

**GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER FROM  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4)  
TOWN OF NORTH HAVEN, CONNECTICUT**

**Ms4 2017 ANNUAL STORMWATER REPORT**

Prepared by:

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Submitted to:

*Department of Energy and Environmental Protection  
79 Elm Street, Hartford, CT 06106-5127*

**DRAFT February 15, 2018**

## Executive Summary

Submission of this report by the Town of North Haven maintains compliance with the reporting requirements and registration under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), submitted to the Commissioner for activities located within the Town of North Haven. The Town of North Haven certifies by this report that the terms and conditions of the general permit are being met. They general permit registration was filed with the State of Connecticut Department of Energy and Environmental protection ('CT DEEP') on March 31, 2017.

The Town of North Haven has been in complete compliance with the stormwater monitoring requirements of the General Permit issued on January 9, 2004 and reissued on January 9, 2009 and again, on January 9, 2013. The in-stream stormwater sampling of 2016 and subsequent reporting of MS4 monitoring results to the CT DEEP complied with the monitoring requirements of the General Permit. This was the case for each of the prior years as completed, reviewed by the Town of North Haven and reported to the CT DEEP (2004 to 2016).

The Town of North Haven plans to incrementally implement new stormwater sampling of its existing and newly identified outfalls (500+/-), where during dry weather periods, a discharge is being observed. The Town of North Haven plans to meet this mandate through the hiring of a Professional Engineering consultant to assist with current and future sampling of such outfalls. The Town understands this Best Management Practice is due on or before July 1, 2019.

This work will be conducted simultaneously with the Town's Professional Geographic Information Systems (GIS) consultant who in coordination with the Professional Engineering consultant hired through a Request for Proposal (RFP) Process will map each of the Town's existing and identified outfalls to surface and impaired waters within the boundaries of the Town of North Haven.

### Summary of Best Management Practices:

The Town of North Haven began implementation of Best Management Practices (BMPs) in 2004 under its January 4, 2004 General Permit. Many of the BMPs identified in the Town's **2004 Stormwater Management Plan** were already in place, particularly in the area of sedimentation and erosion control, which were considered to be effective in reducing contaminant loads observed in stormwater discharges.

Many of the BMPs included in the Town's **2004 Stormwater Management Plan** were implemented either through existing practices of the Town of North Haven or by qualifying local programs conducted within the Town, most notably by the South Central Connecticut Regional Water Authority (RWA) and the Quinnipiac River Watershed Association (QRWA). These BMPs are also a critical component

of the Town's **2017 Stormwater Management Plan** adopted on March 31, 2017 and this **2017 Annual Stormwater Report**, dated April 1, 2018.

#### Summary of Minimum Control Measures:

The Town made progress on several of the Minimum Control Measures (MCMs) by implementing appropriate BMPs identified in the **2017 Stormwater Management Plan** and achieved their respective Measurable Goals. The Town plans to implement any as yet unimplemented BMPs so as to ultimately reach levels of compliance as originally intended in the Plan.

The Town of North Haven continued to progress in the MCMs as they relates to Public Education and Outreach; Public Involvement and Participation; Construction Site Stormwater Runoff; Post-construction Stormwater Management in New Development and Redevelopment Projects; and Pollution Prevention and Good Housekeeping.

In preparation for the Minimum Control Measure of Illicit Discharge Detection and Elimination (IDDE), the Town of North Haven's staff attended the one-day training symposium offered on September 27, 2017 through the CT DEEP and the University of Connecticut's (UCONN) Non-point Education for Municipal Officials(NEMO). This training was later followed up by a UCONN NEMO transmission of a written "Illicit Discharge Detection and Elimination Program" template on January 12, 2018 and a sample "Illicit Discharge Detection and Elimination Program" Ordinance posted on the UCONN NEMO website on January 22, 2018.

#### Summary of Monitoring Data:

The last of the in-stream stormwater sampling at upstream and downstream locations in three tributaries of the Quinnipiac River that pass through North Haven was conducted in April of 2016. The results were entered on DEEP's Stormwater Monitoring Report (SMR) forms and submitted to the CT DEEP. Unfortunately, the Town was not able to conduct any stormwater monitoring for the reporting period of January 1, 2017 through December 31, 2017 under the current General Permit.

While the 2016 monitoring data did not identify the presence of obvious illicit discharges within the areas tributary to the sampling locations identified in the 2009 - 2013 General Permit, there were some exceedances of Environmental Protection Agency(EPA) or DEEP benchmark values for stormwater quality, but none of the exceedances were indicative of illicit discharges.

The Town of North Haven plans to contract with a Professional Engineering consultant to commence future stormwater monitoring. This work will commence on or shortly after July 1, 2018.

#### Summary of Stormwater Activities Planned for the July 1, 2018 through December 31, 2018 (Next Reporting Cycle):

As stated above, the Town of North Haven plans to contract with a Professional Engineering consultant to commence future stormwater monitoring efforts on or shortly after July 1, 2018. This effort will be conducted simultaneously with the Town's MS4 mapping updates for stormwater outfalls, and existing and new stormwater systems (i.e. drainage systems, piping, catch basins, detention basins, etc.). This mapping effort will also include stormwater systems for new construction development and redevelopment within the Town of North Haven.

As follow-up to the UCONN NEMO written "Illicit Discharge Detection and Elimination Program" template on January 12, 2018 and the sample "Illicit Discharge Detection and Elimination Program" Ordinance posted on the UCONN NEMO website on January 22, 2018, the Town of North Haven plans to develop and finalize a written IDDE program document on or before June of 2018, adopt an IDDE Ordinance at a scheduled Town Meeting and with input from its Land Use Office, Engineering Office and Planning and Zoning Commission.

#### Changes in Measurable Goals or Implementation Dates

Per the CT DEEP, the MS4 stormwater monitoring program was modified significantly and approved in 2017 to incorporate BMPs, measurable goals, responsible individuals and Departments, and implementation schedules for the six (6) MCMs:

- (1) Public Education and Outreach;
- (2) Public Involvement and Participation;
- (3) Illicit Discharge Detection and Elimination;
- (4) Construction Site Stormwater Runoff Control;
- (5) Post Construction Stormwater Management in New Development or Redevelopment Projects; and
- (6) Pollution Prevention and Good Housekeeping.

The Town of North Haven approved and adopted a **2017 Stormwater Management Plan** effective March 31, 2017. This Plan is available on the Town's website under the Department of Public Works' Stormwater Section – 2017 Stormwater Management Plan 'Tab'.

#### Introduction

This Stormwater Annual Report for 2017 was developed by the Town of North Haven as part of its efforts to protect water quality and reduce the discharge of pollutants from the municipality's stormwater system. This Annual Report addresses the various requirements, which were established by the State of Connecticut Department of Energy and Environmental Protection's (CT DEEP) General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4). The MS4 General Permit

as mentioned in the Town's **March 2017 Stormwater Management Plan** is the local enforcement mechanism of the United States Environmental Protection Agency (USEPA) under its National Pollutant Discharge and Elimination Systems (NPDES), Stormwater Phase II Rule.

### Focus of Stormwater Management Plan and Reporting

This Annual Report focuses on Best Management Practices (BMPs), measurable goals, those who would be responsible for the program BMPs and Tasks, and an update on where the Town of North Haven is in regards to implementation of the following minimum control measures:

- (1) Public Education and Outreach;
- (2) Public Involvement and Participation;
- (3) Illicit Discharge Detection and Elimination;
- (4) Construction Site Stormwater Runoff Control;
- (5) Post Construction Stormwater Management in New Development or Redevelopment Projects; and
- (6) Pollution Prevention and Good Housekeeping.

The measures identified in the 2017 Stormwater Management Plan and further discussed in this Annual Stormwater Report are applied within the boundaries of the Town of North Haven and are consistent with the MS4 General Permit requirements.

### Exempt Stormwater Discharges

Stormwater discharges from the Town of North Haven's Public Works Garage, Transfer Station, Recycling Center and Water Pollution Control Facility are subject to the CT DEEP's Stormwater General Permit for Industrial Activities and will be regulated under that permit and the conditions of same. For the purposes of this report, these facilities are not discussed nor regulated by the MS4 Stormwater program.

### Stormwater Management Committee

In preparation for the development and adoption of the **March 2017 Stormwater Management Plan**, members of the Department of Public Works, including Engineering, Land Use, Zoning Enforcement, Field Operations, Water Pollution Control, and the Executive Branch formed a Stormwater Management Committee. This Committee has met several times in the reporting year and will continue to do so throughout the term of the MS4 General Permit and its revisions.

The purpose of the Stormwater Management Committee was initially to develop and finalize the **2017 Stormwater Management Plan**; however its current role relates to the tracking and summarizing of Stormwater progress, accomplishments and updates as they relate to the implementation of the aforementioned minimum control measures. This ‘tracking, progress documentation, listing of accomplishments and providing updates will be included and shared with the CT DEEP via the Town’s Annual Reports submitted each year and posted on the Town’s website.

Description of the Town of North Haven

The registrant/operator of the MS4 Permit is the Town of North Haven, Connecticut which is a municipal corporation located in New Haven County, Connecticut. North Haven is bound by the following Towns/Cities: New Haven, East Haven, Hamden, Wallingford and North Branford. As of the 2010 Census, North Haven had a population of 24,093. Additionally, the United States Census Bureau reported that North Haven has a total area of 21.1 square miles, of which 20.8 square miles (53.8 km<sup>2</sup>) is land and 0.3 square miles (0.8 km<sup>2</sup>), or 1.52%, is water. North Haven is located less than 10 miles from the Long Island Sound.

North Haven is home to the Quinnipiac University School of Health Sciences, the School of Nursing, School of Law, and School of Medicine. North Haven has easy access to Interstate 91 and the Wilbur Cross Parkway (also known as Route 15). It is also near Sleeping Giant State Park and less than 10 miles from downtown New Haven and Yale University. North Haven is 27 miles south of the City of Hartford, 76 miles northeast of the City of New York, 80 miles west of Providence, Rhode Island and 115 miles southwest of Boston, Massachusetts.

Impaired Waters

In preparing the MS4 2017 Annual Stormwater Report, the CT DEEP Water Quality Standards were again reviewed along with the UCONN NEMO website for waterbodies within North Haven or those that run through the municipal boundaries of North Haven. The North Haven Impaired Waterbody List was included in the March 2017 Stormwater Management Plan on Page 5 of the Plan and included the following:

<b>North Haven Impaired Waterbody List</b>					
<b>2017</b>					
<b>Waterbody ID</b>	<b>Water Segment Description</b>	<b>Water Segment Length</b>	<b>Impaired Use</b>	<b>Pollutant of Concern</b>	<b>Cause/Potential Source</b>
<b>Quinnipiac River - 02</b>	<b>From Toelles Road, Wallingford/North Haven town</b>	<b>8.5 miles</b>	<b>Recreation</b>	<b>Escherichia Coli</b>	<b>Potential sources include industrial point source</b>

	border, US to Hannover Pond Outlet Dam, Meriden.				discharges, municipal discharges, landfills, illicit discharge, remediation sites, and groundwater contamination.
Allen Brook - 01	From mouth of Wharton Brook, US to Allen Brook Pond outlet Dam, Wallingford.	0.05 miles	Recreation	Escherichia Coli	Wildlife, Pet Waste, Horse/Pet Farm, Unknown Sources
Allen Brook - 02	From inlet to Allen Brook Pond, Wallingford/North Haven town border, US to headwaters, Wallingford.	1.8 miles	Recreation	Escherichia Coli	Wildlife, Pet Waste, Horse/Pet Farm, Unknown Sources
Allen Brook Pond	Impoundment of Allen Brook just US of mouth at confluence with Wharton Brook. Includes swimming area and trout park within Wharton Brook State Park. Between I-91 and Route 5 (Exit 13). Wallingford/North Haven town lines.		Recreation	Escherichia Coli	Wildlife, Pet Waste, Horse/Pet Farm, Unknown Sources
Farm River - 01	Saltwater limit at marsh downstream of Main Street Annex, southwest of Lake Saltonstall, East Haven, US parallel to lake around west side, Burrs Brook parallel to Route 80.	6.14 miles	Recreation	Escherichia Coli	Potential sources include illicit discharge, remediation sites, and groundwater contamination, residential areas.
Muddy River - 02a	Muddy River Pond Inlet North Haven, US to confluence with unnamed tributary, DS of Tyler Mill Road crossing, Wallingford.	8.1 miles	Recreation	Escherichia Coli	
Mill River -02	From inlet to Lake Whitney, east of Route 15, DS of Connolly	9.06 miles	Recreation	Escherichia Coli	Regulates urban runoff, storm sewers, combined

	Parkway Hamden, US to Cook Hill Road crossing, Cheshire.				sewer overflow, dry weather overflow, illegal connections to stormwater systems, pet waste, wildlife, on-site wastewater.
Quinnipiac River – 01	From Sackett Point Road crossing, west of I91 and east of Route 15, North Haven, US to Toelles Road crossing, Wallingford/North Haven town border.	5.05 miles	Recreation	Escherichia Coli	Potential sources include industrial point source discharges, municipal discharges, landfills, illicit discharge, remediation sites, and groundwater contamination.
Long Island Sound Inner Quinnipiac River (mouth)	Central portion of Long Island Sound, from mouth at I95, US of Quinnipiac River to Sackett Point Road, North Haven.	0.63 miles	Recreation	DO saturation, nutrient eutrophication, biological indicators, oxygen, dissolved, oil and grease, PCBs and enterococcus.	



MS4 General Permit  
Town of North Haven 2017 Annual Report  
Existing MS4 Permittee  
Permit Number GSM 000095  
Reporting Period: January 1, 2017 – December 31, 2017

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This report documents the Town of North Haven's efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from **January 1, 2017 to December 31, 2017**.

## **Part I: Summary of Minimum Control Measure Activities**

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

The Town of North Haven will continue to collect and distribute stormwater educational materials that address the impacts of pet waste, impervious area/cover, fertilizer application, pesticide and herbicide applications, illicit discharges and improper disposal of wastes into the Towns MS4 and storm drainage systems.

The Town of North Haven maintains a link to UCONN NEMO's comprehensive online library of stormwater educational materials. Through the Town's website, Department of Public Works, Stormwater Tab, this will link any interested party to the web-based library. Additionally, the Town includes stormwater outreach materials on site plan review checklist(s) to address various pollutants of concern. Materials are also available in printed format in both the Department executive offices at 5 Linsley Street (Town Hall Annex) and in the Town of North Haven's Public Library on 17 Elm Street, North Haven.

The Town of North Haven continues to implement an outreach and education program, educating the public on watershed dynamics and pollution loading issues. This is made possible through the support and partnership with the South Central Connecticut Regional Water Authority (RWA), and the Quinnipiac River Watershed Association (QRWA). North Haven's Conservation Commission (which meets monthly) continues its public outreach involvement through North Haven's Earth Day (April 8, 2017) and participation in RWA's Household HazWaste Central. The DEEP, EPA, Boy Scouts, and Girl Scouts websites have been utilized for educational material and opportunities for students and the public to get involved.

## Regional Water Authority (RWA)

Lisa DiFrancesco, the company's Educator, was contacted again for information on RWA's outreach educational programs available for Elementary and Middle School aged students during the reporting period (January 1 – December 31, 2017).

The Town has discovered from past practices that the most effective way to reach the largest audience of students is through the use of water science loan boxes from the RWA educators. These loan boxes are self-contained teaching units and include teachers' guides for promoting numerous water science activities. The loan boxes are commonly used by teachers, parents, youth group leaders, and the Town for use in their *Earth Day* event, this year held on April 8, 2017.

Typical lessons in water science include topics such as the water cycle, watershed locations, mapping and modeling, aquatic macro invertebrates and the health of streams; and a demonstration of how pollution accumulates within a water body. Loan boxes offer flexibility not found in a more traditional classroom programs and they are integrated easily into science classroom discussions.

Each session involves approximately one-hour of in-classroom discussion and Ms. DiFrancesco educates an entire grade, up to three hundred students, by providing the presentation. These programs are recommended for the North Haven 3<sup>rd</sup> – 5<sup>th</sup> graders in the Elementary Schools and for North Haven Middle School students.

A popular classroom program is *Problem with Pollution*, which identifies both point source and nonpoint source pollutants and targets students 3<sup>rd</sup> grade and up.

RWA also offers a field trip program called *Project W.A.T.E.R. (Watershed, Aquatic, and Terrestrial Ecosystem Research)* for 6<sup>th</sup> through 8<sup>th</sup> graders. This field trip is recommended for a select number of children who are transported on the RWA Project W.A.T.E.R. bus. After an introductory and background lesson on watersheds and water quality testing in the classroom, the students participate in field testing of water temperature, pH, dissolved oxygen and nitrate levels along the Mill River watershed in Hamden. Afterwards, students are assisted with data interpretation and share in a discussion on the impact of human activity on water quality.

### **Statistics for North Haven's 2016 – 2017 school year are as follows:**

#### Loan Boxes:

ACES Mill Road	High School	50 students	The Rainstick, Wise Water Ways, Polar Opposites, From the Ground Up
Clintonville School	Kindergarten	255 students	Oozing Oobleck
Ridge Road School	2 <sup>nd</sup> grade	120 students	The Rainstick

Ridge Road School      3<sup>rd</sup> grade      70 students      The Rainstick

Classroom Programs:

Clintonville School      5<sup>th</sup> grade      75 students      Distribution Solution (classroom program)

Clintonville School      Kindergarten      144 students      Distribution Solution (classroom program)

Project WATER:

ACES Mill Road      High School      39 students      Distribution Solution (classroom program)

**Total Town of North Haven Participation: 753 students**

The aforementioned totals have been provided by RWA's Lisa DiFrancesco for the 2016-2017 school year.

This past year's participation total of 753 students is significantly up from last year's total of 536, but two elementary schools, Green Acres and Montowese, were still not participating in 2017. This confirms that eligible schools in North Haven find ways to integrate water science loan boxes and classroom participation programs into their science curriculum. Only Clintonville Elementary School participated in the classroom program. Apparent is the need for incentive at Green Acres and Montowese Elementary Schools and at the Middle School to utilize classroom participation programs.

For more information on RWA's education program go to [www.rwater.com/products-and-services/education/](http://www.rwater.com/products-and-services/education/), or to request the educational brochure or water science loan box reservation form, contact RWA's *Educational Programs* office by phone at 203-777-1142 between the hours of 8:30 A.M. and 4:30 P.M., Monday through Friday.

Household HazWaste Central

North Haven remains involved in efforts to protect ground water and stormwater through its cooperation with RWA's HazWaste Central (Household Hazardous Waste Collection Center), located at 90 Sargent Drive in New Haven, by providing publicity and volunteers two Saturdays during the summer and fall.

"North Haven Volunteer Days" (July 8, 2017 and September 30, 2017) at HazWaste Central utilizes high school and adult volunteers and residents, including those from North Haven's Conservation Commission, but also provides a good opportunity for distributing brochures and pertinent information regarding watershed protection to participating families and the general public. HazWaste Central flyers or educational kits can be provided to North Haven's schools or Town offices for as many students, youth groups, small

businesses, and residents as needed. HazWaste Central's website is [www.rwater.com/products-and-services/hazwaste-central/](http://www.rwater.com/products-and-services/hazwaste-central/). For more information, email [ask.hazwaste@rwater.com](mailto:ask.hazwaste@rwater.com) or call 203-401-2712. North Haven's Town website has information about and a link to HazWaste Central on its Public Works page, under *Hazardous Waste*, and a link to RWA's home page in its Business tab, under *Utilities*.

In 2017, 510 North Haven households participated in bringing hazardous materials and/or used waste oils to HazWaste Central. This number was up from 443 households in 2016 indicating that participation has increased though public education for the protection of ground water and stormwater.

"North Haven Volunteer Days" for calendar year 2018 has been scheduled for July 14, 2018 and September 29, 2018.

#### North Haven Conservation Commission

The Conservation Commission was established for the conservation of natural resources, including water resources, within its territorial limits and to sponsor events to raise public awareness about the environment. The Commission provides ongoing support for Household HazWaste Central, and educates the public with displays and demonstrations at *North Haven's Earth Day* and plans to continue reaching out to North Haven students to involve them in the yearly event.

Presented and sponsored by the Conservation Commission, the 2017 *North Haven's Earth Day* held on April 8, 2017 once again involved students, including the High School's *Project Green* organization; Public Works Field Operations crew members, members of the Open Space Advisory Committee, the Town's Zoning Enforcement Officer, residents, environmental product vendors, and civic and environmental groups with displays, exhibits and demonstrations.

More information about the Conservation Commission is available on the Commission's tab on the *Public Meetings* Quick Links tab on the Town's website at: [www.northhaven-ct.gov/public\\_meetings/conservation\\_commission.php](http://www.northhaven-ct.gov/public_meetings/conservation_commission.php).

#### Open Space Advisory Committee:

In April 2015, the Town reconvened its Open Space Advisory Committee. Committee members consist of appointed members from the Town's Inland Wetlands Commission, Parks and Recreation Commission, Planning and Zoning Commission, Conservation Commission, Board of Finance, North Haven Trail Association and the North Haven Land Trust. Town staff provides support to the Committee and have focused on the importance of purchasing and preserving Open Space lands, preserving and protecting waterways, tributaries, and wildlife, reducing pollution from over development or development with negative impacts, and the protection of inland wetlands and sensitive ecological areas.

The Open Space Advisory Committee was reestablished to identify areas of intended or possible open space use. Land that is protected against high density residential development may be subject to restrictive covenants or ownership by a land trust organization, and may be accessible to the public for passive, low-impact activities. Preservation or restriction of land use would protect ground water and stormwater and:

- Maintain and enhance the conservation of natural or scenic resources, including protecting animals, vegetation and trees.
- Protect natural streams, tributaries, vernal pools and water supplies.
- Promote conservation of soil, wetlands and tidal marshes.
- Promote orderly urban and suburban development.
- Improve air and water quality.

In August 2016, a Town Meeting was held to present a Capital Bond Program for \$1M toward the procurement and acquisition of priority properties listed for Open Space lands acquisition in North Haven. Residents unanimously approved the proposed program, and \$1M was appropriated for open space land acquisition.

**In 2017 - the Town purchased two (2) Open Space properties, including a 30 acre tract at 182 Kings Highway, North Haven and a 15 acre tract at 603 Middletown Avenue, North Haven.**

It is planned in 2018 that additional Open Space lands be explored for acquisition by the Town of North Haven. Presently the Town is appraising an 11 acre parcel in the northwest portion of the Town.

#### Quinnipiac River Watershed Association (QRWA)

QRWA's *Quinnipiac Watershed Based Plan* is linked to DEEP's website at [www.ct.gov/deep/lib/deep/water/watershed\\_management/wm\\_plans/quinnipiac/quinnipiac\\_river\\_finalwbp.pdf](http://www.ct.gov/deep/lib/deep/water/watershed_management/wm_plans/quinnipiac/quinnipiac_river_finalwbp.pdf) was completed in December 2013 and contains pertinent information and examples for educating the public and municipalities about the principles of Watershed Management.

As reported in previous years, QRWA offers opportunities for educating small groups of students and adults through combined stewardship and education fee- or grant- based volunteer programs and training programs for adjacent Towns' Departments of Public Works employees. QRWA has the support of DEEP, USDA's Natural Resource Conservation Service and US EPA, and serves as a liaison between scientists, volunteers and Town employees.

Students and youth groups learn how to be stewards of the Quinnipiac River through training with QRWA staff. Students also learn to assist DEEP through a program performing rapid bio-assessments of stream life categorizing and verifying macro invertebrates and through a program called *Stream-walks*, which involves a grant used to fund students and youth groups to do physical surveys of the River and its tributaries. Volunteers are trained to National Resources Conservation Service's standards to identify missing riparian buffers, erosion, algae blooms from over-fertilization, and other issues affecting water quality.

QRWA's *Landowner Education* outreach project uses trained students and volunteers to distribute door-to-door material. QRWA offers an abbreviated educational brochure entitled *Quinnipiac Greenway Landowner's Guide* to help landowners reduce pollution, maintain vegetative buffers, and use tax credits to conserve watershed land. QRWA can also supply a full-length guide for municipal officials. This is part of an ongoing program to restore vegetation along the River and to urge land developers and municipalities to follow strict practices in providing protective buffers to ensure water quality.

Labor-intensive *Friends of the River- Recruiting Businesses*, as part of QRWA's Clean Water Act Sec. 319 grant program, has student volunteers (ages 14 and older) recruit homeowners and businesses adjacent to the Quinnipiac River to implement six best management practices in the **MS4 2017 Annual Stormwater Report** to help reduce runoff pollution.

*Source to Sound* is an annual clean-up program on the Quinnipiac River. Although it is mostly filled with adult volunteers, it can involve students and youth groups. (See BMP 3E) In 2017, North Haven's Fire Department and Department of Public Works assisted with the ultimate disposal of debris along the Town's section of the Quinnipiac River. Additionally, a *Source to Sound* Program that leads the way for each town in the watershed to participate in an annual river clean up on the 2nd Saturday in April of 2017 included all 18 towns in the watershed.

QRWA's *Rapid Bio-Assessment Program by volunteers* is another opportunity for public involvement. This grant-based program supports QRWA's volunteer monitoring and citizen science programs and helps DEEP gather much needed data and monitor the Quinnipiac River's water quality.

The event involves volunteers categorizing aquatic creature samples along various points along the Quinnipiac River and its incoming streams, and returning the samples back into the water, sending some samples to DEEP for verification.

3M/QRWA/High School Environmental Education Programs continue to provide students with opportunities to participate in field trips, classroom activities, hands on projects, and independent studies that will connect them to the watershed and beyond in the environment, the community and the river. Other area high schools can participate in these programs and throughout the school year. The programs will be offered during regular school hours utilizing the school's buses to transport students to site locations. With

these educational programs students will be able to participate in experiments to support theories and concepts explained in the classroom.

The QRWA Education Committee plans to continue development of the Aquatic Summer Science Program for younger students. The program will offer students throughout the watershed the opportunity to conduct river monitoring and experiments including projects to determine what effects mercury and phosphorous have on the environment.

QRWA’s programs, including *Stewardship and Education*: [www.qrwa.org/Content/Programs.asp](http://www.qrwa.org/Content/Programs.asp)

QRWA’s *Public Works Department Training*: [www.qrwa.org/Content/Training\\_Sessions\\_for\\_DPW.asp](http://www.qrwa.org/Content/Training_Sessions_for_DPW.asp)

QRWA website: [www.qrwa.org](http://www.qrwa.org) QRWA phone: 203-237-2237, email: [qrwainfo@att.net](mailto:qrwainfo@att.net).

During the April 8, 2017 *North Haven’s Earth Day event* QRWA provided the opportunity for recruiting volunteers (adults and students) for the above programs. The Town anticipates that a similar opportunity will be provided during the **2018 Earth Day** event.

### 1.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
1-1 Implement public education and outreach	<i>Ongoing</i>	<i>The Department of Public Works continues to work closely with the RWA, as stated above and the QRWA, the Conservation Commission and the Open Space Advisory Committee to promote</i>	<i>Continue to implement public education and outreach</i>	<i>Department of Public Works/L. Sadosky, North Haven Board of Education</i>	Jul 1, 2018	<i>Completed and ongoing.</i>	

		stormwater education and outreach to the public.					
1-2 Address education/outreach for pollutants of concern*	Ongoing	The Department of Public Works continues to distribute information on how to prevent or reduce pollutants such as nitrogen and bacteria from reaching its MS4 areas and waterbodies.	Continue to address and educate the public and provide outreach regarding the pollutants of concern Bacteria and Nitrogen	Department of Public Works/L. Sadosky	Jul 1, 2018	Completed and ongoing.	
<b>BMP -</b> Prepare/transmit educational materials to be distributed with Catch Basin marking efforts	Ongoing	When catch basins are replaced or catch basin markers are missing, removed by winter plowing, etc. the Department of Public Works schedules those basins for the installation of new markers and letters to the affected neighborhood are also mailed with accompanying USEPA educational	Continue to prepare/transmit educational materials to be distributed with Catch Basin marking efforts to residential neighborhoods where catch basins are being replaced or markers have been removed.	Department of Public Works/L. Sadosky and Quinnipiac University and College Interns		Completed for approximately 350 catch basins in 2017. This program started in 2009 and continues each year.	



		materials.				
<b>BMP –</b> Update Town of North Haven, DPW Website for Stormwater education and outreach.	Ongoing	In 2017 the Department of Public Works enhanced its exiting website to focus more on stormwater efforts, education, providing easy access to all Annual reports and the March 2017 SMP.	Continue to update Town of North Haven , DPW Website for Stormwater education and outreach	Department of Public Works/L. Sadosky and Quinnipiac University and College Interns and Director of IT Department		Completed but also ongoing as educational or training materials become available.

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

The Department of Public Works plans to continue its public education and outreach through the following methods: providing physical materials in its offices and in the Town’s Public Library, providing easy online access through the Town’s website, DPW portion Stormwater Tab, appearing at Public Meetings which are televised and stressing the importance of stormwater management and pollution prevention to waterbodies, etc. The Department will also continue to transmit letters and educational materials when catch basin marking efforts are undertaken. The Town plans to hire a Professional Engineering consultant in 2018 to assist it with stormwater management efforts (mapping, GIS documentation, educational materials, etc.). The Department will also work with Town legal counsel in an effort to develop and adopt an IDDE Ordinance at a Public Meeting as well as provide education to Commissions, including Inland Wetlands and Planning and Zoning.

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

Program Element/Activity	Audience (and number of people)	Topic(s) covered	Pollutant of Concern addressed (if applicable)	Responsible dept. or partner org.
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	reached)			
<b>Provide education to elementary school and middle school students on stormwater through use of RWA Loan Boxes</b>	Approximately 753 students and 25 teachers in North Haven Public and ACES Schools.	Water science, point source and non-point source pollutants, watershed and water quality testing, watershed dynamics, pollutant loadings	Nitrogen, phosphorus, and bacteria	Board of Education in coordination with the Regional Water Authority
<b>Brochures distributed and educational demonstrations conducted at April 8, 2017 Earth Day Event</b>	Approximately 250 Residents, students, business owners, commission members, teachers,	Impact of impervious cover, erosion control measures, Septic system maintenance, leaf composting, solar energy benefits, recycling, MSW reduction, fertilizer and herbicide use	Bacteria, nitrogen and phosphorus, reduction in sedimentation and erosion.	Department of Public Works – Field Operations, Executive, Zoning Enforcement, Board of Education, RWA, Take 2 (electronics) Recycling, Conservation Commission, Inland Wetlands Commission, Open Space Advisory Committee, First Selectman and others.
<b>Catch Basin Marking Program – No Dumping, Drains to Stream</b>	Approximately 350 catch basins were marked along six different roadways. Materials were mailed to approximately 500 residents.	Preventing non-point pollution, vehicle washing, pet waste, grass clippings, clearing leaves and debris from storm drains, proper disposal of household hazardous wastes.	Bacteria, nitrogen and phosphorus and hazardous materials (used oils and household HazWaste).	Department of Public Works/L. Sadosky in coordination with Quinnipiac University and other College Interns.
<b>Participation in RWA’s Household HazWaste Program and public education on same</b>	510 North Haven households were served in 2017.	Preventing and reducing the number of potential discharges of motor oils, paints, solvents, and household cleaners,	Used oils, paints, solvents, household cleaners and toxic materials.	Department of Public Works, L. Sadosky, Field Operations and RWA HazWaste Central.

		which may be toxic, to North Haven's waterbodies, animals, and environment.		
<b>Update Town of North Haven, DPW Website for Stormwater Education and Outreach</b>	Residents, business owners, Town staff, Environmental Commissions	In 2017 the Department of Public Works enhanced its existing website to focus more on stormwater efforts, education, providing easy access to all Annual reports and the March 2017 SMP.	N/A	Department of Public Works/L. Sadosky and Town's Director of IT Department
<b>Placement of Signage at Town Parks Re: Pet Waste and Water Fowl Wastes</b>	All residents and members of the public who frequent Town of North Haven Parks.	Department of Public Works, Field Operations personnel are vigilant about signage, replacement of missing signage, and education of pet owners on Pet Wastes, not feeding local aquatic birds and reducing water fowl wastes in Town Parks.	Bacteria, nitrogen and phosphorus.	Department of Public Works/V. Palma and M. Maturo, Field Operations Division.

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

### 2.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department /Person Responsible	Due	Date completed or projected completion	Additional details
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						<b>date</b>	
2-1 Comply with public notice requirements for the Stormwater Management Plan	<i>Completed</i>	<i>Published the announcement for the SMP on the Town of North Haven website and in the North Haven Courier on March 31, 2017, a local and well-read newspaper.</i>	<i>Complied with public notice requirements for the Stormwater Management Plan publication.</i>	<i>Department of Public Works/L. Sadosky</i>	<i>Apr 3, 2017</i>	<i>March 31, 2017</i>	
2-2 Comply with public notice requirements for Annual Reports	<i>Completed for 2017 Annual Report</i>	<i>On January 31, 2018, publish a link on the Town's website advising of Draft Report availability on or before February 15, 2018 with appropriate instructions for public comment transmission.</i>	<i>Complied with public notice requirements for 2017 Annual Stormwater Report – first Draft on or before February 15, 2018</i>	<i>Department of Public Works/L. Sadosky and J. Bodwell</i>	<i>Feb 15, 2018</i>	<i>February 15, 2018</i>	
<b>Additional BMP:</b> 2-3 Establish and expand Stormwater Management Committee	<i>Completed establishment of initial Committee membership but plan to expand education / outreach in 2018.</i>	<i>Established Stormwater Management Committee and identified committee members. Will extend committee participation to various IWC and PZC commissions.</i>	<i>Provides forum to coordinate Stormwater Management Plan implementation across Public Works Department</i>	<i>Department of Public Works/Executive, Engineering, Land Use, Zoning Enforcement, WPCF, Field Operations</i>		<i>January 2017</i>	

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

*The Department of Public Works has formed a Stormwater Management Committee. This Committee includes members of the Executive, Engineering, Land Use, Zoning Enforcement, Water Pollution Control Facility, and Field Operations Divisions. This Committee meets quarterly or more frequently to review Stormwater Management Plan implementation and progress. Additionally, and to better coordinate with other Town Departments, this same Committee meets monthly with the “Site Development Coordination Committee”, also comprised of representatives of Fire, Police, Building, and Quinnipiac Valley Health District. It is the goal of the Site Development Coordination Committee to review plans for site development.*

**2.3 Public Involvement/Participation reporting metrics**

Metrics	Implemented	Date	Posted
Availability of the Stormwater Management Plan announced to public	Yes	March 31, 2017	Department of Public Works, Stormwater Section, <a href="http://www.Town.north-haven.ct.us">www.Town.north-haven.ct.us</a>
Availability of Annual Report announced to public	Yes	January 31, 2018 (Initial Announcement) February 15, 2018 (Draft Report) April 1, 2018 (Final 2017 Report)	Department of Public Works, Stormwater Section, <a href="http://www.Town.north-haven.ct.us">www.Town.north-haven.ct.us</a>

**3. Illicit Discharge Detection and Elimination(Section 6(a)(3) and Appendix B / page 22)**

**3.1 BMP Summary**

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
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3-1 Develop written IDDE program	<i>In progress</i>	<i>Town is in process of completing written IDDE program using the UCONN NEMO and CT DEEP IDDE program “template” as transmitted in January 2018.</i>	<i>Develop a written and approved plan of IDDE Program.</i>	<i>Department of Public Works/ Engineering Department</i>	<i>Jul 1, 2018</i>	<i>Anticipate completing by the deadline of July 1, 2018.</i>	
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	<i>In progress</i>	<i>The Department of Public Works has transmitted a Budget request and conducted a presentation to its Board of Finance to secure funding for the mapping of all MS4 Stormwater Outfalls in priority areas.</i>	<i>Develop a list and maps of all MS4 Stormwater Outfalls in each of the priority areas.</i>	<i>Department of Public Works/Engineering Department</i>	<i>Jul 1, 2019</i>	<i>Anticipate completion of task on or before July 1, 2019.</i>	<i>The Department of Public Works will prepare a Request for Proposals (RFP) in May of 2018 in order to select the Professional Engineering consultant who will perform the mapping tasks in coordination with the Town’s GIS consultant (Map Geo).</i>

3-3 Implement citizen reporting program	<i>Ongoing</i>	<i>The Department of Public Works, Engineering Department is contact for all IDDE reporting.</i>	<i>Continue to Implement Citizen Reporting Program for IDDE discharges.</i>	<i>Department of Public Works/Engineering Department</i>	<i>Jul 1, 2017</i>	<i>Ongoing and completed prior to July 1, 2017</i>	
3-4 Establish legal authority to prohibit illicit discharges	<i>In progress</i>	<i>With the assistance of Town Counsel, the Department of Public Works is preparing a written IDDE program and ordinance which will give it the legal authority to prohibit illicit discharges.</i>	<i>Establish the legal authority to prohibit illicit discharges through the adoption of a Town IDDE Ordinance.</i>	<i>Department of Public Works/L. Sadosky</i>	<i>Jul 1, 2018</i>	<i>Anticipate completion on or before July 1, 2018.</i>	
3-5 Develop record keeping system for IDDE tracking	<i>Formalized system not yet completed</i>	<i>Currently researching format for tracking of IDDE reporting.</i>	<i>Develop a formalized record keeping system for IDDE tracking.</i>	<i>Department of Public Works/Engineering Department</i>	<i>Jul 1, 2017</i>	<i>Anticipate completing by July 1, 2018.</i>	
3-6 Address IDDE in areas with pollutants of concern	<i>Not yet completed</i>	<i>Currently discussing methods of addressing IDDE I areas where pollutants of concern have been identified.</i>	<i>Address IDDE in areas with pollutants of concern.</i>	<i>Department of Public Works/Engineering Department</i>	<i>Not specified</i>	<i>Unknown</i>	

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

*A sample written IDDE program was transmitted by UCONN NEMO staff in January 2018 to the Town of North Haven which is currently reviewing and preparing a written IDDE program that will be posted to the Department of Public Works Stormwater webpage in the 2018. Department of Public Works Land Use and Engineering staff will then update the Town’s written IDDE program as needed throughout the term of the General Permit.*

*In coordination with the written IDDE program, staff will maintain a master IDDE tracking spreadsheet . This effort will commence in calendar year 2018.*

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

<b>Date of Report</b>	<b>Location / suspected source</b>	<b>Response taken</b>
03/23/17	34 Gail Drive, North Haven	Gasoline or other flammable spill, Fire Department responded.
03/31/17	Universal Drive and Montowese Avenue, North Haven	Gasoline or other flammable spill, Fire Department responded
07/04/17	Interstate 91, Southbound Exit 9	Gasoline or other flammable spill, Fire Department responded
07/08/17	98 Highland Park Road, North Haven	Gasoline or other flammable spill, Fire Department responded
07/28/17	State Street and Devine Street, North Haven	Gasoline or other flammable spill, Fire Department responded
09/30/17	65 Winchester Drive, North Haven	Gasoline or other flammable spill, Fire Department responded
11/07/17	261 Mill Road, North Haven	Gasoline or other flammable spill, Fire Department responded
12/03/17	555 Universal Drive North, North Haven	Gasoline or other flammable spill, Fire Department responded
06/05/17	221 Elm Street, North Haven	Chemical spill, Fire Department responded.
07/18/17	110 Universal Drive, North haven	Chemical spill, Fire Department responded.
08/14/17	Hickory Hill Road, North Haven	Chemical spill, Fire Department responded.



**3.4 Provide a record of illicit discharges occurring during the reporting period and SSOs occurring July 2012 through end of reporting period using the following table.**

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
41.39022,72.881156 Off Jennifer Drive	12-28-2016	Unknown Brook	Unknown	Clogged pipe, Town	Unclogged pipe, completed 12-28-2016	N.A.

***There were NO SSO's reported in calendar year 2017.***

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

*The Town of North Haven's Department of Public Works and Veolia Water, the Town's contractor for operations and management of the Town's Water Pollution Control Facility track illicit discharges (in paper files and through e-mails) when reported and respond to those reports immediately. The Town Engineer, Zoning Enforcement Officer and Director of Public Works respond to those illicit discharges which are not related to the Town's sanitary sewer system. All SSO's reported are directly addressed through Veolia Water personnel (i.e. Chief Operator for the plant) on behalf of the Town of North Haven and the Department of Public Works.*

*In the calendar year 2018 and in all future years, Town of North Haven and Veolia Water personnel will utilize the Table listed in Section 3.4 (above) and complete the information where available.*

**3.6 Provide a summary of actions taken to address septic failures using the table below.**

Location and nature of structure with failing septic systems	Actions taken to respond to and address the failures	Impacted waterbody or watershed, if known
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5 Honeycomb Lane, North Haven residence, septic tank needed replacement.	Septic tank replaced and system made operational again.	The closest waterbody is Pine Brook.
3000 Ridge Road, North Haven residence, septic tank needed replacement	Septic tank replaced and system made operational again.	The closest waterbody is Pine Brook, a tributary to the Quinnipiac River.
5 Koczak Court, North Haven residence, failed septic system.	System has been repaired according to QVHD records.	The closest waterbody is Pine Brook, a tributary to the Quinnipiac River.
1626 Hartford Turnpike, North Haven, residence, failed septic system.	System has been repaired according to QVHD records.	Quinnipiac River
14 King Arthur Court, North Haven, residence, failed septic system	System has been repaired according to QVHD records.	The closest waterbody is Pine Brook, a tributary to the Quinnipiac River.
<p>Regarding <b>POTENTIALLY FAILING SEPTIC SYSTEMS</b>:</p> <p>Second septic system pump-outs were completed for the following North Haven addresses: 2 Banton Street, 1595 Hartford Turnpike, 1601 Hartford Turnpike, 1640 Hartford Turnpike, 1694 Hartford Turnpike, 1742 Hartford Turnpike, 1975 Hartford Turnpike, 72 Highland Park Road, 114 Highland Park Road, 261 Kings Highway, 7 Mansfield Road, 376 Mansfield Road, 836 Middletown Avenue, 123 Mill Road, 66 North Hill Road, 23 Regency Drive, 3 Rimmon Road, and 6 Todd Drive. While none of the aforementioned addresses were noted as FAILING, they are potential candidates and noted in our records.</p>	<p>The Town provides a second pump-out at a significantly discounted rate (\$15. Per house) for <b>potentially failing septic systems in North Haven</b>. In 2017, the Town provided 18 second pump outs of such potentially failing systems thereby extending the systems useful life and eliminating the opportunity for sanitary sewage discharge to a nearby watershed or waterbody.</p>	<p>30% of all homes in North Haven are serviced by septic systems. Most, if not all, are located within the same watersheds of the Pine Brook (a tributary to the Quinnipiac River), Wharton Brook and the Quinnipiac River.</p>

### 3.7 IDDE reporting metrics

<b>Metrics</b>	
Estimated or actual number of MS4 outfalls	500 – 600 Total Outfalls within Town Boundary
Estimated or actual number of interconnections	Unknown
Outfall mapping complete	0 %
Interconnection mapping complete	0 %
System-wide mapping complete (detailed MS4 infrastructure)	15 %
Outfall assessment and priority ranking	0 %
Dry weather screening of all High and Low priority outfalls complete	0
Catchment investigations complete	0
Estimated percentage of MS4 catchment area investigated	0 %

The Town of North Haven’s Department of Public Works staff commenced with research and Budget needs following the adoption of its March **2017 Storm Water Management Plan**. The Department researched needed upgrades for its Geographic Information System (GIS) to accommodate the MS4 Stormwater mapping requirements and include all Town-wide stormwater structures, such as catch basins, pipelines, retention and detention basins and all sanitary sewer system/structures, pumping stations, Water Pollution Control Facility and underground assets.

Prior to appearing before the Town’s Board of Finance for the Annual Department of Public Works Budget Workshop, Department staff met with MS4 UCONN NEMO staff on January 11, 2018 in effort to better understand the overall needs of the MS4 Stormwater Program. The Town staff discussed with UCONN NEMO staff the data obtained to date, some of the milestones met, the future needs and our proposed Budget Presentation.

Department Staff advised that its Budget requests would include funding for a Professional (Engineering) Stormwater consultant to assist staff with mapping of the outfalls, detailing MS4 priority areas, dry weather screening in MS4 areas, catchment investigations and system-wide mapping of same.

On January 17, 2018, the Department then shared its budget requests with North Haven’s Board of Finance in a meeting which was televised so that all residents in Town through NHTV could observe the Workshop and importance of the MS4 Stormwater Program budget needs. At this meeting, the Department emphasized the requirements of the MS4 Stormwater Program (6 minimum control measures) and the needs for such budgeted items to be approved.

**3.8 Briefly describe the IDDE training for employees involved in carrying out IDDE tasks including what type of training is provided and how often is it given (minimum once per year).**

*On September 27, 2017, Public Works staff attended a one-day symposium training on the Illicit Discharge Detection and Elimination (IDDE) task as provided by the CT DEEP stormwater and UCONN NEMO staff. It is the Town of North Haven’s intent to continue attendance at IDDE Training annually, throughout the term of the General Permit.*

**4. Construction Site Runoff Control(Section 6(a)(4) / page 25)**

**4.1 BMP Summary**

BMP	Status	Activities in current reporting period	Measurable goal	Department /Person Responsible	Due	Date completed or projected completion date	Additional details
4-1 Implement, upgrade, and enforce land use regulations or other legal authority to meet requirements of MS4 general permit	<i>In progress</i>	<i>With the assistance of Town Counsel, the Department of Public Works is preparing a written IDDE program and ordinance which will give</i>	<i>Implement, upgrade, and enforce land use regulations or other legal authority to meet requirements of MS4 general permit</i>	<i>Department of Public Works/Engineering, Zoning Enforcement and Land Use</i>	<i>Jul 1, 2019</i>	<i>Anticipate completing by July 1, 2019.</i>	

		<i>it the legal authority to prohibit illicit discharges.</i>					
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval	<i>Ongoing</i>	<i>The Department of Public Works coordinates site plan and review with various Town Departments (Engineering, Land Use, Zoning, Building, Fire, Quinnipiac Valley Health District (QVHD)</i>	<i>Continue to implement interdepartmental coordination in site plan review and approval.</i>	<i>Department of Public Works/Engineering, Zoning Enforcement and Land Use</i>	<i>Jul 1, 2017</i>	<i>Prior to 2004.</i>	
4-3 Review site plans for stormwater quality concerns	<i>Ongoing</i>	<i>This effort continues to be completed by the Department of Public Works' Engineering and Land Use Departments.</i>	<i>Continue with review of site plans for stormwater quality concerns</i>	<i>Engineering, and Land Use</i>	<i>Jul 1, 2017</i>	<i>Prior to 2004.</i>	
4-4 Conduct site inspections	<i>Ongoing</i>	<i>This effort continues to be completed by the Department of</i>	<i>Continue to conduct site inspections both pre-development and post</i>	<i>Engineering, and Land Use and members of the Inland Wetlands and Planning and</i>	<i>Jul 1, 2017</i>	<i>Prior to 2004.</i>	

		<i>Public Works' Engineering, Zoning Enforcement Departments. The members of Inland Wetlands and Planning and Zoning Commissions often visit sites prior to development or redevelopment Applications are reviewed.</i>	<i>development of construction activities.</i>	<i>Zoning Commissions.</i>			
4-5 Implement procedure to allow public comment on site development	<i>Ongoing</i>	<i>The Town of North Haven complies with all statutory requirements regarding Public Hearings, Public Hearing Notices and staff is available to answer any individual questions by the public – and responses by staff are a</i>	<i>Continue to implement procedures permitting public comment on site development.</i>	<i>Department of Public Works/Engineering, Zoning Enforcement and Land Use and members of the Inland Wetlands and Planning and Zoning Commissions.</i>	<i>Jul 1, 2017</i>	<i>Prior to 2004.</i>	

		priority.					
4-6 Implement procedure to notify developers about DEEP construction stormwater permit	Ongoing	The Town of North Haven Land Use, Engineering and Zoning Enforcement staff provides developers with a document titled “Stormwater Permit Information for Developers and Contractors” which is intended to be helpful and to educate those wishing to develop or redevelop lands in North Haven.	Continue with procedure to notify developers about DEEP construction stormwater permit	Department of Public Works/Engineering, Zoning Enforcement and Land Use.	Jul 1, 2017	January 1, 2017	

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

The Town of North Haven plans to integrate a stormwater management and compliance checklist into its Site Plan and Construction Site Runoff Control review process once completed. The Town plans to continually review and evaluate its erosion and sediment control requirements for construction sites so as to provide for the installation and proper maintenance of construction runoff controls in compliance with state and local laws and the 2017 Stormwater Management Plan. The Town plans

to continually develop and implement strategies, which include a combination of structural and/or non-structural BMPs to meet the requirements of the 2017 Stormwater Management Plan.

## 5. Post-construction Stormwater Management (Section 6(a)(5) / page 27)

The Town of North Haven's existing Erosion and Sediment Control regulations require the installation and proper maintenance of post-construction runoff controls in compliance with state and local laws for any development when the disturbed area is cumulatively more than one-half acre. The Town's Soil Erosion and Sedimentation Control Regulations require compliance with governing state statutes and requires conformance with 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. North Haven's Soil Erosion and Sedimentation Control Regulations (dated 1985 in the Town's Zoning Regulations) closely follow the model ordinance included in Appendix A of 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.

The Town of North Haven's Engineering and Land Use Offices notify developers about stormwater retention requirements for the difference in runoff from pre-development and post-development conditions. The Town Engineer and Land Use Administrator play key roles in notifying developers and potential developers of **post-construction stormwater runoff and post-construction maintenance requirements and inspections related thereto**.

In June, 2011, DEEP added Low Impact Development Appendices to the 2004 Connecticut Stormwater Quality Manual at [http://www.ct.gov/deep/lib/deep/water/nps/swgp/lid\\_apdx\\_ctstormwatermanual.pdf](http://www.ct.gov/deep/lib/deep/water/nps/swgp/lid_apdx_ctstormwatermanual.pdf) and to the Connecticut Guidelines for Soil Erosion and Sedimentation Control at [http://www.ct.gov/deep/lib/deep/water/nps/swgp/lid\\_apdx\\_ctsoilerosionguidlines.pdf](http://www.ct.gov/deep/lib/deep/water/nps/swgp/lid_apdx_ctsoilerosionguidlines.pdf)). These appendices cite LID projects and examples from throughout the State of Connecticut, and show cost analysis comparisons. QRWA's Quinnipiac River Watershed Based Plan contains information on LID and cites LID examples.

DEEP had recommended that the 2004 Connecticut Stormwater Quality Manual be referenced as a guide for post-construction design measures. Hence, the Town's current standard operating procedures of the Town's Engineering and Land Use Offices will be compared to the 2004 Connecticut Stormwater Quality Manual to determine consistency with that manual.

The following task was completed in 2017 and prior:

North Haven continued to review and evaluate the current standard operating procedures regarding control of post-construction stormwater runoff against the 2004 Connecticut Stormwater Quality Manual, model ordinances and other references, and make recommendations, as needed, for post-construction runoff control measures.



The Town's regulations require conformance with and closely follow the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control at [http://www.ct.gov/deep/cwp/view.asp?a=2720&q=325660&deepNav\\_GID=1654%20](http://www.ct.gov/deep/cwp/view.asp?a=2720&q=325660&deepNav_GID=1654%20), with the minimum acceptable standards for development of soil erosion and sediment control plans specifically using the principles from Chapters 3 and 4.

From North Haven's Zoning Regulations' Article VIII- Supplemental Regulations: Section 8.1.2 Activities Requiring a Certified Erosion and Sediment Control Plan: *A soil erosion and sediment control plan shall be submitted with any application for development when the disturbed area of such development is cumulatively more than one-half acre. This shall apply to uses in all zones in town. (A single family dwelling that is not a part of a subdivision of land shall be exempt from these regulations.)*

North Haven's Soil Erosion and Sedimentation Control Regulations require the installation and proper maintenance of post-construction runoff controls in compliance with Connecticut and local laws for development of disturbed areas equal to or more than one acre (1-5 acres and over 5 acres) and for tracts of land that are part of a larger common plan of development.

Chapters 7 and 9 of the 2004 Connecticut Stormwater Quality Manual at <http://www.ct.gov/deep/cwp/view.asp?a=2721&q=325704> contain the appropriate method to be used in determining peak flow rates and volumes of runoff.

From North Haven's Zoning Regulations' Article VIII- Supplemental Regulations: Section 8.1 Soil Erosion and Sedimentation Control:

*Plans for soil erosion and sediment control shall be developed in accordance with these regulations using the principles as outlined in Chapter 3 and 4 of the Connecticut Guidelines for Soil Erosion and Sediment Control (1985), as amended. Soil erosion and sediment control plans shall result in a development that minimizes erosion and sedimentation during construction; is stabilized and protected from erosion when completed; and does not cause off-site erosion and/or sedimentation.*

*The minimum standards for individual measures are those in the Connecticut Guidelines for Soil Erosion and Sediment Control (1985), as amended.*

North Haven's standard procedure includes a pre-construction application review by the Town Engineer for drainage calculations, soil erosion and sedimentation controls, and other pertinent information. The Soil Erosion and Sedimentation Control Plan requires a narrative describing the development, the schedule for grading and construction activities, sequences of grading and construction activities, for installation and/or application of soil erosion and sediment control measures, and for final stabilization of the project site.

Also required are the design criteria, construction details, the installation and/or application procedure, and the operations and maintenance program for proposed soil erosion and sediment control measures. The site plan must have a sufficient scale to show

the location of proposed development and adjacent properties, the existing and proposed topography (including soil types, wetlands, watercourses, and water bodies); and any existing structures on the project site, proposed alterations, the location of the design details for proposed soil erosion and sediment control measures and stormwater management facilities, the sequences of grading and construction activities, for installation and/or application of soil erosion and sediment control measures, and for final stabilization of the project site.

The Inland Wetlands Commission (where applicable), and the Planning and Zoning Commission each review the plan for compliance with the requirements and objectives of the *Soil Erosion and Sedimentation Control Regulations*. The Commissions’ agents conduct inspections during development to ensure compliance with the certified plan. They may also require progress reports.

### 5.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
5-1 Establish and/or update legal authority and guidelines regarding LID and runoff reduction in site development planning	<i>Not yet completed.</i>	<i>The Zoning Enforcement Officer has been conducting research on LID and runoff reduction in site plan development planning.</i>	<i>Establish and/or update legal authority and guidelines regarding LID and runoff reduction in site development planning</i>	<i>Department of Public Works/Engineering, Zoning Enforcement and Land Use</i>	Jul 1, 2021	<i>Anticipated completion date on or before July 1, 2021.</i>	
5-2 Enforce LID/runoff reduction requirements for development and redevelopment	<i>Not yet completed.</i>	<i>The Zoning Enforcement Officer has been conducting research on</i>	<i>Enforce LID/runoff reduction requirements for development</i>	<i>Department of Public Works/Engineering, Zoning Enforcement and Land Use</i>	Jul 1, 2019	<i>Anticipated completion date on or before July 1, 2019.</i>	

projects		<i>LID and runoff reduction in site plan development planning.</i>	<i>and redevelopment projects</i>				
5-3 Identify retention and detention ponds in priority areas	<i>In progress.</i>	<i>N/A</i>	<i>Identify retention and detention ponds in priority areas</i>	<i>Department of Public Works/Engineering, Zoning Enforcement and Land Use.</i>	<i>Jul 1, 2019</i>	<i>Anticipated completion date on or before July 1, 2019.</i>	
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures	<i>Not yet completed.</i>	<i>N/A</i>	<i>Implement long-term maintenance plan for stormwater basins and treatment structures</i>	<i>Department of Public Works/Engineering and Field Operations.</i>	<i>Jul 1, 2019</i>	<i>Anticipated completion date on or before July 1, 2019.</i>	
5-5 DCIA mapping	<i>In progress.</i>	<i>Meetings were conducted with UCONN NEMO and the Department of Public Works in an effort to better understand this task. Staff have downloaded mapping as</i>	<i>Complete DCIA Mapping.</i>	<i>Department of Public Works/Engineering, Zoning Enforcement and Land Use.</i>	<i>Jul 1, 2020</i>	<i>Anticipated completion on or before July 1, 2020.</i>	

		<i>provided by CT DEEP and UCONN NEMO.</i>					
5-6 Address post-construction issues in areas with pollutants of concern	<i>Not yet completed</i>	<i>N/A</i>	<i>Address post-construction issues in areas with pollutants of concern</i>	<i>Department of Public Works/Engineering, Zoning Enforcement and Land Use.</i>	<i>Not specified</i>	<i>Unknown at this time.</i>	

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

*For all Town of North Haven owned stormwater retention or detention structures/ponds, the Department of Public Works will identify, track and research the maintenance needs of such structures and ponds.*

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

<b>Metrics</b>	
Baseline (2012) Directly Connected Impervious Area (DCIA)	<i>6,800 acres</i>
DCIA disconnected (redevelopment plus retrofits)	<i>16 acres this year / acres total</i>
Retrofits completed	<i>12 acres (1 Project)</i>
DCIA disconnected	<i>Unknown % this year / % total since 2012</i>
Estimated cost of retrofits	<i>Unknown Cost</i>
Detention or retention ponds identified	<i>Total of 25 Detention or retention ponds identified</i>

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

*Department of Public Works staff reviewed the State-wide Impervious cover map of 2012 and determined that North Haven has approximately 6,800 acres of DCIA. This number was compared to the CT MS4 NEMO website for North Haven – “Factsheet: Town of North Haven Water Quality and Stormwater Summary” (whose estimate totaled 6,835 acres).*

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

The Town of North Haven is committed to annually train its Public Works and Board of Education employees, including those in its Engineering, Land Use, Blight Prevention, Building, Executive, Zoning Enforcement, Water Pollution Control Facility, Field Operations (Streets and Highways and Sanitation and Recycling) and Facilities and Grounds and to request that senior level personnel attend relevant training seminars.

Department of Public Works management/supervisors and employees attended numerous training sessions, watched instructional videos and participated in webinars in 2017. Some of the relevant courses, videos and webinars included:

1. 2017 CAZEO Monthly meetings - coastal resiliency in riverine and coastal communities.
2. 2017 CACIWC annual meeting- pond dredging, LID techniques, pesticides and water quality.
3. 2017 CAZEO meeting- soils, E & S control & site planning for soils conservation.
4. 2017 CAWS Annual Meeting-wetlands mitigation, permitting issues, affordable housing.
5. 2017 CAWS workshop-wildlife tracking, identifying obligate/facultative wetlands species.
6. March 18, 2017 CT Land Conservation Conference -Wesleyan University- wetlands and land use law.
7. UCONN Cooperative Extension- wetlands commissions, land use law, pertinent statutory discussions.
8. Environmental Summit facilitated by CLCV- predominantly a legislative discussion, with an emphasis on clean water and energy conservation.
9. Training webinar - CT MS4 Mapping Details, Clarification and Tools.
10. Training Seminar in Newington and Webinars - CT MS4 IDDE requirements.
11. 2017 WPCF Veolia Water Training – General Plant Safety; Hazard Communications; Lock Out/Tag Out; Confined Space Entry; Hand and Power Tool Safety; Hearing Conservation and Heat Stroke; Compressed Gas Cylinder Safety; Crane and Hoist Training; Respiratory Protection; International Safety; Electrical Safety; Winter and deicing Training and Bloodborne Pathogens.
12. NEMO Video watched by DPW staff – Why Regulate Stormwater.
13. NEMO Video watched by DPW staff – “Lucky Isn’t Enough”.

14. Building Department personnel attended updates and training on the most recent International Mechanical Code (IMC) and International Plumbing Code (IPC).
15. Building Department personnel attended Testing and Inspections on Plumbing and Mechanical Systems (Division of Construction Services).
16. Municipal Inland Wetlands Commissioner Training – Video watched by Zoning Enforcement, Inland Wetlands Commission members.
17. 2017 Informational session on Open Space and Watershed Lands Grant Application and Opportunities (CT DEEP).
18. 2017 – Storm Sewer Overflows (SSOs) Training with CT DEEP for Public Works Engineering, Executive and WPCF personnel (CT DEEP).
19. 2017 – Field Operations and Executive Annual UST Operator Training (Loureiro).

The Town of North Haven plans to include training for its Public Works employees under the Municipal Stormwater Program to provide education on pollution prevention and good housekeeping practices per the reissued Stormwater Management Plan and General Permit.

#### 6.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-1 Develop/implement formal employee training program	Ongoing	DPW staff attended the UCONN NEMO training of September 27, 2017 on MS4 IDDE Requirements, and the October 24, 2017 MS4 Mapping Details, Clarification and Tools. WPCF	Continue to implement annual employee training on stormwater, pollution prevention and good housekeeping practices.	Department of Public Works/L. Sadosky and Hired Consultants	Jul 1, 2017	Completed in 2017	

		<i>operations staff attended 18 training sessions on safety, wastewater disinfection, reporting, etc.</i>					
6-2 Implement MS4 property and operations maintenance	<i>Ongoing</i>	<i>For Town properties, including the Public Works Garage, Transfer Station, Recycling Center, Water Pollution Control Facility, Operations and Maintenance Plan and Stormwater Pollution Prevention Plan has been developed and complied with. SOPs are consistent with MS4 General Permit.</i>	<i>Continue to implement MS4 property and operations maintenance and compliance with existing SWPPP procedures. Optimize fertilizer applications. Continue with Spill Response protocols and responsibilities. Continue to address pet wastes and water fowl wastes in Town parks.</i>	<i>Department of Public Works/L. Sadosky and Field Operations and Board of Education Facilities and Grounds.</i>	<i>Jul 1, 2018</i>	<i>Since June 2011.</i>	

6-3 Implement coordination with interconnected MS4s	Ongoing	The Stormwater Management Plan dated March 31, 2017 was shared with all interconnected MS4's including the CT DOT, and the Towns of Hamden, Wallingford, North Branford and East Haven.	Continue to coordinate MS4 efforts with interconnected MS4s and share SMP and Annual Reports with same.	Department of Public Works/L. Sadosky.	Not specified	June and December 2017.	
6-4 Develop/implement program to control other sources of pollutants to the MS4	Not yet completed.	N/A	Develop/implement program to control other sources of pollutants to the MS4.	Unknown	Not specified	N/A	
6-5 Evaluate additional measures for discharges to impaired waters*	Not yet completed.	N/A	Evaluate additional measures for discharges to impaired waters. The Town prohibits the feeding of geese and waterfowl to manage populations at our ponds.	Department of Public Works/L. Sadosky.	Not specified	N/A	
6-6 Track projects that disconnect DCIA	Ongoing	The Town of North Haven's Engineering Department will	Continue to annually track the total acreage of DCIA that is disconnected from	Department of Public Works/L. Sadosky and	Jul 1, 2017	Calendar year 2017.	



		<i>maintain a record of all disconnected DCIA projects.</i>	<i>the MS4 as a result of redevelopment or retrofit projects. The Engineering Department will document the amount of existing DCIA that is disconnected.</i>	<i>Engineering Department.</i>			
6-7 Implement infrastructure repair/rehab program	<i>Not yet completed.</i>	<i>N/A</i>	<i>Implement infrastructure repair/rehab program. Identify MS4 structures to repair, rehabilitate or upgrade to reduce the discharge of pollutants.</i>	<i>Department of Public Works/L. Sadosky and Engineering Department.</i>	<i>Jul 1, 2021</i>	<i>It is anticipated that this program will be completed on or before July 1, 2021.</i>	
6-8 Develop/implement plan to identify/prioritize retrofit projects	<i>Not yet completed.</i>	<i>N/A</i>	<i>Develop and implement a plan to identify and prioritize potential DCIA disconnection or retrofit projects. Focus on whether project is in MS4 urbanized (DCIA &gt;11% discharge to impaired waters) area.</i>	<i>Department of Public Works/L. Sadosky and Engineering Department.</i>	<i>Jul 1, 2020</i>	<i>It is anticipated that this program will be completed on or before July 1, 2020.</i>	

6-8a Implement retrofit projects to disconnect 2% of DCIA	Not yet completed.	N/A	Develop and implement retrofit projects to disconnect 2% of all DCIA.	Department of Public Works/L. Sadosky and Engineering Department.	Jul 1, 2022	It is anticipated that this program will be completed on or before July 1, 2022.	
6-9 Develop/implement street sweeping program	Ongoing	The Department of Public Works Field Operations Division continued to implement its street sweeping program. In 2017, 252 miles of Town of North Haven roadways were swept.	Continue to implement the Town's street sweeping program. The Town will continue to inspect, sweep, and or clean all streets in the MS4 areas at least once annually. More frequent cleanings will occur in targeted areas with increased pollutant potential based on active construction or other potential pollutant sources.	Department of Public Works, Field Operations Division, V. Palma and M. Maturo.	Jul 1, 2017	Before calendar year 2004.	
6-10 Develop/implement catch basin cleaning program	Ongoing	The Department of Public Works Field Operations Division continued with its catch basin cleaning	Continue with Town-wide catch basin cleaning program.	Department of Public Works, Field Operations Division, V. Palma and M. Maturo.	Jul 1, 2020	Before calendar year 2004.	

		<i>program. In 2017, 525 catch basins were cleaned in the Town of North Haven and contents appropriately disposed of.</i>					
<i>6-11 Develop/implement snow management practices</i>	<i>Ongoing</i>	<i>The Department of Public Works Field Operations Division continued with its snow management practices throughout 2017.</i>	<i>Continue with the implementation of Town-wide snow management practices to minimize the discharge of anti-icing or de-icing chemicals and other pollutants. Proper training for de-icing application rates has been provided to all Streets and Highways personnel assigned to snow management</i>	<i>Department of Public Works, Field Operations Division, V. Palma and M. Maturo.</i>	<i>Jul 1, 2018</i>	<i>Before calendar year 2004. The Town of North Haven modified its sand and salt deicing program to include only treated salt and salt deicing products.</i>	
<i>6-12 Interconnected MS4s</i>	<i>Ongoing</i>	<i>The Town will continue to coordinate with interconnected MS4s regarding contribution of potential</i>	<i>Work on reducing interconnected MS4s.</i>	<i>Department of Public Works/L. Sadosky</i>	<i>Ongoing</i>	<i>Started sharing SMP in 2017. Will share 2017 Annual Report on April 1, 2018.</i>	

		<i>pollutants from storm sewer systems in our respective MS4s to their MS4s areas.</i>					
<b>Added BMP,</b> <i>Replacement of dilapidated Catch Basins on Town of North haven newly paved roadways.</i>	<i>Completed and Ongoing</i>	<i>The Department of Public Works Field Operations Division continued with the replacement of all dilapidated stormwater catch basins on all newly paved roadways. In 2017, 105 catch basins were replaced on newly paved Town roadways.</i>	<i>Continue with the replacement of dilapidated Catch Basins on Town of North Haven newly paved roadways.</i>	<i>Department of Public Works, Field Operations Division, V. Palma and M. Maturo.</i>	<i>Ongoing</i>	<i>Department of Public Works Field Operations Division has been replacing all dilapidated catch basins noted on Town roadways proposed for repaving.</i>	
<b>Added BMP,</b> <i>Marking of Newly Installed and/or repaired Catch Basins – “No Dumping, Drains to Stream”</i>	<i>Completed and Ongoing</i>	<i>The Department of Public Works Executive Branch with assistance from Quinnipiac University Summer fellowship candidates and</i>	<i>Continue with the marking of all catch basins in Town which are replaced due to maintenance or roadway repaving projects.</i>	<i>Department of Public Works/L. Sadosky and QU Fellowship Candidates</i>	<i>Ongoing</i>	<i>Since 2009, the Department of Public Works Executive Branch and Quinnipiac University Fellowship</i>	

		<i>Interns continues to mark all catch basins recently replaced.</i>				<i>candidates and summer interns have been marking all Town of North Haven Catch Basins with “No Dumping, Drains to Stream” markers.</i>	
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The Town of North Haven’s Public Works Department emphasizes the importance of environmental issues, including the following activities completed:

The Leaf Composting Facility at the terminus of Powdered Metals Drive, North Haven was permitted in the fall of 2013. The composting facility was designed and constructed to avoid disruption of a closed bulky waste site on which it is located and to prevent impacts to adjacent wetlands along the Muddy River. Wood chip erosion control berms/barriers were placed on downhill sides of the roadway and windrow areas. Leaf collection is conducted so as to keep loose leaves and debris from clogging roadside catch basins. Composted leaves are offered at ‘no cost’ year round to the residents of the Town while excess compost is auctioned off annually with proceeds being returned to support the leaf composting program.

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

*The Town of North Haven’s Department of Public Works, Field Operations and BOE Grounds Division will continue with several Stormwater Pollution Prevention and Good Housekeeping activities including: (1) reduce or eliminate fertilizer(s), (2) research alternative fertilizers and (3) properly store same; (4) evaluate reduced mowing frequencies, (5) review availability of drought resistant plants and landscaping materials, (6) continue to dispose of all trash in Park barrels on regular schedule, (7) continue proper disposal of grass clippings, (8) continue with leaf composting activities and offering compost to all residents in Town, (9) continue to address pet waste management and associated signage, and (10) continue address water fowl waste management. In North Haven’s Facilities – we will continue to evaluate the use, storage and disposal of petroleum products, ensure that spill*

prevention plans are in place and staff is trained appropriately on same. Continue to provide disposal service of all Town Facility dumpsters on a regular schedule. Continue to ensure that Facility floor drains are not connected to MS4 areas or are permitted.

### 6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	Yes, December 2016
Street sweeping	
Curb miles swept	252 miles
Volume (or mass) of material collected	Unknown
Catch basin cleaning	
Total catch basins in priority areas	Unknown
Total catch basins in MS4	Unknown
Catch basins inspected	525
Catch basins cleaned	525
Volume (or mass) of material removed from all catch basins	Unknown
Volume removed from catch basins to impaired waters (if known)	Unknown
Snow management	
Type(s) of deicing material used	Ice B Gone
Total amount of each deicing material applied	80 Tons
Type(s) of deicing equipment used	Spreaders
Lane-miles treated	260 Miles
Snow disposal location	N/A
Staff training provided on application methods & equipment	Ongoing, Tool Box Training,

	Review MSDS, Application Rates
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	Unknown Lbs. or %
Reduction in turf area (since start of permit)	Unknown acres
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	Todd's Pond Sinoway Park
Cost of mitigation actions/retrofits	Unknown

#### 6.4 Catch basin cleaning program

**Briefly describe the method used to optimize your catch basin inspection and cleaning schedule.**

*The Town of North Haven's Department of Public Works' Field Operations Division routinely deploy staff with a vacuum truck to areas in Town where catch basins routinely experience the build-up of debris, sediment and leaves. These areas are 'flagged' based upon past experience, areas with heavy tree canopies, etc. These areas contain more trees along the Town's ROW; they include areas where residents report frequent drainage concerns, localized flooding, or areas adjacent to new developments and redevelopments in Town where soil and erosion control concerns are present. Staff timely inspect, observe and remove the basin contents in a timely manner thereby optimizing the cleaning program and schedule.*

*While it is the goal of the Department to clean most of the 2,400 catch basins in Town once annually – not all basins require cleaning. This is based upon inspection and observation.*

#### 6.5 Retrofit program

**Briefly describe the Retrofit Program identification and prioritization process, the projects selected for implementation, the rationale for the selection of those projects and the total DCIA to be disconnected upon completion of each project.**

*This information is not yet available in the 2017 Annual Report. It is understood by the Town of North Haven that this deliverable is due in the 2019 Annual Stormwater Report.*

**Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection in future years.**

*This information is not yet available in the 2017 Annual Report. It is understood by the Town of North Haven that this deliverable is due in the 2019 Annual Stormwater Report.*



**Describe plans for continuing the Retrofit program beyond this permit term with the goal to disconnect 1% DCIA annually over the next 5 years.**

*This information is not yet available in the 2017 Annual Report. It is understood by the Town of North Haven that this deliverable is due in the 2019 Annual Stormwater Report.*

**Part II: Impaired waters investigation and monitoring [This section required beginning with 2018 Annual Report]**

**1. Impaired waters investigation and monitoring program**

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

Nitrogen/ Phosphorus  Bacteria  Mercury  Other Pollutant of Concern

**1.2 Describe program status.**

**Discuss 1) the status of monitoring work completed, 2) a summary of the results and any notable findings, and 3) any changes to the Stormwater Management Plan based on monitoring results.**

*There was no monitoring conducted of any of the outfalls during the reporting period (January 1, 2017 – December 31, 2017) under the MS4 2017 Stormwater Management Plan (SMP).*

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

**2.1 Screening data collected under 2017 permit**

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

		Other pollutant of concern)			

## 2.2 Credit for screening data collected under 2004 permit

Outfall	Sample date	Parameter(Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results	Name of Laboratory (if used)	Follow-up required?
Pine Brook Upstream	04/26/16	E. Coli	200		No
Pine Brook Upstream	04/26/16	Nitrogen	TKN – 0 Not detected		No
Pine Brook Upstream	04/26/16	Oil and Grease	Not Detected, <5		No
Pine Brook Upstream	04/26/16	Phosphorus	TP –Not detected, 0		No
Pine Brook Downstream	04/26/16	E. Coli	132		No
Pine Brook Downstream	04/26/16	Nitrogen	TKN – 0 Not detected		No
Pine Brook Downstream	04/26/16	Oil and Grease	Not Detected, <5		No
Pine Brook Downstream	04/26/16	Phosphorus	TP – Not detected, 0		No
Muddy River Upstream	04/26/16	E. Coli	300		No

Muddy River Upstream	04/26/16	Nitrogen	TKN – 0 Not detected		No
Muddy River Upstream	04/26/16	Oil and Grease	Not Detected, <5		No
Muddy River Upstream	04/26/16	Phosphorus	0.19		No
Muddy River Downstream	04/26/16	E. Coli	1150		Yes
Muddy River Downstream	04/26/16	Nitrogen	1.1		No
Muddy River Downstream	04/26/16	Oil and Grease	Not Detected, <5		No
Muddy River Downstream	04/26/16	Phosphorus	TP – Not detected, 0		No
Little River Upstream	04/26/16	E. Coli	240		No
Little River Upstream	04/26/16	Nitrogen	1.1		No
Little River Upstream	04/26/16	Oil and Grease	Not Detected, <5		No
Little River Upstream	04/26/16	Phosphorus	TP – Not detected, 0		No
Little River Downstream	04/26/16	E. Coli	760		Yes
Little River Downstream	04/26/16	Nitrogen	0.86		No
Little River Downstream	04/26/16	Oil and Grease	Not Detected, <5		No
Little River Downstream	04/26/16	Phosphorus	TP – Not detected, 0		No

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

Outfall	Status of drainage area investigation	Control measure implementation to address impairment
<i>Muddy River Downstream</i>	<i>Completed investigation of outfall drainage area for possible E. Coli source</i>	
<i>Little River Downstream</i>	<i>Completed investigation of outfall drainage area for possible E. Coli source</i>	

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

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

Part III: Additional IDDE Program Data[[This section required beginning with 2018 Annual Report](#)]

**1. Assessment and Priority Ranking of Catchments data (Appendix B (A)(7)(c) / page 5)**

Provide a list of all catchments with ranking results (DEEP basins may be used instead of manual catchment delineations).

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

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

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

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

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

## 2.2 Wet weather sample and inspection data

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

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

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

### 3.1 System Vulnerability Factor Summary

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

Outfall ID	Receiving Water	System Vulnerability Factors

Where SVFs are:

1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.
2. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.

3. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.
4. Common or twin-invert manholes serving storm and sanitary sewer alignments.
5. Common trench construction serving both storm and sanitary sewer alignments.
6. Crossings of storm and sanitary sewer alignments.
7. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;
8. Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.
9. Areas formerly served by combined sewer systems.
10. Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas.
11. Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).
12. History of multiple local health department or sanitarian actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).

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

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

### 3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants

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

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

**Part IV: Certification**

<p>“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 toSection 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute.”</p>	
Chief Elected Official or Principal Executive Officer	Document Prepared by
Print name: Michael J. Freda, First Selectman	Print name: Lynn K. Sadosky, P.E., Director of Public Works
Signature / Date: <b>DRAFT Report February 15, 2018</b>	Signature / Date: <b>DRAFT Report February 15, 2018</b>