DRAFT

STORMWATER MANAGEMENT PLAN UPDATE

TOWN OF WOLCOTT, CONNECTICUT

November 15, 2016

Prepared for:

Town of Wolcott
10 Kenea Ave
Wolcott Ct. 06716

Prepared by:

Mark Possidento P.E.
Wolcott Town Engineer

STORMWATER MANAGEMENT PLAN UPDATE-DRAFT TOWN OF WOLCOTT CONNECTICUT

TABLE OF CONTENTS

STORMWATER MANAGEMENT PLAN UPDATE-DRAFT TOWN OF WOLCOTT, CONNECTICUT

NOV 15, 2016

1.0 INTRODUCTION

The Town of Wolcott is located in the central section of Connecticut. It is approximately 21 square miles in size with a current population (according to the 2010 census) of approximately 16,700. Incorporated in 1796, the town has grown in population but has maintained much of its rural character. Land use is typically residential, with commercial and industrial development limited to the Route 69 and Route 322 corridors.

The Town of Wolcott (the Town) has assigned Town Engineer, Mark Possidento P.E. to review its existing Stormwater Management Plan (the Plan) and provide a summary of recommended modifications and updates for use in ongoing stormwater management activities. Modifications and updates are intended to comply with the requirements established by the Connecticut Department of Energy and Environmental Protection (DEEP) in Section 6 of its General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (the Permit). A copy of that Permit are included in Appendix A and a General Permit Fact Sheet.

Only a draft of the Stormwater Management Plan, (circa 2004) was found, (Appendix B) and will be used as the basis of this annual update. The regulations of the current general permit include registration to obtain permit coverage, development and implementation of a Stormwater Management Plan and monitoring of six stormwater outfalls once per year during a rain storm.

The Stormwater Management Plan (the Plan) is a cornerstone of the MS4 permit and contains information on its stormwater and municipal infrastructure along with Best Management Practices, (BMP"S) to reduce and/or eliminate the discharge of pollutants through the storm sewer system to the Maximum Extent Practicable, (MEP). The definition of MEP is, "to reduce and/or eliminate to the extent achievable using controls measures that are technologically available and economically practicable. Moreover it is an interactive process consisting of a municipality developing a program, implementing the program and evaluating the effectiveness of BMP's included as part of the program, then revising those parts of the program that are not effective, implementing the changes and re-evaluating the overall program.

The BMP"S in the Stormwater Management Plan is organized into six categories of Minimum Control Measures which are:

- Public Education and Outreach on Stormwater Impacts
- Public Involvement/Participation
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Control
- Post construction Stormwater Management in New Development and Redevelopment
- Pollution Prevention/Good Housekeeping for Municipal Operations

Each of the six minimum control measures is described in the following three subsections. The first subsection describes the Permit requirements. The second subsection reviews the Best Management Practices (BMPs) detailed in the existing plan and identifies the available information and existing programs that the Town uses to meet these BMPs. The third subsection presents the recommended modifications to the plan.

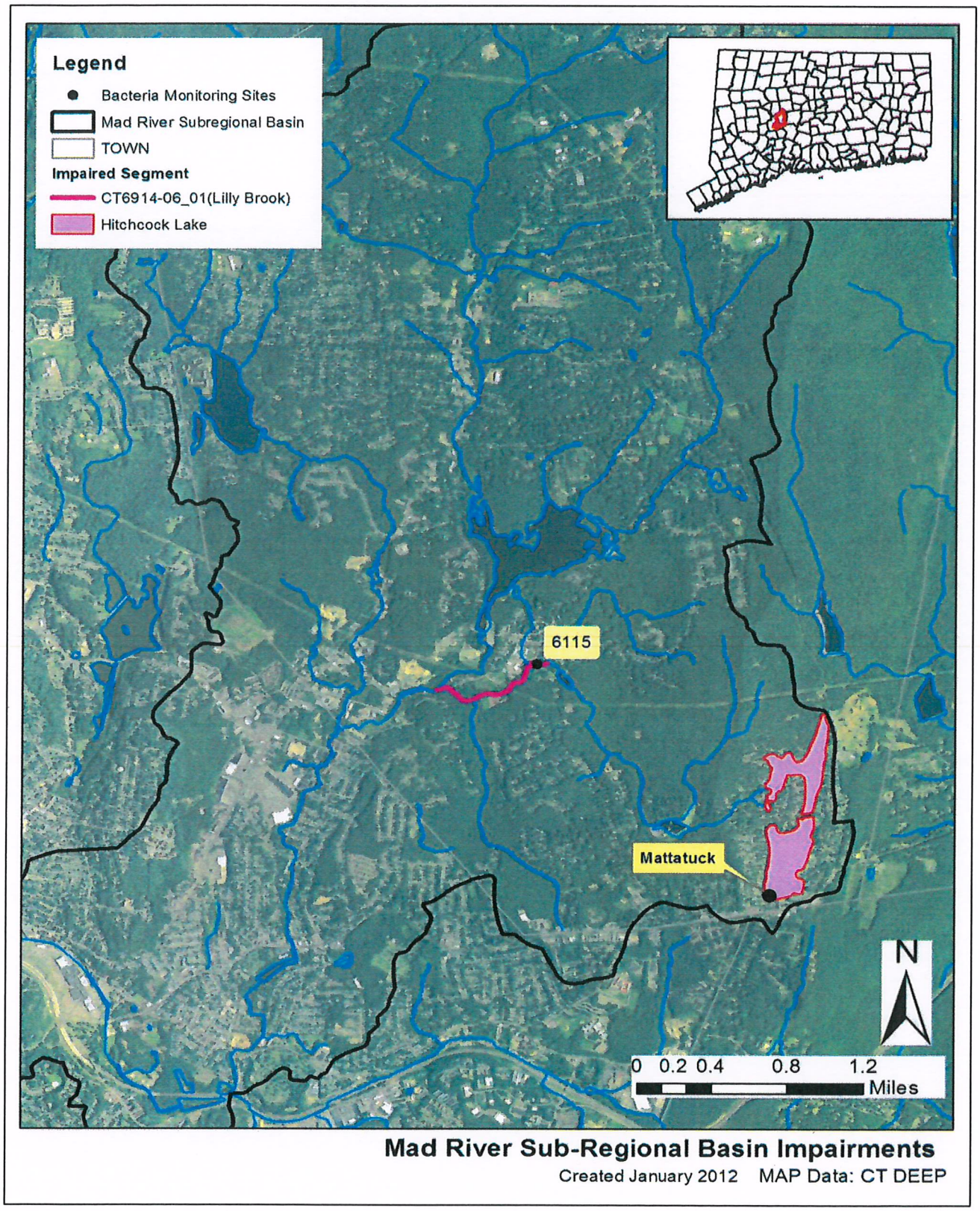
2.0 TMDL BACKGROUND INFORMATION

In 2012, the DEEP finalized a water quality review of the Mad River watershed in an effort to comply with the state water quality standards. (A copy of the report is in Appendix C.) As a result of that investigation two segments of the Mad River Watershed were found to be impaired due to elevated bacteria levels. The two impaired segments were: Lilly Brook which begins at the confluence with an unnamed tributary east of Todd Rd. and ends at its confluence with Mad River just west of Woodtick Road; and Hitchcock Lake which is 100.3 acres and is located in the southeastern corner of Wolcott near the Waterbury and Cheshire town lines.

Lilly Brook and Hitchcock Lake have a water classification of A. Both segments are impaired due to elevated bacteria concentrations affecting the designated use of recreation. While there are no designated beaches on Lilly Brook there are designated beaches on Hitchcock Lake. The two impaired segments are shown on Fig. 1. The DEEP approved a Total Maximum Daily Load (TMDL) allocation for these impaired segments to address high levels of E. coli bacteria.

Water quality is determined by the types and levels of substances and organisms present in a body of water. Any number of pollutants can be found in surface water bodies. These pollutants are a direct result of surface runoff and include microscopic organisms, natural compounds, and human waste. The most common pollutants can be categorized into five main types: pathogens, nutrients, toxicants, litter, and suspended solids. The primary concern of this report is the control of E. coli in stormwater and surface water bodies. Therefore, the focus is on pathogens and suspended solids.

Figure 1: GIS map featuring general information of the Mad River watershed at the sub-regional level



2.1 Potential Bacteria Sources

Potential sources of indicator bacteria in a watershed include point and non-point sources, such as stormwater runoff, agriculture, sanitary sewer overflows (collection system failures), illicit discharges, and inappropriate discharges to the waterbody. Potential sources that have been tentatively identified in the watershed based on land use and a collection of local information for the impaired waterbody is presented in Table 1. However, the list of potential sources is general in nature and should not be considered comprehensive. There may be other sources not listed here that contribute to the observed water quality impairment in the study segments. Further monitoring and investigation will confirm listed sources and discover additional ones. Some segments in this watershed are currently listed as unassessed by CT DEEP procedures. This does not suggest that there are no potential issues on this segment, but indicates a lack of current data to evaluate the segment as part of the assessment process. For some segments, there are data from permitted sources, and CT DEEP recommends that any elevated concentrations found from those permitted sources be addressed through voluntary reduction measures. More detailed evaluation of potential sources is expected to become available as activities are conducted to implement these TMDLs.

Table 1: Potential bacteria sources in the Lilly Brook watershed:

Impaired Segment	Lilly Brook	Hitchcock Lake
Permit Source	X	X
Illicit Discharge	X	X
CSO/SSO Issue		
Failing Septic System	X	X
Agricultural Activity	X	
Stormwater Runoff	X	X
Nuisance Wildlife/ Pets	X	X

Other

2.1 a. Point Sources

Permitted Sources

Potential permitted sources in the Mad River watershed include:

Stormwater associated with Commercial Activity

Stormwater associated with Industrial activities

Stormwater Registration – Construction

MS4 Stormwater Discharges.

None of the point sources would appear to have any impact on the identified impaired segments however further investigation of these sources are recommended.

2.1 b Non Point Sources

Non-point source pollution (NPS) comes from many diffuse sources and is more difficult to identify and control. NPS pollution is often associated with land-use practices. Examples of NPS that can contribute bacteria to surface waters include insufficient septic systems, pet and wildlife waste, agriculture, and contact recreation (swimming or wading). Potential sources of NPS within the Mad River watershed are described below.

Stormwater Runoff from Developed Areas:

While portions of the Mad River watershed are undeveloped, approximately 46% of the watershed is considered urban, particularly surrounding the impaired segments in the Town of Wolcott. Urban areas are often characterized by impervious cover, or surface areas such as roofs and roads that force water to run off land surfaces rather than infiltrate into the soil. Studies have shown a link between increasing impervious cover and degrading water quality conditions in a watershed (CWP, 2003). In one study, researchers correlated the amount of fecal coliform to the percent of impervious cover in a watershed (Mallin et al., 2000).

Approximately 10% of the Mad River watershed is characterized by 0-6% impervious cover, 46% is characterized by 7-11% impervious cover, 19% is characterized by 12-15%, and 24% is characterized by >16% impervious. Most of the highly developed portions of the watershed are located downstream of the impaired segments in the City of Waterbury. However, there are portions of the watershed consisting of 7-11% and 12-15% impervious cover near Lilly Brook's impaired segment and Hitchcock Lake (Figure 9). Water quality testing at Lilly Brook revealed WQS exceedances during wet weather, which suggests that stormwater runoff is a likely source of bacterial contamination.

Insufficient Septic Systems and Illicit Discharges:

Most residents surrounding Lilly Brook rely on onsite wastewater treatment systems, such as septic systems. Insufficient or failing septic systems can be significant sources of bacteria by allowing raw waste to reach surface waters. In Connecticut, local health directors or health districts are responsible for keeping track of any reported insufficient or failing septic systems in a specific municipality. The Town of Wolcott is part of the Chesprocott Health District (www.chesprocott.org/), which handles septic systems within the town. There are multiple areas within the watershed with access to sanitary sewer, particularly Hitchcock Lake. Sewer system leaks and other illicit discharges within the watershed may be contributing bacteria to these waterbodies.

Wildlife and Domestic Animal Waste:

Wildlife and domestic animals within the Mad River watershed represent a potential source of bacteria. With the construction of roads and drainage systems, these wastes may no longer be retained on the landscape, but instead may be conveyed via stormwater to the nearest surface water. These physical land alterations can exacerbate the impact of natural sources on water quality (USEPA, 2001). The water surface of Hitchcock Lake itself may provide an area for waterfowl to congregate. Geese and other waterfowl are known to congregate in open areas, including recreational fields, golf courses, and agricultural crop fields. The recreational fields at the Frisbie School in Wolcott off Todd Road are near the impaired segment of Lilly Brook. In addition to creating a nuisance, large numbers of geese can also create unsanitary conditions on the grassed areas and cause water quality problems due to bacterial contamination associated with their droppings. Large populations of geese can also lead to habitat destruction as a result of overgrazing on wetland and riparian plants. Dense residential development surrounds portions of Lilly Brook's impaired segment and the entire shoreline of Hitchcock Lake. When not disposed properly, waste from domestic animals, such as dogs, can enter surface waters directly or through stormwater infrastructure. Therefore, pet waste may also be contributing to bacteria concentrations in the impaired segment of Lilly Brook and Hitchcock Lake.

Agricultural Activities:

Agricultural operations are an important economic activity and landscape feature in many areas of the State. Runoff from agricultural fields may contain pollutants such as bacteria and nutrients (USEPA, 2011a). This runoff can include pollutants from farm practices such as storing manure, allowing livestock to wade in nearby waterbodies, applying fertilizer, and reducing the width of vegetated buffer along the shoreline. Agricultural land use makes up only 1% of the Lilly Brook watershed. There is an agricultural operation located along Lilly Brook's impaired segment off Woodtick Road. This agricultural area is potentially carrying pollutants, including bacteria, into the impaired segment of Lilly Brook.

Additional Sources:

There may be other sources not listed here or identified in that contribute to the observed water quality impairment in Lilly Brook and Hitchcock Lake. Further monitoring and investigation will confirm the listed sources and discover additional ones. More detailed evaluation of potential sources is expected to become available as activities are conducted to implement this TMDL.

2.2 Current Management Practices

As indicated above, the portion of the watershed surrounding the impaired segments is regulated under the MS4 program. The MS4 General Permit is required for any municipality with urbanized areas that initiates, creates, originates or maintains any discharge of stormwater from a storm sewer system to waters of the State. The MS4 permit requires towns to design a Stormwater Management Plan (SMP) to reduce the discharge of pollutants in stormwater to improve water quality. The plan must address the following 6 minimum measures:

1. Public Education and Outreach
2. Public Involvement/Participation
3. Illicit discharge detection and elimination
4. Construction site stormwater runoff control
5. Post-construction stormwater management in the new development and redevelopment
6. 6. Pollution prevention/good housekeeping for municipal operations.

Each municipality is also required to submit an annual update outlining the steps they are taking to meet the six minimum measures. All updates that address bacterial contamination in the watershed are summarized:

Public Outreach and Education	No Updates
Public Involvement and Participation	No Updates
Illicit Discharge Detection and Elimination	1. Hitchcock Lake Association mapped all drains. 2. Conducted samples on discharge areas
Construction Site Stormwater Runoff Control	1. Ensured all applications adhere to 2004 stormwater Manual
Post Construction Stormwater Management	1. Reestablishing sediment and erosion controls after heavy rains
Pollution Prevention and Good Housekeeping	1. Performed annual maintenance of Catch basins 2. Installed catch basin Hoods on five selected basins to control oil, sediment and floatables contamination to the lake

2.3 Recommended Next Steps

Future mitigative activities are necessary to ensure the long-term protection of Lilly Brook and Hitchcock Lake and have been prioritized below.

1) **Identify areas along Lilly Brook and Hitchcock Lake to implement Best Management Practices (BMPs) to control stormwater runoff.**

   As noted previously, the Town of Wolcott within the Mad River watershed is a MS4 community regulated by the MS4 program. Since 46% of the watershed is considered urban with a high percentage of impervious surfaces around the impaired segments, stormwater runoff may be contributing bacteria to these waterbodies. To identify specific areas that are contributing bacteria to the impaired segment of Lilly Brook and Hitchcock Lake, the town should conduct wet-weather sampling at stormwater outfalls that discharge directly to Lilly Brook and Hitchcock Lake. To treat stormwater runoff, the town should also identify areas along the more developed sections of Lilly Brook, particularly along the impaired segment and near Hitchcock Lake, to install BMPs that encourage stormwater to infiltrate into the ground before entering these waterbodies. These BMPs would disconnect impervious areas and reduce pollutant loads to Lilly Brook's impaired segment and Hitchcock Lake. More detailed information and BMP recommendations can be found in the core TMDL document.

2) **Implement a program to evaluate the sanitary sewer system.**

   Portions around Lilly Brook's impaired segment and the entire shoreline of Hitchcock Lake rely on a municipal sewer system (Figure 6). Ensuring there are no leaks or overflows from the sanitary sewer in this area should be made a priority. It is important for Wolcott to develop a program to evaluate its sanitary sewer and reduce leaks and overflows, especially in the areas around Lilly Brook's impaired segment and Hitchcock Lake. This program should include periodic inspections of the sewer line.

3) **Develop a system to monitor septic systems.**

   The majority of residents adjacent to Lilly Brook's impaired segment rely on septic systems. If not already in place, Wolcott should establish a program to ensure that existing septic systems are properly operated and maintained. For instance, communities can create an inventory of existing septic systems through mandatory inspections. Inspections help encourage proper maintenance and identify failed and sub-standard systems. Policies that govern the eventual replacement of the sub-standard systems within a reasonable timeframe could also be adopted. Towns can also develop programs to assist citizens with the replacement and repair of older and failing systems.

4) **Evaluate municipal education and outreach programs regarding animal waste.**

Any education and outreach programs within Wolcott should highlight the importance of not feeding waterfowl and wildlife, and managing waste from dogs and other pets within the town. The Town of Wolcott and its residents can take measures to minimize waterfowl-related impacts such as allowing tall, coarse vegetation to grow in the riparian areas of the impaired segment of Lilly Brook and Hitchcock Lake that are frequented by waterfowl. Waterfowl, especially grazers like geese, prefer easy access to water. Maintaining an uncut vegetated buffer along the shore will make the habitat less desirable to geese and encourage migration. In addition, any educational program should emphasize that feeding waterfowl, such as ducks, geese, and swans may contribute to water quality impairments in the Lilly Brook watershed, especially Lilly Brook and Hitchcock Lake, and can harm human health and the environment.

Animal wastes should be disposed of away from any waterbody or storm drain system. BMPs effective at reducing the impact of animal waste on water quality include installing signage, providing pet waste Final Mad River Watershed Summary September 2012 Mad River Watershed TMDL Page 22 of 29 receptacles in high-uses areas, enacting ordinances requiring the clean-up of pet waste, and targeting educational and outreach programs in problem areas.

5) **Ensure there are sufficient buffers on agricultural lands along Lilly Brook.**

If not already in place, agricultural producers should work with the CT Department of Agriculture and the U.S. Department of Agriculture Natural Resources Conservation Service to develop conservation plans for their farming activities within the watershed. These plans should focus on ensuring that there are sufficient stream buffers, that fencing exists to restrict livestock and horse access to streams and wetlands, and that animal waste handling, disposal, and other appropriate Best Management Practices (BMPs) are in place. As shown in there is an agricultural area within the riparian zone of Lilly Brook's impaired segment and particular attention should be paid to this area.

6) **Monitoring of permitted sources**.

While no data currently exists for the permitted discharges within the Mad River watershed, these discharges may still be contributing bacteria to Lilly Brook and Hitchcock Lake. Further monitoring will provide information essential to better locate, understand, and reduce pollution sources. If any current monitoring is not done with appropriate bacterial indicator based on the receiving water, then a recommended change during the next permit reissuance is to include the appropriate indicator species. If facility monitoring indicates elevated bacteria, then implementation of permit required, and voluntary measures to identify and reduce sources of bacterial contamination at the facility are an additional recommendation. Regular monitoring should be established for all permitted sources to ensure compliance with permit requirements and to determine if current requirements are adequate or if additional measures are necessary for water quality protection.

Section 6(k) of the MS4 General Permit requires a municipality to modify their Stormwater Management Plan to implement the TMDL within four months of TMDL approval by EPA if stormwater within the municipality contributes pollutant(s) in excess of the allocation established by the TMDL. For discharges to impaired waterbodies, the municipality must assess and modify the six minimum measures of its plan, if necessary, to meet TMDL standards. Particular focus should be placed on the following plan components: public education, illicit discharge detection and elimination, stormwater structures cleaning, and the repair, upgrade, or retrofit of storm sewer structures. The goal of these modifications is to establish a program that improves water quality consistent with TMDL requirements. Modifications to the Stormwater Management Plan in response to TMDL development should be submitted to the Stormwater Program of DEEP for review and approval.

3.0 STORMWATER MANAGEMENT PLAN MODIFICATIONS

The goal of this review is to evaluate the existing Stormwater Management Plan and make recommendations for methods by which the town can seek to manage E. coli within the context of the six minimum control measures and to generally update the plan to reflect current staffing and town operations. The following sections summarize the six measures and offer recommendations for modifications.

3.1 BMP #1 - Public Education and Outreach on Stormwater Impacts

Public education and outreach are important elements of a successful Stormwater Management Plan. An informed and knowledgeable community will be in a position to help develop greater support and compliance in the plan implementation phases.

3.1.1 Permit Requirements

The DEEP Permit requires that the Town develop and implement a public education program to distribute educational materials to the community or conduct other outreach activities explaining the impacts of stormwater discharges on water bodies and the steps that can be taken to reduce stormwater pollution. The public education program must reach residents and business owners throughout the community, not only those in the urbanized areas. This SMP and the requirements herein provide the basis for the public education plan. Since the Town's land use is a combination of residential, agricultural, commercial, and industrial development, its public education program will need to target a variety of audiences. Based on the land use and development within the town of Wolcott, the following land uses and land use practices should be addressed as part of this public education program:

- Septic system maintenance and repair
- Erosion and sediment control
- Herbicide and pesticide application
- Household hazardous waste disposal
- Stormwater management at industrial sites
- Stormwater management at commercial sites

3.1.2 Existing Plan BMPs and Status

Listed below are the proposed BMP's from the existing SMP and the status of those proposals:

	BMP	STATUS
a.	Newspaper Insert on Stormwater	Pending
b.	Town Website Updates	The 2004 Stormwater Management Plan and the 2016 Annual update have been posted on the Towns Website
c.	Wolcott Library Literature Availability	The Plans are available for review at Both the Town Hall and the Wolcott Library
d.	Educational Video to Town Agencies	Pending
e.	SMP Brochure	Pending
f.	Annual Update of SMP	Have prepared update every year since 2004

3.1.3 Recommended Modifications

The following recommendations for improving the existing program are provided below.

Recommendation #1: Outreach and education via the Town of Wolcott website.

The town's website should include the Stormwater Management Plan and Annual Updates for public viewing. The Town should also include a link to the University of Connecticut College of Agriculture and Natural Resources Nonpoint Education for Municipal Officials (NEMO) Program (www.nemo.uconn.edu). NEMO is a part of the Center for Land Use Education and Research (CLEAR) within the University of Connecticut College of Agriculture and Natural Resources. NEMO collaborates with other CLEAR programs on various projects in an effort to create the most useful tools and resources for municipal officials and other local community groups.

Recommendation #2: The Town should continue to distribute materials to citizens as previously proposed.

The following is a summary of additional public education information that is currently available that may be of use to the town. The goal of this BMP is to require that the Town Engineer continue to maintain copies in his office of brochures that have been developed by NEMO (summarized below). This will serve to educate current and new residents of the community on stormwater-related issues such as fertilizer, herbicide and pesticide application, septic system maintenance, and pet/wildlife waste. All NEMO brochures can be downloaded from NEMO's website free of charge. A photocopy of each of these materials is included in Appendix D.

• **Caring for Your Septic System:** This NEMO brochure provides a summary of how septic systems operate and the type of maintenance that is required to keep the system operating correctly. This brochure should also be kept on display at the Health Department.

• **Managing Your Household Chemicals**: This NEMO brochure explains how to determine if your household cleaners contain hazardous materials and how these materials should be handled.

• **Integrated Pest Management and Biological Controls for the Homeowner**: This NEMO publication explains methods for homeowners to minimize their use of pesticides while managing unwanted lawn and garden pests.

• **Animal Waste and Water Quality**: This NEMO publication explains the effects of both pet and wildlife waste on stormwater quality and the methods for residents to reduce these effects.

Recommendation #3: Educate industrial and commercial entities on the need for proper stormwater management. Education of business and industry should be a component of the Town's Stormwater Management Plan.

Education materials should be targeted to owners and operators.

a. The Town should identify the business and industry owners in the commercial and industrial zones in the town. The Chamber of Commerce will develop this information from its existing resources (i.e. Tax Assessor).

b. The listing of local industries and businesses will be used to categorize businesses by typical categories such as industry, car wash facilities, car repair and automotive facilities, nurseries and landscape contractors, and food service providers.

c. The Public Works office should coordinate with the Chamber of Commerce to develop an educational mailing for the industries that use and store hazardous materials. Public education materials will be targeted to reach each category of business that is identified by the list described above. Example flyers are presented in Appendix D, and can be modified to reflect specific Town requirements or needs.

d. Construction companies and general contractors have the potential to significantly impact water quality through improper stormwater management. The Town should hold workshops for contractors on proper sediment and erosion control.

e. All individuals submitting land use applications to the Town will be provided with literature on stormwater and sediment and erosion controls by the Planning and Zoning office. More specifically, this literature will include a checklist of the site plan application, which references stormwater drainage systems, drainage maps, and location and details of sedimentation and erosion control measures.

f. Businesses identified by the Fire Marshal as using and storing chemicals will be included on all exercises and emergency response scenarios that pertain to public health and environmental health.

Recommendation #4: Educate municipal officials and land use commissions on proper stormwater management.

Municipal officials and land use commissions play a critical role in stormwater management since they have review authority over development projects. As part of the public education process, the Town will target its local land use boards, as well as municipal departments (planning, public works) and any interested organizations (Town Council, land trusts, and chamber of commerce) by hosting presentations by NEMO. These presentations focus on a variety of aspects of land use decision making and planning and can be tailored to the individual municipality. The Town Engineer will coordinate with NEMO representatives to develop a presentation program or programs that provide education on Planning for Stormwater, Managing Stormwater, Open Space Planning, and/or Rain Garden Design.

Recommendation #5: Stormwater Education in Schools can be encouraged through classroom initiatives and onsite workshops in elementary through high school classes.

Classes can focus on stormwater and riparian issues and themes. In conjunction with classes and on-site workshops, student information sheets can be prepared and distributed focusing upon these same issues. Further involvement can be encouraged via stormwater school article contests. Stormwater Ambassador Programs have been successful in other locations as well. These programs partner schools and local government, using students selected by their schools as "ambassadors" to promote stormwater and water cycle awareness within the community. Ambassadors' activities have included regular newspaper columns and community newsletters, school assembly presentations, school competitions on stormwater-related issues, drain stenciling, and distributing stormwater awareness information within schools, to neighbors, and to the wider community.

Recommendation #6: Educate Residents on Pet Waste Pollution The town should distribute and make available at town offices the NEMO brochure "Animal Waste and Water Quality."

This brochure addresses the proper disposal of pet waste and the deleterious effects pet waste can have on surface waters and aquatic ecology. A copy of this brochure has been included in Appendix D. The town should also consider providing dog waste stations and/or post signs informing pet owners that it is their responsibility to clean up after their pets in parks, along trails, and in public places where people often walk their dogs. An example of such a signs and stations are shown in the photographs to the left and right. Waste disposal stations can be stocked with biodegradable plastic bags. Town maintenance staff can empty the full waste can with the regular trash pickup. These signs and dog waste stations can be purchased from http://www.propertymanagementshop.com or http://www.parknpool.com/dog-waste-disposal.

3.2 BMP #2 - Public Involvement and Participation

The goal of this measure is to encourage public participation in an effort to successfully implement the overall plan. The public participation element should be aimed at all members of the community, including school children, homeowners, and business and industry owners and employees.

3.2.1 Permit Requirements For this control measure, the Permit requires the Town to:

- Comply with state and local public notice and Freedom of Information requirements when implementing a public involvement/participation program. When notice requirements are inconsistent, the notice provisions providing for the most notice and opportunity for public comment shall be followed.

- Develop a public involvement/participation program that includes the public in developing, implementing, and reviewing the stormwater management program.

- In addition, Section 4(d) of the Permit requires that a draft copy of this plan be made available for public review and comment 30 days before it is submitted to the DEEP. In addition, the required annual reports that must be submitted to the DEEP also must be made available for public comment 30 days before they are submitted.

3.2.2 Existing Plan BMPs and Status

BMP	STATUS
a. Comply with State Public Notification Guidelines	Ongoing
b. Plan Development and Maintenance-Notices and Public Meeting	To be initiated in 2016
c. SMP Committee	To be established in 2017
d. Stream Walk Program	To be schedule for 2017
e. Town wide Volunteer Opportunities	Pending
f. Sponsor Community Participation Event	Pending

3.2.3 Recommended Modifications

Recommendations #1 Implement all of the BMP's listed in the SWP.

To date the town has been tardy in implementing the BMP's outlined in the original SMP due to staff limitations and resources. However recently the leadership of the Town has made a commitment to fully embrace the SMP and will be actively promoting the BMP's for public involvement and participation as originally outlined in the SMP.

The availability of this SMP Annual Update will be posted in the Towns website. A public workshop will be held at the public meeting prior to the annual Town Council update.

A SMP committee will be formed and provided opportunity to review and comment on the Annual Update.

A stream walk program is already partially in effect as the Town recently built a walking path around the Scovill Reservoir (part of the Mad River) and has worked with the Board of Education and Senior Center to afford young and old the opportunity to enjoy the outdoors.

A volunteer program has been started with regard to the Scovill Walking Path by using high school students to help with the clearing of brush and planting of shrubs to enhance the trail.

The Town has also held a number of community participation events including a grand opening of the Scovill Trail on Earth Day and sponsoring a road race on the trail this summer. In the future the scope of the community events will incorporate other watersheds in Town.

3.3 BMP #3 Illicit Discharge Detection and Elimination

Illicit discharges directly affect the quality of area waters. Storm sewers are intended to only accept stormwater runoff and, as such, often discharge to local rivers and streams with no treatment to remove potential pollutants. Illicit discharges are defined as "any discharge to a municipal separate storm sewer system that is not composed entirely of stormwater." (40 CFR 122.26(b) (2) The control of illicit discharges is through both an implementation of ordinances or regulatory mechanisms prohibiting non-stormwater discharge and also information outreach programs to public employees, businesses, and the general public of the hazards associated with illegal discharges and improper disposal of waste.

The DEEP, in Section 3(a) (2) of the General Permit, has stated that certain non-stormwater discharges may be allowable provided they do not contribute to a violation of water quality standards. The Town requests authorization for the following allowable non-stormwater discharges: landscape irrigation, uncontaminated ground water discharges (foundation drains, footing drains), irrigation water, lawn watering runoff, residual street wash water, firefighting wastewaters (except those generated during training exercises), and naturally occurring discharges such as elevated ground water, springs, and diverted stream flows.

3.3.1 Permit Requirements

Because illicit discharges may have significant impacts on receiving waters, the DEEP's General Permit requires municipalities to address the following elements throughout the municipality:

- Implement an ordinance or other regulatory mechanism to effectively prohibit non-stormwater discharges (except those allowed in Section 3(a) (2) of the Permit) into the storm drainage system as well as sanctions to ensure compliance to the extent allowable under state and local law. A model ordinance is attached as Appendix E.

- Inform public employees, businesses, and the general public of the hazards associated with illegal discharges and improper disposal of waste.

- By June of 2018, expand the required storm drainage system map to identify all outfalls in the municipality 12 inches in diameter or greater.

- Develop, implement, and enforce a program to detect and eliminate existing illicit discharges.

- Develop and implement a plan to detect and address future non-stormwater discharges (including illegal dumping).

3.3.2 Existing Plan BMPs and Status

BMP	STATUS
a. Map Outfalls	To date have mapped stormwater pipes > 15"
b. Monitor Six Representative Outfalls	Have monitored the designated six outfalls for every Year since 2005 (2016 results attached in Appendix F)
c. Enacting Ordinance	Pending
d. Conduct Dry Weather Outfall Screening	To be conducted in the next three years

3.3.3 Recommended Modifications

Recommendation #1: Conduct the mapping and dry and wet weather monitoring required of the revised MS4 regulations

Recommendation #2: Educate businesses, public employees and the general public on hazards associated with illicit discharges.

Information could be incorporated into the town's website along with a town-wide mailing. Documents could include fact sheets, Environmental Protection Agency (EPA) information brochures, and NEMO brochures.

Recommendation #3: Develop Waste Management Regulations via Ordinance

3.4 BMP #4 Construction Site Stormwater Runoff Control

Construction sites contain a variety of potential pollutants: sediment, solid and sanitary wastes, fertilizers, pesticides, oil and grease, concrete truck washout, construction chemicals, and construction debris. The goal of this measure is to ensure that these pollutants do not enter downstream waters via storm runoff.

Sediment and erosion from construction sites may increase the amount of suspended solids within stormwater runoff. Pathogens like E. coli may adhere to these particles and be carried along to the final discharge point. Thus, recommendations in the Stormwater Management Plan relative to stormwater quality must be continually enforced to achieve TMDL values set by the DEEP. Preventative measures such as proper sediment and erosion control are the best deterrent to sediment loading in downstream watercourses

3.4.1 Permit Requirements

Pollutants generated by construction site runoff directly discharge into and adversely affect surface waters. Among these pollutants are sediment, solid and sanitary wastes, fertilizers, pesticides, oil and grease, concrete truck washout, construction chemicals, and construction debris. During a short period

of time, construction sites can contribute more sediment to streams than is deposited naturally during several decades. (EPA, Fact Sheet 2.6, January 2000)

The EPA, under Phase I of the National Pollutant Discharge Elimination System (NPDES) program, began to regulate stormwater discharges from construction sites. Phase I regulated construction sites that disturb five acres or more. Connecticut complied with the Phase I requirements by developing a General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities.

In Phase II of the NPDES program, construction site runoff is dealt with in two ways: (1) by requiring towns to develop measures for controlling construction site stormwater runoff, and (2) by reducing the threshold for the DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities from five acres of disturbed area to one acre. The DEEP is in the process of amending its Construction Activities General Permit.

Under the DEEP's General Permit, the Town must develop, implement, and enforce a program to reduce pollutants from construction activities that result in land disturbance greater than or equal to one acre. Activities that result in disturbance of less than one acre must be included if they are part of a larger development. This program applies to all areas of town and must include:

- An ordinance or other regulatory mechanism to require erosion and sediment controls and sanctions for noncompliance
- Procedures for notifying site developers of the requirements for registering under the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities
- Requirements for construction site operators to implement erosion and sediment controls in accordance with the state guidelines
- requirements for construction site operators to control wastes such as building materials, concrete truck washouts, chemicals, litter, and sanitary wastes
- Procedures for site plan review that incorporate consideration of potential water quality impacts
- Procedures for receipt and consideration of public comment
- Procedures for site inspection and enforcement of control measures

3.4.2 Existing Plan BMP"s and Status

BMP	STATUS
a. Review of Land Use Regulations	Pending
b. Training	Pending
c. Inspect Erosion and Sediment Controls	Already Inspected

3.4.3 Recommended Modifications

Recommendation #1: Establish regulations addressing residential stormwater management and enforcement actions.

Proper erosion and sedimentation controls or stormwater management controls are required for lot development work occurring in residential areas. The Town of Cheshire enforces drainage requirements through their Performance Standards. Wolcott could revise their updated Zoning Regulations to include a Performance Standard for drainage.

For example: Section Drainage: *No structure shall be used, erected or expanded and no land shall be graded or hard surfaced unless provisions have been made for the proper disposal of drainage water, particularly from parking areas and driveways, from areas contiguous to property lines and from low areas which tend to collect water.*

3.5 BMP #5 – Post-Construction Stormwater Management

New development and redevelopment increase the quantity of stormwater runoff (due to increased impervious coverage and decreased infiltration) and decrease the quality of stormwater runoff (due to road sands, oil and grease, pesticides, and fertilizers). Both residential and commercial sites have the potential to increase the volume of runoff and add pollutants to stormwater runoff. The goal of this measure is to ensure that programs to address stormwater runoff are developed, implemented, and enforced.

As with construction stormwater management, the recommendations set forth in the Post construction Stormwater Management section of the plan should also be continued and enforced. Low impact development techniques and water quality measures such as basins, swales, and mechanical separators should continue to be encouraged and required where feasible in all developments. Sediment and particles must be prohibited from entering the stormwater drainage system in order to decrease total suspended solids and the pathogens that attach to them.

3.5.1 Permit Requirements

The DEEP, through the Permit, has the following requirements to managing post construction runoff:

- Develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre. The program should ensure that controls are implemented to require appropriate infiltration practices, reduce impervious surfaces, and reduce sediment discharge. This program should be enforceable by an ordinance or other mechanism.

- Develop an ordinance or other mechanism to support the program described above.
- Develop and implement strategies that include a combination of structural and nonstructural BMPs that are appropriate for the town.

• Ensure adequate long-term maintenance and operation of stormwater BMPs that are installed.

3.5.2 Existing Plan BMPs and Status

BMP	STATUS
a. Review and Update of Land Use Regulations	Pending
b. CT DEEP Workshop	Pending
c. Adopt the 2004 CT DEEP Storm Water Quality Manual	Pending
d. Inspection Program	Pending

3.5.3 Recommended Modifications

Recommendations #1 Implement the recommendations of the SMP that have not been completed

Recommendation #2: Promote low-impact development (LID) techniques for development and redevelopment projects in Subdivision Regulations

The Subdivision Regulations could be modified to more effectively encourage LIDs. The Subdivision Regulations currently do not address the handling of stormwater runoff from roofs. The following text could be incorporated into the General Design Requirements: "When feasible and appropriate, roof runoff should be directed into infiltration systems sized to contain the water quality volume associated with the impervious roof area as described in the 2004 Connecticut Stormwater Quality Manual or onto stable vegetated soils for at least 50 feet to encourage infiltration and ground water recharge. Excess roof runoff may be directed overland or to watercourses or storm drains via grass swales or perforated pipes."

Recommendation #3: Develop a mechanism to ensure long-term operation and maintenance of BMPs

The Department of Public Works should develop an inventory of existing detention and retention basins. Ownership of these basins should be identified as either privately or Town owned. The Department of Public Works should perform inspections of town owned detention and retention basins and should implement an operations and maintenance (O&M) plan for ongoing maintenance. Sample O&M plans for basins and swales are included in Appendix G.

3.6 BMP #6 - Pollution Prevention/Good Housekeeping

The goal of this measure focuses on municipal operations. The General Permit requires that the town adopt work practices that minimize pollutant loading to surface waters within the town. Typical measures include employee training regarding prevention of pollution due to park, fleet, and building maintenance; street sweeping programs; catch basin and stormwater structure cleaning programs; and stormwater retrofitting programs.

Because E. coli can attach to suspended solids within stormwater, it is important that town-wide maintenance continue to focus on the Stormwater Quality Manual's goal of 80% removal of total suspended solids and water quality measures throughout the town's storm drainage infrastructure.

3.6.1 Permit Requirements

The DEEP's General Permit requires that the Town adopt work practices that minimize pollutant loading to surface water in the town. Specifically, the Town is required to:

- Develop and implement an operations and maintenance program that includes training for municipal employees and contractors and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.

- The program described in item 2.6.1.1 above should include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

- Develop and implement a program to sweep all streets at least once per year as soon after snowmelt as possible.

- *Develop an*d implement a program to evaluate and, if necessary, clean catch basins and other stormwater structures that accumulate sediment at least once per year, including a provision to identify and prioritize those structures that may require cleaning more than once per year.

- Develop and implement a program to evaluate and, if necessary, prioritize for repairing, retrofitting, or upgrading the stormwater conveyances, structures, and outfalls.

Within the urbanized area, the Town is also required to develop and implement a program to evaluate and prioritize those streets that may require sweeping more than once per year.

3.6.2 Existing Plan BMP"S and Status

BMP	STATUS
a. Training	Pending
b. Street Sweeping	Presently sweeps all roads once/year

c.	Will modify sweeping requirements pending evaluation of roads.	
d.	Municipal Parking Lot Sweeping	Program To be developed
e.	Catch Basin Cleaning	Presently clean once/4yrs Will modify plan based on catch basin inspections
f.	Minimize Impacts from Municipal Vehicle Washing	Presently wash all vehicles indoors
g.	Minimize Impacts from Municipal Vehicle Maintenance	Plan to be developed
h.	Public Grounds Maintenance	Staff to be trained

3.6.3 Recommended Modifications

Recommendation #1: Create an Operations and Maintenance Manual for municipal operations.

The O&M Manual should identify potential sources of contamination that can be minimized with proper control to protect stormwater runoff. The manual will address all public park areas, cemeteries, schools, fire stations, and maintenance facilities controlled by the Town in addition to employee training, housekeeping, and standard operating procedures for pollution control practices related to stormwater management. At a minimum, the manual should address:

- Proper handling of waste oil and other waste material generated by vehicle maintenance
- Proper handling and disposal of paints and other chemicals that may be stored at the Public Works garage
- Proper handling of fertilizers and pesticides and optimum application rates

Recommendation #2: Create fact sheets on the proper handling and disposal of paints and other chemicals that may be stored at the Public Works garage and distribute to Public Works employees.

The fact sheets should address BMPs such as recycling, disposal of containers, labeling of containers, and monthly inspections of hazardous material containers.