

Town of Groton 2023 Annual Stormwater Report

As required per the Small Municipal Separate Storm Sewer Systems (MS4) General Permit

Existing Permittee, Permit Number GSM 000055, Reporting period: January 1, 2023 – December 31, 2023

This report documents the Town of Groton’s efforts to comply with conditions of the MS4 Storm Sewer Permit to the maximum extent practicable (“MEP”) from January 1, 2023 to December 31, 2023. Though the MS4 expired 6/30/2022, and was reissued 10/1/2023, the Town maintained its efforts and includes January - September 2023 activities in the interest of continuity. Note, use of abbreviations: **TOG** = Town of Groton, **PWD** = Public Works Department, **OPDS** = Office of Planning & Development Services, **ECCD** = Eastern Connecticut Conservation District, **B&L** = Barton & Loguidice (stormwater engineers), **SPCC** = Spill Prevention Control & Counter-measures (EPA point-source pollution regulations), **CUSH** = Clean Up Sound & Harbor (non-profit monitoring group)

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The Town of Groton invites your questions and comments. Direct feedback to Michelle Maitland, Project Management Specialist, Department of Public Works, mmaitland@groton-ct.gov 860-448-4544. Note, section & page numbers beside sub-headings reference the permit content. The MS4 permit can be found here: <https://portal.ct.gov/DEEP/Water-Regulating-and-Discharges/Stormwater/Municipal-Stormwater>.

EXECUTIVE SUMMARY

Submission of this report maintains compliance with the CT DEEP General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems. The Town certifies with this document that terms & conditions of the Permit are being met to the maximum extent practicable (MEP).

The Town first contracted with a professional engineering and consulting firm, Barton & Loguidice, LLC (B&L), in May 2020. Through B&L’s efforts, the Town continues toward completion of all outfall screening, sampling, and most MS4 engineering-dependent obligations. In 2023, B&L completed a foundational task: initial visual inspection of the 340 municipally-owned outfalls during dry weather. Visiting outfalls in dry weather provides inspectors the ability to identify potential issues if flow is present. In most cases, flow during dry weather is unexpected and a prompt for further investigation. In 2023, B&L completed “**dry weather screening**” at 21 outfalls and six new samples were collected, which brought the total completed screenings to 322 and samples collected to 85. No new samples collected in 2023 had lab results suggesting an illicit discharge. Therefore, the 13 prospective issues identified in 2022 during dry weather screening are the only of these remaining. These are categorized as high priority and are being investigated.

Of the 340 Town outfalls, 49 discharge to impaired waters, or waterbodies known to be polluted. These 49 outfalls are of special interest and require a higher level of examination, including “**wet weather sampling.**” B&L collected 6 new such samples during the reporting period. Of the wet weather samples collected in 2023, three were found to have possible illicit discharges. To date, 46 of the 49 outfalls discharging to impaired waters have been

sampled, with possible illicit discharges now totaling 33. These outfalls are also being investigated. Simplified dry and wet weather sample results are reflected in the attached *Priority Ranking of Catchment Data* which B&L updates, and are part of a multi-factor scoring system tracking areas of concern.

The number of low ‘wet weather samples’ relative to ‘dry weather’ (33 vs 85) is due to the ratio of outfalls to impaired waters vs. overall outfalls (49 of 340). Note, in the course of this work, some assets are found to have been moved or removed, often due to road work or construction. These can account for minor changes in totals year to year, and call for **mapping updates** which B&L coordinates with the TOG GIS Coordinator.

Illicit Discharge Detection & Elimination (IDDE) is the discovery process meant to identify pollutants and sources. Of the 16 investigations initiated so far (11 from dry screening + 5 from wet weather), 8 source areas have been identified. Several sites were dry during follow-up or need Town assistance to complete, so will be revisited in 2024. Stormwater ordinance ‘notice of violation’ (NOV) letters have been drafted and are presently under TOG review. Note, further sampling may lead to the need for additional IDDE investigations.

In 2022, with assistance from B&L, the Town completed a Directly Connected Impervious Area (DCIA) **retrofit plan** which led PWD to seek funding for plan implementation. Two proposals sought American Rescue Plan Act (ARPA) funding: “Retrofits: Part I,” featuring a Fishtown Rd. drainage area + a Burrows Field lot, and “Learning Lots” to expand PWD capacity for pervious pavement installation. Partial funding of the latter will allow acquisition of a specialized porous paving maintenance vehicle. “Learning Lots” was adapted in Spring 2023 for submission to the Long Island Sound Futures Fund, and, in the Fall, the Town learned it would be fully funded. Program initiation of the 2-year plan will thus begin in 2024 with contracted assessment of a porous paving feasibility study, training of engineers in the assessment process, preliminary design for two sites, and skill sharing with area towns.

In 2021, inspection of 35 sites with underground oil-water separators, and retention and detention ponds, was paired with a B&L draft **Stormwater structure maintenance plan**. Reports were generated for each site and repair and maintenance costs estimated. In 2023, B&L used Town records to identify and map 22 added treatment structures. 31 more inspections and all reporting was finished. Slated for 2024 will be an assessment of ownership obligations. Lastly, B&L also leads **Stormwater Committee meetings**.

For its part, Groton maintained its commitment to **pollution prevention** through catch basin cleaning, street sweeping, intensive inspection schedules, construction site runoff control, and post-construction stormwater management. Relevant Boards and Commissions have become increasingly engaged in MS4 work and Town staff are leaders on Eastern CT Conservation District’s Baker Cove Watershed Committee. As well, the Town continued its stormwater education show on Groton Municipal Television (GMTV) with non-profit partner Save the Sound. “Clean Water Ways” can be viewed on-demand on GMTV’s YouTube channel and is aired locally via Comcast XFINITY & Breezeline Groton Channel 2, and Frontier Vantage Channel 6110.

The Town completed its launch of an online, self-serve permit application program ‘Energov’ which will allow for **improved impervious surface and “DCIA” tracking**, and hosted a summer intern who compiled related historical data from hard copy files for use in coming assessments. In 2022, OPDS welcomed Megan Granato, Sustainability & Resilience Manager, and David Prescott, a Planner II, who each brought new expertise. As expected, through their own work, they have supplemented the efforts of the Stormwater Committee, heightened community interest, and elevate the Town’s efforts to responsibly manage and improve the quality of its stormwater. Comments and questions are welcome through PWD staff via the contact info above.

PART I: Summary of Minimum Control Measure Activities

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

1.1 BMP Summary (Best Management Practice)

BMP	Activities in current reporting period	Sources Used (if applicable)	Method of Distribution	Audience (and number of people reached)	Measurable goal	Dept. / Person Responsible	Additional details
1-1a Implement public education and outreach	PWD distributes info via Facebook, YouTube, website, municipal TV, and conducts outreach with the Town Library, ECCD & others	Not Applicable	See details provided in the events / BMPs that follow in Table 1.1	See details provided below.	Post info on social media annually	Public Works/ Greg Hanover, Director	In 2023, PWD added to its website a page dedicated to the Adopt-A-Highway program promoting roadside litter clean-ups.
1-1b Implement public education and outreach	A 1-wk overnight education program at Marine Science camp hosted in July 2023 for grades 9-12	Not Applicable	Education program at Marine Science camp	30 campers (4 students focused on water quality)	Implement water quality related public outreach events	Local non-profit Project Oceanology	Covered nitrates, ammonium, and coliform bacteria sampling in Baker Cove & Poquonnock River
	A 1-wk overnight education program at Marine Science camp hosted in July 2023 for grades 7-9	Not Applicable	Education program at Marine Science camp	32 campers (4 students focused on water quality)			Covered temp, salinity, pH, and dissolved oxygen sampling in Baker Cove & Poquonnock River
	8-hr Bay Watershed Education & Training (B-WET) given in August 2022	Not Applicable	Professional Development for teachers	8 teachers	Covered watersheds, point & non-point source pollutants, permeable surfaces, enviroscape, & school run-off assessment		
	3-hr Bay Watershed Education & Training (B-WET)	Not Applicable	Professional Development for teachers	8 teachers	Covered land use and mapping, Bake Cove and Poquonnock River, temp, salinity, pH		
	Ten 2.5-hr Water Quality education sessions given to Grade 6-12 on 9/19, 9/21, 9/22, 9/25, 9/26, 10/2, 10/3, 10/6	Not Applicable	Education for students at Groton Middle School, Berlin High, Preston Plains, Norwich Free Academy, East Lyme High, Bennie Dover Jackson	556 students	Covered temp, salinity, pH, and dissolved oxygen sampling in Baker Cove & Poquonnock River		

BMP	Activities in current reporting period	Sources Used (if applicable)	Method of Distribution	Audience (and number of people reached)	Measurable goal	Dept. / Person Responsible	Additional details
1-1c Implement public education and outreach	“Where the City Meets the Sea” grant-funded youth programming	Not Applicable	A three-part program brings marine science programming into school classrooms, + provides transportation for an Aquarium visit, and a trip to Bluff Point State Park for field investigations.	3,800 Title I students total, a sub-section of which are from X schools in Groton	Implement water quality related public outreach events	Local non-profit Mystic Aquarium & Sea Research Foundation	
1-1c Implement public education and outreach (Continued)	Environmental stewardship efforts (water monitoring, coastal clean-ups, and habitat restoration)	Not Applicable	In person: in partnership with CUSH, and other entities		Implement water quality related public outreach events	Local non-profit Mystic Aquarium & Sea Research Foundation	
1-1d Implement public education and outreach	A broad series of public education initiatives and organizing meetings	Not Applicable	In person and online (email, and Zoom)	300 committed community “allies” who represent 30+ organizations across 4 Towns & 2 Tribal Nations	Establish a Mystic River Watershed Resiliency Action Plan, or WRAP	Local non-profit Alliance for the Mystic River Watershed	5 educational gatherings, 15 water monitoring sites (in collaboration with CUSH), 2 Watershed Planners' Convenings
1-1e Implement public education and outreach	Baker Cove Watershed Committee 6 meetings/ yr. + tabling, activities and work sessions	Not Applicable	In person and online (email, and Zoom)	An all volunteer task force of	Carry out the DEEP approved Watershed Based Plan	Eastern CT Conservation District	5 educational gatherings, 15 water monitoring sites (in collaboration with CUSH), 2 Watershed Planners' Convenings
1-2 Address education/ outreach for pollutants of concern*	DEEP "Do Not Feed Waterfowl" brochures continue to be available at Town Hall Annex.	CT DEEP "Do Not Feed Waterfowl" brochure	Brochures available at Town Hall Annex	Available to all residents	Post info on social media annually	Public Works/ Greg Hanover, Director	Content from this brochure was added to the PWD stormwater pollution prevention page.
1-2 Address education/ outreach for pollutants of concern* (Continued)	Distribution of Bacvac map showing groups & individuals ways to help prevent stormwater pollution (pet waste, geese, septic, rain gardens/ barrels, be a volunteer or leader).	Not Applicable	*Available at Town Hall Annex *Tabling at Earth Day event *Used by Project O in grant-funded classroom education program *Various small distributions	*Available at Town Hall Annex *General distribution at various events/ programs	Developed stormwater-centric map for education use by the general public	Public Works as member of Baker Cove Watershed Committee	PWD & OPDS are active on the Eastern CT Conservation District Baker Cove Watershed Committee to reduce pollutants of concern

BMP	Activities in current reporting period	Sources Used (if applicable)	Method of Distribution	Audience (and number of people reached)	Measurable goal	Dept. / Person Responsible	Additional details
1-3 Stormwater info provided on local cable access	PWD/OPDS continued its public access stormwater TV program "Clean Water Ways" with Save the Sound. IN 2023 - Ep. 3 featured Project Oceanology & Save the Sound's Integrated Water Study	Not Applicable	Content aired annually on Groton Municipal Television via cable access and posted online through YouTube, with attempts to share widely	Available to all residents	Content aired annually on cable access	Public Works/ Greg Hanover, Director	Program will seek to educate residents & business community on ways to support town stormwater efforts
1-4 Stormwater info provided on town website	SWMP, Illicit Discharge reporting, Catch Basin Cleaning, & educational links are on PWD stormwater page	CT DEEP, EPA, Long Island Sound Study, Long Island Sound Resource Center	Town Webpage: https://www.groton-ct.gov/departments/pubwks/storm_water.php	Available to all residents	Update Stormwater webpage annually	Public Works/ Greg Hanover, Director	The TOG website in its entirety was redesigned in 2021 + in 2022 PWD stormwater features made more attractive and user friendly
	Educational information on lawn care, auto care, and pet waste provided on website	Not Applicable	Town Webpage: https://www.groton-ct.gov/departments/pubwks/pollution.php				
1-5 Educate dog owners about picking up pet waste	Brochures offered annually with dog license application & June renewals. A limited # of Spanish language versions made available via LISS fund	"Step by Step, A citizen's guide to curbing polluted runoff" brochure by the Long Island Sound Study	Brochures offered annually with dog license application & June renewals	An exact count was unavailable due to a staffing transition at the time of report drafting but expectedly is similar to past years	Pet waste info given to dog owners with annual license.	Public Works/ Greg Hanover, Director	Brochure offers proper pet waste disposal instruction. A new Pks & Rec pilot program offering compostable pet waste bags at Copp Dog Park was delayed due to back-orders but is expected to begin in May 2024.

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

TOG will continue the above efforts including production and release of episode 4 of the public access GMTV show 'Clean Water Ways' offered in partnership with leading non-profit Save the Sound. Episodes are approximately 25 min. each and available for on-demand viewing on GMTV's YouTube channel (search "Clean Water Ways"). They are also aired via Comcast XFINITY of Groton Channel 2, Breezeline (fka Atlantic Broadband of Groton) Channel 2, and Frontier Vantage TV Channel 6110. If you haven't seen them, watch episodes 1-3 anytime. ~ The Town will continue its active role in the Baker Cove Watershed Committee or BACWAC (pr. Back-whack), which includes ongoing outreach, education, and an ambitious workplan of school partnership, and pollution prevention. This ECCD-led, public-private, all volunteer task

force was as outgrowth of a DEEP approved Watershed Based Plan. In 2024 a pilot education program will seek educating about the negative impacts of Fats-Rags-Oils-Grease in drains, and a map update. ~ The Town also aims to continue use of its ‘Enviroscape’ table-top watershed model in partnership with the Town Conservation Commission and by inviting participation of Connecticut College interns. Finally, as time & budget allows, the Town will also continue collaboration with our Town Parks & Rec, Library programs, Thrive 55+ (Senior Center), and other area organizations.

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

2.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Dept. / Person Responsible	Projected or actual date complete	Location Posted
2-1 Final Stormwater Management Plan publically available	Completed / Ongoing	Posted required notices and reports	Report available online	Public Works/ Greg Hanover, Director	April 2019	https://www.groton-ct.gov/departments/pubwks/storm_water.php
2-2 Comply with public notice requirements for Annual Reports (annually by 2/15)	Completed / Ongoing	Public notice posted for Annual Report to Town website in Jan 2022	Comply with annual notice requirements	Public Works/ Greg Hanover, Director	Feb 15, 2022	https://www.groton-ct.gov/departments/pubwks/storm_water.php
2-3 Conduct Stormwater Committee Meetings	Completed / Ongoing	August & December mtgs discussed MS4 and ongoing project details	One meeting held annually	Public Works/ Greg Hanover, Director	Aug 23 & Dec 12, 2023	
2-4 Sponsor community participation event	Completed / Ongoing	On April 22, 2023, PWD participated in an 11 am – 4 pm Earth Day expo at the Groton Public Library with over 40 other vendors and community organizations and which drew several hundred participants. TOG hosted a table and recruited volunteers for the Baker Cove Watershed Committee, and arranged for loan of a free-standing working rain barrel model, built by Groton Utilities. The table had table top displays, handputs, and engaged passers by in education about non-point source pollution prevention and information about local water impairments.	One event held annually	Public Works/ Greg Hanover, Director	April 22, 2023	Promoted widely by Groton Public Library and business sponsor “The Ditty Bag” throughout Groton and adjacent towns. It was announced in The Day, sent to email lists and was posted on social media.

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

See Section 1.2 – The aforementioned Public Education partnerships will also support Public Involvement and Participation. Further, as noted, TOG will give public notice of the draft annual report, offer it for review and comment on the Town website, conduct routine Stormwater Committee Meetings, and host community participation events. Plans for 2024 include a Community Stakeholder Field Trip, enhanced training for Town employees engaged in stormwater activities (Engineers will receive training in design of LID features, plus we are pursuing training for Roads & Streets Foremen and parks employees in specialized outfall maintenance techniques.)

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	Dept. / Person Responsible	Projected or actual date complete	Additional details
3-1 Develop written IDDE program (Due 7/1/19)	Completed	n/a	written IDDE program	Public Works/ Greg Hanover, Director	October 2018	
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas (Due 7/1/20)	Substantially Complete	PWD is in year four of a contract with stormwater engineers Barton & Loguidice, which includes field verification/ updates to the municipal outfall list and related mapping	Outfall & Interconnections inventory / map completed by deadline.	Public Works/ Greg Hanover, Director	Ongoing / June 30, 2020	Maps were considered substantially complete in 2020 but work regularly reveals areas of clarification needed. Updates are made when field workers find errors. Funds have been requested for FY25 to elevate mapping accuracy.
3-3 Implement citizen reporting program (Ongoing)	Completed	Program is being maintained	Complete citizen reporting program	Public Works/ Greg Hanover, Director	2017 and ongoing	
3-4 Establish legal authority to prohibit illicit discharges (Due 7/1/19)	Completed	Legal authority remains in place	Town enacts Ordinance	Public Works/ Greg Hanover, Director	May 1, 2018 and ongoing	Notice of the ordinance was added to the TOG website stormwater page
3-5 Develop record keeping system for IDDE tracking (Due 7/1/17)	Completed / Ongoing	The Town currently uses excel spreadsheets, for IDDE tracking. SSO Tracking is ongoing. See Table below.	IDDE tracking & SSO Inventory developed and incidents included in Annual Report.	Public Works/ Greg Hanover, Director	2017 and ongoing	
3-6 Address IDDE in areas with pollutants of concern	Completed / Ongoing	B&L is continuing to investigate IDDE issues in catchment areas that discharge to impaired waters. B&L will complete those already started and will continue investigations	ID of areas w/ failing septic; % of failing systems addressed each yr.	Public Works/ Greg Hanover, Director	Ongoing	No notice received of new failing septic systems, except as noted in item 3-4 (resolved by LLHD)

BMP	Status	Activities in current reporting period	Measurable goal	Dept. / Person Responsible	Projected or actual date complete	Additional details
		for suspected illicit discharges in 2024 to the maximum extent practicable.				

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

The Town’s stormwater consultant, Barton & Loguidice, LLC (B&L) substantially completed dry weather screening in 2022 and 2023 (at end: 340 Town-owned outfalls) leading to 16 initial IDDE investigations. In 2022 and 2023 follow-up investigations and key junction samples were completed in the field, property owner notice templates were created, and reports were drafted. In 2023, follow-up sampling was completed for 11 cases. In 2024, B&L anticipates finishing these reports, and begin new investigations as called for, to the maximum extent practicable. Town staff will also continue to investigate and document reports received from the public. In 2024, TOG will aim to increase IDDE ordinance administration, but is challenged by staff shortages. As noted, TOG will also continue MS4 system mapping in GIS, as necessary. Finally, in 2023, two exceedances in Town embayments were identified by authorities. Fecal coliform levels temporarily shut down Noank oyster farming. This was investigated by DEEP and LLHD in collaboration with PWD. No definitive source ID was made and the issue resolved on its own. The other, in Palmer Cove, was investigated by CUSH, Harbor Watch, & PWD, with the same result. In 2024, monitoring of these areas will continue.

3.3 Provide a record of all citizen reports of suspected illicit discharges and other illicit discharges occurring during the reporting period and SSOs occurring July 2017 through end of reporting period using the following table.

Illicit discharges are any unpermitted discharge to waters of the state that do not consist entirely of stormwater or uncontaminated groundwater except those discharges identified in Section 3(a)(2) of the MS4 general permit when such non-stormwater discharges are not significant contributors of pollution to a discharge from an identified MS4.

Location (Lat long/ Str crossing /address & 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)
Mumford Cove Pump Station, 80 Sunrise Rd, GLP	9/14/2017 @ 5:00 PM	No discharge to surface water / MS4	7,000 gallons	Mechanical equip. failure	SSO stop @ 6 PM on 9/14. Valve temp repaired, replacement completed 2018.	
Poquonnock River Pump Station: 1286 Poquonnock Rd	7/29/2018 @ 3:30 PM	Poquonnock River	Est 5,400 gal	Electrical equip. failure	SSO stop @ 4:55 PM w pump restart	
WPCF, 170 Gary Court	7/29/2018 @ 6:50 PM	Fort Hill Brook	125,000 gal	Electrical equip. failure	SSO stopped at 9:00 AM on 7/30/18. Repaired electrical power distribution.	
WPCF, 170 Gary Court	1/5/2019 @ 7:29 pm - 7:38 pm	Fort Hill Brook	62,500 gallons	Excess flow during storm event	Duration short (9 m) w only fully treated (clean) effluent. A \$5.5 million Effluent Pump Station upgrade is underway & will increase capacity and back-ups.	

Location (Lat long/ Str crossing /address & 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)
I-95 right-of-way betw. north & south lanes at Pamela Avenue	1/14/2019 @ 10:48 am	Drozdyk Drive stormwater basin	undetermined	Grease blockage plus pipe under I-95 sagged from weight	Reported by DOT, incident time span & volume unknown. Sewer line jetted to resolve. Correction was to add monitoring & jetting 1x monthly).	
WPCF, 170 Gary Court	7/22/2019 @ 10:28 pm - 11:23 pm	Fort Hill Brook	125,000 gallons	Excess flow during storm event	Bypass was fully treated (clean) effluent though DEEP filing says 'disinfected partially treated raw sewage' as 'clean' not a choice. A recently finished Pump Station upgrade will reduce overflows.	
WPCF, 170 Gary Court	8/3/2019 @ 5:30 am – 6:30 pm	Fort Hill Brook	20,001 – 50,000 gallons	Electrical Equipment Failure	On-site guard reported, resolved when commercial power was restored & equipment reset	
2590 Gold Star Hwy, private lateral (condo betw Pumpkin Hill + Chesebrough Farm Rd)	7/28/2020 2 hours	MS4 (very little reached catch basin)	51-500 gallons	Private force main struck during fence post install. Sewage seepage along 900 ft of uncurbed road edge.	Contractor repaired main same day	
514 Judson Avenue manhole near New London Road	9/3/2020 1.75 hours	Fishtown Brook	1-50 gallons	blocked sewer	jetted sewer to clear blockage	
54 West Main Street	Reported 12/9/2020 Observed 11/30/2020	Not Applicable	undetermined	A corrugated pipe at rear of property drains to the parking lot behind it, which is associated with 1 Pearl Street.	PWD Engineering determined that what had appeared as a storm drain was a privately owned dry well, nullifying the complaint.	
78 Valley Road	Reported 5/13/2021	MS4	undetermined	An across the street neighbor called with a complaint that the 78 Valley homeowners habitually dump leaves & grass clippings into the storm drain which results in flooding to his yard	Staff took photos next morning which did not substantiate complaint + there were no prior reports/notes of flooding. Because SW ordinance is new, and such practices accepted historically, it was explained in a reply call to complainant that likely outcome for 1st time violation if found would be education. PWD suggested he call at time of incident. PWD will create a related flyer for are distribution, if not more widely.	
Manhole at 1250 Poquonnock Road	9/2/2021 1 hour	Poquonnock River	undetermined	Excessive flow from storm (3-4" per hour)	Sewage seeping from manhole in storm, draining to nearby river. Character clear grey water, no solids, very dilute.	

Location (Lat long/ Str crossing /address & 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)
Pamela Ave, near 1-95, Exit 87 Frontage road	Observed 5/9/22 2 pm; 3:30 pm end	Not Applicable	Estimate: 15,000 gallons	WPCD routine inspection found sewage line grease block, seeping through manhole vent holes.	Jetted sewer to restore flow	
170 Gary Court (WPCF)	9/5 11:15 pm 9/6/22 4 am 4.75 hrs.	Fort Hill Brook to Mumford Cove	1.1 MG	Storm related electrical failure downed 3 of 4 pumps, 1 pump not enough for flow	Flow diminished w/ end of storm, pumps came back online. Note, discharge was fully treated and disinfected effluent.	
58 Pumpkin Hill Rd near Deerfield Ridge Drive	12/22 @ 3 pm-12/28/22 3:30 pm; appr 1 wk.	Unnamed wetland off Pons Rd (drains to Haley Brook)	8,000-9,000 gallons	Resident called water company who called WPCF. Cause found to be a break in sewer force main (TOG resp)	The Town WPCF excavated and repaired the force main	
55 Pumpkin Hill Rd near Gold Star Highway	4/23 @ 9 am-2 pm	Unnamed wetland off Pons Rd (drains to Haley Brook, ends at Mystic River)	9,000 gallons	Resident called water company who called WPCF. Cause found to be a break in sewer force main (TOG resp)	Septic haulers bypassed force main at 2 pm to enable contracted repair. Issue resolved & system back online by 9 pm	

3.4 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
Ledge Light reported 17 Groton septic system repairs in 2023, but no full failures	10 system replacements (2 to accommodate building additions), 3 Distribution box replacements, and the remainder various combinations of component upgrades (tanks, leaching, lines to house)	No known impacts

3.5 Briefly describe the method and effectiveness of said method used to track illicit discharge reports.

The Town of Groton’s stormwater webpage includes a link “How to Report Illicit Discharges”, which includes a phone number and email address that the public can use to submit a report. Public Works is notified of illicit discharges by citizens, organizations, and/or police dispatch, and responds accordingly. The IDDE program contains guidance and a reporting template (Excel spreadsheet). Reports prompt investigation (site visit, interviews &/or photos) as soon as is practicable to gauge degree and manner of follow-up needed. The Public Works Project Management Specialist tasked with MS4 compliance tracking is responsible for the information.

3.6 IDDE reporting metrics

Metrics			
Estimated or actual number of MS4 outfalls	340 Town-owned	Outfall assessment and priority ranking	340 outfalls have initial rankings
Estimated or actual number of interconnections	Currently estimated at 74	Dry weather screening of all High and Low priority outfalls complete	Outfall screening initiated at 340 outfalls; 322 outfall screens are complete
Outfall mapping complete	100%	Catchment investigations complete	Field work has been completed for 11, 5 are in-progress
Interconnection mapping complete	Will start in 2024	Estimated % of MS4 catchment area investigated	Investigations initiated on ~5% of the MS4 catchment area
System-wide mapping complete (detailed MS4 infrastructure)	85%		

3.7 Briefly describe IDDE training for employees involved in carrying out IDDE tasks including type of training provided and how often given (min 1x yr.).

Trainings are provided to select personnel from Public Works but was delayed in 2023. This will resume in 2024. IDDE specific training slated for development in 2019 will be undertaken though many IDDE topics are covered in the Town’s SPCC & SWPPP training events.

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

4.1 BMP Summary

BMP	Status	Activities in reporting period	Measurable goal	Dept. / Person Responsible	Projected or actual date complete	Additional details
4-1 Implement, upgrade, & enforce land use regulations or other legal authority to meet requirements of MS4 general permit (Due 7/1/20)	Completed / Ongoing	Current standards were the result of 2019 updates and are enforced through plan review & the Zoning Officer.	Existing E&S control and stormwater regulations reviewed and revised as necessary by deadline.	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	October 1, 2019	
4-1b: Establish interagency or inter-jurisdictional agreements	Completed / Ongoing	The agreements from 2019 remain in use.	Inter-jurisdictional agreements established to control pollutants between entities	Public Works/ Greg Hanover, Director	Jul 1, 2019	As time/funding permits, added attention will be given to DOT impact

BMP	Status	Activities in reporting period	Measurable goal	Dept. / Person Responsible	Projected or actual date complete	Additional details
4-2 Develop/ Implement plan for interdepartmental coordination in site plan review and approval (Ongoing)	Completed / Ongoing	TOG maintains a team approach; used since 1980 for site plan review. OPDS sends applications to PWD, Pks & Rec, Fire Marshal, Police & Health District. Dept. reps meet the applicant to discuss concerns, then plan goes to Planning & Zoning Commission for decision.	Site plan review and approval procedures outlined.	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	July 1, 2017	
4-3 Review site plans for stormwater quality concerns (Ongoing)	Completed / Ongoing	OPDS reviewed all site plans & administrative site plans received for E&S control to prevent or minimize impacts to water quality prior to approval.	100% of site plans reviewed for E&S control.	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	July 1, 2017	All 2021 proposals which included site, subdivision and/or wetland permit plans were also reviewed by proper officials.
4-4 Conduct site inspections (Ongoing)	Completed / Ongoing	OPDS conducted weekly inspections for adequate E&S controls on all projects under construction until project sites were permanently stabilized	100% of site inspections conducted for all sites constructed within reporting period.	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	July 1, 2017	
4-5 Implement procedure to allow public comment on site development (Ongoing)	Completed / Ongoing	Meetings were properly posted and held for required projects.	Public mtgs held by Planning, Zoning & Inland Wetlands Agency for 100% of eligible projects. 100% of projects posted on TOG website when not presented at a meeting.	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	July 1, 2017	
4-6 Implement procedure to notify developers about DEEP construction stormwater permit (Ongoing)	Completed / Ongoing	Continued to provide flyers in 100% of preconstruction meetings and land use application reviews.	Flyers provided in 100% of preconstruction meetings and land use application reviews.	Jonathan Reiner, Director of Office of Planning and Developmental Services (OPDS)	July 1, 2017	
4-7 Document compliance with CT Anti-Degradation Implementation Policy in Water Quality Standards for all new or increased discharges to High Quality Waters	Completed / Ongoing	None - there were no relevant applications	100% compliance with policy for all new or increased discharges to high quality waters.	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	July 1, 2017	

BMP	Status	Activities in reporting period	Measurable goal	Dept. / Person Responsible	Projected or actual date complete	Additional details
4-8 Demonstrate no new or increased discharges to Impaired Waters from the MS4	Completed / Ongoing	None - there were no relevant applications	Zero net increase in pollutant load in discharges to Impaired Waters.	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	July 1, 2017	
4-9 Retain Water Quality Volume for all new stormwater discharges located less than 500 feet from a tidal wetland	Completed / Ongoing	None - there were no relevant applications	100% Water Quality Volume retained for new discharges <500 ft from non-freshwater tidal wetland.	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	July 1, 2017	
4-10 Obtain required permits for stormwater discharges below coastal jurisdiction line	Completed / Ongoing	None - there were no relevant applications	100% of all required permits obtained	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	July 1, 2017	

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

TOG will continue current efforts and maintain enforcement of strengthened Zoning Regulations.

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

5.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Dept. / Person Responsible	Projected or actual date complete	Additional details
5-1 Establish or update legal authority & guidelines regarding LID and runoff reduction in site development planning (Due 7/1/22)	Completed	New 2019 Zoning Regulations encourage LID & more strict stormwater reduction & treatment	Adoption of updated legal authority & guidelines	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	October 1, 2019	Efforts will continue to update guidelines to promote best practices to the maximum extent practiceable
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects (Due 7/1/22)	Completed / Ongoing	Requirements, updated in 10/19, are enforced via site plan review & the Zoning Enforcement Officer.	Percent of Water Quality Volume retained.	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	October 1, 2019	
5-3.1 Identify retention and detention ponds in priority areas (Due 7/1/20)	In Progress	To date 68 suspected municipal stormwater treatment structures were ID'd; 33 of which are ponds	ID retention and detention ponds	Public Works/ Greg Hanover, Director	July 2023	B&L will continue to verify the location of the municipal stormwater treatment structures in 2024.

BMP	Status	Activities in current reporting period	Measurable goal	Dept. / Person Responsible	Projected or actual date complete	Additional details
5-3.2 Implement long-term maintenance plan for stormwater basins and treatment structures (Ongoing)	Substantially Complete / Ongoing	B&L prepared a draft town-owned stormwater structure maintenance plan. 67 out of 68 stormwater treatment structures were inspected from 2021 to 2023.	Inspect 100% of Town-owned stormwater basins & structures in Priority Areas	Public Works/ Greg Hanover, Director	July 2023	
5-4 DCIA mapping (Due 7/1/20)	Substantially Complete / Ongoing	TOG used impervious cover layers available to calculate DCIA priority areas.	Percent of total sub-basins for which DCIA has been mapped and calculated.	Public Works/ Greg Hanover, Director	June 2021/ Ongoing	DCIA mapping to be updated as retrofit, new development, & redevelopments data compilation is complete.
5-5 Address post-construction issues in areas with pollutants of concern			<i>Plan developed within 12 months of ID 100% of problem corrected within timeframe,</i>	Public Works/ Greg Hanover, Director		
5-6 Implement and maintain any control measures for new discharge to Impaired Waters without an established TMDL	Ongoing	<i>No relevant applications were received</i>	<i>Plan developed within 12 months of ID 100% of problem corrected within timeframe,</i>	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	July 1, 2017	
5-7 Additional requirements for all new and existing discharges to a water with estbalih	Ongoing	<i>No relevant applications were received</i>	<i>100% of discharge requirements consistent with Waste-load 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; BMPS implemented as necessary for all existing discharges to a Water with an established TMDL or with Pollutant Load Reduction specified within the TMDL</i>	Office of Planning & Development Svcs. (OPDS), Jon Reiner, Director	July 1, 2017	

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

TOG will continue to enforce LID/runoff reduction for development and redevelopment projects, work toward finishing inspections of all stormwater treatment structures, and completing the maintenance plan. The Town is also amidst integration of Energov into relevant OPDS and PWD administrative processes. Energov is an online application tracking software that will allow the public to apply for permits on-line. It will store plans and reports and allow for digital tracking of new projects and changes in impervious surface. Further, the Town seeks funds for a SW intern to compile the data to update DCIA calculations for increased accuracy of plan.

5.3 Post-Construction Stormwater Management reporting metrics

For details on this requirement, visit www.nemo.uconn.edu/ms4/tasks/post-construction.htm. Scroll down to DCIA section.

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	Est. 2,755 acres of impervious area; 814 acres DCIA
DCIA disconnected (redevelopment plus retrofits)	0 acres this year / 0 acres total
Retrofit projects completed	0
DCIA disconnected	0% this year / Unknown % total since 2012
Estimated cost of retrofits	Approximately \$461,000 to disconnect an estimated 3.19 acres of DCIA
Stormwater treatment structures identified (including detention/retention ponds, oil water separators, hydrodynamic separators, green infrastructure, etc.)	A total of 68 suspected municipal stormwater treatment structures have been identified; 33 of those structures are stormwater basins

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

- UCONN CLEAR calculated the impervious cover area for each DEEP sub basin in the Town and this info was incorporated into the Town’s GIS.
- To update the baseline DCIA for the Town, Barton & Loguidice, LLC, used the process found on the CT NEMO website. CT NEMO developed 5 formulas to calculate the DICA and Impervious Cover (IC) based independently for each basin in Groton using the percent DCIA for the basin with the state DCIA removed from the equation. Barton & Loguidice took the formulas and created a bell curve to input the calculated percent of DCIA for each basin and calculate the total DCIA and IC amounts for the Town. Each basin value was added together to create the baseline for the DCIA and IC for the Town of Groton.

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

6.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Dept. / Person Responsible	Projected or actual date complete	Additional details
6-1 Develop/ implement formal employee training program (Ongoing)	Completed / Ongoing	Due to safety restrictions due to COVID, in-person training was delayed. The prior year's attempt at wide-scale digital training wasn't effective so in-person will be restored in 2023. A virtual training was given to selected PWD personnel on May 12, 2022.	Conducted annual training.	Public Works/ Greg Hanover, Director	Completed 2017/ Ongoing	
6-2a Minimize the discharge of pollutants to MS4 from parks & open space mgmt.	Completed / Ongoing	Continued to follow SOPs	100% of existing SOP's reviewed updated	Public Works/ Greg Hanover, Director	Completed 2017/ Ongoing	
6-2b Minimize the discharge of pollutants to MS4 from pet waste	Completed / Ongoing	Continued parks monitoring for pet waste pollution, parks pet waste stations, no dumping signs, & education.	1) Inappropriate pet waste management sites (Ded 2) % locations with compliance complete.	Public Works/ Greg Hanover, Director	Completed 2017/ Ongoing	
6-2c Minimize the discharge of pollutants to MS4 from waterfowl	Completed / Ongoing	"Do Not Feed Waterfowl" brochures at Town Hall Annex, Library & Parks. Continued representation on the ECCD Baker Cove Watershed Committee, formed in part to continue Goose Task Force work.	1) Identify waterfowl congregations & feed on a schedule 2) % of ID'd land w/ educational signs or methods to discourage feeding; 3) % of ID'd land prevention practices, congregation or areas of direct drainage isolated.	Public Works/ Greg Hanover, Director	Completed 2017/ Ongoing	
6-2d Minimize the discharge of pollutants to MS4 from buildings & facilities	Completed / Ongoing	Parking lots swept per plan. Existing SWPPP followed and maintained.	1) Dumpster procedures developed & implemented; 2) Parking lots swept 2x annually; 3) Non-SWPPP facilities evaluated to ensure no interior floor drains connect to MS4.	Public Works/ Greg Hanover, Director	Completed 2017/ Ongoing	
6-2e Minimize discharge of pollutants to MS4 from municipal vehicle and equipment maintenance	Completed / Ongoing	Continued to follow procedures established for vehicle storage and washing.	TOG procedures established for vehicle storage; & to ensure wash water not discharged to the MS4.	Public Works/ Greg Hanover, Director	Completed 2017/ Ongoing	

BMP	Status	Activities in current reporting period	Measurable goal	Dept. / Person Responsible	Projected or actual date complete	Additional details
6-2f Minimize the discharge of pollutants to MS4 from leaf management	Completed / Ongoing	Streets are swept & resident leaf mgmt. promoted. Transfer Station flyer re-design better communicates guidelines (free drop off, loose or in paper bags)	Problem streets swept annually in fall as part of BMP #6-9; Educational info on TOG Stormwater page (BMP #1-4).	Public Works/ Greg Hanover, Director	Completed 2017/ Ongoing	
6-2 Implement MS4 property and operations maintenance (Ongoing)	Completed / Ongoing	Continued to follow SOPs. TOG salt is stored under cover & on impervious surface. Industrial stormwater discharges are monitored. Vehicle maintenance is performed undercover.	Review and update existing SOPs.	Public Works/ Greg Hanover, Director	Completed 2017/ Ongoing	The Town continues review of current practices and looking for optimization.
6-3 Implement coordination with interconnected MS4s	Completed / Ongoing	Via outfall ID, TOG identified interconnections with neighboring towns/cities. Communication is ongoing with municipalities, the DOT and the Naval Base.	Coordinated among interconnected MS4s reps: Groton City, Ledyard, Navy Sub Base, & CT Dept. of Transportation	Public Works/ Greg Hanover, Director	Completed 2017/ Ongoing	
6-4 Develop/ implement program to control other sources of pollutants to the MS4	Complete/ Ongoing	B&L ID'd industrial & commercial facilities not registered under DEEP' SW General Permit, and drafted educational brochures.	Program developed and implemented to control the contribution of pollutants to MS4 by deadline	Public Works/ Greg Hanover, Director		Brochures to be mailed in 2024, alerting potential obligation to register.
6-5 Evaluate additional measures for discharges to impaired waters*	Ongoing	Via IDDE investigations, sites with elevated levels of pollutants to impaired waters are being ID'd and notified.	Evaluate additional measures for discharges to impaired waters.	Public Works/ Greg Hanover, Director	Ongoing	
6-6 Track projects that disconnect DCIA (Ongoing)	Completed / Ongoing	TOG initiated DCIA tracking using UCONN CLEAR spreadsheet tool, updated by B&L. OPDS is also in process of implementing a process upgrade to assist with DCIA updates moving forward.	Continue to annually track the total acreage of DCIA that is disconnected from the MS4 as a result of redevelopment or retrofit projects.	Public Works/ Greg Hanover, Director	Ongoing	TOG has applied to fund an intern in 2023 to record past data for a higher degree of accuracy to town DCIA info.

BMP	Status	Activities in current reporting period	Measurable goal	Dept. / Person Responsible	Projected or actual date complete	Additional details
6-7 Implement infrastructure repair/rehab program (Due 7/1/21)	In Progress	As part of outfall screening, B&L identified sites that require maintenance. TOG started addressing issues and will complete in 2024 to the maximum extent practicable.	Program developed and implemented by deadline.	Public Works/ Greg Hanover, Director	December 2023	In 2024, it is anticipated TOG will review aging infrastructure to ID maintenance needs.
6-8 Develop/ implement plan to ID/prioritize retrofit projects (Due 7/1/20)	Substantially Completed/ Ongoing	A Stormwater Retrofit Plan was completed in February 2022.	Develop and implement plan to ID & prioritize DCIA disconnection/ retrofits with focus on urbanized area (DCIA >11%) & discharge to impaired waters.	Public Works/ Greg Hanover, Director	February 2022 Ongoing	Final report was made available on TOG Stormwater webpage
6-9 Implement retrofit projects to disconnect 2% of DCIA (Due 7/1/22)	Not started	TOG has begun process of fundraising in order to advance implementation of the Feb 2022 Retrofit Plan.	Develop and implement retrofit projects to disconnect 2% of all DCIA.	Public Works/ Greg Hanover, Director	December 2025	Applied for ARPA Covid relief funds (determination is outstanding) & will seek other funds
6-10 Develop/ implement street sweeping program	Completed / Ongoing	Town street sweeping continued through 2022.	Continue to implement the Town's street sweeping program.	Public Works/ Greg Hanover, Director	Ongoing	
6-11 Develop/implement catch basin cleaning program (Ongoing)	Completed / Ongoing	Town catch basin cleaning continued as possible.	Continue with Town-wide catch basin cleaning program.	Public Works/ Greg Hanover, Director	Ongoing	
6-12 Develop/implement snow management practices (Due 7/1/18)	Completed / Ongoing	Town snow management practices continued and in Dec 2022 Roads & Streets foremen received CT T2 "Green Sno Pro" certification	1) SOPs implemented, 2) % of road crew trained on application methods and equipment; 3) goals for chemical application rates met annually	Public Works/ Greg Hanover, Director	December 31, 2017 Ongoing	

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

Existing efforts will be maintained but with added emphasis on finding possibilities to improve efficiency and quantifying results.

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	in-person training is scheduling for each Spring
Street sweeping	

Curb miles swept	Est 525 miles
Volume (or mass) of material collected	Est 682 cubic yards
Catch basin cleaning	
Total catch basins in priority areas (value will be less than or equal to total catch basins town -wide)	590
Total catch basins town- (or institution-) wide	2,656
Catch basins inspected	Est. 95
Catch basins cleaned	Est. 75
Volume (or mass) of material removed from all catch basins	unknown
Volume removed from catch basins to impaired waters (if known)	unknown
Snow management	
Type(s) of deicing material used	Liquid Magnesium Chloride and IB30/70 treated salt
Total amount of each deicing material applied	Est 130-gal Magnesium Chlorides + est 2000 tons IB30/70 treated salt
Type(s) of deicing equipment used	Computerized ground speed control spreaders
Lane-miles treated (A lane-mile is a mile of roadway in a single driving lane)	Est. 190.42 miles
Snow disposal location	741 Flanders Rd.
Staff training provided on application methods & equipment	Yes – Also, foremen this year completed Green Sno Pro training
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	Unknown – will attempt to determine or begin tracking in 2024
Reduction in turf area (since start of permit)	Unknown – will attempt to determine or begin tracking in 2024
Land w/ high potential to contribute bacteria (dog parks, parks w/ open water, & sites w/ failing septic systems)	
Cost of mitigation actions/retrofits	Unknown – will attempt to determine or begin tracking in 2024

6.4 Catch basin cleaning program

Provide any updates or modifications to your catch basin cleaning program

Catch basins are on a schedule to be inspected and cleaned out and the sumps are measured to the maximum extent practicable. When inspections and cleaning are conducted, the conditions and amount of material removed are recorded. A list is generated of catch basins with excess material present to be put on a more frequent cleaning schedule to ensure that the 50% design capacity for the sump is not exceeded.

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. (Due 7/1/20)

In 2020, TOG twice worked with UCONN CLEAR (Land Use Center) and its Climate Corps undergrad team to identify potential projects for Retrofits. Stakeholders (including Bacwac) received final reports and were invited to presentations. In 2021, the Town’s consultant, B&L, reviewed the retrofit projects proposed by Climate Corps for feasibility and the presence of DCIA. Two of the Climate Corps projects were carried over into the Town’s retrofit plan.

In 2021, the Town and B&L worked to prepare a retrofit plan. B&L identified Town-owned properties with a half acre or more of total impervious area. Two privately-owned commercial sites in need of upgrade were also added. A total of forty (40) sites were evaluated through desktop analysis for DCIA, soil drainage class, and estimated depth to groundwater. Sites without DCIA were not evaluated further. Sites with poor soil or shallow groundwater (per USDA NRCS Web Soil Survey) were also not considered further.

Candidate sites were discussed with the Town. Sites where ownership or use is in transition were tabled as potential future sites. A total of five (5) municipal sites were chosen, retrofit concepts & estimated costs developed, and estimated disconnection calculated. Sites were then prioritized based on cost DCIA disconnected, as shown below:

Proposed Retrofit Project Sites	Total DCIA Disconnected	Total Estimated Project Capital Cost	Cost per DCIA Disconnected
1. Fishtown Road (Outfall 0424)	28,200 sq ft	\$30,000	\$1.06/sq ft
2. Community Center	18,000 sq ft	\$79,000	\$4.40/sq ft
3. Noank Community Garden	11,000 sq ft	\$55,000	\$5.00/sq ft
4. Village Lane Senior Housing	19,500 sq ft	\$247,000	\$13.00/sq ft
5. Calvin Burrows Field	3,800 sq ft	\$65,000	\$17.00/sq ft
Total:	80,500 sq ft	\$476,000	

If all five (5) projects are implemented, the total DCIA disconnected would be approximately 80,500 sq ft (1.85 acres). Funds will be requested for implementation though availability may be limited. In addition, retrofit concepts and estimates will be made available to the private property owners with an invitation to discuss partnership.

PWD had sought retrofit project support via the Town’s ARPA Covid Recovery fund program. We learned in 2023, the proposed retrofits were not funded, however; PWD did receive support for aquisition of a specialized porous pavement maintenance device. The process of seeking funding, in any case, helps elevate awareness among Town Council members of the need for retrofits and presence of a plan. As noted in the summary, that proposal “Learning Lots,” was then adapted in Spring for submission to the Long Island Sound Futures Fund, and, this past Fall, the Town learned it would be fully funded. Program initiation of the 2-year plan with thus begin in 2024 with contracted assessment of a porous paving feasibility study, training of engineers in the assessment process, preliminary design for two sites, and skill sharing with area towns.

The 2021 plan revealed that many Town owned properties are not Directly Connected. This is why two private sites were included, as well as in the interest of promoting conversation around public/private partnerships. The dearth of ready Town sites points to a possible need to engage residential, business, and/or community partners in Town disconnection work, and furthers the challenge. However, the 2024 look into porous paver viability may provide valuable new information.

In 2023, Bacvac hosted a second rain barrel sale, and was approved to install an added rain garden at Katherine Kolnaski School, installation of which will be in 2024. Further, from Fall 2021 - Spring 2024, Bacvac member Project Oceanology partnered with the Groton Board of Ed in a resiliency education program, through which Project Rain Barrel awarded 25 rain barrels and supportive materials. These were painted by students and placed at Thames River Magnet School and other local sites. Generating and capturing data on such incremental grassroots efforts is a challenge, but is judged less important, than the value of the education and public embrace of small scale retrofits.

Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection annually in future years. (Due 7/1/22)

In 2024, the Town will begin implementation of the aforementioned 2-year “Learning Lots” program. The Town will also continue refinement of its 2023 new DCIA data collection and assessment process, advance promotion of the 2023 updates to DEEP Soil and Stormwater Guidelines, plus seek funding for specific project implementation to the maximum extent practicable.

PART II: Impaired Waters Investigation And Monitoring

1. Impaired waters investigation and monitoring program

1.1 Indicate which stormwater pollutants of concern occur in your municipality. 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 results and any notable findings, and 3) any changes to the Stormwater Management Plan based on monitoring results.

Barton & Loguidice, LLC (B&L), the Town’s consultant, attempted to collect samples during multiple rain events during 2020, 2021, 2022 and again during 2023. Due to relevant outfalls’ proximity to the coast, many are impacted by tide levels and storm surges which create added complexity in sample collection. During 2022, B&L was able to collect 8 samples during wet weather for impaired waterbody outfalls. To date, B&L has collected wet weather samples at 46 of the 49 Town-owned outfalls. Of the 46 samples collected during wet weather events, 33 were found with elevated parameters, triggering a need for further investigation.

In additdon to collecting initial samples from outfalls discharging to impaired waters, in 2023, B&L was able to collect the six annual priority samples. All six samples collected had elevated levels of enterococcus bacteria and one had an elevated level for fecal coliform bacteria. In 2021, Outfall 0099 had an exceedance for phosphorous, however, the 2023 sample was not elevated for this parameter. Another round of six annual priority samples is expected to be collected in 2024.

Coordination with the tide schedule, storm surges, and qualifying rain events will continue for future monitoring events. Weather conditions during 2021 did not allow B&L to gain significant progress towards wet weather sampling; however, other local efforts resulted in the refinement of the Town’s list of outfalls to impaired waters. Previously there were 29 such outfalls and B&L has now located an additional 10 outfalls, bringing the total number of impaired outfalls to 49. No additional changes have been made to the Stormwater Management Plan at this time.

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

2.1 Screening data

Outfall ID	Latitude	Longitude	Sample Date	Enterococcus (col/100mL)	Fecal Coliform (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab	Investigation Required
0014	41.38448414	-72.08678501	3/14/2023	<10	<10	0.23	0.015	Phoenix	No
0020	41.37257385	-71.96648407	11/30/2020	11200	2910	n/a	n/a	Phoenix	Yes
0025	41.34514866	-72.03647417	3/24/2022	20	52	n/a	n/a	Phoenix	Yes

Outfall ID	Latitude	Longitude	Sample Date	Enterococcus (col/100mL)	Fecal Coliform (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab	Investigation Required
0026	41.34255336	-72.03520038	3/24/2022	573	52	n/a	n/a	Phoenix	Yes
0095	41.38053131	-72.08732605	3/18/2021	145	327	0.06	0.34	Phoenix	Yes
0099	41.37949753	-72.08753204	3/18/2021	109	< 10	0.083	5.97	Phoenix	Yes
0102	41.37841034	-72.08766937	3/18/2021	62	< 10	0.143	0.7	Phoenix	Yes
0105	41.376711	-72.08676762	3/11/2023	<10	10	1.3	0.018	Phoenix	No
0154	41.34407412	-72.03570829	3/24/2022	279	75	n/a	n/a	Phoenix	Yes
0156	41.33128209	-71.99163707	4/6/2022	1250	2850	n/a	n/a	Phoenix	Yes
0191	41.34911568	-71.97244705	3/24/2022	259	108	n/a	n/a	Phoenix	No
0194	41.35067094	-71.97177339	3/14/2023	20	10	n/a	n/a	Phoenix	No
0196	41.34134148	-72.0350516	3/24/2022	121	< 10	n/a	n/a	Phoenix	No
0213	41.36173874	-71.96887182	3/24/2022	990	480	n/a	n/a	Phoenix	Yes
0214	41.3604959	-71.9689119	3/24/2022	473	576	n/a	n/a	Phoenix	Yes
0215	41.35822098	-71.96826284	3/24/2022	2910	1150	n/a	n/a	Phoenix	Yes
0216	41.35726906	-71.96886867	3/24/2022	581	98	n/a	n/a	Phoenix	Yes
0217	41.35683817	-71.96920846	3/24/2022	243	145	n/a	n/a	Phoenix	No
0218	41.35545326	-71.96966835	3/24/2022	14100	86	n/a	n/a	Phoenix	Yes
0220	41.355551	-71.96954616	3/24/2022	557	31	n/a	n/a	Phoenix	Yes
0221	41.35567054	-71.96942835	3/24/2022	408	41	n/a	n/a	Phoenix	No
0222	41.35682523	-71.96921525	3/24/2022	323	146	n/a	n/a	Phoenix	No
0259	41.33663081	-71.98713565	3/14/2023	<10	148	n/a	n/a	Phoenix	Yes
0267	41.32113305	-71.99584665	4/6/2022	85	448	n/a	n/a	Phoenix	Yes
0271	41.33088244	-72.00327869	4/6/2022	504	754	n/a	n/a	Phoenix	Yes
0288	41.35184992	-71.97186853	12/16/2022	435	61	n/a	n/a	Phoenix	No
0290	41.32908115	-71.99064923	3/14/2023	10	10	n/a	n/a	Phoenix	No
0296	41.34161798	-72.03477382	3/24/2022	272	134	n/a	n/a	Phoenix	Yes
0342	41.32129538	-71.99823445	3/14/2023	364	121	n/a	n/a	Phoenix	Yes
0360	41.32286649	-71.99167438	4/6/2022	369	6130	n/a	n/a	Phoenix	Yes
0378	41.38312531	-72.08728027	3/18/2021	84	< 10	0.062	1.05	Phoenix	Yes
0381	41.34436032	-72.03585914	3/24/2022	336	41	n/a	n/a	Phoenix	Yes
0395	41.32302952	-71.991494	4/6/2022	563	31	n/a	n/a	Phoenix	Yes

Outfall ID	Latitude	Longitude	Sample Date	Enterococcus (col/100mL)	Fecal Coliform (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab	Investigation Required
0422	41.31893366	-71.99098032	4/6/2022	216	988	n/a	n/a	Phoenix	Yes
0426	41.32366823	-72.00165782	4/6/2022	231	480	n/a	n/a	Phoenix	Yes
0458	41.32771255	-72.00284226	4/6/2022	960	295	n/a	n/a	Phoenix	Yes
0464	41.37352	-71.96603	11/30/2020	959	31	n/a	n/a	Phoenix	Yes
0525	41.35134137	-71.97168017	12/16/2022	331	63	n/a	n/a	Phoenix	No
0806	41.38633512	-72.086795	3/14/2023	>24200	20	0.43	0.066	Phoenix	Yes
0851	41.32063078	-72.00058178	4/6/2022	30	< 10	n/a	n/a	Phoenix	No
0885	41.37315	-71.9662	11/30/2020	5790	2490	n/a	n/a	Phoenix	Yes
0924	41.3234732	-71.99329511	4/6/2022	369	738	n/a	n/a	Phoenix	Yes
1022	41.36279353	-71.96952752	12/16/2022	2100	315	n/a	n/a	Phoenix	Yes
1074	41.37157822	-72.08493805	3/18/2021	457	< 10	0.103	0.62	Phoenix	Yes
1108	41.34136856	-72.03501924	3/14/2023	20	<10	n/a	n/a	Phoenix	No
1491	41.35772869	-71.96873774	3/24/2022	437	2190	n/a	n/a	Phoenix	Yes

Notes:
n/a - Not Applicable
Outfall 0103 was previously reported with sampling data and was identified in 2023 as an "outlet", not and outfall.
Outfall 0451 was previously reported with sampling data and was identified in 2023 as "privately owned".

2.2 Credit for screening data collected under 2004 permit

Outfall ID	Latitude / Longitude	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results	Name of Laboratory (if used)	Follow-up required?
0312		12/12/16	Bacteria – E. Coli	360 col/100mL	CTL, Inc.	No

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

Provide the following information for outfalls exceeding the pollutant threshold.

Outfall ID	Status of drainage area investigation	Control measure to address impairment
<p>Due to the recent limited number of qualifying storm events and the fact that most of the outfalls in the Town of Groton are tidally influenced, in 2022 and 2023 B&L focused mainly on collecting initial wet weather samples from outfalls to impaired waters and the upgradient structures closest to the outfalls to the maximum extent practicable. In 2024, B&L will continue to attempt to collect wet weather samples from the impaired outfalls until all known locations are sampled and once the remaining impaired wet weather samples are collected, B&L will focus on the wet weather follow-up investigations. B&L initiated dry weather follow-up investigations for several catchment areas and the data for those are found in Part III.3.3.2. of this report.</p>		

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

Once outfall sampling 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 ID	Latitude	Longitude	Sample Date	Enterococcus (col/100mL)	Fecal Coliform (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab
0020	41.3725739	-71.9664841	11/30/2020	11200	2910	n/a	n/a	Phoenix
			12/18/2023	1250	199	n/a	n/a	Phoenix
0099	41.3794975	-72.087532	3/18/2021	109	< 10	0.083	5.97	Phoenix
			12/18/2023	520	122	0.43	0.055	Phoenix
0156	41.3312821	-71.9916371	4/6/2022	1250	2850	n/a	n/a	Phoenix
			12/18/2023	8660	2060	n/a	n/a	Phoenix
0271	41.3308824	-72.0032787	4/6/2022	504	754	n/a	n/a	Phoenix
			12/18/2023	5480	31	n/a	n/a	Phoenix
0360	41.3228665	-71.9916744	4/6/2022	369	6130	n/a	n/a	Phoenix
			12/18/2023	2990	109	n/a	n/a	Phoenix
0422	41.3189337	-71.9909803	4/6/2022	216	988	n/a	n/a	Phoenix
			12/18/2023	2310	161	n/a	n/a	Phoenix

PART III: IDDE (Illicit Discharge Detection & Elimination) Program Data

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

List all catchments with their ranking (DEEP basins may be used instead of manual catchment delineations).

See attachment provided with this report.

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

Table 2.1a - Non-Impaired Waterbody Samples

Outfall ID	Latitude	Longitude	Sample Date	Ammonia (mg/L)	Chlorine (mg/L)	Conductivity (umhos/cm)	Salinity (g/kg)	Temp (oC)	Surfactants (mg/L)	E. Coli (col/100ml)	Lab	Investigation Required
0019	41.37172549	-71.97490059	4/3/2023	0	0.13	246	0.119	10	0.22	450	Phoenix	No
0039	41.34665298	-72.05225372	5/6/2020	0.25	0	91.3	0.043	12.8	0.25	6490	Phoenix	No
0052	41.34937365	-72.04436269	4/3/2023	0	0.2	243	0.115	10.4	0.3	<10	Phoenix	No
0106	41.37507636	-72.08606975	4/3/2023	0	0	896	0.434	7.0	0	<10	Phoenix	No
0124	41.3646965	-71.97394562	5/19/2020	0	0	387	0.186	16.3	0.5	< 10	Phoenix	No
0125	41.36558533	-71.97405243	5/18/2020	0	0	161	0.0756	21.5	0.25	< 10	Phoenix	No
0132	41.35253143	-72.00740814	5/18/2020	0	0.09	390	0.192	14.2	0.25	< 10	Phoenix	No
0133	41.35408783	-71.99932861	5/19/2020	0.25	0.07	141	0.0669	15.4	0.25	< 10	Phoenix	No
0149	41.34929276	-71.98882294	5/14/2020	0	0	396	0.192	14.8	0.5	< 10	Phoenix	No
0155	41.33382416	-72.00167084	5/6/2020	0	0.23	302	0.146	14.3	0.5	< 10	Phoenix	No
0176	41.34951782	-72.05661774	5/13/2020	0.5	0.09	228	0.15	10.4	0.25	< 10	Phoenix	Yes
0180	41.35266113	-71.99863434	5/18/2020	0	0	267	0.126	15.5	0.35	< 10	Phoenix	No
0181	41.34946823	-71.9954834	5/19/2020	0	0.04	245	0.119	17.8	0.25	< 10	Phoenix	No
0186	41.34967804	-71.97966003	5/13/2020	0	0	381	0.184	15	0.25	< 10	Phoenix	No
0205	41.35307312	-72.00856018	5/21/2020	0.25	0.01	156.9	0.07	20.6	0.5	10	Phoenix	No
0207	41.35976359	-72.00861869	11/6/2023	0	0.04	161	0.0767	15.2	0	<10	Phoenix	No
0209	41.38142395	-72.00195313	5/13/2020	0	0.04	194.8	0.09	11.9	0.25	< 10	Phoenix	No
0210	41.38180923	-72.00057983	5/13/2020	0.25	0.08	84.9	0.04	9.4	2	10	Phoenix	No
0225	41.37506866	-71.98500824	5/6/2020	0.25	0.04	234	0.14	14.9	0.25	< 10	Phoenix	No
0237	41.39171982	-72.00437927	5/13/2020	0	0.05	4.3	0	15.9	0.25	20	Phoenix	No
0247	41.3711586	-72.07237244	5/14/2020	0.25	0	311	0.19	13.3	0.25	< 10	Phoenix	No

Table 2.1a - Non-Impaired Waterbody Samples

Outfall ID	Latitude	Longitude	Sample Date	Ammonia (mg/L)	Chlorine (mg/L)	Conductivity (umhos/cm)	Salinity (g/kg)	Temp (oC)	Surfactants (mg/L)	E. Coli (col/100ml)	Lab	Investigation Required
0250	41.35211945	-72.06320953	5/6/2020	0	0.12	542	0.244	12.2	0.25	< 10	Phoenix	No
0252	41.35556412	-72.05262756	5/6/2020	0	0	245	0.117	11.9	0.5	< 10	Phoenix	No
0262	41.32733154	-71.98497772	5/6/2020	0	0.21	685	0.335	11.6	1	< 10	Phoenix	No
0264	41.32585907	-71.99036407	5/6/2020	0	0.02	520	0.23	14.5	0.25	< 10	Phoenix	No
0275	41.36267471	-71.99302673	5/19/2020	0	0.08	233	0.111	14.4	0.5	< 10	Phoenix	No
0292	41.33322144	-72.00208282	5/19/2020	0	0.05	274	0.131	17	0.5	10	Phoenix	No
0300	41.34113693	-72.01931	5/6/2020	0	0.06	184.9	0.09	13.5	0.25	10	Phoenix	No
0317	41.35688782	-72.05446625	5/6/2020	0.5	0.07	268	0.135	16	0.75	41	Phoenix	Yes
0319	41.35826874	-72.05838776	5/6/2020	0.5	0.08	361	0.173	15.6	0.25	10	Phoenix	Yes
0320	41.34470367	-71.98292542	5/14/2020	0	0	543	0.244	12.1	0.25	< 10	Phoenix	No
0340	41.34743118	-71.98931122	5/14/2020	0.25	0.02	265	0.125	16	0.75	41	Phoenix	No
0348	41.35110092	-71.98899078	5/19/2020	0	0.05	315	0.15	16.9	0.3	768	Phoenix	No
0372	41.33790588	-72.04663849	5/19/2020	1	0.12	692	0.41	15.75	0.75	< 10	Phoenix	Yes
0393	41.34672165	-71.97821045	5/13/2020	0	0.01	273	0.132	10.7	0.25	161	Phoenix	No
0394	41.37468719	-71.98301697	5/6/2020	0	0.01	206	0.12	14	0.25	< 10	Phoenix	No
0397	41.33848572	-72.00110626	5/6/2020	0	0	322.8	0.17	10.6	0.25	< 10	Phoenix	No
0400	41.36626816	-71.98139954	5/6/2020	0.25	0.02	217	0.13	13.8	0.25	10	Phoenix	No
0403	41.36229324	-71.98247528	5/19/2020	0	0	190	0.0902	16.1	0.25	< 10	Phoenix	No
0404	41.35911942	-71.98323059	5/19/2020	0	0.02	120	0.0571	17	0.25	20	Phoenix	No
0417	41.36755753	-72.0593338	5/21/2020	0.25	0.21	198	0.0942	18.5	0.25	20	Phoenix	No
0420	41.38817596	-72.00553894	5/13/2020	0	0.03	430.6	0.21	14.1	0.25	134	Phoenix	No
0431	41.39502335	-72.07965851	5/18/2020	0	0	126	0.07	18.3	0.25	740	Phoenix	No
0432	41.33686066	-72.02018738	6/2/2020	0.25	0	204	0.0972	18.4	0.25	< 10	Phoenix	No
0435	41.36832047	-72.05063629	5/21/2020	0.25	0.19	324	0.154	17.3	0.25	< 10	Phoenix	No
0437	41.34486389	-71.98265076	5/14/2020	0	0.2	815	0.4	15.4	0.75	< 10	Phoenix	No
0439	41.36780548	-71.98384094	5/6/2020	0.25	0	394	0.23	15.2	0.25	< 10	Phoenix	No
0444	41.3358345	-72.00187683	5/6/2020	0	0.03	333	0.16	14.7	0.25	< 10	Phoenix	No
0463	41.39541245	-71.96191406	5/18/2020	0.25	0.03	104	0.0491	20.3	0.25	< 10	Phoenix	No
0477	41.37667465	-71.98602295	5/6/2020	0	0	237	0.15	13.1	0.25	< 10	Phoenix	No
0479	41.38464737	-71.98223877	5/13/2020	0	0	145.7	0.07	14.3	0.25	< 10	Phoenix	No
0484	41.35070419	-71.97642517	5/21/2020	0	0.04	194	0.09	20.3	0.5	< 10	Phoenix	No
0787	41.38428497	-72.0198822	5/18/2020	0	0.01	99.4	0.04964	20.9	0.25	< 10	Phoenix	No

Table 2.1a - Non-Impaired Waterbody Samples

Outfall ID	Latitude	Longitude	Sample Date	Ammonia (mg/L)	Chlorine (mg/L)	Conductivity (umhos/cm)	Salinity (g/kg)	Temp (oC)	Surfactants (mg/L)	E. Coli (col/100ml)	Lab	Investigation Required
0796	41.38261414	-72.06428528	5/21/2020	0.25	0.13	258	0.124	14.3	1.5	< 10	Phoenix	No
0817	41.34192276	-72.05704498	6/2/2020	0.25	0.13	361	0.17	19	0.25	310	Phoenix	No
0843	41.36203766	-72.06021118	5/6/2020	0.25	0.07	250	0.12	13	0.5	< 10	Phoenix	No
0861	41.37951821	-71.98535047	4/3/2023	0	0.02	266	0.129	9	0	<10	Phoenix	No
0881	41.38715744	-72.00253296	5/13/2020	0.25	0.12	177.3	0.23	15	0.25	< 10	Phoenix	No
1084	41.35917664	-72.02720642	5/14/2020	0	0	125.1	0.623	9.9	0.5	< 10	Phoenix	No
1137	41.39427567	-72.07929993	5/18/2020	0.25	0.02	199	0.1	17.78	0.5	< 10	Phoenix	No
1157	41.34456	-72.06062	5/6/2020	0.25	0	275	0.132	10.9	0.25	< 10	Phoenix	No
1162	41.38291168	-71.98423004	5/13/2020	0.25	0.01	251	0.12	14.5	0.25	< 10	Phoenix	No
1181	41.34675217	-72.02043915	5/13/2020	1	0.02	422	0.205	14.2	0.25	< 10	Phoenix	Yes
1193	41.37896729	-72.0759964	5/18/2020	0	0.06	371	0.178	14	0.25	84	Phoenix	No
1204	41.36036301	-72.06958008	3/23/2021	0	0.02	1738	0.874	10.3	0.17	10	Phoenix	No
1297	41.37345123	-72.05503082	3/23/2021	0	0.11	577	0.265	2	0.09	10	Phoenix	No
1306	41.3721962	-72.06406403	3/23/2021	0.5	0.02	386	0.189	9.8	0.41	10	Phoenix	Yes
1307	41.37207744	-72.06476331	4/3/2023	0	0	270	0.13	10.4	0	<10	Phoenix	No
1362	41.35009003	-71.9886322	5/14/2020	0	0.04	377	0.181	16.1	0.5	< 10	Phoenix	No
1449	41.38490295	-71.98001862	6/16/2020	0.5	0.05	234	0.111	17.2	0.5	< 10	Phoenix	Yes

Table 2.1b - Class SA & SB Impaired Waterbody Samples

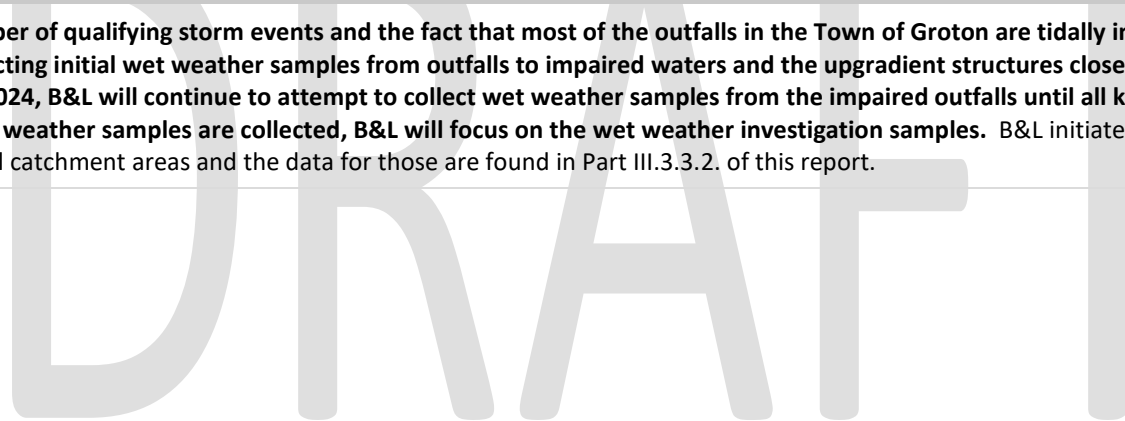
Outfall ID	Latitude	Longitude	Sample Date	Enterococcus (col/100mL)	Fecal Coliform (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab	Investigation Required
0105*	41.376711	-72.08676762	4/3/2023	<10	<10	0.98	0.021	Phoenix	No
0156	41.33128357	-71.99163818	5/6/2020	< 10	< 10	n/a	n/a	Phoenix	No
0213	41.36174011	-71.96887207	5/13/2020	144	450	n/a	n/a	Phoenix	Yes
0216	41.35726929	-71.96887207	6/2/2020	52	10	n/a	n/a	Phoenix	No
0217	41.35683817	-71.96920846	9/30/2021	414	359	n/a	n/a	Phoenix	Yes
0222	41.35682678	-71.96921539	6/2/2020	771	75	n/a	n/a	Phoenix	Yes
0288	41.3518486	-71.97187042	5/13/2020	10	< 10	n/a	n/a	Phoenix	No
0296	41.34161758	-72.03477478	5/13/2020	< 10	20	n/a	n/a	Phoenix	No
0378	41.38312531	-72.08728027	5/14/2020	< 10	< 10	< 0.01	3.69	Phoenix	Yes
0426	41.32366943	-72.00165558	5/6/2020	41	< 10	n/a	n/a	Phoenix	No
0458	41.32771301	-72.00284576	5/6/2020	20	< 10	n/a	n/a	Phoenix	No
1022	41.36279297	-71.9695282	5/13/2020	75	160	n/a	n/a	Phoenix	No
1074	41.37157822	-72.08493805	5/18/2020	10	< 10	< 0.01	3.54	Phoenix	Yes

Table 2.1b - Class SA & SB Impaired Waterbody Samples

Outfall ID	Latitude	Longitude	Sample Date	Enterococcus (col/100mL)	Fecal Coliform (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab	Investigation Required
<p><u>Notes:</u> n/a - Not Applicable * - Fecal Coliform parameter was missed at this outfall during the initial screening process and was rescreened in 2023 Outfall 0103 was previously reported with sampling data and was identified in 2023 as an "outlet", not and outfall. Outfall 0106 was previously reported with sampling data and was identified in 2023 as "not impaired".</p>									

2.2 Wet weather sample and inspection data

Outfall / Interconnection ID	Latitude / Longitude	Sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or Enterococcus	Surfactants	Water Temp	Pollutant of concern
<p>Due to the limited number of qualifying storm events and the fact that most of the outfalls in the Town of Groton are tidally influenced, in 2022 and 2023 B&L focused mainly on collecting initial wet weather samples from outfalls to impaired waters and the upgradient structures closest to the outfalls to the maximum extent practicable. In 2024, B&L will continue to attempt to collect wet weather samples from the impaired outfalls until all known locations are sampled and once the remaining wet weather samples are collected, B&L will focus on the wet weather investigation samples. B&L initiated dry weather follow-up investigations for several catchment areas and the data for those are found in Part III.3.3.2. of this report.</p>										



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.

See attachment provided with this report.

3.2 Key junction manhole dry weather screening and sampling data

Outfall ID	Pipe ID	Latitude	Longitude	Sample Date	Visual/ olfactory evidence of illicit discharge	Ammonia (mg/L)	Chlorine (mg/L)	Surfactants (mg/L)	E coli (col/100ml)	Enterococcus (col/100mL)	Fecal Coliform (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)
0039	UNK31-MH0383	41.3459	-72.05304	5/7/2021	Sewage Smell	0	0.01	0.39	10				
				10/27/2023	Sewage Smell	0	0.01	0.14	457				
0176	MH0177-CB2286	41.35004	-72.05795	8/3/2021	None	0.25	0.05	0.08					
				10/27/2023	Floatables, orange sediment, sour smell	0.25	0.03	0.14	<10				
	UNK1-CB2299	41.3501906	-72.0584927	10/27/2023	Sewage smell, debris/algae	0	0.04	0.05	10				
	CB2285-CB2286	41.35004	-72.05795	8/3/2021	None	0	0.07	0.1					
				10/27/2023	Floatables, orange sediment, sour smell	0	0.11	0.12	<10				
	CB2298-CB2299	41.35025	-72.05881	8/3/2021	None	0.25	0.22	0.1					
				10/27/2023	Sewage smell, debris/algae	0.25	0.07	0.09	<10				
	0210	Inlet-CB1225	41.38252	-72.00068	5/7/2021	None	0	0	0.11				
0213	CB1475-CB0204	41.36176	-71.96973	8/3/2021	None	0	0.02	0.11			10		
	CB3437-CB0213	41.36168	-71.97198	8/3/2021	None	0	0.05	0.14			31		
				10/26/2023	None	0	0.11	0.06			<10		
	CB0214-CB0213	41.36168	-71.97198	8/3/2021	None	0	0	0.1			31		
				10/26/2023	None	0	0.01	0.04			<10		
	UNK1-CB0213	41.36168	-71.97198	8/3/2021	None	0	0.05	0.09			<10		
				10/26/2023	None	0	0.05	0.05			<10		
	CB0213-CB0212	41.36168	-71.97198	8/3/2021	None	0	0.02	0.09			<10		
UNK10-CB0178	41.3573	-71.97042	8/3/2021	None	0	0.06	0.11		565	52			

Outfall ID	Pipe ID	Latitude	Longitude	Sample Date	Visual/ olfactory evidence of illicit discharge	Ammonia (mg/L)	Chlorine (mg/L)	Surfactants (mg/L)	E coli (col/100ml)	Enterococcus (col/100mL)	Fecal Coliform (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)
	CB0180-CB0181	41.35699	-71.97034	8/3/2021	Musty Smell	0	0.04	0.12		441	10		
	CB1475	41.3617538	-71.9697260	10/26/2023	None	0	0.03	0.06			20		
	CB1792	41.3610564	-71.9735574	10/26/2023	Musty Smell	0.25	0	0.04			<10		
	CB1796-CB1794	41.3621853	-71.9737497	10/26/2023	Musty Smell	0	0.03	0.1			<10		
	CB0180-CB0182	41.35699	-71.97034	8/3/2021	None	0.25	0.07	0.31		41	<10		
0222	UNK11-CB0179	41.35729	-71.97033	5/14/2021	None	0	0.09	0.11		<10	<10		
	CB0183-MH0224	41.35626	-71.9705	5/14/2021	None	0.25	0.05	0.29		63	20		
	CB1951-CB1676	41.32733	-71.98554	5/14/2021	None	0.25	0.08	0.15		576			
	CB1674-CB1676	41.32733	-71.98554	5/14/2021	None	0	0	0.18		160			
	CB1677-CB1676	41.32733	-71.98554	5/14/2021	None	0.25	0.02	0.15		<10			
0317	CB1811-CB1758	41.35583	-72.0558	8/3/2021	None	0	0.04	0.11					
				11/1/2023	None	0	0.14	0.4	20				
	CB1757-CB2808	41.35679	-72.05468	8/3/2021	None	0.25	0.05	0.12					
				11/1/2023	None	0.25	0	0.28	41				
	CB0168-CB2808	41.35679	-72.05468	8/3/2021	None	0	0.01	0.11					
				11/1/2023	Musty Smell	0.25	0.1	0.13	160				
	UNKLateral-CB1811	41.3557989	-72.0558367	11/1/2023	None	0	0	0.19	<10				
UNK-lat-CB1812	41.3557472	-72.0588762	11/1/2023	None	0.25	0	0.12	<10					
UNK1-CBUNK2	41.35571	-72.05708	8/3/2021	None	0.5	0.01	0.1						
CB1810-CB1758	41.3561303	-72.0588762	11/1/2023	None	0	0.08	0.16	52					
0378	CB0162-CB1068	41.38351	-72.0867	5/7/2021	None	0.25	0.01	0.15		20	<10	2.68	0.011
				4/4/2023	None	0	0	0.24		<10	<10	2.95	0.016
	Stream-CB0908	41.38308	-72.08667	5/7/2021	None	0	0.03	0.24		30	10	7.48	0.055
				4/4/2023	None	0.25	0	0.28		10	<10	3.84	0.016
	Lateral-CB3502	41.3835242	-72.0865806	4/4/2023	Solvent Smell	0	0	0.18		<10	<10	2.94	<0.010
1074	CB3911-MH0630	41.37252	-72.08498	5/7/2021	None	0	0.02	0.13		<10	<10	3.6	<0.010
				11/1/2023	None	0.25	0	0.46		10	<10	3.98	0.018
0319	Unknown -CB1825	41.3582812	-72.0588762	4/4/2023	Musty Smell	0	0.1	0.26	<10				
	CB1823-CB1825	41.3582394	-72.0588762	4/4/2023	Musty Smell	0	0.3	0.2	<10				
	CB1827-CB1822	41.3580848	-72.05955	4/4/2023	None	0	0.2	0.19	<10				

Outfall ID	Pipe ID	Latitude	Longitude	Sample Date	Visual/ olfactory evidence of illicit discharge	Ammonia (mg/L)	Chlorine (mg/L)	Surfactants (mg/L)	E coli (col/100ml)	Enterococcus (col/100mL)	Fecal Coliform (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)
1449	CB2061-CB2789	41.3843287	-72.979353	4/4/2023	None	0	0.1	0.2	<10				
	CB3917-CB1499	41.3842911	-71.9786572	4/4/2023	Musty Smell	0	0	0.44	20				

Outfall ID	Latitude	Longitude	Date of Initial Sample	Date of Follow-Up	Evidence of Discharge at Time of Follow Up
0020	41.37257385	-71.96648407	11/30/2020	5/14/2021	No
0039	41.34665298	-72.05225372	5/6/2020	5/7/2021	Yes
0156	41.33128357	-71.99163818	5/6/2020	5/14/2021	No
0176	41.34951782	-72.05661774	5/13/2020	8/13/2021	Yes
0210	41.38180923	-72.00057983	5/13/2020	5/7/2021	Yes
0213	41.36174011	-71.96887207	5/13/2020	8/13/2021	Yes
0222	41.35682678	-71.96921539	5/13/2020	5/14/2021	Yes
0262	41.32733154	-71.98497772	5/6/2020	5/14/2021	Yes
0317	41.35688782	-72.05446625	5/6/2020	8/13/2021	Yes
0319	41.35826874	-72.05838776	5/6/2020	5/14/2021	No
0372	41.33790588	-72.04663849	5/19/2020	5/14/2021	No
0378	41.38312531	-72.08728027	5/14/2020	5/7/2021	Yes
0885	41.37314606	-71.96620178	11/30/2020	5/14/2021	No
1074	41.37157822	-72.08493805	5/18/2020	5/7/2021	Yes
1181	41.34675217	-72.02043915	5/13/2020	5/14/2021	No
1449	41.38490295	-71.98001862	6/16/2020	5/14/2021	No

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3.3 Wet weather investigation outfall sampling data

Outfall ID	Latitude / Longitude	Sample date	Ammonia	Chlorine	Surfactants
<p>Due to the recent limited number of qualifying storm events and the fact that most of the outfalls in the Town of Groton are tidally influenced, in 2022 and 2023 B&L focused mainly on collecting initial wet weather samples from outfalls to impaired waters and the upgradient structures closest to the outfalls to the maximum extent practicable. In 2024, B&L will continue to attempt to collect wet weather samples from the impaired outfalls until all known locations are sampled and once the remaining wet weather samples are collected, B&L will focus on annual priority outfalls prior and wet weather investigations.</p>					

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

Discharge location (Outfall ID)	Source Location(s) (Address)	Discharge Description	Method of Discovery	Date of Discovery	Date of Elimination	Mitigation or Enforcement Action
0039	820 Poquonnock Rd	There is only one pipe discharging in this system coming from the direction of 820 Poquonnock Rd that is exceeding the threshold limits of surfactants and chlorine	Visually in field and Lab/Field Testing	5/7/2021		NOV letters will be sent to property owners, as necessary
0176	670 Meridian St Ext	There is a pipe discharging in this system coming from the direction of 670 Meridian St Ext that is exceeding the threshold limits of surfactants with trace amounts of surfactants and ammonia	Visually in field and Lab/Field Testing	8/3/2021		NOV letters will be sent to property owners, as necessary
0210	129 and 147 Yetter Rd	The only pipe discharging water is an open channel/stream running through the system so likely spike of exceeding thresholds could have come from an illicit dumping upstream	Visually in field and Lab/Field Testing	5/7/2021		NOV letters will be sent to property owners, as necessary
0213	55 Cliff Ln, and 105,110 Starr St	There is a lateral discharging into the system coming from 55 Cliff Ln that is discharging exceeding limits of chlorine and trace amounts of surfactants and the main drainage line between 105 and 110 Starr St discharging exceeding amounts of chlorine and trace amount of surfactants	Visually in field and Lab/Field Testing	8/3/2021		NOV letters will be sent to property owners, as necessary
0222	17 and 30 Pearl St, and 20 Bank St	There is a lateral discharging from the area of 20 Bank St that is discharging exceeding amounts of chlorine and enterococcus. 30 Pearl St is discharging exceeding levels of chlorine and an area around 17 Pearl St is discharging exceeding levels of chlorine and surfactants with trace amounts of ammonia	Visually in field and Lab/Field Testing	5/14/2021		NOV letters will be sent to property owners, as necessary
0262	60 and 65 Front St	An area around 60 and 65 Front St is discharging exceeding levels of chlorine and enterococcus, near exceeding levels of surfactants and trace amounts of ammonia.	Visually in field and Lab/Field Testing	5/14/2021		NOV letters will be sent to property owners, as necessary
0317	79 Maxson Rd, 27 Tormberg Ln, 168 and 176 Azalea Dr	79 Maxson Rd is discharging exceeding levels of chlorine and ammonia with trace amounts of surfactants. 27 Tormberg Ln is discharging exceeding levels of chlorine and trace amounts of surfactants. A pipe in between 168 and 176 Azalea Dr is discharging a small exceeding amount of chlorine and a trace amount of surfactants	Visually in field and Lab/Field Testing	8/3/2021		NOV letters will be sent to property owners, as necessary
1074	Odd Fellows Home Rd	The only discharging pipe in this system was coming from the private housing development of Odd Fellows Home Rd. This pipe is discharging exceeding levels of nitrogen and chlorine with trace amounts of surfactants	Visually in field and Lab/Field Testing	5/7/2021		NOV letters will be sent to property owners, as necessary

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:	Greg A. Hanover	Print name:	Michelle Maitland
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