

TOWN OF BETHEL CONNECTICUT



STORMWATER MANAGEMENT PLAN

July 2017

This plan is based on a template originally created by Western Connecticut Council of Governments staff and modified for statewide use by staff from UConn Center for Land use Education and Research (CLEAR).

Contents

INTRODUCTION	3	6.2 IMPLEMENT MS4 PROPERTY AND OPERATIONS MAINTENANCE	18
SMP STRUCTURE.....	3	(i) Parks and open space.....	18
AREA SUBJECT TO THE PLAN.....	3	(ii) Pet waste management	19
SMP DEVELOPMENT.....	3	(iii) Waterfowl management	19
DESCRIPTION OF MUNICIPALITY	3	(iv) Bethel Buildings and facilities (schools under the jurisdiction of Bethel, town offices, police and fire stations, pools, parking garages and other Bethel-owned or operated buildings or utilities).....	19
(1) PUBLIC EDUCATION AND OUTREACH	6	(v) Vehicles and Equipment	20
1.1 IMPLEMENT PUBLIC EDUCATION PROGRAM	6	(vi) Leaf Management	20
1.2 ADDRESS EDUCATION AND OUTREACH FOR POLLUTANTS OF CONCERN	7	6.3 IMPLEMENT COORDINATION WITH INTERCONNECTED MS4S	20
(2) PUBLIC INVOLVEMENT AND PARTICIPATION	8	6.4 DEVELOP AND IMPLEMENT A PROGRAM TO CONTROL OTHER SOURCES OF POLLUTANTS TO THE MS4.....	20
2.1 COMPLY WITH PUBLIC NOTICE REQUIREMENTS FOR THE STORMWATER MANAGEMENT PLAN AND ANNUAL REPORTS.....	8	6.5 EVALUATE ADDITIONAL MEASURES FOR DISCHARGES TO IMPAIRED WATERS 20	
(3) ILLICIT DISCHARGE DETECTION AND ELIMINATION	9	(i) For waters for which Bacteria is a Stormwater Pollutant of Concern:	20
3.2 DEVELOP LIST AND MAP OF ALL MS4 OUTFALLS AND INTERCONNECTIONS IN PRIORITY AREAS	9	6.6 TRACK PROJECTS THAT DISCONNECT DCIA.....	20
3.3 DEVELOP CITIZEN REPORTING PROGRAM.....	10	6.7 DEVELOP AND IMPLEMENT AN INFRASTRUCTURE REPAIR, REHABILITATION AND RETROFIT PROGRAM	21
3.4 ESTABLISH LEGAL AUTHORITY TO PROHIBIT ILLICIT DISCHARGES	10	6.8 DEVELOP AND IMPLEMENT PLAN TO IDENTIFY AND PRIORITIZE RETROFIT PROJECTS.....	21
3.5 DEVELOP RECORD KEEPING SYSTEM FOR IDDE TRACKING	10	6.9 DEVELOP AND IMPLEMENT STREET SWEEPING PROGRAM	21
3.6 ADDRESS IDDE IN AREAS WITH POLLUTANTS OF CONCERN	10	6.10 DEVELOP AND IMPLEMENT CATCH BASIN CLEANING PROGRAM... ..	22
3.7 DETAILED MS4 INFRASTRUCTURE MAPPING	11	6.11 DEVELOP AND IMPLEMENT SNOW MANAGEMENT PRACTICES	22
(4) CONSTRUCTION SITE STORMWATER RUNOFF CONTROL.....	13	(i) Deicing Material Management	22
4.1 IMPLEMENT, UPGRADE AND ENFORCE LAND USE REGULATIONS TO MEET REQUIREMENTS OF MS4 GENERAL PERMIT.....	13	(ii) Snow and Ice Control Practices	22
4.2 DEVELOP AND IMPLEMENT PLAN FOR INTERDEPARTMENTAL COORDINATION OF SITE PLAN REVIEW AND APPROVAL	14	OUTFALL MONITORING.....	24
4.3 REVIEW SITE PLANS FOR STORMWATER QUALITY CONCERNS	14	PLAN AMENDMENTS.....	24
4.4 CONDUCT SITE INSPECTIONS	14	STORMWATER MANAGEMENT PLAN SIGNATURE.....	25
4.5 IMPLEMENT PROCEDURE TO ALLOW PUBLIC COMMENT ON SITE DEVELOPMENT	14	STORMWATER MANAGEMENT PLAN ENGINEERING CERTIFICATION.....	26
4.6 IMPLEMENT PROCEDURE TO NOTIFY DEVELOPERS ABOUT DEEP CONSTRUCTION STORMWATER PERMIT	14	TOWN OF BETHEL – URBANIZED AREA.....	27
(5) POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT OR REDEVELOPMENT	16	TOWN OF BETHEL – IMPAIRED WATERBODIES.....	28
5.1 UPDATE GUIDELINES REGARDING LID AND RUNOFF REDUCTION IN SITE DEVELOPMENT PLANNING	16		
5.2 IMPLEMENT LONG-TERM MAINTENANCE PLAN FOR STORMWATER BASINS AND TREATMENT STRUCTURES	17		
5.3 DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA) MAPPING.....	17		
5.4 ADDRESS POST-CONSTRUCTION ISSUES IN AREAS WITH POLLUTANTS OF CONCERN	17		
(6) POLLUTION PREVENTION / GOOD HOUSEKEEPING ..	18		
6.1 DEVELOP AND IMPLEMENT FORMAL EMPLOYEE TRAINING PROGRAM	18		

Introduction

This Stormwater Management Plan (SMP) was developed by the Town of Bethel 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 and a map of Bethel's impaired waterbodies.

Area Subject to the Plan

The measures identified in this SMP will be applied throughout the boundaries of the Town of Bethel 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

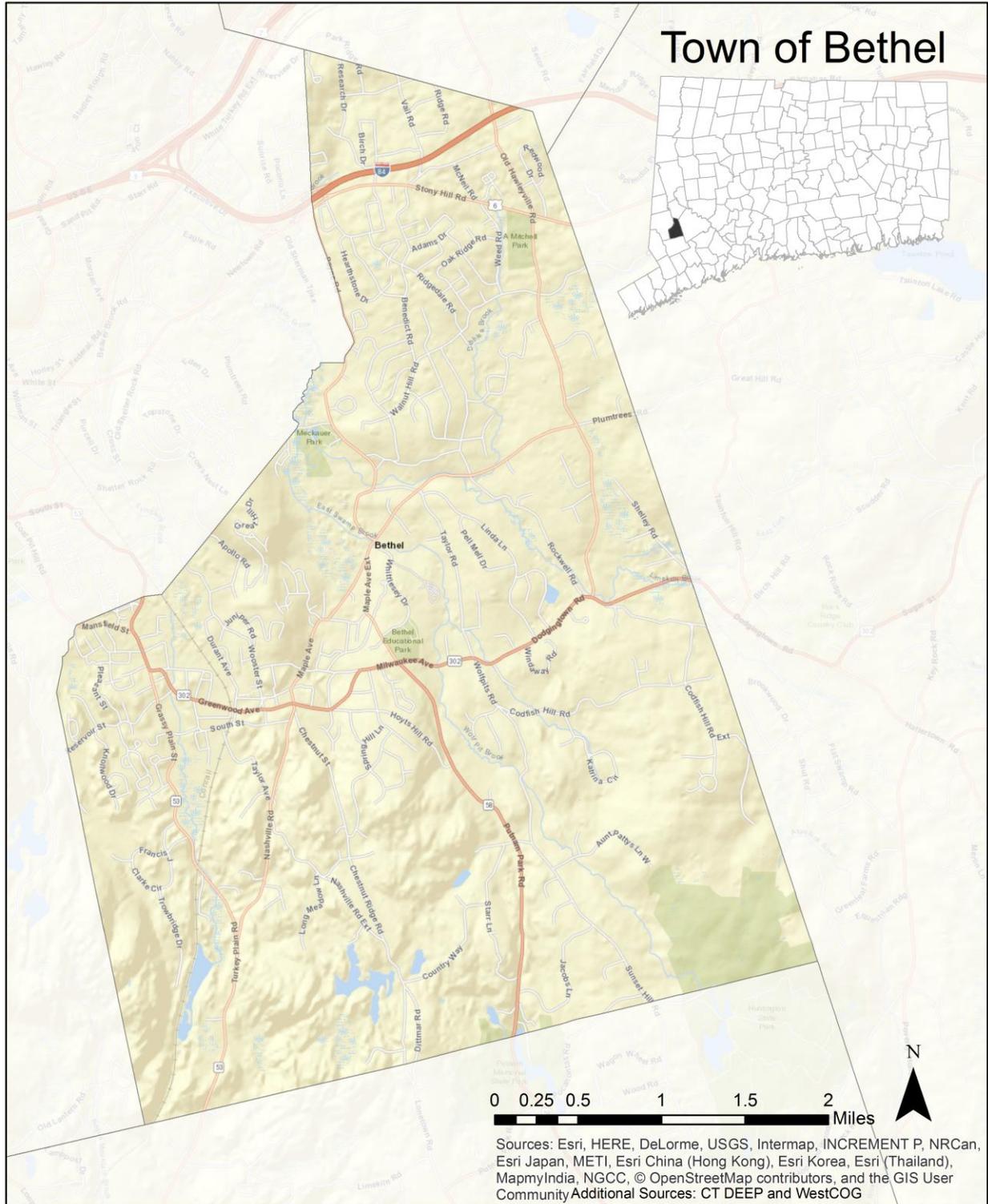
A stormwater committee led by the Public Works Department and including representatives from planning, inland wetlands and watercourses agency, and zoning enforcement was assembled to coordinate the development and implementation of the SMP. The SMP's implementation will be tracked and documented in 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.

Description of Municipality

The operator of the MS4 is the Town of Bethel. The Town of Bethel is a public entity located in the county of Fairfield, State of Connecticut. The Town of Bethel covers an area of approximately 16.91 square miles, located in Western Connecticut as shown in Figure 1.

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

Figure 1



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 Bethel, CT			
Drainage Basin Number	Name	Surface Water Quality Classification	Impaired per Water Quality Standards
6018	Pond Brook	A	NO
6600	Still River	A	NO
6604	Sympaug Brook	A	NO
6605	East Swamp Brook	A	YES
6606	Limekiln Brook	A	YES
7200	Saugatuck River	A	NO
7201	Little River	A	NO
7202	Aspetuck River	A	NO

TABLE 2 Town Impaired Waterbody						
Waterbody ID	Water Segment Description	Water Segment Length	Impaired Use	Pollutant	Cause/Potential Source	TMDL
East Swamp Brook	From mouth at confluence with Limekiln Brook (DS of Shelter Rock Road crossing), US to confluence with Wolf Pit Brook (DS of Taylor Road crossing), Bethel.	2.34 Miles	Recreation	Escherichia Coli (E. Coli)	Nuisance wildlife/pets	Still River Regional Basin E.Coli TMDL
Limekiln Brook	From Shelter Rock Road crossing (first road crossing, above landfill), Bethel, US to headwaters (just US of Poverty Hollow Road crossing), Newtown.	6.04 Miles	Recreation	Escherichia Coli (E. Coli)	Nuisance wildlife/pets	Still River Regional Basin E.Coli TMDL

The surface water classifications currently assigned to the Town of Bethel's 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.

Aquifer Protection Areas

Aquifer Protection Areas, as defined in the Connecticut General Statutes, are areas designated around the state's active public drinking water well fields in sand and gravel aquifers that serve more than 1,000 people. Two mapped Level A Aquifer Protection Areas are located within the Town of Bethel. The implementation of this SWMP for any part of the MS4 located within an aquifer protection area will comply with regulations adopted pursuant to section 22a-354i of the Connecticut General Statutes. For any activity regulated pursuant to sections 8(c) and 9(b) of the Aquifer Protection Regulations (section 22a-354i(1)-(10) of the Regulations of Connecticut State Agencies), stormwater runoff generated from the MS4 will be managed in a manner so as to prevent pollution of groundwater (see Appendix C of the General Permit).

(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 Bethel'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

Bethel 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.

Bethel will maintain their own or link to UConn NEMO's comprehensive online library of stormwater educational material. The Bethel website (bethel-ct.gov) will link directly to this web-based library and

promote the availability of these materials. WestCOG will host town specific sites with educational materials associated with the community. Link will be posted on the Town of Bethel website. Planning & Zoning will include certain outreach material to site plan review checklist. The Town of Bethel will also provide materials in a printed format to be on display in public locations within the town hall and a public library.

Additional targeted outreach efforts will be completed by several town departments to educate [K-12 students, agricultural operators, commercial businesses, developers, and homeowners] on particular aspects of stormwater management.

The Town of Bethel will coordinate with the proper organizations 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

Bacteria is the primary stormwater pollutant of concern for water quality impairments in Bethel and is therefore the focus of the Town’s education and outreach efforts, as well as other aspects of the Town’s stormwater management program.

Bethel 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 or have existed in the Town of Bethel. Currently the Town of Bethel is only having an issue with Bacteria impairing the waterbodies. But will leave in the SMP for future reference.

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	Date of Implementation	Measurable Goal
Implement public education program	Public Works	July 1, 2018 and continue until permit expires	Develop and distribute handouts and publications to educate the general public and increase their awareness regarding the effects

			of polluted stormwater on the environment and necessity of a stormwater quality management program.
Address education/outreach for pollutants of concern	Public Works	July 1, 2018 and continue until permit expires	Target residents and businesses with appropriate informational materials on potential stormwater impacts of improper waste disposal and illegal discharges.

(2) Public Involvement and Participation

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

<p>Goals:</p> <ul style="list-style-type: none"> • 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

Bethel will publish a public notice on its website (bethel-ct.gov) and an article in the Penny Saver. 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 web (bethel-ct.gov) and in Bethel Town Hall. The public notice will allow for a 30-day comment period, at a minimum.

Public involvement and participation schedule

BMP	Lead Department	Date of Implementation	Measurable Goal
Comply with public notice requirements for the SMP and Annual Reports	Public Works	July 1, 2017 and continue until permit expires	Include the public in the development, implementation and review of the SMP and Annual Reports.

(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 Bethel'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

Bethel will develop a written IDDE plan to detect, locate and eliminate illicit discharges (to the maximum extent practicable) from the MS4 within Bethel'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

Bethel will work with UConn CLEAR to develop 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
- c. Surface Water Quality Classification of the immediate surface waterbody or wetland to which the stormwater runoff discharges;
- d. 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;
- e. 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;
- f. 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.

Town will input all information regarding future construction projects with outfalls into a GIS based database updated by the Town of Bethel.

3.3 Develop citizen reporting program

Bethel will establish a system to allow for citizen reporting of suspected illicit discharges into the stormwater system through our GIS database to input all citizen complaints and concerns. The system will include a phone number, address, complaint or other means for submitting a report. Bethel will affirmatively investigate and eliminate any illicit discharges for which a time and location of discharge are provided. Bethel will promptly inspect the reported outfall or manhole and proceed according to the requirements of the written IDDE program. All citizen reports and responses will be included in Bethel's annual report.

3.4 Establish legal authority to prohibit illicit discharges

Bethel has several legal authorities including the rules and regulations of Inland Wetlands Commission, Planning & Zoning Commission, Fire Marshalls Office and the Aquifer Protection Agency 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; 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;

3.5 Develop record keeping system for IDDE tracking

Bethel 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, Bethel will develop and maintain a Sanitary Sewer Overflow 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

Bethel 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 Health Department for corrective action.

3.7 Detailed MS4 infrastructure mapping

Bethel will develop 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 (if available);
 - Municipal combined sewer system (if applicable).

Bethel 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	Date of Implementation	Measurable Goal
Develop written IDDE program	Public Works	July 1, 2018	Develop and implement plan.
Develop list and maps of all MS4 stormwater outfalls in priority areas	Public Works	July 1, 2019	Develop a map that shows the locations and designation of the storm sewer outfalls, inlets and receiving State waters. Identify, locate and eliminate illicit discharges to the stormwater sewer system.
Develop citizen reporting program	Public Works	July 1, 2018	Develop and implement GIS based reporting program to better see problem areas.
Establish legal authority to prohibit illicit discharges	Public Works	July 1, 2018	Make sure that all parties are involved in any illicit discharge problems and make sure staff knows the proper procedure should a problem arise.
Develop record keeping system for IDDE tracking	Public Works	July 1, 2017	Develop and implement GIS based reporting program to better see problem areas.

Address IDDE in areas with pollutants of concern	Public Works	July 1, 2017	Develop and implement GIS based reporting program to better see problem areas.
Detailed MS4 infrastructure mapping	Public Works	July 1, 2020	Develop a map that shows the locations and designation of the storm sewer outfalls, inlets and receiving State waters. Identify, locate and eliminate illicit discharges to the stormwater sewer system.
Complete list and maps of all MS4 stormwater outfalls throughout municipality	Public Works	July 1, 2022	Work with all proper parties including but not limited to WestCOG and UConn CLEAR to reach the mapping goals.

(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 Bethel, this is determined on a site by site basis OR collectively as part of a larger plan.

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

Bethel 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 Bethel;
- c. Bethel 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 Bethel'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 Bethel 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 Bethel's MS4 including short-term and long-term inspection and maintenance measures to be implemented by the private owner; and
- e. Bethel 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

Bethel'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:

The Land Use Department accepts proposed applications for Land Use disturbances and refers these items to all Departments for review including but not limited to Public Works (Highway & Engineering), Public Utilities Commission, Fire Marshall and Health Department. Permits are to not be issued until all issues involving other agencies have been resolved.

4.3 Review site plans for stormwater quality concerns

Bethel 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. Bethel 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

Bethel 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

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

Under state statutes governing Inland Wetlands Commission, Planning & Zoning and Aquifer Protection Agency's along with local governing regulations public hearings are held on the majority of applications for development. Public comment is allowed and encouraged at all Land Use meetings as a listed item on all agendas.

4.6 Implement procedure to notify developers about DEEP construction stormwater permit

Bethel 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 Bethel MS4. Bethel 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:

Bethel will inform developers (working with the municipality) 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 Stormwater 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	Date of Implementation	Measurable Goal
Implement, upgrade and enforce land use regulations to meeting MS4 permit requirements	Planning & Zoning	July 1, 2019	Planning & Zoning will incorporate and expand LID regulations and BMPs in their regulations.
Develop/implement plan for interdepartmental coordination in site plan review and approval	Planning & Zoning	July 1, 2017	Revise and update existing paperwork to promote a good tracking system of communication.
Review site plans for stormwater quality concerns	Engineering	July 1, 2017	Engineer will continue to review site plans per DEEP regulations.
Conduct site inspections	Engineering	July 1, 2017	Engineer will continue to conduct site inspections per DEEP regulations.
Implement procedure to allow public comment on site development	Land Use	July 1, 2017	Continue to promote existing public comment.
Implement procedure to notify developers about DEEP construction stormwater permit	Land Use	July 1, 2017	The Land Use Department will make this part of the site plan application.

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

This minimum control measure outlines Bethel'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 Update guidelines regarding LID and runoff reduction in site development planning

Bethel will update existing the legal authority by ordinance, bylaw, 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 town'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 a mitigation project on another property or pay a fee to fund a DCIA retrofit.

In developing this legal authority, Bethel 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, Bethel will review its current regulations - site planning requirements, zoning regulations, street design regulations, and infrastructure specifications with minimum size 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

Bethel 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

Bethel 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, Bethel 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	Date of Implementation	Measurable Goal
Establish or update legal authority and guidelines regarding LID and runoff reduction in site development planning	Land Use	July 1, 2021	To become more explicit through regulations and examples of good LID development.
Enforce LID/runoff reduction requirements for development and redevelopment projects	Land Use/ Engineering	July 1, 2021	Work with Engineer to develop a plan of action for noncompliance.

Complete DCIA mapping	Public Works	July 1, 2020	With guidance from UConn CLEAR create DCIA mapping.
Address post-construction issues in areas with pollutants of concern	Engineering	July 1, 2019	Engineer will give all information over to individual parties so proper departments can track findings to report.

(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.

Bethel 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

Bethel will continue or establish 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. Training will be administered through the Department of Public Works.

6.2 Implement MS4 property and operations maintenance

Bethel -owned or -operated properties, parks, and other facilities that are owned, operated, or otherwise the legal responsibility of the Town of Bethel and 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

Bethel 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).

Bethel will establish practices for the proper disposal of grass clippings and leaves at Bethel -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

Bethel 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, Bethel will, implement targeted management efforts such as public education and enforcement (e.g. increased patrol for violators).

In Bethel-owned recreational areas where dog walking is allowed, Bethel will install educational signage, pet waste baggies, and disposal receptacles (or require carry-out).

Bethel will document its efforts in its annual reports. Bethel 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

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

To raise awareness regarding the water quality impacts, Bethel 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.

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

Bethel 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

Bethel will:

- establish procedures for the storage of Bethel-owned or -operated vehicles;
- require vehicles with fluid leaks to be stored indoors or in contained areas until repaired;
- evaluate fueling areas owned by Bethel and used by Bethel owned or -operated vehicles and if 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

Bethel 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 Bethel. Bethel will continue annual resident leaf pick up.

6.3 Implement coordination with interconnected MS4s

Bethel 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

Bethel 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 **Bacteria** is a Stormwater Pollutant of Concern:

On Bethel-owned or -operated lands with a high potential to contribute bacteria (such as dog parks, parks with open water, sites with failing septic systems), Bethel 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, the cost of such retrofit or program, and the anticipated pollutant reduction. On Bethel-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 that disconnect DCIA

Bethel 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, Bethel 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, Bethel's goal will be to reduce 1% of its total DCIA acreage per year to the maximum extent possible. Bethel will provide updates on this goal in its annual report. Bethel 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

Bethel will begin 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

Bethel 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). Bethel 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

Bethel will implement a program to provide for regular inspection and maintenance of Bethel-owned or -operated streets, parking areas and other MS4 infrastructure. Every road is swept annually. Village area is swept several times per year.

Bethel 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 Bethel to have increased pollutant potential based on the presence of active construction activity or other potential pollutant sources. Bethel 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 Bethel. 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, Bethel 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, Bethel 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. Bethel 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. Bethel 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. Bethel 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

Bethel 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, Bethel will optimize routine cleaning frequencies for particular structures or catchment areas as follows to maintain acceptable sediment removal efficiencies:

- a. Inspect all Bethel-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 Bethel-owned catch basins located near impaired waters and construction activities (roadway construction, residential, commercial, or industrial development or redevelopment). Bethel 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, Bethel will document that finding, investigate the contributing drainage area for sources of excessive sediment loading, and to the maximum extent practicable, abate contributing sources. Bethel will describe any actions taken in its Annual Report.
- e. Bethel 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. Bethel will keep a log of catch basins cleaned or inspected.
- f. Bethel 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

Bethel 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. Bethel uses a sand mixture for ice/snow control during the winter season. Bethel does not use chloride-based or other salts or deicing product.

(ii) Snow and Ice Control Practices

Bethel 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).

Bethel 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. Bethel 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.

Bethel 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. Bethel 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, Bethel 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.

Pollution prevention/ good housekeeping schedule

BMP	Lead Department	Date of Implementation	Measurable Goal
Develop/implement formal employee training program	Public Works	July 1, 2017	Increase town staff awareness of the effects of polluted stormwater on the environment and the necessity of a municipal stormwater management program.
Implement MS4 property and operations maintenance	Public Works	July 1, 2017	Work with Parks & Recreation to make sure they are following guidelines. Provide list of products and materials being used annually.
Implement coordination with interconnected MS4s	Public Works	July 1, 2017	Continue BMP – Speaking with surrounding towns.
Develop/implement program to control other sources of pollutants to MS4	Public Works	July 1, 2017	Use GIS to track different information from the coordinating departments.
Evaluate additional measures for discharges to impaired waters	Public Works	July 1, 2017	Make sure the Town pays attention to what illicit discharges are happening in the Town and make sure that if there is an issue it is handled and reported.
Track projects the disconnect DCIA	Public Works	July 1, 2017	Attempt to reduce percentage of DCIA.

Develop/implement infrastructure repair/rehab program	Public Works	July 1, 2017	Make sure that all town owned buildings, materials and infrastructure is up to date and maintained.
Develop/implement plan to identify/prioritize retrofit projects	Public Works	July 1, 2020	Continue to track problem areas and make lists of any and all infrastructure issues and track them on GIS.
Develop/implement street sweeping program	Public Works	July 1, 2017	Continue with our annual program and go out to streets several times a year as necessary.
Develop/implement catch basin cleaning program	Public Works	July 1, 2017	Working on budget that accepts catch basin cleaning.
Develop/implement snow management practices	Public Works	July 1, 2017	Continue using sand/salt mixture and not using any sort of liquid deicer.

Outfall Monitoring

Town of Bethel 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, Bethel 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, Bethel 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.

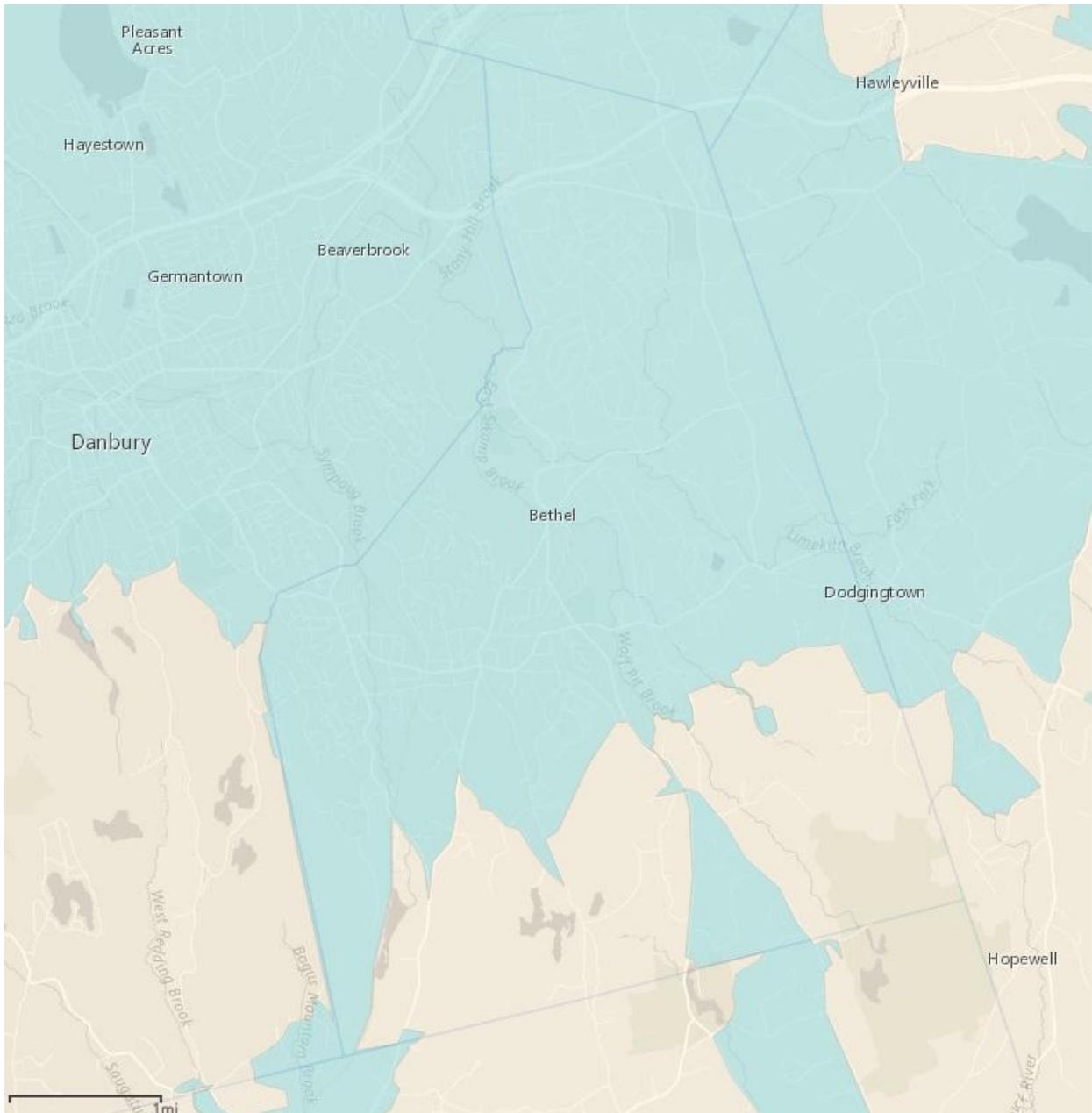
Based on results of the drainage area investigations, Bethel will implement measures to address sources of the impairments including the specific impaired waters provisions described within the permit control measures.

Plan Amendments

Bethel will amend the SMP whenever:

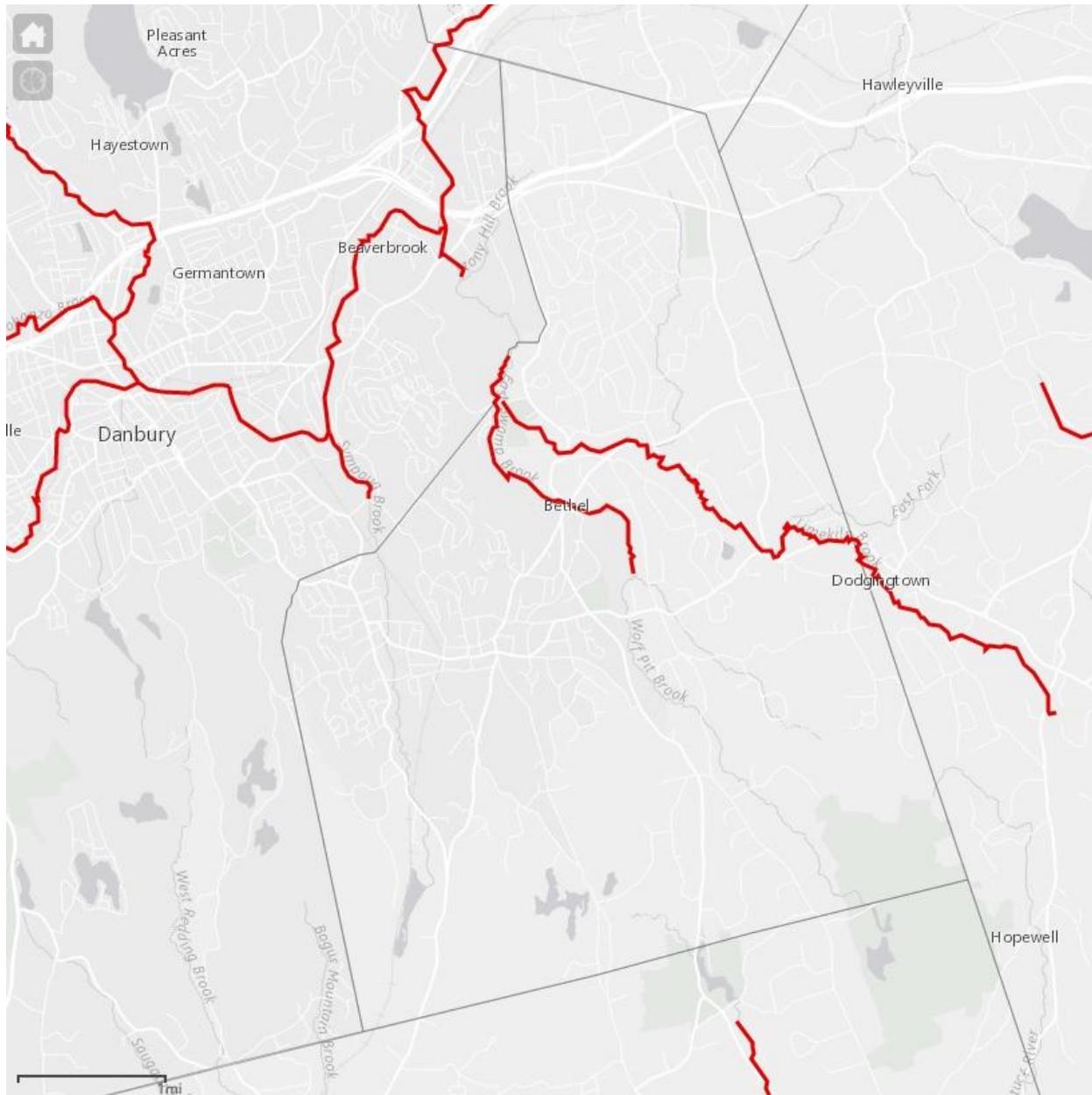
- (1) there is a change which has the potential to cause pollution of the waters of the state; or
- (2) the actions required by the Plan fail to prevent pollution of the waters of the state or fail to otherwise comply with any other provision of this general permit; or
- (3) the Commissioner requests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

Town of Bethel – Urbanized Area



Sources: UConn Nemo – GIS MS4 Map for Connecticut - <http://nemo.uconn.edu/ms4/tools/ms4map.html>

Town of Bethel – Impaired Waterbodies



Sources: UConn Nemo – GIS MS4 Map for Connecticut - <http://nemo.uconn.edu/ms4/tools/ms4map.html>