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MS4 General Permit
 Town of Enfield 2018 Annual Report
 Existing MS4 Permittee
 Permit Number GSM 000086
 [January 1, 2018 – December 31, 2018]



This report documents the Town of Enfield’s efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from January 1, 2018 to December 31, 2018.

Part I: Summary of Minimum Control Measure Activities

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

1.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
1-1 Implement public education and outreach	1-1A. Planning is on-going	Maintain the ‘stormwater’ link on the Town website to include educational materials	Number of clicks on the stormwater ‘link’ on the Town’s website (also see BMP 3-3)	MS4 Program Coordinator, Town Conservation Commission, Town IT Department	Jul 1, 2018	Jul 1, 2018 and on-going	Monitor the stormwater website use
	1-1B.1 Planning is on-going	Distribute educational materials; make available at Town offices, at Town events, at schools for classroom use	Types, sources, number of, and methods by which materials disseminated	MS4 Program Coordinator, Enfield Public Schools, Local Event Organizers	Jul 1, 2018	Jul 1, 2018 and on-going	Track the collected education materials; replenish materials at points of distribution;
	1-1B.1 In Progress					Pre-Jul 1, 2017	Info kiosk at Donald W. Barnes Boat Launch; Installed storm drain markers on 177 new catch basins (BMP 4-6)

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
1-2 Address education/ outreach for pollutants of concern*	Planning is on-going	Select educational materials appropriate for impaired waters and stormwater pollutants of concern; include web link to UConn NEMO website.	Select educational materials covering a range of topics	MS4 Program Coordinator, Town Conservation Commission	Jul 1, 2018	Jul 1, 2018 and on-going	Review educational materials for continued relevance and update as necessary

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

- Earth Day Event – April 2019
- Enfield Conservation Commission Activities (Community Garden, Open Space Acquisition/Inventory)
- Outreach to Enfield Public Schools through the Science Curriculum Coordinator
- Various events on the Scantic River.
 - Source to Sea
 - Rubber duck race
 - Full Moon Paddle
 - Scantic River Clean-up
 - Scantic Spring splash
- Scantic River Superbowl Hike

1.3 Details of activities implemented to educate the community on stormwater

Program Element/Activity	Audience (and number of people reached)	Topic(s) covered	Pollutant of Concern addressed (if applicable)	Responsible dept. or partner org.
Educational Brochures available at Town Hall (similar publications at Boat Launch) – protecting water resources	Town Residents, Town Business Owners	1. Invasive Plants 2. Wetlands, Watercourses and You 3. Your Guide to the Scantic River 4. What You Can Do to Protect Your Local Waterways	E-Coli	Enfield DPW (various divisions), Enfield Conservation Commission, Enfield Inland Wetlands and Watercourse Agency (IWWA)

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

2.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
2-1A: Comply with public notice and posting requirements for the draft Stormwater Management Plan	Completed	Posted on the Town website(s), paper copies available in Town offices, published in Local newspaper.	Draft Stormwater Management Plan on Town website	MS4 Program Coordinator	Feb 3, 2017 (draft version)	Feb 3, 2017	
2-1B: Comply with public notice and posting requirements for the Stormwater Management Plan	Completed	Posted on the Town website(s), paper copies available in Town offices, published in Local newspaper.	Final Stormwater Management Plan on Town website	MS4 Program Coordinator	Apr 3, 2017 (final version)	Apr 3, 2017	
2-1C: Comply with public notice and posting requirements for Draft Annual Reports	Completed Feb 15, 2019	Draft Report posted on the Town website, paper copies available in Town offices, published in Local newspaper.	Draft MS4 Annual Report on Town website	MS4 Program Coordinator	Feb 15, 2019 (draft version) / annually	Feb 15, 2019	
2-1D: Comply with public notice and posting requirements for Final Annual Reports	In-Progress for Apr 1, 2019	Final Report posted on the Town website, paper copies available in Town offices, published in Local newspaper.	Final MS4 Annual Report on Town website	MS4 Program Coordinator	Apr 1, 2019 (final version) / annually	Apr 1, 2019	
2-2 Work with area organizations and groups	On-going	2.2A: Supported and promoted CT River Watershed Council and Scantic River Watershed Association (SRWA) Riverbank Clean-up and Recreational Water Use events	Public activities on the rivers	MS4 Program Coordinator and Town Public Works	Jul 1, 2018 / annually	On-going	(1) Super Bowl Hike – 50 persons, Feb 4, 2018; (2) Scantic Spring Splash – kayak race, Apr 3, 2018; (3) Full Moon Paddles – Scantic River – Aug 25, 2018; (4) Source to Sea Cleanup, Aug 11, 2018, Sept 29, 2018, and Oct 13, 2018 (debris removal supported by Enfield DPW); Earth Day Fair – Apr 21, 2018

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
	On-going	2.2B: Collaborated with Enfield Conservation Commission's goals in the development & conservation of natural resources, including water	Collaborative efforts in stormwater runoff quality maintenance of Town owned 'open space' and 'farmland preservation' lands	MS4 Program Coordinator and Town Conservation Commission	Jul 1, 2018/ annually	On-going	Scantic River Watershed Association (SRWA) assisted in obtaining DEEP support to remove Springborn Dam, opening the river to fish passage.
	On-going	2.2C: Work with local organizations (Enfield Garden Club, Earth Day Event Organizers, Enfield Public Schools, etc.) to identify public involvement opportunities and assist with plan implementation.	Number of meetings and public involvement events conducted: Work with SRWA to obtain Scantic River water testing results (and follow up to determine source of poor quality water results)	MS4 Program Coordinator	Jul 1, 2018/ annually	On-going	Coordinate with St. Joseph College Professor on annual Scantic River sampling program

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

- Hold periodic stormwater committee meetings to review MS4 implementation progress (3x/year in 2018).
- Meet with SRWA to share information on water quality findings and potential sources which might cause contribute to e-coli detection in the Scantic River
- Public meetings of the Enfield Inland Wetlands and Watercourses Agency to regulate proposed activities 100' – 200' upland of wetlands and watercourses
- 'Public Stormwater Management Program' posting on the Town of Enfield's website, as a Special Notice (Jul 16, 2018)

2.3 Public Involvement/Participation reporting metrics

Metrics	Implemented	Date	Posted
Availability of the Stormwater Management Plan announced to public	Yes	Feb 3 / Apr 3, 2017	https://www.enfield-ct.gov/306/Public-Works
Availability of MS4 Annual Report announced to public	Yes – 2016 MS4 Annual Report Yes - 2017 MS4 Annual Report	Feb 13 / Mar 15, 2017 Feb 15 / Apr 1, 2018	https://www.enfield-ct.gov/306/Public-Works
Enfield DPW drop-off events – CY 2018: Used oil collection - 1,199-gallons of oil, 219 participants Used battery collection - 59 automotive batteries			
Enfield Household Hazardous Waste Collection events – CY 2018; 4/28/2018 with 284 billable units from 216 participants 11/17/2018 with 314 billable units from 219 participants			
Recycling from weekly collections – 3,622 pounds			

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

3.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
3-1 Develop written IDDE program	In progress	Town is in the process of completing written IDDE program	Develop written plan of IDDE program	MS4 Program Coordinator / Town Public Works / Town Engineer	Jul 1, 2018	Ongoing draft IDDE review, pending Jul 1, 2019 adoption	IDDE draft developed from UConn CLEAR template with modifications
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	In progress	Town is in the process of dry-weather stormwater outfall inspections / outfall identification in priority areas, updating mapping & database	Priority areas accessed for outfall identification and investigation	MS4 Program Coordinator / Town Public Works /	Jul 1, 2019	Dry weather outfall investigation ~60% complete; 9 watersheds, 144 outfalls, and 32 outfall samples; targeting Jul 1, 2019 100% outfall dry weather investigation completion	Town of Enfield e-coli impaired waters priority areas completed: <u>Scantic River</u> (66 outfalls, 15 flowing) <u>Buckhorn Brook</u> (7 outfalls, 0 flowing) <u>Connecticut River</u> (5 outfalls, 3 flowing)
3-3 Implement citizen reporting program	In-place	The citizen "Report a Concern" / "Fix It! Enfield" is operational; updated with additional stormwater topics	Number of citizen reports. Response to those reports	MS4 Program Coordinator / Town Public Works / IT	Jul 1, 2017	On-going monitoring and response to citizen reports	4 Citizen Reports addressed in 2018; sump pump discharge issue; ditch regraded, enhanced roadway runoff controls, outfall unplugged
3-4 Establish legal authority to prohibit illicit discharges	In progress	Review Town's existing Illicit Discharge and Illegal Connection Ordinance and revise, as necessary.	Adoption of amendments to ordinance	MS4 Program Coordinator / Town Engineer / Town Attorney	Jul 1, 2018	Ongoing draft IDDE review, pending Jul 1, 2019 adoption	IDDE draft legal review early 2019, with public hearing and town vote to follow.
3-5 Develop record keeping system for IDDE tracking	In progress	144 outfalls, and 32 outfall sampled in CY 2018; with notes on suspected water source and its quality – follow up on-going	Coordinate with BMP 3-3 for public awareness, record reported data	MS4 Program Coordinator / Town Engineer / Sanitarian, Engineering	Jul 1, 2018 and on-going	Jul 1, 2018 and ongoing until 100% dry weather outfall investigations completed	Dry weather outfalls investigation mapping and database tracking of outfall's dry weather inspection status is available

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
3-6 Address IDDE in areas with pollutants of concern	In progress	Identifying areas with high potential for septic system failure.	Mapping areas and actions taken to respond to and address septic system failures.	Sanitarian, Engineering	Jul 1, 2019	On-going coordination of septic system status with North Central Health District, as oversight agency	Mapping available indicating (1) areas served by sewer since inception, (2) areas with sewer tie-in optional, (3) Areas where no sewer service available; to assist in identifying areas with high potential for septic system failure.
3-7 Assess and prepare a priority ranking of catchments	In Progress	Classify each catchment within priority areas as: (1) excluded (2) low priority catchment (3) high priority catchment; rank priority or problem catchments and document	Assessment results, including listing of catchments and their rankings within each category .	Town Public Works, Town Engineer, MS4 Program Coordinator	Jul 1, 2019 (initial), revise annually	On-going, targeting a Jul 1, 2019 draft catchment classification	Dry weather outfall investigation ~60% complete (9 watersheds, 144 outfalls)
3-8 Conduct outfall and interconnection screening and sampling	In Progress	Conduct dry weather screening and sampling (where flowing) of every MS4 outfall and interconnection	Screening results available (Also see BMP 3-2)	Town Public Works, Town Engineer	Jul 1, 2019 & Jul 1, 2020	On-going	Dry weather outfall investigation ~60% complete (9 watersheds, 144 outfalls), findings data summaries available
3-9 Conduct catchment investigations and remove illicit discharges	Not Started	Evaluate catchments for System Vulnerability Factors (SVF) and begin catchment investigations.	80% problem Catchments Evaluated (based on findings of 3-9)		July 1, 2020		

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

- Post the written IDDE Program to the Department of Public Works webpage in next year's Annual Report
- Update the written IDDE program as needed throughout the permit term
- Maintain master IDDE tracking spreadsheet and ensure employees involved in IDDE program understand the logging process

Note: There are no known Sanitary Sewer Overflows (SSOs) that have discharged to the Enfield stormwater conveyance system, and therefore an SSO inventory BMP is not applicable.

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

Date of Report	Location / suspected source	Response taken
Ref. BMP 3-3	No citizen reports of illicit discharges	Citizen reports were of stormwater ponding or discharge backup concerns, which were addressed

3.4 Provide a record of illicit discharges occurring during the reporting period and SSOs occurring July 2012 through end of reporting period using the following table. **No discharges proven to be illicit, to date**

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)

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

- (1) Notify Town of Enfield MS4 Program Coordinator / Town Engineer of dry weather flow sample findings and observed outfall conditions of suspected illicit discharge
- (2) Document investigations of sanitary service conveyance piping or septic systems near the outfall and other upstream watershed conditions
- (3) Document follow-up to resolve illicit discharge or other cause of water impairment, as applicable

3.6 Provide a summary of actions taken to address septic failures using the table below.

Location and nature of structure with failing septic systems	Actions taken to respond to and address the failures	Impacted waterbody or watershed, if known
Ref. BMP 3-6 – North Central Health District: Septic System repair / replacements in CY 2018:	Two each: (133 North Street – new tank and new leach field) (97 Weymouth Road – septic tank replaced, leaching field confirmed operational)	Scantic 4200-23 Connecticut Main Stem 4000-07
Ref. BMP 3-6 – North Central Health District: Public sewer related overflow/backups reported in CY 2018:	Three each – all resolved (130 Pearl Street, 143 Pearl Street, 786 Enfield Street)	Connecticut Main Stem 4003-00 (all three)

3.7 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	~240 (144 investigated)
Estimated or actual number of interconnections	None identified at this time
Outfall mapping complete	60(%)
Interconnection mapping complete	0(%) - None identified at this time
System-wide mapping complete (detailed MS4 infrastructure)	80(%)
Outfall assessment and priority ranking	25(%)
Dry weather screening of all High and Low priority outfalls complete	32 each, to date
Catchment investigations complete	9 of 16
Estimated percentage of MS4 catchment area investigated	60%

3.8 Briefly describe the IDDE training for employees involved in carrying out IDDE tasks including what type of training is provided and how often is it given (minimum once per year).

Annual MS4 training was conducted on March 27, 2018, with the MS4 Municipal Stormwater Committee, including Enfield DPW employees regarding 'Pollution Prevention and Good Housekeeping' of municipal managed facilities, and how to recognize illicit discharges and sanitary sewer overflows (SSOs), and how to manage an illicit finding.

Two additional meetings were with Enfield MS4 Stormwater Committee members, to provide updates on outfall investigation mapping and review of other obligations under the MS4 General Permit (June 2018 and November 2018)

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

4.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
4-1 Implement, upgrade, and enforce land use regulations or other legal authority to meet requirements of MS4 general permit	Not started	Review and update, as necessary, existing land use regulations and implementation policies for compliance with the MS4 General Permit construction site stormwater runoff control requirements.	Updated regulations. Date completed.	Town Planning Department, Inland Wetlands and Watercourse Agency (IWWA), P&Z Commission (PZC), Zoning Enforcement Officer(s) (ZEO)	Jul 1, 2019, on-going	Reviewed concurrently with IDDE Ordinance development for consistency – on-going	
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval	On-going	Implement interdepartmental coordination procedures as described in Section 5.2 of this Plan.	N/A (within Section 5.2 – Low Impact Development (LID))	Town Planning Department, IWWA, PZC, ZEO	Jul 1, 2017, on-going	On-going review by Enfield Planning Department and IWWC	Proposed construction and associated sedimentation and erosion control (SEC) plan is presented to Enfield's PZC and IWWA (as applicable)
4-3 Review site plans for stormwater quality concerns	On-going	Complete site plan reviews for all projects subject to the land use regulations listed in BMP 4-1.	Number of plans reviewed.	Town Planning Department, IWWA, PZC, ZEO	Jul 1, 2017, on-going	On-going review by Enfield Planning Department and IWWC	During CY 2018 a total of 11 site plans were reviewed for stormwater quality concerns
4-4 Conduct site inspections	On-going	Conduct inspections and enforcement to assess and ensure the adequacy of the installation, maintenance, operation, and repair of construction and post-construction control measures.	Number of sites inspected. Number of enforcement actions taken. Resolution of violations.	Town Planning Department, PZC, ZEO, Town Engineer	Jul 1, 2017, on-going	On-going review by Enfield Planning Department and Town Engineer	Town holds pre-construction meetings held to verify S&ECs have been installed. Applicant responsible for providing site inspection of S&EC during construction. Town Engineer follows up on complaints, if received. Town inspects at end of construction for conformance with approved plans.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
4-5 Implement procedure to allow public comment on site development	On-going	Post notices of the citizen's "Report a Concern" / "Fix It! Enfield" link to report stormwater related issues or concerns. Public attendance at PZC Commission and IWWA meetings	Number of stormwater concern alerts; Public attendance and involvement at PZC & IWWA	Town Planning Department, IWWA, PZC, ZEO, Town Engineer	Jul 1, 2017, on-going	On-going monitoring by Enfield Planning Department and Town Engineer	Town staff are documenting citizen alerts associated with stormwater concerns PZC & IWWA meeting transcripts available
4-6 Implement procedure to notify developers about DEEP construction stormwater permit	On-going	Continue to utilize the Enfield Site Plan and Subdivision Plan applications with checklists of submittal requirements; for review and approval, prior to start of construction. Also continue to inform developers / contractors of their potential obligations to register under the DEEP 'Construction General Permit' and provide a copy of the associated Storm Water Pollution Control Plan to Enfield upon request	Number of developers / contractors notified; review Town construction requirements and MS4 stormwater compliance for consistency.	Town Planning Department, IEEA, P & Z Commission, ZEO, Town Engineer	Jul 1, 2017, on-going	Developers informed of process for Site Plan and/or Subdivision Plan review, including stormwater obligations as stated in the Town planning and zoning regulations including 2004 CT Stormwater Quality Manual requirements. On-going monitoring by Enfield Public Works Department and Town Engineer of developers projects on an as-needed basis.	Enfield Engineering has coordinated full time inspection (including S&ECs) of 12 road project sites in CY 2018;

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

- Continue to inform developers / contractors of their potential obligations to register under the DEEP 'Construction Activities General Permit' and provide a copy of the associated Storm Water Pollution Control Plan with submittal for Enfield for review and approval
- Continue interdepartmental (Planning, PZC and IWWA) review and approval procedures for proposed construction's 'Drainage Design' and 'S&EC Plan'; review 'Drainage Design' and 'S&EC Plan' requirements for consistency with the MS4 Program; integrate revisions into the Plan Compliance Checklist and the PZC & IWWA plan review process, once completed
- Review public comment on plans presented at PZC and IWWA developer presentations for their reflection in the final site or subdivision construction applications.

- Continue review of proposed drainage plans for effectiveness in maintaining stormwater quality post- construction; review stormwater management drainage plan design compliance for consistency with the MS4 Program
- Continue review of stormwater management S&EC Plans for effectiveness in maintaining stormwater quality during construction; review stormwater management S&EC Plans compliance for consistency with the MS4 Program
- Continue Town Engineer follow-up on complaints of ineffective S&EC practices during construction; document inspection activities; review opportunities for other pro-active inspection opportunities
- Review maintenance practices of the hydrodynamic separators on Town owned property

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

5.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
5-1 Establish and/or update legal authority and guidelines regarding LID and runoff reduction in site development planning	Not started	Review and update, as necessary, existing land use regulations and implementation policies (including Technical Standards) for compliance with the General Permit post-construction stormwater management requirements.	Updated regulations. Date completed.	Planning and Zoning Department, Conservation Commission, MS4 Program Coordinator	Jul 1, 2021	On-going	Planning and Zoning is looking into future regulation updates to require low impact development in new development projects.
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects	Not started	5-2A Review and update, current regulations, as necessary, to identify, reduce, or eliminate existing regulatory barriers to implementation of LID and runoff reduction practices.	Updated regulations. Date completed.	Planning and Zoning Department, Conservation Commission, MS4 Program Coordinator	Jul 1, 2021	On-going	Planning and Zoning is looking into future regulation updates to require low impact development in new development projects.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
	On going	5-2B Complete submitted plan reviews and ensure compliance for all projects subject to the legal authority and/or guidelines listed in BMP 5-1. (Also see BMP 4-3)	Number of plans reviewed.	Planning and Zoning Department, Engineering	Jul 1, 2018 and annually	Pre Jul 1, 2017 and on-going	On-going utilization of the Enfield Site Plan and Subdivision Plan applications, with checklists of submittal requirements; modify as necessary to meet LID/runoff reduction requirements
5-3 Identify retention and detention ponds in priority areas	On-going	5-3A Develop a long-term maintenance plan for retention/detention basins and stormwater treatment structures.	Written plan. Date completed.	Town Public Works, Town Engineer, MS4 Program Coordinator	Jul 1, 2018	On-going, target for completion at end of CY 2019	Retention/detention basins are mapped; to develop listings with maintenance practices to be implemented.
	Not started	5-3B Implement maintenance plan including annual inspection of retention / detention basins and stormwater treatment structures and removal of accumulated sediment and pollutants.	Number of structures inspected, number of structures maintained.	Town Public Works, Town Engineer, MS4 Program Coordinator	Jul 1, 2019 and annually		Add stormwater treatment structures to mapping and list.
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures	Not started	5-4A Calculate the Directly Connected Impervious Area (DCIA) of outfall catchment areas using guidance provided by DEEP and UConn CLEAR.	Number of catchments where DCIA has been calculated. Methodology and assumptions made.	Town Public Works, Town Engineer, MS4 Program Coordinator	Jul 1, 2021		Enfield requires use of catch basins with 2' deep sumps and hoods, as well as final catch basin prior to outfall to have a 4' sump. Accumulated settled debris and floatables removed on a regular basis
	On-going	5-4B Revise DCIA estimate as development, redevelopment, or retrofit projects effectively add or remove DCIA.	Project-specific information to support calculation of net change in DCIA (see BMP 6-6).	Town Public Works, Town Engineer, MS4 Program Coordinator	Jul 1, 2018 and annually		Impervious Area reduced from Town road reconstruction projects: -1.32 acres in 2017 and -0.82 acres in 2018

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
5-5 Directly Connected Impervious Area (DCIA) reduction mapping	Not started	Revise DCIA mapping as development, redevelopment, or retrofit projects effectively add or remove DCIA.	On-going mapping of DCIA activity	MS4 Program Coordinator, Engineer	Not specified – on-going	Town road reconstruction and design promoting reduced pavement width	DCIA reduced with less pavement width in the CY 2017 and CY 2018 road reconstruction projects
5-6 Address post-construction issues in areas with pollutants of concern	Not started	Address erosion and sediment problems noted during inspections conducted under BMP 5-3 through the retrofit program developed under BMP 6-7.	Problem areas retrofitted, cost of retrofit, anticipated amount of pollutant reduction.	Town Public Works, Town Engineer, MS4 Program Coordinator	Jul 1, 2020		

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

- Mapping available indicating location of Town owned retention/detention ponds
- Town owned retention/detention ponds to be reviewed and documented of conditions/recommendation of maintenance practices to be implemented.
- Stormwater treatment structures to be identified with maintenance practices to be implemented.
- Implement maintenance practices, as applicable.
- Begin the process of reviewing and updating land use regulations to promote MS4 related activities.
- Develop updated estimates of DCIA (refer to Section 5.4 below)

5.3 Post-Construction Stormwater Management reporting metrics

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	8,055 acres
DCIA disconnected (redevelopment plus retrofits)	1.32 acres 2017 / 0.82 acres 2018 (total 2.14 acres)
Retrofits completed	0
DCIA disconnected	<1% this year / not tracked since 2012
Estimated cost of retrofits	\$ TBD
Detention or retention ponds identified	No ponds identified for retrofits

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

Directly Connected Impervious Area (DCIA)		
Factsheet: Town of Enfield Water Quality and Stormwater Summary (2012)		
Percent Impervious Cover	Acres	% of Total Acreage
0 – 11%	13,871	63%
12 – 25%	1,678	8%
26 - 50%	3,556	16%
51 - 75%	2,183	10%
76 – 100%	638	3%
Total Acreage:	21,926	100%
Acreage w>11% Impervious Cover:	8,055	37%

DCIA disconnected in CY 2017 from road reconstruction projects: 1.32 acres from Thompsonville, Northeast and Green Manor

DCIA disconnected in CY 2018 from road reconstruction projects: 0.82 acres from Till-Birchwood and St. James West

DCIA will be estimated from high-resolution impervious cover and land use/cover data available from UConn NEMO and empirical equations (Sutherland Equations) relating DCIA and Total Impervious Area (TIA). The DCIA estimates will be developed at the CTDEEP Local Basin scale.

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

6.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-1 Develop/implement formal employee training program	Completed March 2017, on going	Implement joint training program for Town employees, building on the Town's current program (see topics listed in Section 7.2).	Dates of training, names of those trained, topics reviewed	Town Public Works, Town Engineer, Building and Grounds Maintenance	Jul 1, 2017 and annually	Stormwater Team training last completed March 27, 2018	Power point presentation, and attendance sign-in sheet (available upon request)
6-2 Implement MS4 property and operations maintenance	On-going	6-2A.Implement turf/fertilizer management BMPs for parks and open space	Management measures implemented	Town Public Works, Building and Grounds Maintenance	Jul 1, 2018 and annually	Jul 1, 2018	Coordinate contractors activities
	On-going	6-2B.Implement pet waste education program and install additional signage, baggies, and disposal receptacles, as needed, in areas where pet walking is common	Educational messages delivered, signage installed	Town Public Works, Building and Grounds Maintenance, MS4 Program Coordinator	Jul 1, 2018 and annually	Jul 1, 2018	Link to topic brochures on the Enfield DPW web page (stormwater), printed brochures at Town Hall and Town Parks
	On-going	6-2C.Implement waterfowl management BMPs in targeted areas	Management measures implemented	Town Public Works, Building and Grounds Maintenance	Jul 1, 2018 and annually	Jul 1, 2018	Link to topic brochures on the Enfield DPW web page (stormwater), printed brochures at Town Hall and Town Parks
	On-going	6-2D.Evaluate municipal buildings and facilities for spill prevention and pollution prevention practices and implement additional BMPs as necessary	Evaluation of findings, and new or updated Industrial Stormwater Discharge Permit's Stormwater Pollution Prevention Plans (SWPPP) and/or Spill Prevention Control and Countermeasures Plans (SPCC)	Town Public Works, Town Engineer, MS4 Program Coordinator	Jul 1, 2018	Pre Jul 1, 2017	Town facilities with SWPPPs (and SPCC Plans) have monthly inspections completed (and noted deficiencies corrected), and quarterly visual sampling of outfall discharges.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
	On-going	6-2E. Evaluate and modify, as necessary, municipal vehicle and equipment parking, fueling, and maintenance practices	Evaluation findings and new or updated practices	Town Public Works, MS4 Program Coordinator	Jul 1, 2018	Jul 1, 2018	Town sites with vehicle fueling (2 each) have safe fueling practices, inspections, spill reporting & response procedures, and spill response kits to mitigate risk of product release to stormwater
	On-going	6-2F. Continue current leaf management program	Approximate quantity of leaves picked up annually	Town Public Works	Jul 1, 2018 and annually	Jul 1, 2018	Link to topic summary on the Enfield DPW – Refuse & Resource Management web page
6-3 Implement coordination with interconnected MS4s	On-going	Coordinate with neighboring municipalities, institutions, and DOT regarding stormwater management program activities associated with the adjacent MS4s.	Municipalities contacted, actions taken	Town Public Works, MS4 Program Coordinator	Not specified		
6-4 Develop/implement program to control other sources of pollutants to the MS4	Not started	Control through IDDE program, water quality monitoring, the Town's Illicit Discharge and Illegal Connection Ordinance, and targeted education and outreach to commercial, industrial, municipal, institutional facilities owners/operators (see BMP 1-1).	Sources identified and mitigated Types, sources, number of, and methods by which materials disseminated	Town Public Works, Planning and Zoning, MS4 Program Coordinator	Not specified		

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-5 Evaluate additional measures for discharges to impaired waters*	On-going	Implement the measures and procedures described in Section 7.2 including those measures to address stormwater pollutants of concern	Nitrogen/Phosphorus: actions taken, estimate of fertilizer reduction. Bacteria: problem areas for retrofit or source management program, location of closest outfall monitored, cost of retrofit or program, anticipated pollutant reduction. Actions taken to manage waterfowl.	Town Public Works, Planning and Zoning, MS4 Program Coordinator	Not specified		
6-6 Track projects that disconnect DCIA	On-going	Annually track total acreage of DCIA that is disconnected as a result of redevelopment or retrofits (see BMPs 5-4 and 6-7)	See BMPs 5-4 and 6-7	Town Public Works, Town Engineer, MS4 Program Coordinator	Jul 1, 2018 and annually		Impervious Area reduced from Town road reconstruction projects: - 1.32 acres in 2017, - 0.82 acres in 2018
6-7 Implement infrastructure repair/rehab program	On-going	Repair, rehabilitate, or retrofit MS4 infrastructure (e.g., conveyances, structures, outfalls) as needed in a timely manner. (Also see BMP 4-6)	Repairs/retrofits completed.	Town Public Works, Water Pollution Control, MS4 Program Coordinator	Jul 1, 2017 and annually	Pre Jul 1, 2017	Enfield may track catch basin/ manhole/ outfall cleanings with use of (1) Manhole Inspection Form, (2) Outfall/ Catchment Screening Form; 50 catch basins repaired in CY 2018
6-8 Develop/implement plan to identify/prioritize retrofit projects	Not started	Develop retrofit plan and list of priority sites	Retrofit Plan including list of priority sites, identification and prioritization process, a rationale for the selection of projects to be implemented, total acres of DCIA to be disconnected	Town Public Works, Town Engineer, MS4 Program Coordinator	Jul 1, 2020 New new		

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
	Not started	Disconnect 1% per year of Enfield's DCIA from the MS4	Retrofits completed, impervious area disconnected	Town Public Works, Town Engineer, MS4 Program Coordinator	Jul 1, 2021, and annually		
6-9 Implement retrofit projects to disconnect 2% of DCIA	NEW	NEW - TBD	NEW	NEW	NEW		
6-10 Develop/implement street sweeping program	On going	Continue to inspect and sweep all municipally-owned or –operated streets and parking lots annually in the spring following the cessation of winter maintenance activities (i.e. sanding, deicing, etc.)	Summary of inspection results, curb miles swept, dates of cleaning, volume or mass of material collected, method of reuse or disposal.	Town Public Works, MS4 Program Coordinator	July 1, 2018 and annually	Pre Jul 1, 2017	Enfield completes street sweeping annually, on 185 miles of town roadways and town facilities.
		Evaluate runoff reduction measures such as permeable pavement or other measures to promote sheet flow of stormwater for all new and redeveloped municipal parking lots	Runoff reduction measures implemented	Town Public Works, Town Engineer, MS4 Program Coordinator	July 1, 2018 and annually	Jul 1, 2018	Areas sensitive to erosion; lake areas and boat launch, are given extra attention
6-11 Develop/implement catch basin cleaning program	Not started	A. Inspect and clean catch basins as necessary Inspection Schedule: a. 100% within Priority Areas b. 100% of MS4	Total number of catch basins. Log including basins inspected, basins cleaned, total volume or mass of material removed from all catch basins and the mass of material removed from catch basins draining to impaired waters (if possible), Measures taken to abate sources of excess sediment loading.	Town Public Works, MS4 Program Coordinator	Jul 1, 2020 July 1, 2022		Enfield completes this service annually, cleaning 50% of the ~5,000 catch basins every year

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
	On-going	Develop a plan for optimizing catch basin cleaning (i.e., reduced frequency in certain areas) based on inspection findings, such that no catch basin is more than 50% full	Written optimization plan	Town Public Works, MS4 Program Coordinator	July 1, 2019		Areas sensitive to erosion; Shaker Lake and Crescent Lake, are given extra attention
6-12 Develop/implement snow management practices	On-going	Implement practices for deicing material management and snow and ice control	Types of deicing materials used, lane-miles treated, total amount of each deicing material used, type(s) of deicing equipment used, any changes to deicing practices, snow disposal methods. Type of staff training conducted, dates of trainings, names of those trained	Town Public Works, Town Engineer, MS4 Program Coordinator	July 1, 2018 and annually	Jul 1, 2018	

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

Training in 2018 to emphasize DPW personnel awareness of:

- Sediment buildup areas and noticing of same
- Deicing and sanding practices to be effective but controlled
- Snow stockpiling management practices

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	Yes-March 23, 2017
Street sweeping	
Curb miles swept	185 miles (of 328 miles – one side of road)
Volume (or mass) of material collected	A portion of 248 tons
Catch basin cleaning	
Total catch basins in priority areas	~3,500
Total catch basins in MS4	~6,141
Catch basins inspected	2,390
Catch basins cleaned	2,390
Volume (or mass) of material removed from all catch basins & street sweepings	248 tons
Volume removed from catch basins to impaired waters (if known)	A portion of 248 tons
Snow management	
Type(s) of deicing material used (Type 1)	Mg Cl-liquid
Total amount of each deicing material applied	9,400 gallons
Type(s) of deicing material used (Type 2)	CaCl – solid (salt)
Total amount of each deicing material applied	2,637 tons
Type(s) of deicing equipment used	Liquid and solid spreaders
Lane-miles treated	7,030 miles
Snow disposal location	Where plowed, Brainard Park
Staff training provided on application methods & equipment	No
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	lbs or %
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	\$

6.4 Catch basin cleaning program

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

- Enfield contracts catch basin cleaning for approximately 50% of the town wide catch basins each year (so each basin is cleaned at least once every other year)
- Beginning with the 2018 spring catch basin/manhole cleaning, the contractor’s daily work is summarized by an Enfield DPW representative, recording data on the CB solids removed, with general comment on CB sediment fill height and other details of the CB condition, as applicable

6.5 Retrofit program

Briefly describe the Retrofit Program identification and prioritization process, the projects selected for implementation, the rationale for the selection of those projects and the total DCIA to be disconnected upon completion of each project. [\[Provide information if available in 2017 report. Section to be completed for the 2019 Annual Report.\]](#)

- Refer to BMP 6-7 for catch basin repairs/replacements – CY 2018
- Refer to BMP 5-4 for reduction in impervious area – CY 2018

Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection in future years. [\[Provide information if available in 2017 report. Section to be completed for the 2019 Annual Report.\]](#)

Describe plans for continuing the Retrofit program beyond this permit term with the goal to disconnect 1% DCIA annually over the next 5 years. [\[Provide information if available in 2017 report. Section to be completed for the 2019 Annual Report.\]](#)

Part II: Impaired waters investigation and monitoring [This section required beginning with 2018 Annual Report]

1. Impaired waters investigation and monitoring program

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

Nitrogen/ Phosphorus Bacteria Mercury Other Pollutant of Concern

1.2 Describe program status.

Discuss 1) the status of monitoring work completed, 2) a summary of the results and any notable findings, and 3) any changes to the Stormwater Management Plan based on monitoring results.

E-coli is pollutant of concern in some Enfield waterways. Samples of discharge flows during dry-weather outfall investigations (that is 30 of 140) to date; have indicated 3 of the 30 with e-coli results greater than 410 colonies / 100 ml; an indicator of bacteria levels in stormwater as a pollutant of concern, with follow-up ongoing. No changes to the Stormwater Management Plan were made as a result of these findings.

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

2.1 Screening data collected under 2017 permit

Complete the table below for any outfalls screened during the reporting period. Each Annual Report will add on to the previous year's screening data showing a cumulative list of outfall screening data. [Summary table available](#)

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

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?

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
BO-03	Bowyens Brook (Aug 7, 2018) e-coli at 650	Follow up
CT-02	Connecticut River (Aug. 7, 2018) e-coli at 24,200	Follow up
FB-06	Tributary Freshwater Brook (Aug 21, 2018) e-coli at 1,260	Follow up

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

Once outfall screening has been completed for at least 50% of outfalls to impaired waters, identify 6 of the highest contributors of any pollutants of concern. Begin monitoring these outfalls on an annual basis by July 1, 2020.

Outfall	Sample Date	Parameter(s)	Results	Name of Laboratory (if used)
BO-01/02	8/7/2018	foam/surfactants	Detected surfactants and foam	Phoenix Environmental Laboratories (Phoenix)
BO-03	8/7/2018	e-coli > 410	650 col / 100 ml	Phoenix
CT-02	8/7/2018	e-coli >410	24,200 col/100 ml	Phoenix
FB-06	8/21/2018	e-coli >410	1,260 col / 100 ml	Phoenix
SR-08	8/23/2018	oily sheen	Visual evidence	NA
SR-23	11/29/2018	sewage smell	Olfactory evidence	NA

Part III: Additional IDDE Program Data [[This section required beginning with 2018 Annual Report](#)]

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
Bowyens Brook		
Freshwater Brook		
Scantic River		

2. Outfall and Interconnection Screening and Sampling data (Appendix B (A)(7)(d) / page 7)

2.1 Dry weather screening and sampling data from outfalls and interconnections

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

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

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

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

3.1 System Vulnerability Factor Summary

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

Outfall ID	Receiving Water	System Vulnerability Factors

Where SVFs are:

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

11. Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).
12. History of multiple local health department or sanitarian actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).

3.2 Key junction manhole dry weather screening and sampling data

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

3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants

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

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

Part IV: Certification

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

Chief Elected Official or Principal Executive Officer	Document Prepared by
Print name: Christopher Bromson, Town Manager, Enfield	Print name:
Signature / Date: Erik Mas, P.E., Vice President, Fuss & O'Neill	Signature / Date: