

MS4 General Permit
Town of SUBASE New London 2018 Annual Report
New MS4 Permittee
Permit Number GSM 000117
January 1, 2018 – December 31, 2018

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

Part I: Summary of Minimum Control Measure Activities

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

1.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
1-1 Implement public education and outreach	Ongoing	University of Connecticut Nonpoint Education for Municipal Officials (NEMO) on-site MS4 presentation to SUBASENLON Public Works Department, March 2018. Attended East Lyme, CT, MS4 Stormwater workshop, 27 April visit to. Attended UConn “LID isn’t scary” presentation, 30 Oct A Stormwater update article in the “Dolphin” (base newspaper, 1/17/19) reminded base personnel of the MS4 permit and program, posted SWMP and POC number on public-accessible website.	Notices posted within required timeline(s), attendance at events, general awareness in meetings.	Environmental Division (EV) / Chris Koproski	Jul 1, 2019	15 March 2018—UConn NEMO site visit 27 April 2018 —East Lyme visit 30 October 2018—UConn Low Impact Development (LID) 12 December 2018—Soak Up the Rain	East Lyme presentation led directly to SUBASENLON installation of pervious paver test bed. UCONN LID visit helped with tree wells and post-construction comments on the pavers for EV and PWD staff.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
		Environmental Division Director briefed EPA on "Soak Up the Rain New England Webinar Series: Green Infrastructure Approaches for Stormwater Management at Federal Facilities?" SUBASE Stormwater Manager attended multiple Contract design and award briefings to clarify MS4 requirements, and updated on-line training resources for base & contractor personnel via the Navy Environmental Compliance Assessment Training and Tracking System (ECATTS) website.					
1-2 Address education/ outreach for pollutants of concern	Ongoing	Investigating use of tree wells to address bacteria and metals. Published a listing of Stormwater pollutants of concern in the SWMP. Current ECATTS training modules address both Basic and Comprehensive Stormwater issues, MS4 specifics, and additional training modules for Spill Prevention and Fuel/Oil storage, transfer and disposal to lessen the chance of a spill.	Successful completion of ECATTS Stormwater training modules, future sampling, installation of LID measures.	Environmental Division (EV) / Chris Koproski	Jul 1, 2019	Various	N/A

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

Earth Day activities, Community "Navy Day" representation, enhanced ECATTS outreach. Add signs to pervious paver region, and new/planned bio-retention areas.

Update previous-year's Department-specific training for PWD employees.

1.3 Details of activities implemented to educate the community on stormwater

Program Element/Activity	Audience (and number of people reached)	Topic(s) covered	Pollutant of Concern addressed (if applicable)	Responsible dept. or partner org.
UCONN NEMO PWD briefing	12 / 50+	MS4 @ SUBASE	All	EV
East Lyme stormwater workshop	1 / 24	Tree wells	Metals and bacteria	EV, Shops, PWD as a whole.
UCONN "LID isn't scary" tour & presentation	2 / 30+	Pervious pavement, tree wells	Metals and bacteria	EV, sign will reach more people.
Dolphin article MS4 update	Base wide / ~12,000	MS4 status	N/A	EV
ECATTS	2 / 50+	Comprehensive Stormwater topics	N/A	EV, FEAD (for contractor access).
Soak Up the Rain New England Webinar Series: Green Infrastructure Approaches for Stormwater Management at Federal Facilities	10 / 30+	Base Rain Gardens, Pavers, and Tree wells	N/A	EV

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 Continue availability of Final Stormwater Management Plan	Available	Pen & Ink updates	N/A	EV / Chris Koproski	Ongoing	17 March 2017	N/A
2-2 Comply with public notice requirements for Annual Reports	Complete	Post notice	Posted by due date	EV / PAO	Annually	15 February 2019	N/A

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

Earth-day clean-up, Catch basin problem identification education program, EV training events including Command Duty Officer orientation, base new employee indoctrination training.

2.3 Public Involvement/Participation reporting metrics

Metrics	Implemented	Date	Posted
Availability of the Stormwater Management Plan to public	Yes	1/17/18 (ongoing)	Dolphin/online
Availability of Annual Report announced to public	Yes	DRAFT: Proposed - 15 Feb 2019 FINAL: Proposed - 1 April 2019	http://www.cnic.navy.mil/regions/cnrma/installations/navsubase_new_london/om/environmental_support.html

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	Complete	Developed Plan, complete on 1 May 2017	Completed plan	Environmental / Chris Koproski	Jul 1, 2019	1 Mar 2017	N/A
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	Complete	N/A	N/A	Environmental / Chris Koproski	Jul 1, 2020	1 Mar 2017	New adds and modifications will be incorporated as necessary. Dry-weather flow assessment of all catch basins, July-Aug of 2018, to include recording condition for a cleaning program and numbering each basin by drainage area, to ensure consistency with identification for cleaning, repairs, investigation, and IDDE elimination efforts.
3-3 Implement citizen reporting program	Complete	Established reporting method	24/7 on call contact available	Environmental / Chris Koproski	Jul 1, 2017	Jul 1, 2017	Utilized established 24 hr Environmental Duty Officer hotline at 860-215-1384. Also provided Stormwater Program Manager phone contact in SWMP.
3-4 Establish legal authority to prohibit illicit discharges	Complete	Incorporated prohibition in base Environmental Instruction	Signed base Instruction, 5090.7B	Environmental / Chris Koproski	Jul 1, 2019	Aug 8, 2017	Authority to implement and administer the IDDE Program formalized by updated SUBASENLON Environmental Protection Instructions (SUBASENLONINST 5090.7B)
3-5 Develop record keeping system for IDDE tracking	Complete	N/A	N/A	Environmental / Chris Koproski	Jul 1, 2017	1 May 2017	IDDE Program Progress Spreadsheet Tracking tool.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
3-6 Address IDDE in areas with pollutants of concern	Ongoing	Completed dry-weather investigations of catch basins, cross-referenced findings with SUBASE 2014 IDDE survey. Implementing 2019 contract to [list brief details]	Contract awarded.	Environmental / Chris Koproski	Not specified	1 Sept 2018	Areas investigated include sanitary sewer lines, metals, bacteria , Total Suspended Solids (TSS.)

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

The Assessment and Priority Ranking of catchments was completed 1 May 2017. The results will be updated annually based on IDDE Program efforts such as mapping updates, outfall screening, and sampling. Also, the dry weather catchment area inspections have been completed, the sampling efforts will commence this year.

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

Date of Report	Location / suspected source	Response taken
Various	Various	Please see Table below (Section 3.4). NOTE: All reports are considered citizen-reported events, exceptions will be noted.

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 (gallons)	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
Illicit Discharge Section						
50 ft north of Pier 6	1/11/18	Water	1000+ water	Pipe burst/ Public Works	Broken water pipe repaired. 2018-00144.	N/A

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged (gallons)	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
Pier 31 surface drains	1/11/18	Water	Oily sheen	Hose drippings / Submarine	Released oily waste cleaned from pier. NRC # 1201647, DEEP Case #2018-00147.	N/A
Pier 31 N	1/24/18	Water	<1 oil	Unknown	Unknown sheen boomed in. NRC #1202706, DEEP Case# #2018-00368.	N/A
Pier 10	5/5/18	Water	5-10 oil/water mix	Oily Wastewater Submarine	Hose ruptured, replaced, DEEP Case #2018-02163.	N/A
USS Nautilus museum	5/6/18	Water	Unknown	Unknown / Unknown	On-water Nautilus crew identified sheen, no local source found. NRC # 1211387, CTDEEP Case #2018-02189.	N/A
Pier 12 North	11/30/18	Water	0.5 diesel	Vent pipe misalignment on small port services boat / Port ops	Used in-place boom to contain, NRC #1231757, DEEP Case #2018-06297.	N/A
SSO Section						
Pier 8 and 10 / Thames River	8/21/12	Water	1800	Leak from sewer main along quay wall / Public Works	Booms in place. PW UEM repaired pipe. Proposed FY21 project to replace sewer piping on Pier 8.	N/A
Amberjack Rd near B175	9/28/12	Pavement	5	Base employees noted strong sewage odor and saw water seep past sanitary manhole cover in street and onto roadway / UEM	Pump at lift station was not on, crews reactivated the pump, requested increase of inspection frequency. PWD performs weekly inspection on all sewer pumping stations.	N/A
Quay wall between Piers 12 and 15	1/10/13	Water	100	Clamp that wraps around exterior sewer pipe broke free causing sections of pipe to disconnect. Sewage flowing in pipe spilled directly into the river at the point where the pipe disconnected / PWD	PWD repaired the pipe and checked the entire length of sanitary pipe that runs along quaywall above the water line to make sure it is secure. Proposed FY21 project to replace sewer piping on Piers 12 and 15.	N/A
Pier 12 North Near Quay Wall	6/30/2014	Water	75	Broken sewage lateral under Pier	PWD repaired the pipe. Proposed FY21 project to replace sewer piping on Pier 12.	N/A

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged (gallons)	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
				12 north was discovered leaking during sewage pump down operation to pier riser. Between 50-100 gallons of sewage estimated to be released to Thames river / PWD		
Pier 10 North	1/20/15	Pavement	5	Boat crew observed sewage dripping from under pier just after boat pumped their sewage tanks / PWD	PWD repaired pipe. PWD performs monthly inspection on all piers.	N/A
B33 Southwest corner	5/5/15	Pavement	2	Electrical switch malfunction causing sewage overflow at lift station / PWD	PWD repaired B33 sewage lift station.	N/A
Roadway in front of B175 and opposite Pier 33	12/1/2015	Water	10	Sewage observed overflowing into street from manhole / PWD	PWD repaired B175 sewage lift station.	N/A
Sewer lift station opposite Pier 31	3/22/16	Pavement	50	USS San Juan observed sewage rise onto pavement opposite pier head & road where lift station is located. / PWD	PWD performs weekly inspection and PM on all sewer pumping stations.	N/A
Sewage lift station opposite pier 31	8/20/17	Water	100	Grease buildup in lift station. PWD manually started pump to get levels down and to make any necessary	Instructed boats to properly dispose of galley grease via pier dumpsters, not sewer system.	N/A

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged (gallons)	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
				repairs & adjustments / PWD		
Underground pipe at 575	12/1/17	Pier	Unknown	Inspection found a cracked underground pipe when surveying for annual inspection / PWD	Contract awarded. Pipe to be relined.	N/A
Bldg 120, base swimming pool	2/9/18	Pavement	25	Pool and PWD personnel noted backup / PWD	Toilet paper clogged the sanitary pipes occasionally used for pool backwash operations, rerouted flow and cleared—new stand-alone discharge pipe being installed.	N/A
Scorpion avenue near Bldg 148	2/14/18	Thames river	100+	Rock Lake and groundwater in collapsed pipe / PWD	Abandoned sewer line flooded with groundwater, PWD removed top plug and filled in remaining manholes and piping from previously-abandoned buildings.	N/A
Wells Street lift station	2/15/18	Pavement/Ground	10	Diapers & baby wipes / Off-base Housing personnel	Jet truck removed blockage but ~10 gallons spilled during cleanup, no waters or storm drains affected, complete 2/28/18.	N/A
Pier 10 near USS Providence	3/28/18	Pavement / Water	<100 total, ~10 in water	Pump pressure burst pipe / Submarine	Kitchen gray water operation. PWD instructed to continue hose inspections reminded shipboard personnel to cover drains during transfer operations. Possible cooking oil led to ~20 x 50ft sheen, boomed in. NRC# 1207852, DEEP Case 2018-#01479 Complete 3/29/18.	N/A
“Tunnel” between Bldgs. 87 and 76.	5/23/18	Pavement / Stormdrain	50	Lift Station 75 pump malfunction / PWD	Used alternate forced main at the lift station until piping can be excavated/inspected/repared, stormdrain cleaned. Repaired Force Main 6/22/18.	N/A
Pier 10 South, USS Providence	6/8/18	Water	<100	Broken pipe under pier / PWD	Sailors heard rush of air as they began pump operation, immediately shut down, pipe repaired. Complete 6/21/18.	N/A
Pier 31 North	6/13/18	Pier / Water	<10	Riser valve not sealing / PWD	Work order placed, aft and bow valves blew out residual material. Complete 7/24/18.	N/A
Amberjack Rd opposite Pier 31	7/10/18	Pavement	<10	Temp blockage / PWD	Liquid seen running out past sewer manhole and into pavement, collected in low point/depression in road, PWD personnel looked under manhole and nearby lift station, no elevated levels seen, suspect temporary blockage cleared on its own. Complete 7/10/18.	N/A

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged (gallons)	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
Lift Station #75 near gate 4	9/28/18	Pavement	50	Leak at elbow, possible leak further up line / PWD	Shut down lift station and repaired the elbow, will continue to use alternate line until they can excavate further up for inspection and permanent repair. Complete 11/27/18.	N/A
Pier 12	12/20/18	Water	Unknown, previous day operation had 1000 gallons pumped w/100 of that as sewage.	Probable under-pier pipe break suspected when oncoming crew said they smelled sewer odor / PWD	Secured side pump, used opposite pier side pump while repairs made. Pipefitters recommended direct to sanitary pump, break confirmed, repairs made. Repaired sewer line 1/25/19.	N/A

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 majority of illicit discharges onboard SUBASE are the result of hazardous material and sanitary sewer spills and releases. All releases are tracked via an in-house Microsoft Access database, and a hard-copy binder maintained at the Stormwater Program Manager’s desk. Illicit discharges identified during inspections or investigations are tracked via the base Environmental Management System database.

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
N/A—No active septic systems aboard SUBASENLON		

3.7 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	43 (actual)

Estimated or actual number of interconnections	5 (actual surveyed)
Outfall mapping complete	100%
Interconnection mapping complete	100%
System-wide mapping complete (detailed MS4 infrastructure)	100%
Outfall assessment and priority ranking	100%
Dry weather screening of all High and Low priority outfalls complete	100%
Catchment investigations complete	0
Estimated percentage of MS4 catchment area investigated	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).

SUBASENLON has current Stormwater and Spill Response training modules on the Navy ECATTS training website available to the entire community, including visiting agencies and contractors. Dedicated/consolidated IDDE modules are available, with content covering the Purpose and Scope of the IDDE Program, the Definition of an Illicit Discharge, Recognizing Illicit Discharges, Reporting them, and Preventing Future Instances.

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	Ongoing	All construction contracts include requirements to follow CT regulations, including the 2002 Soil erosion and Sediment control Measure chart.	N/A	Public Works Facilities Engineering & Acquisition Division / Christopher Shukis	Jul 1, 2020	Ongoing	Implemented with permit start-date; all projects by the 2020 official date will be MS4 compliant.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval	Complete	Included in SWMP	N/A	Environmental / Chris Koproski	Jul 1, 2017	1 Mar 2017	All construction contracts require interdepartmental review prior to award. This review includes National Environmental Policy Act (NEPA) documentation statements specifically targeting LID and stormwater requirements.
4-3 Review site plans for stormwater quality concerns	Ongoing	Active review of contracts awarded, conduct site inspections as available.	100% of contracts reviewed.	Environmental / Chris Koproski	Jul 1, 2017	Various	<i>EV Site Plan Reviews</i> will evaluate the adequacy and appropriateness of proposed construction and post construction erosion and sediment control measures, while <i>EV Site Inspections (4-4)</i> will assess the adequacy of the installation, operation, maintenance, and repair of construction and post-construction erosion and sediment control measures.
4-4 Conduct site inspections	Ongoing	Active contracts.	MS4 compliance.	Facilities Engineering & Acquisition Division / Christopher Shukis	Jul 1, 2017	Various	Inspections are a current responsibility / activity for Facilities Engineering & Acquisition Division .
4-5 Implement procedure to allow public comment on site development	Ongoing	Signage with contact information is posted at construction activities.	Signs posted.	Facilities Engineering & Acquisition Division / Christopher Shukis	Jul 1, 2017	Various.	
4-6 Implement procedure to notify developers about DEEP construction Stormwater permit	Ongoing	Included with construction contract specifications	Construction permit, if required.	Facilities Engineering & Acquisition Division / Christopher Shukis	Jul 1, 2017	Pre-MS4	The required Environmental Management Plan for contractors includes the Stormwater Pollution Control Plan, required by the CT DEEP Construction General Permit.

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

Continued efforts to update our Interdepartmental Coordination Plan (a detailed plan that includes each department’s responsibilities, positions responsible for each task, and deadlines associated with each task), conduct Contract Reviews and Site Inspections, ensure contract inspectors complete ECATTS training, continue to notify contractors to obtain Permits for stormwater and wastewater activities (as applicable) for large scale (1 acre+) disturbances. One General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities was issued in 2018.

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	Complete	N/A	MS4 compliance.	PWD Project Management and Engineering / Michael Crooks, Senior Design Manager	Jul 1, 2022	1 Mar 2017	Legal authority to implement and enforce the Post-Construction Stormwater Management Program is established by inclusion of the Navy LID Policy standards, the DoD EISA Section 438 Policy standards, and the MS4 General Permit LID standards in SUBASENLON’s standard construction specifications.
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects	Ongoing	Enacted in March, 2017 in anticipation of MS4 permit.	Meet Navy LID Policy standards, MS4 standards, and DoD EISA Section 438 Policy standards.	Environmental/Chris Koproski (initial mapping), Facilities Maintenance director / Jim Gentry (updates due to activities)	Jul 1, 2022	Various	Pre-MS4 requirements mirror MS4 activities.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
5-3 Identify retention and detention ponds in priority areas	Complete	Completed in March, 2017 in anticipation of MS4 permit.	MS4 compliance.	Environmental / Chris Koproski	Jul 1, 2020	March, 2017	Updated as needed.
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures	Ongoing	N/A	MS4 compliance.	Facilities Sustainment Branch Head / George Russel Production Division Director / Jason Billings	Jul 1, 2020	Ongoing	Existing plan is being augmented as equipment and personnel resources are directed to complete this task. A common designation scheme has been completed and incorporated to GIS/GRX maps (to ensure all agencies identify each structure consistently).
5-5 DCIA mapping	Complete	Completed in March, 2017 in anticipation of MS4 permit.	N/A	Environmental / Chris Koproski (initial mapping), Facilities Maintenance Director/Jim Gentry (updates due to activities)	Jul 1, 2020	March 2017 for initial effort, ongoing for updates.	Updated as needed.
5-6 Address post-construction issues in areas with pollutants of concern	Complete	Retention of Water quality volume, limits of disturbance, and CT Stormwater Quality Manual excerpts briefed to Stakeholders	Contact with all Division and Branch Heads.	Environmental / Chris Koproski	Not specified	6 December	Due to impaired status of the Thames River, this program applies throughout SUBASENLON.

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

SUBASENLON will continue to consider the inclusion of the following watershed protection elements for future construction projects: Minimization of impervious surfaces by limiting new development and encouraging the use of LID; Preservation, protection, restoration, and creation of ecologically sensitive areas (e.g., riparian buffers, headwaters, floodplains, and wetlands); Implementation of stormwater management practices that prevent or reduce impacts on receiving waters (e.g., vegetated

buffers, disconnection of impervious surfaces); Prevention of hydromodification of streams and other waterbodies due to development; Protection of trees and other vegetation with important evapotranspirative properties; and Protection of native soils (e.g., prevention of topsoil stripping and soil compaction).

5.3 Post-Construction Stormwater Management reporting metrics

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	197.29 acres
DCIA disconnected (redevelopment plus retrofits)	1.435 acres this year / 2.85 acres total (B499 Parking area)
Retrofits completed	1
DCIA disconnected	1.435 this year / .014% total since 2012
Estimated cost of retrofits	\$156,000.00
Detention or retention ponds identified	1 this year / 5 total (B607, Shark Ave, Commissary, B499, B522)

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

GIS and field measurements by a contract team, with the product available March 2017 and contracted for annual updates based off the raw data provided from PWD program managers, through EV.

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	Ongoing	Expanded ECATTS modules to include an MS4 aspects. Updated training sheet for members without ready access to computers. Stormwater team members associated with Industrial permit have in-person training 2x year (during Site Compliance Evaluation) to augment/replace ECATTS on-line training modules.	100% of target audience trained	Environmental / Chris Koproski	Jul 1, 2019	Jul 1 2018	Administrator function within ECATTS allows training to be tracked. Most of the associated data is already on ECATTS in the form of Stormwater and spill response modules.
6-2 Implement MS4 property and operations maintenance	Ongoing		Property and operations maintenance BMPs were legacy actions implemented under existing SUBASENLON Industrial permit.	PWD Facilities Management Division Director / Jim Gentry	Jul 1, 2018	1 Jul 2018	SUBASENLON will fully implement the Property and Operations Maintenance Program by the end of the MS4 General Permit Term (June 30, 2022).
6-3 Implement coordination with interconnected MS4s	Ongoing	Previous exchange of contact details with Town of Groton MS4 Manager, Kristin Doundoulakis.	Positive contact	Environmental / Chris Koproski	Not specified	24 Jan 2018	The SUBASENLON MS4 is interconnected to the CT Department of Transportation (CTDOT), Town of Groton, and Town of Ledyard MS4 plans at various points along Route 12 and Crystal Lake Road. The only true interconnects are along the base access road, sharing one outfall (O-35) with the town of Groton.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-4 Develop/implement program to control other sources of pollutants to the MS4	Ongoing	Leaf collection procedures revised to include ensuring piles remain away from storm drains. Ensured repeat notice sent with leaf collection activities on 5 Nov 2018.	BMPs	Environmental / Chris Koproski	Not specified	5 Nov 2018	N/A
6-5 Evaluate additional measures for discharges to impaired waters	Ongoing	Implementing 2019 Canada Geese control program with US Dept. of Agriculture, pet waste management and feral cat control program continuing, "Do Not Feed Geese" signs maintained, effort on-track, will reevaluate after next bacteria results are in for Industrial sampling effort, along with the start of MS4 IDDE screening/sampling later this year.	6 Dec 17	Environmental / Chris Koproski	Not specified	1 Jul 2018	N/A
6-6 Track projects that disconnect DCIA	Ongoing	GIS/GRX system updates are the basis for a contracted action that calculates DCIA each year.	Maintain an accurate list of DCIA.	PWD Facility Management Division Director / Jim Gentry	Jul 1, 2017	1 May 2017	DCIA calculated after 2018 B499 parking area reconstruction, and 2019 Central Base Parking reconstruction will affect next year's DCIA calculation.
6-7 Implement infrastructure repair/rehab program	Ongoing	Briefed key decision makers on MS4 requirements and explored how to work new requirements into existing prioritization scheme.	Add MS4 aspects for consideration for project prioritization.	PWD Facility Management Division Director / Jim Gentry and Production Division Director / Jason Billings	Jul 1, 2021	6 Dec 17	Received copy of master Installation Development Plan and Execution Plan, EV to look for opportunities within scheduled projects.

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-8 Develop/implement plan to identify/prioritize retrofit projects	Ongoing	Briefed key decision makers on MS4 requirements and explored how to work new requirements into existing prioritization scheme.		PWD Facility Management Division Director / Jim Gentry	Jul 1, 2020	6 Dec 17	
6-9 Implement retrofit projects to disconnect 2% of DCIA	Ongoing	Briefed key decision makers on MS4 requirements and explored how to work new requirements into existing prioritization scheme.		PWD Facility Management Division Director / Jim Gentry	Jul 1, 2022	6 Dec 17	SUBASENLON currently requires that development and redevelopment conform to UFC 3-210-10, LID, and EISA Section 438. In addition, SUBASENLON will begin to require its design and construction contractors to comply with the LID standards defined by the MS4 General Permit. SUBASENLON PWD staff will review development/construction plans that include associated stormwater design calculations for compliance with these standards. Anticipate meeting the 2% threshold this coming CY (19).
6-10 Develop/implement street sweeping program	Ongoing		MS4 compliance.	PWD Transportation Branch Head / Jim Cottrell	Jul 1, 2018	1 May 17	Log book in both sweepers and the vac truck instituted in CY 2018; schedule/program in the transportation section and on an as-needed basis with PWD.
6-11 Develop/implement catch basin cleaning program	Ongoing	Meetings conducted with key personnel to discuss upcoming requirements and address any differences between the existing	MS4 compliance.	PWD Facilities Sustainment Branch Head / George Russel	Jul 1, 2020	Prior to 1 July 2020	In 2018, several catch basins have been cleaned (detailed in report Section 6.3), additionally a GIS/GRX mapping effort was recently completed to

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
		program and the proposed new methods.					<p>give a uniform identification scheme to each basin, for tracking. Currently creating a schedule to include recommended cleaning frequencies for each drainage structure. Catchment areas for those outfall/drainage structures where excessive sediment or debris is observed will receive first priority. Further prioritization will be based on the following items:</p> <ul style="list-style-type: none"> • Staff and tenant complaints of localized flooding • Stormwater drainage structures downstream of construction areas • DCIA estimates developed as described in Section 6.2.3 of the SWMP
6-12 Develop/implement snow management practices	Ongoing, nearly complete	<p>SUBASENLON evaluated and updated its snow and ice control practices to ensure that the following permit-required considerations are included:</p> <ul style="list-style-type: none"> • Implement and refine SOPs to 	6 Dec 17	Transportation Branch Head / Jim Cottrell	Jul 1, 2018	Not specified by the MS4 General Permit; therefore, SUBASENLON will fully implement these requirements by the end of the MS4 General Permit Term (June 30, 2022).	

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
		minimize / optimize the use of sand and deicing agents. <ul style="list-style-type: none"> • Provide education and training for those involved in deicing tasks • Maintain records of the application of sand and deicing agents 					

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

Continue to implement ECATTS training modules, conduct inspections, investigate use of tree wells, and review all projects for MS4 compliance.

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	Yes, various dates
Street sweeping	
Curb miles swept	67 miles
Volume (or mass) of material collected	14 yards
Catch basin cleaning	
Total catch basins in priority areas	61

Total catch basins in MS4	845 (excluding infalls and scuppers)
Catch basins inspected	845
Catch basins cleaned	14
Volume (or mass) of material removed from all catch basins	4.5 yds solids / 5200 gallons water
Volume removed from catch basins to impaired waters (if known)	4.5 yds solids / 5200 gallons water
Snow management	
Type(s) of deicing material used	Salt / Ice-bite
Total amount of each deicing material applied	600 tons / 8500 gal
Type(s) of deicing equipment used	Truck-mounted Sprayers and Salt spreaders
Lane-miles treated	75 miles (including parking lots), estimated 183 passes (13,725 total miles treated)
Snow disposal location	Alpha-lot (eastern interior side of base); not required for 2018
Staff training provided on application methods & equipment	Jan 2018, each snow month (Jan-Apr, Nov-Dec)
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	0%--Note: Base Golf course policy includes only "spoon-feeding" the greens. 2019 may see a recovery effort that may temporarily increase fertilizer use until play areas are reestablished.
Reduction in turf area (since start of permit)	0 acres
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	
Cost of mitigation actions/retrofits	\$0.00

6.4 Catch basin cleaning program

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

Catch basin cleaning program to be administered in-house vice via outside contract as originally published in SWMP. This will allow SUBASE to determine a baseline level of effort for CB cleaning and disposal schedules and operations. As stated above (6.1), the program will begin in earnest in 2019.

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. [\[Provide information, if available, in 2018 report. Section to be completed for the 2019 Annual Report.\]](#)

Pre-existing, scheduled projects:

Central Base Parking reconstruction effort will incorporate two large bio-retention ponds—parking redesign was able to accommodate Water Quality Volume (WQV) standards--DCIA approx. 2 acres.

Micro-grid energy project with Town of Groton & Fuel Cell Energy—site not directly connected to an Outfall--DCIA approx. 1 acre.

Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection in future years. [\[Provide information, if available, in 2018 report. Section to be completed for the 2019 Annual Report.\]](#)

Navy designers are aware of LID, incorporating EV/MS4 requirements with the Integrated Development Plan to ensure BMPs and WQV requirements are met. The DCIA effort for the permit period should be met CY19.

Describe plans for continuing the Retrofit program beyond this permit term with the goal to disconnect 1% DCIA annually over the next 5 years. [\[Provide information, if available, in 2018 report. Section to be completed for the 2019 Annual Report.\]](#)

Activities beyond the permit term are being identified and prioritized for inclusion with the base Integrated Development Plan, but it appears likely offsets (rather than in-place WQV retention) will be needed for lower base developments, due to factors including heavy development, Installation Remediation status for certain sites, and mission needs which limit available “green space”.

Part II: Impaired waters investigation and monitoring [This section required beginning with 2019 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.

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

2.1 Screening data

Complete the table below for any outfalls screened during the reporting period. Each Annual Report will add on to the previous year’s screening data showing a cumulative list of outfall screening data.

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

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

Provide the following information for outfalls exceeding the pollutant threshold.

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

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, 2021.

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

Part III: Additional IDDE Program Data [This section required beginning with 2019 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: Michael Brown	Print name: Christopher Koproski
Signature / Date:	Signature / Date: