Final

STORMWATER MANAGEMENT PLAN

Naval Submarine Base New London
Groton, Connecticut

Naval Facilities Engineering Command
Mid-Atlantic

CONTRACT: N62470-14-D-9022
DELIVERY ORDER: 0010

March 2017

Final

STORMWATER MANAGEMENT PLAN

NAVAL SUBMARINE BASE NEW LONDON – GROTON, CONNECTICUT

Prepared For:

NAVAL FACILITIES ENGINEERING COMMAND
MID-ATLANTIC
NORFOLK, VA 23511

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Contract: N62470-14-D-9022
Delivery Order: 0010

March 2017

AH/BC Navy JV, LLC

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APPENDICES

TABLES

FIGURES

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ACRONYMS AND ABBREVIATIONS

AH	AH/BC Navy JV, LLC
ARDM-4	Medium Auxiliary Repair Dry Dock
AST	aboveground storage tank
BMP	best management practice
BWTF	bulky waste transfer facility
CCTV	closed-circuit television
CFR	Code of Federal Regulations
cfu	colony-forming units
CIP	capital improvement plan
CT	Connecticut
CTDOT	Connecticut Department of Transportation
DCIA	Directly Connected Impervious Area
DEEP	Department of Energy and Environmental Protection
DLA	Defense Logistics Agency
DoD	Department of Defense
ECATTS	Environmental Compliance Assessment, Training, and Tracking System
EISA	Energy Independence and Security Act
EPA	Environmental Protection Agency
EV	Environmental Division
FEAD	Facilities Engineering and Acquisition Division
GIS	geographic information system
HM	hazardous material
HW	hazardous waste
ICP	Integrated Contingency Plan
IDDE	illicit discharge detection and elimination
LID	low impact development
MCM	minimum control measure
MEP	maximum extent practicable
mg/L	milligram per liter
mL	milliliter
MS4	municipal separate storm sewer system
MWR	Morale, Welfare, and Recreation
NAVFAC	Naval Facilities Engineering Command
NEX	Navy Exchange

ACRONYMS AND ABBREVIATIONS, CONTINUED

NPDES	National Pollutant Discharge Elimination System
O&M	operation and maintenance
OWS	oil/water separator
PE	Professional Engineer
PMP	Pest Management Plan
POL	petroleum, oil, and lubricant
PVC	polyvinyl chloride
PWD	Public Works Department
RFP	Request for Proposal
SBFD	Naval Submarine Base New London Fire Department
SHWT	seasonal high water table
SIC	Standard Industrial Classification
SOP	standard operating procedure
SPCC	spill prevention, control, and countermeasure
SSO	sanitary sewer overflow
SUBASENLON	Naval Submarine Base New London
SVF	system vulnerability factor
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
TSDF	treatment, storage, and disposal facility
UA	Urbanized Area
UFC	Unified Facilities Criteria
US	United States
WQV	water quality volume

ACKNOWLEDGEMENT

OF

STORMWATER MANAGEMENT PLAN

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.

Capt. Paul Whitescarver
Commanding Officer
Naval Submarine Base New London
Groton, Connecticut

Date

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STORMWATER MANAGEMENT PLAN CERTIFICATION

I hereby certify that I am a qualified Professional Engineer (PE), as defined in the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems. I am making this certification in connection with a registration under such general permit, submitted to the Commissioner by the United States Naval Submarine Base New London for an activity located at or within the Town of Ledyard and Town of Groton, Connecticut. I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(*b*)(9)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate, and complete to the best of my knowledge and belief. I certify, based on my review of all information described in Section 3(*b*)(9)(A) of such general permit and on the standard of care for such projects, that I have made an affirmative determination in accordance with Section 3(*b*)(9)(B) of this general permit. I understand that this certification is part of a registration submitted in accordance with Section 22a-430b of Connecticut General Statutes and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law.

3/9/17

Sean P. McNamara, PE
AH/BC Navy JV, LLC
Certifying Engineer
PE Registration No. 0030642

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RECORD OF REVISIONS AND AMENDMENTS

All revisions and amendments to the Stormwater Management Plan are, and will continue to be, summarized in the following table.

Table 1 Record of Revisions and Amendments

Date	Description of Revision/Amendment

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1. INTRODUCTION

AH/BC Navy JV, LLC (AH) developed this Stormwater Management Plan (SWMP) for Naval Submarine Base New London (SUBASENLON). This project was completed under Naval Facilities Engineering Command (NAVFAC) Contract N62470-14-D-9022, Delivery Order 0010.

1.1 FACILITY DESCRIPTION

SUBASENLON is located in the towns of Groton and Ledyard, Connecticut (CT) on the east bank of the Thames River. SUBASENLON is a military/naval installation, the primary activity being national security, classified by the Standard Industrial Classification (SIC) Code 9711, as identified in the *Standard Industrial Classification Manual, Executive Office of the President, Office of Management and Budget 1987*. SUBASENLON is divided by the Providence and Worcester Railroad tracks into "Upper Base" and "Lower Base." The Lower Base consists of the area west of the tracks, down to the Thames River waterfront; the Upper Base occupies the high ground between the Providence and Worcester Tracks and Route 12.

The Lower Base includes the following primary activities:

- Facilities dedicated to submarine support, maintenance, and repair
- SUBASENLON Fire Department (SBFD)
- Steam and power plant (auxiliary power only)
- Oily waste treatment facility
- Morale, Welfare, and Recreation (MWR) Marina
- Berthing piers
- Medium Auxiliary Repair Dry Dock (ARDM-4)
- Maintenance and repair activities and small craft dockage
- Various parking, loading, and storage areas associated with activities within proximate buildings

The Upper Base includes the following primary activities:

- Facilities providing personnel support and administrative services
- Maintenance and repair activities
- Submarine Learning Center
- Base maintenance activities
- Weapons storage facilities
- Medical research facilities
- Bulky Waste Transfer Facility (BWTF)
- Defense Logistics Agency (DLA) Disposition Services facility
- Hazardous Waste (HW) Treatment, Storage, and Disposal Facility (TSDF)
- Naval Branch Health Clinic
- Recreational activities
- Various parking, loading, and storage areas associated with activities within proximate buildings

SUBASENLON is located within the Thames River watershed. The Thames River is classified as SB[1] and is impaired for bacteria in the vicinity of SUBASENLON. Stormwater from the site drains west towards the Thames River via streams and the stormwater drainage system.

1.2 PROJECT BACKGROUND

The CT Department of Energy and Environmental Protection (DEEP) stormwater general permit program was developed pursuant to United States (US) Environmental Protection Agency's (EPA) Stormwater Rule. Phase I of the EPA Stormwater Rule was published in 1990 and addressed runoff from medium and large municipal separate storm sewer systems (MS4s) with populations greater than 100,000, as well as runoff from industrial and construction activities. Phase II of the Stormwater Rule was published in 1999 and addressed runoff from small MS4s with populations less than 100,000.

[1] CT Department of Energy and Environmental Protection (DEEP) defines SB waters as waters designated for the following: habitat for marine fish, other aquatic life, and wildlife; commercial shellfish harvesting; recreation; industrial water supply; and navigation.

The CT DEEP first issued the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (hereafter referred to as the "MS4 General Permit") on January 9, 2004 under this Phase II rule. The purpose of the MS4 General Permit is to protect waters of the state from urban stormwater runoff through MS4s. The EPA defines a regulated small MS4 as a municipality that owns and operates a storm sewer system in an Urbanized Area (UA). UAs are densely populated areas surrounding urban centers designated by the federal Census Bureau based on each decennial census. The MS4 General Permit issued in 2004 (coverage based on 2000 census) has been reissued without modification since 2004. However, as of July 1, 2017 a new MS4 General Permit will take effect (coverage based on 2010 census). The new MS4 General Permit also extends coverage to institutions such as universities and federal facilities that are located in UAs, including SUBASENLON. Figure 1-1 provides a vicinity map of SUBASENLON illustrating the boundary of the MS4 to be covered under the MS4 General Permit.

The requirements of the MS4 General Permit include submitting a registration to obtain permit coverage, developing and implementing a SWMP, and monitoring six stormwater outfalls annually during a rain event. The SWMP is a document prepared by the owner/operator of the MS4 that contains information on its stormwater and municipal infrastructure along with best management practices (BMPs) to minimize the discharge of pollutants through the storm sewer system to the maximum extent practicable (MEP).

The SWMP organizes BMPs into the following six categories, referred to as minimum control measures (MCMs):

- MCM 1: Public Education and Outreach
- MCM 2: Public Involvement / Participation
- MCM 3: Illicit Discharge Detection and Elimination
- MCM 4: Construction Site Stormwater Runoff Control
- MCM 5: Post-Construction Stormwater Management
- MCM 6: Pollution Prevention / Good Housekeeping

1.3 ADDITIONAL STORMWATER GENERAL PERMIT COVERAGE

SUBASENLON currently holds a General Permit for the Discharge of Stormwater Associated with Industrial Activity (hereafter referred to as the "Industrial Stormwater General Permit"), issued by the CT DEEP (permit number GSI000679). The Industrial Stormwater General Permit covers point source stormwater discharges associated with regulated industrial activity. Under this permit, SUBASENLON is required to assess stormwater quality and implement BMPs to reduce and/or eliminate the discharge of pollutants at those activities. The SUBASENLON Stormwater Pollution Prevention Plan (SWPPP) serves as the management document for the Industrial Stormwater Permit.

1.4 PLAN ORGANIZATION

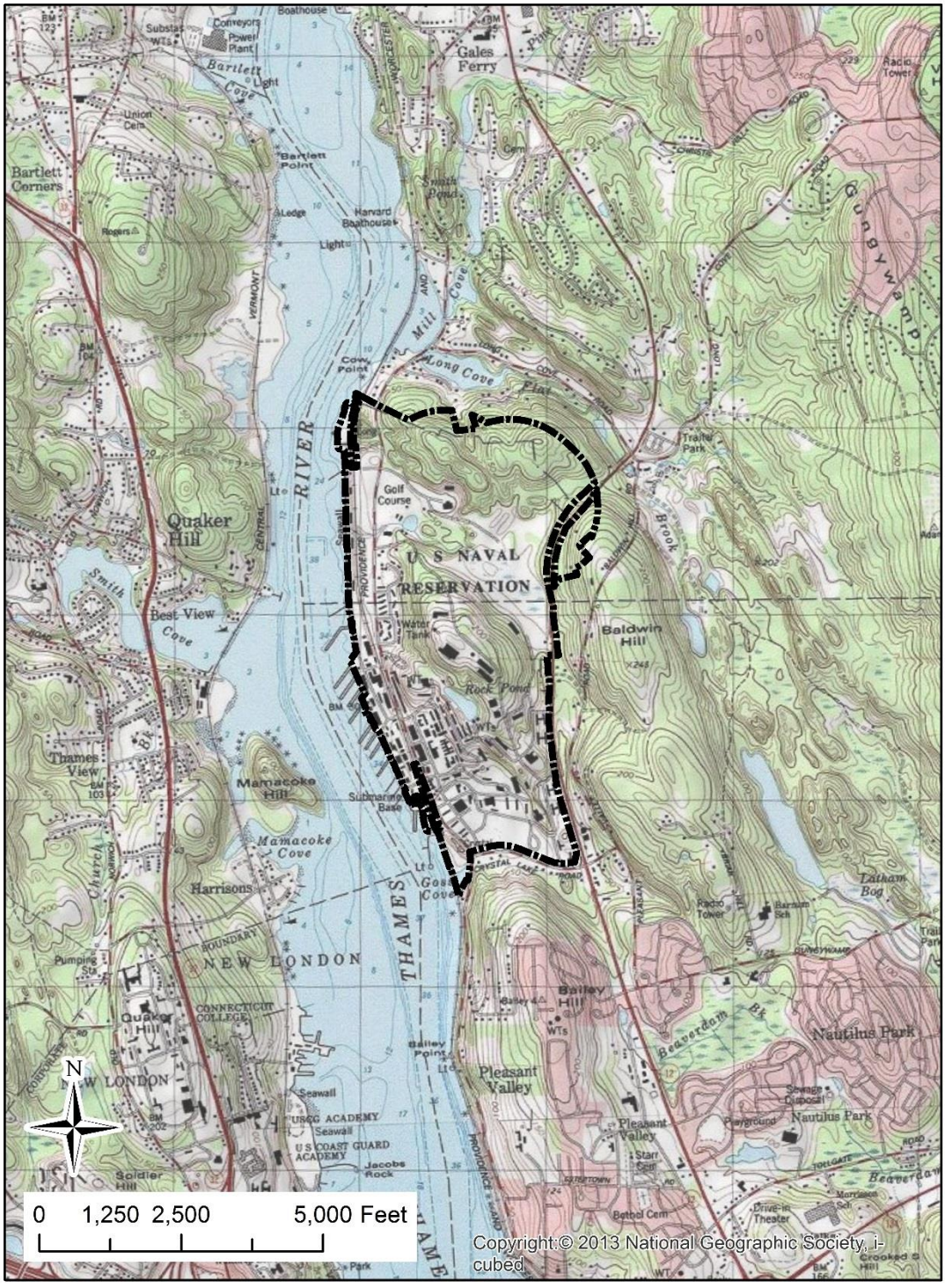
Following the introduction, this SWMP presents information in the following sections:

- **Section 2** MCM 1 Public Education and Outreach
- **Section 3** MCM 2 Public Involvement / Participation
- **Section 4** MCM 3 Illicit Discharge Detection and Elimination
- **Section 5** MCM 4 Construction Site Stormwater Runoff Control
- **Section 6** MCM 5 Post-Construction Stormwater Management
- **Section 7** MCM 6 Pollution Prevention / Good Housekeeping
- **Section 8** Monitoring Requirements for Discharges to Impaired Waters
- **Section 9** Reporting and Recordkeeping Requirements
- **Section 10** Additional Requirements and Conditions
- **Section 11** References and Works Consulted

The following appendices provide supplemental information:

- **Appendix A** includes a Gantt chart and table that summarize the implementation milestones for each MCM and associated BMPs.
- **Appendix B** provides an interdepartmental coordination plan that includes each department's responsibilities and positions responsible for each task.
- **Appendix C** provides a large-format wall chart summarizing soil erosion and sediment control measures for implementation during construction activities.

Figure 1-1 SUBASENLON Vicinity and MS4 Boundary Map



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2. MCM 1: PUBLIC EDUCATION AND OUTREACH

Section 6(a)(1) of the MS4 General Permit

Education and outreach help the public of SUBASENLON better understand why a stormwater program is necessary and how their actions impact stormwater quality. A better understanding of the stormwater program will result in greater support for the program and ensure compliance with the MS4 General Permit.

The following goals of this MCM will be met by implementing the BMPs described in this section:

- Raise awareness that polluted stormwater runoff is a significant source of water quality problems
- Motivate the public to engage in activities that reduce polluted stormwater runoff and promote water quality

At SUBASENLON, the public includes servicemen and women, residents, government employees, contractor workers, etc. within the SUBASENLON fence line.

2.1 REQUIREMENTS

Section 6(a)(1) of the MS4 General Permit requires SUBASENLON to implement a public education program that includes distributing educational materials and/or conducting outreach activities that raise public awareness about stormwater pollution and identify actions that promote water quality.

2.2 PUBLIC EDUCATION PROGRAM

SUBASENLON will distribute educational materials to its public or conduct equivalent outreach activities about stormwater pollution (types, sources) and its impact on water quality. Furthermore, the program will inform the public of actions it can take to re-

duce pollutants in stormwater runoff. Table 2-1 summarizes stormwater pollutants of concern and their sources.

Table 2-1 Stormwater Pollutants of Concern

Source	Pollutant						
	Bacteria[1]	Sediment	Trash	Metals	Oil and Grease	Nutrients	Herbicides/ Pesticides
Illicit Discharges	X	X	X	X	X	X	X
Disposal of Waste into MS4	X	X	X	X	X	X	
Impervious Cover		X	X	X	X		
Landscaping/ Grounds Maintenance	X	X	X			X	X
Outdoor Material Storage		X	X	X	X		
HM/HW and POL Storage, Transfer, and Disposal	X			X	X		X
Vehicle Washing/ Maintenance		X	X	X	X		
Stormwater Utility O&M	X	X	X	X	X	X	
Wastewater Utility O&M	X	X			X	X	

Note:
1. The Thames River, which drains the entirety of SUBASENLON, is impaired for bacteria. The SUBASENLON public education program will include additional content targeted at this pollutant.

Abbreviations:
HM/HW – hazardous material / hazardous waste
O&M – operation and maintenance
POL – petroleum, oil, lubricant

Stormwater runoff from SUBASENLON ultimately discharges to the Thames River, which is impaired for bacteria. Therefore, educational material will be specifically tailored to address the following potential sources of bacteria in stormwater discharges:

- Sanitary sewer cross-connections
- Waterfowl and feral cats
- Pet waste

- Solid waste management

The MS4 General Permit also requires educational material pertaining to septic systems for systems that discharge to waters impaired for bacteria. However, this requirement does not apply as there are no active septic systems at SUBASENLON.

Implementation: SUBASENLON Environmental Division (EV) will administer the public education program. SUBASENLON will disseminate the educational content of its program through the following media:

- Stormwater inlet stenciling
- Web-based learning
- "Earth Day," "Meet the Navy," and other similar educational events
- Flyers / brochures
- *The Dolphin* (SUBASENLON newspaper)

The education materials will be targeted at the following SUBASENLON audiences:

- Military and civilian workforce
- Base contractors
- Landscape / grounds maintenance workers
- Residents

SUBASENLON will pursue collaboration / partnerships with local organizations and environmental groups (when possible). Additionally, SUBASENLON will continue to require all base personnel and contractors to complete Environmental Management System (EMS) training through the Environmental Compliance Assessment, Training, and Tracking System (ECATTS).

2.3 DOCUMENTATION

The following information is required for inclusion in each Annual Report:

- Type of material distributed
- Quantity of material distributed
- Source of information
- Method of distribution
- Summary of outreach efforts (including date and number of participants)

2.4 PUBLIC EDUCATION AND OUTREACH SCHEDULE

Table 2-2 summarizes the scheduled milestones for MCM 1.

Table 2-2 Public Education and Outreach Schedule

Task	Task Start Date	Task Due Date
Complete development of educational materials	Jul 1, 2017	Jul 1, 2018
Implement the public education program (continue implementation until permit expiration)	Jul 1, 2017	Jul 1, 2019

2.5 SUPPLEMENTAL INFORMATION AND RESOURCES

SUBASENLON will reference educational resources made available by multiple entities including the EPA, CT DEEP, and NAVFAC when developing the educational material. The following web links include reference material utilized in the development of SUBASENLON's public education program:

https://www3.epa.gov/npdes/pubs/fact2-3.pdf

https://www3.epa.gov/npdes/pubs/after_the_storm.pdf

https://www3.epa.gov/npdes/pubs/nps_month_bookmark.pdf

https://www3.epa.gov/npdes/pubs/doorhanger.pdf

https://www3.epa.gov/npdes/pubs/stormwaterstickers.pdf

https://www3.epa.gov/npdes/pubs/solution_to_pollution.pdf

https://www3.epa.gov/npdes/pubs/stormwaterplacemat.pdf

https://www3.epa.gov/npdes/pubs/potmunpoll.pdf

http://www.ct.gov/deep/cwp/view.asp?a=2690&q=322450&deepNav_GID=1511

http://nemo.uconn.edu/tools/publications.htm

3. MCM 2: PUBLIC INVOLVEMENT / PARTICIPATION

Section 6(a)(2) of the MS4 General Permit

The public can be a valuable resource during the development and implementation of a stormwater program. Engaging the public in the program broadens support, helps identify potential obstacles to implementation, invites additional expertise, and provides a conduit to other complimentary programs.

3.1 REQUIREMENTS

Section 6(a)(2) of the MS4 General Permit requires SUBASENLON to provide opportunities for the public to participate in the planning and implementation of the MS4 program. The permit specifically requires public notification and public comment periods prior to finalization of the SWMP and each Annual Report.

3.2 IMPLEMENTATION

SUBASENLON will publish a public notice (on a website, through an email or mailing list, and/or in a newspaper) publicizing the availability for review of the SWMP and each Annual Report. The public notice will include contact information (name, phone number, address, and email) for receipt of public comments. The SWMP and each Annual Report will be publicly available at the following website:

http://www.cnic.navy.mil/regions/cnrma/installations/navsubbase_new_london/om/environmental_support.html

A hardcopy of each document will be available for review at Building 439 at the offices of the SUBASENLON EV.

3.3 PUBLIC INVOLVEMENT / PARTICIPATION SCHEDULE

The SWMP will be published for public review and comment at least 90 days prior to the effective date of this permit (effective date = July 1, 2017; 90 days prior = April 2, 2017). The public may provide comments on or before 60 days from the date of the availability of the plan (June 1, 2017).

Public notice of the 30-day comment period on the Annual Report will be published no later than January 31, annually. The public notice for the first Annual Report will occur no later than January 31, 2019. Each Annual Report will be made available for public review and comment on or before February 15, annually, and the report will be submitted to CT DEEP by April 1, annually.

Table 3-1 summarizes the schedule for MCM 2.

Table 3-1 Public Involvement / Participation Schedule

Task	Task Start Date	Task Due Date
Publish SWMP for public review and commenting period	Apr 2, 2017	Jun 1, 2017
Publish public notice for the 30-day Annual Report 1 commenting period	Jan 31, 2019	Feb 15, 2019
Publish public notice for the 30-day Annual Report 2 commenting period	Jan 31, 2020	Feb 15, 2020
Publish public notice for the 30-day Annual Report 3 commenting period	Jan 31, 2021	Feb 15, 2021
Publish public notice for the 30-day Annual Report 4 commenting period	Jan 31, 2022	Feb 15, 2022
Publish Draft Annual Report 1 for public review and commenting period	Feb 15, 2019	Mar 17, 2019
Publish Draft Annual Report 2 for public review and commenting period	Feb 15, 2020	Mar 16, 2020
Publish Draft Annual Report 3 for public review and commenting period	Feb 15, 2021	Mar 17, 2021
Publish Draft Annual Report 4 for public review and commenting period	Feb 15, 2022	Mar 17, 2022

4. MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION

Section 6(a)(3) of the MS4 General Permit

An illicit discharge is any discharge to the MS4 or waters of the state that does not consist entirely of stormwater, with some exceptions. Exceptions include those discharges identified as allowable in the MS4 General Permit (when such non-stormwater discharges are not significant contributors of pollution) and industrial discharges covered by a separate CT DEEP-issued National Pollutant Discharge Elimination System (NPDES) permit. The MS4 General Permit allows the following non-stormwater discharges:

- Uncontaminated groundwater discharges including, but not limited to, pumped groundwater, foundation drains, water from crawl space pumps, and footing drains
- Irrigation water including, but not limited to, landscape irrigation and lawn watering runoff
- Residual street wash water associated with sweeping
- Discharges or flows from firefighting activities (except training)
- Naturally occurring discharges such as rising ground waters, uncontaminated groundwater infiltration[2], springs, diverted stream flows, and flows from riparian habitats and wetlands.

Common industrial discharges covered by SUBASENLON's NPDES permit include the following allowable non-stormwater discharges:

- Fire hydrant, fire pump, and sprinkler test water
- Steam condensate return overflow
- Utility sump/trench dewatering
- Various non-contact cooling waters
- Potable water to prevent freezing of water supply lines to vessels
- Various dry dock discharges such as ballast water discharges, biofouling prevention discharges, sonar dome discharges, and non-contact cooling water discharges.

[2] Infiltration as defined by the Code of Federal Regulations (CFR) at 40 CFR 35.2005(20).

Illicit discharges may result from direct cross-connections (e.g., sanitary sewer piped directly into the MS4) or from indirect sources. The following sources are common examples of indirect illicit discharges:

- Infiltration from broken sanitary sewer pipes or septic systems
- Accidental wastewater / POL spills
- Intentionally dumped or pumped wastewater / POLs

An effective illicit discharge detection and elimination (IDDE) program is necessary to protect waterbodies from these discharges and the following harmful pollutants that they may contain: heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria.

4.1 REQUIREMENT

Section 6(a)(3) of the MS4 General Permit requires SUBASENLON to develop and implement a written IDDE Program that accomplishes the following goals:

- Provide legal authority to prohibit and eliminate illicit discharges to the MS4
- Detect and locate the source of any illicit discharges
- Eliminate those illicit discharges
- Ensure ongoing screening and tracking to prevent and/or eliminate future illicit discharges

The permit requires that, upon detection, SUBASENLON eliminate illicit discharges as soon as possible. If, upon source confirmation, the illicit discharge cannot be eliminated within 60 days, SUBASENLON will establish a schedule for its elimination that does not exceed 180 days (from confirmation). Actions to eliminate illicit discharges will begin immediately. In the period between detection and elimination, SUBASENLON will take all reasonable and prudent measures to minimize the discharge of pollutants to its MS4 or waters of the state.

Records of the following illicit discharge abatement activities will be maintained: location, description, date(s) of inspection, sampling data (if applicable), action(s) taken, date of removal or repair, and responsible party(ies). This information will also be included in the Annual Report.

Refer to Appendix B of the MS4 General Permit for the IDDE Program Protocol. The remainder of this section provides a summary of this protocol.

4.2 PROGRAM ELEMENTS

The required program elements are summarized herein. For each element, the summary provides a date by which that element must be implemented and the method through which the requirement will be met.

4.2.1 Legal Authority

SUBASENLON will update its existing Environmental Protection Instructions (SUBASENLONINST 5090.7A) to include the following provisions:

- Authorizes SUBASENLON to implement and enforce the IDDE Program
- Prohibits illicit discharges to the MS4 and requires elimination of such discharges per Section 6(a)(3)(A) of the MS4 General Permit as summarized in Section 4.1 of this SWMP
- Controls the discharge of spills and prohibits the dumping or disposal of materials including, but not limited to, residential, industrial, and commercial wastes; trash; used motor vehicle fluids; pesticides; fertilizers; food preparation waste; leaf litter; grass clippings; and animal wastes into the MS4
- Authorizes administrative action by the SUBASENLON upon any person or entity creating an illicit discharge or spilling or dumping as specified in this section
- Provides any additional authorities specified in the written IDDE Program

Schedule: Complete prior to July 1, 2019

Implementation: Authority to implement and administer the IDDE Program will be formalized by an updated SUBASENLON Environmental Protection Instructions (SUBASENLONINST 5090.7A).

4.2.2 Written IDDE Program

SUBASENLON will develop a written IDDE Program (separate from this SWMP) in accordance with Section 6(a)(3) of the MS4 General Permit. Appendix B of the permit provides the IDDE Program Protocol that includes the specific requirements of the written IDDE Program (refer to Section A(7) of the appendix). The written program will

clearly identify responsibilities with regard to eliminating illicit discharges. The statement will identify lead departments and/or personnel responsible for implementing the IDDE Program. If multiple departments are responsible, the program will specify specific areas of responsibility and processes for coordination.

The written IDDE Program will be designed to prevent illicit discharges and sanitary sewer overflows (SSOs) through implementation of BMPs such as spill response/prevention procedures, public awareness programs, reporting hotlines, and training of personnel involved in the program.

Schedule: Complete prior to July 1, 2019

Implementation: SUBASENLON will complete its written IDDE Program Plan in 2017.

4.2.3 Public Reporting of Illicit Discharges

SUBASENLON will create a means for the SUBASENLON public to report illicit discharges. Reported discharges will be promptly investigated and, if confirmed, eliminated, provided that the report provides at least a date, time, and location for the observed discharge.

Schedule: Complete prior to July 1, 2019

Implementation: SUBASENLON personnel report suspected SSOs and illicit discharges to the EV Stormwater Program Manager by calling (860) 694-5191. The reporting requirements and procedures are included in SUBASENLON's IDDE Program training (refer to Section 4.2.11 of this document). The IDDE Program (to be completed in 2017) includes provisions for tracking of reported SSOs and illicit discharges.

Documentation: All publicly reported illicit discharges and the responses to the reported discharges will be documented in the Annual Report.

4.2.4 Sanitary Sewer Overflows

SUBASENLON will eliminate SSOs as soon as possible upon detection and will implement interim measures to minimize the discharge of pollutants into and from its MS4 while working to eliminate such SSOs.

SUBASENLON will develop an inventory of all SSOs that have occurred in the previous five years. The inventory will include the following attributes:

- Location and receiving water
- Statement of whether the SSO entered the MS4 or a surface water directly
- Date and time of the start and end of each SSO
- Estimated volume of the SSO
- Description of the SSO that indicates the cause or suspected cause
- Completed mitigation and corrective measures with dates implemented
- Planned mitigation and corrective measures with implementation schedules

The SSO Inventory will be updated annually.

Within five days of SSO detection, SUBASENLON will provide written notice to the Commissioner that includes the same information included in the SSO Inventory.

Schedule: Complete prior to October 29, 2017 (then update annually)

Implementation: SUBASENLON maintains a spills and leaks database that includes all SSOs in addition to spills and leaks of other materials. This database includes all required SSO related fields noted in this section. SUBASENLON provides written notice to the Commissioner within five days of any SSO detection.

Documentation: The annually updated SSO inventory will be included in the Annual Report (note: SSO information will be extracted from the spills and leaks database for the timeline covered by each Annual Report).

4.2.5 Outfall / Interconnection Inventory

An outfall is a point source where the MS4 discharges to waters of the state. An interconnection is a point where one MS4 connects to another stormwater system or MS4 and the combined discharge ultimately enters waters of the state. SUBASENLON will develop an inventory that includes the following attributes for each outfall or point of interconnection associated with its MS4:

- Unique identifier
- Receiving water
- Date of most recent inspection
- Type and shape of conveyance (e.g., circular pipe, rectangular channel)
- Dimension(s)
- Material (e.g., polyvinyl chloride [PVC], reinforced concrete)
- Spatial location (latitude and longitude with a minimum accuracy of +/- 0.30 feet)
- Physical condition as of the most recent inspection
- Indicators of non-stormwater discharge from most recent inspection (presence or evidence of suspected flow, odor, color, turbidity, floatables, or POL sheen)

The Outfall / Interconnection Inventory will be updated annually, which will require inspection of each outfall and point of interconnection at least once per year.

Schedule: Complete prior to July 1, 2019

Implementation: SUBASENLON's Outfall / Interconnection Inventory (scheduled for completion in 2017) includes the attributes required by the MS4 General Permit. The inventory is being developed using existing geographic information system (GIS) data supplemented with field-collected data. Field data collection was conducted in October 2016 and consisted of visual inspections of each accessible outfall or first accessible structure upstream of the outfall.

Documentation: The annually updated Outfall / Interconnection Inventory will be included in the Annual Report.

4.2.6 IDDE Mapping

SUBASENLON will develop detailed mapping of its MS4 to facilitate effective system O&M and aid in the identification of potential sanitary sewer cross-connections. This mapping can also be used to trace suspected illicit discharges upstream to their sources or identify areas or features downstream of confirmed discharges for mitigation efforts. Accurate mapping is essential to the implementation of the overall IDDE Program.

The MS4 General Permit requires the following mapping elements:

- Delineated catchment areas (i.e., drainage basins)
- Outfalls
- Interconnections with other stormwater systems or MS4s
- Waterbodies identified by name (identify impairments)
- Pipes and conduits
- Open channel conveyances (swales, ditches, etc.)
- Catch basins / curb inlets
- Manholes and junctions
- Stormwater treatment structures (detention/retention systems, bioretention areas, oil/water separators [OWSs], particle separators, pervious pavement, other engineered systems)
- SUBASENLON sanitary sewer system

The MS4 General Permit recommends the following mapping elements, if available:

- Storm sewer conduit material, size, and age
- Sanitary sewer conduit material, size, and age
- Septic systems
- Seasonal high water table (SHWT) elevations
- Topography
- Orthophotography
- Location of historical illicit discharge investigations including flow isolation, dye testing, and closed-circuit television (CCTV) inspections
- Locations of suspected, confirmed, and eliminated illicit discharges

The IDDE mapping will be updated on an as-needed basis whenever major changes to critical infrastructure are made or new data is created and/or made available.

Schedule: Complete prior to July 1, 2020

Implementation: SUBASENLON developed IDDE mapping in accordance with the requirements of the MS4 General Permit concurrently with the development of this SWMP. The mapping was developed using existing GIS data supplemented with field-collected data.

Documentation: The progress towards completion of the permit-required IDDE mapping (complete) will be included in the first Annual Report.

4.2.7 Assessment and Priority Ranking of Catchments

SUBASENLON will assess and priority rank its catchment areas (i.e., drainage basins) in terms of illicit discharge and SSO potential and the related public health significance. Catchment area ranking will determine the priority order for outfall screening and catchment investigations. Each catchment area will be classified into one of the following categories:

- Excluded: no potential for illicit discharges or SSOs and excluded from the IDDE Program (limited to roadway drainage in undeveloped areas with no dwellings or sanitary sewer; drainage for athletic fields; parks; or undeveloped green space without services)
- Problem: known or suspected contributions of illicit discharges, including any catchment where any previous screening indicates potential sanitary sewer input (olfactory/visual evidence or suspect analytical results)
- High Priority: presence of system vulnerability factors (SVFs) (refer to Section 4.2.9.1 for a list of SVFs) and/or pollutant indicators observed during baseline outfall screening
- Low Priority: does not fall into other three categories

After initial classification, the catchment areas will be prioritized within each category based on the following factors:

- Past discharge complaints / reports
- Poor dry weather receiving water quality
- Development density within area
- Age of surrounding development and infrastructure
- Sewer conversions
- Historic combined sewer systems

- Presences of septic systems
- Culverted streams

Schedule: Complete prior to July 1, 2019

Implementation: SUBASENLON began assessing and priority ranking its catchment areas concurrently with the development of its written IDDE Program Plan. The plan will be completed in 2017.

Documentation: Progress of SUBASENLON's catchment area assessment and priority ranking effort will be included in the Annual Report. Priority rankings will be updated annually based on new information resulting from other IDDE Program efforts (e.g., mapping updates, outfall screening and sampling).

4.2.8 Outfall / Interconnection Screening and Sampling Procedures

The written IDDE Program Plan (to be completed in 2017) includes procedures for screening and sampling of SUBASENLON's outfalls and interconnections for presence or evidence of illicit discharges. Dry weather and wet weather screening and sampling will be conducted at all outfalls and interconnections. The written procedures will apply to each of the following types of screening and sampling:

- Baseline outfall and interconnection screening and sampling (dry weather)
- Confirmatory screening and sampling (dry and/or wet weather)
- Follow-up screening and sampling (dry and/or wet weather depending on catchment area characteristics)

The written IDDE Program Plan details the following:

- Procedures for sample collection, field-measurement of specified water quality parameters, and sample storage and conveyance (including holding times)
- Course of action in cases where outfalls or interconnections are inaccessible or submerged (i.e., proceed to the first accessible upstream drainage structure and report the location with the screening and sampling results)
- Dry weather screening and sampling:
  - Proceed only when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period
  - Visually screen for presence or evidence of dry weather flow

  - If no flow is observed, but evidence of a dry weather flow exists, revisit the outfall during dry weather within one week, if possible, to perform second dry weather screening (and sampling, if applicable)
- Wet weather screening and sampling:
  - Sample during or after a storm event of sufficient intensity to produce a discharge (no minimum rainfall volume specified)
  - To occur in the spring (March to June) when groundwater levels are elevated
  - Intent of sampling is to identify illicit discharges only made active or evident during wet weather flow conditions
  - Consider including provisions that assist in the identification of suspected illicit discharges such as specifying a minimum storm intensity that would likely trigger SSOs or avoiding sampling during the "first flush"
- Collect samples and analyze for ammonia, chlorine, conductivity, salinity, Enterococci, fecal coliform, surfactants, and temperature
- Sampling results that exceed one of the following criteria will be considered highly likely to contain illicit discharges from sanitary sources (such catchment areas will be ranked at the top of the "High Priority Catchments" category):
  - Ammonia ≥ 0.5 milligrams per liter (mg/L), surfactants ≥ 0.25 mg/L, and bacterial levels ≥ water quality criteria of receiving water[3], or
  - Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine (i.e., total chlorine ≥0.05 mg/L)

4.2.9 Catchment Area Investigations

SUBASENLON will develop a written, systematic procedure for catchment area investigation that contains the following elements:

1. Review of existing catchment area data (SSO Inventory, storm and sanitary sewer mapping, design and record drawings, records of prior repairs, and complaint records)
2. Methodology for inspection of key stormwater drainage structures
3. Illicit discharge isolation and confirmation procedures

Schedule: The schedule for catchment area investigations includes the following milestones:

- Complete investigations in at least 80 percent of "Problem" catchment areas prior to July 1, 2020

[3] CT DEEP water quality criteria for bacteria within the Thames River in the vicinity of SUBASENLON are 500 colony forming units (cfu) per 100 milliliters (mL) for Enterococci and 260 cfu/100mL for fecal coliform.

- Complete 100 percent of "Problem" catchment area investigations prior to July 1, 2022
- Complete investigations in all catchment areas where information indicated potential sewer input (olfactory / visual evidence and/or sampling results) prior to July 1, 2022
- Complete investigations in 40 percent of the catchment areas served by the MS4 prior to July 1, 2022
- Complete 100 percent of investigations prior to July 1, 2027

Implementation: SUBASENLON has begun conducting catchment area investigations; baseline dry weather flow screening and sampling was completed in October 2016.

Documentation: The Annual Report will document the following information from the catchment area investigations:

- Presence or absence of SVFs (refer to Section 4.2.9.1 for a list of SVFs) for each catchment area
- Flows observed during baseline dry weather flow observations
- Results of any dry weather or wet weather sampling

4.2.9.1 Review of Existing Data

Based on the review of the existing catchment area data, SUBASENLON will identify and document the following SVFs for each catchment area:

- History of SSOs
- Sewer lift stations, siphons, or known sanitary sewer restrictions where power/equipment failure could result in SSOs
- Inadequate sewer service resulting in surcharging, back-ups, or customer complaints
- Common or twin-invert junctions serving storm and sewer alignments
- Common trench construction for storm and sanitary sewer alignments
- Crossings of storm and sanitary sewer alignments
- Sanitary sewers constructed with underdrains
- Defective sanitary sewers
- Areas formerly served by combined sewers
- Any sanitary or storm infrastructure over 40 years old
- Widespread code-required septic system upgrades
- History of local health department intervention regarding septic failures

Where one or more SVFs are identified, further investigative work will be required.

4.2.9.2 Key Stormwater Drainage Structure Inspections

SUBASENLON's IDDE Program (to be completed in 2017) includes a written storm sewer system investigation methodology that includes systematically and progressively observing, sampling (as applicable), and evaluating all key drainage structures (e.g., catch basins, curb inlets, manholes) in each catchment area. The methodology was developed with the following goals in mind:

- Confirm existing and identify additional potential SVFs
- Observe presence or evidence of potential illicit discharges
- Isolate source of suspected illicit discharges

The investigations can either start from the outfall and work upstream, or start from the upper portions of the catchment area and work downstream.

Key drainage structure investigations will begin with dry weather observations, the procedures for which are summarized in Appendix B, Section (A)(7)(d)(iii) of the MS4 General Permit. Where sampling results or visual / olfactory evidence indicate potential illicit discharges, the catchment area draining to the structure will be flagged for further investigation. During the dry weather observations, SUBASENLON will identify any additional SVFs not previously identified during the review of existing data (refer to Section 4.2.9.1).

Wet weather investigations will be performed whenever one or more SVFs have been identified for a given catchment area. SUBASENLON will conduct at least one wet weather sampling event for catchment areas where one or more SVFs are present. Wet weather sampling procedures are summarized in Appendix B, Section (A)(7)(d)(iv) of the MS4 General Permit.

4.2.9.3 Isolation and Source Verification

SUBASENLON developed written procedures for inclusion in its IDDE Program Plan to isolate and confirm suspected illicit discharges identified during the key drainage structure inspections. These procedures include isolation of the drainage area con-

tributing to the structure where the suspected discharge was detected, and inspection of additional structures and alignments in that drainage area. SUBASENLON may implement the following techniques to further isolate suspected discharges:

- Sonic testing
- Flow testing
- Video inspections / CCTV
- Temporary dams
- Smoke testing
- Dye testing

4.2.10 Removal, Confirmation, and Follow-Up Screening

Once an illicit discharge has been detected, isolated, and its source identified, SUBASENLON will eliminate the discharge per Section 6(a)(3)(A)(ii) of the MS4 General Permit and Section 4.1 of the SWMP.

Within one year of elimination of an illicit discharge, its elimination will be confirmed by conducting confirmatory outfall / interconnection screening and sampling as follows:

- If no SVFs were identified for the catchment area, conduct dry weather screening and sampling only
- If SVFs were identified for the catchment area, conduct dry and wet weather screening and sampling

SUBASENLON will conduct follow-up screening and sampling within five years of the confirmatory screening and sampling as defined above. Follow-up screening and sampling will be conducted in the same manner as confirmatory screening and sampling.

Schedule: Confirmatory screening and sampling will occur within one year of discharge elimination. Follow-up screening and sampling will occur within five years of the confirmatory screening and sampling.

Implementation: SUBASENLON will begin implementation of the procedures described above immediately upon the effective date of the MS4 General Permit.

Documentation: The Annual Report will include the following information:

- Location of discharge and source
- Description of discharge
- Method of discovery
- Date of discovery
- Date of elimination, mitigation, or administrative action
- Estimated volume of flow removed

4.2.11 Training

SUBASENLON will develop and conduct IDDE training for Public Works Department (PWD) personnel involved in the IDDE Program (e.g., EV and pertinent Production Division staff). The training will ensure the target audience understands what constitutes an illicit discharge, how to recognize an illicit discharge, and how to report an illicit discharge.

Schedule: Develop and implement prior to July 1, 2019

Implementation: SUBASENLON will complete development of its IDDE Program Training Module in 2017. Content covered by the training module includes the purpose and scope of the IDDE Program, the definition of an illicit discharge, recognizing illicit discharges, reporting illicit discharges, and removing and preventing future illicit discharges. The module will be administered via ECATTS.

Documentation: SUBASENLON will include IDDE training frequency and content in the Annual Report.

4.3 IDDE PROGRAM SCHEDULE

Table 4-1 summarizes the implementation schedule for MCM 3.

Table 4-1 IDDE Program Schedule

Task	Task Start Date	Task Due Date
Develop an SSO inventory (then update the inventory annually)	Jul 1, 2017	Oct 29, 2017
Complete Environmental Protection Instruction Update	Jul 1, 2017	Jul 1, 2019
Implement Public Reporting Program for SSOs and Illicit Discharges	Jul 1, 2017	Jul 1, 2019
Implement IDDE Training Program	Jul 1, 2017	Jul 1, 2019
Develop an Outfall / Interconnection Inventory (then update the inventory annually)	Jul 1, 2017	Jul 1, 2019
Develop written IDDE program	Jul 1, 2017	Jul 1, 2019
Complete catchment priority ranking	Jul 1, 2017	Jul 1, 2019
Complete IDDE mapping	Jul 1, 2017	Jul 1, 2020
Complete catchment investigations for at least 80% of "Problem" catchments	Jul 1, 2017	Jul 1, 2020
Complete catchment investigations for all "Problem" catchments within the MS4	Jul 1, 2017	Jun 30, 2022
Complete catchment investigations in all catchments with potential sewer input	Jul 1, 2017	Jun 30, 2022
Complete catchment investigations for at least 40% of all catchments within the MS4	Jul 1, 2017	Jun 30, 2022
Complete catchment investigations for all catchments within the MS4	Jul 1, 2017	Jul 1, 2027

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5. MCM 4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Section 6(a)(4) of the MS4 General Permit

Development and redevelopment projects aboard SUBASENLON are conducted under the authority and supervision of SUBASENLON. Such projects are executed through design and construction contracts with outside parties that are overseen by SUBASENLON personnel. Therefore, SUBASENLON assumes the role of developer and regulator.

Construction activities are a major contributor of pollution to CT's waterbodies. The most significant pollutant of concern resulting from construction activities is sediment resulting from erosion of earth denuded during construction prior to site stabilization. Sediment can be prevented from leaving construction sites and entering waterways through proper implementation and maintenance of appropriate erosion and sediment control measures.

5.1 REQUIREMENTS

Section 6(a)(4) of the MS4 General Permit requires SUBASENLON to implement and enforce a program to control runoff from construction activities (including redevelopment) that disturb one acre or more, whether considered individually or collectively as part of a larger common plan. The permit specifies the following elements for inclusion in the Construction Site Runoff Control Program:

- Base Instruction that establishes legal authority for SUBASENLON to implement and enforce the program
- Interdepartmental coordination plan
- Site plan review and construction site inspection
- Public involvement
- Notification of contractor obligation to obtain General Permit for Discharge of Stormwater and Dewatering Wastewater Associated with Construction

Activities (hereafter referred to as the "Construction General Permit") that disturb one (1) acre or more

5.2 PROGRAM ELEMENTS

The required program elements are summarized herein. For each element, the summary provides a date by which that element must be implemented and the method through which the requirement will be met.

5.2.1 Legal Authority

SUBASENLON will update its existing Environmental Protection Instructions (SUBASENLONINST 5090.7A) to include the following requirements and provide SUBASENLON the authority to implement and enforce the Construction Site Runoff Control Program elements required by the MS4 General Permit:

- Construction site operators or contractors shall maintain consistency with the most recent version of CT DEEP's Construction General Permit, Guidelines for Soil Erosion and Sediment Control, as amended, and the CT Stormwater Quality Manual.
- Construction site operators or contractors shall implement additional measures beyond the requirements referenced above as deemed necessary by SUBASENLON.
- SUBASENLON shall conduct site plan reviews, construction site inspections, surveillance, and monitoring to determine compliance with all SUBASENLON programs related to the management of its MS4.
- SUBASENLON PWD Facilities Engineering and Acquisition Division (FEAD) shall require that development or redevelopment projects that include stormwater treatment structures (e.g., detention/retention systems, bioretention areas, OWSs, particle separators, pervious pavement, other engineered systems) also include long term maintenance plans and schedules to ensure performance and pollutant removal efficiency of those BMPs.
- SUBASENLON shall control the contribution of pollutants between its MS4 and other stormwater systems or MS4s through interagency or interjurisdictional agreements.

Schedule: Complete prior to October 1, 2020

Implementation: Legal authority to implement and enforce the Construction Site Runoff Control Program will be formalized by an updated SUBASENLON Environmental Protection Instructions (SUBASENLONINST 5090.7A).

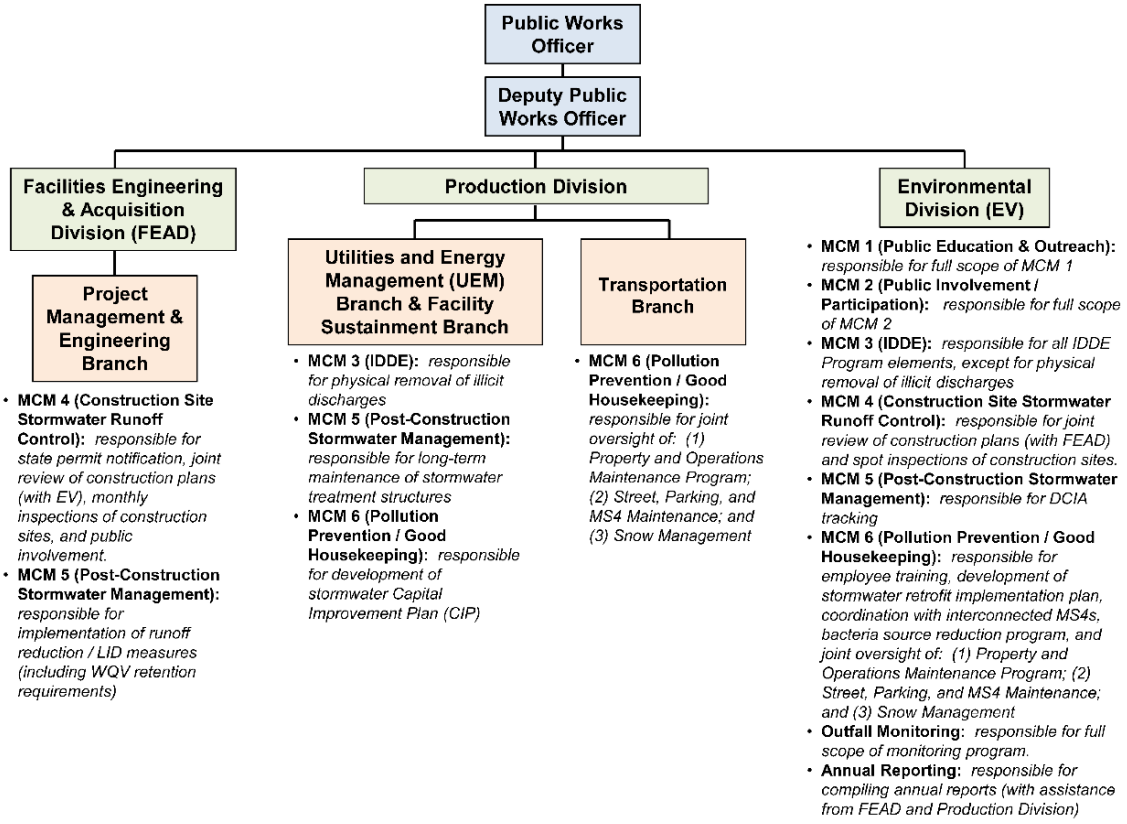
5.2.2 Interdepartmental Coordination

Implement a plan that identifies the SUBASENLON entities responsible for review, approval, and inspection of land disturbance and development projects aboard SUBASENLON. This plan will also outline how the various entities will coordinate their functions with one another.

Schedule: Complete prior to July 1, 2017

Implementation: The following organizational chart summarizes SUBASENLON's interdepartmental coordination plan for implementing its Construction Site Runoff Control Program, as well as the remaining components of this SWMP. Appendix B provides a detailed interdepartmental coordination plan that includes each department's responsibilities, positions responsible for each task, and deadlines associated with each task.

Figure 5-1 SUBASENLON PWD MS4 Program Organization Chart



5.2.3 Plan Review and Site Inspection

SUBASENLON will conduct site plan reviews and construction site inspections (and enforcement) for construction activities that disturb one or more acres, as follows, with the goal of preventing or minimizing adverse impacts to stormwater quality resulting from the construction activity:

- Site plan reviews will evaluate the adequacy and appropriateness of proposed construction and post-construction erosion and sediment control measures.
- Site inspections will assess the adequacy of the installation, operation, maintenance, and repair of construction and post-construction erosion and sediment control measures.

Schedule: Implement July 1, 2017

Implementation: SUBASENLON PWD FEAD and EV staff review site plans prior to construction. This includes site plans that show proposed construction and post-construction erosion and sediment control measures (for projects that disturb one or more acres). Applications and plans are reviewed for consistency with the Construction General Permit, CT's 2002 Guidelines for Soil Erosion and Sediment Control, as amended, and the CT Stormwater Quality Manual. SUBASENLON has the authority to require erosion and sediment control measures that go above and beyond the minimum measures required by the Construction General Permit.

SUBASENLON provides all construction contractors with standard construction specifications that require regular inspection of construction site erosion and sediment control measures by the contractor[4]. In addition, SUBASENLON PWD FEAD staff conduct monthly site inspections of erosion and sediment control measures and related contractor recordkeeping for project sites that disturb one or more acres. At the FEAD staff's discretion, inspections may also be conducted more frequently or after significant rainfall events. SUBASENLON FEAD staff can require repair or modification of erosion and sediment control measures, or addition measures, based on the results

[4] Standard specifications include the following contractor requirements: "Submit *Erosion and Sediment Control Inspection Reports* (form provided at the pre-construction conference) and *Storm Water Inspection Reports* for [Construction] General Permit to the Contracting Officer once every 7 calendar days and within 24 hours of a storm event that produces 0.5 inch or more of rain."

of these inspections. SUBASENLON EV staff also conduct spot checks of construction site erosion and sediment control measures.

5.2.4 Public Involvement

SUBASENLON will implement a procedure for receipt and consideration of information submitted by the public concerning proposed and ongoing land disturbance and development activities.

Schedule: Implement July 1, 2017

Implementation: In concert with MCM 2 – Public Involvement / Participation, SUBASENLON posts signage at construction activities prior to and during such activities that provides NAVFAC project management contact information. SUBASENLON will provide public education material that raises awareness about construction site runoff control and submission of public comments to the NAVFAC project management team.

5.2.5 State Permit Notification

SUBASENLON will notify its contractors of the requirement to obtain a CT DEEP Construction General Permit for development or redevelopment projects that disturb one (1) or more acres of land, either individually or collectively, as part of a larger common plan, and result in a point source discharge to surface waters of the state directly or through the MS4. This notification will include a provision that requires the contractor to provide a copy of the Stormwater Pollution Control Plan (required by the CT DEEP Construction General Permit) to SUBASENLON upon request.

Schedule: Implement July 1, 2017

Implementation: SUBASENLON provides standard construction specifications to its contractors that include notification of the requirement to obtain a CT DEEP Construction General Permit, when applicable. The standard construction specifications also require the contractor to develop and provide a copy of the Environmental Management Plan to SUBASENLON for review (note: the Environmental Management Plan

includes the Stormwater Pollution Control Plan that is required by the CT DEEP Construction General Permit).

5.3 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL SCHEDULE

The schedule summarized in Table 5-1 identifies the MS4 General Permit requirements for implementation of the Construction Site Stormwater Runoff Control Program elements.

Table 5-1 Construction Site Stormwater Runoff Control Schedule

Task	Task Start Date	Task Due Date
Implement interdepartmental coordination plan	Jul 1, 2016	Jul 1, 2017
Implement site plan reviews and site inspections	Jul 1, 2016	Jul 1, 2017
Implement public involvement procedures	Jul 1, 2016	Jul 1, 2017
Implement state permit notification procedures	Jul 1, 2016	Jul 1, 2017
Implement full *Construction Site Runoff Control* program	Jul 1, 2017	Oct 1, 2020

5.4 SUPPLEMENTAL INFORMATION & RESOURCES

Construction site runoff control is achieved through the implementation of soil erosion and sediment control measures. CT DEEP has published the following two documents that are the primary sources for designers, builders, operators, and regulators of soil erosion and sediment control measures:

- 2002 Guidelines for Soil Erosion and Sediment Control
- 2004 CT Stormwater Quality Manual

Each of these documents are available for download from CT DEEP's website: http://www.ct.gov/deep/site/default.asp.

Appendix L of the 2002 Guidelines for Soil Erosion and Sediment Control provides a large-format wall chart that summarizes each available control measure documented in the guidelines, along with an abbreviated description of the control measure and its applicability. This wall chart is also provided in Appendix C of this SWMP.

6. MCM 5: POST-CONSTRUCTION STORMWATER MANAGEMENT

Section 6(a)(5) of the MS4 General Permit

The overarching goal of post-construction stormwater management is to minimize the impact of a developed or redeveloped site on the local hydrology and ultimately the waters of the state. Development and redevelopment projects can affect downstream runoff water quality by increasing the type and quantity of pollutants and increasing in volume and velocity of runoff.

Development projects generally result in increasing a site's impervious area through the construction of buildings, roadways, and parking areas. Also, as the site experience a change in use, new pollutants are introduced (e.g., oil and grease in parking areas). As stormwater travels over impervious surfaces, it picks up pollutants including, but not limited to, sediment, oil and grease, heavy metals, and nutrients (nitrogen and phosphorus). These pollutants can be transported downstream and deposited where they may have harmful effects on aquatic life or humans.

A further detrimental impact of development, also a result of increased site imperviousness, is the increase in the volume and velocity of stormwater. Development projects often reduce a site's natural ability to retain and infiltrate or evapotranspirate precipitation. Post-construction conditions typically result in larger runoff volumes that concentrate faster than under predevelopment conditions. This can lead to downstream channel erosion, sedimentation, and flooding.

Many of these impacts can be effectively mitigated through implementation of this MCM that features watershed protection, low impact development (LID), and long term maintenance of post-construction stormwater treatment structures (e.g., bioretention areas).

6.1 REQUIREMENTS

Section 6(a)(5) of the MS4 General Permit requires SUBASENLON to implement and enforce a post-construction stormwater management program targeted at minimizing the impacts of development or redevelopment projects on the local hydrology and waters of the state. The permit requires the following program elements be included in the Post-Construction Stormwater Management Program:

- Establish the legal authority for SUBASENLON to implement and enforce the program
- Watershed protection
- LID site planning and development practices
- Accounting of Directly Connected Impervious Area (DCIA)
- Long term maintenance planning for post-construction stormwater controls

6.2 PROGRAM ELEMENTS

The required program elements are summarized herein. For each element, the summary provides a date by which that element must be implemented and the method through which the requirement will be met.

6.2.1 Legal Authority

In accordance with the Navy LID Policy and the Department of Defense (DoD) Energy Independence and Security Act (EISA) Section 438 Policy, construction projects at SUBASENLON are required to implement LID site planning and development practices to the MEP. These LID requirements, as well as state LID requirements, are included in the standard construction specifications for each construction project; thereby giving SUBASENLON legal authority to enforce the post-construction stormwater management program. State LID requirements are defined by the MS4 General Permit.

SUBASENLON will consider the inclusion of the following watershed protection elements for future construction projects:

- Minimization of impervious surfaces by limiting or minimizing 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 thermal 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
- Protection of native soils (e.g., prevention of topsoil stripping and soil compaction)

Schedule: Complete prior to July 1, 2022

Implementation: 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.

6.2.2 Runoff Reduction / LID Measures

SUBASENLON will require its design and construction contractors to comply with the LID standards defined by the Navy LID Policy, DoD EISA Section 438 Policy, and the MS4 General Permit.

The DoD Unified Facilities Criteria (UFC) on LID (UFC 3-210-10, LID), describes the technical criteria necessary to comply with the stormwater requirements of the Navy LID Policy and the DoD EISA Section 438 Policy. In summary, these standards require LID management strategies be implemented including maximization of pervious area, disconnection of impervious surfaces, and use of vegetated buffers. The following additional LID requirements of the MS4 General Permit are summarized herein:

- Retention of the water quality volume
- Limits of disturbance
- CT Stormwater Quality Manual
- Septic systems

Schedule: Implement October 1, 2020

Implementation: 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 FEAD staff will review development/construction plans that include associated stormwater design calculations for compliance with these standards.

6.2.2.1 Retention of the Water Quality Volume

The water quality volume (WQV) is defined in CT as the runoff volume associated with the first one-inch of rainfall over the area of interest. Retention is defined as infiltration, evapotranspiration, or reuse.

Sites with existing DCIA greater than or equal to 40 percent:

- Retain a minimum of one-half of the WQV onsite
- In cases where one-half of the WQV cannot be retained onsite, the following alternative method for complying with this program element is available:
  - Retain runoff volume to the MEP
  - Provide additional treatment of sediment, floatables, and nutrients for the difference between one-half of the WQV and the volume retained onsite to the MEP
  - Develop a report detailing measures taken to maximize runoff reduction practices, reasons why those practices constitute the MEP, the alternative retention volume, and a description of the measures used to provide additional treatment
  - Complete a mitigation project at another site or set aside funding for a future mitigation project to offset the difference between one-half of the WQV and the volume retained onsite to the MEP

Sites with existing DCIA less than 40 percent:

- Retain the full WQV onsite
- In cases where the WQV cannot be retained onsite, the following alternative method for complying with this program element is available:
  - Retain runoff volume to the MEP
  - Provide additional treatment of sediment, floatables, and nutrients for the difference between the WQV and the volume retained onsite to the MEP
  - Develop a report detailing measures taken to maximize runoff reduction practices, reasons why those practices constitute the MEP,

the alternative retention volume, and a description of the measures used to provide additional treatment

- Complete a mitigation project at another site or set aside funding for a future mitigation project to offset the difference between the WQV and the volume retained onsite to the MEP

6.2.2.2 Limits of Disturbance

Limit land disturbing activities to those areas necessary to construct buildings, utilities, stormwater management measures, parking, access ways, reasonable lawn areas, and contouring necessary to prevent future site erosion.

6.2.2.3 Connecticut Stormwater Quality Manual

Maintain consistency with the CT Stormwater Quality Manual, or if inconsistent, provide an explanation of why consistency is not feasible or practicable and how the proposed plan of development is adequately protective of stormwater quality.

6.2.2.4 Septic Systems

There are currently no active or inactive on-site sewage disposal systems (e.g., septic systems) located within SUBASENLON. Furthermore, no future on-site sewage disposal systems are planned. In the event that such disposal systems are installed in the future, areas to be served with on-site sewage disposal systems will require coordination with state or local health officials. Systems should be designed in accordance with the CT Department of Health's Technical Standards for Subsurface Sewage Disposal Systems, Section 19-13-B100A of the Regulations of Connecticut State Agencies, and CT DEEP requirements for on-site sewage disposal systems.

6.2.3 Directly Connected Impervious Area

SUBASENLON will calculate the DCIA that contributes stormwater to each MS4 outfall. DCIA is defined as impervious area from which stormwater runoff discharges directly to waters of the state or directly to a storm sewer system that discharges to waters of the state. Impervious areas that discharge through a system designed to retain the appropriate portion of the WQV (refer to Section 6.2.2.1) are not considered DCIA.

Schedule: Complete prior to July 1, 2020

Implementation: SUBASENLON maintains a GIS database that includes all of its MS4 outfalls, the drainage areas contributing to those outfalls, existing utilities (including stormwater infrastructure), and impervious areas such as roads, buildings, parking lots, etc. SUBASENLON used these existing data to calculate the DCIA contributing to each MS4 outfall. DCIA estimates are updated on annually to account for new development or redevelopment.

6.2.4 Long Term Maintenance

SUBASENLON will implement a maintenance and inspection program that ensures long-term effectiveness of stormwater retention / detention systems and other stormwater treatment structures (e.g., bioretention areas, OWSs, particle separators, pervious pavement)

The MS4 General Permit requires that this program apply to all catchment areas (i.e., drainage basins) that drain to impaired waters. Therefore, this program applies throughout SUBASENLON due to the bacteria impairment of the Thames River. At a minimum, the following inspection and maintenance requirements will be implemented:

- Annual inspection of all stormwater treatment structures
- Sediment (or other accumulated pollutant) removal when accumulated material exceeds 50 percent of the design capacity

Schedule: Implement July 1, 2020

Implementation: SUBASENLON will initiate and maintain an annual contract that includes inspection of all stormwater treatment structures. Based on the findings of these inspections, the contractor will perform necessary maintenance.

6.2.5 Additional Measures for Discharges to Impaired Waters

Erosion and sediment problems that are noted during the course of annual inspections should be included in the Infrastructure Repair and Rehabilitation program un-

der MCM 6 – Pollution Prevention / Good Housekeeping (refer to Section 7.2.2 of this SWMP).

6.3 POST-CONSTRUCTION STORMWATER MANAGEMENT SCHEDULE

Table 6-1 summarizes the MS4 General Permit required implementation schedule for the Post-Construction Stormwater Management Program.

Table 6-1 Post-Construction Stormwater Management Schedule

Task	Task Start Date	Task Due Date
Complete DCIA estimates (then update estimates annually)	Jul 1, 2017	Jul 1, 2020
Implement long-term maintenance requirements	Jul 1, 2017	Jul 1, 2020
Implement LID and WQV retention requirements	Jul 1, 2017	Oct 1, 2020
Implement full *Post-Construction Stormwater Management* program	Jul 1, 2017	Jun 30, 2022

6.4 SUPPLEMENTAL INFORMATION AND RESOURCES

CT DEEP's 2004 CT Stormwater Quality Manual is the primary resource for the design, construction, operation, inspection, and long-term maintenance of post-construction stormwater management facilities. The manual is available for download from CT DEEP's website: http://www.ct.gov/deep/site/default.asp.

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7. MCM 6: POLLUTION PREVENTION / GOOD HOUSEKEEPING

Section 6(a)(6) of the MS4 General Permit

Pollution prevention / good housekeeping is the MCM that specifically targets municipal-type operations. In the case of SUBASENLON, this MCM applies to the operations of PWD (including the Production Division and EV). The goal of pollution prevention / good housekeeping is to reduce pollution from the following sources:

- Impervious surfaces (streets, parking lots, vehicle storage and maintenance areas)
- Open spaces (athletic fields, golf course, parks)
- Poorly maintained stormwater infrastructure

The intent of this MCM is to improve stormwater quality through better SUBASENLON facility O&M.

7.1 REQUIREMENTS

Section 6(a)(6) of the MS4 General Permit requires SUBASENLON to implement an O&M program that reduces its facilities' contribution of pollutants to runoff and ultimately to the receiving waters of its MS4. The program will include the following elements:

- Employee training
- Infrastructure repair and rehabilitation
- Retrofit program (to reduce DCIA)
- Facility operations maintenance
- Streets, parking, and MS4 maintenance
- Snow management standard operating procedures (SOPs)
- Coordination with interconnected MS4s
- Source control of pollutants
- Bacteria source reduction

7.2 PROGRAM ELEMENTS

The required program elements are summarized herein.

7.2.1 Employee Training

SUBASENLON will develop a formal training program for key staff that addresses the relationship between O&M of SUBASENLON facilities and stormwater quality. The training program should cover the following items:

- General responsibilities of MS4 General Permit holders
- General goals and objectives of the MS4 General Permit and the SWMP
- Proper identification and reporting of illicit discharges / improper disposal practices
- Spill response protocols
- Organizational responsibilities and key responsible persons

Schedule: Complete prior to July 1, 2019

Implementation: SUBASEBLON will require key staff to complete the "*Stormwater--Comprehensive Overview: Connecticut*" training module available through ECATTS. This training module currently summarizes general responsibilities of MS4 General Permit holders, and general goals and objectives of the MS4 General Permit and the SWMP. SUBASENLON will augment this training module to include the following additional items:

- Proper identification and reporting of illicit discharges / improper disposal practices
- Spill response protocols
- Organizational responsibilities and key responsible persons

Documentation: SUBASENLON's Annual Report will include training records that indicate the number of base personnel that received MS4 training that year through ECATTS.

7.2.2 Infrastructure Repair and Rehabilitation

SUBASENLON will repair and rehabilitate its MS4 infrastructure to reduce or eliminate discharge of pollutants to receiving waters in a timely manner. Stormwater infrastructure includes the following components:

- Conveyances (piping, culverts, swales, channels)
- Drainage structures (manholes, catch basins, curb inlets)
- Treatment structures (detention/retention basins, bioretention areas, OWSs, particle separators, pervious pavement, other engineered systems)

Schedule: Complete prior to July 1, 2020

Implementation: SUBASENLON will develop a capital improvement plan (CIP) to identify stormwater infrastructure that is in need of repairing, retrofitting, and/or upgrading. The CIP will identify, prioritize, and provide budgetary capital cost estimates for critical stormwater infrastructure projects. Project priority will be based upon known and/or documented issues, infrastructure age, operational criticality, and probable cost. The CIP will also identify an implementation timeline that gives an approximation of the year or range of years that a particular project should be implemented. The CIP and timeline will serve as a valuable resource in the procurement of project funding.

Documentation: SUBASENLON will provide a summary of its CIP in its third Annual Report (due April 1, 2021).

7.2.3 Retrofit Program

SUBASENLON will implement a retrofit program that seeks to “disconnect” existing DCIA that contributes to its MS4 or directly to waters of the state. In order to disconnect existing DCIA, the WQV generated by rain falling on that area must be retained as described in Section 6.2.2.1 of this SWMP and Section 6(a)(5)(B)(i) or (ii) of the MS4 General Permit. DCIA disconnection can be accomplished through retrofit or redevelopment projects that utilize LID and runoff reduction measures. Disconnection may also be accomplished by simply converting DCIA to pervious area. The DCIA calculations completed per the requirements of Section 6(*a*)(5)(C) of the MS4 General

Permit and described in Section 6.2.3 of this SWMP will serve as the baseline for the retrofit program described herein.

7.2.3.1 DCIA Disconnection Tracking

SUBASENLON will track on an annual basis the total acreage of DCIA that is disconnected as a result of redevelopment or retrofit projects within the MS4. SUBASENLON may include DCIA disconnection resulting from redevelopment or retrofit projects that were completed up to five years prior to the effective date of the MS4 General Permit (i.e., projects implemented after July 1, 2012). Tracking DCIA disconnection will not apply for previously undeveloped sites where there were no existing impervious surfaces prior to development.

Schedule: Implement prior to July 1, 2017

Implementation: SUBASENLON will begin DCIA tracking upon the effective date of the MS4 General Permit and will retroactively account for any disconnection of DCIA that has occurred in the period between July 1, 2012 and June 30, 2017.

Documentation: SUBASENLON will report the number of acres of DCIA that were disconnected each year in the Annual Report.

7.2.3.2 Retrofit Planning

SUBASENLON will develop a plan to implement the goals of the retrofit program. The program goal is to disconnect one percent of the MS4's DCIA per year beginning in the fourth year of the permit term. The plan should identify and prioritize sites that are suitable for retrofit or redevelopment. Priority should be given to sites within catchment areas that consist of greater than 11 percent DCIA.

Schedule: Complete prior to July 1, 2020

Implementation: SUBASENLON will develop a retrofit implementation plan that will identify and prioritize sites that are suitable for retrofit or redevelopment to meet the DCIA disconnection schedule summarized in Section 7.2.3.3 of this SWMP. For sites

identified in the plan, stormwater treatment structures or other development strategies (e.g., elimination of existing DCIA) that meet the retrofit program goals will be recommended. The plan may include preliminary designs and cost opinions.

Documentation: SUBASENLON will include the following items in its third Annual Report (due April 1, 2021):

- Summary of the site identification and prioritization process
- List of projects selected for implementation
- Rationale for the selection of those projects
- Total DCIA to be disconnected as a result of the selected projects.

7.2.3.3 Retrofit Schedule

SUBASENLON will begin implementation of retrofit projects (identified through the retrofit planning described in Section 7.2.3.2) targeted at disconnecting DCIA at a rate of one percent per year for the fourth and fifth years of the MS4 General Permit term, or a total of two percent, to the MEP. The goal of two percent can also be met by accounting for retrofit or redevelopment projects that included DCIA disconnection that occurred as far back as five years prior to the effective date of the MS4 General Permit (i.e., between July 1, 2012 and July 1, 2019).

Documentation: If the two percent goal will not be met, the fifth Annual Report (due April 1, 2023) will include a discussion of what percentage of DCIA was disconnected and why the remainder of the two percent goal could not be achieved based on the MEP.

7.2.4 Property and Operations Maintenance Program

SUBASENLON will implement property and operations maintenance BMPs as described herein to minimize the discharge of pollutants to its MS4.

Schedule: None specified by MS4 General Permit; therefore, SUBASENLON will fully implement the Property and Operations Maintenance Program by the end of the MS4 General Permit Term (June 30, 2022).

Implementation: SUBASENLON will begin implementation of the property and operations maintenance BMPs upon the effective date of the MS4 General Permit.

Documentation: SUBASENLON will provide a summary of any new property and operations maintenance BMPs implemented to improve water quality in the Annual Report.

7.2.4.1 Parks and Open Spaces

The practices described in this subsection will apply throughout SUBASENLON wherever fertilizers, herbicides, or pesticides are used or stored; landscape maintenance is performed; or public trash receptacles are provided.

SUBASENLON maintains a Pest Management Plan (PMP) that includes standard operating procedures (SOPs) for pesticides. SUBASENLON issues an annual grounds maintenance contract that contains requirements for storage, handling, application, and disposal of fertilizers and herbicides. Future grounds maintenance contracts will be updated to require practices and procedures for the optimization of fertilizer application. The following optimization practices will be considered in the development of grounds maintenance contracts:

- Conduct soil testing to determine soil characteristics
- Reduce or eliminate fertilizers when possible
- Adhere to manufacturer's application instructions
- Use more "economically friendly" forms of fertilizers (e.g., products with reduced, slow-releasing, or insoluble phosphorous compositions)
- Require application when climactic conditions minimize runoff potential

SUBASENLON will evaluate existing landscaping and lawn maintenance activities to identify practical changes that could improve water quality. The following landscaping and lawn maintenance practices are examples that promote water quality:

- Reduced mowing frequencies
- Proper disposal of lawn/grass clippings and leaves (away from storm drains)
- Use of alternative landscaping materials such as drought resistant and native plantings

7.2.4.2 Solid Waste Management

SUBASENLON will evaluate the management of its solid waste receptacles (dumpsters) to determine if the existing quantity and distribution are sufficient, whether existing emptying/cleaning schedules are effective, and if pollution prevention practices are being followed (maintain lids and doors closed, and drain plugs in).

7.2.4.3 Pet Waste Management

SUBASENLON will attempt to identify locations where inappropriate pet waste management practices are apparent and threaten receiving water quality due to proximity to surface waters, stormwater inlet structures, or open conveyances. For areas identified where pet waste is being improperly disposed of and is detrimental to stormwater quality, SUBASENLON will install educational signage, and provide pet waste baggies and disposal receptacles (or require carry-out).

7.2.4.4 Waterfowl / Feral Cat Management

Congregating waterfowl and populations of feral cats can be detrimental to surface water quality in the same manner as mismanagement of pet waste. SUBASENLON will identify lands where waterfowl and feral cats congregate and/or areas where SUBASENLON tenants feed these animals. Educational signage will be installed in these areas to increase awareness about the detrimental effects of feeding these animals. Additionally, SUBASENLON will implement practices that discourage the congregation of waterfowl. SUBASENLON has published a feral cat management policy (SUBASENLONINST 5090.1) that prohibits SUBASENLON tenants from feeding feral cats. This policy also instituted management procedures aimed at reducing the population of feral cats aboard SUBASENLON.

7.2.4.5 Buildings and Facilities

SUBASENLON will minimize the pollution potential posed by the use, storage, and disposal of POLs and other potentially hazardous products. The following control measures will apply throughout SUBASENLON, where such materials exist:

- Ensure that SUBASENLON personnel and contractors who handle POLs and hazardous products are properly trained
- Ensure that appropriate emergency response plans and spill response materials are available and proximate to POL and HM storage and handling areas
- Ensure the adequacy of existing waste management programs and equipment
- Ensure that interior building floor drains are not connected to the MS4, unless covered under a separate NPDES permit (this MS4 permit does not authorize such discharges)

SUBASENLON maintains a Spill Prevention, Control, and Countermeasure (SPCC) Plan that provides detailed procedures for storage, handling, and emergency response as they relate to POLs. SUBASENLON also maintains an Integrated Contingency Plan (ICP) that covers storage, handling, and emergency response related to HM and HW. SUBASENLON's SWPPP, which is a requirement of its Industrial Stormwater General Permit, provides further oversight of the control measures discussed in this subsection at buildings and facilities engaging in regulated industrial activities.

7.2.4.6 Vehicles and Equipment

SUBASENLON will evaluate its existing vehicle and equipment storage, maintenance, fueling, and washing policies to ensure adequacy with respect to the protection of surface water quality. The following vehicle and equipment BMPs are examples of practices that promote water quality:

- Perform vehicle and equipment maintenance indoors
- Locate fuel transfer areas under cover or within secondary containment
- Store vehicles with fluid leaks indoors, in contained areas, or use drip pans
- Regularly inspect vehicle and equipment storage area for leaks or evidence of leaks
- Locate spill response materials proximate to vehicle and equipment storage, maintenance, and fueling activities
- Do not discharge vehicle wash waters to the MS4 or surface waters

Road vehicle washing is authorized only at the car wash located next to the Navy Exchange (NEX) gas station, where washing wastewaters are permitted to discharge to the sanitary sewer system. Marine vehicle and equipment washing shall be conduct-

ed at the wash rack located south of Building 476. Wastewater from this wash rack is processed through an O/WS and permitted to be discharged to the sanitary sewer system.

7.2.4.7 Leaf Management

Leaf management is covered under the annual grounds maintenance contract. SUBASENLON will evaluate its existing leaf management practices to minimize or prevent the deposition of leaves in catch basins, streets, parking lots, driveways, sidewalks, or other paved surfaces that discharge to the MS4. SUBASENLON's existing leaf management activities include biennial leaf pickup with each pickup event lasting approximately one week. Tenants are instructed to locate leaf piles away from impervious surfaces.

7.2.5 Street, Parking, and MS4 Maintenance

SUBASENLON will implement a program that provides for the regular inspection and maintenance of streets, parking areas, and MS4 infrastructure. Required elements of the program will include sweeping and stormwater drainage structure inspection and cleaning.

7.2.5.1 Sweeping

SUBASENLON will establish and implement the following sweeping procedures for all impervious areas that contribute runoff to the MS4:

- All areas should be inspected, swept, and/or cleaned at least once per year in the spring, following the cessation of winter activities (sanding, deicing, etc.)
- Sweeping procedures should include more frequent inspection, sweeping, and/or cleaning for areas determined to have higher pollution potential
  - Areas of higher pollution potential to be determined based on inspections, cleaning results, land use, deicing application, construction activity, etc.
- If wet dust suppression is conducted, water use should be minimized such that excess water does not discharge to surface waters and/or the storm sewer system
- Ensure proper disposal of sweepings in accordance with CT DEEP policies, guidance, and regulations including the most recent version of CT DEEP's

Guideline for Municipal Management Practices for Street Sweeping & Catch Basin Cleanings.

Schedule: Implement July 1, 2017

Implementation: SUBASENLON will continue to implement its existing sweeping program that includes annual sweeping of roads and parking lots and more frequent sweeping as needed (e.g., after a nor'easter). SUBASENLON will enhance its record-keeping to meet the documentation requirements necessary to complete the Annual Report.

Documentation: SUBASENLON will include the following items in its Annual Report:

- Summary of inspections
- Quantification of area/distance swept
- Dates of cleaning
- Mass / volume of collected material and method of disposal
- Include documentation of any alternate sweeping plans

7.2.5.2 Stormwater Drainage Structure Cleaning

SUBASENLON will conduct routine inspection and cleaning of all stormwater drainage structures within the MS4. Stormwater drainage structures include manholes, catch basin, and curb inlets. Stormwater drainage structure inspection and cleaning frequencies will be optimized either by drainage structure, by catchment area, or a combination of both. The following items should be considered when prioritizing inspection and cleaning frequencies:

- Prioritize inspection and maintenance events for drainage structures or catchment areas located near impaired waters or any construction, or where staff or tenant complaints have been noted
- Establish a cleaning schedule that ensures that no drainage structure will be more than 50 percent full of debris or sediment (a drainage structure is considered 50 percent full when the contents within the sump exceed one-half the distance between the bottom of the structure and the invert of the deepest outlet)
- For catch basins that are more the 50 percent full for two consecutive inspections, conduct investigation to determine source of debris / sediment loading and abate contributing sources to the MEP

Schedule: The stormwater drainage structure inspection and cleaning program includes the following milestones:

- Inspect all stormwater drainage structures prior to July 1, 2020
- Begin stormwater drainage structure cleaning prior to July 1, 2020

Implementation: SUBASENLON will award a contract to complete all stormwater drainage structure inspections by the end of the third year following the effective date of the MS4 General Permit (prior to July 1, 2020). Based on the results of the inspections and other applicable data gathered, the contactor will develop a stormwater drainage structure cleaning schedule that includes recommended cleaning frequencies for each drainage structure. Catchment areas for those outfall / drainage structures where excessive sediment or debris was observed will receive first priority. Further prioritization will be based on the following items:

- 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 this SWMP

SUBASENLON will award an annual catch basin cleaning contract prior to October 1, 2020. The number of stormwater drainage structures to be cleaned annually will be estimated based on the previously completed inspections.

Documentation: SUBASENLON will include the following information regarding stormwater drainage structure inspection and cleaning in its Annual Report:

- Methodology for inspection and cleaning frequency optimization (include in first Annual Report, due April 1, 2019
- Total number of catch basins in cleaning program
- Number of catch basins inspected
- Number of catch basins cleaned
- Total volume / mass of material removed from all catch basins

7.2.6 Snow Management Practices

SUBASENLON will evaluate and update, as necessary, its snow management practices including the type of deicing materials used, the management (application, storage, handling, disposal) of those materials, recordkeeping, and disposal of accumulated snow.

Schedule: 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).

Implementation: SUBASENLON will evaluate and update, as necessary, its snow management practices as described herein.

Documentation: SUBASENLON will include in its Annual Report the following items associate with its snow management practices:

- Summary of staff training on application methods and equipment
- Type(s) and quantities of deicing agents used
- Quantification of distance / area treated
- Equipment used
- Snow disposal methods
- Any changes in deicing practices

7.2.6.1 Deicing Material Management

SUBASENLON will evaluate and update, as necessary, existing implementation plans and SOPs for the application, handling, storage, and disposal of deicing agents. SUBASENLON has implemented the use of organic liquid deicing material to increase the efficacy of deicing salt (reducing the quantity of salt required for deicing).

For any exterior containers of liquid deicing materials installed after the effective date of the MS4 General Permit, the permit requires secondary containment be provided of at least 110% of the largest container or 10% of the total volume of all containers, whichever is larger. The only permanent liquid deicing tank aboard SUBASENLON is a 5,000-gallon aboveground storage tank (AST) associated with a regulated industrial activity covered by SUBASENLON's Industrial Stormwater General Permit. The industrial stormwater general permit requires that this AST be housed within secondary containment regardless of the date of its installation.

7.2.6.2 Snow and Ice Control Practices

SUBASENLON will evaluate and update, as necessary, its snow and ice control practices to ensure that the following permit-required considerations are included:

- Implement and refine SOPs to minimize / optimize the use of sand and deicing agents.
- Evaluate and refine application techniques and management strategies
- Provide education and training for those involved in deicing tasks
- Maintain records of the application of sand and deicing agents
- Dispose of collected snow in accordance with CT DEEP's BMPs for Disposal of Snow Accumulation from Roadways and Parking Lots

7.2.7 Coordination with Interconnected MS4s

The SUBASENLON MS4 is interconnected to the CT Department of Transportation (CTDOT), Town of Groton, and Town of Ledyard MS4s at various points along Route 12 and Crystal Lake Road. Interconnected MS4s (e.g., MS4s interconnected to neighboring municipalities, institutions, or CTDOT) will coordinate efforts regarding the contribution of potential pollutants from the storm sewer systems, contributing land use areas, and stormwater control measures in the respective MS4s. Coordination regarding O&M procedures is also required.

7.2.8 Bacteria Source Reduction Program

SUBASENLON will develop, fund, implement, and prioritize a source management program to address potential sources of bacteria. Refer to Section 4 for a summary of the IDDE MS4 General Permit requirements. Refer to Section 7.2.4.3 and Section 7.2.4.4 for summaries of the permit requirements related to pet waste management and waterfowl / feral cat management, respectively. SUBASENLON's implementation of the IDDE Program, pet waste management BMPs, and waterfowl / feral cat management BMPs effectively constitute its bacteria source reduction program.

7.3 POLLUTION PREVENTION / GOOD HOUSEKEEPING SCHEDULE

Table 7-1 summarizes the implementation schedule for MCM 3.

Table 7-1 Pollution Prevention / Good Housekeeping Schedule

Task	Task Start Date	Task Due Date
Implement employee training	Jul 1, 2017	Jul 1, 2019
Develop stormwater infrastructure CIP	Jul 1, 2017	Jul 1, 2020
Develop retrofit implementation plan	Jul 1, 2017	Jul 1, 2020
Commence implementation of retrofit projects (disconnect 1% of DCIA for the 4th permit year)	Jul 1, 2020	Jul 1, 2021
Commence implementation of retrofit projects (disconnect 1% of DCIA for the 5th permit year)	Jul 1, 2021	Jun 30, 2022
Conduct annual inspections and sweeping of streets and parking areas (1st permit year)	Jul 1, 2017	Jul 1, 2018
Conduct annual inspections and sweeping of streets and parking areas (2nd permit year)	Jul 1, 2018	Jul 1, 2019
Conduct annual inspections and sweeping of streets and parking areas (3rd permit year)	Jul 1, 2019	Jul 1, 2020
Conduct annual inspections and sweeping of streets and parking areas (4th permit year)	Jul 1, 2020	Jul 1, 2021
Conduct annual inspections and sweeping of streets and parking areas (5th permit year)	Jul 1, 2021	Jun 30, 2022
Inspect all stormwater drainage structures	Jul 1, 2017	Jul 1, 2020
Commence stormwater drainage structure cleaning	Jul 1, 2020	Jun 30, 2022
Implement Property and Operations Maintenance Program	Jul 1, 2017	Jun 30, 2022
Implement Snow Management Practices	Jul 1, 2017	Jun 30, 2022

8. MONITORING REQUIREMENTS FOR DISCHARGES TO IMPAIRED WATERS

Section 6(i) of the MS4 General Permit

This section describes the monitoring requirements associated with discharges to impaired waters.

8.1 OUTFALL SCREENING

As previously indicated, stormwater runoff from SUBASENLON ultimately discharges to the Thames River, which is impaired for bacteria. As a result, SUBASENLON must complete wet weather screening for bacteria at all stormwater outfalls. The following screening and sampling requirements apply:

- Each outfall throughout SUBASENLON must be sampled and analyzed for fecal coliform and Enterococci (for discharges to the Thames River, a class SB surface water). This sampling must occur during wet weather (refer to Section 8.4 for wet weather sampling requirements).
- SUBASENLON may substitute historic outfall sampling data, when available. SUBASENLON currently monitors for fecal coliform and Enterococci at eight representative outfalls under the Industrial Stormwater General Permit. These outfalls are: O-6, O-7, O-15, O-17, O-22A, O-27, O-35-1, and O-36. SUBASENLON may use historic data for these outfalls to satisfy the initial outfall screening requirements.
- Follow-up investigations will be required when fecal coliform results are greater than 260 cfu/100 mL or Enterococci results are greater than 500 cfu/100 mL (for discharges to non-swimming areas)[5].

If SUBASENLON can document that bacteria in excess of the water quality criteria at an outfall is solely the result of natural sources of bacteria, it is not required to conduct a follow-up investigation at that outfall. Natural sources may include wildlife or runoff from undeveloped wooded areas, but do not include pet waste or waterfowl congregating at parks, ponds, or other attractive nuisance areas.

[5] CT DEEP water quality criteria for bacteria within the Thames River in the vicinity of SUBASENLON.

8.2 FOLLOW-UP INVESTIGATIONS

For outfalls requiring follow-up investigations, SUBASENLON will implement the following measures.

- Investigate activities occurring within each outfall's drainage area:
  - Land use or development patterns
  - Business / commercial activities
  - Industrial activities
  - DCIA
  - Natural contributors of bacteria
  - Potential MS4 maintenance issues
  - Residential activities
  - Other activities with potential to contribute to elevated levels of bacteria
- Implement a BMP program focusing on the impaired waters provisions of each of the MCMs.

8.3 PRIORITIZED ANNUAL OUTFALL MONITORING

Once screening is complete for half of the stormwater outfalls throughout SUBASENLON, six of the highest contributors of bacteria will be selected for annual outfall monitoring. These six outfalls will be sampled annually for fecal coliform and Enterococci. If fewer than six outfalls were identified for follow-up investigations, all of these outfalls identified for follow-up investigations will be monitored annually. This sampling must occur during wet weather (refer to Section 8.4 for wet weather sampling requirements).

As indicated previously, SUBASENLON annually monitors for fecal coliform and Enterococci at eight representative outfalls under the Industrial Stormwater General Permit. Based on the results of the outfall screening, there is potential for duplication between the eight representative outfalls required by the industrial permit and the six outfalls to be monitored under the MS4 General Permit. If that is the case, any duplicate outfalls will only be monitored once annually, satisfying the requirements of both permits.

8.4 WET WEATHER SAMPLING AND ANALYSIS REQUIREMENTS

The following requirements apply to the initial outfall screening and subsequent prioritized annual outfall monitoring:

- Samples must be collected from discharges resulting from any rain event that produces a discharge from the outfall(s) being monitored and that occurs at least 48 hours after any previous rain event that produced a discharge from the outfall. Runoff events resulting from snow or ice melt alone cannot be used to meet these monitoring requirements. However, monitoring may be conducted during a rain event that may include insignificant amounts of snow or ice melt. Monitoring will consist of a single grab sample taken within the first six hours of discharge from the outfall.
- The following rain event information must be recorded for all sampling events:
  - Date, temperature, time of the start of the discharge, time of sampling, and magnitude (in inches) of the rain event sampled
  - Duration between the rain event sampled and the end of the previous measurable (greater than 0.1-inch rainfall) rain event
- All samples will be tested according to methods prescribed in 40 CFR 136 (1990). Laboratory analyses must be consistent with Connecticut Reasonable Confidence Protocols.

8.5 IMPAIRED WATERS DISCHARGE MONITORING SCHEDULE

Table 8-1 summarizes the impaired waters monitoring schedule requirements.

Table 8-1 Impaired Waters Discharge Monitoring Schedule

Task	Task Start Date	Task Due Date
Begin outfall screening	Jul 1, 2017	Jul 1, 2019
Complete 50% of outfall screening	Jul 1, 2017	Jul 1, 2021
Complete all outfall screening	Jul 1, 2017	Jun 30, 2022
Commence and conduct follow-up investigations	Jul 1, 2020	Jun 30, 2022
Commence and conduct annual monitoring	Jul 1, 2021	Jun 30, 2022

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9. REPORTING AND RECORDKEEPING REQUIREMENTS

By April 1 of the second year following the effective date of the MS4 General Permit (i.e., April 1, 2019) and annually thereafter by April 1, SUBASENLON is required to submit an Annual Report for the preceding calendar year electronically to CT DEEP. The Annual Report must be in Microsoft Word, Adobe Acrobat, or other format acceptable to CT DEEP. SUBASENLON is also required to submit an Annual Report review fee of $375.00 with each Annual Report submittal to CT DEEP. Table 9-1 summarizes the Annual Report submittal schedule for the duration of the permit term (July 1, 2017 through June 30, 2022).

Table 9-1 Annual Report Submittal Schedule

Annual Report Number	CT DEEP Submittal Deadline	Coverage of Annual Report
1	April 1, 2019	July 1, 2017 through December 31, 2018
2	April 1, 2020	January 1, 2019 through December 31, 2019
3	April 1, 2021	January 1, 2020 through December 31, 2020
4	April 1, 2022	January 1, 2021 through December 31, 2021[1]

Note:

1. The remainder of the permit term (January 1, 2022 through June 30, 2022) will be included in the first Annual Report for the renewed or newly issued MS4 General Permit that will become effective July 1, 2022.

9.1 REQUIRED CONTENT OF ANNUAL REPORTS

This section provides an outline of the Annual Report requirements as stated in the MS4 General Permit. Table 9-2 summarizes the Annual Report requirements specific to each of the six MCMs.

Table 9-2 Summary of MCM Annual Report Requirements

Minimum Control Measure	Required Annual Report Content
MCM 1 Public Education and Outreach	Summary of the Public Education and Outreach Program: – Type of material distributed – Quantity of material distributed – Source of information – Method of distribution – Summary of outreach efforts (including date and number of participants)
MCM 2 Public Involvement / Participation	No formal reporting requirements for the Annual Report
MCM 3 Illicit Discharge Detection and Elimination	Summarize progress of IDDE Program development and implementation: – Outfall / Interconnection Inventory progress – IDDE mapping progress – Catchment area rankings progress: provide a list of all catchment areas and the results of the priority ranking effort – Screening and sampling progress: in addition to summarizing the screening and sampling progress, identify follow-up actions taken to locate the source of any apparent intermittent flow that was not sampled (if applicable) – Catchment area investigation progress: for each catchment being investigated, provide (1) a summary of evidence of known or suspected illicit discharges and SSOs; (2) completed, ongoing, or planned corrective measures addressing confirmed illicit discharges and SSOs; and (3) a schedule for completing and verifying measures to eliminate the confirmed illicit discharges and SSOs
	For all illicit discharges or SSOs provide: – Location of the discharge – Source and description of the discharge – Method of discovery – Date of discovery – Date of elimination – Mitigation or administrative actions taken – Estimate of the volume of flow removed
	Provide an updated SSO Inventory including the status of mitigation and corrective measures implemented to address each SSO
	Summarize areas identified with septic / sanitary sewer failures including: – Corrective actions taken – Anticipated pollutant reduction
	Document the presence or absence of SVFs for all catchment areas

Table 9-2 Summary of MCM Annual Report Requirements (cont'd)

Minimum Control Measure	Required Annual Report Content
MCM 3 Illicit Discharge Detection and Elimination (cont'd)	Summarize the frequency and type of training completed
	Summarize indicators of IDDE Program progress: – Measures taken to locate illicit discharges – Number of SSOs and illicit discharges identified and removed – Area of the MS4 where catchment area investigations have been completed – Estimate of volume removed
MCM 4 Construction Site Stormwater Runoff Control	Summary of written regulations that were established or updated – Base Instruction – SOPs – Construction specifications – Request for proposal (RFP) templates
MCM 5 Post-Construction Stormwater Management	Summary of written regulations that were established or updated – Base Instruction – SOPs – Construction specifications – RFP templates
	Document the progress of the DCIA calculation effort including the methodology and assumptions used in calculating the DCIA
	Summary of repairs or retrofits implemented to address erosion and sediment problems including: – Capital costs – Anticipated pollutant reduction
MCM 6 Pollution Prevention / Good Housekeeping	Summary of street sweeping program: – Inspection results – Distance / area swept – Dates of cleaning – Volume or mass collected – Methods of reuse or disposal
	Summary of stormwater drainage structure cleaning: – Total number of stormwater drainage structures – Number of drainage structures inspected – Number of drainage structures cleaned – Volume or mass removed – Plan development of inspection and cleaning schedule (first Annual Report only)

Table 9-2 Summary of MCM Annual Report Requirements (cont'd)

Minimum Control Measure	Required Annual Report Content
MCM 6 Pollution Prevention / Good Housekeeping (cont'd)	Summary of snow management and deicing: – Type of training conducted – Types of deicing materials used – Distance / area treated – Volume or mass of deicing material used – Types of deicing equipment used – Changes to deicing practices with reasons for the change(s) – Snow disposal methods
	Report the total amount of DCIA that has been disconnected during the reporting period (i.e., previous calendar year)
	Summary of retrofit planning (for the third Annual Report): – Retrofit identification and prioritization process – Selection of the retrofit projects to be implemented – Rationale for the selection of those projects – Total DCIA to be disconnected upon implementation of the projects
	Summary of retrofit schedule/implementation: – If the two percent DCIA disconnection goal will not be met within the permit term, include a discussion of what percentage of DCIA will be disconnected and why the remainder of the two percent goal could not be achieved – For the fourth Annual Report, include a discussion regarding how the retrofit program will be continued with the goal to disconnect one percent of DCIA in each year thereafter
	Summary of pet waste management efforts including the scope and extent of applicable education and any compliance / administrative actions
	Summary of additional measures for discharges to impaired waters (bacteria): – Problem areas for which a retrofit or source management program was developed – Location of the closest outfall monitored in accordance with Section 8 of this SWMP – Cost of such retrofit or program – Anticipated pollutant reduction
	Summary of training including frequency and type of training completed, and number of personnel trained

In addition, each Annual Report will include a written discussion of the status of compliance with the MS4 General Permit, including, but not limited to, the following topics:

1. The overall status of each of the six categories of the MCMs and a discussion of the effectiveness of each category in achieving its goals
2. A listing and brief description of all BMPs within each MCM

3. Summary of MS4 program implementation schedule and status of implementation:
    - Implementation schedule for each BMP and an indication of whether or not the BMP, or any portion of the BMP, was scheduled to be implemented during the calendar year covered by the Annual Report
    - Status of implementation for each BMP scheduled to be completely or partially implemented during the year covered by the Annual Report including an assessment of the appropriateness of the BMP and progress towards achieving the implementation dates and measurable goals for that BMP
    - For any portion of a BMP implementation scheduled for the year covered by the Annual Report that was not completed as scheduled, a discussion of the circumstances and reasons for non-implementation, a modified implementation schedule, and, if necessary, a modified or alternate BMP to replace the BMP not implemented (including the rationale for such modification or alternate BMP)
    - All above requirements can be presented in tabular form in the Annual Report
4. Description of any new BMPs added to the SWMP during the year including a description of the BMP, the reason or rationale for adding the BMP, the timeline for implementation, the party responsible for implementation, and the measurable goal for the BMP
5. Discussion of any planned BMP implementation in the coming year, including a discussion of any new or modified BMPs planned for future implementation
6. Discussion of any changes to personnel responsible for the SWMP or BMP implementation
7. Discussion of measures included in the SWMP for the control of discharges to impaired waters, progress in implementing these measures, any evaluation of the effectiveness of these measures in meeting the goals of the SWMP's impaired waters program, and any new or modified BMPs to be added to the SWMP to improve its effectiveness
8. Discussion of the MS4's stormwater monitoring program, summary of the status of monitoring for the calendar year of the report (see note below), the overall status of the monitoring program, a summary of the findings, any significant observations regarding the results, and any modifications to the SWMP as a result of the monitoring results
    - Summarize the status of monitoring: include a list of the outfalls screened during the year, the number of outfalls identified for follow-up investigation, the progress of drainage area investigations, a description of control measures implemented for the impairment, identification of the six outfalls to be monitored, and the results of the outfall monitoring

9. Summary of all monitoring data collected and analyzed pursuant to Section 10 of this SWMP (i.e., monitoring requirements for discharges to impaired waters).
10. Summary of all other information collected and analyzed, including data collected under the IDDE Program, during the reporting period.

9.2 AVAILABILITY OF ANNUAL REPORTS

At least 45 days prior to submission of each Annual Report to CT DEEP, SUBASENLON will make a draft copy available for public review and comment. Annual Reports will be finalized and submitted to CT DEEP on April 1, annually; therefore, the reports must be made available to the public on or before February 14, annually. The comment period will be 30 days. Public comments to the Annual Report will be received and addressed by SUBASENLON EV staff; however, these comments are not submitted to CT DEEP. The draft copy of the latest Annual Report will be available at the following locations for public review and comment:

- Hard Copy:
  SUBASENLON Environmental Division
  Tautog Avenue Building 439, Room 104
  Point of Contact: Chris Koproski
  Telephone: (860) 694-5191
  Email: christopher.koproski@navy.mil
- Electronic Version:
  http://www.cnic.navy.mil/regions/cnrma/installations/navsubbase_new_london/om/environmental_support.html

SUBASENLON will make reasonable efforts to inform the public of the Annual Report availability by distributing emails to the various SUBASENLON tenants. Following submission of each Annual Report to CT DEEP, a copy of the latest final report will also be made available at the above locations.

9.3 RECORDKEEPING REQUIREMENTS

SUBASENLON is required to keep all records pertaining to the MS4 General Permit for at least five years following its expiration, or longer if requested by the CT DEEP. Such records, including the SWMP, will be available to the public upon request.

10. ADDITIONAL REQUIREMENTS AND CONDITIONS

The following additional requirements and conditions are included in the MS4 General Permit.

10.1 KEEPING THE SWMP CURRENT

SUBASENLON will amend, revise, and update this SWMP in any of the following instances: (1) there is a change that has the potential to cause pollution of the waters of the state; (2) the actions required by the SWMP fail to prevent pollution of the waters of the state or fail to otherwise comply with any other provision of the MS4 General Permit; or (3) CT DEEP requests modification of the SWMP. Amendments, revisions, and updates to the SWMP, and all actions required as a result, will be completed within a time period determined by CT DEEP.

CT DEEP may notify SUBASENLON in writing at any time that the SWMP does not meet one or more of the requirements of the MS4 General Permit. Within 30 days of such notification, unless otherwise specified by CT DEEP in writing, SUBASENLON will respond to CT DEEP indicating the intended plan to modify the SWMP to address these requirements. Within 90 days of this response or within 120 days of the original notification (whichever is less) unless otherwise specified by CT DEEP in writing, SUBASENLON will then revise the SWMP, perform all actions required by the revised SWMP, and certify to CT DEEP that the requested changes have been made and implemented. SUBASENLON will provide such information as CT DEEP requires to evaluate the SWMP and its implementation. If at any time CT DEEP finds that the SWMP is not adequate to protect the waters of the state from pollution, CT DEEP may terminate authorization under this permit and require the permittee to submit an individual permit application.

10.2 PROPER OPERATION AND MAINTENANCE

SUBASENLON will properly operate and maintain all facilities and systems of treatment and control, including related appurtenances, which are installed or used to achieve compliance with the conditions of the MS4 General Permit.

10.3 REQUIREMENTS FOR EXISTING AND NEW DISCHARGES

The following requirements apply to existing and new discharges within the SUBASENLON MS4.

10.3.1 New or Increased Discharges to Impaired Waters

If a new discharge to an impaired water (without an established Total Maximum Daily Load [TMDL]) is authorized by CT DEEP under this MS4 General Permit, SUBASENLON must implement and maintain any control measures or conditions required by CT DEEP, and modify such measures or conditions as necessary to maintain future compliance. SUBASENLON must also maintain compliance with all conditions of this SWMP and the MS4 General Permit, and update the SWMP to include the newly required measures and conditions.

10.3.2 Conditions Applicable for Certain Discharges

SUBASENLON will ensure that authorized activities under the MS4 General Permit are conducted in accordance with the following conditions:

- If SUBASENLON initiates, creates, or originates a discharge of stormwater located less than 500 feet from a tidal wetland (that is not a fresh-tidal wetland), such discharge will flow through a system designed to retain the WQV.
- If SUBASENLON wishes to initiate, create, or originate a discharge of stormwater below the coastal jurisdiction line into coastal, tidal, or navigable waters for which a permit is required under the Structures and Dredging Act (refer to Section 22a-361(a) of the Connecticut General Statutes) or into tidal wetlands for which a permit is required under the Tidal Wetlands Act (refer to Section 22a-32 of the Connecticut General Statutes), SUBASENLON will obtain such permit(s) from CT DEEP prior to initiating, creating, or originating such discharge.

- There will be no distinctly visible floating scum, oil, or other matter contained in any stormwater discharge. Excluded from this are naturally occurring substances such as leaves and twigs, provided no person has placed such substances in or near the discharge.
- The stormwater discharge will not result in pollution that may cause or contribute to acute or chronic toxicity to aquatic life, impair the biological integrity of aquatic or marine ecosystems, or result in an unacceptable risk to human health.
- Any stormwater discharge will not cause or contribute to an exceedance of the applicable Water Quality Standards in the receiving water.

10.4 REGULATIONS INCORPORATED INTO THE MS4 GENERAL PERMIT AND OTHER APPLICABLE LAWS

SUBASENLON must comply with all applicable regulations of Connecticut state agencies that are referenced in Section 3(b) and Section 7(a) of the MS4 General Permit.

Nothing in the MS4 General Permit relieves SUBASENLON of the obligation to comply with any other applicable federal, state, and local laws, including, but not limited to, the obligation to obtain any other authorizations required by such laws.

10.5 DUTY TO CORRECT AND REPORT VIOLATIONS

Upon learning of a violation of the MS4 General Permit, SUBASENLON will immediately take all reasonable action to determine the cause, implement corrective actions, mitigate any damages or harm as a result, and prevent future violation. SUBASENLON will report the violation and subsequent corrective action(s) in writing to CT DEEP within five days of learning of the violation.

10.6 DUTY TO PROVIDE INFORMATION

If CT DEEP requests any information pertinent to the authorized activity, compliance with the MS4 General Permit, or SUBASENLON's authorization under the MS4 General Permit, SUBASENLON will provide such information within 30 days of the request.

10.7 CERTIFICATION OF DOCUMENTS

Any document, including, but not limited to, any notice, information, or report, which is submitted to CT DEEP under the MS4 General Permit will be signed/certified by the SUBASENLON Commanding Officer, and by the individual(s) responsible for preparing the document. The required certification language is as follows:

> *"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."*

10.8 DATE OF FILING

The official date of filing with CT DEEP for any document is the date the document is received by CT DEEP.

10.9 FALSE STATEMENTS

Any false statement in any information submitted pursuant to the MS4 General Permit may be punishable as a criminal offense, in accordance with Section 22a-6, under Section 53a-157b of the Connecticut General Statutes.

10.10 CORRECTION OF INACCURACIES

Within 15 days after the date SUBASENLON becomes aware of a change in any information in any material submitted pursuant to the MS4 General Permit, or becomes aware that any such information is inaccurate or misleading, or that any relevant in-

formation has been omitted, SUBASENLON will correct the inaccurate or misleading information or supply the omitted information in writing to CT DEEP.

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11. REFERENCES AND WORKS CONSULTED

AH/BC Navy JV, LLC. (2016). *Stormwater Pollution Prevention Plan – Naval Submarine Base New London, Connecticut*.

Connecticut Department of Energy and Environmental Protection. (2002). *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* (Effective May 2002, Errata Corrections September 2007).

Connecticut Department of Energy and Environmental Protection. (2004). *Guideline for Municipal Management Practices for Street Sweepings & Catch Basin Cleanings.*

Connecticut Department of Energy and Environmental Protection. (2007). *2004 Connecticut Stormwater Quality Manual.*

Connecticut Department of Energy and Environmental Protection. (2011). *Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots* (DEP-PED-GUID-002, Revised 4 February 2011).

Connecticut Department of Energy and Environmental Protection. (2011). *General Permit for the Discharge of Stormwater Associated with Industrial Activity* (Effective 1 October 2011; Modified 3 December 2013).

Connecticut Department of Energy and Environmental Protection. (2011). *Water Quality Standards.*

Connecticut Department of Energy and Environmental Protection. (2013). *General Permit for Discharge of Stormwater and Dewatering Wastewater Associated with Construction Activities* (Issued 21 August 2013, Effective 1 October 2013).

Connecticut Department of Energy and Environmental Protection. (2016*). General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems* (Issued 20 January 2016; Effective 1 July 2017; Expires 30 June 2022).

Connecticut Department of Energy and Environmental Protection. (2016*). General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems Reissuance with Modifications Fact Sheet*.

Office of Management and Budget. (1987). *Standard Industrial Classification Manual,* Executive Office of the President.

United States National Archives and Records Administration. *Code of Federal Regulations. Title 40. State and Local Assistance, Part 35; Definitions, Section 2005.*

United States National Archives and Records Administration. (1990). *Code of Federal Regulations. Title 40. Guidelines Establishing Test Procedures for the Analysis of Pollutants, Part 136.*

United States Naval Submarine Base New London. (2013). *Naval Submarine Base New London Environmental Protection Instruction (SUBASENLONINST 5090.7A)*.

United States Naval Submarine Base New London. (2016). *SUBASE New London Feral Cat Management Policy (SUBASENLONINST 5090.1)*.

United States Naval Submarine Base New London, Environmental Division. (2015). *Spill Prevention, Control, and Countermeasure Plan*.

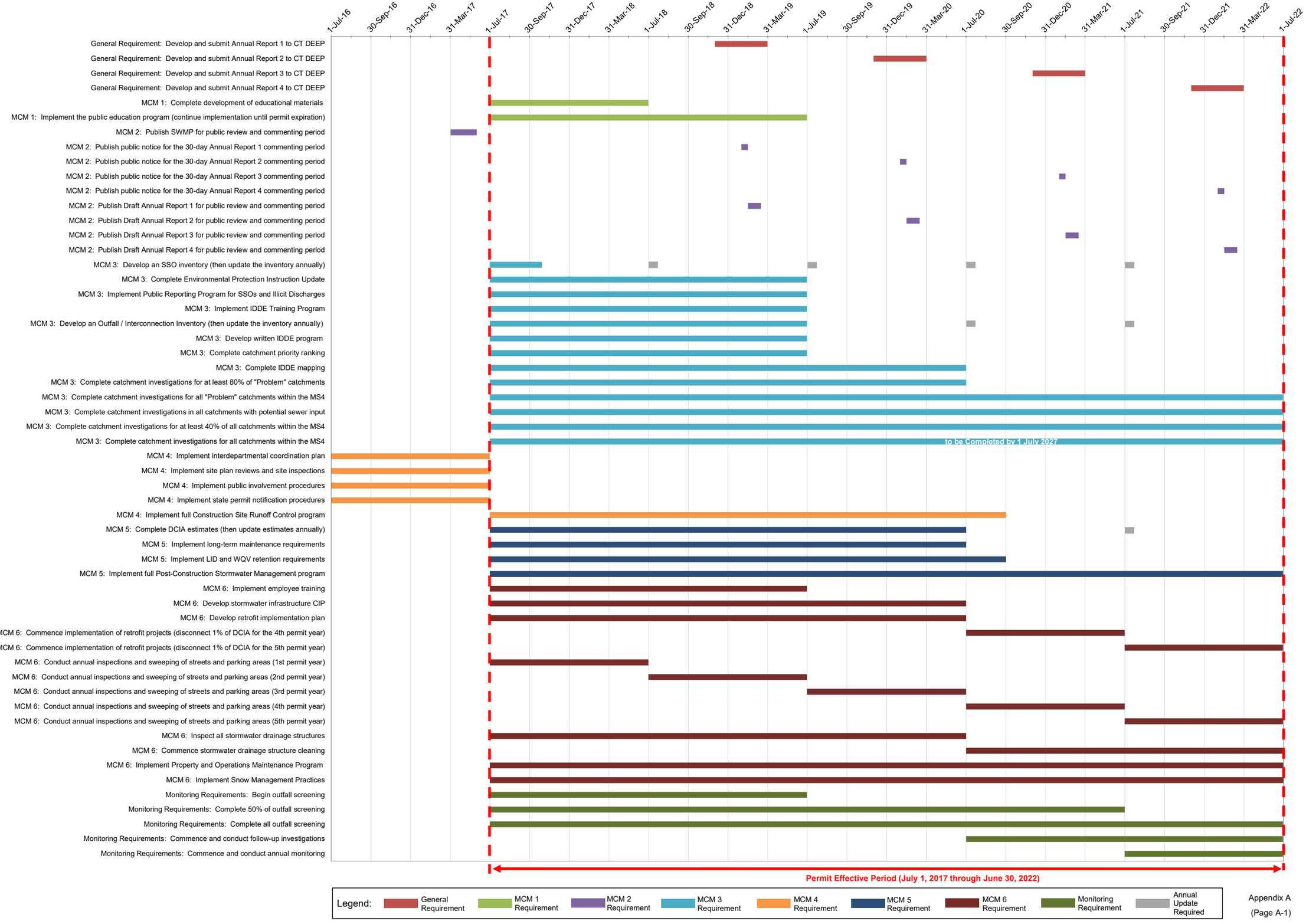
United States Naval Submarine Base New London, Environmental Division. (2016). *Integrated Contingency Plan*.

APPENDIX A

MCM and BMP Implementation Schedule

(6 PAGES)

Summary of MCM and BMP Implementation Schedule



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The MCM and BMP implementation schedule is also provided below in tabular form (organized sequentially by task due dates):

Task	Task Start Date	Task Due Date
MCM 2: Publish SWMP for public review and commenting period	Apr 2, 2017	Jun 1, 2017
MCM 4: Implement interdepartmental coordination plan	Jul 1, 2016	Jul 1, 2017
MCM 4: Implement site plan reviews and site inspections	Jul 1, 2016	Jul 1, 2017
MCM 4: Implement public involvement procedures	Jul 1, 2016	Jul 1, 2017
MCM 4: Implement state permit notification procedures	Jul 1, 2016	Jul 1, 2017
MCM 3: Develop an SSO inventory (then update the inventory annually)	Jul 1, 2017	Oct 29, 2017
MCM 1: Complete development of educational materials	Jul 1, 2017	Jul 1, 2018
MCM 6: Conduct annual inspections and sweeping of streets and parking areas (1st permit year)	Jul 1, 2017	Jul 1, 2018
MCM 2: Publish public notice for the 30-day Annual Report 1 commenting period	Jan 31, 2019	Feb 15, 2019
MCM 2: Publish Draft Annual Report 1 for public review and commenting period	Feb 15, 2019	Mar 17, 2019
General Requirement: Develop and submit Annual Report 1 to CT DEEP	Dec 1, 2018	Apr 1, 2019
MCM 1: Implement the public education program (continue implementation until permit expiration)	Jul 1, 2017	Jul 1, 2019
MCM 3: Complete Environmental Protection Instruction Update	Jul 1, 2017	Jul 1, 2019
MCM 3: Implement Public Reporting Program for SSOs and Illicit Discharges	Jul 1, 2017	Jul 1, 2019
MCM 3: Implement IDDE Training Program	Jul 1, 2017	Jul 1, 2019
MCM 3: Develop an Outfall / Interconnection Inventory (then update the inventory annually)	Jul 1, 2017	Jul 1, 2019
MCM 3: Develop written IDDE program	Jul 1, 2017	Jul 1, 2019
MCM 3: Complete catchment priority ranking	Jul 1, 2017	Jul 1, 2019
MCM 6: Implement employee training	Jul 1, 2017	Jul 1, 2019
MCM 6: Conduct annual inspections and sweeping of streets and parking areas (2nd permit year)	Jul 1, 2018	Jul 1, 2019
Monitoring Requirements: Begin outfall screening	Jul 1, 2017	Jul 1, 2019
MCM 2: Publish public notice for the 30-day Annual Report 2 commenting period	Jan 31, 2020	Feb 15, 2020
MCM 2: Publish Draft Annual Report 2 for public review and commenting period	Feb 15, 2020	Mar 16, 2020

Task	Task Start Date	Task Due Date
General Requirement: Develop and submit Annual Report 2 to CT DEEP	Dec 1, 2019	Apr 1, 2020
MCM 3: Complete IDDE mapping	Jul 1, 2017	Jul 1, 2020
MCM 3: Complete catchment investigations for at least 80% of "Problem" catchments	Jul 1, 2017	Jul 1, 2020
MCM 5: Complete DCIA estimates (then update the estimates annually)	Jul 1, 2017	Jul 1, 2020
MCM 5: Implement long-term maintenance requirements	Jul 1, 2017	Jul 1, 2020
MCM 6: Develop stormwater infrastructure CIP	Jul 1, 2017	Jul 1, 2020
MCM 6: Develop retrofit implementation plan	Jul 1, 2017	Jul 1, 2020
MCM 6: Conduct annual inspections and sweeping of streets and parking areas (3rd permit year)	Jul 1, 2019	Jul 1, 2020
MCM 6: Inspect all stormwater drainage structures	Jul 1, 2017	Jul 1, 2020
MCM 4: Implement full *Construction Site Runoff Control* program	Jul 1, 2017	Oct 1, 2020
MCM 5: Implement LID and WQV retention requirements	Jul 1, 2017	Oct 1, 2020
MCM 2: Publish public notice for the 30-day Annual Report 3 commenting period	Jan 31, 2021	Feb 15, 2021
MCM 2: Publish Draft Annual Report 3 for public review and commenting period	Feb 15, 2021	Mar 17, 2021
General Requirement: Develop and submit Annual Report 3 to CT DEEP	Dec 1, 2020	Apr 1, 2021
MCM 6: Commence implementation of retrofit projects (disconnect 1% of DCIA for the 4th permit year)	Jul 1, 2020	Jul 1, 2021
MCM 6: Conduct annual inspections and sweeping of streets and parking areas (4th permit year)	Jul 1, 2020	Jul 1, 2021
Monitoring Requirements: Complete 50% of outfall screening	Jul 1, 2017	Jul 1, 2021
MCM 2: Publish public notice for the 30-day Annual Report 4 commenting period	Jan 31, 2022	Feb 15, 2022
MCM 2: Publish Draft Annual Report 4 for public review and commenting period	Feb 15, 2022	Mar 17, 2022
General Requirement: Develop and submit Annual Report 4 to CT DEEP	Dec 1, 2021	Apr 1, 2022
MCM 3: Complete catchment investigations for all "Problem" catchments within the MS4	Jul 1, 2017	Jun 30, 2022
MCM 3: Complete catchment investigations in all catchments with potential sewer input	Jul 1, 2017	Jun 30, 2022
MCM 3: Complete catchment investigations for at least 40% of all catchments within the MS4	Jul 1, 2017	Jun 30, 2022

Task	Task Start Date	Task Due Date
MCM 5: Implement full *Post-Construction Stormwater Management* program	Jul 1, 2017	Jun 30, 2022
MCM 6: Commence implementation of retrofit projects (disconnect 1% of DCIA for the 5th permit year)	Jul 1, 2021	Jun 30, 2022
MCM 6: Conduct annual inspections and sweeping of streets and parking areas (5th permit year)	Jul 1, 2021	Jun 30, 2022
MCM 6: Commence stormwater drainage structure cleaning	Jul 1, 2020	Jun 30, 2022
MCM 6: Implement Property and Operations Maintenance Program	Jul 1, 2017	Jun 30, 2022
MCM 6: Implement Snow Management Practices	Jul 1, 2017	Jun 30, 2022
Monitoring Requirements: Complete all outfall screening	Jul 1, 2017	Jun 30, 2022
Monitoring Requirements: Commence and conduct follow-up investigations	Jul 1, 2020	Jun 30, 2022
Monitoring Requirements: Commence and conduct annual monitoring	Jul 1, 2021	Jun 30, 2022
MCM 3: Complete catchment investigations for all catchments within the MS4	Jul 1, 2017	Jul 1, 2027

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APPENDIX B

Interdepartmental Coordination Plan

(8 PAGES)

Facilities Engineering & Acquisition Division - Project Management & Engineering Branch				
MCM 4 (Construction Site Stormwater Runoff Control) - SWMP Section 5 and 9				
Task ID	MCM Responsibility	Responsible Party (Name/Position/Phone No.)	Implementation Deadline	SWMP Section
4a	Site plan reviews	Christopher Shukis, PM&E Supe Const Mngr, 860-694-4556	July 1, 2017	5.2.3
4b	Monthly site inspections	Christopher Shukis, PM&E Supe Const Mngr, 860-694-4556	July 1, 2017	5.2.3
4d	Public involvement procedures	Christopher Shukis, PM&E Supe Const Mngr, 860-694-4556	July 1, 2017	5.2.4
4e	State permit notification procedures	Christopher Shukis, PM&E Supe Const Mngr, 860-694-4556	July 1, 2017	5.2.5
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
4f	Summary of written documents/procedures that were established or updated to help implement/enforce MCM 4. This includes, but is not limited to: Base Instructions, SOPs, Construction Specifications, RFP Templates, etc.	LCDR Elles, FEAD Director, 860-694-4555	Annually, due to CT DEEP by 01 April 2018	9.1
MCM 5 (Post-Construction Stormwater Management) - SWMP Section 6 and 9				
	MCM Responsibility	Responsible Party (Name/Position/Phone No.)	Implementation Deadline	SWMP Section
5b	Implement runoff reduction and LID / WQV retention requirements	Hal Zod, PM&E Senior Design Mngr, 860-694-2079	October 1, 2020	6.2.2
5c	DCIA calculation	Jim Gentry, FMD Director, 860-694-5776	July 1, 2020 (then update annually)	6.2.3
5d	Long-term maintenance of stormwater treatment structures	Jim Gentry, FMD Director, 860-694-5776	July 1, 2020	6.2.4
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
5e	Document the progress of the DCIA calculation effort, including the methodology and assumptions used in calculating the DCIA	Jim Gentry, FMD Director, 860-694-5776	Annually, due to CT DEEP by 01 April 2018	9.1
5f	Summary of written documents/procedures that were established or updated to help implement/enforce MCM 5. This includes, but is not limited to: Base Instructions, SOPs, Construction Specifications, RFP Templates, etc.	LCDR Elles, FEAD Director, 860-694-4555	Annually, due to CT DEEP by 01 April 2018	9.1
MCM 6 (Pollution Prevention / Good Housekeeping) - SWMP Section 7 and 9				
	MCM Responsibility	Responsible Party (Name/Position/Phone No.)	Implementation Deadline	SWMP Section
6n	DCIA disconnection tracking	Jim Gentry, FMD Director, 860-694-5776	Begin July 1, 2017 and continue through permit term	7.2.3.1
6o	Development of stormwater retrofit implementation plan	Jim Gentry, FMD Director, 860-694-5776	July 1, 2020	7.2.3.2
6f	Joint management (with PROD/EV support) of Property and Operations Maintenance Program	Jim Gentry, FMD Director, 860-694-5776	June 30, 2022	7.2.4
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
6i	Report the total amount of DCIA that has been disconnected during the reporting period (i.e., previous calendar year)	Jim Gentry, FMD Director, 860-694-5776	Annually, due to CT DEEP by 01 April 2018	9.1
6j	Summary of retrofit planning: • Retrofit identification and prioritization process; • Selection of the retrofit projects to be implemented; • Rationale for the selection of those projects; and • Total DCIA to be disconnected upon implementation of the projects	Jim Gentry, FMD Director, 860-694-5776	Include in 3rd Annual Report (due April 1, 2021)	9.1
6k	Summary of retrofit schedule/implementation: • If the two percent DCIA disconnection goal will not be met within the permit term, include a discussion of what percentage of DCIA will be disconnected and why the remainder of the two percent goal could not be achieved; and • For the fourth Annual Report, include a discussion regarding how the retrofit program will be continued with the goal to disconnect one percent of DCIA in each year thereafter	Jim Gentry, FMD Director, 860-694-5776	Include in 4th Annual Report (due April 1, 2022)	9.1

Production Division - Utilities and Energy Management Branch, Facility Sustainment Branch, & Transportation Branch				
MCM 3 (Illicit Discharge Detection and Elimination) - SWMP Section 4				
Task ID	MCM Responsibility	Responsible Party (Name/Position/Phone No.)	Implementation Deadline	SWMP Section
3t	Eliminate illicit discharges	Jason Billings, Production Division Director, 860-694-4484	Within 60 days after discovery of illicit discharge (or within 180 days, with approval) - refer to SWMP Section 4.1	4.2.10
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
3u	The annually updated Outfall / Interconnection Inventory will be included in the Annual Report	Jason Billings, Production Division Director, 860-694-4484	Annual	4.2.5 & 9.1
3v	Date(s) of illicit discharge elimination, mitigation, and/or administrative action; Estimated volume of flow removed	Jason Billings, Production Division Director, 860-694-4484	Annually, due to CT DEEP by 01 April 2018	4.2.10 & 9.1
MCM 5 (Post-Construction Stormwater Management) - SWMP Section 6				
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
5g	Summary of repairs or retrofits implemented to address erosion and sediment problems (including capital costs and anticipated pollutant reduction)	Jason Billings, Production Division Director, 860-694-4484	Annually, due to CT DEEP by 01 April 2018	9.1
MCM 6 (Pollution Prevention / Good Housekeeping) - SWMP Section 7				
	MCM Responsibility	Responsible Party (Name/Position/Phone No.)	Implementation Deadline	SWMP Section
6f	Joint management (with FEAD/EV support) of Property and Operations Maintenance Program	Jason Billings, Production Division Director, 860-694-4484	June 30, 2022	7.2.4
6n	Management of Street, Parking, and MS4 Maintenance Program - Sweeping	Jim Cottrell, Transportation Branch Head, 860-694-4459	July 1, 2017	7.2.5
6o	Development of stormwater capital improvement plan (CIP)	Jim Gentry, FMD Director, 860-694-5776	July 1, 2020	7.2.2
6p	Management of Street, Parking, and MS4 Maintenance Program - Stormwater structure inspection and cleaning	Steve Cavanaugh, Facilities Sustainment Branch Head, 860-694-4587	• Inspect all stormwater junctions prior to July 1, 2020; • Begin stormwater junction cleaning prior to July 1, 2020	7.2.5
6q	Management of Snow Management Program	Jim Cottrell, Transportation Branch Head, 860-694-4459	June 30, 2022	7.2.6
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
6r	Summary of CIP	Jim Gentry, FMD Director, 860-694-5776	Include in 3rd Annual Report (due April 1, 2021)	7.2.2 & 9.1
6s	Sweeping program reporting requirements: (1) Summary of inspections; (2) Quantification of area/distance swept; (3) Dates of cleaning; (4) Mass / volume of collected material and method of disposal; and (5) Include documentation of any alternate sweeping plans	Jim Cottrell, Transportation Branch Head, 860-694-4459	Annually, due to CT DEEP by 01 April 2018	7.2.5.1 & 9.1

Production Division - Utilities and Energy Management Branch, Facility Sustainment Branch, & Transportation Branch (continued)				
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
6t	Stormwater structure inspection and cleaning reporting requirements: (1) Methodology for inspection and cleaning frequency optimization; (2) Total number of catch basins in cleaning program; (3) Number of catch basins inspected; (4) Number of catch basins cleaned; (5) Total volume / mass of material removed from all catch basins	Steve Cavanaugh, Facilities Sustainment Branch Head, 860-694-4587	Annually, due to CT DEEP by 01 April 2018	7.2.5.2 & 9.1
6u	Snow management reporting requirements: (1) Summary of staff training on application methods and equipment; (2) Type(s) and quantities of deicing agents used; (3) Quantification of distance / area treated; (4) Equipment used; (5) Snow disposal methods; and (6) Any changes in deicing practices	Jim Cottrell, Transportation Branch Head, 860-694-4459	Annually, due to CT DEEP by 01 April 2018	7.2.6 & 9.1

Environmental Division				
MCM 1 (Public Education & Outreach) - SWMP Section 2				
Task ID	MCM Responsibility	Responsible Party (Name/Position/Phone No.)	Implementation Deadline	SWMP Section
1a	Implement public education & outreach program	Christopher Koproski, Stormwater Program Manager, 860-694-5191	• Complete development of educational materials prior to July 1, 2018; • Implement the public education program prior to July 1, 2019	2.1 through 2.5
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
1b	• Type of material distributed • Quantity of material distributed • Source of information • Method of distribution • Summary of outreach efforts (including date and number of participants)	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	2.3 & 9.1
MCM 2 (Public Involvement / Participation) - SWMP Section 3				
	MCM Responsibility	Responsible Party (Name/Position/Phone No.)	Implementation Deadline	SWMP Section
2a	Implement public involvement / participation	Christopher Koproski, Stormwater Program Manager, 860-694-5191	• Publish SWMP by April 2, 2017; • Provide public notice of the 30-day comment period on the Annual Report (no later than January 31, annually)	3.1 through 3.3
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
2b	No formal reporting requirements for the Annual Report	N/A	N/A	N/A
MCM 3 (Illicit Discharge Detection and Elimination) - SWMP Section 4				
	MCM Responsibility	Responsible Party (Name/Position/Phone No.)	Implementation Deadline	SWMP Section
3a	Begin illicit discharge removal confirmation and follow-up screening procedures	Christopher Koproski, Stormwater Program Manager, 860-694-5191	July 1, 2017	4.2.10
3b	Develop SSO inventory	Christopher Koproski, Stormwater Program Manager, 860-694-5191	October 29, 2017 (then update annually)	4.2.4
3c	Establish legal authority	Christopher Koproski, Stormwater Program Manager, 860-694-5191	July 1, 2019	4.2.1
3d	Develop written IDDE plan	Christopher Koproski, Stormwater Program Manager, 860-694-5191	July 1, 2019	4.2.2
3e	Implement public reporting of illicit discharges	Christopher Koproski, Stormwater Program Manager, 860-694-5191	July 1, 2019	4.2.3
3f	Develop outfall/interconnection inventory	Christopher Koproski, Stormwater Program Manager, 860-694-5191	July 1, 2019	4.2.5

Environmental Division (continued)				
	MCM Responsibility	Responsible Party (Name/Position/Phone No.)	Implementation Deadline	SWMP Section
3g	Develop IDDE mapping	Christopher Koproski, Stormwater Program Manager, 860-694-5191	July 1, 2020	4.2.6
3h	Complete assessment and priority ranking of catchment areas	Christopher Koproski, Stormwater Program Manager, 860-694-5191	July 1, 2019	4.2.7
3i	Implement IDDE training program	Christopher Koproski, Stormwater Program Manager, 860-694-5191	July 1, 2019	4.2.11
3j	Conduct catchment area investigations	Christopher Koproski, Stormwater Program Manager, 860-694-5191	• Complete investigations in at least 80 percent of “Problem” catchment areas prior to July 1, 2020; • Complete 100 percent of “Problem” catchment area investigations prior to July 1, 2022; • Complete investigations in all catchment areas where information indicated potential sewer input (olfactory / visual evidence and/or sampling results) prior to July 1, 2022; • Complete investigations in 40 percent of the catchment areas served by the MS4 prior to July 1, 2022; and • Complete 100 percent of investigations prior to July 1, 2027	4.2.9
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
3k	All illicit discharges and the responses to the discharges will be documented in the Annual Report	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	4.2.3 & 9.1
3l	The annually updated SSO inventory will be included in the Annual Report	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	4.2.4 & 9.1
3m	The progress towards completion of the permit-required IDDE mapping will be included in the first Annual Report	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Include in 1st Annual Report (due Apr 1, 2019)	4.2.6 & 9.1
3n	Progress of catchment area assessment and priority ranking effort will be included in the Annual Report	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	4.2.7 & 9.1

Environmental Division (continued)				
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
3o	The following information will be documented for the catchment investigations: • Presence or absence of SVFs for each catchment area; • Flows observed during dry weather flow observations; and • Results of any dry weather or wet weather sampling;	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	4.2.9 & 9.1
3p	The Annual Report will include the following illicit discharge information: • Location of discharge and source; • Description of discharge; • Method of discovery; • Date of discovery; • Date of elimination, mitigation, or administrative action; and • Estimated volume of flow removed	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	4.2.10 & 9.1
3q	Summary of IDDE training frequency and content to be included in the Annual Report	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	4.2.11 & 9.1
3r	Summary of screening and sampling progress: in addition to summarizing progress, identify follow-up actions taken to locate the source of any apparent intermittent flow that was not sampled (if applicable)	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	9.1
3s	Summarize indicators of IDDE program progress: • Measures taken to locate illicit discharges; • Number of SSOs and illicit discharges identified and removed; • Area of the MS4 where catchment area investigations have been completed; and • Estimate of volume removed	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	9.1
MCM 4 (Construction Site Stormwater Runoff Control) - SWMP Section 5				
	MCM Responsibility	Responsible Party (Name/Position/Phone No.)	Implementation Deadline	SWMP Section
4a	Site plan reviews	Christopher Koproski, Stormwater Program Manager, 860-694-5191	July 1, 2017	5.2.3
4b	Spot construction site inspections (EV)	Christopher Koproski, Stormwater Program Manager, 860-694-5191	July 1, 2017	5.2.3
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
4c	Include FEAD reporting responsibilities (4d, 4e) in Annual Reports	N/A	Annually, due to CT DEEP by 01 April 2018	N/A

Environmental Division (continued)				
MCM 5 (Post-Construction Stormwater Management) - SWMP Section 6				
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
5a	Include FEAD reporting responsibilities (5c-5f) in Annual Reports	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	9.1
MCM 6 (Pollution Prevention / Good Housekeeping) - SWMP Section 7				
	MCM Responsibility	Responsible Party (Name/Position/Phone No.)	Implementation Deadline	SWMP Section
6a	Oversight of Street, Parking, and MS4 Maintenance Program - Sweeping	Christopher Koproski, Stormwater Program Manager, 860-694-5191	July 1, 2017	7.2.5
6b	Employee training program	Christopher Koproski, Stormwater Program Manager, 860-694-5191	July 1, 2019	7.2.1
6c	Oversight of Street, Parking, and MS4 Maintenance Program - Stormwater structure inspection and cleaning	Christopher Koproski, Stormwater Program Manager, 860-694-5191	• Inspect all stormwater junctions prior to July 1, 2020; • Begin stormwater junction cleaning prior to July 1, 2020	7.2.5
6d	Coordination with interconnected MS4s	Christopher Koproski, Stormwater Program Manager, 860-694-5191	As needed	7.2.7
6e	Bacteria source reduction program	Christopher Koproski, Stormwater Program Manager, 860-694-5191	June 30, 2022	7.2.8
6f	Joint management (with PROD/FEAD support) of Property and Operations Maintenance Program	Christopher Koproski, Stormwater Program Manager, 860-694-5191	June 30, 2022	7.2.4
6g	Oversight of Snow Management Program	Christopher Koproski, Stormwater Program Manager, 860-694-5191	June 30, 2022	7.2.6
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
6h	Annual Report will include training records that indicate the number of base personnel that received MS4 training that year through ECATTS	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	7.2.1 & 9.1
6i	Report the total amount of DCIA that has been disconnected during the reporting period (i.e., previous calendar year)	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	9.1
6j	Summary of retrofit planning: • Retrofit identification and prioritization process; • Selection of the retrofit projects to be implemented; • Rationale for the selection of those projects; and • Total DCIA to be disconnected upon implementation of the projects	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Include in 3rd Annual Report (due April 1, 2021)	9.1

Environmental Division (continued)				
	MCM Reporting Requirement	Responsible Party (Name/Position/Phone No.)	Reporting Frequency	SWMP Section
6k	Summary of retrofit schedule/implementation: • If the two percent DCIA disconnection goal will not be met within the permit term, include a discussion of what percentage of DCIA will be disconnected and why the remainder of the two percent goal could not be achieved; and • For the fourth Annual Report, include a discussion regarding how the retrofit program will be continued with the goal to disconnect one percent of DCIA in each year thereafter	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Include in 4th Annual Report (due April 1, 2022)	9.1
6l	Summary of pet waste management efforts including the scope and extent of applicable education and any compliance / administrative actions	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	9.1
6m	Summary of additional measures for discharges to impaired waters (bacteria): • Problem areas for which a retrofit or source management program was developed; • Location of the closest outfall monitored; • Cost of such retrofit or program; and • Anticipated pollutant reduction	Christopher Koproski, Stormwater Program Manager, 860-694-5191	Annually, due to CT DEEP by 01 April 2018	9.1

APPENDIX C

Wall Chart of Soil Erosion and Sediment Control Measures

(1 PAGE)

Connecticut Guidelines for Soil Erosion and Sediment Control Measures

TO MAIN TOC

Functional Group: Measure	Key	Description	Applicability
5-1 Protect Vegetation			
Tree Protection	TP	The protection of desirable trees from mechanical and other injury during construction.	Where individual trees and forested areas are subject to land disturbing activities and where the protection and preservation of trees will aid in erosion and sediment control or provide other environmental benefits.
5-2 Preserve and Conserve Soil			
Topsoiling	TO	The application of topsoil to promote the growth of vegetation following the establishment of final grades.	Where the texture, pH, or nutrient balance of the available soil (sands, gravels or other unconsolidated materials) cannot be modified by reasonable means to provide an adequate growth medium. ■ Where the existing soil material is too shallow to provide an adequate root zone and to supply necessary moisture and nutrients for plant growth. ■ Where high quality turf is desirable to prevent erosion and withstand intensive use and/or meet aesthetic requirements. ■ Where landscape plantings are planned. ■ Where extensive filling and cutting of slopes has occurred. Only on slopes no steeper than 2:1.
Land Grading	LG	Reshaping of the ground surface by excavation or filling or both, to obtain planned grades.	Where grading to planned elevations is practical for the purposes set forth above. ■ On slopes no steeper than 2:1. For slopes steeper than 2:1, see the slope stabilization measures in the Stabilization Structures Functional Group. ■ Does not apply to bedrock cuts or faces.
Surface Roughening	SR	A rough soil surface with horizontal depressions created by operating a tillage or other suitable implement on the contour, or by leaving slopes in a roughened condition by not fine-grading them.	On disturbed slopes whose gradients are between 2:1 and 4:1, inclusive.
Dust Control	DC	The control of dust on construction sites, construction roads and other areas where dust is generated.	On unstable soils subject to construction traffic. Where unstable soils are located on hill tops or long reaches of open ground and can be exposed to high winds.
5-3 Vegetative Soil Cover			
Temporary Seeding	TS	Establishment of temporary stand of grass and/or legumes by seeding and mulching soils that will be exposed for a period greater than 1 month but less than 12 months.	Within the first 7 days of suspending work on a grading operation that exposes erodible soils where such suspension is expected to last for 1 to 12 months. Such areas include soil stockpiles, borrow pits, road banks and other disturbed or unstable areas. ■ Not for use on areas that are to be left dormant for more than 1 year. Use permanent vegetative measures in those situations.
Permanent Seeding	PS	Establishment of permanent stand of grass and/or legumes by seeding and mulching exposed soils with a seed mixture appropriate for long term stabilization.	On disturbed or erodible soils have been brought to final grade or where the suspension of work is expected to exceed 1 year, and ■ Where slopes gradients are no steeper than 2:1. For slopes steeper than 2:1, use slope stabilization measures from the Stabilization Structures Functional Group.
Sodding	SO	Stabilizing fine-graded disturbed areas with the use of cut pieces of turf.	On slopes 2:1 or flatter, except on very short slopes where the slope length is no longer than the width of the cut sod. In channels where the design velocity does not exceed 5 feet per second (fps) with a duration of 1 hour or less when the velocity is at or near 5 fps. For design velocities that exceed 5 fps, refer to the Riprap and Permanent Turf Reinforcement Mat measures. ■ On sediment producing areas such as drainageways carrying intermittent flows, around drop inlets, in grassed drainageways, cut and fill slopes and other areas where conventional methods of turf establishment may be difficult or risky. In watersheds where maintenance of high water quality is particularly important. ■ Where establishing turf grass and lawn is needed in the shortest time possible.
Landscape Planting	LP	Planting trees, shrubs, or ground covers for stabilization of disturbed areas.	On steep or irregular terrain, where mowing to maintain an herbaceous plant cover is not feasible. ■ Where ornamental plantings are desired to improve site aesthetics. ■ In shady areas where turf establishment is difficult. ■ Where woody plants are desirable for soil conservation, plant diversity, or to create or enhance wildlife habitat. ■ Where permanent plantings will reduce the extent of lawn and lawn maintenance requirements. ■ Where riparian or other functional buffers need to be extended, re-established or created. ■ Where wind breaks are needed.
5-4 Non-Living Soil Protection			
Temporary Soil Protection	TSP	Application of a degradable material that will protect the soil surface on a temporary basis without the intention of promoting plant growth.	When grading of the disturbed area will be suspended for a period of 30 or more consecutive days, but less than 5 months, stabilize the site within 7 days of the suspension of grading through the use of mulch or other materials appropriate for use as a temporary soil protector. ■ For surfaces that are not to be reworked within 5 months but will be reworked within 1 year, use Temporary Seeding and Mulch for Seed. ■ For surfaces that are to be reworked after 1 year, use Permanent Seeding and Mulch for Seed.
Mulch for Seed	MS	Application of a mulch that will protect the soil surface on a temporary basis and promote the establishment of temporary or permanent seedings.	To aid in the growth of herbaceous vegetation by reducing evaporation of water, enhancing absorption of water, helping to anchor seed in place, providing protection against extreme heat and cold and improving soil texture as it decomposes.
Landscape Mulch	LM	Application of a mulch that protects the soil surface on a long term basis and promotes the growth of landscape plantings.	Used only with landscape plantings (see Landscape Planting measure) and existing woody vegetation.
Temporary Erosion Control Blanket	ECB	A manufactured blanket composed of biodegradable / photodegradable natural or polymer fibers and/or filaments that have been mechanically, structurally or chemically bound together to form a continuous matrix.	On disturbed soils where slopes are 2:1 or flatter. ■ Where wind and traffic generated air flow may dislodge standard, unarmored mulches. ■ May be used as a substitute for Mulch for Seed (see Page MS-3). ■ May be used as a substitute for Temporary Soil Protection (see Page TSP-4).
Permanent Turf Reinforcement Mat	TRM	A manufactured mat composed of non-biodegradable polymer or synthetic fibers mechanically, structurally or chemically bound together to form a continuous matrix.	In channels where design velocities exceed the stability limits of the soil and/or vegetation, and a soft-armored approach is desired. ■ On unstable soils where intermittent flow exists. ■ On disturbed soils with slopes 2:1 or flatter. On shorelines above a protected or stable toe to reduce soil erosion.
Stone Slope Protection	SSP	Applying stone aggregates for permanent protection on slopes where vegetative soil cover measures are either impractical or difficult to establish.	Where highly erodible soils provide for unfavorable conditions for plant establishment and growth. ■ Where herbaceous plant growth is to be discouraged or controlled.
5-5 Stabilization Structures			
Retaining Walls	RW	A wall that provides stability to a slope, constructed of mortared block or stone, cast-in-place concrete, timber, reinforced earth, gabions, precast concrete modular units or similar structures.	Where erosion or slope failure may occur due to excessive loadings, steepness, seepage or other unstable soil conditions. ■ Where site constraints won't allow slope stabilization by flattening and seeding.
Riprap	RR	A permanent, erosion-resistant ground cover of large, loose, angular stone.	On soil-water interfaces where soil conditions, expected flow conditions (including water turbulence, velocity and waves), and expected vegetative cover, etc., are such or will be such that the soil will erode under the design flow conditions. ■ At storm drain outlets, on channel banks and/or bottoms, roadside ditches, permanent slope drains, at the toe of slopes, or to stabilize streams.
Gabions	G	Flexible wire mesh baskets composed of rectangular cells filled with riprap or other selected (hard, durable) rock.	For use in channels, stream deflectors, grade control structures, revetments, retaining walls, abutments, stonecheck dams, and similar installations.
Permanent Slope Drain	PSD	A permanent open or enclosed structure or series of structures consisting of pipe(s), culvert(s) and/or manhole(s) used to convey water from a higher elevation to a lower elevation.	Within and upon cut and fill slopes where the soil and existing or planned vegetative cover will not handle concentrated runoff flows without erosion.
Channel Grade Stabilization Structure	CSS	A permanent open structure used to control the grade and head cutting in natural or artificial channels.	In areas where the concentration and flow velocity of water requires a structure or series of structures to stabilize the grade in channels or to control gully erosion. ■ For channel side-inlet structures needed to lower the water from a higher elevation, a surface drain, or a waterway to a lower outlet channel. ■ Does not apply to structures designed to control the rate of flow or to regulate the water level in channels.
Temporary Lined Chute	TC	A temporary channel constructed with a non-erosive material, such as concrete, bituminous concrete, riprap, sacked concrete, gabions, half round pipes, revetment erosion control mats with cement grout or similar materials used to carry concentrated runoff down a slope.	For drainage areas less than or equal to 36 acres. ■ Where the intended use is less than one year. ■ For protection of disturbed cut or fill slopes where planned vegetative cover is not established and/or permanent drainage controls have not been completed. ■ On slopes no steeper than 1.5:1 and no flatter than 5:1. For slopes flatter than 5:1 use Temporary Lined Channel, Vegetated Waterway or Permanent Lined Waterway where appropriate.
Temporary Pipe Slope Drain	TSD	A flexible or rigid pipe used to conduct water from the top of a slope to the toe of the slope.	On cut or fill slopes where the soil or existing vegetative cover will not withstand concentrated runoff flows. ■ For use less than 6 months. ■ Where the contributing drainage area is 5 acres or less.
5-6 Drainageways & Watercourses			
Vegetated Waterway	VW	A natural or constructed channel or swale shaped or graded in earth materials and stabilized with non-woody vegetation for the non-erosive conveyance of water.	Where the contributing drainage area does not exceed 50 acres. ■ Where the design discharge does not exceed 100 cfs. ■ For man-made channels such as roadside ditches and drainageways. ■ Not for use in perennial streams.
Temporary Lined Channel	TLC	A channel designed to convey flows on a short term basis and lined with a flexible impermeable geomembrane or other erosion resistant covering.	For drainage areas less than 100 acres where the gradient of the flow line of the channel is greater than 2%. ■ For drainage areas less than 1 square mile where the gradient of the flow line of the channel is less than 2%. ■ Where the temporary relocation of a drainage way is needed to complete other construction work or to allow for the establishment of vegetation in a permanent channel. ■ Use limited to 60 days when lined with flexible impermeable geomembrane. ■ Use limited to 2 years when lined with a permanent channel lining as referenced in Permanent Lined Waterway measure.
Permanent Lined Waterway	PW	A permanent waterway, including chutes and flumes, with an erosion resistant lining composed of concrete, stone, or other appropriate durable material.	Where the contributing drainage area does not exceed 200 acres. ■ Where the design discharge does not exceed 200 cfs. ■ Where the velocity of concentrated runoff is of such magnitude that a lining is needed to prevent erosion of the channel. ■ Where excessive grades, channel wetness, prolonged base flow, seepage, or soil piping would cause erosion. ■ Where vegetative slopes will not prevent erosion caused by people, animals, or vehicles. ■ Where property values or adjacent facilities warrant the extra cost to contain design runoff in a limited space. ■ In natural channels, waterways, drainageways, roadside ditches and other man-made channels that are modified or constructed and where vegetation alone will not prevent erosion. ■ Major streams need full design considerations and calculations.
Temporary Stream Crossing	TSC	A temporary bridge, or culvert(s), across a watercourse for use by construction traffic.	For streams with drainage areas less than 1 square mile. For drainage areas exceeding 1 square mile use generally accepted engineering standards (e.g. NRCS Field Office Technical Guide, the SCS National Engineering Handbook, DOT Drainage Manual) which more accurately define the actual hydrologic and hydraulic parameters which will affect the functioning of the structure. ■ Where the intended use does not exceed 3 years.

Functional Group: Measure	Key	Description	Applicability
5-7 Diversions			
Temporary Fill Berm	TFB	A very temporary berm of soil placed at the top of an unprotected fill slope.	On active earth fill slopes where the drainage area at the top of fill drains toward the exposed slope and where ongoing fill operations make the use of a **Permanent Diversion** infeasible. ■ Where the intended use is 5 days or less. For use longer than 5 days use **Temporary Diversion** or other measure. ■ Where the drainage area at the point of discharge is less than 3 acres.
Water Bar	WB	A channel with a supporting berm on the down slope side constructed across a construction access road, driveway, log road or other access way.	On construction access road, driveway, log road or other access way. ■ Where the drainage area to each separate water bar is less than 1 acre. For drainage areas greater than 1 acre, use **Permanent Diversion** measure or **Permanent Lined Waterway** measure modified to remain stable during vehicular traffic or **Temporary Stream Crossing** measure.
Temporary Diversion	TD	A temporary channel with a berm of tamped or compacted soil placed in such a manner so as to divert flows.	Where the drainage area at the point of discharge is 5 acres or less. For drainage areas greater than 5 acres use **Permanent Diversion** measure. ■ Where the intended use is 1 year or less. For uses greater than 1 year use **Permanent Diversion** measure.
Permanent Diversion	PD	A channel constructed across a slope with a supporting earthen ridge on the lower side.	Where the contributing watershed is 25 acres or less. For watersheds with a drainage area greater than 25 acres, either use **Permanent Lined Waterway** or **Vegetated Waterway**. ■ Where the diversion is to be included as an integral part of a permanent water management system. ■ Where runoff from areas of higher elevation may damage property, cause erosion, or interfere with the establishment of vegetation on lower areas. ■ Where surface and/or shallow subsurface flow is damaging sloping uplands. ■ Where the slope length needs to be reduced to control excessive overland flow velocities and minimize soil loss.
5-8 Subsurface Drains			
Subsurface Drains	SD	An underground water conveyance system consisting of a perforated conduit, such as pipe, tubing, tile or a stone filled trench installed beneath the ground to intercept and convey ground water.	Used in areas having a high water table where benefits of lowering or controlling groundwater or surface runoff are desired. ■ Where soil permeability is sufficient to permit installation of an effective and economically feasible system. ■ Not intended for use within septic system setbacks, in areas of ground water pollution, or to drain inland wetlands or tidal wetlands without prior authorization.
5-9 Detention Structures			
Detention Basin	DB	An impoundment made by constructing a dam or an embankment (embankment detention basin), or by excavating a pit or dugout (excavated detention basin). Basins resulting from both excavation and embankment construction are classified as embankment detention basins where the depth of water impounded against the embankment at emergency spillway elevation is three feet or more.	Where there is a need to control or prevent downstream erosion and flooding due to site development or from other land use changes.
5-10 Energy Dissipators			
Level Spreader	LS	An outlet for diversions and other water conveyances consisting of an excavated depression with a broad stable point of discharge constructed at zero grade across a slope.	Where there is a need to carry storm water away from disturbed areas and to avoid stressing erosion control measures. ■ Where sediment reduced runoff can be released in sheet flow over a stabilized slope without causing erosion. ■ Where the spreader can be constructed on undisturbed soil. ■ Where the area below the level spreader lip has a slope of 5% or flatter and is stabilized by vegetation.
Outlet Protection	OP	Structurally lined aprons or other acceptable energy dissipating devices placed between the outlets of pipes or paved channel sections and a stable downstream channel.	At the outfall of all storm drain outlets, road culverts, paved channel outlets, new channels constructed as outlets for culverts and conduits, etc. discharging into natural or constructed channels, which in turn discharge into existing streams or drainage systems.
Stone Check Dam	SCD	A temporary stone dam placed across a drainageway.	Where concentrated flows are expected to cause erosion. ■ For temporary drainageways which, because of their short length of service, will not receive a non-erodible lining but still need protection to reduce erosion. ■ For permanent drainageways which, for some reason, will not receive a permanent non-erodible lining for an extended period of time. ■ For temporary or permanent drainageways which need protection during the establishment of vegetative linings. ■ This measure is not a substitute for a Temporary Sediment Trap or a Temporary Sediment Basin, however, stone check dams may be used in conjunction with those measures.
5-11 Sediment Impoundments, Barriers & Filters			
Temporary Sediment Basin	SB	A temporary dam, excavated pit or dugout pond constructed across a waterway or at other suitable locations with a controlled outlet(s) such that a combination of wet and dry storage areas are created. A basin that is created by the construction of a dam is classified as an *embankment sediment basin* and a basin that is constructed by excavation is an *excavated sediment basin*. A basin that is created by a combination of dam construction and excavation is classified as an *embankment sediment basin* when the depth of water impounded against the embankment at emergency spillway elevation is three feet or more.	Below disturbed areas with a contributing drainage areas less than 100 acres. For drainage areas less than five acres, a Temporary Sediment Trap may be used. ■ Only for locations where failure of the temporary sediment basin will not, within reasonable expectations, result in loss of life or damage to buildings, roads, railroads or utilities. ■ Not for use as a post-construction stormwater renovation system.
Temporary Sediment Trap	TST	A temporary ponding area with a stone outlet formed by excavation and/or constructing an earthen embankment.	Below disturbed areas where the contributing drainage area is 5 acres or less. For drainage areas greater than 5 acres use Temporary Sediment Basin measure. ■ Where the intended use is 2 years or less. For uses greater than 2 years use Temporary Sediment Basin measure. ■ When diverting sediment-laden water with diversions that meet the above limitations for use.
Hay Bale Barrier	HB	A temporary sediment barrier consisting of a row of entrenched and anchored bales of hay or straw.	Below small disturbed areas where the drainage area (disturbed and undisturbed) is less than 1 acre in size. ■ Above disturbed slopes to direct surface water away from erodible areas where the drainage area (disturbed and undisturbed) is less than 1acre in size. ■ Where protection and effectiveness is required for less than 3 months. ■ Where sedimentation will reduce the capacity of storm drainage systems or adversely affect adjacent areas, watercourses and other sensitive areas. ■ Not for use in drainageways, except in special cases where it is applied with other measures (see Geotextile Silt Fences and Stone Check Dams special cases). ■ Not intended for use in streams.
Geotextile Silt Fence	GSF	A temporary sediment barrier consisting of a geotextile fabric pulled taut and attached to supporting posts and entrenched.	Below small disturbed areas where the contributing drainage area (disturbed and undisturbed) is less than 1 acre in size. ■ At storm water drainage inlets and catch basins where sedimentation will reduce the capacity of storm drainage systems or adversely affect adjacent areas, watercourses and other sensitive areas. ■ Not for use in areas where rock, frozen ground or other hard surface prevents proper installation of the barrier (see Special Case Combinations in Stone Check Dam measure). ■ Prohibited from use in drainageways whose flow is supported by ground water discharge.
Turbidity Curtain	TC	A temporary, impervious barrier installed in a stream, river, lake or tidal area which will retain silts, sediment, and turbidity within the construction area.	Where construction activities will take place immediately adjacent to or within tidal and non- tidal watercourses and sediment movement into the water is unavoidable. ■ Where other sediment barriers will not be effective in preventing the movement of sediment in the water. ■ Where water velocity in the area needing control will not exceed 5 feet per second (or a current of approximately 3 knots). For situations where there are greater flow velocities or currents, a qualified engineer and product manufacturer must be consulted.
Vegetative Filter	VF	A maintained area of well established herbaceous or woody vegetation through which small volumes of sediment-laden water pass and are filtered.	For contributing drainage areas of 1 acre or less in size. ■ For contributing slopes are no steeper than 10% ■ Where slopes in the vegetated filter area are no steeper than 10%. ■ For use only when existing vegetation is in an adequate condition to provide filtering of runoff water. If vegetated filters are to be established from permanent seedings, use is prohibited until after the grass has reached 6 inches in height, has been mowed twice and survived one full growing season. ■ Not for use where flows concentrate or at the outlet of diversions, drainageways, and waterways except in special cases where other measures are applied in conjunction with a vegetated filter, such as a Level Spreader, Geotextile Silt Fence or Hay Bale Barrier.
5-12 Tire Tracked Soils			
Construction Entrance	CE	A stone stabilized pad sometimes associated with a mud rack, automotive spray, or other measures located at points of vehicular ingress and egress on a construction site.	At points of construction vehicle ingress and egress where sediment may be tracked onto adjoining paved surfaces by vehicles.
5-13 Dewatering			
Pump Intake and Outlet Protection	PuP	Structures or other protective devices into which or on which intake and discharge hoses are placed during pumping operations.	Wherever dewatering is required by means of pumping such as cofferdams, building foundations, utility line installation (or repair) and pond construction or rehabilitation.
Pumping Settling Basin	PSB	An enclosed sediment barrier or excavated pit constructed with a stable inlet and outlet such that sediment laden water from pumping operations is de-energized and temporarily stored, allowing sediments to be settled and/or filtered out before being released from the construction site.	When a pump discharge from a construction area is sediment laden. ■ Not for use with hydraulic dredging operations in open waters. (See **Dewatering of Earth Materials** measure).
Portable Sediment Tank	PST	A tank or container into which sediment laden water is pumped in order to trap and retain the sediment before discharging the water or to transport the sediment laden water to an approved location for further treatment.	When a pump discharge from a construction area is sediment laden and space limitations prevent the use of a pumping settling basin. ■ For sites with severe space limitations, a portable sediment tank may be used to transport the sediment laden water to an approved location. (DW) When excavating saturated soils that are too wet to transport or to be contained with geotextile silt fence or hay bales. ■ Not for dewatering contaminated soils. Handling of contaminated soils shall comply with the directives of the regulating agency (e.g. DEP and EPA).
Dewatering of Earth Materials	DWM	A procedure that uses a perimeter earthen berm and excavation to create a containment area where excessively wet soil is placed to allow for the draining of water or evaporation of excessive moisture.	When excavating saturated soils that are too wet to transport or to be contained with geotextile silt fence or hay bales. ■ Not for dewatering contaminated soils. Handling of contaminated soils shall comply with the directives of the regulating agency (e.g. DEP and EPA).