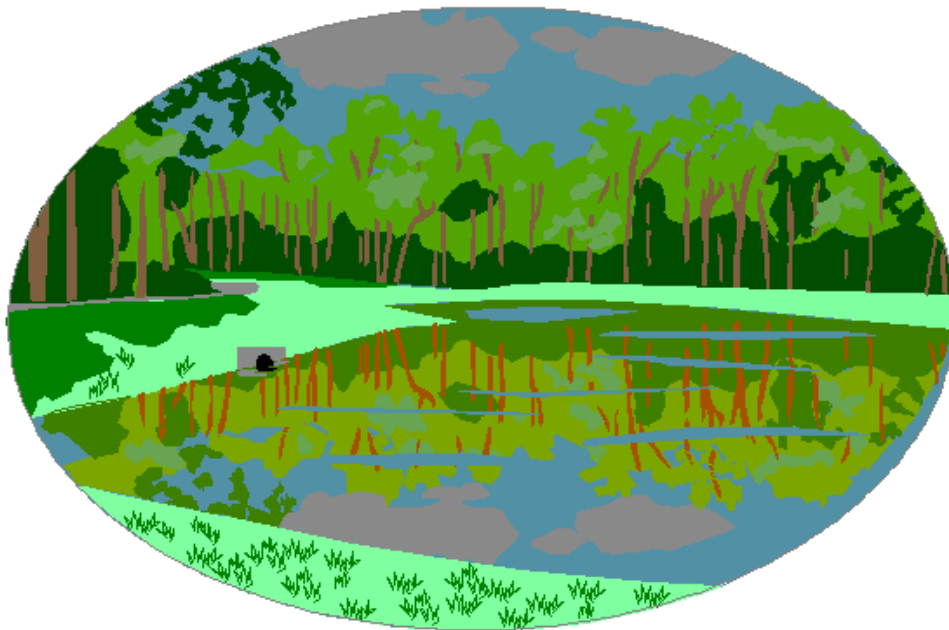


STORMWATER MANAGEMENT PLAN

THOMPSON, CONNECTICUT

July 1, 2017 - June 30, 2022



April 12, 2017

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Introduction

The purpose of this Stormwater Management Plan (SMP) is to identify the goals the Town of Thompson has, and actions or steps it plans to take, to promote and ensure stormwater entering the waters of the state are free from pollution to the maximum extent possible within statutory and constitutional limitations. This SMP is required by the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 GP) issued by the Connecticut Department of Energy and Environmental Protection (DEEP¹) on January 20, 2016 (hereafter referred to as the "2016 MS4 GP"). It uses information gathered on the conditions of its watercourses, their contributing watersheds and the Town's stormwater drainage system to set goals for inventorying, monitoring, maintaining and improving the quality of its stormwater discharges to waters of the state.

Background

The MS4 GP is the product of a mandate by the US Environment Protection Agency (EPA) as part of its Stormwater Phase 2 Rules in 1999 developed pursuant to the Federal Clean Water Act². It was first issued in January 2004 and required towns like Thompson that contained an urbanized area³ to file a registration under that 2004 MS4 GP. As a consequence, Thompson filed a registration for the MS4 GP in 2004 and developed a SMP. Since then the MS4 GP has been reissued and revised several times and now contains increased detail and responsibilities.

Thompson covers an area of 47.0 mi.² with a population of 9,458 (2010 census data) and an overall population density of 190/ mi.². According to the U.S. Census Bureau⁴, the villages of North Grosvenordale and Quinebaug have increased densities of 674 / mi.² and 260.5 / mi.², respectively. Consequently, portions of Thompson were determined to be part of an urbanized area that reached down from Worcester, Massachusetts⁵.

Water Quality and Watersheds in Thompson

Since the passage of the Federal Clean Water Act the DEEP has established water quality standards⁶ and, using those standards, has assessed the water quality of Connecticut waterbodies based on water samples that have been collected from them. Every two years DEEP has issued a report to EPA on its assessment of the water quality of Connecticut waterbodies. The most recent report is entitled "2014 Connecticut Integrated Water Quality Report."⁷

The MS4 GP uses the reported water quality assessments, along with the location of urbanized areas, to set priorities for monitoring and improving water quality from small municipal separate

¹ Formerly known as the Department of Environmental Protection or DEP.

² See <https://www.epa.gov/laws-regulations/history-clean-water-act>.

³ Urbanized areas in Thompson were identified by the U.S. Census Bureau as a result of the 2000 and 2010 census.

⁴ See <https://www.census.gov/prod/cen2010/cph-2-8.pdf>.

⁵ See <https://www2.census.gov/geo/maps/urbanarea/uaoutline/UA2000/ua97291/> for 2000 Worcester Area mapping.

⁶ See http://www.ct.gov/deep/cwp/view.asp?a=2719&q=325618&deepNav_GID=1654%20.

⁷ See http://www.ct.gov/deep/lib/deep/water/water_quality_management/305b/2014_iwqr_305b_303d_final.pdf

storm sewer systems (MS4s) located in the watersheds of waterbodies that are reported to have water quality problems.

To understand the goals of this SMP it is helpful to understand the current status of the water quality for water resources in Thompson. First, surface water resources are identified by their watershed. A watershed is an area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel. The word "watershed" is sometimes used interchangeably with "drainage basin", "basin" or "catchment".

In Connecticut watersheds are identified by a 1 to 7 digit number and frequently a name depending on the watershed's size and location. In Thompson there is one (1) major basin containing three (3) regional basins which collectively contain seven (7) subregional basins. Subregional basins are further divided into many local basins.

The first digit in a basin number designates the major basin; in Thompson there is only one (1) and that being Major Basin #3- Thames River Basin. The first two digits in a basin number designate the regional basin; in Thompson there are three (3) and those are:

Regional Basin # 33 – French River

Regional Basin # 34 – Five Mile River

Regional Basin # 37 – Quinebaug River

The first 4 digits in a basin number designate the subregional basin; in Thompson there are seven (7) and those are:

3300	French River – main stem
3301	Webster Lake / Mill Brook
3400	Five Mile River – main stem
3401	Rocky Brook
3402	Mary Brown Brook
3700	Quinebaug River – main stem
3708	Little River

It is noted that there are no municipal storm drain outfalls that discharge into subregional watersheds # 3301 (Webster Lake/Mill Brook) #3401 (Rocky Brook) and #3402 (Mary Brown Brook).

The water quality of waterbodies (i.e. rivers, streams, brooks, lakes, ponds) in some of these drainage basins have been sampled and some problems have been found over time resulting in portions of these watercourses being designated by DEEP as impaired. When a watercourse has been designated as impaired, it may be assigned a Total Maximum Daily Load (TMDL) for the pollutant causing the impairment. Using the drainage basin number as an identifier the table below contains a listing of waterbodies in Thompson currently listed as impaired or having TMDLs assigned in Thompson.

Waterbody Segment ID & Name	Location	EPA Category / Impaired designated use(s)	Designation status	TMDL & Pollutants of Concern
CT3300-02_01: Long Branch Brook	0.96 miles from inlet Langers Pond (part of French River segment 2) upstream to confluence with Knowlton Brook	Category 4a / recreation	Impaired for <i>Escherichia coli</i>	CT Statewide Bacteria TMDL ⁸ established 9/12/2012, nitrogen, phosphorus
CT3700-00_05: Quinebaug River	3.32 miles from its confluence with the French River in Mechanicsville downstream to just upstream of the Putnam POTW (just upstream of railroad crossing) in Putnam	Category 5 / Recreation, habitat for fish, other aquatic life & wildlife	Impaired for <i>Escherichia coli</i> and causes unknown	None (CT Statewide Bacteria TMDL recommended in 2016 Draft Integrated Water Quality Report) and phosphorus is a pollutant of concern (see Appendix D of MS4 GP), nitrogen
CT3700-00-2+L1_01 West Thompson Lake	189.28 acres	Category 5 / Recreation, habitat for fish, other aquatic life & wildlife	Impaired for excess algal growth (Chlorophyll-a) / nutrient/ eutrophication biological indicators	None, phosphorus is a pollutant of concern (see Appendix D of MS4 GP), nitrogen
CT3708-00_01: Little River (Putnam)	2.64 miles from its confluence with Quinebaug River just downstream of Route 44 crossing in Putnam, upstream to the drinking water watershed boundary in Woodstock	Category 5 / Recreation	Impaired for <i>Escherichia coli</i>	None, phosphorus is a pollutant of concern (see Appendix D of MS4 GP), nitrogen

It is noted that for discharges to the French River watershed (# 3300), only a portion of Long Branch Brook (segment 3300-02_01) is listed as impaired and has a TMDL listed. There are no impaired waters in the Five Mile River watershed (# 3400). The Quinebaug River watershed (#3700) has West Thompson Lake and the lower portions of the Quinebaug River listed as impaired and a TMDL is being recommended for the future. While a portion of the Little River is impaired (segment CT3708-00_01, Putnam), Thompson has no storm drain outfalls in that local watershed (3708-00).

When a waterbody segment has been designated as impaired, the MS4 GP requires that the Town inventory and screen those outfalls in that watershed for the pollutant(s) of concern. Nitrogen and mercury are pollutants of statewide concern and are included as a pollutant of concern for screening purposes.

Mapping of Thompson's Storm Drain Outfalls

As a requirement of the MS4 GP, in 2013 Thompson inventoried, mapped and photographed the storm drain outfalls for its storm drain systems. Of the 154 storm drain outfalls 58 of them are located in the urbanized area identified in 2000. Under the 2016 MS4 GP, Thompson is required to expand the mapping to include information on the location of all pipes, open channel conveyances, catch basins, manhole, inlets and detention basins located in the

⁸ See http://www.ct.gov/deep/lib/deep/water/tmdl/statewidebacteria/swbtml_corefinal.pdf page 22 for Statewide TMDL.

urbanized area and those outfalls with catchment areas with either a directly connected impervious area (DCIA) of greater than 11% or which discharge to an impaired water.

Comparing the 2000 urbanized area maps with the impervious cover maps found on pages 33 and 36 of the DEEP's document entitled "Tier 1 Municipality Fact Sheets"⁹, it has been determined that all of Thompson's MS4s with DCIAs of greater than 11% are located within the urbanized area. All other DCIAs are either associated with state owned MS4s or are privately owned. Therefore, no expanded mapping is proposed to occur outside of the urbanized area until such time that new information shows this position to be in error.

Stormwater Management Plan Contents

This SMP outlines the best management practices (BMPs) Thompson plans to implement to address the six minimum control measures identified in Section 6 of the 2016 MS4 GP from July 1, 2017 through June 30, 2022 while the MS4 GP is effective in an effort to reduce the discharge of pollutants from its MS4 to the maximum extent practicable and to protect water quality. These control measures are:

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

Acronyms and Abbreviations

SSO – Sanitary Sewer Outflow

CIP – Catchment Investigation Procedure

MS4 – Municipal Separate Storm Sewer System

SVF – System Vulnerability Factor

IDDE- Illicit Discharge Detection Elimination

TMDL- Total Maximum Daily Load

BMP – Best Management Practice

MCM – Minimum Control Measure

LID – Low Impact Development

DCIA – Directly Connected Impervious Area – the impervious area from which stormwater runoff discharges directly to waters of the state or directly to a storm sewer system

WQV – Water Quality Volume – volume of runoff generated by one inch of rainfall on a site in accordance with the formula in the Connecticut Stormwater Quality Manual

Urbanized Area – the areas of the State of Connecticut so defined by the U.S. Census Bureau for the 2000 or 2010 census

Stormwater Pollutant of Concern – phosphorus, nitrogen, bacteria, mercury

⁹ See pages 25 to 34

http://www.ct.gov/deep/lib/deep/water_regulating_and_discharges/stormwater/municipal/townfs/suffield_watertown_tier1.pdf.

MCM 1 - Public Education and Outreach

Goals

- To raise awareness that polluted stormwater runoff is the most significant source of water quality problems;
- To motivate residents to use Best Management Practices (BMPs) which reduce polluted stormwater runoff; and
- To reduce polluted stormwater runoff as a result of increased awareness and utilization of BMPs.

BMP 1-1 Initial Implementation of Public Education Program¹⁰

Thompson will use the materials developed under the 2004 MS4 permit and update or modify as necessary and may include materials which become available at the DEEP stormwater webpage and UConn's NEMO site. A link to these materials will be placed on the Town's website.

Specific areas to be targeted include:

1. Pet waste
2. Septic systems
3. Fertilizer, pesticide and herbicide application
4. Discharge of sediment from construction sites
5. Impacts of illicit discharges and impervious cover
6. Impacts and available recycling programs for thermometers, thermostats, fluorescent lights and button cell batteries
7. Grass clippings and leaf management
8. Detergent use
9. Discharge of sediment (to which phosphorus binds) from construction sit2

BMP 1-2 Review of links to BMP1-1

BMP	Type of Action	Responsible Party	Measurable Goal	Deadline for Action
BMP 1-1	Initial Imp	DPW	Links placed	July 1, 2017
BMP 1-2	Review of links	DPW	Links reviewed	Every December, prior to annual notice posting required by MCM 2

¹⁰ See Section 6(a)(1) beginning on page 19 of 50 of the 2016 MS4 GP

MCM 2 - Public Involvement/Participation¹¹

Goal

- To involve the community in both the planning and implementation process of improving water quality.

BMP 2-1 Publish Initial Public Notice

Thompson will publish a notice on its website, or in The Thompson Villager to inform the public of the Stormwater Management Plan (SMP) and the Annual Report. The notice will provide a contact name (phone number, address and email) to whom the public can send comments and a publicly accessible location or URL where the SMP and Annual Report are available for public review.

BMP 2-2 Publish Annual Public Notice

Thompson will publish a notice annually on its website, or in The Thompson Villager to inform the public of the Stormwater Management Plan and the Annual Report. The notice will provide a contact name (phone number, address and email) to whom the public can send comments and a publicly accessible location or URL where the SMP and Annual Report are available for public review.

BMP	Type of Action	Responsible Party	Measurable Goal	Deadline for Action
BMP 2-1	Initial Notice	First Selectman	Notice placed	ASAP
BMP 2-2	Annual Notice	First Selectman	Notice placed	January 15 th of each year

¹¹ See Section 6(a)(2) page 21 of 50 of the 2016 MS4 GP

MCM 3 - Illicit Discharge Detection & Elimination¹²

Goals

- To identify and prioritize areas for investigation of potential illicit discharges that contribute to violations of Connecticut's Water Quality Standards;
- To develop a process that identifies and causes the elimination of such illicit discharges within existing statutory authority and constitutional limitations; and
- To educate the public as to how they can participate to prevent and eliminate such illicit discharges.

BMP 3-1 Develop Expanded 2013 MS4 Maps and Inventory

BMP 3-1a Using the existing outfall data, delineate on the outfall maps and identify in the outfall inventory spreadsheet all outfalls located within:

- (1) the 2000 UA as identified by the U.S. Census Bureau, and
- (2) the watersheds of impaired waters and waters with TMDLs as identified in the most recent Connecticut Integrated Water Quality Report adopted by the DEEP.

BMP 3-1b Update the outfall maps and inventory to include any outfalls and data previously missed in the initial inventory and any interconnections to state owned MS4s for the following state facilities: Route 12 (Riverside Drive), Route 21 (County Home Road), Route 131 (Quinebaug Road), Route 193 (Thompson Road), Route 200 (Quaddick Road) and associated DOT maintenance facility, Route 438 (Quaddick Town Farm Road) and I-395.

BMP 3-1c For all MS4 outfalls located within the UA and/or that discharge to impaired waters, modify the outfall maps and inventory to include information on the location of all MS4: pipes, open channel conveyances, catch basins, manholes, inlets, detention basins and an indication as to what, if any, repairs are needed.

BMP 3-1d For all MS4 outfalls located within the UA and/or that discharge to impaired waters:

- (1) delineate the contributing drainage area to the MS4;
- (2) map the impervious areas that directly connect (i.e. DCIA) to each MS4¹³;
- (3) determine the extent of the DCIA in each contributing drainage area; and
- (4) record in the inventory the contributing drainage acreage and the % of the DCIA for each MS4 outfall.

BMP 3-2 Develop Written IDDE Program

BMP 3-2a Citizen reporting

- (1) Produce and post on Thompson's webpage a citizen's reporting form; and
- (2) Develop a method for tracking citizen's complaints, subsequent investigations and actions taken.

¹² See Section 6(a)(6) beginning on page 22 of 50 and Appendix B of the 2016 MS4 GP

¹³ DCIA does not include isolated impervious areas with an indirect hydraulic connection to the MS4 or that otherwise drain to a pervious area, nor swimming pools or the surface area of natural waterbodies and wetlands.

BMP 3-2b Review existing authorities available to eliminate illicit discharges and identify the enforcement mechanism(s) available or to be established and taken to abate illicit discharges found within existing statutory authorities and constitutional limitations. Document actions taken.

BMP 3-2c Utilizing the data collected from BMP 3-1, develop an outfall screening program and illicit discharge detection protocol that includes:

- (1) assessing illicit discharge potential and priority ranking based on existing information and identify outfall sampling priorities;
- (2) establishing procedures for wet and dry weather sample collection, use of field kits, storage and conveyance of samples;
- (3) identify sample analysis requirements including those for stormwater pollutants of concern;
- (4) develop a catchment investigation procedure as identified beginning on Page 9 of Appendix B of the MS4 GP; and
- (5) develop employee training and recordkeeping protocols.

BMP 3-3 Indicators of Program Progress

Thompson will describe the indicators for tracking program progress in its annual report.

BMP 3-4 Inventory and Address Sanitary Sewer Overflows

All known locations where sanitary sewer overflows have discharged to the MS4 within the previous five years as required by Appendix B of the 2016 MS4 GP.

BMP 3-5 Employee Training

Using the written IDDE Program, provide training to Public Works Department employees on how recognize and report illicit discharges and sanitary sewer overflows.

BMP 3-6 Document actions taken for MS4 GP Annual Report.

BMP	Type of Action	Responsible Party	Measurable Goal	Deadline for Action
BMP 3-1	Updated maps & spread sheet(s)	First Selectman	Document production	July 1, 2020
BMP 3-1a	UA, impaired waters & TMDL watersheds	First Selectman	Document production	July 1, 2018
BMP 3-1b	Interconnections with state MS4s identified/mapped	First Selectman	Document production	July 1, 2018
BMP 3-1c	Detailed priority MS4 mapping	First Selectman	Document production	July 1, 2019
BMP 3-1d	DCIA mapping & assessments	First Selectman	Document production	July 1, 2020
BMP 3-2	Written IDDE program	Public Works Dept.	Posting of document on Thompson's webpage	July 1, 2018
BMP 3-2a	Citizen reporting form & recording	First Selectman	Posting of reporting form and instruction and Thompson webpage	July 1, 2018

BMP	Type of Action	Responsible Party	Measurable Goal	Deadline for Action
BMP 3-2b	Legal authority assessment & adjustments	First Selectman	Verification by legal counsel on course of action	July 1, 2018
BMP 3-2c	Outfall screening protocols	Public Works Dept.	Document production	July 1, 2018
BMP 3-3	Indicators of program progress	Public Works Dept.	Documentation in Annual Report	Annually beginning July 1, 2018
BMP 3-4	Inventory SSO past 5 years	Public Works Dept.	Documentation in Annual Report	October 29, 2017
BMP 3-5	Employee Training	Public Works Dept.	Documentation in Annual Report	To be determined
BMP 3-6	Documenting of actions taken	Public Works Dept.	Posting of annual Report on Thompson's webpage	Annually beginning January 31, 2018

MCM 4 - Construction Site Stormwater Runoff Control

Goals

- To implement and enforce a program to control stormwater discharges to its MS4 associated with land disturbance or development activities with more the 1 acre of soil disturbance.

BMP 4-1 Legal Authority¹⁴

BMP 4-1a Conduct and document a review of existing road ordinances, planning and zoning regulations and inland wetlands and watercourse regulations, along with any respective standard conditions of approval, and determine in light of statutory and constitutional limitations if those regulations are adequate to ensure:

- (1) Developers, construction site operators or contractors are required to maintain consistency with the current 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, 2004 Connecticut Stormwater Quality Manual, and all stormwater permits issued by DEEP;
- (2) Thompson's regulating authorities have the ability to require additional measures to protect/improve water quality as deemed necessary by that regulating authority;
- (3) Thompson's regulating authorities have the right to carry out all inspections, surveillance and monitoring procedures necessary to determine compliance with the respective regulating authority's regulations related to the management of Thompson's MS4;
- (4) Thompson's regulating authority has the ability to require site owners seeking development approval to provide to the respective regulating authority and comply with a long term maintenance plan and schedule to ensure the performance of privately owned stormwater treatment systems that discharge to or receive discharge from a Thompson MS4; and
- (5) Thompson has the authority to enter into interagency or inter-jurisdictional agreements to control the contribution of pollutants between Thompson's MS4 and MS4s owned by other towns or the State of Connecticut.

BMP 4-1b Upon completion of the review referenced above the Board of Selectmen, Planning and Zoning Commission and/or Inland Wetlands Commission will take such actions necessary to amend the ordinance(s) or respective regulations to correct any deficiencies identified based on the advice of Town Counsel.

BMP 4-2 Interdepartmental Coordination¹⁵

Thompson's First Selectman will review and determine if the current interdepartmental coordination between Thompson's departments, boards and offices with jurisdiction over the review, permitting or approval of land disturbance and development projects within its MS4 are adequate and will issue a memorandum confirming the coordination procedures to be performed.

¹⁴ See Section 6(a)(4)(A) page 25 of 50 of the 2016 MS4 GP

¹⁵ See Section 6(a)(4)(B) page 26 of 50 of the 2016 MS4 GP

BMP 4-3 Site Review & Inspections¹⁶

BMP 4-3a For site plans needing a municipal approval that propose an acre or more of land disturbance, the Thompson approving authority will include in its review a consideration of stormwater controls or management practices to prevent or minimize impacts to water quality.

BMP 4-3b For sites authorized to disturb an acre or more of land, the Thompson approving authority will conduct site inspection(s) and take enforcement actions as needed to ensure post construction control measures are adequately installed, maintained, repaired and operated.

BMP 4-4 Public Involvement¹⁷

Thompson First Selectman will review and make such changes as are necessary to ensure existing procedures for processing citizen's complaints / concerns are adequate to address proposed and ongoing land disturbance and development activities.

BMP 4-5 State Permit Notification¹⁸

The guidance documents available to applicants to for subdivision, zoning and wetlands approvals will be reviewed and modified to advise applicants of DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewater Associated with Construction Activities for construction sites with a land disturbance of one or more acres.

BMP	Type of Action	Responsible Party	Measurable Goal	Deadline for Action
BMP 4-1	Legal Authority		Document production	June 30, 2019
BMP 4-1a	Review of ordinances, regulations, general conditions	First Selectman, P&Z Commission IW Commission	Review report	July 1, 2017
BMP 4-1b	Adopt / amend insufficient ordinance, regulation or standard condition	As determined by review in BMP 4-1-a & Town Counsel	Document production	July 1, 2017
BMP 4-2	Interdepartmental Coordination	First Selectman	Document production	July 1, 2017
BMP 4-3	Site Review & Inspections	P&Z Commission and/or IW Commission	None	As needed
BMP 4-4	Public Involvement	First Selectman	Citizen comment form	July 1, 2017
BMP 4-5	State Permit Notification	P&Z Commission and IW Commission	Revised guidance documents	July 1, 2017

¹⁶ See Section 6(a)(4)(C) page 26 of 50 of the 2016 MS4 GP

¹⁷ See Section 6(a)(4)(D) page 26 of 50 of the 2016 MS4 GP

¹⁸ See Section 6(a)(4)(E) beginning on page 26 of 50 of the 2016 MS4 GP

MCM 5 - Post Construction Stormwater Management in New Development or Redevelopment

Goals

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

BMP 5-1 Legal Authority¹⁹

BMP 5-1a Conduct and document a review of existing road ordinances and planning and zoning regulations, along with any respective standard conditions of approval, determine and make recommendation for the changes that are necessary, in light of statutory and constitutional limitations, to comply with requirements of Section 6(5)(A and B) of the 2016 MS4 GP so that developers or contractors seeking approval for development or redevelopment are required to:

- (1) use to the maximum extent possible low impact development (LID) and runoff reduction site planning and development practices prior to the consideration of other practices that meet or exceed the LID and runoff reduction practices identified in the 2004 Connecticut Stormwater Quality Manual issued by DEEP;
- (2) calculate the percentage of the directly connected impervious area (DCIA) draining to Thompson's MS4;
- (3) for the redevelopment of sites with a DCIA of 40% or more require the on-site retention of one half the water quality volume (i.e. WQV, the volume of runoff generated by one inch of rainfall as identified in Chapter 7 page 7-4 of the 2004 Connecticut Stormwater Quality Manual), or perform actions as otherwise allowed by Section 6(5)(A)(i) of the 2016 MS4 GP, and
- (4) for sites for new development or redevelopment sites with less than 40% DCIA require the retention of the WQV or perform actions as otherwise allowed by Section 6(5)(A)(ii and iii) of the 2016 MS4 GP.

BMP 5-1b Upon completion of the review referenced above the Board of Selectmen and/or the Planning and Zoning Commission will take such actions as necessary to amend the ordinance or respective regulations to correct any deficiencies identified.

BMP 5-2 Long Term Maintenance of Stormwater Treatment Structures²⁰

An annual inspection will be performed for all retention / detention basins identified in BMP 3-1c and any known stormwater treatment structures owned by Thompson (such as swirl concentrators, oil & grit separators), and accumulated pollutants (such as sediment, oils, leaves, litter, etc.) will be removed and properly disposed of where accumulation is found to be in excess of 50% of the design capacity.

BMP 5-3 Directly Connected Impervious Areas²¹

¹⁹ See Section 6(a)(5)(A & B) beginning on page 27 of 50 of the 2016 MS4 GP

²⁰ See Section 6(a)(5)(D) beginning on page 30 of 50 of the 2016 MS4 GP

²¹ See Section 6(a)(5)(C) page 30 of 50 of the 2016 MS4 GP

As needed (see explanation in Introduction), Thompson will calculate the Directly Connected Impervious Area (DCIA) that contributes stormwater runoff to each of its MS4 outfalls (i.e. catchment area) using option 1 as specified in Appendix 3 of DEEP's "Connecticut Stormwater Response Plan for Impervious Cover" which can be found at the following location:
http://www.ct.gov/deep/lib/deep/water/ic/watershed_response_plan_for_ic/appendix3_ic_in_ct_municipalities.pdf

BMP 5-4 Document actions taken for MS4 GP Annual Report

BMP	Type of Action	Responsible Party	Measurable Goal	Deadline for Action
BMP 5-1	Legal Authority		Document production	7/1/2021
BMP 5-1a	Review of ordinances, regulations	Planning & Development director	Review report	7/1/2018
BMP 5-1b	Adopt / amend insufficient ordinance or regulation(s)	As determined by review in BMP 5-1a	Document production	7/1/2020
BMP 5-2	Long Term Maintenance	Public Works Dept.	Inspection documentation	Annually by December 31st
BMP 5-3	DCIA Delineations	First Selectman	Document production	As needed
BMP 5-4	Documenting of Actions Taken	Selectman's Office	Posting of annual Report on Thompson's webpage	Annually beginning January 31, 2018

MCM 6 – Pollution Prevention/Good Housekeeping

Goals

- To prevent or reduce pollutant runoff and protect water quality from all Thompson owned or operated MS4.

BMP 6-1 BMP 6-1 Employee Training Program²²

Using training materials available from the EPA, the DEEP or other organizations, Public Works Department employees will be given training to provide:

- (1) an awareness of the MS4 GP;
- (2) this SMP's goals and objectives;
- (3) the proper identification and reporting of illicit discharges;
- (4) spill response protocols; and
- (5) the responsibilities of personnel involved.

BMP 6-2 Infrastructure Repair and Rehabilitation²³

BMP 6-2a Using the spreadsheets, maps and photographs found in the 2013 Inventory of Stormwater Outfalls prepared by J & D Civil Engineers, the Public Works Department will prioritize and develop a schedule for outfalls and drainage systems needing repair, initially selecting 5 outfalls for work in the first year.

BMP 6-2b As new data becomes available related to outfalls discharging pollutants, impaired waters or inspection observations, the Public Works Department will adjust its priorities and schedules for the repair and rehabilitation of outfall and drainage systems.

BMP 6-3 Retrofit Program²⁴

The goal of the retrofit program is to "disconnect" existing Directly Connected Impervious Areas (DCIAs) such that the volume of runoff generated by either 1 inch or ½ inch of rainfall, depending on existing conditions²⁵ as determined by the formula provided in Section 7.4.1 (page 7-4) of the 2004 Stormwater Quality Manual. Disconnection may occur via site redevelopment to modify its function or via retrofit to modify a site specifically for the purpose of disconnecting the DCIA.

BMP 6-3a The Public Works Department will maintain records on the acreage of DCIA that is disconnected from its MS4 and provide total acreage for MS4 GP annual reporting purposes.

BMP 6-3b The Public Works Department, in coordination with the First Selectman's Office will identify and prioritize what sites, if any, are suitable for retrofit.

²² See Section 6(a)(6)(A) page 31 of 50 of the 2016 MS4 GP

²³ See Section 6(a)(6)(B) page 31 of 50 of the 2016 MS4 GP

²⁴ See Section 6(a)(6)(B)(ii) page 32 of 50 of the 2016 MS4 GP

²⁵ See Section 6(a)(5)(A)(i) page 27 of 50 of the MS4 GP

BMP 6-3c A retrofit schedule will be dependent upon the availability of suitable retrofit projects to the maximum extent possible.

BMP 6-4 MS4 Property and Operations²⁶

BMP 6-4a The First Selectman's Office will provide guidance and direction to the various Town offices, departments and staff responsible for or involved with :

- (1) parks and open space management to optimize the application of fertilizers;
- (2) management of pet wastes;
- (3) management of waterfowl;
- (4) buildings and facilities to ensure, among other things, spill prevention plans are in place, areas around facilities are clean to minimize runoff of pollutants and no interior floor drains are connected to the MS4;
- (5) town owned vehicles are properly maintained; and
- (6) the Thompson Transfer Station's composting facility is available to receive leaf disposal.

BMP 6-5 Street, Parking & MS4 Maintenance²⁷

BMP 6-5a In light of the fact that Thompson uses no sand for deicing purposes and until it is determined that there are DCIAs of greater than 11 % that existing outside the UA, each spring town owned streets and parking lots in the UA, will be surveyed and swept when accumulations of material are observed on the paved surfaces.

BMP 6-5b Until it is determined that there are DCIAs of greater than 11 % that existing outside the UA, Thompson will inspect all catch basins within the UA and any catch basin sump that is found to be more than 50% full will be cleaned and the cleaning documented in a log for annual reporting.

BMP 6-5c Document deicing management practices used for handling, storage, application and disposal of deicing products to minimize exposure to stormwater.

BMP 6-5d For its de-icing and snow removal operations performed in accordance with DEEP's Best Management Practices for Disposal of Snow Accumulation for Roadways and Parking Lots, revised 2/4/11 and as amended, the Public Works Department will document for the MS4 annual report:

- (1) the type of staff training conducted on application methods and equipments;
- (2) types(s) of deicing materials used;
- (3) lane-miles treated;
- (4) the amounts of each deicing material used;
- (5) type(s) of deicing equipment used; and
- (6) any changes in deicing practices and snow removal with the reason for the change.

²⁶ See Section 6(a)(6)(C) beginning on page 33 of 50 of the 2016 MS4 GP

²⁷ See Section 6(a)(6)(D & E) beginning on page 35 of 50 of the 2016 MS4 GP

BMP 6-6 Interconnected MS4s²⁸

If it is found that a Thompson MS4 is interconnected with any state or federal MS4, it will coordinate with the operators of the interconnected MS4 on the establishment of an interagency agreement regarding operations and maintenance of the interconnected systems.

BMP 6-7 Sources Contributing Pollutants to Thompson's MS4²⁹

If it is found that the discharge from a Thompson MS4 is unacceptable and that the likely source of pollution comes from a commercial, industrial, municipal, institutional or other facility, not otherwise authorized by a permit issued pursuant to Sections 22a-430 or 22a-430a of the Connecticut General Statutes nor an illicit discharge, then the town will develop and implement a program to control the contribution of pollutants from that facility.

BMP 6-8 Document Actions Taken for MS4 GP Annual Report

BMP	Type of Action	Responsible Party	Measurable Goal	Deadline for Action
BMP 6-1	Employee Training Program	Public Works Dept	Training form signatures	7/1/2019
BMP 6-2	Infrastructure Repair and Rehabilitation	Public Works Dept	Repair of all MS4 identified from BMP 3-1c	7/1/2022
BMP 6-2a	First 5 outfalls for repair	Public Works Dept	Repair of outfalls	7/1/2017
BMP 6-2b	Future outfalls for repair	Public Works Dept	To be determined	To be determined
BMP 6-3	Retrofit Program	Public Works Dept	None	7/1/2020
BMP 6-3a	Recording for annual report of disconnected DCIA	Public Works Dept	Annual report	Annually beginning January 31, 2018
BMP 6-3b	Retrofit identifications	Public Works Dept	Listing of retrofits, if any	To be determined
BMP 6-3c	Schedule of retrofits	Public Works Dept	To be determined	To be determined
BMP 6-4	MS4 Property and Operations	Selectman's Office	Guidance document	7/1/2020
BMP 6-5	Street, Parking & MS4 Maintenance	Public Works Dept	Annual Report	Annually beginning January 31, 2018
BMP 6-6	Interconnected MS4s	Selectman's Office	To be determined	To be determined
BMP 6-7	Contributing Pollutants to MS4	Selectman's Office	Annual Report	Annually beginning January 31, 2018
BMP 6-8	Documenting of Actions	Selectman's Office	Posting of annual report on Thompson's webpage	Annually beginning January 31, 2018

²⁸ See Section 6(a)(6)(F) page 38 of 50 of the 2016 MS4 GP

²⁹ See Section 6(a)(6)(G & H) page 38 of 50 of the 2016 MS4 GP

Monitoring

M-1 Inventory

Create an inventory of all outfalls that discharge to impaired waters (if any) utilizing the list and mapping prepared pursuant to Section 6(a)(3)(C) of the 2016 MS4 GP (page 23).

M-2 Screening

Screen those outfalls identified above that discharge to impaired waters as directed in Section 6(i)(A,B &C) of the 2016 MS4 GP (pages 41-42).

M-3 Follow Up Investigations

M-3a Investigate activities within the drainage area contributing to each outfall identified for follow up investigation in accordance with the criteria specified in Section 6(i)(D) of the 2016 MS4 GP (page 43).

M-3b For each outfall drainage areas identified for follow up investigation implement a BMP program focusing on the impaired waters provision of each of the six (6) MCMs.

M-4 Prioritized Outfall Monitoring

As soon as one half of the outfall screening referenced above is completed six (6) of the highest contributors of any of the pollutants of concern will be selected and sample annually. Sampling procedures and data collection shall be as specified in Section 6(i)(2) of the 2016 MS4 GP (pages 44-45).

BMP	Type of Action	Responsible Party	Measurable Goal	Deadline for Action
M-1	Inventory	First Selectman	Inventory complete	July 1, 2019
M-2	Screening	First Selectman	50% complete	July 1, 2020
M-3	Followup investigations	First Selectman	Investigation complete	July 1, 2019
M-3a	Drainage area Investigations	First Selectman	Report of work done	July 1, 2019
M-3b	Implement BMPs	Public Works Dept.	Report of work done	July 1, 2019
M-4	Monitoring	First Selectman	Monitoring reports submitted to DEEP	July 1, 2021

ANNUAL REPORTING

An annual report will be provided to DEEP which contains a written discussion of the status of compliance with the 2016 MS4 GP (see pages 45-46), including but not limited to:

- A listing and brief description of all BMPs within each MCM;
- Any reporting requirements enumerated in the MCMs section;
- An implementation schedule for each BMP and an indication of whether or not the BMP was scheduled to be implemented during the year covered by the annual report;
- The status of implementation for each BMP scheduled to be completely or partially implemented during the year covered by the annual report, including an assessment of the appropriateness of the BMP and progress towards achieving the implementation dates and measurable goals for that BMP;
- For any portion of a BMP implementation scheduled for year covered by the annual report that was not completed as scheduled, a discussion of the circumstances and reason for non-implementation, a modified implementation schedule and, if necessary, a modified or alternate BMP to replace the BMP not implemented, including the rationale for such modification or alternate BMP;
- The overall status of each of the six categories of the Minimum Control Measures and a discussion of the effectiveness of each category in achieving its goals;
- A discussion of any changes to personnel responsible for the Plan or BMP implementation;
- A description of any new BMPs added to the plan during the year including a description of the BMP, the reason or rationale for adding the BMP, the timeline for implementation, the party responsible for implementation and the measurable goal for the BMP;
- A discussion of the progress and status of the IDDE program including the outfall screening, mapping, drainage area evaluation and prioritization, illicit discharge tracking activities, IDDE field monitoring results, number and type of illicit discharges detected and number of illicit discharges eliminated;
- A discussion of measures included in the plan for the control of discharges to impaired waters;
- A discussion of the MS4's stormwater monitoring program;
- A discussion of any planned BMP implementation in the coming year;
- Document results of sweeping program, including curb miles swept, dates of cleaning, volume or mass of material collected and methods of reuse or disposal.
- Document the plan for optimizing catch basin cleaning.
- Report the total number of catch basins and include the number inspected, number cleaned, and total volume or mass of material removed from each catch basin;
- Document the types and quantities of deicing materials used; and lane-miles treated;
- All monitoring data collected and analyzed including a listing of the outfalls screened during the year, number of outfalls identified for follow-up investigations, progress of drainage area investigations, description of the control measure implementation for the different impairments, and identification of the six (6) outfalls to be monitored.
- All other information specifically listed under each BMP for reporting.

This information, along with a plan review fee of \$187.50, will be electronically submitted in MS Word or Adobe Acrobat to the DEEP Commissioner in accordance with instruction provided on the website.

BMP	Type of Action	Responsible Party	Measurable Goal	Deadline for Action
A-1	Annual Report	First Selectman	Report Submitted	Annually by April 1

AQUIFER PROTECTION AREAS

The Town has an aquifer protection area as shown on Figure 2. The basic stormwater principles for Aquifer Protection Areas are to prevent inadvertent pollution discharges/releases to the ground, while encouraging recharge of stormwater where it does not endanger groundwater quality. Measures include:

- Prevent illicit discharges to storm water, including fuel/chemical pollution releases to the ground;
- Minimize DCIA and disconnect large areas of DCIA with natural or landscape areas;
- Direct paved surface runoff to above ground type land treatment structures;
- Provide necessary impervious pavement in high potential pollutant release areas;
- Only use subsurface recharge structures to directly infiltrate clean runoff; and
- Restrict pavement deicing chemicals or use an environmentally suitable substitute such as sand only or alternative deicing agents such as calcium chloride or calcium magnesium.

Infiltration of stormwater should be restricted under the following site conditions:

- Land uses or activities with potential for higher pollutant loads (see figure 3);
- Subsurface contamination (infiltration of stormwater in areas with soil or groundwater contamination such as brownfield sites and urban redevelopment areas can mobilize contaminants); and
- Groundwater supply and wellhead areas.

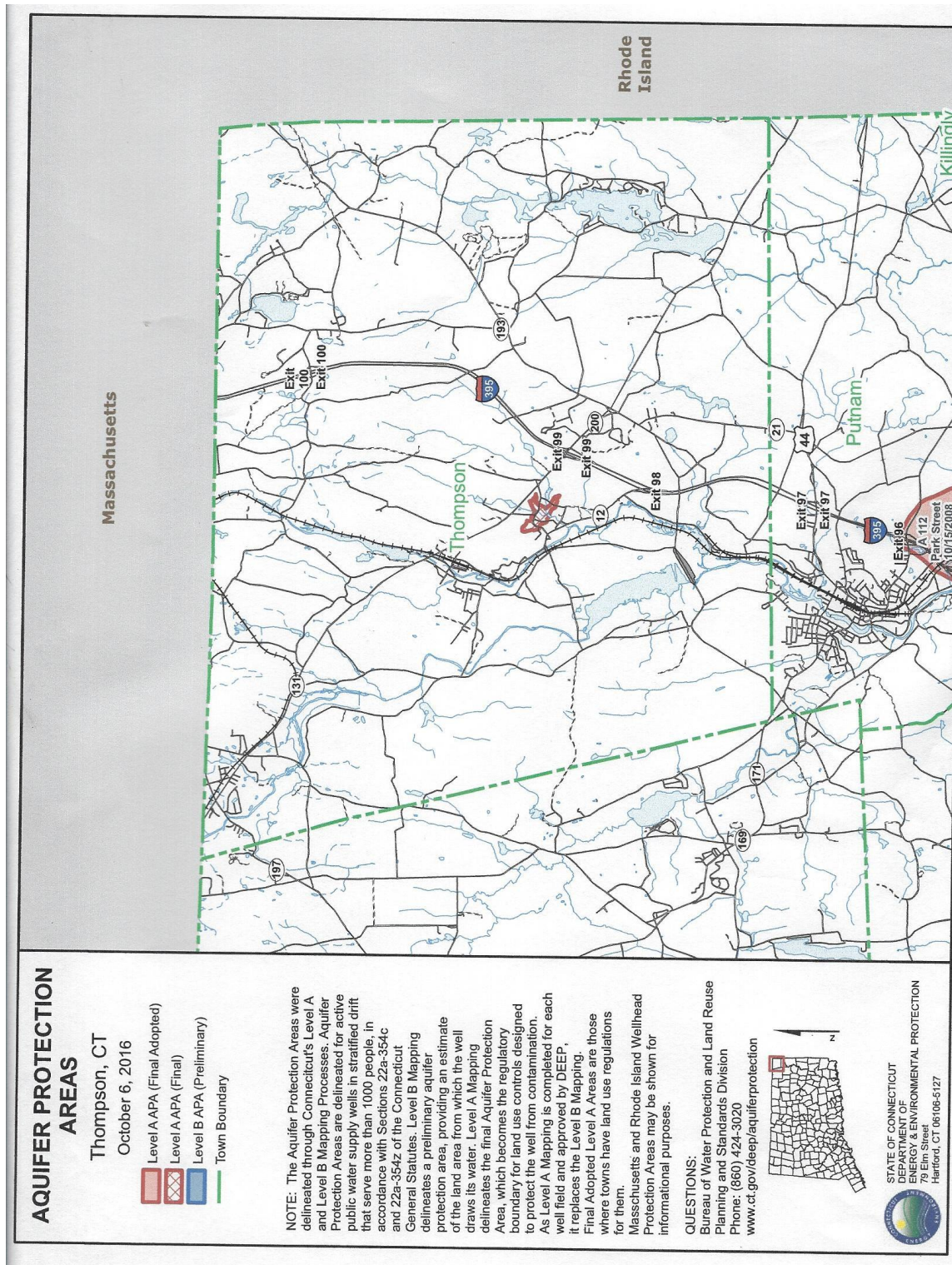


Figure 2 – Aquifer Protection Area Map

Figure 3 – Land Uses or Activities with Potential for Higher Pollutant Loads

Land Uses or Activities with Potential for Higher Pollutant Loads
Table 7-5 of the 2004 Stormwater Quality Manual

Land Use/Activities	
☐ Industrial facilities subject to the DEEP Industrial Stormwater General Permit or the U.S. EPA National Pollution Discharge Elimination System (NPDES) Stormwater Permit Program ☐ Vehicle salvage yards and recycling facilities ☐ Vehicle fueling facilities (gas stations and other facilities with on-site vehicle fueling) ☐ Vehicle service, maintenance, and equipment cleaning facilities ☐ Fleet storage areas (cars, buses, trucks, public works) ☐ Commercial parking lots with high intensity use (shopping malls, fast food restaurants, convenience stores, supermarkets, etc.) ☐ Public works storage areas	☐ Road salt storage facilities (if exposed to rainfall) ☐ Commercial nurseries ☐ Flat metal rooftops of industrial facilities ☐ Facilities with outdoor storage and loading/unloading of hazardous substances or materials, regardless of the primary land use of the facility or development ☐ Facilities subject to chemical inventory reporting under Section 312 of the Superfund Amendments and Reauthorization Act of 1986 (SARA), if materials or containers are exposed to rainfall ☐ Marinas (service and maintenance) ☐ Other land uses and activities as designated by the review authority

For further information regarding the design of stormwater collection systems in Aquifer Protection Areas, contact the Aquifer Protection Area Program at (860) 424-3020 or visit www.ct.gov/deep/aquiferprotection.

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 investigations, 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.

Ken Beausoleil, First Selectman

Date

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

Dennis R. Blanchette, CT PELS 12107

Date

TRAINING FORM

Type of Training (circle one)

IDDE Training (BMP 3-5)

Good Housekeeping (BMP 6-1)

Date of Training: _____

Training Leader: _____

In Attendance:

_____ Signature	_____ Position/title
_____ Signature	_____ Position/title
_____ Signature	_____ Position/title
_____ Signature	_____ Position/title
_____ Signature	_____ Position/title
_____ Signature	_____ Position/title
_____ Signature	_____ Position/title
_____ Signature	_____ Position/title