

TOWN OF NORTH BRANFORD CONNECTICUT



DRAFT - 3-31-17

STORMWATER MANAGEMENT PLAN

July 2017

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Introduction

This Stormwater Management Plan (SMP) was developed by the Town of North Branford to protect water quality and reduce the discharge of pollutants from the municipality's storm sewer system to the maximum extent practicable (MEP). This SMP addresses the requirements established by the CT Department of Energy and Environmental Protection's (DEEP) General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 General Permit). This permit is the local enforcement mechanism of the U.S. Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II Rule.

SMP Structure

The plan outlines a program of best management practices (BMPs), measurable goals, responsible individuals or departments, and implementation schedules for the following six 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 and redevelopment
- (6) Pollution prevention/good housekeeping

Appendices to this plan include the CT DEEP General Permit for the Discharge of Stormwater from Small MS4s (by reference) and a map of North Branford's impaired waterbodies.

Area Subject to the Plan

The measures identified in this SMP will be applied throughout the boundaries of the Town of North Branford except as otherwise noted and be consistent with the MS4 General Permit requirements. Stormwater discharge from municipally-owned maintenance garages, salt sheds and other facilities subject to the DEEP Industrial Stormwater General Permit will continue to be regulated under the conditions of that permit.

SMP Development

A stormwater committee led by the Engineering Department and including department and/or agency representatives from public works, planning and zoning, parks and recreation, economic development, inland wetlands and watercourses was assembled to coordinate the development and implementation of the SMP.

Annual Reporting

The SMP's implementation will be tracked and documented in Annual Reports summarizing stormwater management activities carried out by the town and its partners. These reports will be submitted to DEEP on an annual basis no later than April 1 of any given year.

Description of Municipality

The operator of the MS4 is the Town of North Branford. The Town of North Branford is a public entity located in the county of New Haven, State of Connecticut. The Town of North Branford covers an area of approximately 26.7 square miles, located in South Central Connecticut as shown in figure 1 (attached).

The Connecticut Department of Transportation (DOT) operates an MS4 on state highways located in the Town of North Branford. This system is regulated under the CT DOT's MS4 permit. Implementation of the BMPs identified in this plan will be coordinated between North Branford and CT DOT.

Impaired Waters

In preparing the SMP, the CT DEEP's Water Quality Standards were reviewed in order to determine the Surface Water Quality Classifications for each watercourse in town. Certain BMP's address the watersheds containing

watercourses designated as "impaired" by the CT DEEP. Table 1 shows the water quality classification for each watershed. Table 2 summarizes the water bodies within or that run through the municipality that are listed on the 2014 List of Connecticut Water Bodies not meeting water quality standards and are designated as "impaired".

TABLE 1 Water Quality Surface Classifications North Branford, CT			
Drainage Basin Number	Name	Surface Water Quality Classification	Impaired per Water Quality Standards
4607	Coginchaug River	AA	No
5112	Farm River	AA	Yes
5208	Muddy River	AA	Yes
5111	Branford River	A	No

TABLE 2 North Branford Impaired Waterbody					
Waterbody ID	Water Segment Description	Water Segment Length (miles)	Impaired Use	Pollutant	Cause/Potential Source
Muddy River	From Wallingford Town line to North Haven Town line	0.5 miles	Recreation	Bacteria	Include permitted & non-permitted stormwater, illicit discharges, septic systems, nuisance wildlife, pets, agriculture
Farm River	From Pages Millpond to East Haven Town line	1.5 miles	Aquatic life, recreation	Bacteria	Include permitted & non-permitted stormwater, illicit discharges, septic systems, nuisance wildlife, pets, agriculture
Cedar Pond	Pond	---	Aquatic life, recreation	Phosphorus	Quarry, construction activities, fertilizers, septic systems
Linsley Pond	Pond	---	Aquatic life, recreation	Phosphorus	Quarry, construction activities, fertilizers, septic systems
Burrs Brook	From Tilcon downstream to Farm River	1.35 miles	Aquatic life	Sodium, Turbidity	Quarry, construction activities, fertilizers, septic systems

The surface water classifications currently assigned to North Branford watercourses are defined below.

Class A

Surface water is known or presumed to meet Water Quality Criteria which support designated uses, which may include potential drinking water supply; fish and wildlife habitat; recreational use; agricultural, industrial supply and other legitimate uses, including navigation.

Class AA

Designated uses include existing or proposed drinking water supply, fish and wildlife habitat, recreational use (may be restricted), agricultural and industrial supply.

Based on the DEEP Surface Water Quality Classifications, the Farm River is identified as the surface water that should take the highest priority in North Branford's efforts to address stormwater impacts. This was taken into consideration as the BMPs were developed.

(1) Public Education and Outreach

This minimum control measure outlines a program to communicate common sources of stormwater pollution and the impacts of polluted stormwater to the public. This will be done through distributing educational materials to the community and conducting outreach activities. The following BMPs and implementation schedule serve as North Branford's MS4 Public Education Program.

Goals:

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

1.1 Implement public education program

North Branford will collect and distribute stormwater educational materials that, at a minimum, address the impacts of the following on water quality: pet waste, impervious cover, application of fertilizers, pesticides, and herbicides, and illicit discharges and improper disposal of wastes into the MS4.

North Branford will link to UConn NEMO's comprehensive online library of stormwater educational material. The North Branford website (www.townofnorthbranfordct.com) will link directly to this web-based library and promote the availability of these materials. The planning department will include or reference outreach material with development review checklists. The Town will also provide materials in a printed format which will be on display in public locations within Town Hall and the libraries.

Additional targeted outreach efforts will be completed by the Engineering, Planning, and Public Works departments to educate K-12 students, agricultural operators, commercial businesses, developers, and homeowners on particular aspects of stormwater management.

North Branford will coordinate with East Shore District Health Department (ESDHD), NBPS's, Hazardous Waste Committee and others to ensure that all required topics listed in this plan are covered and tracked on an annual basis.

1.2 Address education and outreach for pollutants of concern

North Branford will distribute information on common sources of phosphorus, nitrogen, bacteria, and mercury pollution and how to prevent or reduce the amount reaching the MS4 and discharging into waterways.

The table below shows additional topics to be covered to address the phosphorus, nitrogen, bacteria, and mercury impairments that exist in North Branford.

Phosphorus	Nitrogen	Bacteria	Mercury
Septic systems	Septic systems	Septic systems	Thermometers
Fertilizer use	Fertilizer use	Sanitary cross connections	Thermostats
Grass clippings and leaves management	Grass clippings and leaves management	Waterfowl	Fluorescent lights
Detergent use	Discharge of sediment (to which Nitrogen binds) from Construction sites	Pet waste	Button cell batteries
Discharge of sediment (to which Phosphorus binds) from Construction sites	Other erosive surfaces	Manure piles associated with livestock and horses	Thermometers
Other erosive surfaces			

Public outreach and education schedule

BMP	Lead department / individual	Month / year of implementation	Measurable goal
Implement public education program	Engineering & Planning Town Engineer, Town Planner	July 1, 2018 and continue until permit expires	-Inclusion in land use applications -Public display of materials -Links to informational materials -Include w/development permits (quantify)
Address education/outreach for pollutants of concern	Engineering, Planning, ESDHD Town Engineer, Town Planner, Director ESDHD	July 1, 2018 and continue until permit expires	-Number of meetings held -Quantify information distributed -Attendance at school science fair(s), at least 1 per year

(2) Public Involvement and Participation

This minimum control measure identifies the process for public involvement and participation in the town's stormwater management efforts.

Goals:

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

2.1 Comply with public notice requirements for the Stormwater Management Plan and Annual Reports

North Branford will publish a public notice on its website (www.townofnorthbranfordct.com). The notice will provide a contact name, phone number, address, and email to whom the public can send comments. Additionally, this plan and the Annual Reports will be publicly accessible on the Town website and in North Branford Town Hall and the Smith and Atwater libraries. The public notice will allow for a 30-day comment period, at a minimum.

Public involvement and participation schedule

BMP	Lead department / individual	Month / year of implementation	Measurable goal
Comply with public notice requirements for the SMP and Annual Reports	Engineering/ Town Engineer	July 1, 2017 and continue until permit expires	Post on website

(3) Illicit Discharge Detection and Elimination

This minimum control measure outlines a program to detect and eliminate current illicit discharges to the MS4 and prevent further illicit discharges in the future. All activities for this measure will be completed in North Branford's priority areas (urbanized area, catchment areas with directly connected impervious area (DCIA) > 11%, and outfalls that discharge to impaired waters).

Goal:

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

3.1 Develop written IDDE plan

North Branford will develop a written IDDE plan to detect, locate and eliminate illicit discharges (to the maximum extent practicable) from the MS4 within North Branford's priority areas. The IDDE plan will provide enforceable legal authority to eliminate illicit discharges, assign responsibilities, and develop a citizen reporting program. The plan will also outline the outfall screening and IDDE protocols consistent with Appendix B of the MS4 General Permit to identify, prioritize, and investigate MS4 catchments for suspected illicit discharge of pollutants. Also, the IDDE plan will outline follow-up screening and illicit discharge prevention procedures.

3.2 Develop list and map of all MS4 outfalls and interconnections in priority areas

North Branford will complete a database of all stormwater discharges from a pipe or conduit located within and owned or operated by the municipality and all interconnections with other MS4s. Each entry will include:

- a. Type, material, size, shape and location (identified with a latitude and longitude) of conveyance, outfall or channelized flow (e.g. 24" concrete pipe);
- b. the name, water body ID and Surface Water Quality Classification of the immediate surface waterbody or wetland to which the stormwater runoff discharges;
- c. if the outfall does not discharge directly to a named waterbody, the name and water body ID of the nearest named waterbody to which the outfall eventually discharges;
- d. the name of the watershed, including the subregional drainage basin number (available from CT ECO at www.cteco.uconn.edu) in which the discharge is located;
- e. date of most recent inspection of the outfall, the condition, and any indicators of potential non-stormwater discharges as of most recent inspection;

The database will be exported into excel format for annual reports.

The Engineering Department will enter inspection reports as provided by the Public Works Department who will record select data each time they inspect, clean or repair an outlet.

3.3 Develop citizen reporting program

North Branford will establish a system to allow for citizen reporting of suspected illicit discharges into the stormwater system. The system will include an email address and phone number for submitting a report.

North Branford will affirmatively investigate and eliminate any illicit discharges for which a time and location of discharge are provided. North Branford will promptly inspect the reported outfall location and proceed according to the requirements of the written IDDE program. All citizen reports and follow-up responses will be included in North Branford's annual report.

3.4 Establish legal authority to prohibit illicit discharges

North Branford will update the necessary and enforceable legal authority by ordinance to eliminate illicit discharges. The authority will:

- a. prohibit illicit discharges to its storm sewer system and require removal of such discharges consistent with the deadlines outlined in the MS4 general permit; and
- b. authorize the investigation of suspected illicit discharges and elimination of illicit discharge, including from properties not owned or controlled by the MS4 that discharge to the MS4
- c. control the discharge of spills and prohibit the dumping or disposal of materials including, but not limited to, residential, industrial and commercial wastes, trash, used motor vehicle fluids, pesticides, fertilizers, food preparation waste, leaf litter, grass clippings, and animal wastes into its MS4; and
- d. authorize appropriate enforcement procedures and actions;
- e. authorize fines or penalties and/or recoup costs incurred by the permittee from anyone creating an illicit discharge or spilling or dumping.

3.5 Develop record keeping system for IDDE tracking

North Branford will keep a record of illicit discharge abatement activities including location (including latitude and longitude or address), description, date(s) of inspection, sampling data (if applicable), action(s) taken, date of removal or repair and responsible party.

In addition, North Branford will develop and maintain an SSO inventory that records the location, date and time of occurrence, estimated volume of discharge, a description of known or suspected cause, and details about mitigating measures including dates of implementation.

This inventory will also:

- include all known SSOs to their MS4 in the past 5 years (July 1, 2012 – June 30, 2017);
- continue to be updated to track future SSOs; and
- be included in Annual Reports.

3.6 Address IDDE in areas with pollutants of concern

North Branford will identify which areas in town are most likely to contribute nitrogen, phosphorus, and bacteria to the MS4. This assessment will consider: historic on-site sanitary system failures, proximity to bacterial impaired waters, low infiltrative soils, and shallow groundwater. Any areas determined to have a high potential for septic system failure will be reported to the East Shore District Health Department for corrective action.

3.7 Detailed MS4 infrastructure mapping

North Branford will revise a detailed map of the MS4 to include:

- Components of the MS4 within priority areas:
 - Outfalls & receiving waters;
 - Pipes; open channel conveyances; catch basins; manholes;
 - Interconnections with other MS4s and other storm sewer systems;
 - Municipally-owned stormwater treatment structures (e.g. detention & retention ponds, infiltration systems, bioretention areas, water quality swales, gross particle separators, oil/water separators, or other systems);
 - Catchment delineations for each outfall;
 - Impaired water bodies identified by name and use impairment as defined by the most recent integrated water quality report;
 - Municipal sanitary sewer system.

North Branford will update the map as new information becomes available and will report on the progress of the development of this map in the annual report.

Illicit discharge detection and elimination schedule

BMP	Lead department / individual	Month / year of implementation	Measurable goal
Develop written IDDE program	Engineering	July 1, 2018	Completion of written program
Develop list and maps of all MS4 stormwater outfalls in priority areas	Engineering	July 1, 2019	Completion of map and list
Develop citizen reporting program	Engineering/ Planning	July 1, 2018	Completion of written program
Establish legal authority to prohibit illicit discharges	Engineering	July 1, 2018	Revision of ordinance
Develop record keeping system for IDDE tracking	Engineering/ Public Works	July 1, 2017	Completion of tracking program set-up
Address IDDE in areas with pollutants of concern	Engineering/ Public Works	July 1, 2017	Completion of investigation
Detailed MS4 infrastructure mapping	Engineering	July 1, 2020	Completion of map
Complete list and maps of all MS4 stormwater outfalls throughout municipality	Engineering/ Public Works	July 1, 2022	Completion of map

(4) Construction Site Stormwater Runoff Control

This minimum control measure outlines procedures for minimizing polluted stormwater runoff from activities that disturb one or more acres of land. In North Branford, this is determined on a site by site basis.

Goal:

Minimize polluted stormwater runoff from construction sites and prevent it from carrying sediment into waterways via MS4 infrastructure.

4.1 Implement, upgrade and enforce land use regulations to meet requirements of MS4 general permit

North Branford will revise its land use regulations to establish the legal authority to control stormwater runoff from construction sites by requiring:

- a. developers, construction site operators, or contractors maintain consistency with the 2002 Guidelines for Soil Erosion and Sedimentation Control, as amended, the Connecticut Stormwater Quality Manual, and all stormwater discharge permits issued by the DEEP within the municipal or institutional boundary pursuant to CGS 22a-430 and 22a-430b;
- b. the implementation of additional measures to protect/improve water quality (in addition to the above requirements) as deemed necessary by North Branford;
- c. North Branford is authorized to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with municipal regulations, ordinances or programs or institutional requirements related to the management of North Branford's MS4. Inspections shall be conducted, where allowed, to inventory the number of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive drainage from the permittee's MS4;
- d. the owner of a site seeking development approval from North Branford shall provide and comply with a long term maintenance plan and schedule to ensure the performance and pollutant removal efficiency of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive discharge from North Branford's MS4 including short-term and long-term inspection and maintenance measures to be implemented by the private owner; and
- e. North Branford will control, through interagency or inter-jurisdictional agreements, the contribution of pollutants between the permittee's MS4 and MS4s owned or operated by others.

4.2 Develop and implement plan for interdepartmental coordination of site plan review and approval

North Branford's plan to coordinate the functions of all the departments and boards involved in the review, permitting, or approval of land disturbance projects is as follows:

Application and permit review check lists will be required to include MS4 requirements. Designated parties will be required to review and acknowledge compliance or non-compliance on the review forms to ensure that any final approval complies with the requirements.

4.3 Review site plans for stormwater quality concerns

North Branford will conduct site plan reviews that incorporate consideration of stormwater controls or management practices to prevent or minimize impacts to water quality on sites with soil disturbance of one acre or more. North Branford will also conduct site inspections to assess the adequacy of the installation, maintenance, operation, and repair of construction and post construction control measures and take enforcement action when necessary.

4.4 Conduct site inspections

North Branford will perform construction site inspections and take enforcement actions if necessary to ensure the adequacy of the installation, maintenance, operation, and repair of all construction and post-construction runoff control measures.

4.5 Implement procedure to allow public comment on site development

North Branford's procedure for public involvement in proposed and ongoing development and land disturbance activities is as follows:

New applications to various land use agencies are included on agency agendas which are posted to the North Branford website. During the agency review process some applications will require public hearings due to regulation requirements, at which anyone can comment on the application, including MS4 impacts. Input on other items which do not require public hearings may be provided by any person by contacting and providing comments to the land use staff. During the construction phase anyone can contact the land use staff to discuss concerns or issues regarding on-going development, who will follow up with on-site review of the issue(s).

4.6 Implement procedure to notify developers about DEEP construction stormwater permit

North Branford will notify developers and contractors of their potential obligation to obtain authorization under DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities (construction general permit) if their project disturbs more than 1 acre of land and results in a point source discharge to Connecticut surface waters directly or through the North Branford MS4. North Branford will also require a copy of the Storm Water Pollution Control Plan be made available to the town on request. The procedure to notify developers of the construction general permit is as follows:

NORTH BRANFORD WILL INFORM DEVELOPERS WORKING WITHIN THE TOWN THAT THEY HAVE A POTENTIAL OBLIGATION TO OBTAIN AUTHORIZATION UNDER THE DEEP'S GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS ASSOCIATED WITH CONSTRUCTION ACTIVITIES ("CONSTRUCTION GENERAL PERMIT") IF THEIR DEVELOPMENT OR REDEVELOPMENT PROJECT DISTURBS ONE OR MORE ACRES OF LAND, EITHER INDIVIDUALLY OR COLLECTIVELY, AS PART OF A LARGER COMMON PLAN, AND RESULTS IN A POINT SOURCE DISCHARGE TO THE SURFACE WATERS OF THE STATE DIRECTLY OR THROUGH THE PERMITTEE'S MS4. THE NOTIFICATION SHALL INCLUDE A PROVISION INFORMING THE DEVELOPER/ CONTRACTOR OF THEIR OBLIGATION TO PROVIDE A COPY OF THE STORM WATER POLLUTION CONTROL PLAN (REQUIRED BY THE CONSTRUCTION GENERAL PERMIT) TO THE PERMITTEE UPON REQUEST.

THE CONTRACTOR IS REQUIRED AT ALL TIMES TO CONDUCT HIS OPERATIONS IN CONFORMITY WITH ALL FEDERAL AND STATE PERMIT REQUIREMENTS CONCERNING WATER, AIR, NOISE POLLUTION AND THE DISPOSAL OF CONTAMINATED, OR HAZARDOUS MATERIALS.

Construction site stormwater management schedule

BMP	Lead department / individual	Month / year of implementation	Measurable goal
Implement, upgrade and enforce land use regs to meeting MS4 permit requirements	Planning/Town Planner, ZEO	July 1, 2019	Inclusion of addition to regulations
Develop/implement plan for interdepartmental coordination in site plan review and approval	Planning/Town Planner	July 1, 2017	Include in application review process procedure
Review site plans for stormwater quality concerns	Engineering/Town Engineer	July 1, 2017	Address in individual site plan review comments
Conduct site inspections	Planning/ZEO	July 1, 2017	
Implement procedure to allow public comment on site development	Planning/Town Planner	July 1, 2017	Procedure currently exists
Implement procedure to notify developers about DEEP construction stormwater permit	Planning/Town Planner	July 1, 2017	Include in standard conditions of approval of Planning & Zoning applications

(5) Post-construction Stormwater Management in New Development or Redevelopment

This minimum control measure outlines North Branford's program to address stormwater runoff from new or re-development projects that disturb one or more acres of land.

Goal:

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

5.1 Establish legal authority and guidelines regarding LID and runoff reduction in site development planning

North Branford will establish the legal authority by regulation, standard condition of approval, or other means to require, to the MEP, developers and contractors seeking the town's approval to consider the use of low impact development (LID) and runoff reduction site planning and development practices that meet or exceed those LID and runoff reduction practices in the CT Stormwater Quality Manual prior to other stormwater management practices allowed in North Branford's land use regulations, guidance or construction project requirements.

This legal authority will include the following standards:

- 1) for redevelopment of sites that are currently developed with Directly Connected Impervious Area (DCIA) of forty percent or more, the project must retain on-site half the water quality volume for the site, or
- 2) for new development and redevelopment of sites with less than forty percent DCIA, retain the water quality volume for the site, or
- 3) if those retention standards cannot be met, the developer will be required to provide a report indicating why the standard could not be met and construct a mitigation project on another property or pay a fee to fund a DCIA retrofit, as directed by the Planning and Zoning Commission.

In developing this legal authority, North Branford will consider the following watershed protection elements to manage the impacts of stormwater on receiving waters:

- a. Minimize the amount of impervious surfaces (roads, parking lots, roofs, etc.) within each municipality by minimizing the creation, extension, and widening of parking lots, roads, and associated development and encourage the use of Low Impact Development or green infrastructure practices.
- b. Preserve, protect, create and restore ecologically sensitive areas that provide water quality benefits and serve critical watershed functions. These areas may include, but are not limited to; riparian corridors, headwaters, floodplains and wetlands.
- c. Implement stormwater management practices that prevent or reduce thermal impacts to streams, including requiring vegetated buffers along waterways, and disconnecting discharges to surface waters from impervious surfaces such as parking lots.
- d. Seek to avoid or prevent hydromodification of streams and other water bodies caused by development, including roads, highways, and bridges.
- e. Implement standards to protect trees, and other vegetation with important evapotranspirative qualities.
- f. Implement policies to protect native soils, prevent topsoil stripping, and prevent compaction of soils.

- g. Coordinate with state or local health officials to ensure no interference with performance of on-site septic systems.
- h. Limit turf areas.

In addition, North Branford will review its current regulations - site planning requirements, zoning regulations, street design regulations, and infrastructure specifications regarding minimum criteria for impervious cover (roads, parking lots, etc.) to identify and, where appropriate, reduce or eliminate existing regulatory barriers to implementation of LID and runoff reduction practices to the MEP.

5.2 Implement long-term maintenance plan for stormwater basins and treatment structures

North Branford will develop a maintenance plan for retention / detention ponds and stormwater treatment structures that it owns or over which it holds an easement or other authority and that are located in the town's priority areas to ensure their long-term effectiveness. This plan will require an annual inspection of those retention / detention ponds and stormwater treatment structures and removal of accumulated sediment and pollutants in excess of 50% design capacity.

5.3 Directly Connected Impervious Area (DCIA) mapping

North Branford will follow guidance provided by DEEP and UConn CLEAR to calculate the Directly Connected Impervious Area (DCIA) that contributes stormwater runoff to each of its MS4 outfalls. Progress on this task will be documented in each Annual Report until completion.

5.4 Address post-construction issues in areas with pollutants of concern

For areas contributing to waters where **Nitrogen, Phosphorus** or **Bacteria** is a Stormwater Pollutant of Concern and erosion or sedimentation problems are found during the annual inspections conducted under the long-term maintenance plan described in BMP 5.2, North Branford will prioritize those areas for the DCIA retrofit program under minimum control measure 6 – Pollution Prevention/Good Housekeeping.

Post-construction stormwater management schedule

BMP	Lead department / individual	Month / year of implementation	Measurable goal
Establish or update legal authority and guidelines regarding LID and runoff reduction in site development planning	Planning, Engineering/ Town Planner, Town Engineer	July 1, 2021	Revision to Zoning Regulations
Enforce LID/runoff reduction requirements for development and redevelopment projects	Planning, Engineering/ Town Planner, Town Engineer	July 1, 2021	Include requirements on applications, check lists
Implement long-term maintenance plan for stormwater basins and treatment structures	Public Works, Engineering/ Director of Public Works, Town Engineer	July 1, 2019	Provide written plan to include listing of basins & structures

Complete DCIA mapping	Engineering/ Town Engineer	July 1, 2020	Completion of mapping
Address post-construction issues in areas with pollutants of concern	Engineering, Health District/ Town Engineer, Health Director	July 1, 2019	Number of issues addressed

(6) Pollution Prevention / Good Housekeeping

This minimum control measure outlines a program to mitigate the impact of town operations and maintenance on town owned and/or operated properties and the MS4 itself to water quality.

Goal:

Prevent or reduce pollutant runoff as a result of municipal operations.

North Branford will implement an operations and maintenance program to prevent or reduce pollutant runoff from town facilities and protect water quality.

6.1 Develop and implement formal employee training program

North Branford will continue its MS4 training program for town employees to increase awareness of water quality issues. Training will include:

- Standard operating procedures consistent with the MS4 general permit;
- General goals and objectives of this Stormwater Management Plan;
- Identification and reporting of illicit discharges and improper disposal; and
- Spill response protocols and responsibilities.

These trainings may also include regional or statewide trainings coordinated by UConn CLEAR or others. The training will be coordinated by the Director of Public Works with assistance from the Town Engineer.

6.2 Implement MS4 property and operations maintenance

North Branford-owned or -operated properties, parks, and other facilities that are owned, operated, or otherwise the legal responsibility of North Branford will be maintained so as to minimize the discharge of pollutants to its MS4. Such maintenance will include, but not be limited to:

(i) Parks and open space

North Branford will optimize the application of fertilizers by municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance. Optimization practices considered may include:

- conducting soil testing and analysis to determine soil phosphorus levels,
- the reduction or elimination of fertilizers,
- reduction of fertilizer usage by adhering to the manufacturers' instructions,

- use of alternative fertilizers forms (i.e. products with reduced, slow-releasing, or insoluble phosphorus compositions),
- proper storage and application practices (i.e. avoid impervious surfaces),
- application schedule (i.e. appropriate season or month) and timing (i.e. coordinated with climatic conditions to minimize runoff potential);
- standard operating practices for the handling, storage, application, and disposal of pesticides and herbicides in compliance with applicable state and federal laws;
- evaluating reduced mowing frequencies and use of alternative landscaping materials like drought resistant and native plantings;
- establish procedures for management of trash containers at parks (scheduled cleanings; sufficient number).

North Branford will establish practices for the proper disposal of grass clippings and leaves at North Branford-owned lands. Clippings shall be composted or otherwise appropriately disposed. Clippings will not enter the MS4 system or waters of the state.

(ii) Pet waste management

North Branford will identify locations where inappropriate pet waste management practices are immediately apparent and pose a threat to receiving water quality due to proximity and potential for direct conveyance of waste to its storm system and waters. In such areas, North Branford will, implement targeted management efforts such as public education and enforcement (e.g. increased patrol for violators).

In North Branford-owned recreational areas where dog walking is allowed, North Branford will install educational signage, and require carry-out.

North Branford will document its efforts in its annual reports. North Branford should consider including information regarding the scope and extent of its education, compliance, and enforcement efforts (including the number of violations pursued and fines levied or other enforcement taken).

(iii) Waterfowl management

North Branford will identify lands where waterfowl congregate and feeding by the public occurs.

To raise awareness regarding the water quality impacts, North Branford will install signage or use other targeted techniques to educate the public about the detrimental impacts of feeding waterfowl (including the resulting feces deposition) and discourage such feeding practices.

North Branford will also implement practices that discourage the undesirable congregation of waterfowl in these areas, or otherwise isolate the direct drainage from these areas away from its storm system and waters.

(iv) North Branford Buildings and facilities (schools under the jurisdiction of North Branford, town offices, police and fire stations, pools, parking garages and other North Branford-owned or operated buildings or utilities)

North Branford will:

- evaluate the use, storage, and disposal of both petroleum and non-petroleum products and ensure, through employee training, that those responsible for handling these products know proper procedures;
- ensure that Spill Prevention Plans are in place, if applicable, and coordinate with the fire department as necessary;
- develop management procedures for dumpsters and other waste management equipment;
- sweep parking lots and keep areas surrounding the facilities clean to minimize runoff of pollutants;
- ensure that all interior building floor drains are not connected to the MS4 and are appropriately permitted.

(v) Vehicles and Equipment

North Branford will

- establish procedures for the storage of North Branford-owned or -operated vehicles;
- require vehicles with fluid leaks to be stored indoors or in contained areas until repaired;
- evaluate fueling areas owned by North Branford and used by North Branford owned or -operated vehicles and if feasible and possible, place fueling areas under cover in order to minimize exposure;
- establish procedures to ensure that vehicle wash waters are not discharged to the municipal storm sewer system or to surface waters;
- ensure any interior floor drains are appropriately permitted.

(vi) Leaf Management

North Branford will establish and implement procedures to minimize or prevent the deposition of leaves in catch basins, streets, parking lots, driveways, sidewalks or other paved surfaces that discharge to the MS4. Such procedures shall also apply to leaves collected by North Branford.

6.3 Implement coordination with interconnected MS4s

North Branford will coordinate with operators of interconnected MS4s (such as neighboring municipalities, institutions and DOT) regarding the contribution of potential pollutants from the storm sewer systems, contributing land use areas and stormwater control measures in the respective MS4s. This same coordination shall be conducted regarding operation and maintenance procedures utilized in the respective systems.

6.4 Develop and implement a program to control other sources of pollutants to the MS4

North Branford will develop and implement a program to control the contribution of pollutants to its MS4 from commercial, industrial, municipal, institutional or other facilities, not otherwise authorized by a CT DEEP stormwater permit.

6.5 Evaluate additional measures for discharges to impaired waters

(i) For waters for which Phosphorus is a Stormwater Pollutant of Concern:

On North Branford-owned or -operated lands, North Branford implement a turf management practices and procedures policy which includes, but is not limited to, procedures for proper fertilizer application and the planting of native plant materials to lessen the amount of turf area requiring mowing and the application of chemicals. Each Annual Report will discuss the actions taken to implement this policy with an estimate of fertilizer and turf reduction.

(ii) For waters for which Bacteria is a Stormwater Pollutant of Concern:

On North Branford-owned or -operated lands with a high potential to contribute bacteria (such as dog parks, parks with open water, sites with failing septic systems), North Branford will develop, fund, implement, and prioritize a retrofit or source management program to correct the problem(s) within a specific timeframe. Each Annual Report will identify problem areas for which a retrofit or source management program were developed, the location of the closest outfall monitored in accordance with Section 6(i), the cost of such retrofit or program, and the

anticipated pollutant reduction. On North Branford-owned or -operated lands, prohibit the feeding of geese or waterfowl and implement a program to manage geese and waterfowl populations. Each Annual Report will discuss the actions taken to implement this program.

6.6 Track projects the disconnect DCIA

North Branford will annually track the total acreage of Directly Connected Impervious Area (DCIA) that is disconnected from the MS4 as a result of redevelopment or retrofit projects within the town. For each retrofit/redevelopment project, North Branford will document the amount of existing DCIA that is disconnected. The total amount of disconnected DCIA will be reported each year in the Annual Report. Starting on July 1, 2021, North Branford's goal will be to reduce 1% of its total DCIA acreage per year to the maximum extent possible. North Branford will provide updates on this goal in its annual report. North Branford will also incorporate all DCIA disconnections which occurred in the town since July 1, 2012 towards meeting this goal.

6.7 Develop and implement an infrastructure repair, rehabilitation and retrofit program

North Branford will continue a program to identify MS4 structures to repair, rehabilitate, or upgrade to reduce or eliminate the discharge of pollutants into water bodies. This program will be responsive to new information on outfalls discharging pollutants, impaired waters, inspections, or observations made during outfall mapping under the IDDE section of this plan.

6.8 Develop and implement plan to identify and prioritize retrofit projects

North Branford will develop a Retrofit Project Plan to identify and prioritize potential DCIA disconnection projects. Prioritization will be based on several factors, including whether the project lies within one of the MS4 priority areas (urbanized area, DCIA > 11%, discharge to impaired waters). North Branford will include in its annual report for the third year of the permit (2020-2021) its identification and prioritization process, a rationale for the selection of projects to be implemented, and the total acres of DCIA to be disconnected upon implementation. The implementation of projects in this plan will begin by June 30, 2022.

6.9 Develop and implement street sweeping program

North Branford will implement a program to provide for regular inspection and maintenance of North Branford-owned or -operated streets, parking areas and other MS4 infrastructure.

North Branford will establish and implement procedures for sweeping town-owned or operated streets and parking lots. All streets and parking lots within the MS4 Priority Areas will be inspected, swept and/or cleaned (as necessary) at least once per year in the spring following the cessation of winter maintenance activities (i.e. sanding, deicing, etc.). The procedures shall also include more frequent inspections, cleaning and/or sweeping of targeted areas determined by North Branford to have increased pollutant potential based on the presence of active construction activity or other potential pollutant sources. North Branford will identify such potential pollutant sources based upon surface inspections, catch basin cleaning or inspection results, land use, winter road deicing and/or sand application, impaired or TMDL waters or other relevant factors as determined by North Branford. If wet dust suppression is conducted, the use of water will be minimized such that a discharge of excess

water to surface waters and/or the storm sewer system does not occur.

For streets and parking lots outside the MS4 Priority Areas, including any rural uncurbed streets and parking lots with no catch basins, North Branford will either meet the minimum frequencies above, or develop and implement an inspection, documentation and targeted sweeping and/or cleaning plan for those areas by June 30, 2018 and submit such plan with its year one Annual Report. For new and redeveloped municipal parking lots, North Branford will evaluate options for reducing stormwater runoff to surface waters and/or the storm sewer system by the installing pervious pavements and/or other measures to promote sheet flow of stormwater.

- a. North Branford will ensure the proper disposal of street sweepings in accordance with DEEP policies, guidance and regulations. Sweepings shall not be discharged back into the storm drain system and/or surface waters.
- b. North Branford will document results of its sweeping program in its annual reports including: a summary of inspection results, curb miles swept, dates of cleaning, volume or mass of material collected, and method(s) of reuse or disposal. North Branford will also include documentation of any alternate sweeping plan for rural uncurbed streets and any runoff reduction measures implemented.

6.10 Develop and implement catch basin cleaning program

North Branford will conduct routine cleaning of all catch basins and track catch basin inspection observations. Utilizing information compiled through its inventory of catch basins, operational staff and public complaints, North Branford will optimize routine cleaning frequencies for particular structures or catchment areas as follows to maintain acceptable sediment removal efficiencies:

- a. Inspect all North Branford-owned catch basins within MS4 Priority Areas at least once by June 30, 2020. Catch basins outside the MS4 Priority Areas shall be inspected by June 30, 2022.
- b. Prioritize inspection and maintenance for North Branford-owned catch basins located near impaired waters and construction activities (roadway construction, residential, commercial, or industrial development or redevelopment). North Branford will clean catch basins in such areas more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings.
- c. Establish a schedule such that the frequency of routine cleaning will ensure that no catch basin at any time will be more than fifty (50) percent full. A catch basin sump is more than 50 percent full if the contents within the sump exceed one half the distance between the bottom interior of the catch basin to the invert of the deepest outlet of the catch basin.
- d. If a catch basin sump is more than fifty (50) percent full during two consecutive routine inspections/cleaning events, North Branford will document that finding, investigate the contributing drainage area for sources of excessive sediment loading, and to the maximum extent practicable, abate contributing sources. North Branford will describe any actions taken in its Annual Report.
- e. North Branford will detail its plan for optimizing catch basin cleaning, inspection plans, and its schedule for gathering information to develop the optimization plan in its first annual report. Documentation shall include metrics and other information used to reach the determination that the established plan for cleaning and maintenance is optimal for the MS4. North Branford will keep a log of catch basins cleaned or inspected.
- f. North Branford will report in each Annual Report the total number of catch basins, number inspected, number cleaned, the total volume or mass of material removed from all catch basins and, if practicable, the volume or mass of material removed from each catch basin draining to water quality limited waters.

6.11 Develop and implement snow management practices

(i) Deicing Material Management

North Branford will develop and implement standard operating practices for the use, handling, storage, application, and disposal of deicing products such as salt and sand to minimize exposure to stormwater; consider means to minimize the use and optimize the application of chloride-based or other salts or deicing product (while maintaining public safety) and consider opportunities for use of alternative materials; for any exterior containers of liquid deicing materials installed after July 1, 2017, North Branford will provide secondary containment of at least 110% of the largest container or 10% of the total volume of all containers, whichever is larger, without overflow from the containment area.

(ii) Snow and Ice Control Practices

North Branford will implement and refine its standard operating practices regarding its snow and ice control to minimize the discharge of sand, anti-icing or de-icing chemicals and other pollutants (while maintaining public safety).

North Branford will establish goals for the optimization of sand and/or chemical application rates through the use, where practicable, of automated application equipment (e.g. zero-velocity spreaders), anti-icing and pre-wetting techniques, implementation of pavement management systems, and alternate chemicals.

North Branford will maintain records of the application of sand, anti-icing and/or de-icing chemicals to document the reduction of chemicals to meet established goals.

North Branford will ensure the proper training for deicing applications for municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance.

North Branford will manage and dispose of snow accumulations in accordance with DEEP's Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots, revised 2/4/11 and as amended (see link at: www.ct.gov/deep/stormwater).

In its Annual Report, North Branford will document results of its snow removal program including, at a minimum: the type of staff training conducted on application methods and equipment, type(s) of deicing materials used; lane-miles treated; total amount of each deicing material used; type(s) of deicing equipment used; any changes in deicing practices (and the reasons for the change); and snow disposal methods.

6.12 Interconnected MS4s

North Branford will coordinate with operators of interconnected MS4s (such as neighboring municipalities, institutions and DOT) regarding the contribution of potential pollutants from the storm sewer systems, contributing land use areas and stormwater control measures in the respective MS4s. This same coordination will be conducted regarding operation and maintenance procedures utilized in the respective systems.

6.13 Sources contributing pollutants to the MS4

North Branford will develop and implement a program to control the contribution of pollutants to its MS4 from commercial, industrial, municipal, institutional or other facilities, not otherwise authorized by permit issued pursuant to Sections 22a-430 or 22a-430b of the Connecticut General Statutes.

6.14 Additional measures for discharges to impaired waters (with or without a TMDL)

(i) For waters for which Nitrogen or Phosphorus is a Stormwater Pollutant of Concern:

On North Branford-owned or -operated lands, North Branford will implement a turf management practices and procedures policy which includes, but is not limited to, procedures for proper fertilizer application and the planting of native plant materials to lessen the amount of turf area requiring mowing and the application of chemicals. Annual Reports will discuss the actions taken to implement this policy with an estimate of fertilizer and turf reduction.

(ii) For waters for which Bacteria is a Stormwater Pollutant of Concern:

On North Branford-owned or -operated lands with a high potential to contribute bacteria (such as dog parks, parks with open water, sites with failing septic systems), North Branford will develop, fund, implement, and prioritize a retrofit or source management program to correct the problem(s) within a specific timeframe. Annual Reports will identify problem areas for which a retrofit or source management program were developed, the location of the closest outfall monitored in accordance with Section 6(i), the cost of such retrofit or program, and the anticipated pollutant reduction. On North Branford-owned or -operated lands, North Branford will prohibit the feeding of geese or waterfowl and implement a program to manage geese and waterfowl populations. Annual Reports will discuss the actions taken to implement this program.

Pollution prevention/ good housekeeping schedule

BMP	Lead department / individual	Month / year of implementation	Measurable goal
Develop/implement formal employee training program	Engineering, Public Works/Town Engineer, PW Director	July 1, 2017	Provide training sessions (3)
Implement MS4 property and operations maintenance	Public Works/Public Works Director	July 1, 2017	Commence maintenance
Implement coordination with interconnected MS4s	Public Works/Public Works Director	July 1, 2017	Coordination with others, if applicable
Develop/implement program to control other sources of pollutants to MS4	Engineering, Public Works/Town Engineer, PW Director	July 1, 2017	Develop written program
Evaluate additional measures for discharges to impaired waters	Engineering/Town Engineer	July 1, 2017	Identify measures
Track projects the disconnect DCIA	Engineering/Town Engineer	July 1, 2017	# projects disconnected
Develop/implement infrastructure repair/rehab program	Public Works	July 1, 2017	Track infrastructure repair/rehab
Develop/implement plan to identify/prioritize retrofit projects	Public Works/Engineering	July 1, 2020	Develop plan

Develop/implement street sweeping program	Public Works	July 1, 2017	Develop program
Develop/implement catch basin cleaning program	Public Works	July 1, 2017	Develop program
Develop/implement snow management practices	Public Works	July 1, 2017	Develop program

Outfall Monitoring

Town of North Branford will monitor and investigate all MS4 outfalls that discharge to impaired waterbodies by the end of the permit term. Using the outfall inventory developed under the IDDE minimum control measure, North Branford will identify which outfalls discharge to impaired waters and screen them for the specific impairments.

Once half of all outfalls discharging to impaired waterbodies have been screened, the 6 outfalls contributing the highest level of pollutants will be identified and screened on an annual basis.

Based on the screening results, North Branford will investigate the drainage areas of outfalls that are contributing to the impairment. The investigations may consider land use or development patterns, business or commercial activities, industrial activities, DCIA, natural contributors, MS4 maintenance issues, residential activities, or anything else potentially contributing to the source of the impairment.

Based on results of the drainage area investigations, North Branford will implement measures to address sources of the impairments including the specific impaired waters provisions described within the permit control measures.

Plan Amendments

North Branford will amend the SMP whenever:

- (1) there is a change which has the potential to cause pollution of the waters of the state; or
- (2) the actions required by the Plan fail to prevent pollution of the waters of the state or fail to otherwise comply with any other provision of this general permit; or
- (3) the Commissioner requests modification of the Plan.

Stormwater Management Plan Signatures

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

_____	_____	_____
Chief Elected Official/ Principal Executive Officer	Title	Date
_____	_____	_____
Principal plan preparer	Title	Date

Stormwater Management Plan Engineering Certification

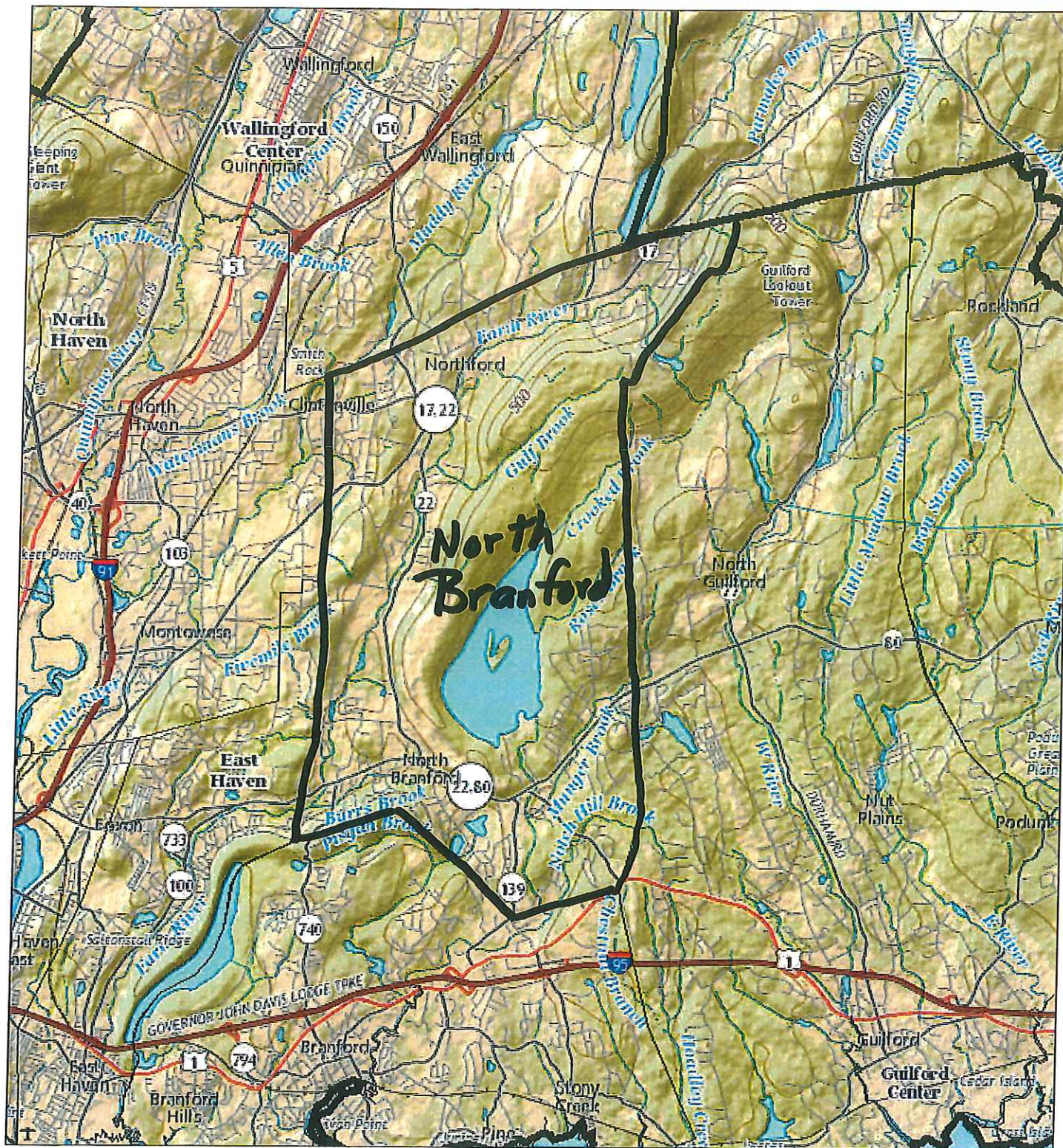
"I hereby certify that I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, submitted to the Commissioner by [INSERT NAME OF REGISTRANT] for an activity located at or within [NAME OF MUNICIPALITY OR ADDRESS OF THE REGISTERED ACTIVITY] and that all terms and conditions of the general permit are being met for all discharges which have been created, initiated or maintained and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 3(b)(8)(B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Connecticut General Statutes, as amended by Public Act 12-172. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

Name

Title

Company

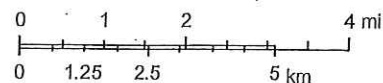
Date



February 13, 2017

1:144,448

- Councils of Government
- CT Town Boundaries
- 1x1 Degree labels
- 30x60 Minute (1:100K) Index
- 15 Minute (1:63K) Index
- 7.5 Minute (1:24K) Index
- 3.75 Minute Index
- 1x1 Degree Index



U. S. Geological Survey - National Geospatial Program
 Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the
 GIS user community
 USGS The National Map: National Boundaries Dataset, National Elevation
 Dataset, Geographic Names Information System, National Hydrography

Fig. 1

Web AppBuilder for ArcGIS