

**GENERAL PERMIT FOR THE DISCHARGE OF  
STORMWATER FROM SMALL MS4S**

**2017 ANNUAL REPORT**

**FOR  
TOWN OF GREENWICH, CT  
(GSM 000084)**



**REPORT FOR DEEP  
APRIL 1, 2018**

**MS4 General Permit**  
**Town of Greenwich 2017 Annual Report**  
 Existing MS4 Permittee  
 Permit Number GSM 000084  
 July 1, 2017 – December 31, 2017

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This report documents the Town of Greenwich efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from July 1, 2017 to December 31, 2017.

**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 – TOG SWMP 1.1 Develop/Acquire Education Materials	Ongoing	Health Yard Workshop October 18, 2017. Individual and group coaching for property owners on how to maintain healthy yards (composting, leaf mulching mowing, grass cycling) throughout fall 2017. Compost education at schools. Healthy Yards – Healthy You: workshop for the landscape contractors.		Directors, Conservation/IWWA	Jul 1, 2018	Ongoing throughout General Permit.	

1-2 Address education/ outreach for pollutants of concern - TOG SWMP 1.4 Targeted Outreach	In progress	Educational program at schools (fourth grade "Long Island Sound in a Jar") watershed and what are the point and non-point pollutants are. Every year in fall. Geese Management training (include egg oiling technique and other deterring practices).		Directors, Conservation/IWWA	Jul 1, 2018		
1-3 TOG SWMP 1.2 Web Based MS4 Library	Not Started			DPW/WestCOG		Ongoing throughout General Permit.	
1-4 TOG SWMP 1.3 Printed MS4 Educational Materials	In progress	"Learn How to Save More and Boost Your Efficiency by Recycling Organic Waste!" – for landscape contractors. "Learn How to Spend Less and Reuse More!" – for property owners. Land Care to Protect our Water" – prepared by IWWA.		Directors, Conservation/IWWA		Ongoing throughout General Permit.	
1-5 TOG SWMP 1.5 Partner Organizations	In progress	Aquarion Water Company, Audubon Greenwich, Garden Clubs, Garden Education Canter, Greenwich Green and Clean, Greenwich Recycling Advisory Board, and Greenwich Tree Conservancy.		Directors, Conservation/IWWA		Ongoing throughout General Permit.	
1-6 TOG SWMP 1.6 Reporting	Not Started			Directors, P&Z/Conservation/IWWA and Commissioner of Public Works (D,P&Z/C/IWWA&CPW)		Ongoing throughout General Permit.	

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

The Conservation Commission will continue with organic land care education and recycling of organic yard waste. This program not only would reduce but it would also enrich the soil increasing absorption of storm water runoff and pollutants.

**1.3 Details of activities implemented to educate the community on stormwater**

<b>Program Element/Activity</b>	<b>Audience (and number of people reached)</b>	<b>Topic(s) covered</b>	<b>Pollutant of Concern addressed (if applicable)</b>	<b>Responsible dept. or partner org.</b>
<u>Organic land management:</u> Healthy Yards Workshop:	80 property owners attended.	Topic: Limit/eliminate harsh chemicals (pesticides, herbicides and nutrient overload) via organic approach.	Phosphorus and nitrogen.	Conservation
<u>Organic land management:</u> Healthy Yards – Healthy You:	Over 40 landscape contractors attended.	Topic: Limit/eliminate harsh chemicals (pesticides, herbicides and nutrient overload) via organic approach.	Phosphorus and nitrogen.	Conservation
<u>Water quality, LIS:</u> Long Island Sound in a Jar.	About 175 students (fourth grade).	Topic: watershed, point and no-point source pollution.		Conservation
<u>Water quality, LIS:</u> Geese Management.	About 55 property owners and leaders of non-for-profit organizations were trained.	Topic: egg oiling and other techniques deterring goose.		Conservation

## 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
2-1 Comply with public notice requirements for the Stormwater Management Plan – TOG SWMP 2.1 Public notice	Completed	Completed General Permit and SWMP		Commissioner, Public Works	Apr 3, 2017	March 29, 2017	
2-2 Comply with public notice requirements for Annual Reports – TOG SWMP 2.1 Public notice	Completed	Published public notice on February 15, 2018		Commissioner, Public Works	Feb 15, 2018		
2-3 TOG SWMP 2.2 Public comment reporting			Results expected at Technical Advisory Group (TAG) meeting.	WestCOG		Ongoing throughout General Permit.	Have not received any reports since this will be the first comment period.

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

### 2.3 Public Involvement/Participation reporting metrics

Metrics	Implemented	Date	Posted
Availability of the Stormwater Management Plan announced to public	Yes	March 30, 2017	Engineering Division Office and Web Page - <a href="http://www.greenwichct.org/public_documents/greenwichct_dpw/greenwichct_engineering/stormwater/pollutants/index/">http://www.greenwichct.org/public_documents/greenwichct_dpw/greenwichct_engineering/stormwater/pollutants/index/</a>
Availability of Draft Annual Report announced to public Availability of the Final Annual Report announced to the public	Yes Yes	February 15, 2018 March 28 ,2018	Engineering Division Office and Web Page - <a href="http://www.greenwichct.org/public_documents/greenwichct_dpw/greenwichct_engineering/stormwater/pollutants/index/">http://www.greenwichct.org/public_documents/greenwichct_dpw/greenwichct_engineering/stormwater/pollutants/index/</a>

### 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 – TOG SWMP 3.1 Develop IDDE Program	In progress	Town is in process of completing written IDDE program using the CT IDDE program template	Develop written plan of IDDE program	Commissioner, Public Works	Jul 1, 2018	Anticipate completing by the deadline of July 1, 2018.	The plan will be added as an appendix to the Town of Greenwich Drainage Manual.
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas – TOG SWMP 3.7 Stormwater Discharge List and Map	In progress	The list of outfalls to be investigated for the Impaired Waters has been completed (246 outfalls). Will continue to work on the remaining priority areas.	Complete list of all outfalls in priority areas and entire Town.	Commissioner, Public Works	Jul 1, 2019	Anticipate completing by the deadline of July 1, 2019.	The following are the number of outfalls identified thus far within the three Impaired Waters locations: Byram River: 9 outfalls. Horseneck Brook: 80 outfalls. Shoreline Area: 157 outfalls.
3-3 Implement citizen reporting program – TOG SWMP 3.4 Citizen Reporting Program	In progress	Will be improving the Town web page and setting up the Town's asset management software for citizen reports.	Generation of reports of illicit discharge received from citizens.	Commissioner, Public Works	Jul 1, 2017	Anticipate completing by the deadline of July 1, 2018.	The asset management software (Lucity) is being setup to collect citizen reports of suspected illicit discharges.
3-4 Establish legal authority to prohibit illicit discharges – TOG SWMP 3.2 IDDE program legal authority	In progress	Town is in process of developing an Illicit Discharge appendix to be included in drainage manual.	Completed appendix within the drainage manual.	Commissioner, Public Works	Jul 1, 2018	Anticipate completing appendix by the July 1, 2018.	The incorporation of the appendix into the drainage manual may not occur until after July 1, 2018.
3-5 Develop record keeping system for IDDE tracking	In progress	Working with Town GIS system and Town asset management system (Lucity) to setup all Dry Weather Inspections and Wet Weather Sampling of all Town outfalls.	Completed database of all outfalls.	Commissioner, Public Works	Jul 1, 2017	Anticipate completing by the July 1, 2018.	The Town currently uses GIS and paper records for outfall information and this change to using Lucity will allow the Dry Weather Inspection information to be collected on a tablet and uploaded directly into the asset management system.

3-6 Address IDDE in areas with pollutants of concern – TOG SWMP 3.3 IDDE program implementation	In progress	The list of outfalls to be investigated for the Impaired Waters has been completed (246 outfalls). Will continue to work on the remaining priority areas.	Completed database of all outfalls.	Commissioner, Public Works	Not specified	Anticipate completing by the July 1, 2022.	
3-7 TOG SWMP 3.5 Ongoing screening and tracking	Not started		Completed database of all outfalls.	Commissioner, Public Works	-	Ongoing throughout General Permit.	Compile all the IDDE tracking requirements (Dry Weather Inspections and Wet Weather Sampling) into asset management system (Lucity).
3-8 TOG SWMP 3.6 Track illicit abatement activities	Not started		Completed database of all illicit abatement activities.	Commissioner, Public Works		Ongoing throughout General Permit.	Compile all the illicit abatement activities into asset management system (Lucity).
3-9 TOG SWMP 3.8 Detailed system map	In progress	The Town started the final field inspection on January 9, 2017 of the stormwater infrastructure to complete the detailed system map.	Completed detailed system map.	Commissioner, Public Works	July 1, 2020	Anticipate completing by the July 1, 2020.	The field investigation will be completed in the following order: 1. Impaired Waters 2. Urban Area 3. DCIA > than 11% 4. Remaining area of Town

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

The written IDDE program will be added to the Town’s Drainage Manual as an Appendix and posted to the Department of Public Works webpage and a link listed in next year’s Annual Report. The Town will update the written IDDE program as needed throughout the permit term.

Maintain IDDE tracking within asset management software (Lucity) and ensure all employees involved in IDDE program understand the process.



**3.3 List of citizen reports of suspected illicit discharges received during this reporting period. No citizen reports for July 1, 2017 – December 31, 2017.**

Date of Report	Location / suspected source	Response taken

**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 illicit discharges to report for 2017. Included all SSOs from 2012 through March 12, 2018.**

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)
Mason Street at Havemeyer Place, vicinity 15 Havemeyer Place and 11 Bruce Place. Greenwich Harbor.	3/12/2018 9:38am 3/12/2018 10:20am		501-1,000 gallons	Sewer line blockage – other.	Continue Private Inflow Removal Program; continue improvements to collection system and continue maintenance program.	
Grass Island WWTP – Final Settling Tanks. Greenwich Harbor.	3/2/2018 7:05am 3/4/2018 7:00am		Undetermined	Weather conditions – Heavy rain – over 1 inch of rain per hour.	Made all possible process control changes; such as lower returns; shut off recycle flow; implemented wet weather strategy.	
7 Carol Place.	3/2/2018 7:57am 3/2/2018 10:00am		51-500 gallons	Sewer line blockage – grease.	Continue to educate public, residents, and restaurants regarding proper disposal of grease from cooking and perform cleaning/maintenance and inspection of sewer mains.	
145 Old Church Road sewer lateral, water coming out on property of 143 Old Church Road. Small stream/brook that eventually leads to West Brother Brook and Indian Harbor.	2/28/2018 1:00pm Na		51-500 gallons	Sewer line – other.	Private property issue. Property owner notified. Property owner working with Sewer Division and Department of Health to correct the issue with the private sewer lateral and private sewer main. Temporary fix completed 3/6/2018. Property owner is working on permanent solution.	

Grass Island WWTP – Final Settling Tanks. Greenwich Harbor.	2/11/2018 3:00pm 2/12/2018 4:00am			Weather conditions – Heavy rain – over 1 inch of rain per hour.	Continue to make improvements to collection system, continue to work on wet weather strategy, etc.	
Ballwood Pump Station, 14 Ballwood Road. Null.	2/6/2018 2:20pm 2/6/2018 3:30pm		51-500 gallons	Mechanical equipment failure.	Pump station is under construction / rehabilitation. Equipment/valve was fixed. Issue closed 2/6/2018.	
Sewer Main - West Putnam Avenue, vicinity of 1 Edgewood Avenue. Horseneck Brook.	12/4/2017 9:50am 12/4/2017 10:20am		51-500 gallons	Sewer line blockage – other.		
Private Sewer Main – 44 Lake Avenue (serves Bethel AME Church and apts/condos behind church. Storm drain that discharges to small pond on Glen Court then Horseneck Brook.	10/29/2016 11:15am 10/29/2016 12:30pm		350 gallons	Sewer line blockage – roots.	Notified private property owners to get the sewer line inspected and take corrective actions.	
Sewer Manhole – West Putnam Avenue and Edgewood Avenue. Storm drain that discharges to Greenwich Harbor via Horseneck Brook.	10/23/2016 6:50am 10/23/2016 7:15am		<500 gallons	Sewer line blockage – grease.	Continue to educate public, residents, and restaurants regarding proper disposal of grease from cooking and perform cleaning/maintenance and inspection of sewer mains.	
Private Sewer Main – near 42 ½ Sunshine Avenue. Storm drain that discharges to Mianus River.	6/25/2016 11:30am 6/25/2016 1:00pm		100 gallons	Sewer line blockage – roots.	Notify private property owners to get the sewer line inspected and take corrective actions.	
Sewer Manhole – near 52 Weaver Street. Storm drain that discharges to Tom’s Brook.	2/21/2016 1:00pm 2/21/2016 1:30pm		250 gallons	Sewer line blockage – grease, ‘Swiffer’ rags.	Continue to educate public, residents, and restaurants regarding proper disposal of grease from cooking and perform cleaning/maintenance and inspection of sewer mains.	

Sewer Lateral Vent on side of building - 180 West Putnam Avenue. Horseneck Brook.	6/18/2015 1:35pm 6/18/2015 2:10pm		750 gallons	Sewer line blockage – grease.	Continue to perform cleaning/maintenance and inspection of sewer mains.	
Sewer Manhole - Ritch Avenue – across from Byram Park. Storm drain that discharges to Byram Harbor.	5/25/2015 5:45pm 5/25/2015 7:00 pm		350 gallons	Sewer line blockage – grease.	Continue to educate public, residents, and restaurants regarding proper disposal of grease from cooking and perform cleaning/maintenance and inspection of sewer mains.	
Grass Island WWTP - Final Settling Tank Nos. 1 & 3. Greenwich Harbor.	3/11/2015 2:00pm 3/12/2015 early morning		Undetermined	Weather conditions. Saturated ground conditions from some prior rain and snow melting / thawing.	Continue I&I program to remove extraneous flows, improved management of sludge blankets, etc.	
South Water Street – between Church Street and just beyond pumping station at Hervey Street. Byram River.	12/9/2014 11:30am 12/10/2014 11:00pm		Undetermined	Weather conditions. Approx. 3.25 inches of rain in less than 24 hours, high tides during peak rainfall, & high groundwater table.	Installed larger diameter relief sewer that is deeper with greater slope, installed larger wet well completed in 2016, continue I&I program to remove extraneous flows, continue to line mains, manhole repairs, pipe replacements, etc.	
Manhole – 211 West Putnam Avenue – behind it in wooded area. Horseneck Brook.	12/9/2014 1:00pm 12/10/2014 10:00pm		5,000 gallons	Weather conditions. Approx. 3.25 inches of rain in less than 24 hours, high tides during peak rainfall, & high groundwater table.	Continue I&I program to remove extraneous flows, continue to line mains, manhole repairs, pipe replacements, etc.	
Arch Street & Sound View Drive – near 75 Arch Street. Greenwich Harbor.	12/9/2014 12noon 12/9/2014 4:00pm		350 gallons	Weather conditions. Approx. 3.25 inches of rain in less than 24 hours, high tides during peak rainfall, & high groundwater table.	Continue I&I program to remove extraneous flows, continue to line mains, manhole repairs, pipe replacements, etc.	

Force Main – Hill Lane Avenue. Small pond on Hill Lane Avenue.	8/14/2014 8:30am 8/14/2014 8:45am		150 gallons	Force Main break.	Full replacement of force main completed in 2017/early 2018.	
Private Storm Drain connected to Private Sewer Lateral – 150 North Water Street. Byram River.	7/25/2014 4:45pm 7/25/2014 5:45pm		300 gallons	Private storm drain illegally connected to the private sanitary sewer lateral.	Notified private property owner to take corrective actions. Continue I&I program to remove extraneous flows.	
Manholes –Old Greenwich Pump Station / West End Avenue. Long Meadow Creek.	7/9/2014 3:45pm 7/9/2014 4:10pm		350 gallons	Mechanical equipment failure.	Investigate to determine actual cause of equipment failure. Installed high level float in manhole in 2016.	
South Water Street – between Church Street and just beyond pumping station at Hervey Street. Byram River.	5/1/2014 8:30am 5/2/2014 7:30am		Undetermined	Weather conditions. Approx. 4.5 inches of rain in less than 24 hours, high tides during peak rainfall, & high groundwater table.	Installed larger diameter relief sewer that is deeper with greater slope, installed larger wet well completed in 2016, continue I&I program to remove extraneous flows, continue to line mains, manhole repairs, pipe replacements, etc.	
Roosevelt Avenue at Irvine Street. Storm drain that discharges to Long Island Sound.	5/1/2014 8:30am 5/1/2014 12noon		500 gallons	Weather conditions. Approx. 4.5 inches of rain in less than 24 hours, high tides during peak rainfall, & high groundwater table.	Continue I&I program to remove extraneous flows, continue to line mains, manhole repairs, pipe replacements, etc.	
Sound Beach Avenue – near 268 Sound Beach Avenue. Storm drain that discharges to Long Meadow Creek.	5/1/2014 8:30am 5/1/2014 12noon		750-850 gallons	Weather conditions. Approx. 4.5 inches of rain in less than 24 hours, high tides during peak rainfall, & high groundwater table.	Continue I&I program to remove extraneous flows, continue to line mains, manhole repairs, pipe replacements, etc.	
Loughlin Avenue. Mianus River.	5/1/2014 10:00am 5/2/2014 12:30am		Undetermined	Weather conditions. Approx. 4.5 inches of rain in less than	Continue I&I program to remove extraneous flows, continue to line mains, manhole repairs, pipe replacements, etc.	

				24 hours, high tides during peak rainfall, & high groundwater table.	
Grass Island WWTP - Final Settling Tanks. Greenwich Harbor.	5/1/2014 7:00am 5/1/2014 7:30am		Undetermined	Weather conditions. Approx. 4.5 inches of rain in less than 24 hours, high tides during peak rainfall, & high groundwater table.	Continue I&I program to remove extraneous flows, continue to line mains, manhole repairs, pipe replacements, etc.
Grass Island WWTP - Final Settling Tanks. Greenwich Harbor.	4/30/2014 9:15pm 5/1/2014 7:30am		Undetermined	Weather conditions. Approx. 4.5 inches of rain in less than 24 hours, high tides during peak rainfall, & high groundwater table.	Continue to improve management of sludge blanket levels, perform maintenance of equipment, I&I program to remove extraneous flows, etc.
Grass Island WWTP - Final Settling Tank No. 1. Greenwich Harbor.	4/7/2014 9:00am 4/7/2014 12noon		Undetermined	Weather conditions. Heavy rain & saturated ground conditions.	Continue to improve management of sludge blanket levels, I&I program to remove extraneous flows, etc.
Grass Island WWTP - Final Settling Tank No. 3. Greenwich Harbor.	3/30/2014 3:00am 3/30/2014 7:00am		Undetermined	Weather conditions – Heavy rain – Approx. 3.1 inches of rain between 3/29/2014 and 3/30/2014.	Continue to improve management of sludge blanket levels, I&I program to remove extraneous flows, etc.
Manhole – Hill Top Pumping Station – Byram Road at Nickel Street. Na (dry weather).	11/17/2013 10:45am 11/17/2013 1:20pm		200 gallons	Sewer line blockage – roots & other.	Continue to perform maintenance of sewer mains.
Manhole – West Putnam Avenue – between Edgewood and Oak Ridge Street. Na (dry weather).	10/25/2013 8:00am 10/25/2013 9:00am		<100 gallons	Sewer line blockage – grease & other.	Continue to perform maintenance of sewer mains.

Private Sewer Main – Chimney Corners / Oneida Drive. Greenwich Harbor.	9/13/2013		Undetermined		Notified private property owners to get the sewer line inspected and take corrective actions. Work completed in 2015.	
Manhole – Milbank Avenue & Lexington Avenue. Long Island Sound.	6/27/2013 2:00pm 6/27/2013 3:30pm		1,150 gallons	Sewer line blockage – grease, roots, & other.	Continue to perform maintenance of sewer mains.	
Manhole – South Water Street – between Division Street and Berrian Place. Byram River.	6/14/2013 7:45am 6/14/2013 12:30pm		200 gallons	Weather conditions – Heavy rain – saturated ground conditions, almost 10 inches of rain received in first two weeks of June and 1.5 inches of rain received the night before.	Pump station and influent gravity sewer rehabilitation completed in 2016.	
Four Manholes – South Water Street – between Hervey Street and Church Street. Byram River.	6/8/2013 2:30am 6/8/2013 4:00pm		Undetermined	Weather conditions – Heavy rain – over 4.5 inches of rain in 24 hours.	Pump station and influent gravity sewer completed in 2016.	
Private Sewer Lateral – 116 Butler Street. Cos Cob Harbor	3/3/2013 11:30am 3/3/2013 12noon		Undetermined	Sewer line blockage – other.	Private property issue. Continue I&I program to remove extraneous flows, etc.	
Grass Island WWTP - Final Settling Tanks. Greenwich Harbor.	2/27/2013 10:00am 2/27/2013 8:00pm		Undetermined	Excessive flows, mechanical equipment failure.	Continue to improve management of sludge blanket levels, perform maintenance of equipment, I&I program to remove extraneous flows, etc.	
Cleanout on Private Sewer Lateral – 9 Seton Lane. Byram River.	1/12/2013 9:15am 1/12/2013 12:30pm		150 gallons	Sewer line blockage – grease & other.	Continue to perform maintenance of sewer mains.	
Manholes –Old Greenwich Pump Station / West End Avenue. Long Meadow Creek.	11/25/2012 9:30am 11/25/2012 9:50am		200-250 gallons	Mechanical equipment failure.	We improved our telemetry/alarming system and added high level float in influent manhole in 2016.	
Western Pumping Station – at end of	10/30/2012 Na		Undetermined	Weather conditions – Hurricane Sandy –		

private section of Byram Shore Road. Byram River.				roads flooded, trees down, power lines down, roads impassable, stations could not be accessed to connect portable generators to, Electrical equipment failure (power loss).	
Heusted Pumping Station. Greenwich Cove.	10/30/2012 10/30/2012 8:00pm		Undetermined	Weather conditions – Hurricane Sandy – roads flooded, trees down, power lines down, roads impassable, stations could not be accessed to connect portable generators to, Electrical equipment failure (power loss).	
Ballwood Pumping Station. Long Island Sound.	10/30/2012 10/30/2012 4:00pm		Undetermined	Weather conditions – Hurricane Sandy – roads flooded, trees down, power lines down, roads impassable, stations could not be accessed to connect portable generators to, Electrical equipment failure (power loss).	
Belle Haven Pumping Station. Long Island Sound.	10/30/2012 10/30/2012 11:00am		Undetermined	Weather conditions – Hurricane Sandy – roads flooded, trees down, power lines down, roads	

				impassable, stations could not be accessed to connect portable generators to, Electrical equipment failure (power loss).		
Shore Road – Station D. Greenwich Cove.	10/30/2012 10/30/2012 4:00pm		Undetermined	Weather conditions – Hurricane Sandy – roads flooded, trees down, power lines down, roads impassable, stations could not be accessed to connect portable generators to, Electrical equipment failure (power loss).		
Grass Island WWTP – Manhole near Final Clarifiers. Greenwich Harbor.	10/30/2012 1:15am 10/30/2012 3:00am		Undetermined	Weather conditions – Hurricane Sandy, Full Moon High Tide, storm surge conditions, Mechanical equipment failure, Electric utility failure.		

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

The Town is working to setup our Asset Management System (Lucity) to be the repository of all Illicit Discharge Reports, responses and tracking. The Engineering Division of the Department of Public Works will be responsible for Illicit Discharge Reports.



**3.6 Provide a summary of actions taken to address septic failures using the table below. Will begin working with the Health Department in 2018 to compile the relevant information to complete the table.**

Location and nature of structure with failing septic systems	Actions taken to respond to and address the failures	Impacted waterbody or watershed, if known

**3.7 IDDE reporting metrics**

Metrics	
Estimated or actual number of MS4 outfalls – The number includes Town, State and Private outfalls. This will be revised to only include Town outfalls once GIS mapping review and field investigations are completed.	1,465 Outfalls
Estimated or actual number of interconnections – This is an estimated number and will be revised once GIS mapping review and field investigations are completed.	State CT I95 – 41 State CT US1 – 30 State CT Merritt – 24 Stamford CT – 5 State NY - 14
Outfall mapping complete – The mapping is completed and the Town is currently performing an entire visual field inspection to close any connectivity issue and to finalize ownership (Town, State and Private).	90%
Interconnection mapping complete – This requires field investigation to be completed to verify the GIS mapping. The % is based only on GIS data.	40%
System-wide mapping complete (detailed MS4 infrastructure) - The mapping is completed and the Town is currently performing an entire visual field inspection to close any connectivity issue and to finalize ownership (Town, State and Private).	90%
Outfall assessment and priority ranking – The % completed is based on GIS mapping, prior wet weather sampling, SSO’s and infrastructure.	17%
Dry weather screening of all High and Low priority outfalls complete – Dry weather inspections will begin in 2018 along with wet weather sampling of Impaired Waters.	Will begin in 2018 for 2017 General Permit.
Catchment investigations complete – The Town is using the DEEP IC Basin Layer for the Catchment Areas. A priority ranking will be given to each of the 106 Catchments. To address the issue of many outfalls within a Catchment Area, each outfall will also be given a priority ranking. Will begin in 2018.	0
Estimated percentage of MS4 catchment area investigated. Will begin in 2018.	0%

**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).**

The proposed IDDE training for Town employees has not been developed for the July 2017 General Permit. The Town is in the process of putting together the training program with Osprey Environmental Engineering, LLC whom will be providing the training.

**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 – TOG SWMP 4.1 Legal authority for construction site stormwater control	Ongoing	The Conservation Commission very often enforces the compliance for the activities approved by P&Z. The submittal of Long Term Maintenance Plans for detention and retention structures on site that are permitted by P&Z, Wetlands and Building Division..	Inventory the number of Long Term Maintenance Plans from 2012.	Directors, P&Z/Conservation/IWWA and Commissioner of Public Works (D,P&Z/C/IWWA&CPW)	Jul 1, 2019	Annually	This is an ongoing process and the Town will continue to make changes as needed.
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval – TOG SWMP 4.2 Interdepartmental coordination	Ongoing	Stormwater quality is being review by the Conservation Commission Staff for applications submitted with P&Z. The goal is to provide recommendation ensuring that the proposed development would	Compare how many Building Permits were issued and confirm that Land Use sign offs were obtained for all applicable Building Permits.	D,P&Z/C/IWWA&CPW	Jul 1, 2017	Annually	This is an ongoing process and the Town will continue to make changes as needed.

		not have any long-term impact on the storm water quality. Sign off from Land Use Agencies prior to acceptance of Building Permit applications. Greenwich routes Planning and Zoning applications to other applicable Town Departments for comment prior to decisions on Site Plans and Subdivisions.					
4-3 Review site plans for stormwater quality concerns – TOG SWMP 4.3 Construction site reviews and inspections	Ongoing	The Conservation Commission staff reviews site plans for storm water quality concerns upon public complaint. Greenwich conducts site plan reviews that incorporate consideration of stormwater controls or management practices to prevent or minimize impacts to water quality on sites with soil disturbance of 1 acre or more.	Inventory how many building permits were issued vs how many projects required site plan review by P&Z (and/or wetlands)	D,P&Z/C/IWWA&CPW	Jul 1, 2017	Annually	This is an ongoing process and the Town will continue to make changes as needed.
4-4 Conduct site inspections – SWMP 4.3 Construction site reviews and inspections	Ongoing	The Conservation Commission staff conducts site inspections for storm water quality concerns upon public complaint. Greenwich conducts site inspection(s) and enforcement to assess the adequacy of	Inventory how many code enforcement violations were issued for control measures and/or how many wetlands violations were issued.	D,P&Z/C/IWWA&CPW	Jul 1, 2017	Annually	This is an ongoing process and the Town will continue to make changes as needed.

		the installation, maintenance, operation, and repair of construction and post construction control measures.					
4-5 Implement procedure to allow public comment on site development – TOG SWMP 4.4 Incorporate public involvement into development activities	Ongoing	The Conservation Commission is not a regulatory body. Greenwich requires applicants to provide notice of all pending IWWA and P&Z applications to abutting landowners via direct mail. Greenwich accepts input from the public regarding Land Use Agencies applications and procedures via email, phone, public counter, and public meetings. Greenwich forwards information received via phone, email, or Greenwich's "Community First" hotline to the appropriate town department.	Inventory how many members of the community and other departments commented on applications at meetings or in the office.	D,P&Z/C/IWWA&CPW	Jul 1, 2017	Daily/weekly	This is an ongoing process and the Town will continue to make changes as needed.
4-6 Implement procedure to notify developers about DEEP construction stormwater permit – TOG SWMP 4.5 Notify developers of permit requirements	Ongoing	This information is included in site plan comments provided to the P&Z Commission and the applicant during the project review phase. The Town will notify developers or contractors of their potential obligation to	The application forms and website will be updated with this information.	D,P&Z/C/IWWA&CPW	Jul 1, 2017	Ongoing	This is an ongoing process and the Town will continue to make changes as needed.

		<p>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 Town's MS4. The Town will also require a copy of the Storm Water Pollution Control Plan be made available to the town on request.</p>					
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**4.2 Describe any Construction Site Runoff Control activities planned for the next year, if applicable.**

Develop documentation and procedure for receiving, reporting and addressing construction site runoff complaints.

## 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 – TOG SWMP 5.1 Legal authority for post-construction stormwater management	Ongoing	Review of the Town of Greenwich Drainage Manual February 2014 to determine possible modifications to better match the requirements of the July 2017 General Permit. The Conservation Commission Staff advise the P&Z Commission on new development applying consistent guidelines regarding LID.	The completed Amended Town of Greenwich Drainage Manual.	Directors, P&Z/Conservation/IWWA and Commissioner of Public Works (D,P&Z/C/IWWA&CPW)	Jul 1, 2021	Ongoing throughout General Permit.	The Town of Greenwich has been requiring LID and runoff reduction for site development since May 2012.
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects – TOG SWMP 5.2 Reduce regulatory barriers for implementing LID – TOG SWMP 5.3 Runoff Reduction/LID Measures	Ongoing	Review of the Town of Greenwich Drainage Manual February 2014 to determine possible modifications to better match the requirements of the July 2017 General Permit.	The completed Amended Town of Greenwich Drainage Manual.	Commissioner, Public Works	Jul 1, 2019	Ongoing throughout General Permit.	The Town of Greenwich has been requiring LID and runoff reduction for site development since May 2012.
5-3 Identify retention and detention ponds in priority areas – TOG SWMP 5.5 Detention/retention pond long term maintenance plan	Not started		Completed list of all retention and detention ponds.	Commissioner, Public Works	Jul 1, 2019		The Town of Greenwich has been requiring all private site development projects to file a Stormwater Management Maintenance Declaration prior to the issuance of a Certificate

							of Occupancy since May 2012.
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures – TOG SWMP 5.6 Stormwater treatment structures long term maintenance plan	Not started		Completed list of all stormwater basins and treatment structures.	Commissioner, Public Works	Jul 1, 2019		The Town of Greenwich has been requiring all private site development projects to file a Stormwater Management Maintenance Declaration prior to the issuance of a Certificate of Occupancy since May 2012.
5-5 DCIA mapping – TOG SWMP 5.4 Directly Connected Impervious Area (DCIA) mapping	In progress		Completed DCIA list and map.	Commissioner, Public Works	Jul 1, 2020		
5-6 Address post-construction issues in areas with pollutants of concern					Not specified		

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

The Town is working to setup our Asset Management System (Lucity) to be the repository of all Town owned detention/retention ponds and stormwater treatment structures. The Asset Management System (Lucity) will be able to maintain a database of each structure which includes inspection and maintenance records.

### 5.3 Post-Construction Stormwater Management reporting metrics

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA) – The DCIA listed is preliminary and will be revised once the watersheds shared with Stamford have been revised to only include the Greenwich DCIA.	737 acres
DCIA disconnected (redevelopment plus retrofits) – Currently working to collect all the redevelopment records for all properties issued a Certificate of Occupancy.	acres this year / acre’s total for 2012 acres this year / acre’s total for 2013 acres this year / acre’s total for 2014 acres this year / acre’s total for 2015 acres this year / acre’s total for 2016 acres this year / acre’s total for 2017
Retrofits completed – Based on the level of redevelopment and development in the Town of Greenwich, retrofit projects are not planned at this time.	0
DCIA disconnected - Currently working to collect all the redevelopment records for all properties issued a Certificate of Occupancy from 2012 through 2017.	% this year / % total since 2012 % this year / % total since 2013 % this year / % total since 2014 % this year / % total since 2015 % this year / % total since 2016 % this year / % total since 2017
Estimated cost of retrofits – Based on the level of redevelopment and development in the Town of Greenwich, retrofit projects are not planned at this time and therefore no estimated construction costs.	\$0.00
Town owned Detention or retention ponds identified – This work has not begun so the provided information is only an estimate at this time. Will begin in 2018.	# this year /# total

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

The baseline for the DCIA is based on the GIS information provided by the DEEP IC Basin Layer (2012). The Town has given a DCIA Connectivity Level of 1 – 5 to 96 of the total 106 Catchment Areas. The 10 Catchment Areas that have not been given a DCIA Connectivity Level include large areas of Stamford and the Town has not determined how they will approach these Catchments since most of the impervious area is in Stamford. The most likely course will be to have the Town’s GIS Department modify the 10 Catchment Area boundaries as well as the impervious coverage information in the DEEP IC Basin Layer (2012). The connectivity level was based on the Town’s GIS System Layers as well as local knowledge of the Town.



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

### 6.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-1 Develop/implement formal employee training program – TOG SWMP 6.1 Employee training program	Not Started			Commissioner, Public Works	Jul 1, 2017		The Town is in the process of putting together the training program with Osprey Environmental Engineering, LLC who will be providing the training.
6-2 Implement MS4 property and operations maintenance – TOG SWMP 6.5 MS4 Property and Operations Maintenance (i)Parks and open space (ii)Pet waste management (iii)Waterfowl management (iv)Buildings and facilities (v)Vehicles and Equipment (vi)Leaf Management	Ongoing	The Conservation Commission Staff advises and reviews some of the operations as requested or whenever complaint arrives. Parks & Recreation uses Nutrients Plus Screamin Green 16-2-3 fertilizer for the maintenance of the following fields: GHS Baseball Field 840lbs. – 16.8lbs. of P <sub>2</sub> O <sub>5</sub> GHS Softball Field 750lbs. – 15.0lbs. of P <sub>2</sub> O <sub>5</sub> Upper Havemeyer Field 453lbs. – 9.06lbs. of P <sub>2</sub> O <sub>5</sub> Lower Havemeyer Field 872lbs. – 17.44lbs. of P <sub>2</sub> O <sub>5</sub> Julian Curtis Field 937lbs. – 18.74lbs. of P <sub>2</sub> O <sub>5</sub>	Reports for Buildings and Facilities.	Commissioner, Public Works, Town Facilities Managers, Directors, Parks & Recreation, Conservation and Fleet	Jul 1, 2018		The Town is in the process of putting together the buildings and facilities program with Osprey Environmental Engineering, LLC who will be providing the inspections and improvements.

		<p>Bruce Park Fields 788lbs. – 15.76lbs. of P<sub>2</sub>O<sub>5</sub></p> <p>The Town is planning to try a sister product this year to try and get the same results without any phosphorous.</p> <p>The dog park has trash cans at the site that the Town regularly come and pick up. The Town picks up during Spring, Summer and Fall 3 times per week and during the Winter 2 times per week.</p>					
6-3 Implement coordination with interconnected MS4s – TOG SWMP 6.8 Interconnected MS4s	Not Started			Commissioner, Public Works	Not specified		
6-4 Develop/implement program to control other sources of pollutants to the MS4 – TOG SWMP 6.9 Sources contributing pollutants to the MS4	Not Started			Commissioner, Public Works	Not specified		
6-5 Evaluate additional measures for discharges to impaired waters* - TOG SWMP 6.10 Additional Measures for discharges to impaired waters	Not Started			Commissioner, Public Works	Not specified		
6-6 Track projects that disconnect DCIA – TOG SWMP 6.3 Directly Connected Impervious Area (DCIA) disconnection tracking	In Progress	Began development of procedures to record and track DCIA.	Completed spreadsheet of DCIA for sites and entire Town.	Commissioner, Public Works	Jul 1, 2017		

6-7 Implement infrastructure repair/rehab program – TOG SWMP 6.2 Infrastructure Repair, Rehabilitation and Retrofit	Ongoing		Completed DPW work orders.	Commissioner, Public Works	Jul 1, 2021		
6-8 Develop/implement plan to identify/prioritize retrofit projects – TOG SWMP 6.4 DCIA Retrofit Planning	Not Started		Completed projects.	Commissioner, Public Works	Jul 1, 2020		
6-9 Implement retrofit projects to disconnect 2% of DCIA – TOG SWMP 6.4 DCIA Retrofit Planning	Not Started		Completed projects.	Commissioner, Public Works	Jul 1, 2022		Based on the typical level of redevelopment within the Town it is hopeful no retrofit projects will be required.
6-10 Develop/implement street sweeping program – TOG SWMP 6.6 Street, Parking & MS4 Maintenance	Ongoing	All streets and parking lots within the MS4 Priority Areas were swept and/or cleaned (as necessary) at least once per year in the spring following the cessation of winter maintenance activities (i.e. sanding, deicing, etc.).	Completed DPW work orders.	Commissioner, Public Works	Jul 1, 2017	Ongoing throughout General Permit.	
6-11 Develop/implement catch basin cleaning program – TOG SWMP 6.6 Street, Parking & MS4 Maintenance	Ongoing	The Town conducted routine cleaning and inspection of 3,905 catch basins.	Completed DPW work orders.	Commissioner, Public Works	Jul 1, 2020	Ongoing throughout General Permit.	
6-12 Develop/implement snow management practices – TOG SWMP 6.7 Snow Management Practices	Ongoing		Completed DPW work orders.	Commissioner, Public Works	Jul 1, 2018	Ongoing throughout General Permit.	

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

**6.3 Pollution Prevention/ Good Housekeeping reporting metrics**

Metrics	
Employee training provided for key staff – Currently working on the training program for implementation during 2018.	No
Street sweeping	
Curb miles swept	15,233 miles
Volume (or mass) of material collected	10,390 tons
Catch basin cleaning	
Total catch basins in priority areas	#
Total catch basins in MS4	Town - 6,043 State - 975 Private 3,561 Total 10,579
Catch basins inspected	3,905
Catch basins cleaned	3,905
Volume (or mass) of material removed from all catch basins	1,750 tons
Volume removed from catch basins to impaired waters (if known)	Not Known
Snow management	
Type(s) of deicing material used	Sodium Chloride (solid and liquid)
Total amount of each deicing material applied	9,475 tons of salt 13,750 gal of liquid de-icer
Type(s) of deicing equipment used	Solid material spreaders and liquid sprayers
Lane-miles treated	531 miles per storm
Snow disposal location	Holly Hill Transfer Station
Staff training provided on application methods & equipment	Yes – September 2017 – Defensive

	Driving for Snow Plow Operators
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit) all fields list in BMP 6-2 are in Impaired Waters for N/P. In 2017 the Town used a total of 4,640lbs. of fertilizer containing 92.8lbs. of phosphorus.	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 for dog park	\$ 4,100 annually/\$50,000 Retrofit

#### 6.4 Catch basin cleaning program

<b>Briefly describe the method used to optimize your catch basin inspection and cleaning schedule. [Complete this section for the 2017 Annual Report only]</b>
Currently reviewing cleaning records to determine possible procedures to optimize the catch basin inspection and cleaning schedule.

## 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.]**

The Town anticipates no retrofits will be required based on the typical level of private redevelopment.

**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.]**

The Town anticipates no retrofits will be required based on the typical level of private redevelopment.

**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.]**

The Town anticipates no retrofits will be required based on the typical level of private redevelopment.

**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.**

The Town is scheduled to being wet weather sampling of an estimated 256 outfalls that discharge into Impaired Waters (Section of Byram River, Section of Horseneck Brook and the Shoreline). The Town is putting together the program to begin dry weather screening of the estimated 1,465 outfalls throughout the entire Town.

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

**2.1 Screening data collected under 2017 permit – No screening completed**

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?

## 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?
OUT_488	08/25/2011	Bacteria	- E. coli >2419.6 col/100ml	Complete Environmental Test, Inc.	Yes
OUT_488	08/11/2015	Bacteria	- E. coli 10,170 col/100ml	Complete Environmental Test, Inc.	Yes
OUT_410	06/12/2012	Turbidity	7.5 NTU	Complete Environmental Test, Inc.	Yes
OUT_410	08/14/2014	Turbidity	9.0 NTU	Complete Environmental Test, Inc.	Yes
OUT_1442	06/12/2012	Turbidity	11 NTU	Complete Environmental Test, Inc.	Yes
OUT_1442	08/11/2015	Turbidity	11 NTU	Complete Environmental Test, Inc.	Yes
OUT_275	4/22/2006	Bacteria	- E. coli 3.1 col/100ml	Complete Environmental Test, Inc.	No
OUT_281	8/21/2007	Bacteria	- E. coli 1,011.20 col/100ml	Complete Environmental Test, Inc.	Yes
OUT_400	4/3/2006	Bacteria	- E. coli <1.0 col/100ml	Complete Environmental Test, Inc.	No
OUT_483	10/27/2016	Bacteria	- E. coli 410 col/100ml	Complete Environmental Test, Inc.	No
OUT_917	6/12/2012	Bacteria	- E. coli >2419.6 col/100ml	Complete Environmental Test, Inc.	Yes
OUT_918	6/12/2012	Bacteria	- E. coli >2419.6 col/100ml	Complete Environmental Test, Inc.	Yes
OUT_1312	8/13/2014	Bacteria	- E. coli 81,300 col/100ml	Complete Environmental Test, Inc.	Yes
CB_14128	9/29/2006	Bacteria	- E. coli 209.8 col/100ml	Complete Environmental Test, Inc.	No



### 3. Follow-up investigations (Section 6(i)(1)(D) / page 43)

Provide the following information for outfalls exceeding the pollutant threshold. Investigations will begin in 2018.

Outfall	Status of drainage area investigation	Control measure implementation to address impairment

### 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)

**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

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

**2.1 Dry weather screening and sampling data from outfalls and interconnections**

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

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

## 2.2 Wet weather sample and inspection data

Provide sample data for outfalls and key junction manholes of any catchment area with at least one System Vulnerability Factor.

Outfall / Interconnection ID	Sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or Enterococcus	Surfactants	Water Temp	Pollutant of concern

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

### 3.1 System Vulnerability Factor Summary

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

Outfall ID	Receiving Water	System Vulnerability Factors

Where SVFs are:

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

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

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

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

### 3.3 Wet weather investigation outfall sampling data



Outfall ID	Sample date	Ammonia	Chlorine	Surfactants

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

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

**Part IV: Certification**

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

Chief Elected Official or Principal Executive Officer	Document Prepared by
Print name: James W. Michel, P.E., Deputy Commissioner	Print name: Scott Marucci, Senior Civil Engineer
Signature / Date:  3/27/18	Signature / Date:  3/27/18