

**MS4 General Permit
Town of Enfield 2019 Annual Report
Existing MS4 Permittee
Permit Number GSM 000086
[January 1, 2019 – December 31, 2019]**



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, 2019 to December 31, 2019.

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 22, 2020
- 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 Cleanup - September 25-26, 2020
 - Full Moon Paddle – Date TBD
 - Scantic River Clean-up – Dates TBD
 - Scantic Spring Splash – March 28, 2020
- Scantic River Superbowl Hike – February 2, 2020

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.
UConn's Center for Land Use Education and Research & CT NEMO's Public Education and Outreach Library (on-line access); provided via a link on Town website: https://nemo.uconn.edu/ms4/tasks/public-education.htm	Town Residents, Town Business Owners	References to NEMO stormwater educational materials on managing pollutant sources and protecting water resources	E-Coli (bacteria)	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, 2020 (Feb 15, 2019) (Feb 15, 2018)	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, 2020 (draft version) / annually	Feb 15, 2020	
2-1D: Comply with public notice and posting requirements for Final Annual Reports	Apr 1, 2020 (pending) Completed: (Apr 1, 2019) (Apr 1, 2018)	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, 2020 (pending final version) / annually	Apr 1, 2020	
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	Source to Sea Cleanup, Sept. 25-26, 2020 (2019 had 4.64 tons trash collected), Earth Day Fair – Apr 22, 2020
	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.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
	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 2019).
- 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

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 – MS4 Annual Report for (2016, 2017, 2018, and 2019	Feb 15 (draft) / Apr 1 (final); for 2017, 2018, 2019, and 2020 (pending)	https://www.enfield-ct.gov/306/Public-Works
Enfield DPW drop-off events – CY 2019: Used oil collection - 1,134-gallons of oil, 241 participants Used battery collection - 46 automotive batteries			
Enfield Household Hazardous Waste Collection events – CY 2019 4/27/2019 with 284 billable units from 241 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 early 2020 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; 13 watersheds, 251 outfalls, and 41 outfall samples to date; targeting Jul 1, 2020 100% outfall dry weather investigation completion	Town of Enfield e-coli impaired waters priority areas dry weather investigations completed to date: <u>Scantic River</u> (66 outfalls, 12 flowing) <u>Buckhorn Brook</u> (13 outfalls, 0 flowing) <u>Connecticut River</u> (11 outfalls, 3 flowing)
3-3 Implement citizen reporting program	In-place	The citizen "Report a Concern" / "Fix It! Enfield" is operational; and includes stormwater-related 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 2019 relating to catch basin top inundations
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 early 2020 adoption	IDDE draft legal review early 2020, with public hearing and town vote to follow.
3-5 Develop record keeping system for IDDE tracking	In progress	251 outfalls, and 41 outfalls sampled to date; 7 outfalls were noted to have quality discharges of concern, with 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 ~90% complete (13 watersheds, >350 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 ~90% complete (13 watersheds, >350 outfalls), findings data summaries available
3-9 Conduct catchment investigations and remove illicit discharges	Started	Evaluate catchments for System Vulnerability Factors (SVF) and begin catchment investigations.	80% problem Catchments Evaluated (based on findings of 3-8)	Town Public Works, Town Engineer, MS4 Program Coordinator	July 1, 2020	Started	On-going as outfall investigations conducted

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	4 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 (NCHD): Septic System repair / replacements in CY 2019:	<p>2019 Enfield Septic Repairs –</p> <p>114 Broad Brook Rd – Permit date – 10/15/19 – Septic Tank Only – Crushed by traffic over tank area – Industrial Business location.</p> <p>87 Shaker Rd - Permit Date - 10/2/2019 – Tank and Leach Field replaced – Old system – Pipe was crushed – nearby small brook / drainage area – no Impact seen.</p> <p>90 No. Maple St. – Permit date - 6/17/19 – Tank and Leach Field replaced - Old system – back lot off road – Sewer access not feasible. For a Sale of property.</p>	No Impact

Ref. BMP 3-6 – North Central Health District: Public sewer related overflow/backups reported in CY 2019:	<p>65 Simon Rd - No Permit issued – 6/5/19 Reviewed - wanted to install a Tank only - Sewer available – Septic System old - abandoned – House connected to the sewer.</p> <p>3/5/2019 Incident – Shopping Plaza located at 25 Hazard Ave. Enfield Commons, Enfield CT. Sewage was overflowing out of manholes onto the parking lot and driving areas A sewage / septic pumper was called who pumped the sewage from the full manholes – jetted sewer lines – was able to eventually find and remove the blockage in the sewer piping. The pumper was told to clean the catch basins.</p>	Freshwater Brook
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3.7 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	350+
Estimated or actual number of interconnections	Adjacent Towns, CCI, State Roads (separate list available for other MS4 discharge interconnections)
Outfall mapping complete	~90%
Interconnection mapping complete	On-going
System-wide mapping complete (detailed MS4 infrastructure)	90(%)
Outfall assessment and priority ranking	25(%)
Dry weather screening of all High and Low priority outfalls complete	~90%
Catchment investigations complete (for suspected illicit discharges)	2 started of 7 identified
Estimated percentage of MS4 catchment area investigated	10%

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, and again May 7, 2019 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/eliminate an illicit finding.

Meetings were held with the Enfield MS4 Stormwater Committee members, to provide updates on outfall investigation mapping and review of other obligations under the MS4 General Permit (in June and November 2018; and June, October and December 2019)

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	On-going	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	Actively ongoing as Planning and Zoning regulations are being updated.	
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 by developers (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 2019 a total of 5 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 to verify S&EC measures have been installed. Applicant responsible for providing site inspection of S&EC during construction. Assistant Town Engineer and Planning Office 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, and DPW	Town DPW has documentation of citizen alerts associated with stormwater concerns PZC & IWWA meeting dates and subsequent meeting minutes 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, IEAA, 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 5 road project sites in CY 2019;

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 to 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	On-going	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 will be establishing legal authority and guidelines regarding low impact development (LID) in new development projects. (Reference NEMO's "Developing a Sustainable Community")
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects	On-going	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 will be establishing regulation updates to require low impact development in new development and redevelopment 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 Jul 1, 2020 (consistent with outfall mapping)	Retention/detention basins are mapped; to develop listings with maintenance practices to be implemented.
	On-going	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	On-going, target for completion Jul 1, 2020 (consistent with outfall mapping)	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' deep 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 2018/2019

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	On-going	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 2018/2019 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.
- Continue 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, and 0.82 acres 2018/2019 (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 2018/2019 from road reconstruction projects: 0.82 acres from Till-Birchwood and St. James West

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 annually, and 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 May 7, 2019	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	Fertilizer use is limited by Town Buildings and Grounds staff
	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	Signage in place at dog park on Town Farm Road, as well as pet baggies
	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 Town page (stormwater)
	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 (3 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 Town page, under Refuse & Resource Management
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	On-going	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		Enfield Conservation Commission discussion on animal waste and bacteria in water (December 10, 2019 meeting minutes).

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	ON-going tracking	Impervious Area reduced from Town road reconstruction projects: -1.32 acres in 2017, -0.82 acres in 2018/2019
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; 100 catch basins repaired (with ~10 fully replaced) in CY 2019

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
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	Targeted for July 1, 2020	
	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	Not started	Disconnect 2% total by end of current MS4 General Permit term	Retrofits completed, impervious area disconnected	Town Public Works, Town Engineer, MS4 Program Coordinator	Jul 1, 2022		
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 and on-going	Enfield completes street sweeping annually, on 185 miles of town roadways and town facilities.
	ON-going	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 and on-going	Areas sensitive to erosion; lake areas and boat launch, are given extra attention

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-11 Develop/implement catch basin cleaning program	On-going	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 and July 1, 2022		Enfield completes this service annually, cleaning 50% of the ~5,000 catch basins every year
	On-going	Develop a plan for optimizing catch basin cleaning (i.e., reduced frequency in certain areas) based on inspection findings, such that catch basin is less than 50% full	Written optimization plan	Town Public Works, MS4 Program Coordinator	July 1, 2019	Jul 1, 2019 and on-going	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 and on-going	Limiting Salt use; Calibration of salting units completed November 2019.

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

Annual MS4 training highlights awareness of DPW personnel to be responsive to:

- Sediment build-up on municipally managed surfaces, with management to prevent runoff
- Deicing and sanding practices to be effective but controlled
- Snow stockpiling management practices on grassed surfaces where possible
- Exterior equipment management on municipally managed surfaces to prevent petroleum, rust or other product releases
- Ongoing quarterly visual outfall monitoring indicates the Transfer Station, Highway Garage, Building and Grounds, and WPCF with intermittent noticeable color, cloudiness, solids (floating, suspended, and settled) on occasion (detailed results available).
- Ongoing semi-annual outfall sample analysis indicates that monitoring be continued for COD at the Transfer Station and Highway Garage, for TSS at the Transfer Station and Building & Grounds, for TP at the Transfer Station, Highway Garage and WPCF, and for TKN at the Transfer Station.

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	Yes-March 23, 2017, and annually thereafter
Street sweeping	
Curb miles swept	182 miles (of 328 miles – one side of road)
Volume (or mass) of material collected	A portion of 400 tons
Catch basin cleaning	
Total catch basins in priority areas	~3,500
Total catch basins in MS4	~6,141 (some DOT owned)
Catch basins inspected	2,500
Catch basins cleaned	2,500
Volume (or mass) of material removed from all catch basins & street sweepings	267 tons
Volume removed from catch basins to impaired waters (if known)	A portion of 267 tons
Snow management	
Type(s) of deicing material used (Type 1)	Mg Cl-liquid
Total amount of each deicing material applied	2 gal/mile x 7050 miles = 14,100 gallons
Type(s) of deicing material used (Type 2)	CaCl – solid (salt)
Total amount of each deicing material applied	250 lbs/mile x 7050 miles = 1,762,500 lbs
Type(s) of deicing equipment used	Liquid and solid spreaders
Lane-miles treated	7,050 miles
Snow disposal location	Where plowed, Brainard Park
Staff training provided on application methods & equipment	Nov 4, Nov 5, 2019
Municipal turf management program actions (for permittee properties in basins with N/P Impairments)	
Reduction in application of fertilizers (since start of permit)	(Limited Use) 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

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

Catch Basin Cleaning will consist of removing dirt, refuse and other debris from the catch basin, the gutter mouth of curb inlets and properly disposing of materials removed. This will involve removing the basin grate, cleaning the sides and bottom of the sump. Each basin should be thoroughly cleaned of sand, silt and debris from the sump through the use of a vacuum truck, other mechanical means, or by hand if necessary.

- Clean and remove grate, remove all material in basin including sticks, dirt, refuse and other debris using minimal amounts of water.
- While cleaning, observe condition of basin for undermining, cracked or broken frames, plugged or broken pipe connections or any suspicious pipe inlets. Record and report as observed. Upon completion of cleaning, replace grate securely.

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 2019
- Refer to BMP 5-4 for reduction in impervious area – CY 2019

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.]

- Enfield has on-going plans to reduce the quantity of impervious road surface by refining road limits when repaved/reconstructed.

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.]

- Enfield has on-going plans to reduce the quantity of impervious road surface by refining road limits when repaved/reconstructed.

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 (bacteria) is pollutant of concern in some Enfield waterways. Samples of discharge flows during dry-weather outfall investigations (~50 of 318 outfalls visited during dry weather to date); have indicated 4 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 on-going. 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

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
BB-08	Buckhorn Brook (Dec 4, 2017) e-coli at 1,860 cols/100mls	Follow up (verify if failed septic in area)
BO-03	Bowyens Brook (Aug 7, 2018) e-coli at 650 cols/100mls	Follow up
CT-02	Connecticut River (Aug. 7, 2018) e-coli at 24,200 cols/100mls	Follow up
FB-06	Tributary Freshwater Brook (Aug 21, 2018) e-coli at 1,260 cols/100mls	Follow up

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

Once outfall screening has been completed for at ~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)
BB-08	12/4/2017	e-coli > 410	1,860 cols/ 100 mls	Phoenix Environmental Laboratories (Phoenix)
BO-01/02	8/7/2018	foam/surfactants	Detected surfactants and foam	Phoenix
BO-03	8/7/2018	e-coli > 410	650 cols/ 100 mls	Phoenix
CT-02	8/7/2018	e-coli >410	24,200 cols/100 mls	Phoenix
FB-06	8/21/2018	e-coli >410	1,260 cols / 100 mls	Phoenix
SR-08	11/29/2018	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
Scantic River	High priority	1
Bowyens Brook	Low priority	2
Freshwater Brook	Low priority	3

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 (i.e. Buckhorn Brook and Connecticut River).

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
BB-08	12/4/2017					1,860 cols/100 mls				
CT-02	8/7/2018					24,200 cols/100 mls				

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
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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
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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
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3.3 Wet weather investigation outfall sampling data

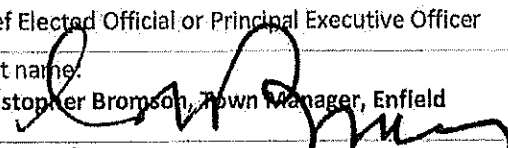
Outfall ID	Sample date	Ammonia	Chlorine	Surfactants
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3.4 Data for each illicit discharge source confirmed through the catchment investigation procedure

Discharge location	Source location	Discharge description	Method of discovery	Date of discovery	Date of elimination	Mitigation or enforcement action	Estimated volume of flow removed
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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: Erik V. Mas, P.E., Vice President, Fuss & O'Neill
Signature / Date:  03/23/2020	Signature / Date: March 24, 2020 