



CITY OF GROTON

2020 ANNUAL REPORT

[January 1, 2020 – December 31, 2020]

General Permit for the Discharge of Stormwater from Small Municipal Separate Stormwater Sewer Systems (MS4 General Permit)

Permit Number GSM-000070

Executive Summary

This document presents the Stormwater Management Plan (SWMP) Annual Report for the City of Groton. The SWMP Annual Report was developed to provide a summary of the City's progress towards implementing the best management practices (BMPs) for the six Minimum Control Measures outlined in the SWMP to meet the requirements of the Connecticut Department of Energy & Environmental Protection (DEEP) General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 General Permit) to the maximum extent practicable from January 1, 2020 to December 31, 2020.

The Annual Report includes a written discussion of the status of compliance with the MS4 General Permit, all monitoring data collected and analyzed, and all other information collected and analyzed, and follows the UCONN CLEAR MS4 Annual Report template.

The Draft Annual Report was available for public review during regular business hours at the Public Works Department offices and on-line at <http://cityofgroton.com/government-services/departments/public-works/engineering/phase-ii-stormwater-permitting-plan/>

A notice that the Draft Annual Report would be available was publicly posted 15 days earlier on the City of Groton Website and Facebook page.

2019 Annual Report
MS4 General Permit
City of Groton
Permit Number GSM-00070
[January 1, 2020 – December 31, 2020]

This report documents City of Groton’s efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from January 1, 2020 to December 31, 2020.

Part I: Summary of Minimum Control Measure Activities

1. Public Education and Outreach (Section 6 (a)(1))

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	Ongoing	Within Groton there is a continuing program of public education and outreach.	Update Stormwater webpage annually	DPW	7/1/18	Ongoing	See Section 1.3 below for highlights of the 2020 public education and outreach program
1-1b Periodically post Stormwater management issues on social media	Ongoing	Posted the following to Facebook: Notice of review of annual report, advertised water quality and treatment display for Groton City Day	Post educational information on social media at least three times annually	DPW	7/1/18	Ongoing	Utilized City Facebook and website throughout the year to educate residents with respect to the impact of leaves, grass clippings, dog waste, etc. on stormwater systems.
1-1c Stormwater information provided on local cable access	Implemented	GMTV Channel 2 on Comcast Cable aired program multiple times in 2018	Program on local cable access channel aired once annually	DPW	7/1/18	Ongoing	Program aired: the DEEPs public service announcement ‘Clean Water Starts With You’
1-1d Educate dog owners about picking up dog waste	Implemented	The Long Island Sound Study (LISS) brochure entitled “Step by Step, A citizen’s guide to	Pet waste fact sheets distributed to licensed dog	DPW	7/1/18	7/1/18	Dog licenses for City residents are obtained from the Town of Groton’s Clerks Office who distributes the

		curbing polluted runoff" was distributed with dog license in June	owners with annual dog license				brochure. 1,860 dog licenses were issued in 2018.
1-2 Address education/outreach for pollutants of concern	Completed	Participate in National Public Works Week. Educational opportunity	One post to social media addressing Stormwater Pollutants of Concern	DPW	7/1/18	Ongoing	Created flyers, posted educational materials in City lobby, website and Facebook.

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

The City will continue to expand its Public Education and Outreach efforts to give the community more access to stormwater management information and access to more detailed maps on-line. We will continue to utilize formal and informal opportunities to educate our residents. DPW staff had planned to become more engaged in community events to present topics of concern, educate and answer questions from our residents however in response to COVID-19 most in-person events were cancelled. DPW staff has a marked presence on the Baker Cove Watershed Committee (BacWac). The Committee is specifically engaged in educating stakeholders within the watershed in reducing pollutants, specifically bacteria. DPW staff, along with Town of Groton staff and BacWac, is developing a relationship with Project Oceanology in an effort to collaborate on stormwater and watershed educational opportunities within the Groton school system.

1.3 Details of activities implemented to educate the community on stormwater

Program Element/Activity	Audience (and Distribution)	Topics covered	Pollutant of Concern addressed	Responsible dept. or partner org.
National Public Works week	Residents (brochures, displays, social media posts)	Grass clippings, leaves, vehicle washing, proper containment of sanitation	Nitrogen, bacteria	City of Groton DPW
Fall Leaf Collection and Christmas Tree Collection 2020	Residents (seasonal brochure)	Leaf management, collection schedule	Nitrogen	City of Groton DPW
Recycling/stormwater pollution education	Residents (seasonal brochure)	Stormwater pollution/Best Practices and Recycling	Surfactants, Chemical Oxygen Demand	City of Groton DPW
Baker Cove Watershed map	City/Town residents and visitors	Non-point source pollution, Good House Keeping Practices - BMP	Fecal coliform/bacteria	City of Groton DPW with Baker Cove Watershed Committee
Educational discussions/presentations at Mayor and Council meetings	Residents (accessible on GMTV)	Overview/purpose of MS4 permit and its requirements	Nitrogen, phosphorous, bacteria	City of Groton DPW
Scientific study/education program	Students in grades 7-12 and their parents	Microplastics, marine debris, and plankton diversity in the	Microplastics and marine debris	Project Oceanology

		Poquonnock and Thames Rivers		
Teacher Training Education Program	4 teachers	Stormwater runoff & management, watersheds, ecosystem services, climate resilience	Broad overview	Project Oceanology

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

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	The City complied with the public notice requirements and submitted the SMP on Schedule	All required notices posted by deadline	DPW	4/3/17	3/31/2017	
2-1a Comply with public notice requirements for Annual Reports	Completed	Posted a notice that the draft annual report would be available for review	All required notices posted by deadline	DPW/Heidi Comeau	1/31/18	Ongoing	
2-2: Stormwater Committee meetings	On-going	Formal meeting, several coordination meetings amongst DPW, Planning and P&R	One meeting held annually	DPW/Heidi Comeau	6/30/19	Ongoing	
2-3 Sponsor community participation event	Ongoing	See section 1.3 above	One event held annually	DPW	6/30/19	Ongoing	

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

The City held an in-formal MS4 Meeting to discuss and inform all applicable parties of the DPW's focus to adhere to and meet the requirements of the Permit and to garner support from our internal partners. The City had several Department Head level (Building Official, Planner, DPW Director) staffing changes in 2020 and will focus more heavily in 2021 on regular meetings with internal partners. Due to COVID-19 there were little to no in-person events to which we could participate. We utilized YouTube and social media to provide messaging and information to our residents. City DPW has representation on the City Community Resiliency Planning Committee and will be conducting educational and informational workshops with our residents and external stakeholders in 2021.

2.3 Public Involvement/Participation reporting metrics

Metrics	Implemented	Date	Posted
Availability of the Stormwater Management Plan announced to public	Yes	3/31/2017	http://cityofgroton.com/government-services/departments/public-works/engineering
Availability of Annual Report announced to public	Yes	1/31/21	http://cityofgroton.com/government-services/departments/public-works/engineering/phase-ii-stormwater-permitting-plan/

3. Illicit Discharge Detection and Elimination (Section 6(a)(3) and Appendix B)

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	Written IDDE plan	Written IDDE Program developed	DPW/Heidi Comeau	7/1/18	7/1/19	Written IDDE plan was developed. The City will continue to use this document as a tool in its procedures and update as necessary.
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	Completed	Outfall mapping was completed under the 2004 MS4 Program, DPW is determining what additional details need to be added	Outfall and interconnections inventory and map completed by deadline	DPW/Heidi Comeau	7/1/19	7/1/19	City's outfall mapping was completed with the assistance of the SECCOG. All City outfalls have been identified and assigned attributes.
3-3 Implement citizen reporting program	Completed	Citizen reporting program has been in place since 2015	Formal written program developed	DPW/Heidi Comeau	7/1/17	7/1/19	Reported illicit discharges reported below.
3-4 Establish legal authority to prohibit illicit discharges	Completed	The City is reviewing the Permit to determine if further changes need to be made in authority	Ordinance reviewed and revised if necessary	DPW/Heidi Comeau	7/1/18	7/1/19	Ordinance prohibiting illicit discharges established under the 2004 MS4 Program. Ordinance will be reviewed annually to determine if additions or changes are required.
3-5 Develop record keeping system for IDDE tracking	Complete	Record keeping system has been in place since 2015	IDDE tracking spreadsheet	DPW/Heidi Comeau	7/1/17	Before 7/1/15	See list below

3-6 Address IDDE in areas with pollutants of concern	In progress	Failing septic systems in the City are managed by the Ledge Light Health District	Areas with failing septic systems identified by the deadline; % of failing systems addressed annually	LLHD	Not specified	Ongoing	Very few septic systems in the City (Eastwood Section/Groton Bank)
------------------------------------------------------	-------------	-----------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------	------	---------------	---------	--------------------------------------------------------------------

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

The City will continue to monitor activities as they relate to the IDDE plan and investigate, mitigate and track all known reports of Illicit Discharge.

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

Date of Report	Location / suspected source	Response taken
3/17/20	Thames Street/Smith Street/Eastern Point Road – delivery vehicle to Pfizer	Contacted Pfizer Environmental and Health Services. Pfizer EHS contacted appropriate authorities (DEEP) and deployed booms around storm drains to mitigate release into storm drain system.
8/7/20	First Street – report of camper discharging into a basin	Investigated. No storm sewer or catch basin located on this street. Reported incident to Pollution Abatement Facility as it is possible the discharge was to the public sewer system.
9/23/20	Mitchell Street- pool drain	Met with homeowners and explained that they would need to drain the pool over the grassy area of their yard and avoid its runoff into the street.

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.

SSO Location ¹	Discharge Point ²	Date ³	Time Start ³	Time End ³	Estimated Volume ⁴	Description ⁵	Mitigation Completed ⁶	Mitigation Planned ⁷
Mitchell Street	Birch Plain Creek – reached storm drain	9/23/20	Unkn own	11:06 a.m.	Unknown	Chlorinated pool water – resident draining pool water into roadway	Impact of drainage reported to homeowner. Homeowner put on notice.	
Thames/Smith Street, Eastern Point Road	Thames Street	3/17/20	Unkn own	12:10 p.m.	5-10 gallons	Fuel filter failure. Lost diesel fuel.	Contained with roadway booms	

Bishop Court	Reached storm drain	4/8/20	Unkn own	7:30 a.m.	Unknown	Sewer line blockage	Line cleared 4/8/20 and cleanup completed.	
Three Acre/Eastern Point Road	Reached storm drain	2/8/20	10:00 a.m.	10:52	50 gallons	Sewer line blockage	Line cleared and sanitized with chlorine	
171 Bridge Street	Thames River	10/1/19	8:00 a.m.		Unknown	Sewer line blockage/possible cracked line (seepage)	Line cleared 10/9/19	
Nathan Hale Road	Discharge to Birch Plain Creek	3/27/19	10:00 a.m.	3:49 p.m.	1,000-5,000 gallons	Sewer line blockage	Line cleared 3/27/19	
Meridian Street Pump station	Reached through MS4. Tributary to Birch Plain Creek	11/28/18	7:48 a.m.	8:30 a.m.	Unknown	Contractor backed into tank and created hole. Pump Station bioxide tank.	Clean up completed 11/28/18	
Chapman Street/EB South Yard	Reached storm drain	2/12/18	4:38 p.m.		1-50 gallons	Blockage caused by wipes	CL2 tablet put in catch basin. 2 inches of rain night before.	
Poquonnock Road and Rainville Avenue	Raw sewage to MS4	11/29/17	2:00 p.m.	3:15 p.m.	51-500 gallons	Electrical equipment failure. Main breaker tripped.	Cleanup completed 11/29/17.	

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

Citizens can notify the City of a concern by phone or on-line (most come on-line). The Public Works Department would then investigate the complaint and initiate a work order to correct any issues. Work orders are tracked electronically. DPW communicates with homeowners, businesses and other City of Groton/Groton Utilities staff to ensure complete follow up in the investigation.

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
Septic systems in the city are under the authority of the Ledge Light Health District		

3.7 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	81
Estimated or actual number of interconnections	22 – State of CT, Pfizer, General Dynamics, Town of Groton
Outfall mapping complete	100%
Interconnection mapping complete	100%
System-wide mapping complete (detailed MS4 infrastructure)	75%
Outfall assessment and priority ranking	100%
Dry weather screening of all High and Low priority outfalls complete	87% -71 basins investigated
Catchment investigations complete	7 of 81
Estimated percentage of MS4 catchment area investigated	8.5%

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).

City DPW had staffing schedule changes due to COVID in 2020, next training is scheduled for February 25, 2021.

4. Construction Site Runoff Control (Section 6(a)(4))

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
4-1a Implement, upgrade (as necessary) and enforce City land use regulations	In progress	The City had a change of staff in 2020 and hired a new City Planner	Existing E&S control and stormwater regulations reviewed and revised as necessary by deadline	City Planning	7/1/19	7/1/19	
4-1b: Establish interagency or inter-jurisdictional agreements	In progress	The City is in ongoing discussions with other agencies to establish MOUs to control the contribution of pollutants between the City's MS4 and	Interagency or inter-jurisdictional agreements established by deadline	DPW	7/1/19	7/1/19	Potentially interconnected MS4 that have been identified include the Town of Groton and CTDOT. Discussions have ensued with TOG Project Management.

		MS4s operated by others.					
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval	Completed	The City has implemented interdepartmental coordination in site plan review and approval	Plan developed and implemented by deadline	DPW	7/1/17	Before 7/1/17	Detailed and on-going discussions with Planning and B&Z staff to ensure DPW has notification and sign-off on site plans
4-3 Review site plans for stormwater quality concerns	Completed	Site plans are reviewed for stormwater quality concerns	100% of site plans received are reviewed prior to approval for E&S control	DPW	7/1/17	Before 7/1/17	Detailed and on-going discussions with Planning and B&Z staff to ensure DPW has notification and sign-off on site plans
4-4 Conduct site inspections	Completed	All sites are inspected	100% of site inspections conducted for all sites constructed within reporting period, and percent of resolutions achieved after discovery of deficiency	DPW	7/1/17	On-going	Formal inspection form has been developed for tracking purposes.
4-5 Implement procedure to allow public comment on site development	Completed	Currently any project requiring approval by a land use agency or commission is presented at a public meeting.	Public meetings held by Planning, Zoning and Inland Wetlands Agency for 100% of eligible projects. 100% of projects posted on City website when not presented at a meeting	City Planning/Building and Zoning	7/1/17	Before 7/1/17	
4-6 Implement procedure to notify developers about DEEP construction stormwater permit	Completed	The City notifies Contractors and developers that they must submit a registration Stormwater Construction General Permit when the City	Flyers provided in 100% of preconstruction meetings and land use application reviews	City Planning/Building and Zoning	7/1/17	Before 7/1/17	

		holds a preconstruction meeting or reviews an application					
--	--	-----------------------------------------------------------	--	--	--	--	--

5. Post-construction Stormwater Management (Section 6(a)(5))

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 progress		1) Legal authority established for LID and runoff reduction practices; 2) Identification and, where appropriate, reduction or elimination of existing local regulatory barriers to implementing LID and runoff practices; and 3) Consideration of the watershed protection elements to manage the impacts of stormwater on receiving waters implemented	City Planning	7/1/21	7/1/21	City of Groton hired a new City Planner in 2020. Discussions have begun with the Planning department to ensure we are compliant with permitting and Zoning Regulations.
5-2 Enforce LID/runoff reduction requirements	Ongoing		Percent of <i>Water Quality Volume</i> retained	City Planning	7/1/19	7/1/20	Reports are being provided with submitted applications by contractors and developers providing required WQV information
5-3 Implement long-term maintenance plan for stormwater basins and	Completed		Inspect 100% of City-owned stormwater basins and treatment structures annually	DPW	7/1/19	4/1/20	City DPW has re-initiated the process of inspecting all basins and formally documenting its condition, approximately 880 basins within the City. 100% complete.

treatment structures							
5-4 DCIA mapping	Ongoing	Reviewing UCONN's impervious cover by basin data	Percent of total outfalls that DCIA has been mapped and calculated for	DPW	7/1/19	12/30/19	Basin data has been reviewed and it was determined that there is approximately 213.30 acres of DCIA.
5-5 Address post-construction issues in areas with pollutants of concern	In Progress	Utilize Construction Site Inspection Reports	Plan for correcting problems developed within 12 months of identification. 100% of identified problems corrected within required timeframe	DPW	On going		The City will implement Construction Site Stormwater Inspection Reports, in addition to utilizing sampling data, to identify and mitigate problem areas.
5-6 Implement and maintain any control measures or conditions for New Discharge to an Impaired Water without an Established TMDL	Completed	None	100% of control measures or conditions implemented and maintained	DPW	7/1/17	7/1/17	
5-7 Additional requirements for all new and existing discharges to a water with an Established TMDL or with a Pollutant Load Reduction	Completed	None	100% of the discharge requirements consistent with the applicable Wasteload Allocations, Load Allocations or Water Quality Targets for that TMDL followed for new authorized discharges to a water with a TMDL or with a pollutant load reduction established within the TMDL	DPW	7/1/17	7/1/17	

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

In 2020 the City of Groton DPW engaged UCONN CLEAR Stormwater Corps to identify projects to reduce impervious cover and increase infiltration of runoff. These projects included use of Turfstone, rain gardens and additional tree filters. The City is actively employing these recommendations and attempting to budget accordingly to incorporate at least one or two of these tools into planned projects. Continuing to work with the Planning and Building and Zoning Departments to ensure all requirements are met and we are engaging with contractors and developers in the planning and permitting stages to encourage incorporation of LID practices in projects.

5.3 Post-Construction Stormwater Management reporting metrics

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	213.30 acres
DCIA disconnected (redevelopment plus retrofits)	8.45 acres total
Retrofits completed	1 project (7 tree filters)
DCIA disconnected	4.0 % total since 2012
Estimated cost of retrofits	\$0 (project was grant funded)
Detention or retention ponds identified	2 total

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

Identified Major Basins surrounding the City of Groton to which the stormwater drainage system outfalls. Utilized the formula for a wicked connected system and determined the estimated baseline DCIA. The City of Groton will be required to disconnect approximately 4.266 acres to meet the 2% disconnection threshold. City DPW has worked with Building and Zoning staff to identify permitted projects with a look back through 2012. The purpose was to identify projects where there was a potential change to directly connected impervious area and begin tracking those changes. As there are several large scale projects currently in the planning and permitting stages, we will continue to work with Building and Zoning and Planning to ensure we are tracking all changes to DCIA, both positively and negatively, to ensure accurate recording going forward.

6. Pollution Prevention/Good Housekeeping (Section 6(a)(6))

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 Continue formal employee training program	On going	Conducted annual training for DPW operations staff on 11/12/19	100% of required operational employees trained annually	DPW/Heidi Comeau	7/1/17	7/1/17	

6-2a Minimize the discharge of pollutants to MS4 from parks and open space management	On going	The City contracts with a professional lawn maintenance company (TruGreen) that optimizes the application of fertilizers, pesticides and herbicides on City lands. TruGreen has standard operating practices for the handling, storage, application, and disposal of pesticides and herbicides	100% of existing SOP's reviewed and updated by deadline. Missing SOP's (if applicable) developed within 12 months	DPW/Heidi Comeau	7/1/17	7/1/17	Application logs are being included as backup in stormwater management files. Copies are available as necessary.
6-2b Minimize the discharge of pollutants to the MS4 from pet waste	On going	The City has not identified any locations where inappropriate pet waste management practices are apparent and pose a threat to the MS4.	Locations with inappropriate pet waste management identified by deadline; and 2) % of locations where compliance activities are complete	DPW/Heidi Comeau	7/1/17	7/1/17	The City maintains dog waste stations in areas of high dog walking. The City does not have an established dog park.
6-2c Minimize the discharge of pollutants to the MS4 from waterfowl	On going	The City has Identified park lands where waterfowl congregate, and has contracted pest waterfowl management company	1) Lands where waterfowl congregate identified within schedule; 2) % of identified lands that have signs installed or other targeted techniques to educate public and discourage feeding; 3) % of identified lands that have practices implemented to prevent congregation and/or the areas of direct drainage isolated	DPW/Heidi Comeau	7/1/17	7/1/17	The City has DPW staff represented on the Baker Cove Watershed Committee which will have a heavy focus on waterfowl pollutant mitigation.
6-2d Minimize the discharge of pollutants to MS4 from municipal buildings and facilities	On going	<ul style="list-style-type: none"> The City swept all parking areas In 2017, the City has updated procedures for management of dumpsters In 2017, the City evaluated all interior building floor drains, and confirmed 	1) Procedures developed and implemented for dumpsters by deadline; 2) 100% of parking lots swept annually; 3) 100% of non-SWPPP facilities	DPW/Heidi Comeau	7/1/17	Ongoing	

		they are not connected to the MS4	evaluated by deadline to ensure no interior floor drains connect to the MS4				
6-2e: Minimize the discharge of pollutants to MS4 from municipal vehicle and equipment maintenance	On going	The City maintains vehicles and equipment so as to minimize the discharge of pollutants to the MS4 as described in the SMP.	1)Procedures established for City vehicle storage; 2)Fueling areas evaluated; and 3)Procedures established to ensure that vehicle wash waters are not discharged to the MS4 or to surface waters	DPW/Heidi Comeau	7/1/17	Ongoing	
6-2f: Minimize the discharge of pollutants to MS4 from leaf management	Completed	Posted leaf collection schedule and proper management on Facebook and webpage; swept streets in fall	Problem streets swept annually in the fall as part of BMP #6-9; Educational information provided on social media (BMP #1-1b) and on City Stormwater webpage (BMP #1-1a) annually	DPW/Heidi Comeau	7/1/17	Ongoing	
6-3 Implement coordination with interconnected MS4s	Ongoing	The City has identified the Town and CTDOT as interconnected MS4s	Interconnected MS4 coordination implemented within deadline	DPW/Heidi Comeau	7/1/19	Ongoing	Continued discussions with Town of Groton staff regarding relevant projects within the Town limits affecting City drainage and outfalls.
6-4 Develop & implement program to control other sources of pollutants to the MS4	In Progress	Electric Boat under an EPA settlement installed an oil/water separator and other improvements to their drainage system	Program developed and implemented to control the contribution of pollutants to MS4 by deadline	DPW/Heidi Comeau	12/31/17	12/31/17	
6-5 Evaluate additional measures for discharges to impaired waters	Ongoing	The City has contracted a pest waterfowl management company and is working with the ECCD Canada Goose Project	Additional measures implemented by deadline	DPW/Heidi Comeau	12/31/17	7/1/19	Baker Cove Watershed Committee is undertaking sampling of locations within the watershed to identify bacteria. The Committee is collaborating with local stakeholders to provide education on Good

							Housekeeping Practices to minimize bacteria contributing discharges.
6-6 Track projects that disconnect DCIA	Ongoing	City has a system to track these projects	The total amount of DCIA that has been disconnected during a given year	DPW/Heidi Comeau	7/1/17	Ongoing	The City DPW has implemented a system to track projects and their impacts on DCIA on a go-forward basis.
6-7 Develop infrastructure repair/rehab program	In Progress		Program developed and implemented by deadline	DPW/Heidi Comeau	7/1/21	7/1/21	City DPW is researching appropriate GIS based application to track assets and infrastructure
6-8 Develop & implement plan to identify/prioritize retrofit projects	In Progress		Plan developed by deadline; 2% DCIA disconnected by deadline	DPW/Heidi Comeau	7/1/20	7/1/20	The City has determined its baseline DCIA and will continue to work with City Planning and Building and Zoning Departments to implement and enforce LID and to identify disconnection projects.
6-9 Develop & implement street sweeping program	Ongoing	<ul style="list-style-type: none"> Streets and parking lots are swept and/or cleaned with a minimum frequency of once per year in the spring following the cessation of winter maintenance activities. More frequent cleaning and/or sweeping of targeted areas occurs as needed (fall leaves). Wet dust suppression is not conducted Street sweepings are disposed of in accordance with DEEP policies, guidance and regulations. 	Street sweeping program developed and implemented	DPW/Heidi Comeau	7/1/17	Ongoing	

6-10 Develop & implement catch basin cleaning program	Completed	The City developed & implemented SOPs; all catch basins are cleaned once annually	100% of catch basins cleaned within schedule	DPW/Heidi Comeau	7/1/20	7/1/20	Catch basins inspected for repairs and maintenance, repairs are issued work orders and tracked electronically
6-11 Develop & implement snow	Ongoing	The City developed standard operating practices for snow	1) SOPs implemented, 2) Percent of operational staff	DPW/Heidi Comeau	7/1/18	Ongoing	Snow and Ice SOP's being reviewed for changes and/or updates.

management practices		management practices as described in the SMP	trained on application methods and equipment; and 3) goals for chemical application rates met annually				
----------------------	--	----------------------------------------------	--------------------------------------------------------------------------------------------------------	--	--	--	--

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

Continue formal employee training program; City DPW staff is actively involved with the Baker Cove Watershed Committee (BacWac). BacWac has developed a work plan which includes good housekeeping practices and the education of stakeholders within the watershed in these practices. BacWac recently created an Implementation Sub-Committee, with representation from the City DPW, which will focus largely on prioritizing tasks within the workplan to identify and pursue funding for those tasks determined to have the greatest impact.

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	Yes
Street sweeping	
Curb miles swept	60
Volume (or mass) of material collected	Not Tracked
Snow management	
Type(s) of deicing material used	Pre-treated Salt
Total amount of each deicing material applied	150 tons
Type(s) of deicing equipment used	Non-Automated Rear-Discharge Spreader
Lane-miles treated	40
Snow disposal location	City Park Property
Staff training provided on application methods & equipment	Continuous
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	Not Tracked
Reduction in turf area (since start of permit)	Not Tracked
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	
Cost of mitigation actions/retrofits	None identified

6.4 Catch basin cleaning program

Provide any updates or modifications to your catch basin cleaning program

The City of Groton completed a full catch basin inspection and cleaning initiative in 2020. We are working to develop a priority cleaning and inspection list based on the results provided in the inspection reports. We will focus our cleaning efforts on those areas that continue to produce larger volumes of material removed at each cleaning. We have continued to have a robust street sweeping program throughout the City, again focusing on those areas determined to produce higher volumes of material. The City is currently evaluating software to allow us to track and maintain records of catch basin cleaning and inspection reports in an ESRI GIS based system.

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

The City Public Works Department was engaged with the UConn Stormwater Corps in 2020. The Corps developed 5 runoff reduction recommendations for the City. If all 5 recommendations were implemented, the City would have an overall reduction of 21,477 sq. ft. of impervious cover disconnected resulting in the capture of 565,510 gallons of untreated stormwater and therefore preventing 5.88 pounds of Nitrogen and 1.27 pounds Phosphorous from entering local waterways. DPW has also begun the task of identifying grants to aid in the funding for such projects.

Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection in future years

In addition to the projects identified by the UCONN Stormwater Corps, the City has also identified several green infrastructure practices that can easily be implemented on municipal property and upcoming municipal projects. We will continue to research all practices available and the feasibility of their implementation.

Describe plans for continuing the Retrofit program beyond this permit term to disconnect 1% annually over the next 5 years

The City Public Works Department continues to work closely with the City Planning and Building and Zoning Departments to ensure Retrofit and LID practices are incorporated into Zoning Regulations and formal tracking of development projects and LID practices will be ongoing. As the City is a densely populated urbanized area with growth expectations due to increase in contract work at Electric Boat, this requirement will create challenges however we have begun to look at creative initiatives to meet these goals.

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.

The City met the goal of screening 50% of outfalls by June 30, 2020, partially utilizing data collected under the 2004 permit. The City will begin monitoring its 6 highest contributing outfalls in Spring of 2021 and continue sampling the remainder of the outfalls to meet 100% by 2022.

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

2.1 Screening data

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?
CG-Out34	6/25/19	Nitrogen, Phosphorus	Within threshold limits	Phoenix Environmental Labs	Industrial – screened bi-annually
CG- Out35	6/25/19	Nitrogen, Phosphorus	Chemical Oxygen Demand and Nitrogen above limits	Phoenix Environmental Labs	Industrial – silt sack placed in basin – screened bi-annually
CG-Out13	10/17/19	Nitrogen, Phosphorus, Bacteria, Other Pollutant of Concern	E. Coli and Total coliforms above acceptable limits	Phoenix Environmental Labs	Continue to monitor bacteria
CG-Out33	10/17/19	Nitrogen, Phosphorus, Bacteria, Other Pollutant of Concern	E. Coli and Total coliforms above acceptable limits	Phoenix Environmental Labs	Continue to monitor bacteria
CG-Out19	10/17/19	Bacteria	E. Coli and Total coliforms above acceptable limits	Phoenix Environmental Labs	Continue to monitor bacteria
CG-Out26	10/17/19	Bacteria	E. Coli and Total coliforms above acceptable limits	Phoenix Environmental Labs	Continue to monitor bacteria
CG-Out25	10/17/19	Bacteria	E. Coli and Total coliforms above acceptable limits	Phoenix Environmental Labs	Continue to monitor bacteria
CG-Int22	10/9/19	Nitrogen, Phosphorus, Bacteria, Other Pollutant of Concern	E. Coli and Total coliforms above acceptable limits	Phoenix Environmental Labs	Continue to monitor bacteria
CG-Out48	6/25/19	Nitrogen, Phosphorus, Bacteria, Other Pollutant of Concern	E. Coli and Total coliforms above acceptable limits	Phoenix Environmental Labs	Continue to monitor bacteria
CG-Out45	6/25/19	Nitrogen, Phosphorus, Bacteria, Other Pollutant of Concern	E. Coli and Total coliforms above acceptable limits	Phoenix Environmental Labs	Continue to monitor bacteria

--	--	--	--	--	--

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?
CG-Out 56	11/5/2008	Nitrogen, Phosphorus, Bacteria, Other Pollutant of Concern	E. Coli above acceptable limits	Connecticut Testing Laboratories	Continue to monitor bacteria
CG-Out 23	11/5/2008	Nitrogen, Phosphorus, Bacteria, Other Pollutant of Concern	E. Coli above acceptable limits	Connecticut Testing Laboratories	Continue to monitor bacteria

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
N/A	N/A	

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)
N/A	N/A	N/A	N/A	N/A

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).

All City outfalls are within a priority area.

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
CG-Out 56	5/14/20	0	0	196.6	0.10	63	0	49.6	Nitrogen - .28; Phosphorous – 0.016	
CG-Out 59	5/14/20	0	0	133.7	0	<10	0	52.7	N/A	
CG-Out 57	5/14/20	0	0	193.2	0.10	109	0.1	52.4	N/A	
CG-Out 58	5/14/20	0	0	90.5	0	131	0.1	52.3	N/A	
CG-Out 13	8/11/20	0	0	298	0.10	41	0.1	73.2	Nitrogen- 0.54; Phosphorous- 0.025	
CG-Int 18	8/11/20	0	0	543	0.30	345	0.10	74.3	Nitrogen- 0.49; Phosphorous- 0.128	Follow up screening and investigation for E.Coli exceeding acceptable thresholds.
CG-Out 55	8/11/20	0	0	663	.30	52	0	75.3	Nitrogen- 0.52; Phosphorous- 0.056	

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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
N/A									

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
CG-Int22	Thames River	Potential sanitary sewer infrastructure defects; blockages

Where SVFs are:

- History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.
- Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.
- Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.
- Common or twin-invert manholes serving storm and sanitary sewer alignments.
- Common trench construction serving both storm and sanitary sewer alignments.
- Crossings of storm and sanitary sewer alignments.
- Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;
- 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.
- 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
N/A	N/A	N/A	N/A	N/A	N/A

3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants
N/A	N/A	N/A	N/A	N/A

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
CG-Int22	Sewer infrastructure defect	Sanitary sewer leaching into stormwater manhole	Citizen report of sewer smell	10/1/19	10/9/19	Line jetted sewer manhole blockage	unknown