How to complete the MS4 Annual Report template

General Instructions

- Text highlighted yellow represents generic text to be updated.
- Example responses are provided in red text. Delete these if you don't use them.
- When viewing this template in Word, please click on the comment bubble icon to view the language from the permit for that requirement. For more detail on permit requirements, please see the corresponding page number in the general permit in each comment.

Part I: Summary of Minimum Control Measure (MCM) Activities

- Best Management Practice (BMP) Summary tables: Each MCM section starts with a BMP Summary table. A description of what to include in each column is below.

BMP: Self-explanatory.
Status: Provide status of BMP implementation (not started, ongoing, in progress, or complete).
- *In progress* means a task has been started but not yet completed.
- *Ongoing* means a task that is due each year or that is required to be maintained throughout the year (ex. Track disconnections of DCIA or Review site plans for stormwater quality concerns).

Activities in current reporting period: Describe ongoing and completed BMP activities. Briefly explain if you're on schedule to meet the deadline or not. If not, explain why you don't expect to meet the deadline.
Measurable Goal: Provide a measurable goal for the BMP.
Dept/Person Responsible: Identify the lead department and responsible person for that BMP. Note if it changed from the previous year. Third parties can be listed here if they are implementing the BMP. However, the permittee retains responsibility for tracking the BMP.
Date completed / projected completion date: Actual BMP completion date or when it's scheduled to be completed.
Additional details: Add any additional details including reasons for overdue BMPs, specific location of BMP if applicable, reason for adding an additional BMP.

- Other Tables: Each MCM has specific data reporting requirements. Brief descriptions and/or example responses are provided for each requirement.

Part II: Impaired waters investigation and monitoring

- Brief instructions are provided for each reporting requirement throughout Part II.

Part III: Additional IDDE Program Data

- Brief instructions are provided for each reporting requirement throughout Part III.

Part IV: Certification - Self-explanatory

Town of Essex, Connecticut
2022 Annual Report

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

Permit Number GSM 000019

MS4 General Permit
Town of Essex 2022 Annual Report
Permit Number GSM 000019
January 1, 2022 – December 31, 2022
Primary MS4 Contact:
Lisa Fasulo, MPH, REHS/RS, Director of Health / Sanitarian, 860-767-4240 x-118, lfasulo@essexct.gov

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This report documents the Town of Essex'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.

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	2022 Monthly Facebook Recycling and Environmental postings. Published on social media and town website a reminder about car washing activities, animal waste clean-up and proper removal and disposal of leaves and other vegetation and to prevent debris from entering the MS4. Link to information on free compost collection at the Essex Landfill station.	Facebook page and Town website.	Facebook Page and Town website.	Facebook posts have reach approximately 100 people per post.	Impacts to stormwater from web-based personal waste / recycling programs, animal waste clean-up and car washing activities.	Administrative Assistant to the Selectman: Alyson Finnegan / Health Department: Lisa Fasulo	

1-2	Stormwater News Article in Essex News.	Town-wide email submittal.	Essex News subscribers and Town Website	Over 1,476 email addresses were sent with a 62.5% "open" rate (922 people).	Webpage "Open" rate of 62.5%	Administrative Assistant to the Selectman: Alyson Finnegan / Health Department: Lisa Fasulo	
1-3	Updated Stormwater Brochure	Outside Essex Town Hall Voting Booth area on November 8, 2022	Brochure handouts	Approximately 20 citizens picked up the brochure and asked questions.	Approximately 20 citizens picked up the brochure and asked questions.	Health Department: Lisa Fasulo	
1.2 Address education/ outreach for pollutants of concern	Town of Essex Community Resiliency Building Workshop.	Town of Essex embarked on a certification via Sustainable CT. As part of that certification, Sustainable CT and the Nature Conservancy provided the Town with a voluntary process to conduct an assessment of Climate Change impacts. In August 2019, a municipal-based core team organized a Community Reliance Building Workshop facilitated by the Nature Conservancy in Partnership with Sustainable CT.	Town Meetings and Email Correspondence	Town Members	On-Going	Town Members	

1-3 Car and Truck Washing Events	Published Car and Truck washing prohibited on impervious surfaces.	Posted vehicle washing recommendations on town web site and Facebook page. Residents should avoid having car washes on impervious surfaces.	Essex News subscribers and Town Website	The Town continues to educate residents to wash their cars and boats on grassy or crushed stone areas.	On-Going	Administrative Assistant to the Selectman: Alyson Finnegan / Town Members	
1-4 Pet Wastes (Pick Up)	Published pet waste removal from Public Areas (i.e. Parks)	Posted signage in parks and public areas and on town web site and Facebook page. Residents request to pick up after your pet.	Facebook posts on *People of Essex, CT* page documents the ongoing dialog and conversation about pet waste.	The Town provides pet-waste bags in municipal-owned parks and continues to educate residents about picking up after pets.	On-Going	Town Members	
1-5 Address education/ outreach for pollutants of concern*	Due to continued Covid-19 restrictions, which included the closure of public buildings, schools, and town fairs and events, minimal public outreach occurred in 2022.	N/A	N/A	N/A	N/A	N/A	

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

Continued support of Sustainable CT and the Stormwater MS4 Working Group.
Continued Facebook posts regarding material recycling and MS4 Issues.
Continue Town Web Page regarding MS4 Activities.
Continue Quarterly MS4 Committee Meetings
Continue to pursue other public activities and groups to participate in MS-4 activities.

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

2.1 BMP Summary

BMP	Status (Complete, Ongoing, In Progress, or Not started)	Activities in current reporting period	Measurable Goal	Department / Person Responsible	Date completed or projected completion date (include the start date for anything that is 'in progress')	Location Posted	Additional details
2-1 Final Stormwater Management Plan publicly available	On-Going	Publically available SWMP.	Final SWMP.	Town of Essex	Completed on March 23, 2017	Town Hall and Town Website http://essexct.gov/	Review SMP Annually by Feb 15
2-2 Comply with public notice requirements for Annual Reports (annually by 2/15)	On-Going	Public Notice available	45-day Public Notice	Town of Essex		Hartford Courant	
2-3 Town of Essex Stormwater (MS4) Working Group	Quarterly Meetings	Committee Members Identified	Provide forum to coordinate SWMP implementation across departments and commissions	Town Planner: John Guszkowski DPH: Lisa Fasulo Town Engineer: Robert Doane	On-Going	Email Solicitations	Reason for addition: Committee will represent town departments & commissions with stake in stormwater management.
2-4 Town of Essex Stormwater (MS4) Working Group	Quarterly Meetings MInutes	Committee Members	Minutes are posted on Town Web page and available to the public.	Administrative Assistant to the Selectman: Alyson Finnegan	After every quarterly meeting.	Town Hall and Town Website http://essexct.gov/	

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

Hold quarterly stormwater committee meetings to review SMP implementation progress.
Provide availability of the Stormwater Management Plan to public.
Provide availability of Annual Report and comments announced to public.

3. Illicit Discharge Detection and Elimination (Section 6(*a*)(3) and Appendix B / page 22)

3.1 BMP Summary

BMP	**Status** (Complete, Ongoing, In Progress, or Not started)	**Activities in current reporting period**	**Measurable Goal**	**Department / Person Responsible**	**Date completed or projected completion date** (include the start date for anything that is 'in progress')	**Additional details**
3-1 Develop written IDDE program (Due 7/1/19)	Completed	Town completing the written IDDE program using the CT IDDE program template	Written Plan Prepared	Essex DPW: Ryan Welch Essex Health Dept: Lisa Fasulo	Jul 1, 2018	
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas (Due 7/1/20)	100% Complete	Editting and finalizing the remaining interconnections and CBs.	100% Complete	MapGEO Essex DPW: Ryan Welch Health Dept: Lisa Fasulo	August 2020	
3-3 Implement citizen reporting program (Ongoing)	On-Going	Designed a public comment / reporting on MS4 webpage.	100% Complete	MapGEO Essex DPW: Ryan Welch Health Dept: Lisa Fasulo Administrative Assistant to the Selectman: Alyson Finnegan	March 2020	There are multiple ways in which citizens can report any concerns, including IDDE, to the Town Authorities. (1) Citizens can report directly to the Essex Health Dept by phone, email or in person at the Health Dept Office. (2) There have been a few instances where citizens called the Selectman's office or Land Use Office who then referred the caller to the Health Dept. (3) Alternately, citizens can go to the Town of Essex website and under the Quick Links tab, select REPORT A CONCERN https://www.essexct.gov/home/webforms/report-a-concern
3-4 Establish legal authority to prohibit illicit discharges (Due 7/1/19)	Completed	Completed	Written ordinance	Town Officials	February 2019	
3-5 Develop record keeping system for IDDE tracking (Due 7/1/17)	Completed	Prepared dry and wet inspection sheets and MS4 documentation.	Completion	Essex DPW: Ryan Welch Health Dept: Lisa Fasulo	March 2022	

3.1 BMP Summary (cont).

BMP	**Status** (Complete, Ongoing, In Progress, or Not started)	**Activities in current reporting period**	**Measurable Goal**	**Department / Person Responsible**	**Date completed or projected completion date** (include the start date for anything that is 'in progress')	**Additional details**
3-6 Address IDDE in areas with pollutants of concern	On-Going	Completed final 1/2 of outfall dry inspections.	Completed dry inspections	MapGEO Essex DPW: Ryan Welch	March 2023	

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

The written IDDE Plan / program will be posted to the Town of Essex webpage and a link listed in 2021 Annual Report; will update the written IDDE program as needed throughout the permit term.

Illicit discharges are called into the town. Town assistant records call and the town public works department is sent in to investigate. Maintain master IDDE tracking spreadsheet and ensure all employees involved in IDDE program understand the logging process and can log in future IDDE reports.

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/ 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)
None						

3.4 Provide a summary of actions taken to address septic failures 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**
The Health Dept uses a permit tracking system to document failures and all corrective actions as required by CT Public Health Code Section 19-13-B103a and 19-13-B104.	10 West Avenue - New septic system for guest house	New septic system for guest house – Jeffery Rummel	None	Health Dept: Lisa Fasulo

3.4 Provide a summary of actions taken to address septic failures using the table below (cont).

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
	10 Riverview Street - 1000 gal tank, tank and leaching overflow	Empty 1000-gal tank – Skips Wastewater	None	Health Dept: Lisa Fasulo
	12 River Road Drive - Broken pipe from tank to D-box	Repair broken pipe – Schumack Engineered	None	Health Dept: Lisa Fasulo
	8-60 Plaza Drive - Improve on existing system - DEEP Permit	Complee system update - Septic Works / Matt Stark	None	Health Dept: Lisa Fasulo
	39 West Hills - New tank - 1000 gal	Replace 1000 gal tank - HomeTown Sanitation	None	Health Dept: Lisa Fasulo
	25 Cedar Grove Terrace - Septic repair not to code	Repair system and upgrade to code - Chris Kostek	None	Health Dept: Lisa Fasulo
	5 River Road - Replace D box only	Replace D box - Duncan Downies Septic and Excavation, Inc.	None	Health Dept: Lisa Fasulo
	6 Crosstrees Hill - replace soil pipes	Replace soil pipes - Duncan Downies Septic and Excavation, Inc.	None	Health Dept: Lisa Fasulo
	41 Main Street - Septic failure going to 1500 gal tank	Replace Piping to 1500 gal tank - Duncan Downies Septic and Excavation, Inc.	None	Health Dept: Lisa Fasulo
	28 Sunset Terrace - Septic repair to 1000 gal	Repair 1000 gal septic tank – SepTech, LLC	None	Health Dept: Lisa Fasulo
	35-41 # 6 Industrial Park - Septic repair 1000 gal	Replace 3 D-boxes - Stevens Excavating	None	Health Dept: Lisa Fasulo
	12 Rachel Lane - Septic failure Repair septic failure	Repair septic failure - Carolee Cannata	None	Health Dept: Lisa Fasulo
	145 Main Sreet (Ivoryton) - Septic failure Repair septic failure	Repair septic failure - Precision Landscaping	None	Health Dept: Lisa Fasulo
	20 Sunset Terrace – Septic tank collasped	Replace septic tank - Bob Blouin Contractors	None	Health Dept: Lisa Fasulo
	83 North Main Street - Septic tank failure	Replace septic tank - Tom Botts Construction Co, LLC.	None	Health Dept: Lisa Fasulo
	7 Crosstrees Hill Road - Septic tank failure	Replace septic tank – Craig Stevens Connecticut Septic System	None	Health Dept: Lisa Fasulo
	54 North Main Street – Septic system modification	Add 1500 gal tank for detached garage - Duncan Downies Septic and Excavation, Inc.	None	Health Dept: Lisa Fasulo
	17 Mack Lane - Modification to existing septic for new house	Modification to existing septic for new house - Duncan Downies Septic and Excavation, Inc.	None	Health Dept: Lisa Fasulo
	42 Prospect Street – Modification for new addition	Modification for new addition - Winthrop Construction	None	Health Dept: Lisa Fasulo
	49 Plains Road - Modification for new addition	Modification for new addition - Bob Doane Engineering	None	Health Dept: Lisa Fasulo

3.4 Provide a summary of actions taken to address septic failures using the table below (cont).

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
	1 Primrose Ledge - Modification New 1250 Tank to an existing 4 bedroom home	Modification New 1250 Tank to an existing 4 bedroom home - Bob Doane Engineering	None	Health Dept: Lisa Fasulo
	6 Foxboro Road - Modification for a pool installation	Modification for a pool installation - Stevens Excavation	None	Health Dept: Lisa Fasulo
	15 Cedar Grove Terrace - Modification Septic repair for renovations	Modification Septic repair for home renovations – Maris Leblanc	None	Health Dept: Lisa Fasulo
	26 Maple Avenue - Modification Septic repair for renovations	Modification Septic repair for home renovations – Schumack Engineering	None	Health Dept: Lisa Fasulo

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

The Health Dept uses a permit tracking system to document failures and all corrective actions as required by CT Public Health Code Section 19-13-B103a and 19-13-B104. This system has successfully implemented and tracked the required repairs or modifications to septic system issues for the town.

3.6 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	207
Estimated or actual number of interconnections	18
Outfall mapping complete	100%
Interconnection mapping complete	100%
System-wide mapping complete (detailed MS4 infrastructure)	100%
Outfall assessment and priority ranking	80%
Dry weather screening of all High and Low priority outfalls complete	15
Catchment investigations complete	371
Estimated percentage of MS4 catchment area investigated	60%

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 it is given (minimum once per year).

Two Public Works employees are trained to recognize IDDE issues including IDDE identification, potential catchment basin and outfall repairs and sediment loading. These employees perform CB and Outfall inspections throughout the town. IDDE Training is given annually by the Town Garage (Public Works) Director and the environmental consultant.

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

4.1 BMP Summary

BMP	Status (Complete, Ongoing, In Progress, or Not started)	Activities in current reporting period	Measurable Goal	Department / Person Responsible	Date completed or projected completion date (include the start date for anything that is 'in progress')	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)	Ongoing	Specific LID Requirements		Land Use Office – Carey Duques Town Engineer – Robert Doane Essex DPW – Ryan Welsh Essex Health Department – Lisa Fasulo	July 1, 2019	
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval (Ongoing)	Ongoing	Stormwater MS4 Working Group		Land Use Office – Carey Duques Town Engineer – Robert Doane Essex DPW – Ryan Welsh Essex Health Department – Lisa Fasulo	Completed and Ongoing	
4-3 Review site plans for stormwater quality concerns (Ongoing)	Ongoing	Stormwater MS4 Working Group		Land Use Office – Carey Duques Town Engineer – Robert Doane Essex DPW – Ryan Welsh Essex Health Department – Lisa Fasulo	Ongoing	

4.1 BMP Summary (cont)

BMP	Status (Complete, Ongoing, In Progress, or Not started)	Activities in current reporting period	Measurable Goal	Department / Person Responsible	Date completed or projected completion date (include the start date for anything that is 'in progress')	Additional details
4-4 Conduct site inspections (Ongoing)	Ongoing	• Inspect Heron Pond (SW detention) • Inspect 36 Pratt Street (oil/water separator) • Inspect Stonebrook Drive stormwater recharge system • 43 Bokum Road a 8.9 acre construction project will erect 28,000 sq ft and 24,480 sq ft commercial building and associated site work within 100 feet of a wetlands and with both temporary and permanent impacts to a wetlands.	Inspections Completed	Land Use Office – Carey Duques Town Engineer – Robert Doane Essex DPW – Ryan Welsh Essex Health Dept. – Lisa Fasulo	Ongoing	Heron Pond clean out on 03/30/22. 36 Pratt Street Oil/water Separator – Inspection on 07/20/22 Stonebrook Drive recharge inspection on 05/12/22. 57 Main Street Ivoryton (building renovation adjacent to Falls River) – inspect E&S controls frequently 4 Essex Glen (ongoing large site development project) – inspect E&S controls & detention pond frequently. 43 Bokum Road - inspect E&S controls frequently
4-5 Implement procedure to allow public comment on site development (Ongoing)	Ongoing	Stormwater MS4 Working Group		Land Use Office – Carey Duques Town Engineer – Robert Doane Essex DPW – Ryan Welsh Essex Health Dept. – Lisa Fasulo	Ongoing	
4-6 Implement procedure to notify developers about DEEP construction stormwater permit	Ongoing	Section 82 of the Zoning Regulations	Land Use Regulation Completed	Land Use Office – Carey Duques Town Engineer – Robert Doane	Ongoing	
4-7 Develop stormwater compliance checklist	In progress	Developing checklist to provide developers on stormwater management compliance requirements	LID checklist (attached)	Land Use Office – Carey Duques	Jul 1, 2018	The existing Zoning and Inland Wetlands Regulations are routinely enforced by Town staff for all approved Wetlands and P & Z applications that are under construction.

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

Continue to inspect and perform maintenance on Town-owned stormwater features such as detention ponds, oil/water separators and infiltration galleries. The Town of Essex Land Use Office and Engineering Department require any new proposed Site Plans to comply with the Planning and Zoning LID regulation requirements. The Town of Essex Land Use Department Officer, or his designee, inspects all construction sites a minimum of once a week or as necessary.

The Town of Essex Land Use and Town Engineer require any new proposed Site Plans to comply with the current CTDEEP Erosion and Sediment Control and LID regulation requirements.

Integrate stormwater compliance checklist into review process completed.

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

5.1 BMP Summary

BMP	**Status** (Complete, Ongoing, In Progress, or Not started)	**Activities in current reporting period**	**Measurable Goal**	**Department / Person Responsible**	**Date completed or projected completion date** (include the start date for anything that is 'in progress')	**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)	Ongoing	Article IV Section 608 Drainage and Stormwater Control regulations	Written Zoning Regulations - Completed	Land Use Office – Carey Duques	Ongoing – Beginning date July 1, 2021	
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects (Due 7/1/22)	Ongoing	Article IV Section 608 Drainage and Stormwater Control regulations	Written Zoning Regulations - Completed	Land Use Office – Carey Duques	Ongoing – Beginning date July 1, 2019	

5.1 BMP Summary (cont).

BMP	**Status** (Complete, Ongoing, In Progress, or Not started)	**Activities in current reporting period**	**Measurable Goal**	**Department / Person Responsible**	**Date completed or projected completion date** (include the start date for anything that is 'in progress')	**Additional details**
5-3 Identify retention and detention ponds in priority areas (Due 7/1/20)	Ongoing	Heron Pond (stormwater detention pond) 36 Pratt Street Oil/water separator Stone Brook Drive Recharge/Infiltration Gallery.	Annual and Semi-annual Maintenance activities	Land Use Office – Carey Duques Town Engineer – Robert Doane Essex DPW – Ryan Welsh	Ongoing beginning Jul 1, 2019	Heron Pond (stormwater detention pond) clean out on 03/30/22. 36 Pratt Street Oil/water Separator – Inspection on 07/20/22. Stonebrook Drive recharge inspection 05/12/22.
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures (Ongoing)	Ongoing	Heron Pond (stormwater detention pond) 36 Pratt Street Oil/water separator Stone Brook Drive Recharge/Infiltration Gallery.	Annual and Semi-annual Maintenance activities	Land Use Office – Carey Duques Town Engineer – Robert Doane Essex DPW – Ryan Welsh	Ongoing beginning Jul 1, 2019	Heron Pond (stormwater detention pond) 36 Pratt Street Oil/water Separator Stonebrook Drive recharge system.
5-5 DCIA mapping (Due 7/1/20)	Complete	DCIA Mapping and Report Completed	Town-wide DCIA estimated at 6.78%	Land Use Office – Carey Duques Town Engineer – Robert Doane AppGEO	Completed June 12, 2020	
5-6 Address post-construction issues in areas with pollutants of concern	Ongoing	None	Reduction DCIA by 2% per year.	Land Use Office – Carey Duques Town Engineer – Robert Doane AppGEO		

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

Ten new septic systems were designed and completed for new construction in 2022. Eight of these are in the new Essex Glen LLC development. The Town of Essex Land Use and Town Engineer require any new proposed Site Plans to comply with the current Stormwater Erosion and Sediment Control and LID regulation requirements.

The Town of Essex Public Works department maintains the stormwater retention ponds, oil/water separators and infiltration galleries.

5.3 Post-Construction Stormwater Management reporting metrics

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

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	1, 507.67 acres
DCIA disconnected (redevelopment plus retrofits)	0 acres this year / acres total
Retrofit projects completed	None
DCIA disconnected	6.78% this year / % total since 2012
Estimated cost of retrofits	$0
Detention or retention ponds identified	2 this year /2 total

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

To estimate the DCIA % for the town, the total acres of catchment areas (1,507.67 acres) and impervious cover within those catchments (250.52 acres) were used to get the towns IC% (16%). Equation 3 was used as an average for all the catchments to estimate the town's DCIA% to be **6.78%**.

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

6.1 BMP Summary

BMP	**Status** (Complete, Ongoing, In Progress, or Not started)	**Activities in current reporting period**	**Measurable Goal**	**Department / Person Responsible**	**Date completed or projected completion date** (include the start date for anything that is 'in progress')	**Additional details**
6-1 Develop/implement formal employee training program (Ongoing)	Ongoing	Perform Training Program	Annual training Performed on11/09/22.	Essex DPW – Ryan Welsh	Essex DPW Ongoing	
6-2 Implement MS4 property and operations maintenance (Ongoing)	Complete Heron Pond (stormwater Detention pond) 36 Pratt Street Oil/water separator Stone Brook Drive Recharge/Infiltration Gallery.	Annual and Semi-annual Maintenance Activities.	Ongoing Beginning July 1, 2018	Land Use Office – Carey Duques Town Engineer – Robert Doane Essex DPW – Ryan Welsh	Ongoing Annual Maintenance Activities	
6-3 Implement coordination with interconnected MS4s	Ongoing	Wet and Dry Outfall Inspections to verify interconnected MS4s	Identify MS4s Interconnections.	Essex DPW – Ryan Welsh	Ongoing	
6-4 Develop/implement program to control other sources of pollutants to the MS4	Ongoing	Industrial stormwater permit compliance at Town Garage.	Complete - Compliance with Industrial Stormwater General Permit Criteria	Essex DPW – Ryan Welsh Health Dept – Lisa Fasulo	Ongoing	
6-5 Evaluate additional measures for discharges to impaired waters*	Ongoing	There are no impaired waterways identified for the Town of Essex	Not specified	Essex DPW – Ryan Welsh Health Dept – Lisa Fasulo	Ongoing	There are no impaired waterways identified for the Town of Essex
6-6 Track projects that disconnect DCIA (Ongoing)	Ongoing	Installation of (4) Drywells		Town Engineer – Robert Doane Essex DPW – Ryan Welsh AppGEO	Ongoing	

6.1 BMP Summary (cont).

BMP	**Status** (Complete, Ongoing, In Progress, or Not started)	**Activities in current reporting period**	**Measurable Goal**	**Department / Person Responsible**	**Date completed or projected completion date** (include the start date for anything that is 'in progress')	**Additional details**
6-7 Implement infrastructure repair/rehab program (Due 7/1/21)	Ongoing Catchment basin	Thirty-five (35) CB were repaired during 2022.	Thirty-five (35) CB were repaired during 2022.	Essex DPW – Ryan Welsh	November 1, 2022. Continue inspecting and Repairing CBs in town.	
6-8 Develop/implement plan to identify/prioritize retrofit projects (Due 7/1/20)	Not started yet				July 1, 2020	
6-9 Implement retrofit projects to disconnect 2% of DCIA (Due 7/1/22)	Ongoing				July 1, 2022	
6-10 Develop/implement street sweeping program (Ongoing)	Ongoing	Street Sweeping Report attached.	Completed 2022 Street Sweeping Program.	Essex DPW – Ryan Welsh	Completed 2022 Street Sweeping Program	
6-11 Develop/implement catch basin cleaning program (Ongoing)	Ongoing (Annual program)	340 catch basins cleaned (out of 965 total)	340 catch basins Cleaned in 2022.	Janet Sweeping Company	August 18 – 31, 2022.	
6-12 Develop/implement snow management practices (Due 7/1/18)	Ongoing	Snow management practices began in 2019 including snow disposal locations, reduced sand spreading operations and use of treated "brown" salt materials.	Snow Management Plan (2020)	Essex DPW – Ryan Welsh	Snow Management Plan (2020)	

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

Inventory and Map erosion areas in Town ROW to reduce the sediment that may be entering the Town MS4 system.
Continue infrastructure repair and rehabilitation, street sweeping, catch basin cleaning and snow management practices.
The town will continue to track illicit discharges and sanitary sewer system failures / repairs.

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	On the job tra ining
Street sweeping	
Curb miles swept	84 miles
Volume (or mass) of material collected	480 yards of debris collected in 2022
Catch basin cleaning	
Total catch basins in priority areas (value will be less than or equal to total catch basins town or institution-wide)	#340
Total catch basins town- (or institution-) wide	#950
Catch basins inspected	#31
Catch basins cleaned	#340
Volume (or mass) of material removed from all catch basins	480 yards
Volume removed from catch basins to impaired waters (if known)	0 lbs or tons
Snow management	
Type(s) of deicing material used	Blizzard Wizard (treated sugar cane molasses salt) and Washed winter road sand.
Total amount of each deicing material applied	220 tons – Blizzard Wizard 440 tons – Washed winter road sand
Type(s) of deicing equipment used	Town-owned Spreader / Jet Sanders
Lane-miles treated (A lane-mile is a mile of roadway in a single driving lane)	84 miles
Snow disposal location	1. Bushnell Park Parking Lot 2. Comstock Field (50 Park Road)
Staff training provided on application methods & equipment	On the Job training
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	100 %
Reduction in turf area (since start of permit)	Acres
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	
Cost of mitigation actions/retrofits	$0

6.4 Catch basin cleaning program

Provide any updates or modifications to your catch basin cleaning program.
The Town of Essex retains the services of Janet Sweeping Company, Meriden Connecticut. The Department of Public Works oversees the catch basin cleaning activities and attempts to complete a third of the CBs in one year (approximately 350/year). The Town of Essex completed 340 CB cleanings in 2022.

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)
The Town of Essex will utilize the DCIA map and new zoning regulations to prioritize the Retrofit Program. Any new project that is anticipated to be undertaken will be evaluated for possible retrofit to remove impervious surfaces with low LID projects. The responsible departments will review any projects that may be used as retrofit projects. Responsible Department: Engineering, Public Works Administration Measurable Goal: Develop a list of possible retrofit projects.

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)
The Town of Essex Planning and Engineering Departments require any new proposed Site Plans to comply with the Planning and Zoning LID regulation requirements.

Part II: Impaired waters investigation and monitoring

1. Impaired waters investigation and monitoring program

For details on this requirement, visit https://nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the yellow column of the Monitoring comparison chart and the Impaired waters monitoring flowchart.

1.1 Indicate which stormwater pollutant(s) of concern occur(s) in your municipality or institution. This data is available on the MS4 map viewer: http://s.uconn.edu/ctms4map.

Nitrogen/ Phosphorus ☐ Bacteria ☐ Mercury Other Pollutant of Concern ☐

1.2 Describe program status

Discuss 1) the status of monitoring work completed, 2) a summary of the results and any notable findings, and 3) any changes to the Stormwater Management Plan based on monitoring results.
According to the MS4 map viewer described above and the CTDEEP 2020 IWQR, there are no priority impaired or TMDL Impaired waterways / waterbodies located in the Town of Essex. The Town of Essex monitors six (6) outfalls for bacteria (E. coli), Nitrogen and Phosphorus.

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

2.1 Screening data

Complete the table below to report data for any wet weather sampling completed for MS4 outfalls that discharge directly to a stormwater impaired waterbody during the reporting period. For details on this requirement, visit www.nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the yellow column of the Monitoring comparison chart and the Impaired waters monitoring flowchart.

Each Annual Report will add on to the previous year's data showing a cumulative list of sampling data. **You may also attach an excel spreadsheet with the same data rather than copying it into this table**. If you do attach a spreadsheet, please write "See Attachment" below.

Outfall ID	Latitude / Longitude	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results	Name of Laboratory (if used)	Follow-up required? *

Follow-up investigation required (last column) if the following pollutant thresholds are exceeded:

Pollutant of concern	Pollutant threshold
Nitrogen	Total N > 2.5 mg/l
Phosphorus	Total P > 0.3 mg/l
Bacteria (fresh waterbody)	• E. coli > 235 col/100ml for swimming areas or 410 col/100ml for all others • Total Coliform > 500 col/100ml
Bacteria (salt waterbody)	• Fecal Coliform > 31 col/100ml for Class SA and > 260 col/100ml for Class SB • Enterococci > 104 col/100ml for swimming areas or 500 col/100 for all others
Other pollutants of concern	Sample turbidity is 5 NTU > in-stream sample

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
Sunset Terrace	In Progress	Review lawn fertilizer usage
Foot of Main	In Progress	Possible septic system issue
New City Street	In Progress	Possible septic system issue

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, 2021. **You may also attach an excel spreadsheet with the same data rather than copying it to this table.** If you do attach a spreadsheet, please write "See Attachment" below.

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

Part III: Additional IDDE Program Data

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

Provide a list of all catchments with ranking results (DEEP basins may be used instead of manual catchment delineations).

1. Catchment ID (DEEP Basin ID)	2. Category	3. Rank

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

This screening is the baseline IDDE dry weather screening. For details on this requirement, visit https://nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the blue column of the Monitoring comparison chart and the IDDE baseline monitoring flowchart.

Provide sample data for outfalls where flow is observed, during dry weather, of outfalls and interconnections categorized as high or low priority in priority areas. Do not include problem or excluded catchments. Only include Pollutant of concern data for outfalls that discharge into stormwater

impaired waterbodies. **You may also attach an excel spreadsheet with the same data rather than copying it to this table.** If you do attach a spreadsheet, please write "See Attachment" below.

Outfall / Interconnection ID	Latitude / Longitude	Screening / sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or enterococcus	Surfactants	Water Temp	Pollutant of concern	If required, follow-up actions taken

2.2 Wet weather sample and inspection data

This sampling data is the baseline wet weather priority catchment investigation sampling. For details on this requirement, visit https://nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the green column of the Monitoring comparison chart and the IDDE catchment investigation flowchart.

Provide baseline sample data for outfalls and key junction manholes of any catchment area (all high priority, low priority, and problem outfalls within the priority area) with at least one System Vulnerability Factor. **You may also attach an excel spreadsheet with the same data rather than copying it to this table.** If you do attach a spreadsheet, please write "See Attachment" below.

Outfall / Interconnection ID	Latitude / Longitude	Sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or Enterococcus	Surfactants	Water Temp	Pollutant of concern
Sunset Terrace		12/31/22	ND<0.05	ND<0.02	442	ND<1	ND<10	ND<0.1	10.5	Nitrogen
Sunset Pond		12/31/22	0.33	ND<0.02	103	ND<1	ND<10	ND<0.1	9.4	Nitrogen TKN
Foot of Main		12/31/22	ND<0.05	ND<0.02	134	ND<1	1,553	ND<0.1	7.8	E. Coli
New City Street		12/31/22	ND<0.05	ND<0.02	260	ND<1	2,140	ND<0.1	10.0	E. Coli
Bokum Road		12/31/22	ND<0.05	ND<0.02	128	ND<1	175	ND<0.1	11.1	
Ivoryton Library		12/31/22	ND<0.05	ND<0.02	305	ND<1	317	ND<0.1	12.2	

3. Catchment Investigation data (Appendix B (A)(7)(e) / page 9)

For details on this requirement, visit www.nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the green column of the Monitoring comparison chart and the IDDE catchment investigation flowchart.

3.1 System Vulnerability Factor Summary

For those catchments being investigated for illicit discharges (i.e. categorized as high priority, low priority, or problem) document the presence or absence of System Vulnerability Factors (SVF). If present, report which SVF's were identified. An example is provided below.

Outfall ID	Receiving Water	System Vulnerability Factors
FRS-OF-0053	Falls River	11, 12
FRN-OF-0030	Falls River	11, 12
FRS-OF-0057	Falls River	11, 12
FRS-OF-0005	Falls River	11, 12
FRS-OF-0006	Connecticut River	11, 12 no flow
FRN-OF-0001	Connecticut River	11, 12
FRS-OF-0007	Connecticut River	11, 12
FRS-OF-0003	Connecticut River	11, 12 no flow
CRN-OF-0023	Connecticut River	11, 12
FRS-OF-0052	Falls River	11, 12
FRS-OF-0051	Falls River	11, 12 no flow
FRS-OF-0039	Falls River	11, 12 no flow
FRS-OF-0038	Falls River	11, 12 no flow
FRS-OF-0027	Falls River	11, 12 no flow
FRN-OF-0019	Falls River	11, 12 no flow
FRS-OF-0017	Falls River	11, 12
FRS-OF-0014	Falls River	11, 12 no flow
CRS-OF-0008	Connecticut River	11, 12
CRS-OF-0009	Connecticut River	11, 12 no flow
CRS-OF-0007	Connecticut River	11, 12 no flow
CRN-OF-0005	Connecticut River	No discharge pipe found
CRN-OF-0004	Connecticut River	11, 12 no flow
CRN-OF-0012	Connecticut River	11, 12 no flow
CRN-OF-0007	Connecticut River	11, 12 no flow
CRN-OF-0008	Connecticut River	11, 12 no flow
CRN-OF-0004	Connecticut River	11, 12
CRN-OF-0002	Connecticut River	11, 12

Outfall ID	Receiving Water	System Vulnerability Factors
CRN-OF-0003	Connecticut River	11, 12 no
CRN-OF-0009	Connecticut River	11, 12
CRN-OF-0013	Connecticut River	11, 12 no
CRS-OF-0006	Connecticut River	11, 12 no

Where SVFs are:

1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.
2. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.
3. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.
4. Common or twin-invert manholes serving storm and sanitary sewer alignments.
5. Common trench construction serving both storm and sanitary sewer alignments.
6. Crossings of storm and sanitary sewer alignments.
7. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;
8. Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.
9. Areas formerly served by combined sewer systems.
10. Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas.
11. Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance).
12. History of multiple local health department or sanitarian actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance).

3.2 Key junction manhole dry weather screening and sampling data

This screening is the dry weather priority catchment investigation screening. Provide sample data, both baseline and follow-up, for key junction manholes of any catchment area begin investigated for an illicit discharge and do not have any SVFs present. Follow-up investigations must take place within one year and again within five years. **You may also attach an excel spreadsheet with the same data rather than copying it to this table**. If you do attach a spreadsheet, please write "See Attachment" below.

Key Junction Manhole ID	Latitude / Longitude	Screening / Sample date	Visual/ olfactory evidence of illicit discharge	Ammonia	Chlorine	Surfactants

3.3 Wet weather follow-up investigation outfall sampling data

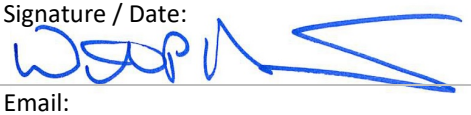
This sampling is the follow-up investigations for the wet weather priority catchment investigation. Provide follow-up sample data for outfalls and key junction manholes of any catchment area with at least one System Vulnerability Factor. Follow-up investigations must take place within one year and again within five years. **You may also attach an excel spreadsheet with the same data rather than copying it to this table.** If you do attach a spreadsheet, please write "See Attachment" below.

Outfall ID	Latitude / Longitude	Sample date	Ammonia	Chlorine	Surfactants

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

Discharge location	Source location	Discharge description	Method of discovery	Date of discovery	Date of elimination	Mitigation or enforcement action	Estimated volume of flow removed

Part IV: Certification

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."	
Chief Elected Official or Principal Executive Officer	Document Prepared by
Print name: Norm Needleman, First Selectman	Print name: William Drouin, CHMM
Signature / Date:	Signature / Date:  01/20/23
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