

**City of Bristol  
Bristol, Connecticut**

**DRAFT**

**2019 ANNUAL REPORT**

**General Permit for the Discharge of Stormwater from  
Small Municipal Separate Storm Sewer Systems**

**DEP Permit No.: GSM000042  
January 31, 2020**



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## Introduction

The following is the Annual Report, prepared in accordance with the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, permit number GSM000042. In accordance with General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (effective July 1, 2017), Section 4(d)(3), the Annual Report shall be made available for public review and comment at least 45 days prior to submission to CT DEEP. Comments on the Annual Report may be made to the City of Bristol and are not submitted to Connecticut Department of Energy and Environmental Protection (CT DEEP). The draft report shall be made available on the City's website for public inspection and copying, consistent with the federal and state Freedom of Information Acts and at least one other location (City Hall Public Works Division Office, Ground Floor, 111 North Main St., Bristol, CT 06010). Following submission of the Annual Report to CT DEEP, a copy of the final report shall be made available for public inspection during regular business hours.

The annual reporting requirements are stipulated in Section 6 (j)(2) of the General Permit. By April 1 of the second year following the effective date of permit and annually thereafter by April 1, the permittee shall submit an Annual Report for the preceding calendar year electronically to the Department. The DEEP MS4 stormwater webpage ([www.ct.gov/deep/municipal/stormwater](http://www.ct.gov/deep/municipal/stormwater)) will provide guidance of the Annual Report submittal. The Annual Report must be in Microsoft Word ©, Adobe Acrobat © or other format acceptable to the Commissioner. The report shall include:

- (A) A municipal plan review fee of \$187.50 (submitted separately);
- (B) A written discussion of the status of compliance with the general permit, but not limiting to (*Note: Italicized text provides reference for the reporting location within this report*):
  - (i) A listing and brief description (including, where appropriate, the address or latitude and longitude) of all BMPs within each Minimum Control Measure (*See Summary of Minimum Control Measures section of this report*);
  - (ii) Any reporting requirements enumerated in the controls section 6(a) and its subsections (*Refer to Summary of Minimum Control Measures and appendix sections of this report*);
  - (iii) An implementation schedule for each BMP and an indication of whether or not the BMP or any portion of the BMP was scheduled to be implemented during the year covered by the Annual Report (*Refer to Summary of Minimum Control Measures section of this report*);
  - (iv) The status of implementation for each BMP scheduled to be completed or partially implemented during the year covered by the Annual Report, including an assessment of the appropriateness of the BMP and progress made toward achieving the implementation dates and measureable goals of the BMP (*Refer to Summary of Minimum Control Measures section of this report*);
  - (v) For any portion of a BMP implementation scheduled for the year covered by the Annual Report that was not completed as scheduled, a discussion of the circumstances and reasons for non-implementation, a modified implementation schedule, and if necessary, a modified or alternate BMP to replace the BMP not implemented including the rationale for such modification or alternate BMP (*See Summary of Minimum Control Measures section of this report*);

- (vi) An overall status of each of the six categories of the Minimum Control Measures and a discussion of the effectiveness of each category in achieving its goals (*Refer to Summary of Minimum Control Measures section of this report*);
  - (vii) A discussion of any changes to personnel responsible for the Plan or BMP implementation (*Personnel changes of those responsible for BMP implementation are discussed in the Summary of Minimum Control Measures section of the report*);
  - (viii) A description of any new BMP added to the Plan during the year, including a description of the BMP, the reason or rationale for adding the BMP, the timeline for implementation, the party responsible for implementation and the measureable goal for the BMP and where appropriate, the location for each BMP, including the address and latitude and longitude (*See Summary of Minimum Control Measures section of this report for BMPs and schedule*);
  - (ix) A discussion of the progress and status of the MS4's IDDE program (see General Permit (GP) Section 6(a)(3)) including outfall screening, mapping, drainage area evaluation and prioritization, illicit discharge tracking activities, IDDE field monitoring results, number and type of illicit discharges detected, and number of illicit discharges eliminated (*See Summary of Minimum Control Measures section and appendices of this report*);
  - (x) A discussion of the measures included in the Plan for the control of discharges to impaired waters (see GP Section 6(k)) including a list of BMPs in the Minimum Control Measures that are targeted for such discharges, progress in implementing these measures, any evaluation of the effectiveness of these measures in meeting the goals of the Plan's Impaired Waters program, and any new or modified BMPs to be added to the Plan to improve its effectiveness (*See Monitoring and appendix sections of this report*);
  - (xi) A discussion of the MS4's stormwater monitoring program describing the status of monitoring for the year of the report, the overall status of the monitoring program. A summary of the findings, any significant observations regarding the results, any modifications of the Plan as a result of the monitoring results (*See Monitoring and appendix sections of this report*);
  - (xii) A discussion of any planned BMP implementation in the coming year, including a discussion of any new or modified BMPs planned for future implementation (*See Summary of Minimum Control Measures section*).
- (C) All monitoring data collected and analyzed pursuant to Section 6(i) (*See Monitoring and appendix sections of this report*);
- (D) All other information collected and analyzed, including data collected under the Illicit Discharge Detection Protocol (General Permit Appendix B), during the reporting period (*See Monitoring and appendix sections of this report*).

MS4 General Permit  
City of Bristol 2019 Annual Report  
Existing MS4 Permittee  
Permit Number GSM GSM000042  
[January 1, 2019 – December 31, 2019]

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This report documents City of Bristol'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 of General Permit)

**Goals:**

- ) *Raise public awareness that polluted stormwater runoff is the most significant source of water quality problems;*
- ) *Motivate residents to use Best Management Practices (BMPs) that reduce polluted stormwater runoff; and*
- ) *Reduce polluted stormwater runoff in town as a result of increased awareness and utilization of BMPs.*

## 1.1 BMP Summary

BMP	Status	Activities in current reporting period (if needed, more space available after this table)	Measurable goal	Dept / Person Responsible	Due	Date completed or projected completion date	Additional details
1-1 Implement public education and outreach	Completed, and on-going	Update PW community page(s) for additional stormwater education: add link to DEEP website (Approved Watershed Based Plans) for Pequabuck River Watershed Base Plan (September 2019)	At least once per year, update the public works community page to include additional links with information on impacts of stormwater discharges on water bodies and impacts of stormwater discharges to reduce pollutants in stormwater runoff	Department of Public Works-Eng (DPW-Env Eng for reporting)	Annual update	Ongoing – see activities in current reporting period for specific dates	Current City education programs include both printed and electronic information for the community, at main locations, including those listed below:
<p>Additional details 1-1, cont</p> <ul style="list-style-type: none"> <li>) City website <a href="http://www.ci.bristol.ct.us/">http://www.ci.bristol.ct.us/</a> provides overall City department information, contact information and departmental webpage links, links to Facebook page for Mayor, Public Works, Parks and Recreation and other City Departments.</li> <li>) Public Works office, 111 North Main St., Bristol, CT 06010, provides printed information on MS4, construction BMPs, solid waste and recycling disposal guidelines, pet waste, invasive species, and information on the CT Construction Stormwater General Permit requirements.</li> <li>) Public Works webpage, <a href="http://www.bristolct.gov/publicworks">http://www.bristolct.gov/publicworks</a> provides public information on services including <a href="#">street maintenance</a>, tree and roadside maintenance, <a href="#">solid waste</a> (rubbish) and <a href="#">recycling</a> collection, <a href="#">leaf and branch collection</a>, maintenance of municipal <a href="#">vehicles and equipment</a>, <a href="#">winter snow and ice control</a>, and <a href="#">wastewater collection and treatment</a>. The webpage provides links to City services, a calendar, frequently asked questions section and contact information. Public Works also maintains twitter and facebook pages, which are linked to the webpage.</li> <li>) Bristol Public Works Water Pollution Control website page (<a href="http://www.ci.bristol.ct.us/index.aspx?NID=241">http://www.ci.bristol.ct.us/index.aspx?NID=241</a>) provides information about the City's sanitary sewer system, such as: major service upgrades and accomplishments, blockage and back-up prevention information, frequently asked questions information, contact information and indicates the WPC staff will conduct educational tours of the treatment facility for local schools and clubs upon request.</li> <li>) Bristol Water Department information and education page is located at <a href="http://www.bristolwaterdept.org/education.php">http://www.bristolwaterdept.org/education.php</a>. The page includes fun stuff for kids, teacher pack for environmental education and links to local, state and federal topics.</li> </ul>							

<p>1-2 Address education/ outreach for pollutants of concern*</p>	<p>Completed, and on- going</p>	<p>) Rain Garden workshop (4-18-2019) with free downspout disconnect kits and link to free rain garden app (FRWA)          ) “Rain Gardens, Why and How” program developed by and for BEHS students (2 environmental science classes)          ) City of Bristol hosted stakeholders meeting for Pequabuck River Watershed Based Plan, March and August 29, 2019, including BMP review and Public Participation on Sept. 26, 2019          ) Bristol Eastern students &amp; PRWA completed rain garden at Bristol Eastern  <a href="https://bristolobserver.com/2019/08/10/for-grads-legacy-a-little-rain-garden-has-fallen/">https://bristolobserver.com/2019/08/10/for-grads-legacy-a-little-rain-garden-has-fallen/</a>)          ) FRWA &amp; Bristol Parks Dept. completed demonstration rain garden in Page Park  <a href="http://www.bristolpress.com/BP-Bristol+News/350549/river-watershed-volunteers-spruce-up-page-park-with-rain-garden">http://www.bristolpress.com/BP-Bristol+News/350549/river-watershed-volunteers-spruce-up-page-park-with-rain-garden</a>)  <a href="https://m.facebook.com/bristolparksandrecreation/posts/be-sure-to-visit-our-beautiful-new-rain-garden-at-page-park-if-you-or-your-organ/2305817286199485/">https://m.facebook.com/bristolparksandrecreation/posts/be-sure-to-visit-our-beautiful-new-rain-garden-at-page-park-if-you-or-your-organ/2305817286199485/</a>)          ) Stress Factors on the Lower Coppermine Brook presentation by CCSU Global Sustainability graduate student (August 8, 2019), PRWA intern, addressing water flow and water quality.</p>	<p>Coordinate with Watershed Associations for community programs and education workshops (cross-posting and hosting)</p>	<p>City-wide, community, watershed associations, Public Works-Engineering (DPW-Env Engineer for reporting)</p>	<p>Annual updates</p>	<p>Ongoing</p>	<p>) Continue to update the PW community page for cross postings and additional information on plastic bag and film collection, and MS4 information. Continue UCONN NEMO and Riversmart links, providing information on BMPs around the house, including pollutants of concern (Bacteria, phosphorus, nitrogen and mercury)           See also Detail Section 1.3 for additional information on:          ) Pequabuck River Watershed Association (PRWA) programs within Bristol,          ) Farmington River Watershed Association (FRWA) programs within Bristol, and          ) Environmental Learning Center (ELCCT) youth-based programs at schools, Indian Rock Nature Center and Barnes Memorial Nature Center</p>
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Additional BMPs Sustainable CT	Completed, with updates	) Continue certification program with Sustainable CT	Continue to improve BMPs in watershed education and protection, LID, and green grounds and maintenance program	Department of Public Works-Facilities	Annual updates	Ongoing	Continued participation with Sustainable CT, <a href="#">a voluntary certification program</a> to recognize thriving and resilient Connecticut municipalities and provide them with a wide-ranging menu of <a href="#">best practices</a> .
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**Additional details 1-2**

The majority (approximately 84%) of Bristol’s watershed areas discharge to the Pequabuck River (or its tributaries), which continues to drain east through the City to the Farmington River. The active Watershed Associations are the Pequabuck River Watershed Association, working for "Collaborating and Advocating for a Healthy Pequabuck River" and Farmington River Watershed Association “dedicated to preserving, protecting and restoring the Farmington River and its watershed”.

Environmental Learning Center (ELCCT) operates the Indian Rock Nature Preserve and the Harry C. Barnes Memorial Nature Center in Bristol, offering diverse, hands-on field and classroom programs to inspire appreciation and learning in students.

The City of Bristol continues to participate independently and in association with these organizations in community activities and cross posting of information for public education related to reduction of polluted stormwater runoff and resource management.

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

- ) Continue and expand environmental education programs to Bristol schools for outdoor classrooms
- ) Additional workshops, including field activity, for watershed education (invasives, native plants and rain gardens)
- ) Pequabuck River Watershed Association (PRWA): Public education and outreach events which may include composting class at BEHS, Enviroscape Model (non-point source pollution model)/Interactive social media photo booth of Pequabuck River support at Page Park Fishing Derby, Rockwell Park Festival, Gloria Dei “Solarbration”, Earth Day (Indian Rock Nature Preserve), Earth Day (Bristol Public Library), Forestville Duck Race, Imagine Nation Water Carnival, and Bristol Mum Festival, (See also next section Public Involvement)
- ) Farmington River Watershed Association (FRWA): Outreach activities planned include additional training for direct downwater disconnections, stormwater and rain gardens; Boys and Girls Club stormwater education activities, RBV training and sampling (See also next section Public Involvement)

### 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.
Pequabuck River BMP tour (PRWA, FRWA, ELCCT, City of Bristol)-October 5, 2019	Citizens, including CCSU and Vo-ag students (approx. 20)	Stormwater treatment systems (Including phosphorus, nitrogen removal), Low Impact Development (LID), Erosion and slope stabilization, dam removal topics	Included discussion of Impaired waters, phosphorus, nitrogen and bacteria	PRWA organized tour with speakers from PRWA, Bristol Public Works and Environmental Learning Center
Public Meetings-(Conservation Commission and Inland Wetland Commission) on water quality and conservation	Public (Open Space Sub Committee (1-10-2019), and Inland Wetland (12-4-2019))	Open Space (See 1-10-2019 agenda and letter of support), Low Impact Development (LID) systems and their applicability	Addressed the modification of standard permit stipulations to include additional LID options for infiltration systems	PW Land Use Conservation/Wetland Commission
Participation in DEEP 2019 Volunteer Monitoring Conference and Wetlands training	Conservation Commission and Inland Wetland Commission	Regulatory, water quality and natural environment habitats	Included discussion of Impaired waters, phosphorus, nitrogen and bacteria	DEEP, FRWA, PRWA, CACIWC
My Healthy Stream books, provided by Farmington River Watershed Association have been distributed to citizens through the IWW permitting and reporting process	Citizens-ongoing	Watershed protection, stream condition and habitat, riparian area protection, including impact from pesticides and herbicides, invasive species, extreme weather	Addresses reduction of pesticides, herbicides, bacteria, turfgrass, invasive species	FRWA publication distributed by Bristol PW
PRWA Enviroscope Model and PRWA Interactive Photo Booth	Citizens Page Park fishing derby, Rockwell Park festival (up to 12,000 attend) Gloria Dei Festival Earth Day (Bristol Library) Earth Day (Indian Rock Nature Preserve) Imagine Nation Water Carnival Forestville Duck Race	Water cycle and non-point source pollution prevention	Stormwater pollution prevention, including nutrients from erosion, fertilizers and failing septic systems bacteria	PRWA and FRWA

	Bristol Mum Festival (up to 100,000 festival goers attend)			
PRWA Student Watershed Education	Schools and scouts	Composting, Non- point source pollution and water cycle programs with cloud experiment	Stormwater pollution prevention, including nutrients from erosion, fertilizers and failing septic systems bacteria	PRWA
) PRWA/FRWA riffle bioassessment survey training and field day (Coppermine Brook September 28, 2019)	8 students and adults	Water quality and ecosystems	Review of healthy ecosystem	CT DEEP, FRWA, local watershed communities

## 2. Public Involvement/Participation (Section 6(a)(2) / page 21 of General Permit)

### Goals:

- *Involve the community in planning and implementing the town's stormwater management activities.*
- *Provide a minimum 30 day notice to the public for comment on annual reports.*

### 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
2-1 Comply with public notice requirements for Annual Reports	On going	Complete annual report using expanded template to provide regulatory explanation of reporting requirements	Publish a public notice on City's Public Works website with contact information for public input and information on annual report.	DPW/Env Eng reporting	April 2012	Annual report completed Jan 2020	In accordance with the MS4 general permit requirements, at least 45 days prior to April 1, 2020 and continuing annually until the permit expiration, the City of Bristol (Public Works Department-Engineering Division) will publish a public notice on its website ( <a href="http://www.bristolct.gov/enginfo">http://www.bristolct.gov/enginfo</a> ). The notice will provide a contact name, phone number, address, and email to whom the public can send comments. Additionally, the City's Stormwater Management Plan and the Annual Reports will be publicly accessible on the website and in the Bristol Public Works office at 111 North Main Street, Bristol, CT 06010. The public notice will allow for a 30-day comment period, at a minimum. Comments on the Annual Report may be made to the City of Bristol and are not submitted to CT DEEP. Following submission of the Annual Report to CT DEEP, a copy of the final report shall be made available for public inspection during regular business hours.

2-2 Public Information/Participation	On-going	<ul style="list-style-type: none"> <li>) PRWA Water Awareness Forum, January 26, 2019 (</li> <li>) Bristol Parks Green team clean-ups last Saturday of month (alternating Rockwell and Page Park)</li> <li>) Pequabuck River Watershed Assoc (PRWA) River Clean-up (April 27, 2019)</li> <li>) FRWA Annual River Clean-up (September 28, 2019) Bristol location coordinated with Green Team (Rockwell Park)</li> <li>) In 2019, Environmental Learning Center (ELCCT) Indian Rock Nature Preserve, the Harry C. Barnes Memorial Nature Center and in CT schools, provided environmental educational programs to over 25,000 children and families from over 70 Connecticut communities!</li> <li>) PRWA and FRWA: Water monitoring: Aquatic Insect Monitoring (RBV macroinvertebrate training (Sept. 2019)</li> <li>) In 2019, Bristol Public Works provided each school with a rain barrel for outdoor classroom use.</li> </ul>	Host/Cross agency postings – IWW meetings, fb, City website	Community/DP W/Env Eng reporting	Ongoing with annual reporting	Ongoing with annual reporting	Two watershed associations, two facilities of the ELCCT (Indian Rock Nature Preserve and Barnes Nature Museum), and the City of Bristol continue to offer and collaborate on outreach to increase public participation in activities related to environmental systems appreciation and understanding, including stormwater pollution prevention.
2-3 Additional BMP Activities Invasive Species Workshop	Completed	Provided forum to educate public about invasive species spread throughout CT and various control techniques, invasive insects and impact on neighborhood trees, enhancing habitats using native plants	Host/Cross agency postings – IWW meetings, fb, City website	Bristol Public Works, Environmental Learning Center of Central CT (ELCCT) and Bristol Garden Club	N/A	3-20-2019	The workshop speakers were Scott Heth (ELCCT), Dr. Jeffrey Ward (CT Agricultural Experiment Station and Peter Picone (CT DEEP Wildlife Biologist)
2-3 Rain Garden Workshop	Completed	Outlined why installation of bioswales, rain gardens and river buffers are important and ways to reduce stormwater and improve water quality.	Host/Cross agency postings – IWW meetings, fb, City website	Farmington River Watershed Association (FRWA)	N/A	4-18-2019	The workshop speaker was Aimee Petras, Outreach and Education Coordinator for FRWA. Free downspout disconnect kits were provided.

2-3 Open Space support	On- going	Community project for preservation of open space adjacent to environmental learning center museum and City park	Community- wide support	Community- wide	On-going with educational component	On-going	CT DEEP grant approved for watershed protection
2-3 Continue the Shared Cost Waterway Tree and Wooded Debris removal Policy	On- going	Bristol PW program assisting homeowners and businesses in removing large amounts of debris or sediments for the river Residential Waterway Maintenance	Allows for cost share for residents' maintenance of waterways	Bristol residents	On-going	On-going	Waterway protection assistance is provided to residents.

**Extra space for describing above BMP activities, if needed:**

BMP	
Public Works recycling, community and clean-up programs	Public awareness and opportunity for recycling empty plastic bags and film into Trex Company bench for local park (October 2019 – April 2020). See also Section 3.2 for student participation in illegal litter clean-ups (last Saturday of month), electronics recycling at weekly (seasonal) Farmers Market, special haz waste drop-off participation, waste oil drop-off offered to residents

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

- ) Continue public outreach/workshops for Rain Gardens, Native Plants, LID and Invasives Species management.
- ) Continue program assisting homeowners and businesses in reporting and removing large amounts of debris or sediments for the river Residential Waterway Maintenance
- ) Continue recycling and disposal notifications and special events
- ) Pequabuck River Watershed Association (PRWA): Continue public involvement/participation including Water Awareness Forum, rain garden planting, BMP workshop, RBV training/sampling participation (See also previous section Public Education/Outreach), river clean-up
- ) Farmington River Watershed Association (FRWA): Public involvement/participation include additional rain garden planned for Barnes Museum site, demonstration project, Boys and Girls Club stormwater education activities, RBV training and sampling (See also previous section Public Education/Outreach), river clean-up
- )

### 2.3 Public Involvement/Participation reporting metrics

Metrics	Implemented	Date	Posted
Availability of Annual Report announced to public	On target	Annually, 45 days prior to CT DEEP due date of April 1	<a href="http://www.bristolct.gov/enginfo">http://www.bristolct.gov/enginfo</a> and IWW Jan Commission meeting
PRWA Water Awareness Forum PRWA Water Awareness Forum, January 26, 2019	Yes	January 26, 2019	PRWA, Bristol IWW
Pequabuck River Clean-up	Yes	April 28, 2018	PRWA, Bristol PW FB, Bristol IWW
Pequabuck River BMP tour (see also Stormwater Education Section)	Yes	Oct. 5, 2019	PRWA, Bristol IWW, FRWA
PRWA EnviroScape Model and PRWA Interactive Photo Booth at various festivals Rockwell Park festival (up to 12,000 attend) Gloria Dei Festival Earth Day Earth Day Open House (Indian Rock Nature Preserve)-farm animal visits, hayrides, Earthday activities, native plant sale, live bird of prey show and Native American demonstration Earth Day Celebration (Manross Library and Bristol Public Library) –stories of nature, discussion of what it means to be eco-friendly, and eco-friendly crafts Imagine Nation Water Carnival and Early Learning programs Forestville Duck Race Bristol Mum Festival (up to 100,000 festival goers attend)	Yes, on-going	Misc. dates	Postings vary, including PRWA, FRWA, Bristol fb, Bristol IWW, Bristol All Heart
Water monitoring: Aquatic Insect Monitoring (RBV training)	Yes – on-going	Aquatic Insect Sampling (RBV) workshop (Whole day, both indoors and then outdoors portion, Barnes Nature Center, Bristol)	PRWA
FRWA completed rain garden at Page Park, Bristol Eastern High School students completed rain garden at BEHSI	Yes	Completed May 2019	FRWA, PRWA, Bristol Parks, Bristol IWW

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

**Goal:**

*Find the source of any illicit discharges; eliminate those illicit discharges; and ensure ongoing screening and tracking to prevent and eliminate future illicit discharges.*

#### 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	Completed	No change	Develop written plan of IDDE program	PW -Env Eng and EPT	Jul 1, 2018	Dec. 19, 2017	Continue to train and implement
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	Completed for overall City based on existing mapping references	Calculate and map DCIA>11%, Populate dry screening sampling data (see Appendix for DCIA with Dry Screening Sampling Locations Map)	Continue development of base maps and outfalls	PW-Eng/Env Eng reporting	Jul 1, 2019	Completed with initial data– ongoing updates	Basin outfall maps completed-
3-3 Implement citizen reporting program	Completed/ongoing	No change	Review and update website annually	PW-Eng	June 2018	Completed, with updates as needed	Direct reporting link added in 2018
3-4 Establish legal authority to prohibit illicit discharges	Completed	No change	Legal authority is established to prohibit illicit discharges in Section 22 - Water			Bristol currently has a legal authority to prohibit illicit discharges in Section 22 – Water, Sewers and Sewage Disposal into its Code of Ordinances (adopted Dec. 10, 1984). The provisions of	Continue to review and update ordinances to comply with regulatory updates

						Article II-Public Sewer Systems, and specifically Sec 22-23 for Enforcement and Penalties provides the City of Bristol with adequate legal authority	
3-5 Develop record keeping system for IDDE tracking	Complete	No change	IDDE reports are currently investigated, recorded and reported.	PW - EPT	June 2018	The 2019 EPT reports are provided in this Annual Report Appendix B.	May be updated for GIS recording as program develops
3-6 Address IDDE in areas with pollutants of concern	Partially completed	Outfall inspections continue	Complete initial illicit discharge assessment and initial priority ranking (See also BMP 3-7)	PW – Eng	July 2019	June 30, 2020	Continue to field verify drainage basin and outfall maps while collecting samples
3-7 Incorporate written procedure for screening and sampling of outfalls & MS4 interconnections/catchment investigation procedure	Partially complete- Forms and procedures are incorporated in written IDDE plan	Dry weather outfall screening records continue and locations have been mapped into GIS	Formalize written catchment investigation/manhole inspection/outfall screening procedure for IDDE program (use BMP 5-4 for implementation)	PW – EPT and Env Eng reporting	Update annually	Complete dry weather screenings July 2022	Sampling locations are updated in GIS
3-8 Sanitary Sewer Overflow (SSO) Inventory	Completed, with annual updates	Updated for 2019	Incorporate all known SSOs to the MS4 for past 5 years into excel database	WPC, with Eng reporting	October 2017	The 2019 reports are provided in Appendix A.	
BMP 3-9 Develop Illicit Discharge Prevention procedures	Completed, with ongoing updates		Incorporate into IDDE plan (BMP 3-1) and public education program (BMP 1-2)				
BMP 3-10 Perform IDDE staff training	Completed, with annual updates	Updated for 2019	Staff training on initial program and at least annual refresher for program updates	DPW training	Update annually	Annually	Continue to train; 2019 expanded to Park Supervisor training.

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

Continue with inspections, sampling, coordination and training. (Per permit IDDE sampling requirement includes outfalls in priority areas (urbanized areas overlapped by impaired waters or DCIA>11%) for initial baseline screening and dry or wet weather screening as needed based on results of catchment investigations. 2020 IDDE activities will include additional dry weather outfall screening, including visual documentation record and laboratory sampling.

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

Date of Report	Location / suspected source	Response taken
See Appendix B for Inspection and IDDE Investigation Records	See Appendix for locations	Record of inspections and NOV documentation is provided in Appendix B

**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.**

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)
See Appendix A for SSO records.  See Appendix B for Inspection and IDDE Investigation Records						

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

Bristol’s Environmental Protection Tech (EPT) and Environmental Engineer receive complaints from referred calls or on-site forms. Generally, the EPT responds to the complaint and addresses the action in monthly report, which is reviewed by Environmental Engineer, City Engineer and Inland Wetland Commission. If warning letter is issued, EPT may include “Summary of Urban Stormwater Pollutants” table from 2004 CT Stormwater Quality Manual to educate homeowners on water quality issues. Compliance fines may also now be assessed. In 2019, the Bristol Inland Wetland Commission, with support of the City leadership, voted to use environmental compliance-related enforcement fines for conservation/environmental betterment projects, with implementation beginning in 2020.

**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
From Public Health Dept Chief Sanitarian records, none for 2019		

**3.7 IDDE reporting metrics**

Metrics	
Estimated or actual number of MS4 outfalls	See maps
Estimated or actual number of interconnections	See maps
Outfall mapping of Kahn maps has been completed <sup>(1)</sup> - post-construction or field verification updates are not included	100% <sup>(1)</sup>
Interconnection mapping complete	100% <sup>(1)</sup>
System-wide mapping complete (detailed MS4 infrastructure)	100% <sup>(1)</sup>
Outfall assessment and priority ranking – 52 total outfalls have been initially assessed	20 outfalls were assessed in 2019
Dry weather screening of all High and Low priority outfalls complete: 52 total outfalls have been initially assessed	20 outfalls were assessed in 2019
Catchment investigations complete	2 locations identified to date for follow-up
Estimated percentage of MS4 catchment area investigated	Investigations are in response to IDDE reports

**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).**

Bristol’s Environmental Protection Tech (EPT) and Environmental Engineer regularly attend MS4 trainings that are made available from UCONN NEMO. 2019 Trainings included the monitoring workshop (June 2019) and others provided in Section 6.1.

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

**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	Completed	None	Review and revise, where necessary, land use regulations to comply with MS4 mandates	Land Use / Env Eng reporting	Jul 1, 2019	ongoing	Below

Additional details: Construction sites are regulated by “General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities”, a general permit issued under the authority of section 22a-430b of the Connecticut General Statutes. The general permit (effective date October 1, 2019) authorizes the discharge of stormwater and dewatering wastewaters for surface waters from construction activities on a site (as defined by the permit) with a total land disturbance of one or more acres of land area on a site, regardless of project phasing. The general permit defines requirements for registration. It allows “small construction” projects, i.e. construction projects with a total land disturbance of between one and five acres, to adhere to the erosion and sediment control land use regulations of the municipality in which the construction activity is conducted, as well as the Guidelines and Stormwater Quality Manual. According to the general permit, no registration or Plan review shall be required for “small construction” activity provided a land-use commission of the municipality (i.e. planning, wetland, conservation) reviews and issues a written approval of the proposed erosion and sediment control measures, pursuant to the requirements of section 22a-329 of the Connecticut General Statutes. In the absence of such municipal commission approval, registration with Connecticut Department of Energy and Environmental Protection (DEEP) is required.

Section IX A of the City of Bristol’s Zoning Regulations, Soil Erosion and Sediment Control Regulations, identifies the basic requirements for the regulations as “No development the disturbed area of which is cumulatively more than one-half acre in area shall be undertaken in any zoning district unless certification therefor in compliance with the provision of this Section has been first obtained from the Commission or its designated agent.”

The land use regulations review and if necessary, revision to establish the legal authority to control stormwater runoff from construction sites, as required by the MS4 permit may include:

- ) developers, construction site operators, or contractors maintain consistency with the 2002 Guidelines for Soil Erosion and Sedimentation Control, as amended, the Connecticut Stormwater Quality Manual, and all stormwater discharge permits issued by the DEEP within the municipal or institutional boundary pursuant to CGS 22a-430 and 22a-430b; [currently required by Land Use development review]*
- ) the implementation of additional measures to protect/improve water quality (in addition to the above requirements) as deemed necessary; [Water quality requirements in accordance with 2004 CT Stormwater Quality Manual is currently implemented]*
- ) authorization to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with municipal regulations, ordinances or programs or institutional requirements related to the management of Bristol’s MS4. Inspections shall be conducted, where allowed, to inventory the number of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive drainage from the permittee’s MS4;*

) the owner of a site seeking development approval from Bristol shall provide and comply with a long term maintenance plan and schedule to ensure the performance and pollutant removal efficiency of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive discharge from Bristol’s MS4 including short-term and long-term inspection and maintenance measures to be implemented by the private owner; [currently implemented]

) Bristol will control, through interagency or inter-jurisdictional agreements, the contribution of pollutants between the permittee’s MS4 and MS4s owned or operated by others.

4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval	Complete/on-going	Subdivision and site plan reviews for erosion control and stormwater management are conducted in accordance with MS4 and local criteria	Land Use reviews include state MS4 criteria for stormwater controls during construction and post-development	Land Use/Eng	Jul 1, 2017	Complete	The City’s Land Use Division the review, permitting, or approval of land disturbance projects.
4-3 Review site plans for stormwater quality concerns	On-going	Subdivision and site plan reviews for erosion control and stormwater management are conducted in accordance with MS4 and local criteria	Land Use reviews include state MS4 criteria for stormwater controls during construction and post-development	Land Use/Eng	Jul 1, 2017	Complete	The City of Bristol conducts site plan reviews that incorporate consideration of stormwater controls or management practices to prevent or minimize construction impacts to the MS4’s water quality.
4-4 Conduct site inspections	Ongoing	See Appendix B for Inspection reports	Continue site inspection program, including coordination with BMP 3-10 and BMP 6-4	EPT and other DPW-Inspectors	Jul 1, 2017	Ongoing	The City of Bristol performs construction site inspections and where necessary, initiates enforcement actions to ensure the adequacy of the installation, maintenance, operation, and repair of all construction and post-construction runoff control measures as it relates to the City’s MS4 system.
4-5 Implement procedure to allow public comment on site development	Complete	Procedure is in place.			Jul 1, 2017	Complete	See below.

Additional Information BMP 4-5: Land development is regulated under the City of Bristol’s Code of Ordinances, which is publicly available on the City’s website and in the City Clerk’s office. The City’s website provides information on the City Government Boards, Committees, meeting schedules, agendas, and minutes relating to site development projects. Meetings are held in public hearing format, with opportunity for public comment on site development projects. Public comment opportunity is currently implemented in the development review process with the use of public hearings for applications and proposed ordinance changes. The review Boards and Commissions are made of City of Bristol citizens, elected or appointed by an elected Mayor.

4-6 Implement procedure to notify developers about DEEP construction stormwater permit	Complete/on-going	The City Engineering Department continues to provide flyers to contractors and residences through the Building Department permit process and Public Works offices. A copy of the flyer is provided in appendix.			Jul 1, 2017	Complete	See Additional Information BMP 4-6 below.
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Additional Information BMP 4-6: The City of Bristol formalized and makes available a notification to developers and contractors of their potential obligation to obtain authorization under DEEP’s General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities (construction general permit) if their project disturbs more than 1 acre of land and results in a point source discharge to Connecticut surface waters directly or through the MS4, including the requirement to provide a copy of the Storm Water Pollution Control Plan be made available on request.

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

Continue to implement educational, inspection and enforcement actions.

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

**Goal:**

*Mitigate the long-term impacts of new and re-development projects on water quality through proper use of low impact development and runoff reduction practices.*

**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	Completed/ongoing	Zoning Regulations amended to update and add new Stormwater Management section for consideration of LID	Update LID and runoff reduction site planning and development standards (Zoning Commission 7-10-19)	PW Land Use and Eng	completed	ongoing	See additional details BMP 5-1 below.

Additional details BMP 5-1: The MS4 General Permit requires the establishment of a legal authority by ordinance, bylaw, regulation, standard condition of approval, or other means to require, to the maximum extent practicable (MEP), *that developers and contractors seeking the City's approval consider the use of low impact development (LID) and runoff reduction site planning and development practices that meet or exceed those LID and runoff reduction practices in the CT Stormwater Quality Manual prior to other stormwater management practices allowed in the land use regulations, guidance or construction project requirements.* This legal authority shall include the following standards:

- ) for redevelopment of sites that are currently developed with Directly Connected Impervious Area (DCIA) of forty percent or more, the project must retain on-site half the water quality volume for the site, or
- ) for new development and redevelopment of sites with less than forty percent DCIA, retain the water quality volume for the site, or
- ) if those retention standards cannot be met, the developer will be required to provide a report indicating why the standard could not be met and a mitigation project on another property or pay a fee to fund a DCIA retrofit.
- ) In developing this legal authority, the following watershed protection elements to manage the impacts of stormwater on receiving waters shall be considered:
- ) Minimize the amount of impervious surfaces (roads, parking lots, roofs, etc.) within each municipality by minimizing the creation, extension, and widening of parking lots, roads, and associated development and encourage the use of Low Impact Development or green infrastructure practices.

- ) Preserve, protect, create and restore ecologically sensitive areas that provide water quality benefits and serve critical watershed functions. These areas may include, but are not limited to; riparian corridors, headwaters, floodplains and wetlands.
- ) Implement stormwater management practices that prevent or reduce thermal impacts to streams, including requiring vegetated buffers along waterways, and disconnecting discharges to surface waters from impervious surfaces such as parking lots.
- ) Seek to avoid or prevent hydromodification of streams and other water bodies caused by development, including roads, highways, and bridges.
- ) Implement standards to protect trees, and other vegetation with important evapotranspirative qualities.
- ) Implement policies to protect native soils, prevent topsoil stripping, and prevent compaction of soils.
- ) Coordinate with state or local health officials to ensure no interference with performance of on-site septic systems.
- ) Limit turf areas.

5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects	Completed	None, except as noted in Additional Details column	Adds reference for Stormwater Management (Section IX.G) and updates Soil and Erosion Control references to zoning regulations	PW Land Use and Eng	Jul 1, 2019	Adopted by Zoning Commission 8-5-2019	See Appendix F for Memorandum summary (April 1, 2019).
5-3 Implement long-term maintenance plan for stormwater basins and treatment structures	Complete for City's stormwater trust ponds	GIS map of existing stormwater trust ponds completed in 2018 Maintenance & inspection of City's stormwater trust ponds are completed semi-annually	Establish GIS database for pond and structures. Establish and implement a plan for ongoing inspection and maintenance.	PW Facilities Maintenance and Eng	Jul 1, 2019	Completed and on-going	Long term maintenance plans are currently established for the City of Bristol Stormwater Trust Ponds and associated stormwater structures. The systems are maintained, inspected and reported at least semi-annually by City staff and the Stormwater Trust Committee inspects the systems annually. The City's Stormwater Trust program is a 2014 New England STORMY award-winning program for Best Stormwater funding idea. See Appendix F for reporting format
5-4 DCIA mapping	Complete	State IA layer added to GIS and the estimated DCIA calculated using Sutherland Equation	Complete DCIA for each MS4 outfall (See also BMP 3-2)	DPW-Eng /Env Eng, EPT and GIS	Jul 1, 2020	Complete	DCIA are established for each basin. See Appendix C for Areas with DCIA>11% Map and calculations and basin maps.

5-5 Address post-construction issues in areas with pollutants of concern	In progress	Establish and implement retrofit plan (See BMP 6-8)	Establish and implement retrofit plan (See BMP 6-8)	PW Land Use and Eng	June 2020	In progress	See also BMP 6-8. It is anticipated that as the priority implementation framework is completed, the City will continue to address permit requirements concerning post-construction issues of Pollutants of Concern.
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**5.2 Describe any Post-Construction Stormwater Management activities planned for the next year, if applicable.**

Continue to develop LID practices and GIS stormwater database and retrofit plan in accordance with permit schedule requirements.

**5.3 Post-Construction Stormwater Management reporting metrics**

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	See Appendix C
DCIA disconnected (redevelopment plus retrofits)	In progress-Not reported in 2019
Retrofits completed	In progress-Not reported in 2019
DCIA disconnected	In progress-Not reported in 2019
Estimated cost of retrofits	Not reported in 2019
Detention or retention ponds identified	Not reported in 2019

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

Bristol’s estimated directly connected impervious area was calculated with the CT DEEP/NEMO GIS impervious cover data (excluding DOT areas) and using the Sutherland equation, as presented in the NEMO November 14, 2019 webinar. The overall City map and calculations are provided in Appendix C.

## 6. Pollution Prevention/Good Housekeeping (Section 6(a)(6) / page 31 of General Permit)

### 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 and on-going	<p>PW and Parks staff attended training, including:</p> <ul style="list-style-type: none"> <li>) Feb 2019 (Parks Dept) Training with Parks Dept. re: MS4 and chemical use (Feb 7, 2019)</li> <li>) Training (Feb. 8, 2019) Municipal Action Success Stories in Land and Natural Resources and Planning workshop</li> <li>) PW Staff (1) attended DOT Stormwater Management Plan public information meeting (May 14, 2019)</li> <li>) PW staff (3) attended the UCONN Water Quality Monitoring Workshop June 20, 2019)</li> <li>) Pw Staff (1) attended MS4 Permit Year 3 Tasks webinar (June 24)</li> <li>) PW Staff (1) attended UCONN webinar "Getting to 2%-case studies in Impervious area disconnection)</li> <li>)</li> </ul>	Continue to expand its MS4 training program for town employees to increase awareness of water quality issues.	Parks/DPW	Annually	Complete and on-going	Training records are provided in Appendix F
6-2 Implement MS4 property and operations maintenance	On-going	Coordinate initial BMP guidance and tracking documents for annual report (See BMPs 6-9, 6-10, and 6-11)	Coordinate initial BMP guidance and tracking documents for annual report (See BMPs 6-9, 6-10, and 6-11)	Env Eng reporting	Annually	Complete and on-going	Records are provided in Appendix.

6-3 Implement coordination with interconnected MS4s	Annually	Mapping completed.	Establish interconnection locations and appropriate contacts. Coordinate MS4 strategies in communication(s)	DPW-Eng / Env Eng reporting	June 2017	May 2018	Additional watershed coordination in 2019 related to Pequabuck Watershed Plan coordination meetings
6-4 Develop/implement program to control other sources of pollutants to the MS4	On-going	On-going	Coordinate BMPs and outreach to Public Works Divisions (fertilizers and pesticides applications and use. Material storage, pet waste, waterfowl management, mowing, clipping disposal, alternative landscapes, pollution prevention, leaf and trash management)	DPW-Eng / Env Eng reporting	June 2017	On-going	Continue education and coordination efforts
6-5 Evaluate additional measures for discharges to impaired waters*	On-going	Pequabuck River Watershed Based Plan was completed Sept. 2109. Stakeholders reviewed and commented on Watershed BMP report.	Using BMP 3-2 progress, coordinate BMPs with BMP 1-2, 6-1, 6-2, 6-4, 6-7 through 6-11	Watershed communities / Env Eng reporting	Annually	On-going	Pequabuck River Watershed Plan link added to PW-Eng website
6-6 Track projects that disconnect DCIA	To be completed		Using database for BMP 5-4, establish procedure to document DCIA removal projects and assign tracking responsibilities	DPW-Eng / Env Eng reporting	In progress	In progress	See BMP 6-6 additional details below.

BMP 6-6 additional details: The MS4 permit requires annual tracking of the total acreage of Directly Connected Impervious Area (DCIA) that is disconnected from the MS4 as a result of redevelopment or retrofit projects within the town. For each retrofit/redevelopment project, Bristol will document the amount of existing DCIA that is disconnected. The total amount of disconnected DCIA will be reported each year in the Annual Report. Starting on July 1, 2021, a 1% reduction of its total DCIA acreage per year to the maximum extent possible is the MS4 permit goal. Bristol will provide updates on this goal in its annual report, documenting and incorporating all DCIA disconnections which occurred in the town since July 1, 2012 towards meeting this goal.

6-7 Implement infrastructure repair/rehab program	Ongoing	Coordinating with BMP 5-3 database and plan, prioritize and track MS4 infrastructure maintenance	Continue the program to identify MS4 structures to repair, rehabilitate, or upgrade to reduce or eliminate the discharge of pollutants into water bodies.	DPW / Env Eng reporting	June 2020	Ongoing	
6-8 Develop/implement plan to identify/prioritize retrofit projects	In progress		Using BMPs 3-2, 5-4, 5-5, monitoring and/or other resources, identify retrofit projects. Develop initial priority implementation framework with the goal of 1% DCIA removal in each of 4 <sup>th</sup> and 5 <sup>th</sup> years (2021 and 2022)		Jul 1, 2020	In progress	Implement retrofit projects to disconnect 2% of DCIA
6-9 Develop/implement street sweeping program	Ongoing	Ongoing-Sweepings stockpile sampled in accordance with CT DEEP guidelines (6-18-19)	Compile BMP and annual tracking documents. Consider future updates after completion of BMP 5-4 document.	DPW / Env Eng reporting	Annually		<i>Records in Appendix A</i>
6-10 Develop/implement catch basin cleaning program	Ongoing	Ongoing	Coordinate BMPs, procedure and annual tracking documents	DPW / Env Eng reporting	Annually		<i>Records in Appendix A</i>
6-11 Develop/implement snow management practices	Ongoing	Ongoing	Compile BMP and annual tracking document	DPW / Env Eng reporting	Annually		<i>Records in Appendix A (No change from 2018)</i>

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

Continue and expand implementation, education and recording of BMP activities.

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	See appendix F and section 6-1
Street sweeping	
Curb miles swept	See appendix A for Street sweeping records
Volume (or mass) of material collected	See appendix A for street sweeping records
Catch basin cleaning	
Total catch basins in priority areas	See appendix C for location (number not tabulated)
Total catch basins in MS4	See appendix C for location (number not tabulated)
Catch basins inspected	See appendix C for location (number not tabulated)
Catch basins cleaned	See appendix A - CB Cleaning records
Volume (or mass) of material removed from all catch basins	See appendix A – CB cleaning records
Volume removed from catch basins to impaired waters (if known)	See appendix for locations-volume not tabulated
Snow management	
Type(s) of deicing material used	Blizzard Wizard Salt, Liquid Magnesium Pro Melt M1000
Total amount of each deicing material applied	Liquide Mag 30,000 gals, Salt 3,850 tons
Type(s) of deicing equipment used	Pickup trucks and Dump Trucks
Lane-miles treated	225 Miles
Snow disposal location	Depot Square (across from City Hall)
Staff training provided on application methods & equipment	Not available
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	
Reduction in turf area (since start of permit)	
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	
Cost of mitigation actions/retrofits	

## Part II: Impaired waters investigation and monitoring

### 1. Impaired waters investigation and monitoring program

1.1 Indicate which stormwater pollutant(s) of concern occur(s) in your municipality or institution. 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.**

Sampling plan summary:

2019 sampling included dry weather sampling and inspections of 20 culvert outfalls in the Pequabuck River impaired waters section of the City, which included the area east of Middle Street to the confluence with the Coppermine Brook, and continuing east to proximately the City boundary line with Plainville. This area of the Pequabuck River-02 has been identified per 2018 Stormwater Impaired River as Priority Impaired for bacteria, phosphorus and other pollutant of concern. Culverts were visually inspected for dry weather flow and a monitoring record, with photograph, was made. If flow was noted the culverts were marked for follow-up sampling. In addition to the visual monitoring and photo record, field parameters for pH, temperature, ammonia, chlorine were measured and recorded on the Outfall Monitoring reports. Flow samples were taken in 4 locations for laboratory analysis of e. coli and conductivity. Locations without sampling were either dry or inaccessible.

### 2. Screening data for outfalls to impaired waterbodies

#### 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.

Outfall ID	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results	Name of Laboratory (if used)	Follow-up required?
See Appendix E for cumulative list spreadsheet					

## 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?
2004 Outfalls to Impaired Waters are shown in Appendix E. They include Outfalls 3 and 4	Data spreadsheet for 2004 MS4 summary (Table 3) is included in Appendix E				

## 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
See Appendix E	(Follow-up investigations are to be conducted for drainage areas associated with outfalls identified as potentially contributing to impairment, implementing a BMP program focusing on the impairment. This program is still under development).	

## 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)
See Appendix E				

(Note: It is anticipated that the prioritized monitoring will begin on an annual basis by July 1, 2020. The prioritized outfall locations will be identified in 2020 Annual Report).

### Part III: Additional IDDE Program Data

#### 1. Assessment and Priority Ranking of Catchments data

Assessment and ranking below was made with results of sampling and monitoring to date (MEP). See Appendix C for justifications based on the following category definitions.

- J Excluded catchments: Catchments with no potential for illicit discharges may be excluded from the IDDE program. This category is limited to roadway drainage in undeveloped areas with no dwellings and no sanitary sewers; drainage for athletic fields, parks or undeveloped green space and associated parking without services; cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.
- J Problem Catchments: Catchments with known or suspected contributions of illicit discharges based on existing information shall be designated as Problem Catchments. This shall include any catchments where previous outfall/interconnection screening indicates sewer input based on olfactory/visual evidence or sampling results (ammonia  $\geq 0.5$  mg/l, surfactants  $\geq 0.25$  mg/l, and bacteria levels greater than the water quality criteria applicable to the receiving water; or ammonia  $\geq 0.5$  mg/l, surfactants  $\geq 0.25$  mg/l, and detectable levels of chlorine). Problem Catchments need not be screened pursuant to subsection (d), below, and shall be scheduled for catchment investigation pursuant to subsection (e), below. Problem catchments shall be identified during the initial ranking of catchments and subsequent rankings shall not add any catchments to the Problem Catchment category.
- J High Priority Catchments: Catchments that have not been classified as Problem Catchments and that are discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds; catchments determined by the permittee as high priority based on outfall/interconnection screening under subsection (d), below, and catchment characteristics assessment under subparagraph (c)(ii), below. Any catchment where outfall/interconnection screening indicates sewer input based on olfactory/visual evidence or sampling results (ammonia  $\geq 0.5$  mg/l, surfactants  $\geq 0.25$  mg/l, and bacteria levels greater than the water quality criteria applicable to the receiving water; or ammonia  $\geq 0.5$  mg/l, surfactants  $\geq 0.25$  mg/l, and detectable levels of chlorine) shall be ranked at the top of the High Priority Catchments category and scheduled for catchment investigation pursuant to subsection (e), below.
- J Low Priority Catchments: Catchments determined by the permittee as low priority based on outfall/interconnection screening under subsection (d), below, and catchment characteristics assessment under subparagraph (c)(ii), below.

Provide a list of all catchments with ranking results:

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

#### 2. Outfall and Interconnection Screening and Sampling data

##### 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
See Appendix E										

## 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
None in 2019									

## 3. Catchment Investigation data

### 3.1 System Vulnerability Factor Summary

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

Outfall ID	Receiving Water	System Vulnerability Factors
N/A in 2019		

Where SVFs are:

History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.

Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.

Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.

Common or twin-invert manholes serving storm and sanitary sewer alignments.

Common trench construction serving both storm and sanitary sewer alignments.

Crossings of storm and sanitary sewer alignments.

Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;

Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.

Areas formerly served by combined sewer systems.

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

Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).

History of multiple local health department or sanitarian actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).

### 3.2 Key junction manhole dry weather screening and sampling data

Key Junction Manhole ID	Screening / Sample date	Visual/ olfactory evidence of illicit discharge	Ammonia	Chlorine	Surfactants
N/A for 2019					

### 3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants
None for 2019				

### 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
N/A for 2019							
Outfall ID	Receiving Water	System Vulnerability Factors					
N/A in 2019							

## Part IV: Certification

### 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: Ellen Zoppo-Sassu, Mayor	Print name: Carol Noble, P.E.
Signature / Date:	Signature / Date: