

2022 ANNUAL REPORT

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

Registration No. GSM000023

for

*Town of Waterford, CT
15 Rope Ferry Road
Waterford, CT 06385*



Prepared By:

**Barton
& Loguidice**

**41 Sequin Drive
Glastonbury, CT 06033
T: 860.633.8770
F: 860.633.5971**

MS4 General Permit
Town of Waterford 2022 Annual Report
Existing MS4 Permittee
Permit Number GSM000023
January 1, 2022 – December 31, 2022

Primary MS4 Contact: Gary J. Schneider; Director of Public Works; (860) 444-5864; gschneider@waterfordct.org

This report documents the Town of Waterford's efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from January 1, 2022 to December 31, 2022.

Executive Summary

Submission of this report by the Town of Waterford maintains compliance with the reporting requirements and registration (no. GSM000023) under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), submitted to the State of Connecticut Department of Energy and Environmental Protection ('CT DEEP') Commissioner for activities located within the Town of Waterford. The Town of Waterford certifies by this report that the terms and conditions of the General Permit are being met to the maximum extent practicable (MEP).

The Town of Waterford, hired a Professional Engineering Consultant, Barton & Loguidice, LLC (B&L), who has completed much of the dry weather screening and sampling of the Town's existing and newly identified outfalls (376 municipally-owned). Through the efforts of B&L, the Town continues working toward the completion of all dry weather outfall Illicit Discharge Detection and Elimination (IDDE) screening and sampling, and wet weather impaired outfall sampling efforts for all of the municipally-owned outfalls identified in the Town to the MEP.

In 2021 and 2022, the Town made significant updates to the MS4 system mapping based on street map as-built drawings and field observations made by B&L. Through the field investigation process, large areas of the MS4 system that were previously mapped in GIS were identified as needing significant updates based on actual field conditions. These areas of the Town's system mapping were able to be resolved by adding missing structures and correcting piping to match the true conditions. B&L also identified several large areas in Waterford that were missing mapping entirely and meetings were conducted with the Waterford DPW to locate "as-built" drawings for the missing areas. This is a long and tedious process that exhausts a lot of resources but, large questionable areas of the Town's system mapping were able to be resolved, missing structures added, and piping corrected to match the true conditions. B&L's efforts assisted in reducing the burden on the Town for mapping locations that could be resolved in the field allowing the Town to focus on other aspects of the MS4 permit. By performing the actions listed above, B&L located approximately 150 new outfalls, including 17 new drop down catch basins (catch basins that discharge directly into a waterway with no other piping connected to the system). These newly identified outfalls have been updated in the databases and catchment ranking tables. In 2023 efforts will continue to be made to complete all identified errata points.

Since the primary focus of 2021 and 2022 was to update the Town's mapping, B&L did not screen any additional outfalls during dry weather events in 2021 or 2022. To date, dry weather screening and sampling efforts were completed at 228 Town-owned outfalls and a total of 54 samples were collected. Eight of the previously sampled outfalls were identified with suspected illicit discharges and were ranked at the top of the high priority category for further investigations.

In 2021 and 2022, B&L initiated efforts on the 12 highest priority ranked outfalls for IDDE investigations. During these efforts, two catchments were screened completely, three catchments are awaiting assistance for further investigation, and seven catchments were unable to be completed because they were dry during the follow-up screening events. More attempts will be made for the incomplete investigations, most likely during the spring season of 2023, when the groundwater levels are higher. For the investigations completely screened, reports are in their final stages of being drafted.

As a result of the significant mapping updates in 2021 and 2022, B&L was not able to sample many outfalls during wet events during these years. In 2022, three additional samples were collected and all three were identified with suspected illicit discharges. To date, wet weather screening and sampling efforts were completed at 27 of the 61 known impaired outfall locations. The previous number of outfalls discharging to impaired waters was 29, which has been increased during the mapping updates. Of the 27 outfalls sampled, 19 were identified with suspected illicit discharges and were ranked at the top of the high priority category for further investigations. Due to the limited amount of qualifying storm events and the fact that most of the outfalls are tidally influenced, in 2023, B&L is focusing on collecting wet weather samples from the remaining outfalls and from the most upgradient structure from the waterbody as possible. B&L will continue to attempt to collect wet weather samples from the impaired outfalls until all known locations are sampled. Due to the limited amount of qualifying storm events and the fact that most of the outfalls are tidally influenced, no annual samples were able to be completed in 2022 and will be resumed to the maximum extent practicable in 2023.

In 2021, B&L conducted inspections at 35 municipal stormwater treatment structures. B&L has since identified five new stormwater treatment structures. B&L will continue to review the existing structures against available mapping to accurately map all known treatment structures for the Town and will update the mapping and list of structures accordingly. It is anticipated that B&L will complete the reporting for the previously inspected stormwater treatment structures in the spring of 2023 and will continue to inspect any new structures identified in 2023. In 2021, B&L provided the Town with a spreadsheet of all structures inspected with the conditions of each structure listed and estimated costs for annual maintenance for each of the municipal structure inspected.

In 2021, B&L identified the top 40 Town-owned properties with the greatest amount of impervious area. These sites were then evaluated to determine whether or not runoff from the impervious areas discharge to the MS4. There are currently 21 Town-owned properties that have been identified as potential candidate sites for retrofit projects. The next phase of the desktop analysis is to confirm the presence of directly connected impervious areas (DCIA) at each site, as well as determine the suitability and capacity of site soils for supporting the implementation of retrofit projects. A new DCIA tracking worksheet was prepared by B&L in 2021 for inclusion in the Town's land development applications. The worksheet would confirm compliance of applicants with site stormwater runoff retainage requirements, as well as determine the total change in site DCIA. The change in site DCIA would then be incorporated into the Town's overall DCIA tracking spreadsheet for determining progress towards the Town's DCIA disconnection goal. The Town is in the process of reviewing and implementing the new DCIA tracking worksheet.

In 2021, B&L identified all industrial and commercial facilities within the Town that likely needed to be registered for CT DEEP's Industrial and Commercial Stormwater General Permits, who are not currently registered. B&L then prepared educational brochures regarding these stormwater permits, which the Town mailed to all of the applicable industrial facilities in 2021 and is anticipating on distributing to the commercial facilities in 2023.

In 2021, B&L started to prepare an MS4 Pollution Prevention and Good Housekeeping Protocols document for the Town and it is anticipated that this will be completed in 2023. This document will optimize some of the best management practices (BMPs) that are currently being carried out by the Department of Public Works to minimize the discharge of pollutants to the Town's MS4 and waters of the State. BMPs for the following protocols are covered in this document: cleaning and maintenance of vehicles and equipment, leaf management, streets and parking lot sweeping, catch basin inspection and cleaning, and snow management.

B&L evaluated the Town's land use regulations in 2021 with respect to construction stormwater runoff control and post-construction stormwater management. A report was prepared comparing existing regulations to MS4 General Permit requirements. Recommended regulatory revisions were included in this report. The Town intends to review its regulations and revise them in 2023, as necessary, to improve permit compliance.

Part I: Summary of Minimum Control Measure Activities

1. PUBLIC EDUCATION AND OUTREACH (Section 6 (a)(1) / page 19)

1.1 BMP Summary

BMP	Activities in current reporting period	Sources Used (if applicable)	Method of Distribution	Audience (and number of people reached)	Measurable goal	Department/ Person Responsible	Additional details
1-1 Implement public education and outreach	Link was created for accessing the Town's Stormwater Regulations website. Links were added discussing Stormwater & Water Quality, Impervious Cover, Urban Runoff, the NPDES Program and Save the Sound. Planning & Development and Recreation & Parks added a webpage link to the Stormwater. Informational material is also present at Town offices.	CT DEEP, NRDC, UConn NEMO, NOFA, NH DES, Clemson Cooperative Extension, Minnesota PCA, Long Island Sound Study, Save the Sound, Connecticut Conservation Districts, EPA	Town Offices and Webpage: www.waterfordct.org/public-works/pages/stormwater-regulations	General Public	Continue distributing educational brochures as bill inserts, mailings, and fact sheets at town offices and with building permits, and on the town website.	Department of Public Works	
1-2 Address education/ outreach for pollutants of concern*	Weblinks regarding nitrogen, phosphorus, turbidity and bacteria are available on the Town's Stormwater webpage. What residents can do to mitigate these pollutants is also discussed on the Stormwater webpage.				Develop and Distribute Information on Nitrogen and Bacteria Pollution		
1-3 Town Website	The SMP and draft Annual Report are also available through the Town's website. Public educational documents are available on the Town's Stormwater Regulations webpage (see BMP 1-1 and BMP 1-2). A notification/link for the Construction Stormwater General Permit is also available on the Town's Stormwater Regulations webpage (see BMP 4-6).	See BMP 1-1 / BMP 1-2	Town Webpage: www.waterfordct.org/public-works/pages/stormwater-regulations	General Public	Update website to include additional stormwater information.	Department of Public Works	

BMP	Activities in current reporting period	Sources Used (if applicable)	Method of Distribution	Audience (and number of people reached)	Measurable goal	Department/ Person Responsible	Additional details
1-4 Catch Basin Stenciling/Badges	All catch basins have been stenciled.	Not Applicable	Not Applicable	General Public	Continue an on-going stenciling program in which basins in Town are prioritized and stenciled.	Department of Public Works	The Town will continue its catch basin stenciling program, as needed.
1-5 Household Hazardous Waste Collection Days	HHW Collections Days were conducted on 4/2/22, 5/7/22, 6/4/22, 6/19/22, 7/9/22, 8/6/22, 9/17/22, 10/8/22, and 11/5/22.	Southeastern Connecticut Regional Resources Recovery Authority (SCRRRA)	Town Webpage: www.waterfordct.org/public-works/pages/hazardous-household-waste-paper-shredding SCRRRA provided fliers.	General Public	Continue program in an effort to remove household hazardous waste safely from the waste stream using a Qualifying Local Program	Department of Public Works	

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

- Continue to update the Town's Stormwater webpage with new/updated stormwater related information
- Continue distributing educational brochures
- Attempt to coordinate efforts with local schools for presentation on stormwater management
- Continue the catch basin stenciling/badges program, as needed
- Continue to coordinate HHW program

2. PUBLIC INVOLVEMENT/PARTICIPATION (Section 6(a)(2) / page 21)

2.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Location Posted	Additional details
2-1a Final Stormwater Management Plan publicly available	Complete	Notice of the SMP was published in The Day newspaper and on Town's Stormwater website.	Notify public of published SMP and document comments received.	Department of Public Works	April 1, 2017	The Day, Planning & Development and Town Clerk's Offices, Department of Public Works Complex, the Library and www.waterfordct.org/sites/waterfordct/files/file/file/20170912_waterford_bmp_smp_2017.pdf	The Stormwater Management Plan will be reviewed periodically and updated, as necessary.

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Location Posted	Additional details
2-1b Comply with public notice requirements for Annual Reports (annually by 2/15)	Complete	Notice of the draft 2021 Annual Report was posted on the Town's website on 1/20/22 and the report was available on the Town's website from 2/14/22 through 3/28/22.	Notify public of draft Annual Report and document comments received.	Department of Public Works	2021 Report: Feb 14, 2022 2022 Report: Feb 15, 2023	Planning & Development and Town Clerk's Offices, Department of Public Works Complex, the Library and www.waterfordct.org/public-works	Notice of the draft 2022 Annual Report was posted in The Day newspaper on 2/7/23 and the report was available on the Town's website from 2/15/23 through 3/28/23.
2-2 Community Group Engagement	Complete	The Planning Department and Public Works department continue to work with the Niantic River Watershed Committee in implementation of educational programs, and installation of LID measures within the Niantic Watershed.	Identify and reach out to local organizations that may want to participate in review and implementation of this SMP.	Department of Public Works	On-going		
2-3 Interagency Meetings	Complete	Meetings were held throughout the year with Public Works and Planning & Development.	Continue to facilitate a panel of staff and volunteers.	Department of Public Works	On-going	Not Applicable	

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

- Continue to provide notice of updated SMPs and draft Annual Reports
- Continue to engage Community Groups
- Continue interagency meetings

3. ILLICIT DISCHARGE DETECTION AND ELIMINATION (Section 6(a)(3) and Appendix B / page 22)

3.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Additional details
3-1 Develop written IDDE program (Due 7/1/19)	Complete	The Town finalized its IDDE program.	Development and implement an IDDE Program	Department of Public Works	Apr 29, 2020	
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas (Due 7/1/20)	Substantially Complete	In 2021 and 2022, with assistance from the Town's consultant, Barton & Loguidice, the Town conducted significant efforts to confirm and locate additional outfalls in priority areas that were either incorrect or not previously identified.	Finalize mapping of all MS4 Outfalls	Department of Public works	June 2023	In 2023, the Town will continue to update its mapping as new information is gathered.
3-3 Implement citizen reporting program (On-going)	In Progress/ On-going	Currently, citizens can call the Department of Public Works to report any activities. An updated system will be developed to include use of <i>Municipity Software</i> .	Develop an online method for citizens to report spills and illicit dischargers	Department of Public Works	June 2023	The Town will add an email and phone contact on the stormwater page for reporting illicit discharges.
3-4 Establish legal authority to prohibit illicit discharges (Due 7/1/19)	Substantial Complete	Current ordinance generally meets requirements. The Town reviewed its ordinance against the template provided by UConn CLEAR and will be making slight changes to be more consistent with the template.	Review and update ordinances.	Department of Public Works	December 2023	
3-5 Develop record keeping system for IDDE tracking (Due 7/1/17)	Complete	The Town currently uses excel and access spreadsheets, along with GIS, for IDDE tracking.	Record illicit discharge abatement activities. Develop and maintain an SSO inventory.	Department of Public Works	Jul 1, 2017 On-going	The Town started developing a recording system for IDDE tracking using the <i>Municipity Software</i> .
3-6 Address IDDE in areas with pollutants of concern	In Progress	In 2021 and 2022, B&L continued IDDE investigations for catchment areas that discharge to impaired waters. It is anticipated that B&L will complete the initial investigations started and will continue to investigate additional suspected illicit discharges in 2023 to the maximum extent practicable.	Identify which areas in Town are most likely to contribute nitrogen phosphorous, and bacteria to the MS4 (IDDEs).	Department of Public Works	On-going	The Town continues to identify structures that are not connected to the sanitary sewer system which are located near the MS4.

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Additional details
3-7 Map MS4 System in Priority Areas	In Progress	In 2021 and 2022, with assistance from B&L, the Town conducted significant efforts to confirm and locate additional outfalls in priority areas that were either not mapped correctly or were not previously identified. The Town also conducted efforts for updating the mapping for catch basins, piping and stormwater structures in priority areas.	Map Priority Areas	Department of Public Works	On-going	In 2023, the Town will continue to update its mapping as new information is gathered.

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

- Post IDDE Program to the Stormwater webpage and include link in next year's Annual Report
- Post an Illicit Discharge Reporting link on the Stormwater webpage
- Continue updating the MS4 outfall and system mapping
- Maintain master IDDE tracking system
- Continue to investigate illicit discharges in areas with pollutants of concern

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.

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
<u>No citizen reports of suspected illicit discharges were reported during 2022</u>						
<u>No other illicit discharges were reported during 2022</u>						
<u>No SSOs were reported from 2017 through 2020 and none were reported in 2022</u>						
Magonk Point Road	Started 8/31/21 Ended 9/1/21	No	51-500 gallons	Pump station equipment failure (reported by neighbor) / Utility Commission Office	Force main was drained, tanker was used to by-pass the pump station, and staff/contractor repaired the pipe.	N/A
Cross Road	Started 9/26/21 Ended 9/27/21	No	51-500 gallons	Sewer Line Blockage – A spill out a manhole located on a large grass area outside BJs in Waterford was reported by BJs property manager.	Cleared the backup and cleaned the pipe. It appears that non-flushable materials are being discharged into the collection system.	N/A

3.4 Provide a summary of actions taken to address septic failures during the Reporting Period using the table below.

Method used to track illicit discharge reports	Location and nature of structure with failing septic systems	Actions taken to respond to and address the failures	Impacted waterbody or watershed, if known	Dept. / Person responsible
Septic Installation Log	39 Braman Rd Failing septic system	Action initiated by septic installer. Permit for septic repair approved on 7/21/2022.	Unknown	Ledge Light Health District

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

Currently, phone calls and emails are received by the Department of Public Works from citizen's reporting possible illicit discharges. The Town will continue tracking illicit discharges using an excel table. The Town is working towards tracking reports and responses using the *Municipity Software* program.

3.6 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	376 (increased from 262 in 2020 and decreased from 387 in 2021)
Estimated or actual number of interconnections	21
Outfall mapping complete	90%
Interconnection mapping complete	50%
System-wide mapping complete (detailed MS4 infrastructure)	75%
Outfall assessment and priority ranking	376 outfalls have initial rankings (increased from 250 in 2021)
Dry weather screening of all High and Low priority outfalls complete	228 of 376
Catchment investigations complete	5 investigations were initiated in 2021
Estimated percentage of MS4 catchment area investigated	Approximately 5%

3.7 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).

An MS4 and IDDE training program was developed for presentation to all Town personnel that may come into contact with stormwater or that may review applications and plans that impact stormwater quality. Typically, this training is conducted on an annual basis for members of Public Utility, Board of Education, Department of Public Works, Parks and Recreation, Police Department, and Fire Department. A virtual training was provided to select personnel from Public Works and the Conservation Commission on May 15, 2022. Many IDDE topics are discussed during the Town's annual SPCC and SWPPP training events.

4. CONSTRUCTION SITE RUNOFF CONTROL (Section 6(a)(4) / page 25)

4.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Additional details
4-1 Implement, upgrade, and enforce land use regulations or other legal authority to meet requirements of MS4 general permit (Due 7/1/20)	Complete	P&Z updated the Subdivision and Zoning Regulations to incorporate LID, green infrastructure, and stormwater design requirements. B&L, the Town's consultant, evaluated the Town's land use regulations in 2021 and made recommendations towards improving compliance with the MS4 General Permit.	Review and update the regulations to be consistent with the requirements of the permit.	Planning	April 2018	In 2023, the Town will continue to review its stormwater management regulations and revise if necessary to meet MS4 general permit requirements.
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval (On-going)	Complete	Site applications are forwarded to Town Officials for review and comment during application process. Plans are not signed by commission until all departments have signed off on project plan.	Document Current Procedure	Planning	Jul 1, 2017 On-going	
4-3 Review site plans for stormwater quality concerns (On-going)	Complete	Commercial and residential site plans involving greater than 0.5 acre of land disturbance were reviewed for stormwater quality control measures.	Continue to review all design plans for consistency with town and state guidelines for erosion and sediment control.	Planning	Jul 1, 2017 On-going	Application review checklists have been revised to include stormwater management regulation requirements
4-4 Conduct site inspections (On-going)	Complete	Zoning and Inland Wetland enforcement staff verify site development practices are in accordance with approved plans. Planning staff employ an inspection checklist to document compliance and to identify measures requiring repair/additional control measures. Inspections occur after every significant rainfall event.	Document Inspections Performed Continue existing program of construction inspections.	Planning	Jul 1, 2017 On-going	

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Additional details
4-5 Implement procedure to allow public comment on site development (On-going)	Complete	All agendas and minutes are noticed in compliance with State requirements for public notice. Public hearings announced in newspaper. Complaints regarding land-disturbance are forwarded to Planning and Development Department.	Document Public Comments	Planning	Jul 1, 2017	
4-6 Implement procedure to notify developers about DEEP construction stormwater permit (On-going)	Complete	Town agencies notify developers of stormwater requirements. When applicable, developers submit notification of registration to State. P&Z application checklist was revised to require applicant's determination if a Construction Stormwater GP is required.	Update application forms to include determining if Construction Stormwater GP is required. Updated webpage.	Planning	Jul 1, 2019	A note was added to the website regarding need for a Construction Stormwater GP: www.waterfordct.org/public-works/pages/stormwater-regulations

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

- Continue to update land use regulations to improve compliance with MS4 General Permit.
- Continue to review all design plans for consistency with Town and State guidelines for erosion and sediment control.
- Continue existing program for construction inspections.
- Continue to follow all State public notice and hearing requirements and follow up on all comments and complaints received.

5. POST-CONSTRUCTION STORMWATER MANAGEMENT (Section 6(a)(5) / page 27)

5.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Additional details
5-1 Establish and/or update legal authority and guidelines regarding LID and runoff reduction in site development planning (Due 7/1/22)	Complete	P&Z updated the Subdivision and Zoning Regulations to incorporate LID, green infrastructure, and stormwater design requirements. B&L, the Town's consultant, evaluated the Town's land use regulations in 2021 and made recommendations towards improving compliance with the MS4 General Permit.	Review and update the regulations to be consistent with the requirements of the Permit.	Planning	April 2018	The Town continues to review its stormwater management regulations for effective LID implementation and run-off reduction.
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects (Due 7/1/22)	Complete	Section 25.6 Stormwater Management regulations require LID, run-off control and stormwater treatment to the maximum extent practicable for all new development >0.5 acre. B&L, the Town's consultant, evaluated the Town's LID/runoff reduction requirements in 2021 and made recommendations towards improving compliance with the MS4 General Permit.	Review current regulations to identify and, where appropriate, reduce or eliminate existing regulatory barriers to implementation of LID and runoff reduction practices to the MEP.	Planning	April 2018 On-Going	The Town continues to review its regulations requiring run-off reduction for development and redevelopment projects and revise requirements affecting impervious surface area.
5-3 Identify retention and detention ponds in priority areas (Due 7/1/20)	Substantially Complete	Known ponds under the control of the Town have been mapped. In 2021 and 2022, B&L continued to review the mapping and made updates to the ponds, as necessary.	Inventory Town retention/detention ponds	Department of Public Works	Mar 23, 2018	

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Additional details
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures (On-going)	Complete/ On-going	Inspection reports and water quality monitoring for stormwater and treatment basins continue to be completed. Town maintains an inventory of required stormwater management control practices for completed site developments. Documentation of inspection and maintenance of stormwater treatment is requested as part of land use and building permit approvals. Town employees receive instruction on maintenance for rain gardens, stormwater detention /treatment systems. All basins and structures are inspected and maintained at least annually.	Develop a maintenance plan for retention/ detention ponds and stormwater treatment structures that it owns or over which it holds an easement or other authority and that are located in the Permittee's priority areas to ensure their long-term effectiveness.	Planning	Feb 15, 2018 On-going	A draft plan for routine inspections and maintenance for the Town's basins and structures is currently being reviewed by the Town. In 2021, B&L conducted stormwater structure inspections for all ~40 stormwater treatment structures identified and started drafting reports and recommendations for maintenance. Based on the inspections conducted, B&L provided the Town with a cost spreadsheet for budgeting annual maintenance.
5-5 DCIA mapping (Due 7/1/20)	Substantially Completed	The DCIA for the priority areas have been calculated using the available impervious cover layers.	Calculate DCIA	Department of Public Works	Jul 1, 2020 On-going	The DCIA mapping will be updated, as necessary, to include retrofit, development and development projects.
5-6 Address post-construction issues in areas with pollutants of concern	Not Started	None	Document issues identified and address. Prioritize areas for the DCIA retrofit program under MCM-6	Department of Public Works	On-going	

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

- Continue to review and update land use regulations to improve compliance with MS4 General Permit.
- Continue to enforce LID/runoff reduction requirements for development and redevelopment projects.
- Review Stormwater Structures Management Plan for areas of optimization.
- Continue to conduct inspections and water quality monitoring for stormwater and treatment basins.
- Continue updating the DCIA mapping, as necessary.

5.3 Post-Construction Stormwater Management reporting metrics

Metrics		
Baseline (2012) Directly Connected Impervious Area (DCIA)	240	acres
DCIA disconnected (redevelopment plus retrofits)	Unknown	acres this year / acres total
Retrofits completed	Unknown	#
DCIA disconnected	TBD	% this year / % total since 2012
Estimated cost of retrofits	Unknown	\$
Stormwater treatment structures identified (including detention/retention ponds, oil water separators, hydrodynamic separators, green infrastructure, etc.)	45 total treatment structures 13 retention/detention ponds	# total

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

- To calculate the baseline DCIA for the Town of Waterford, the Town used the process found on the CT NEMO website. CT NEMO developed 5 formulas to calculate the DCIA and Impervious Cover (IC) independently for each basin in the Town using the percent DCIA for the basin with the state DCIA removed from the equation. The Town 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.

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

6.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Additional details
6-1 Develop/implement formal employee training program (On-going)	Complete/ On-going	A training program has been developed. A virtual training was provided to select personnel from Public Works and the Conservation Commission on May 15, 2022.	Track Town employee training	DPW, Parks and Rec., Utility Commission, Waterford Buildings and Grounds, and Waterford BOE.	On-going	
6-2 Implement MS4 property and operations maintenance (On-going)	Complete/ On-going	Salt piles are stored under cover and on impervious surfaces. Town industrial stormwater discharges are monitored. Vehicle maintenance is performed undercover.	Continue the pattern of MS4 property and operations maintenance in accordance with the Permit.	Department of Public Works, Police Department, Fire Department, Board of Ed, Parks and Rec	Jul 1, 2017 On-going	The Town continues reviewing current practices and looking for areas for optimization.

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Additional details
6-3 Implement coordination with interconnected MS4s	In Progress	Through the outfall identification process, the Town has identified several interconnections with the neighboring towns/cities.	Coordinate pollution prevention activities with interconnected MS4s.	Department of Public Works	On-going	
6-4 Develop/implement program to control other sources of pollutants to the MS4	Substantially Complete	The Town has identified industrial and commercial facilities not registered under DEEP's Industrial Stormwater General Permit and Commercial Stormwater General Permit, respectively. Educational brochures were mailed to the industrial facilities in 2021, notifying them of their potential obligation to register.	Develop and implement a program to control the contribution of pollutants to the MS4.	Department of Public Works	Aug 2021 Spring 2022	Commercial brochures will be mailed to these facilities in 2023, notifying them of their potential obligation to register.
6-5 Evaluate additional measures for discharges to impaired waters*	To be Started	None	Identify potential project locations.	Department of Public Works		
6-6 Track projects that disconnect DCIA (On-going)	In Progress	A table was created for tracking disconnected DCIA. The Town has started filling out the DCIA tracking table with completed development projects dating back to 2012. In 2021, B&L reviewed all Town approved projects since 2012 to identify all potential projects completed during that time. In 2021, B&L created a DCIA tracking form to be completed for each new project, which is being reviewed by the Planning Department before implementing.	Annually track acreage of DCIA disconnected as a result of redevelopment/ retrofit projects within the Town.	Department of Public Works	Jul 1, 2019 On-going	The Town will maintain a record of all disconnected DCIA projects.

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Additional details
6-7 Implement infrastructure repair/rehab program (Due 7/1/21)	On-going	In 2022, the Town installed a new catch basin in line with an already existing pipe at the corner of Leary Drive and Quarry Road. The Town replaced some piping on Gardiners Wood Road and also replaced two pipes and one center line catch basin top on Lakes Pond Road. The Town replaced numerous catch basin tops on Butlertown Road prior to paving.	Identify MS4 structures to repair, rehabilitate, or upgrade to reduce pollutant discharge.	Department of Public Works	December 2022 On-going	The Town will review current practices and look for areas for optimization.
6-8 Develop/implement plan to identify/prioritize retrofit projects (Due 7/1/20)	In Progress	In 2021 and 2022, with the assistance of B&L, Town-owned sites with the greatest amount of impervious area were identified as potential candidates for retrofit projects.	Develop a retrofit project plan to identify and prioritize DCIA connection projects	Department of Public Works	December 2023 On-going	In 2023, the Town will continue working with its consultant to identify and prioritize potential projects for the Retrofit Program to the maximum extent practicable.
6-9 Implement retrofit projects to disconnect 2% of DCIA (Due 7/1/22)	In Progress	In 2021 and 2022, with the assistance of B&L, Town-owned sites with the greatest amount of impervious area were identified as potential candidates for retrofit projects.	Implement retrofit projects	Planning	Jul 1, 2023 On-going	In 2023, the Town will continue working with its consultant to identify and prioritize potential projects for the Retrofit Program to the maximum extent practicable.
6-10 Develop/implement street sweeping program (On-going)	Complete/ On-going	Typically, all Town-owned roads are swept every year, starting after the last snow melt. The Town had maintenance issues with their sweepers in 2021 and 2022 but, were able to sweep most of the town in 2022 and will continue their sweeping program in 2023.	Continue sweeping all streets at least once per year, as soon as possible after snowmelt.	Department of Public Works	Jul 1, 2017 On-going	The Town continues reviewing current practices and looking for areas for optimization.
6-11 Develop/implement catch basin cleaning program (On-going)	Complete/ On-going	The Town cleans approximately 1/3 of all of the catch basins annually.	Continue current maintenance program in accordance with the Permit.	Department of Public Works	Jul 1, 2019 On-going	The Town continues reviewing current practices and looking for areas for optimization.

BMP	Status	Activities in current reporting period	Measurable goal	Department/ Person Responsible	Date completed/ projected	Additional details
6-12 Develop/ implement snow management practices (Due 7/1/18)	Complete/ On-going	DEEP Guidelines on snow management provided to Town. The Town streets and municipal lots were plowed, as necessary. Roads were treated with salt (no sand), as necessary.	Develop/implement snow management practices	Department of Public Works	Jul 1, 2017 On-going	The Town continues reviewing current practices and looking for areas for optimization.

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

- Conduct annual MS4 training events.
- Continue to review MS4 property and operations maintenance practices and look for areas for optimization.
- Notify commercial facilities of their requirements to register under the Industrial Stormwater GP.
- Continue tracking disconnected DCIA using the table created.
- Continue efforts to identify and prioritize potential projects for the Retrofit Program to the maximum extent practicable.
- Continue street sweeping, catch basin cleansing and snow management practices.

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	Yes – 5/15/22
Street sweeping	
Curb miles swept	~80 miles were swept in 2022 – ~1/3 of the Town experienced maintenance issues with the sweepers in 2022.
Volume (or mass) of material collected	~200 CY
Catch basin cleaning	
Total catch basins in priority areas	~3,000
Total catch basins in MS4	~3,000
Catch basins inspected	905
Catch basins cleaned	905
Volume (or mass) of material removed from all catch basins	~600 CY
Volume removed from catch basins to impaired waters (if known)	Unknown
Snow management	
Type(s) of deicing material used	Salt
Total amount of each deicing material applied	~2,290 tons
Type(s) of deicing equipment used	Truck/spreader
Lane-miles treated	242 miles
Snow disposal location	N/A
Staff training provided on application methods & equipment	Yes – as necessary

Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	Unknown
Reduction in turf area (since start of permit)	Unknown
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	
Cost of mitigation actions/retrofits	N/A

6.4 Catch basin cleaning program

Provide any updates or modifications to your catch basin cleaning program.

Catch basins have been inspected and cleaned out and the sumps have been measured. The Town continues to clean and inspect approximately 1/3 of all of the catch basins annually, and the amount of material removed is recorded. A list will be generated and the catch basins with the most material present will 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 2021 and 2022, with the assistance of B&L, Town-owned sites with the greatest amount of impervious area were identified as potential candidates for retrofit projects.

In 2022, as part of the Niantic River Watershed 4-Town Bio-Infiltration, Filtration & Water Collection Project, in cooperation with the Eastern CT Conservation District and funded by a Section 319 grant, the Town of Waterford installed 20 catch basin smart sponge inserts (storm drain filters) in the neighborhood around the avenues east of Niantic River and 2 tree filters were installed on Scenic View Drive, all to treat run-off draining to Niantic River. Operation & Maintenance Plans were also created for both the storm drain filters and for the tree filters (wells) to assist with the inspection and maintenance of the filters.

The catch basin filter inserts that were installed were specially designed and installed to capture and filter stormwater runoff from impervious surfaces in the neighborhood around the avenues east of Niantic River to protect and improve water quality in an un-named brook and Niantic River. These catch basin filter inserts provide the following benefits: reduces the frequency of maintenance required for BMPs downstream of the storm drain filters; captures trash, debris, and sediment, as well as removes fine sediment (TSS); removes phosphorous, hydrocarbons and oil; and, some filter media can remove heavy metals as well. These catch basin filter inserts will filter stormwater runoff from the roadway and parking lots, removing up to 99% of common NPS pollution, prior to its discharge to Niantic River.

The tree wells installed are a Low Impact Development (LID) bio-retention practice that is used to capture and infiltrate stormwater. The tree well plants absorb some of the water that flows into the unit and utilize some of the nutrients as well. The top soil contains micro-organisms that are capable of breaking down a wide variety of common contaminants including hydrocarbons, fecal bacteria, pesticides, herbicides and fertilizer. The bark mulch provides carbon-rich organic material for both soil biota and the tree well plants. The 2 tree well systems installed on Scenic View Drive intercept stormwater runoff from the roadway. The Scenic View Drive tree wells are designed to infiltrate stormwater, preventing contaminated runoff from entering Niantic River and Bay via storm drain discharge. Native ornamental grasses (PANICUM VIRGATUM `RUBY RIBBONS`) was installed in the tree wells, which are drought-tolerant.

In 2023, the Town will continue working with its consultants to identify and prioritize potential projects for the Retrofit Program to the maximum extent practicable.

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 2021 and 2022, with the assistance of B&L, Town-owned sites with the greatest amount of impervious area were identified as potential candidates for retrofit projects. In 2023, the Town will continue working with its consultant to identify and prioritize potential projects for the Retrofit Program to the maximum extent practicable.

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.

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.

Barton & Loguidice, LLC, the Town's consultant, attempted to collect samples during multiple rain events during 2020, 2021, and again during 2022. Due to the impaired outfalls proximity to the coast, most of the outfalls in the Town are impacted by tide levels and storm surges. To date, wet weather samples were collected from 27 of the known 61 outfalls that discharge to impaired waters. Previously, there were 29 outfalls directly discharging to impaired waters and as part of the recent mapping updates, B&L has now located a total of 62 outfalls discharging to impaired waters. Of the 27 outfall samples collected during wet weather events, 19 samples exceeded pollutant thresholds and require follow-up investigations. Due to the limited number of qualifying storm events and the fact that most of the outfalls are tidally influenced, in 2023, B&L will continue focusing on collecting wet weather samples from the remaining outfalls and from upgradient structures closest to the outfalls to the maximum extent practicable. B&L will continue to attempt to collect wet weather samples from the impaired outfalls until all known locations are sampled. Once the remaining impaired wet weather samples are collected, B&L will focus on the wet weather investigation samples. Coordination with the tide schedule, storm surges and qualifying rain events will continue to be conducted for future monitoring events. Weather conditions during 2022 did not allow B&L to gain much progress towards wet weather sampling; however, other local efforts resulted in the refinement of the Town's list of outfalls to impaired waters. In 2021, B&L was able to collect 2 of the 6 annual priority wet weather samples, and will continue to attempt to collect these during 2023. 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 collected under 2017 permit

Table 2.1a - Class SA & SB Impaired Waterbody Samples

Outfall ID	Latitude	Longitude	Sample Date	Outfall Turbidity (NTU)	Turbidity Upstream (NTU)	Fecal Coliform (col/100mL)	Enterococcus (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab	Investigation Required
OIL-1	41.36996625	-72.1922495	12/16/2022	0.59	0	41	187	0.64	0.021	Phoenix	YES
OIL-2	41.37059465	-72.1924246	12/16/2022	2.59	0	96	341	0.38	0.022	Phoenix	YES
STAN-1	41.35766326	-72.1877547	12/16/2022	3.04	0	6490	5790	0.54	0.144	Phoenix	YES
EWHARF-1	41.327666	-72.1740938	9/1/2021	1.46	1.88	738	3870	3.47	<0.010	Phoenix	YES
GLEN-1	41.3172803	-72.1037312	4/24/2020	n/a	n/a	< 10	96	n/a	n/a	Phoenix	YES
OLDNOR-4	41.40117677	-72.11190543	4/24/2020	n/a	n/a	31	10	0.34	0.033	Phoenix	NO
4TH-1	41.326394	-72.175706	4/13/2020	5.57	7.52	1190	1170	0.72	0.094	Phoenix	YES

Table 2.1a - Class SA & SB Impaired Waterbody Samples

Outfall ID	Latitude	Longitude	Sample Date	Outfall Turbidity (NTU)	Turbidity Upstream (NTU)	Fecal Coliform (col/100mL)	Enterococcus (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab	Investigation Required
BALD-1	41.336172	-72.144587	4/13/2020	n/a	n/a	20	187	n/a	n/a	Phoenix	NO
BALD-2	41.3350363	-72.14569031	4/13/2020	n/a	n/a	< 10	97	n/a	n/a	Phoenix	NO
NIARIV-1	41.35634543	-72.17600201	4/13/2020	6.33	0	31	437	0.73	0.046	Phoenix	YES
NIARIV-2	41.3532664	-72.1762042	4/13/2020	0	2.11	74	512	0.56	0.051	Phoenix	YES
OSWE-5	41.355933	-72.1772576	4/13/2020	0	1.14	< 10	537	0.75	0.046	Phoenix	YES
PARK-1	41.3502878	-72.1858535	4/13/2020	2.71	0.71	75	1310	0.62	0.046	Phoenix	YES
RIVSI-2	41.3524954	-72.1870468	4/13/2020	0	2.14	301	2600	0.62	0.051	Phoenix	YES
SHAW-1	41.3497751	-72.1817401	4/13/2020	8.14	4.76	52	1500	1.78	0.117	Phoenix	YES
WINDW-1	41.3169534	-72.1568046	4/13/2020	n/a	n/a	882	3650	n/a	n/a	Phoenix	YES
JORCIR-1	41.31817856	-72.15100011	12/30/2019	n/a	n/a	*	933	n/a	n/a	Phoenix	YES
NIARIV-5	41.34061	-72.17339	12/30/2019	15.5	0	< 10	292	0.79	0.163	Phoenix	YES
NIARIV-6	41.3392626	-72.1736651	12/30/2019	9.47	0	52	393	0.42	0.05	Phoenix	YES
NIARIV-7	41.3359644	-72.1740182	12/30/2019	1.97	18.8	20	171	0.57	0.082	Phoenix	NO
BLOOM-2	41.4010613	-72.1207251	9/25/2018	3.34	6.07	n/a	n/a	n/a	n/a	Phoenix	NO
OLDMIL-2	41.4002874	-72.1150245	9/25/2018	7.54	3.4	n/a	n/a	n/a	n/a	Phoenix	NO
OLDNOR-3	41.4031439	-72.112051	9/25/2018	n/a	n/a	3260	8160	0.52	0.117	Phoenix	YES
OLDNOR-5	41.3996828	-72.1116347	9/25/2018	4.98	2.44	n/a	n/a	n/a	n/a	Phoenix	NO
WINT-1	41.4009492	-72.1114224	9/25/2018	18.79	13.59	11200	4610	0.4	0.09	Phoenix	YES
WINT-2	41.40077	-72.10806	9/25/2018	11.46	7.08	1500	2250	0.43	0.046	Phoenix	YES

Notes:

n/a - Not Applicable

* = Missing parameter; outfall is impaired for bacteria and will need to be resampled for fecal coliform

Table 2.1b - Class A & B Impaired Waterbody Samples

Outfall ID	Latitude	Longitude	Sample Date	E. Coli (col/100mL)	Lab	Investigation Required
OSWE-6	41.3567635	-72.1761815	4/13/2020	10	Phoenix	NO
OSWE-7	41.3567781	-72.1761586	12/30/2019	20	Phoenix	NO

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?
N/A					

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
Due to the limited number of qualifying storm events and the fact that most of the outfalls are tidally influenced, in 2023, B&L is focusing on collecting wet weather samples from the upgradient structures closest to the outfalls to the maximum extent practicable. B&L will continue to attempt to collect wet weather samples from the impaired outfalls until all known locations are sampled. Once the remaining impaired wet weather samples are collected, B&L will focus on the wet weather follow-up investigations.		

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 ID	Latitude	Longitude	Sample Date	Outfall Turbidity (NTU)	Turbidity Upstream (NTU)	Fecal Coliform (col/100mL)	Enterococcus (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab
4TH-1	41.326394	-72.175706	4/13/2020	5.57	7.52	1190	1170	0.72	0.094	Phoenix
			9/1/2021	3.37	3.56	238	175	0.94	0.172	Phoenix
EWHARF-1	41.327666	-72.1740938	9/28/2018	4.74	0.24	*	3870	5.58	0.058	Phoenix
			9/1/2021	1.46	1.88	738	3870	3.47	<0.010	Phoenix
JORCIR-1	41.3181786	-72.1510001	12/30/2019	n/a	n/a	*	933	n/a	n/a	Phoenix
OLDNOR-3	41.4031439	-72.112051	9/25/2018	n/a	n/a	3260	8160	0.52	0.117	Phoenix
WINDW-1	41.3169534	-72.1568046	4/13/2020	n/a	n/a	882	3650	n/a	n/a	Phoenix
WINT-1	41.4009492	-72.1114224	9/25/2018	18.79	13.59	11200	4610	0.4	0.09	Phoenix
Notes: n/a - Not Applicable * = Missing parameter; outfall is impaired for bacteria and will need to be resampled for fecal coliform										

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).

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

Provide sample data for outfalls where flow is observed. Only include Pollutant of concern data for outfalls that discharge into stormwater impaired waterbodies.

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)	MBAs (mg/L)	E. Coli (col/100ml)	Lab	Investigation Required
ALMO-1	41.35523994	-72.131162	4/1/2020	1	0	94.1	0.0424	10.3	0.25	< 10	Phoenix	NO
AVERY-1	41.34467066	-72.1372108	4/1/2020	0	0.02	259	0.126	12.3	0.25	20	Phoenix	NO
AVERY-2	41.3439838	-72.1380138	6/20/2018	0.25	0.07	675	0.33	20.85	0.25	63	Phoenix	NO
BLN-1	41.339836	-72.1454662	10/24/2019	0	0.06	139	0.0663	12.4	0.25	< 10	Phoenix	NO
BRAM-2	41.31948893	-72.115328	5/5/2020	0	0.02	140	0.0663	14	0.25	< 10	Phoenix	NO
CHAP-1	41.3767821	-72.1225643	2/20/2020	0.5	0.13	319	0.155	6.2	0.5	< 10	Phoenix	YES
CHAP-3	41.3757661	-72.1271063	6/18/2018	0	0.02	758	0.39	22.46	0.25	< 10	Phoenix	NO
COLL-1	41.3831457	-72.1109513	7/21/2020	3	0	807	0.391	27.1	>3	>24200	Phoenix	YES
CROYD-1	41.32934221	-72.1712939	5/5/2020	0	0	514	0.229	13.3	0.25	< 10	Phoenix	NO
DIMM-1	41.31183406	-72.114509	5/12/2020	0.25	0	147	0.698	12.7	0.25	< 10	Phoenix	NO
DOYLE-1	41.348095	-72.1709064	7/21/2020	0.25	0.03	217	0.102	20.2	0.25	41	Phoenix	NO
FULM-1E	41.352156	-72.174253	5/12/2020	0	0.01	172	0.07	12.7	0.25	85	Phoenix	NO
FULM-2	41.3524608	-72.1741223	6/20/2018	0.5	0.11	360	0.17	16.89	0.5	393	Phoenix	YES
GOUN-1	41.31748414	-72.1195059	5/5/2020	0.25	0.11	125	0.0596	13.4	0	10	Phoenix	NO
HICK-1	41.384342	-72.143777	1/15/2020	0	0.16	177	0.0834	10.4	0.25	< 10	Phoenix	NO
HIGRID-1	41.33065358	-72.170537	1/22/2020	0.25	0.06	156	0.0748	8.5	0.25	10	Phoenix	NO
INA-1	41.34965252	-72.1677084	4/1/2020	1	0.01	197	0.0952	7.7	0.25	< 10	Phoenix	YES
LAUCRE-1	41.32994152	-72.1350245	1/29/2020	0.25	0	204	0.0942	7.8	0.25	< 10	Phoenix	NO
LAUCRE-2	41.3299966	-72.1294099	1/29/2020	0	0	187	0.0887	9.6	0.25	< 10	Phoenix	NO
LONG-1	41.34282613	-72.1510046	3/10/2020	0	0.16	229.4	0.11	7.3	0.25	< 10	Phoenix	NO
MAYF-1	41.31768494	-72.1181761	5/5/2020	0.25	0.44	201	0.096	14.5	1	< 10	Phoenix	NO
OLDCOL-1	41.4210875	-72.132232	8/27/2018	0.25	0.39	344	0.16	23.45	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)	MBAs (mg/L)	E. Coli (col/100ml)	Lab	Investigation Required
PEPP-1	41.33037816	-72.1147537	5/5/2020	0.25	0	355	0.171	14.4	0.25	< 10	Phoenix	NO
PILG-1	41.3770728	-72.1226691	6/18/2018	0.25	0.05	210	0.11	21.34	0.25	< 10	Phoenix	NO
POND-1	41.38986574	-72.1398288	1/15/2020	0	0.05	231	0.111	9.9	0	30	Phoenix	NO
SHORD-4	41.315372	-72.146904	6/28/2019	0.25	0.03	215	0.12	18.21	0.25	520	Phoenix	NO
SHORD-6	41.3095762	-72.1440754	10/24/2019	0.25	0	228	0.105	18	0.25	530	Phoenix	NO
STOHEI-3	41.35058433	-72.1595844	4/1/2020	0	0.01	222	0.106	10.7	0.25	< 10	Phoenix	NO
STOHEI-4	41.35009308	-72.1590696	3/9/2020	0	0.22	279.9	0.13	7.4	0	< 10	Phoenix	NO
SUSA-1	41.31990528	-72.1254505	5/12/2020	0.25	0.04	69	0.0323	13.5	0.25	10	Phoenix	NO
SUSA-2	41.31910337	-72.1253908	5/5/2020	0.25	0.16	86.6	0.0404	11.1	0.25	< 10	Phoenix	NO
SUSA-6	41.31570628	-72.1251014	5/5/2020	0.25	0.05	130	0.0615	14.2	0.25	< 10	Phoenix	NO
TANGLE-2	41.4052925	-72.1158648	6/18/2018	0.25	0.19	81	0.04	25.12	0.5	598	Phoenix	NO
TOTO-1	41.3901968	-72.1115598	10/25/2019	0.25	0.01	59	0.03	24.04	0.5	10	Phoenix	NO
TWINHA-1	41.366985	-72.132366	3/9/2020	0	0	404.9	0.19	6.7	0.25	< 10	Phoenix	NO
TWINLA-1	41.390183	-72.141697	1/15/2020	0.25	0	78.1	0.037	10.3	0.25	< 10	Phoenix	NO
TWINLA-2	41.387082	-72.1361025	6/18/2018	0.25	0.51	190	0.09	23.69	0	< 10	Phoenix	NO
TWINLA-3	41.38603	-72.137506	1/3/2020	0	0.02	118	0.089	2.8	0.25	< 10	Phoenix	NO
VILL-1	41.33200058	-72.1340978	3/10/2020	0.25	0	305	0.148	7.3	0.75	< 10	Phoenix	NO
VILL-2	41.33200059	-72.1340979	1/29/2020	3	0	243	0.116	14	0.25	< 10	Phoenix	NO
WESTW-1	41.3104625	-72.1243861	8/24/2018	0	0.06	537	0.26	27.5	0.25	84	Phoenix	NO
WINRID-1	41.35631863	-72.1307051	4/1/2020	0.5	0.52	328	0.158	11.8	0.25	20	Phoenix	YES

Note:

STOHEI-1 and STOHEI-2 were screened and later identified as no longer being municipal outfalls

Table 2.1b - Class SA & SB Impaired Waterbody Samples

Outfall ID	Latitude	Longitude	Sample Date	Turbidity (NTU)	Turbidity Upstream (NTU)	Enterococcus (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab	Investigation Required
4TH-1	41.326394	-72.175706	4/25/2019	1.09	0	< 10	1.31	0.056	Phoenix	NO
ALEW-1	41.31653	-72.1034217	10/25/2019	n/a	n/a	51	n/a	n/a	Phoenix	NO
BALD-1	41.336172	-72.144587	1/29/2020	n/a	n/a	< 10	n/a	n/a	Phoenix	NO
EWHARF-1	41.327666	-72.1740938	4/25/2019	0.02	0	< 10	4.68	10	Phoenix	YES
JORCIR-2	41.316541	-72.151863	5/5/2020	n/a	n/a	496	n/a	n/a	Phoenix	NO
NIARIV-1	41.35634543	-72.17600201	4/1/2020	0.84	0.86	< 10	2.93	< 0.01	Phoenix	YES
NIARIV-2	41.3532664	-72.1762042	4/25/2019	0.22	0.3	< 10	0.46	0.039	Phoenix	NO
NIARIV-8	41.3284041	-72.1740437	2/5/2019	2.81	2.75	107	2.63	0.252	Phoenix	YES
OIL-1	41.3699747	-72.1922504	10/25/2019	4.04	3.1	73	0.77	0.032	Phoenix	NO

Table 2.1b - Class SA & SB Impaired Waterbody Samples

Outfall ID	Latitude	Longitude	Sample Date	Turbidity (NTU)	Turbidity Upstream (NTU)	Enterococcus (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab	Investigation Required
OLDNOR-3	41.4031439	-72.112051	8/24/2018	n/a	n/a	173	1.5	0.105	Phoenix	NO
SHORD-3S	41.3175383	-72.1472038	10/24/2019	n/a	n/a	30	n/a	n/a	Phoenix	NO
WINDW-3	41.3131931	-72.1603927	10/25/2019	n/a	n/a	< 10	n/a	n/a	Phoenix	NO
Notes: n/a - Not Applicable TANGLE-2 is no longer an impaired outfall so it is reported with the non-impaired data table										

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
Due to the limited number of qualifying storm events and the fact that most of the outfalls are tidally influenced, in 2023, B&L is focusing on collecting wet weather samples from the upgradient structures closest to the outfalls to the maximum extent practicable. B&L will continue to attempt to collect wet weather samples from the impaired outfalls until all known locations are sampled. Once the remaining impaired wet weather samples are collected, B&L will focus on the wet weather investigation samples.									

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.

Outfall ID	Receiving Water	System Vulnerability Factors
CHAP-1	Thames River Basin	Sanitary and Storm Drain Infrastructure >40 years Old
EWHARF-1	LIS EB Inner - Niantic River(mouth), Niantic	Sanitary and Storm Drain Infrastructure >40 years Old; Septic with Poor Soils or Water Table Separation
FULM-2	Niantic River Basin	Sanitary and Storm Drain Infrastructure >40 years Old; Septic with Poor Soils or Water Table Separation
JORCIR-1	LIS EB Inner - Jordan Cove, Waterford	Sanitary and Storm Drain Infrastructure >40 years Old; Septic with Poor Soils or Water Table Separation
NIARIV-5	LIS EB Inner - Niantic River(mouth), Niantic	Sanitary and Storm Drain Infrastructure >40 years Old; Septic with Poor Soils or Water Table Separation
NIARIV-6	LIS EB Inner - Niantic River(mouth), Niantic	Sanitary and Storm Drain Infrastructure >40 years Old; Septic with Poor Soils or Water Table Separation
NIARIV-8	LIS EB Inner - Niantic River(mouth), Niantic	Sanitary and Storm Drain Infrastructure >40 years Old; Septic with Poor Soils or Water Table Separation
OIL-1	LIS EB Inner - Niantic River(mouth), Niantic	Sanitary and Storm Drain Infrastructure >40 years Old; Septic with Poor Soils or Water Table Separation
OLDNOR-3	LIS EB Inner – Thames River (middle)	Sanitary and Storm Drain Infrastructure >40 years Old; Septic with Poor Soils or Water Table Separation
OSWE-2	LIS EB Inner - Niantic River(mouth), Niantic	Sanitary and Storm Drain Infrastructure >40 years Old; Septic with Poor Soils or Water Table Separation
SHORD-3	Southeast Shoreline Basin	Sanitary and Storm Drain Infrastructure >40 years Old; Septic with Poor Soils or Water Table Separation
VILL-2	Southeast Shoreline Basin	Septic with Poor Soils or Water Table Separation
WINT-1	LIS EB Inner – Thames River (middle)	Sanitary and Storm Drain Infrastructure >40 years Old; Septic with Poor Soils or Water Table Separation
WINT-2	LIS EB Inner – Thames River (middle)	Sanitary and Storm Drain Infrastructure >40 years Old; Septic with Poor Soils or Water Table Separation

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.
- Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas.
- 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).
- 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

Pipe ID	Outfall ID	Structure Type	Sample Date	Outfall Turbidity (NTU)	Turbidity Upstream (NTU)	Ammonia (mg/L)	Chlorine (mg/L)	Surfactants (mg/L)	Ecoli (col/100ml)	Enterococcus (col/100mL)	Fecal Coliform (col/100mL)	Nitrogen (mg/L)	Phosphorous (mg/L)	Lab
OLDNOR-3	OLDNOR-3	Outfall	5/21/2021	n/a	n/a	0	0.12	1.8	n/a	235	74	5.2	0.827	Phoenix
DMH19-1- NIARIV-8	NIARIV-8	Outfall	5/21/2021	0.27	0.93	0	0.01	0.58	n/a	31	41	1.61	0.046	Phoenix
CB3804-DMH486		Manhole	5/21/2021	2.2	0.93	0	0.04	0.18	n/a	<10	<10	4.9	0.638	Phoenix
CB3806-DMH486		Manhole	5/21/2021	11.8	0.93	0	0.04	0.1	n/a	302	20	4.32	0.094	Phoenix
CB3795-CB3757		Catch Basin	5/21/2021	0.24	0.93	0	0.07	0.1	n/a	20	<10	3.22	0.052	Phoenix
CB3756-CB3757		Catch Basin	5/21/2021	0.44	0.93	0	0.01	0.07	n/a	110	86	0.89	0.016	Phoenix
EWHARF-1		Outfall	5/13/2021	1.2	1.2	0	0.02	0.08	n/a	10	<10	3.81	0.013	Phoenix
UNK-5-CB3892	EWHARF-1	Catch Basin	5/13/2021	0.95	1.2	0	0.05	0.08	n/a	<10	<10	3.96	<0.010	Phoenix
CB3817-CB3799		Manhole	5/13/2021	3.83	1.2	0	0.01	0.27	n/a	174	<10	4.44	0.183	Phoenix
COLL-1	COLL-1	Outfall	5/13/2021	n/a	n/a	0	0	0.23	6870	n/a	n/a	n/a	n/a	Phoenix
Inlet-1-CB2342		Catch Basin	5/13/2021	n/a	n/a	0	0.29	0.16	2600	n/a	n/a	n/a	n/a	Phoenix
4TH-1	4TH-1	Outfall	5/13/2021	0.68	3.75	0.25	0.18	0.28	n/a	<10	<10	0.71	0.128	Phoenix
CB1664- DMH434		Manhole	5/13/2021	2.94	3.75	0	0.02	0.23	n/a	<10	<10	0.38	0.089	Phoenix
DMH436-DMH437		Manhole	5/13/2021	1.85	3.75	0	0	0.39	n/a	10	<10	0.83	0.057	Phoenix

Notes:

n/a - Not Applicable

3.3 Wet weather investigation outfall sampling data


Outfall ID	Sample date	Ammonia	Chlorine	Surfactants
It is anticipated that this will be initiated in 2023 and will be completed to the maximum extent practicable. B&L is focusing wet weather sampling efforts on impaired outfalls and the annual priority outfalls prior to conducting wet weather investigations.				

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	Estimated Volume of Flow Removed
COLL-1	7 College Ct	Outfall location looks to be discharging sewage from septic tank/leaching field located at 7 College Ct. Homeowner even noted they installed the system themselves.	Visually in field and field/lab testing	7/21/2020 and 5/13/21			
EWHARF-1	5-13 E Wharf Rd and 4-7 High Ridge Dr	Pipes from CB3814 is discharging high levels of nitrogen likely coming from 5 E Wharf Rd. Pipes from 6 to 13 E Wharf Rd discharge is exceeding levels of chlorine, surfactants, and nitrogen. Lateral pipe that's likely coming from 7 High Ridge Dr discharge is exceeding levels of chlorine and nitrogen	Visually in field and field/lab testing	5/13/2021			
OLDNOR-3		Investigation was initiated but was unable to be completed because the system was completely dry. This area will be reviewed during spring of 2023 when the water table levels are higher.					
NIARIV-8		Investigation was initiated but was unable to be completed because a branch of the system has not yet been fully mapped. Once mapping of area is complete further investigation will commence.					
4TH-1		Investigation was initiated but was unable to be completed because a manhole cover could not be lifted for inspection. Awaiting Town's assistance in order to further complete the investigation					

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: Robert J. Brule First Selectman	Print name: T.J. Therriault, EIT, CDT Barton & Loguidice, LLC
Signature / Date:	Signature / Date:  3/28/2023
Email: firstsel@waterfordct.org	Email: tjt@bartonandloguidice.com

Catchment ID		Receiving Water	Wet Sampling Results Indicate Likely Illicit Discharge? ¹	Dry Screening Results Indicate Likely Illicit Discharge? ^{1a}	Discharging to Area of Concern to Public Health? ²	Frequency of Past Discharge Complaints	Receiving Water Quality ³	Density of Generating Sites ⁴	Age of Development/ Infrastructure ⁵	Historic Combined Sewers or Septic? ⁶	Aging Septic? ⁷	Culverted Streams? ⁸	Additional Characteristics				
Old Catchment ID	New Catchment ID	Information Source	Catchment inspections and sample results	Catchment inspections and sample results	GIS Maps	Municipal Staff	Impaired Waters List	Land Use/GIS Maps, Aerial Photography	Land Use Information, Visual Observation	Municipal Staff, GIS Maps	Land Use, Municipal Staff	GIS and Stormwater system Maps	Other	Sample Score	Total Score	Priority Ranking	
		See Note	Score is determined using an extrapolated formula based on the results		Yes = 3 No = 0	Frequent = 3 Occasional = 2 d	Poor = 3 Fair = 2 Good = 0	High = 3 Medium = 2 Low = 1	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	Yes = 3 No = 0	Yes = 3 No = 0	TBD				
	EWHARF-1	LIS EB Inner - Niantic River(mouth), Niantic	13	11	0		3		3			0		24	30	High	
	OLDNOR-3	LIS EB Inner – Thames River (middle)	8	10	0		2		3			0		18	23	High	
	4TH-1	LIS EB Inner - Niantic River(mouth), Niantic	8	3	3		3		3			0		11	20	High	
	NIARIV-8	LIS EB Inner - Niantic River(mouth), Niantic	0	14	0		3		3			0		14	20	High	
	NIARIV-1	LIS EB Inner - Niantic River(mouth), Niantic	1	12	0		3		3			0		13	19	High	
	WINDW-1	LIS EB Inner - Jordan Cove, Waterford	8	3	3		3		2			0		11	19	High	
20234	COLL-1	Thames River Basin	0	13	0		0		3			0		13	16	High	
	JORCIR-2	LIS EB Inner - Jordan Cove, Waterford	0	9	0		3		3			0		9	15	High	
	WINT-1	LIS EB Inner – Thames River (middle)	10	0	0		2		3			0		10	15	High	
	ALEW-1	LIS EB Inner - Alewife Cove, Waterford/New London	0	8	0		3		3			0		8	14	High	
	WESTW-1	Southeast Shoreline Basin	0	10	0		0		3			0		10	13	High	
	JORCIR-1	LIS EB Inner - Jordan Cove, Waterford	5	0	0		3		3			0		5	11	High	
	RIVSI-2	LIS EB Inner - Niantic River(mouth), Niantic	5	0	0		3		3			0		5	11	High	
	SHORD-3S	Southeast Shoreline Basin	5	3	0		0		3			0		8	11	High	
	NIARIV-2	LIS EB Inner - Niantic River(mouth), Niantic	3	1	0		3		3			0		4	10	High	
	PARK-1	LIS EB Inner - Niantic River(mouth), Niantic	4	0	0		3		3			0		4	10	High	
10196	2ND-1	LIS EB Inner - Niantic River(mouth), Niantic	0	0	3		3		3			0		0	9	High	
	2ND-4	LIS EB Inner - Niantic River(mouth), Niantic	3		0		3		3			0		3	9	High	
	NIARIV-5	LIS EB Inner - Niantic River(mouth), Niantic	3	0	0		3		3			0		3	9	Low	
	NIARIV-6	LIS EB Inner - Niantic River(mouth), Niantic	3	0	0		3		3			0		3	9	Low	
	OIL-1	LIS EB Inner - Niantic River(mouth), Niantic	1	2	0		3		3			0		3	9	Low	
	OSWE-8	LIS EB Inner - Niantic River (mouth), Niantic	0	0	3		3		3			0		0	9	Low	
	WINT-2	LIS EB Inner – Thames River (middle)	4	0	0		2		3			0		4	9	Low	
	MAYF-1	Southeast Shoreline Basin	0	5	0		0		3			0		5	8	Low	
	WINDW-3	LIS EB Shore - Outer Jordan Cove, Waterford	0	3	0		3		2			0		3	8	Low	
	10181	CHAP-1	Thames River Basin	0	4	0		0		3			0		4	7	High
10015	OLDCOL-1	Sandy Brook	0	4	0		0		3			0		4	7	Low	
	OSWE-5	LIS EB Inner – Niantic River (mouth) Niantic	1	0	0		3		3			0		1	7	Low	
20192	TANGLE-2	Hunts Brook Basin	0	4	0		0		3			0		4	7	Low	
20183	WINRID-1	Jordan Brook Basin	0	5	0		0		2			0		5	7	High	
10085	2ND-2	LIS EB Inner - Niantic River(mouth), Niantic	0		0		3		3			0		0	6	Low	
	2ND-3	LIS EB Inner - Niantic River(mouth), Niantic	0		0		3		3			0		0	6	Low	
	BALD-1	LIS EB Inner – Jordan Cove Waterford	0	0	0		3		3			0		0	6	Low	
10072	BALD-2	LIS EB Inner – Jordan Cove Waterford	0	0	0		3		3			0		0	6	Low	
	BEACH-1	LIS EB Shore – Outer Jordan Cove Waterford	0	0	0		3		3			0		0	6	Low	
10110	CLARLN-1	Fenger Brook (Waterford)-01	0	0	0		3		3			0		0	6	Low	
	DIVI-1	LIS EB Inner - Jordan Cove, Waterford	0	0	0		3		3			0		0	6	Low	
	FULM-2	Niantic River Basin	0	3	0		0		3			0		3	6	High	
	GLEN-1	LIS EB Inner - Alewife Cove, Waterford/New London	0	0	0		3		3			0		0	6	Low	
	HICK-1	Thames River Basin	0	3	0		0		3			0		3	6	Low	
	JORRD-2	LIS EB Inner – Jordan Cove Waterford	0	0	0		3		3			0		0	6	Low	
	LAMP-1	LIS EB Inner – Jordan Cove Waterford	0	0	0		3		3			0		0	6	Low	
	LINC-1	LIS EB Inner – Jordan Cove Waterford	0	0	0		3		3			0		0	6	Low	
	LONG-1	Jordan Brook Basin	0	3	0		0		3			0		3	6	Low	
	MAGO-1	LIS EB Inner - Niantic River(mouth), Niantic	0	0	0		3		3			0		0	6	Low	
	20120	MINER-2	Southeast Shoreline Basin	0	0	3		0		3			0		0	6	Low
	10078	NIARIV-4	LIS EB Inner - Niantic River(mouth), Niantic	0	0	0		3		3			0		0	6	Low
	10047	NIARIV-7	LIS EB Inner - Niantic River(mouth), Niantic	0	0	0		3		3			0		0	6	Low
	10073	OIL-2	LIS EB Inner - Niantic River(mouth), Niantic	0	0	0		3		3			0		0	6	Low
	10087	OLDCOL-2	Hunts Brook Basin			0		0		3			3		0	6	Low
10173	OLDNOR-11	Hunts Brook Basin			0		0		3			3		0	6	Low	
20250	OSWE-1	LIS EB Inner - Niantic River (mouth), Niantic	0	0	0		3		3			0		0	6	Low	
20249	PARK-2	LIS EB Inner – Niantic River (mouth) Niantic	0	0	0		3		3			0		0	6	Low	
	PINE-1	Fenger Brook (Waterford)-01	0	0	0		3		3			0		0	6	Low	
	RIDG-2	LIS EB Inner – Alewife Cove	0	0	0		3		3			0		0	6	Low	
20243	ROSEMA-2	Hunts Brook Basin	0	0	0		0		3			3		0	6	Low	
	SHAW-1	LIS EB Inner - Niantic River(mouth), Niantic	0	0	0		3		3			0		0	6	Low	
	SHODR-1	LIS EB Inner - Alewife Cove, Waterford/New London	0	0	0		3		3			0		0	6	Low	
20107	SHODR-2	LIS EB Inner - Alewife Cove, Waterford/New London	0	0	0		3		3			0		0	6	Low	
	SHODR-3	LIS EB Inner - Alewife Cove, Waterford/New London	0	0	0		3		3			0		0	6	Low	
20106	SHORD-1	LIS EB Inner – Jordan Cove Waterford	0	0	0		3		3			0		0	6	Low	
10066	SHORD-2	LIS EB Inner – Jordan Cove Waterford	0	0	0		3		3			0		0	6	Low	
10064	SHORD-4	Southeast Shoreline Basin	0	3	0		0		3			0		3	6	Low	
	STAN-1	LIS EB Inner - Niantic River(mouth), Niantic	0	0	0		3		3			0		0	6	Low	
	SUNS-2	Hunts Brook Basin			0		0		3			3		0	6	Low	
	SUNS-3	Hunts Brook Basin			0		0		3			3		0	6	Low	
	SUNS-4	Hunts Brook Basin			0		0		3			3		0	6	Low	
	SUNS-5	Hunts Brook Basin			0		0		3			3		0	6	Low	
	SUNS-6	Hunts Brook Basin			0		0		3			3		0	6	Low	
	SUNS-7	Hunts Brook Basin			0		0		3			3		0	6	Low	
	SUSA-2	Southeast Shoreline Basin	0	3	0		0		3			0		3	6	Low	

Catchment ID		Receiving Water	Wet Sampling Results Indicate Likely Illicit Discharge? ¹	Dry Screening Results Indicate Likely Illicit Discharge? ^{1a}	Discharging to Area of Concern to Public Health? ²	Frequency of Past Discharge Complaints	Receiving Water Quality ³	Density of Generating Sites ⁴	Age of Development/ Infrastructure ⁵	Historic Combined Sewers or Septic? ⁶	Aging Septic? ⁷	Culverted Streams? ⁸	Additional Characteristics	Sample Score	Total Score	Priority Ranking
Old Catchment ID	New Catchment ID	Information Source	Catchment inspections and sample results	Catchment inspections and sample results	GIS Maps	Municipal Staff	Impaired Waters List	Land Use/GIS Maps, Aerial Photography	Land Use Information, Visual Observation	Municipal Staff, GIS Maps	Land Use, Municipal Staff	GIS and Stormwater system Maps	Other			
		See Note	Score is determined using an extrapolated formula based on the results		Yes = 3 No = 0	Frequent = 3 Occasional = 2 d	Poor = 3 Fair = 2 Good = 0	High = 3 Medium = 2 Low = 1	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	Yes = 3 No = 0	Yes = 3 No = 0	TBD			
	CROSRD-2	Niantic River Basin	0	0	0		0		3			0		0	3	Low
10053	CROSRD-3	Niantic River Basin	0	0	0		0		3			0		0	3	Low
	CROSRD-6	Niantic River Basin	0	0	0		0		3			0		0	3	Low
	CROSRD-7	Niantic River Basin			0		0		3			0		0	3	Low
20247	CROSRD-8	Niantic River Basin			0		0		3			0		0	3	Low
10183	DANIEL-1	Niantic River Basin			0		0		3			0		0	3	Low
	DAVID-1	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
10093	DAY-1	Thames River Basin			0		0		3			0		0	3	Low
	DDCB-BUTLER-1	Latimer Brook Basin			0		0		3			0		0	3	Low
	DDCB-GrTREE-1	Hunts Brook Basin			0		0		3			0		0	3	Low
	DDCB-GrTREE-2	Hunts Brook Basin			0		0		3			0		0	3	Low
	DDCB-GrTREE-3	Hunts Brook Basin			0		0		3			0		0	3	Low
	DDCB-GrTREE-4	Hunts Brook Basin			0		0		3			0		0	3	Low
10046	DDCB-LOGHIL-1	Jordan Brook Basin			0		0		3			0		0	3	Low
20253	DDCB-LOGHIL-2	Jordan Brook Basin			0		0		3			0		0	3	Low
10020	DDCB-OLDCOL-1	Hunts Brook Basin			0		0		3			0		0	3	Low
	DDCB-OSWE-1	Niantic River Basin			0		0		3			0		0	3	Low
	DDCB-OSWE-2	Niantic River Basin			0		0		3			0		0	3	Low
	DDCB-PARKWS-1	Niantic River Basin			0		0		3			0		0	3	Low
	DDCB-STONEY-1	Niantic River Basin			0		0		3			0		0	3	Low
	DDCB-TOTO-1	Church Brook			0		0		3			0		0	3	Low
	DDCB-TOTO-2	Church Brook			0		0		3			0		0	3	Low
10029	DDCB-VAUX-1	Thames River Basin			0		0		3			0		0	3	Low
	DEVO-1	Jordan Brook Basin	0	0			0		3			0		0	3	Low
	DOUG-1	Jordan Brook Basin			0		0		3			0		0	3	Low
	DOUG-2	Jordan Brook			0		0		3			0		0	3	Low
	DOUG-3	Jordan Brook Basin			0		0		3			0		0	3	Low
	DOUG-4	Jordan Brook Basin			0		0		3			0		0	3	Low
	EAST-1	Niantic River Basin	0	0	0		0		3			0		0	3	Low
	FAIR-1	Thames River Basin	0	0	0		0		3			0		0	3	Low
10179	FITZ-1	Thames River Basin	0	0	0		0		3			0		0	3	Low
	FITZ-2	Church Brook	0	0	0		0		3			0		0	3	Low
	FOG-1	Perry Pond	0	0	0		0		3			0		0	3	Low
	FOG-2	Jordan Brook Basin			0		0		3			0		0	3	Low
10003	FOG-3	Nevins Brook			0		0		3			0		0	3	Low
	FOG-4	Nevins Brook			0		0		3			0		0	3	Low
	FORE-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	GOUN-1	Southeast Shoreline Basin	0	1	0		0		2			0		1	3	Low
10076	GRAH-1	Jordan Brook	0	0	0		0		3			0		0	3	Low
10001	GrTREE-1	Hunts Brook Basin			0		0		3			0		0	3	Low
20235	GrTREE-2	Hunts Brook Basin			0		0		3			0		0	3	Low
20231	HAMA-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	HANS-1	Niantic River Basin			0		0		3			0		0	3	Low
20229	HIGH-1	Jordan Brook Basin			0		0		3			0		0	3	Low
	HILL-1	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
20025	HILLCRE-1	Green Swamp Brook			0		0		3			0		0	3	Low
10043	HUNTS-1	Hunts Brook Basin			0		0		3			0		0	3	Low
10044	HUNTS-2	Hunts Brook Basin			0		0		3			0		0	3	Low
10180	HUNTS-3	Hunts Brook Basin			0		0		3			0		0	3	Low
10116	HUNTS-4	Hunts Brook Basin			0		0		3			0		0	3	Low
	INDUS-1	Oil Mill Brook Basin	0	0	0		0		3			0		0	3	Low
20241	INDUS-2	Jordan Brook			0		0		3			0		0	3	Low
	JORRD-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
30003	JORTER-1	Jordan Brook	0	0	0		0		3			0		0	3	Low
10199	JOSA-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
10199	KENY-1	Thames River Basin	0	0	0		0		3			0		0	3	Low
20228	KENY-2	Thames River Basin	0	0	0		0		3			0		0	3	Low
10074	KINGFI-1	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
10012	KINGFI-2	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
10013	KINGFI-3	Nevins Brook	0	0	0		0		3			0		0	3	Low
10149	LIND-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
20150	LOCU-1	Niantic River Basin	0	0	0		0		3			0		0	3	Low
	LOCU-2	Niantic River Basin			0		0		3			0		0	3	Low
	LOGHIL-1	Jordan Brook Basin	0	0			0		3			0		0	3	Low
	LOGHIL-2	Jordan Brook Basin			0		0		3			0		0	3	Low
20226	MACKEN-1	Nevins Brook			0		0		3			0		0	3	Low
10070	MAPL-1	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
20218	MAPLECT-1	Thames River Basin			0		0		3			0		0	3	Low
	MAPLERD-1	Hunts Brook Basin			0		0		3			0		0	3	Low
10140	MARBUT-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
10086	MARGUY-1	Hunts Brook Basin			0		0		3			0		0	3	Low
	MARILYN-1	Jordan Brook Basin			0		0		3			0		0	3	Low
	MARLIN-1	Southeast Shoreline Basin			0		0		3			0		0	3	Low
	MARY-1	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
	MEAD-1	Thames River Basin	0	0	0		0		3			0		0	3	Low
20127	MEAD-2	Thames River Basin			0		0		3			0		0	3	Low
	MEAD-3	Thames River Basin			0		0		3			0		0	3	Low
20124	MILLW-1	Niantic River Basin	0	0	0		0		3			0		0	3	Low
10084	MILT-1	Thames River Basin	0	0	0		0		3			0		0	3	Low
20121	MILT-2	Thames River Basin			0		0		3			0		0	3	Low
10082	MINER-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	MONR-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	MULHIL-1	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
	MULHIL-2	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	MULHIL-3	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
10178	MYRO-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
20154	NEWSHO-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
20153	NIARIV-10	Niantic River Basin			0		0		3			0		0	3	Low
20153	NIARIV-3	Niantic River Basin	0	0	0		0		3			0		0	3	Low
	NIARIV-9	Niantic River Basin			0		0		3			0		0	3	Low
	NICH-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	NICH-2	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
10128	NICH-3	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
30001	NILHIL-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
10141	NILHIL-2	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
20182	NORTH-1	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
	NORTH-2	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
	NORTH-3	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
	NORTH-4	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
	NORWOD-1	Hunts Brook Basin	0	0	0		0		3			0		0	3	Low
	OIL-3	Oil Mill Brook			0		0		3			0		0	3	Low
	OIL-4	Oil Mill Brook			0		0		3			0		0	3	Low
	OLDBAR-1	Hunts Brook Basin	0	0	0		0		3			0		0	3	Low
	OLDBAR-2	Hunts Brook Basin	0	0	0		0		3			0		0	3	Low
	OLDMIL-1	Hunts Brook Basin	0	0	0		0		3			0		0	3	Low
	OLDNOR-1	Hunts Brook Basin	0	0	0		0		3			0		0	3	Low
	OLDNOR-12	Church Brook			0		0		3			0		0	3	Low
	OLDNOR-6	Church Brook	0	0	0		0		3			0		0	3	Low
	OLDNOR-7	Thames River Basin	0	0	0		0		3			0		0	3	Low
	OLDNOR-8	Thames River Basin	0	0	0		0		3			0		0	3	Low
10061	OSWE-10	Niantic River Basin			0		0		3			0		0	3	Low
	OSWE-4	Niantic River Basin	0	0	0		0		3			0		0	3	Low
	OSWE-9	Niantic River Basin			0		0		3			0		0	3	Low
	OVER-1	Jordan Brook Basin			0		0		3			0		0	3	Low

Catchment ID		Receiving Water	Wet Sampling Results Indicate Likely Illicit Discharge? ¹	Dry Screening Results Indicate Likely Illicit Discharge? ^{1a}	Discharging to Area of Concern to Public Health? ²	Frequency of Past Discharge Complaints	Receiving Water Quality ³	Density of Generating Sites ⁴	Age of Development/ Infrastructure ⁵	Historic Combined Sewers or Septic? ⁶	Aging Septic? ⁷	Culverted Streams? ⁸	Additional Characteristics	Sample Score	Total Score	Priority Ranking
Old Catchment ID	New Catchment ID	Information Source	Catchment inspections and sample results	Catchment inspections and sample results	GIS Maps	Municipal Staff	Impaired Waters List	Land Use/GIS Maps, Aerial Photography	Land Use Information, Visual Observation	Municipal Staff, GIS Maps	Land Use, Municipal Staff	GIS and Stormwater system Maps	Other			
		See Note	Score is determined using an extrapolated formula based on the results		Yes = 3 No = 0	Frequent = 3 Occasional = 2 d	Poor = 3 Fair = 2 Good = 0	High = 3 Medium = 2 Low = 1	High = 3 Medium = 2 Low = 1	Yes = 3 No = 0	Yes = 3 No = 0	Yes = 3 No = 0	TBD			
20195	SHORD-7	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
20236	SNOW-1	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
	SOLJ-1	Thames River Basin	0	0	0		0		3			0		0	3	Low
10025	SOLJ-2	Thames River Basin	0	0	0		0		3			0		0	3	Low
20007	SOLJ-3	Thames River Basin			0		0		3			0		0	3	Low
20006	SPIN-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	STOHEI-3	Jordan Brook Basin	0	1	0		0		2			0		1	3	Low
	STONE-1	Niantic River Basin	0	0	0		0		3			0		0	3	Low
10144	STONE-2	Niantic River Basin			0		0		3			0		0	3	Low
	STONEY-1	Niantic River Basin			0		0		3			0		0	3	Low
	STONEY-2	Niantic River Basin			0		0		3			0		0	3	Low
10039	SUNS-1	Hunts Brook Basin	0	0	0		0		3			0		0	3	Low
	SUSA-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	SUSA-3	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	SUSA-5	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	TANGLE-1	Hunts Brook Basin	0	0	0		0		3			0		0	3	Low
	TIFF-1	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
	TOTO-2	Thames River Basin	0	0	0		0		3			0		0	3	Low
	TRUM-2	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
	TWINLA-4	Thames River Basin	0	0	0		0		3			0		0	3	Low
	UNCAS-1	Thames River Basin			0		0		3			0		0	3	Low
	UNCAS-2	Hunts Brook Basin			0		0		3			0		0	3	Low
	UPRBAR-1	Thames River Basin	0	0	0		0		3			0		0	3	Low
	VALE-1	Niantic River Basin	0	0	0		0		3			0		0	3	Low
	VAUX-1	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
	VAUX-10	Thames River Basin			0		0		3			0		0	3	Low
	VAUX-11	Thames River Basin			0		0		3			0		0	3	Low
	VAUX-12	Lake Brandegee			0		0		3			0		0	3	Low
20200	VAUX-13	Lake Brandegee			0		0		3			0		0	3	Low
	VAUX-14	Hunts Brook Basin			0		0		3			0		0	3	Low
10034	VAUX-15	Jordan Brook Basin			0		0		3			0		0	3	Low
10083	VAUX-2	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
	VAUX-3	Hunts Brook Basin	0	0	0		0		3			0		0	3	Low
	VAUX-4	Thames River Basin	0	0	0		0		3			0		0	3	Low
	VAUX-6	Thames River Basin	0	0	0		0		3			0		0	3	Low
10171	VAUX-8	Thames River Basin			0		0		3			0		0	3	Low
	VAUX-9	Thames River Basin			0		0		3			0		0	3	Low
	WALL-1	Jordan Brook Basin	0	0	0		0		3			0		0	3	Low
	WAY-1	Oil Mill Brook			0		0		3			0		0	3	Low
	WESTW-2	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
10148	WESTW-3	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	WESTW-4	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
10050	WIEM-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	WILL-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	WILL-2	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	WOLAND-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	WOLAWN-1	Nevins Brook	0	0	0		0		3			0		0	3	Low
	WOODS-1	Southeast Shoreline Basin	0	0	0		0		3			0		0	3	Low
	ARROW-1	Niantic River Basin	0	0	0		0		2			0		0	2	Low
	ARROW-2	Niantic River Basin			0		0		2			0		0	2	Low
10147	ARROW-3	Niantic River Basin			0		0		2			0		0	2	Low
10146	DOYLE-1	Niantic River Basin	0	0	0		0		2			0		0	2	Low
	ELAKE-1	Lake Brandegee	0	0	0		0		2			0		0	2	Low
	GIOV-1	Jordan Brook Basin	0	0	0		0		2			0		0	2	Low
	GIOV-2	Jordan Brook Basin			0		0		2			0		0	2	Low
	GIOV-3	Jordan Brook Basin			0		0		2			0		0	2	Low
	HICK-2	Thames River Basin	0	0	0		0		2			0		0	2	Low
	HICK-3	Thames River Basin			0		0		2			0		0	2	Low
	LLOYD-1	Southeast Shoreline Basin	0	0	0		0		2			0		0	2	Low
10192	MELA-1	Southeast Shoreline Basin	0	0	0		0		2			0		0	2	Low
	MEMO-1	Southeast Shoreline Basin			0		0		2			0		0	2	Low
10182	MEMO-2	Southeast Shoreline Basin			0		0		2			0		0	2	Low
20239	PADG-1	Thames River Basin	0	0	0		0		2			0		0	2	Low
20238	PEPP-2	Southeast Shoreline Basin	0	0	0		0		2			0		0	2	Low
20240	RAIN-1	Hunts Brook Basin	0	0	0		0		2			0		0	2	Low
	WhOAK-1	Jordan Brook Basin			0		0		2			0		0	2	Low
10024	WINDW-2	Southeast Shoreline Basin	0	0	0		0		2			0		0	2	Low
10002	YORK-1	Jordan Brook Basin	0	0	0		0		2			0		0	2	Low
	YORK-2	Jordan Brook	0	0	0		0		2			0		0	2	Low
10188	YORK-3	Jordan Brook Basin	0	0	0		0		2			0		0	2	Low
10189	YORK-4	Jordan Brook Basin	0	0	0		0		2			0		0	2	Low
10190	YORK-5	Jordan Brook Basin	0	0	0		0		2			0		0	2	Low
	CONSH-1	Hunts Brook Basin			0		0		1			0		0	1	Low
10095	CROSRD-9	Niantic River Basin			0		0		1			0		0	1	Low
10096	DDCB-PARKWS-2	Niantic River Basin			0		0		1			0		0	1	Low
20257	DDCB-PARKWS-3	Niantic River Basin			0		0		1			0		0	1	Low
10035	HART-1	Jordan Brook Basin			0		0		1			0		0	1	Low
10060	HART-2	Jordan Brook Basin			0		0		1			0		0	1	Low
	KATH-1	Southeast Shoreline Basin			0		0		1			0		0	1	Low
	ONEIL-1	Southeast Shoreline Basin			0		0		1			0		0	1	Low
	PARKWS-3	Niantic River Basin			0		0		1			0		0	1	Low
	PERFAR-1	Southeast Shoreline Basin	0	0	0		0		1			0		0	1	Low
	PERFAR-2	Southeast Shoreline Basin			0		0		1			0		0	1	Low
	Impaired Waterbodies													0	1	Low

Scoring Criteria:

If there's no waterbody feature identified the receiving body source will be the name of the subregional basin the outfall resides in

¹ Previous wet weather screening results indicate impacts to impaired waters including:

- Total Nitrogen >2.5 mg/L, Total Phosphorous >0.3 mg/L,
- E. Coli >235col/100 ml for swimming areas and >410 col/100 ml for all others or,
- Total Coliform >500 col/100 ml, or Fecal coliform >31 col/100ml for Class SA and >260 Col/100ml for Class SB, or
- Enterococci >104 col/100ml for swimming areas and >500 col/100ml for all others, or
- Turbidity at outfall is more than 5 NTU greater than the in-stream sample.

^{1a} Previous dry weather screening results indicate likely sewer input if any of the following are true:

- Olfactory or visual evidence of sewage,
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine

² Catchments that discharge to or in the vicinity of any of the following areas: public beaches, recreational areas, drinking water supplies, or shellfish beds

³ Receiving water quality based on latest version of State of Connecticut Integrated Water Quality Report.

- Poor = Waters with approved TMDLs (Category 4a Waters) where illicit discharges have the potential to contain the pollutant identified as the cause of the impairment
- Fair = Water quality limited waterbodies that receive a discharge from the MS4 (Category 5 Waters)
- Good = No water quality impairments

⁴ Generating sites are institutional, municipal, commercial, or industrial sites with a potential to contribute to illicit discharges (e.g., car dealers, car washes, gas stations, garden centers, industrial manufacturing, etc.)

⁵ Age of development and infrastructure:

- High = Industrial areas greater than 40 years old and areas where the sanitary sewer system is more than 40 years old
- Medium = Developments 20-40 years old
- Low = Developments less than 20 years old

⁶ Areas once served by combined sewers and but have been separated, or areas once served by septic systems but have been converted to sanitary sewers.

⁷ Aging septic systems are septic systems 30 years or older in residential areas.

⁸ Any river or stream that is culverted for distance greater than a simple roadway crossing.