



Lunenburg Stormwater Management Plan

June 30, 2019

Prepared by:

Design Consultants Inc.
Massachusetts Watershed Coalition

Prepared for:

Town of Lunenburg
Stormwater Task Force

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LIST OF ACRONYMS

BMP	Best Management Practice
CGP	Construction General Permit
DPW	Lunenburg Department of Public Works
EPA	U.S. Environmental Protection Agency
IDDE	Illicit Discharge Determination and Elimination
LID	Low Impact Development
MADEP	Massachusetts Department of Environmental Protection
MCM	Minimum Control Measure
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer Systems
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
PSAs	Public Service Announcements
SOP	Standard Operating Procedure
SSO	Sanitary Sewer Overflow
SWMP	Stormwater Management Program
SWPPP	Stormwater Pollution Prevention Plan
SWTF	Lunenburg Stormwater Task Force
USFWS	U.S. Department of Fish and Wildlife

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1.0 CERTIFICATION

In accordance with Appendix B, Subsection 11.A of the Permit, the following statement is incorporated and signed in this document.

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Printed Name: Heather Lemieux, Town Manager

Date

2.0 BACKGROUND

2.1 Stormwater Regulation

The 1999 Stormwater Phase II Final Rule followed the 1987 Phase I Rule in EPA's effort to preserve, protect, and improve the Nation's water resources from polluted stormwater runoff. The Phase II program expands the Phase I program by requiring additional operators of Small Municipal Separate Storm Sewer Systems (MS4s) in urbanized areas and operators of small construction sites to implement programs and practices to control polluted stormwater runoff. Phase II is intended to further reduce adverse impacts to water quality and aquatic habitat by instituting controls on the unregulated sources of stormwater discharges that have the greatest likelihood of causing continued environmental degradation. Under the Phase II rule all MS4s with stormwater discharges from Census designated Urbanized Area are required to seek National Pollutant Discharge Elimination System (NPDES) permit coverage for those stormwater discharges.

2.2 Permit Program Background

On May 1, 2003, EPA Region 1 issued its Final General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (2003 small MS4 permit) consistent with the Phase II rule. The 2003 small MS4 permit covered "traditional" (i.e., cities and towns) and "non-traditional" (i.e., Federal and state agencies) MS4 Operators located in the states of Massachusetts and New Hampshire. This permit expired on May 1, 2008 but remained in effect until operators were authorized under the 2016 MS4 general permit, which became effective on July 1, 2018.

2.3 Stormwater Management Program (SWMP)

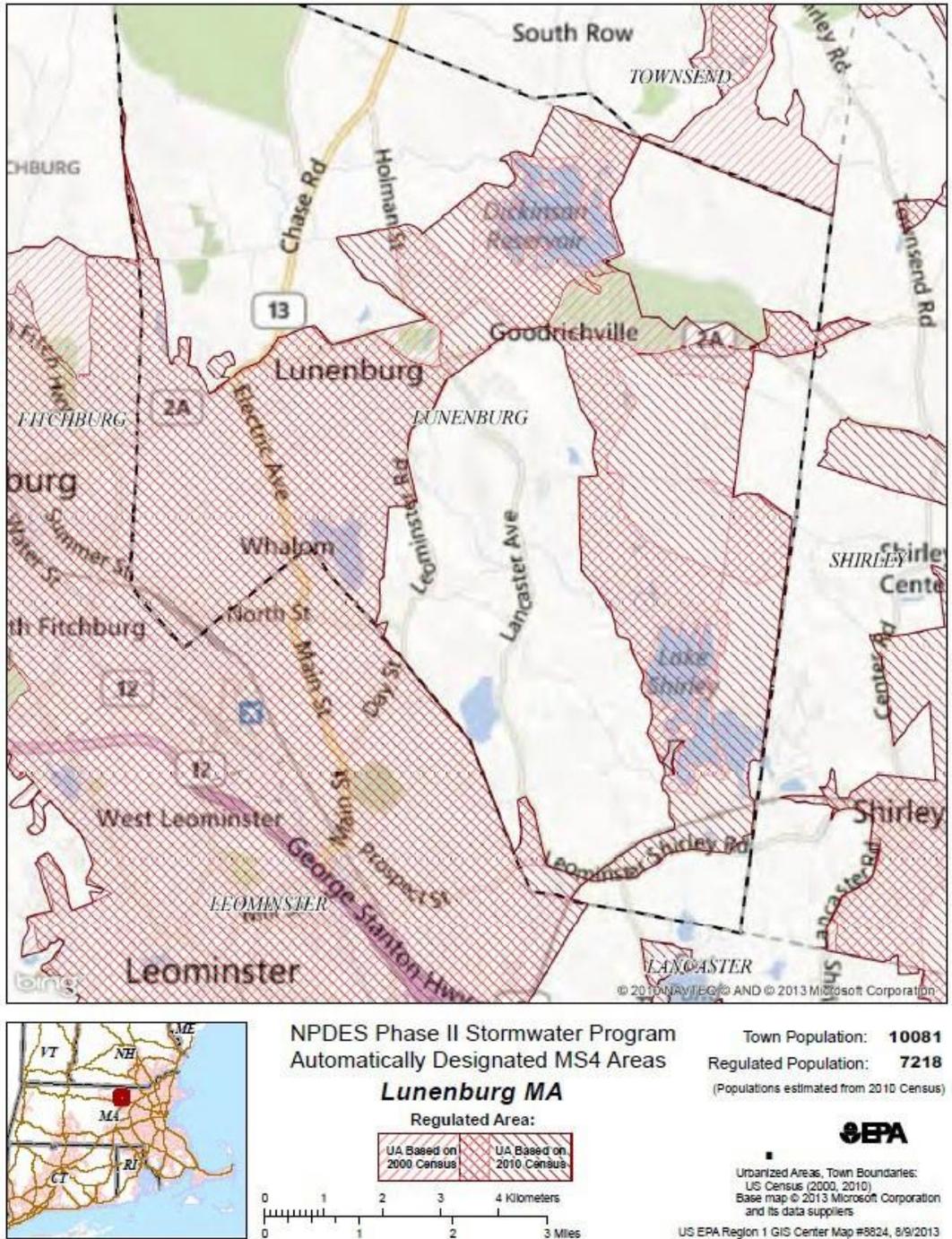
The SWMP describes and details the activities and measures that will be implemented to meet the terms and conditions of the permit. The SWMP accurately describes the permittees plans and activities. The document should be updated and/or modified during the permit term as the permittee's activities are modified, changed or updated to meet permit conditions during the permit term. The main elements of the stormwater management program are:

- (1) a public education program in order to affect public behavior causing stormwater pollution,
- (2) opportunity for the public to participate and provide comments on the stormwater program,
- (3) a program to effectively find and eliminate illicit discharges within the MS4,
- (4) a program to effectively control construction site stormwater discharges to the MS4,
- (5) a program to ensure that stormwater from development projects entering the MS4 is adequately controlled by the construction of stormwater controls, and
- (6) a good housekeeping program to ensure that stormwater pollution sources on municipal properties and from municipal operations are minimized.

2.4 Lunenburg

Lunenburg is a suburban urban community and municipality within the Worcester County. The

FIGURE 2-1 LUNENBURG MS4 AREAS



Lunenburg stormwater system consists of local municipal drainage pipes, open channels, or natural channels. Waterways in Lunenburg include Mulpus Brook, Catacoonamug Brook, Pearl Hill Brook and Easter Brook. Lunenburg is part of the Nashua River basin.

This SWMP was developed to comply with the permit, and is designed to reduce, to the maximum extent practicable (MEP), the discharge of pollutants from the municipal storm drain system. The SWMP includes stormwater management practices, control techniques, system design and engineering methods, an education component, and other provisions appropriate for the control of pollutants. The development, implementation and enforcement of the SWMP are to fulfill requirements under the permit, in accordance with Section 402(p)(3)(B) of the Federal Clean Water Act.

2.5 Small MS4 Authorization

The MS4 Permit Notice of Intent NOI was submitted on September 26, 2018. The NOI can be found at the following web address: <https://www.lunenburgma.gov>

The EPA Authorization to Discharge has not been granted. The Authorization Letter will be found at the following web address: <https://www.lunenburgma.gov>

2.6 MS4 Team

Lunenburg, under the direction of its Town Manager, is responsible for the overall implementation of the SWMP. Other Town departments assist in this implementation as appropriate and provided in the flow chart in Figure 2-2. Specific responsibilities are provided within each chapter. The responsible parties are as follows:

SWMP Team

SWMP Team Coordinator

Name: Heather Lemieux, Town Manager
Town of Lunenburg
17 Main Street
Lunenburg, MA 01462

Email: hlemieux@lunenburgonline.com
Phone: (978) 582-4130

Role: Overall project management, financial management and contract management.

SWMP Team

Name: Adam Burney, Director
Town of Lunenburg
Land Use Department
960 Massachusetts Avenue
Lunenburg, MA 01462

Email: aburney@lunenburgonline.com
Phone: (978) 582-4147

Role: Managing and implementing MCMs 1, 2, 4, and 5

Name: Jack Rodriquenz, Director
Town of Lunenburg
Department of Public Works
520 Chase Road Lunenburg,
MA 01462 Role:
Managing and implementing MCMs 3 and 6

Email: jrodriquenz@lunenburgonline.com
Phone: (978) 582-4160

Name: Stormwater Task Force
Town of Lunenburg
17 Main Street
Lunenburg, MA 01462

Email: stormwater@lunenburgonline.com
Phone: (978) 582-4130

Role: The **Stormwater Task Force** is charged with the development of a comprehensive stormwater management plan that complies with state and federal regulations, provides a storm and surface water system that controls damage from storms, protects surface water quality and the environment. The plan shall determine which local agency or agencies will be responsible for implementation, establish the estimated cost of the program, as well as provide for the creation of an ongoing funding source to enable its success.

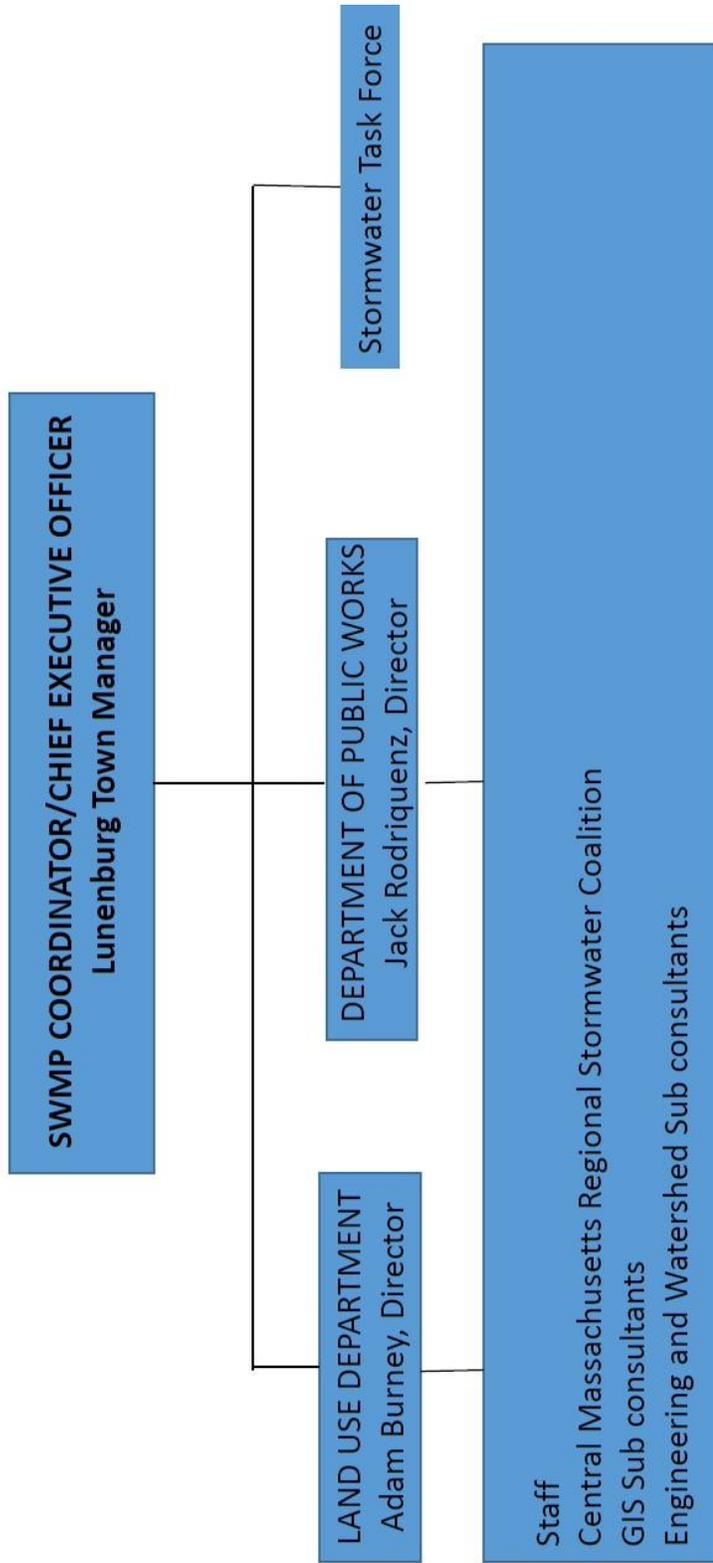
2.7 Purpose

This SWMP identifies tasks for development and implementation through the current permit cycle (set to expire on Sept 4, 2019). This SWMP will be updated as required per the renewed permit. These tasks are designed to address the six minimum control measures (MCMs) for the Town and are listed below:

- **Public Education and Outreach**
- **Public Involvement and Participation**
- **Illicit Discharge Detection and Elimination**
- **Construction Site Stormwater Runoff Control**
- **Long-term Stormwater Management in New Development and Redevelopment**
- **Pollution Prevention and Good Housekeeping for Municipal Operations**

Other permit requirements that incorporate all these MCMs include record keeping and reporting.

Figure 2-2 Staffing Flow Chart



The Stormwater Task Force is charged with the development of a comprehensive stormwater management plan that complies with state and federal regulations, provides a storm and surface water system that controls damage from storms, protects surface water quality and the environment. The plan shall determine which local agency or agencies will be responsible for implementation, establish the estimated cost of the program, as well as provide for the creation of an ongoing funding source to enable its success.

3.0 SPECIAL CONDITIONS

The 2016 MS4 Permit requires the SWMP address potential impacts to impaired water bodies, threatened and endangered species, and historic properties with regards to the discharge of stormwater. This section provides a discussion of these issues.

3.1 Receiving Waters.

As required by the 2016 MS4 Permit, the SWMP is required to identify all waters that receive stormwater in the Town. The Table 3-1 lists all receiving waters, impairments and number of outfalls discharging to each waterbody segment.

TABLE 3-1 RECEIVING WATERS											
Waterbody segment that receives flow from the MS4	No. of outfalls to water body	Chloride	Chlorophyll-a	Dissolved Oxygen	Nitrogen	Oil, Grease, PAH	Phosphorus	Solids/TSS/Turbidity	E.coli	Enterococcus	Other pollutants causing impairments
Pearl Hill Brook & wetlands	48	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Baker Brook	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tributary to Pearl Hill Brook	16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Brook crossing Northfield Road	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mulpus Brook	32	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lack of fish assemblage
Tributary to Mulpus Brook	7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hickory Hills Lake	23	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mercury in fish tissue
Wetlands to HH Lake	14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Turkey Hill Pond Wetlands	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lake Shirley	27	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mercury in fish tissue
Easter Brook	12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Whalom Lake & its wetlands	23	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weed growth
Massapoag Pond	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Catacoonamug Brook	15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Catacoonamug Wetlands	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

3.2 Threatened and Endangered Species

The results of the US Fish and Wildlife Service (USFWS) endangered species screening determination are included in Appendix A. These lists are subject to change, therefore the most recent information should be obtained prior to initiating new stormwater projects. Lunenburg will coordinate with the appropriate federal offices when new stormwater projects are planned and the potential impact to these species will be evaluated. The USFWS will be contacted during the planning stages.

Under what criterion did permittee determine eligibility for ESA? Criterion C

3.3 Historic Properties

Lunenburg will evaluate construction of the storm drain systems under the CGP and contact the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), or other Tribal representative as required.

Under what criterion did permittee determine eligibility for Historic Properties? Criterion A

3.4 Reminder

The proper consultations and updates to the SWMP must be conducted for construction projects related to your permit compliance where Construction General Permit (CGP) coverage, which requires its own endangered species and history preservation determination, is NOT being obtained.

4.0 MCM1: PUBLIC OUTREACH AND EDUCATION

Objective: The permittee shall implement an education program that includes educational goals based on stormwater issues of significance within the MS4 area. The ultimate objective of a public education program is to increase knowledge and change behavior of the public so that the pollutants in stormwater are reduced.

BMP 1-1: Web Page for Businesses, Institutions and Commercial Facilities

Document Name and/or Web Address: SWTF website address

Description: Web page posting of downloadable brochures, flyers and fact sheets posted on Town website may include materials available from the MADEP Stormwater Outreach Materials website (e.g., Stormwater Management for Small Businesses) and the Think Blue Massachusetts website.

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: Lunenburg Land Use Department

Measurable Goal(s): Inform and assist targeted audience to improve stormwater management for their facilities. Town webmaster will track # of people who view materials and # of people that download materials. Goal: 100 brochures/flyers/fact sheets will be downloaded by web page visitors annually.

Message Date(s): Materials to be posted starting FY2020 with more materials made available in subsequent years.

BMP 1-2: Cable TV for Businesses, Institutions and Commercial Facilities

Document Name and/or Web Address: SWTF website address

Description: Broadcast public service announcements and videos about stormwater management on the Lunenburg Cable Television channel, which are available from the Cable Television programs, the YouTube website, and the Think Blue Massachusetts website.

Targeted Audience: Businesses, institutions and commercial facilities

Responsible Department/Parties: Lunenburg Land Use Department

Measurable Goal(s): Inform and assist targeted audience to improve stormwater management for their facilities. Cable TV will track # of PSAs and videos broadcast annually. Estimate # viewers based on Cable Television statistics. Goal: 1000 people will view Public Service Announcements (PSAs) and videos annually. Survey Monkey will measure effectiveness of Cable TV messages.

Message Date(s): PSAs and videos broadcasts to begin in FY2023.

BMP 1-3: Stormwater Management Email for Developers

Document Name and/or Web Address: SWTF website address

Description: Email developers and home builders a brochure/fact sheet about construction stormwater management, which is available from the MADEP Stormwater Outreach Materials website and the Think Blue Massachusetts website.

Targeted Audience: Developers (construction)

Responsible Department/Parties: Lunenburg Land Use Department

Measurable Goal(s): Inform and assist builders and developers to protect the Town's water resources. Email messages will include response form to measure the effectiveness of brochure/fact sheet. Track # and date of emails sent and responses received from targeted audience.

Message Date(s): Email developers and home builders in FY2020.

BMP 1-4: Low Impact Development (LID) Email for Developers

Document Name and/or Web Address: SWTF Website

Description: Email developers and home builders the brochure "Builders Guide to Low Impact Development", which is available from the MADEP Stormwater Outreach Materials website and the National Association of Home Builders research center website.

Targeted Audience: Developers (construction)

Responsible Department/Parties: Lunenburg Land Use Department

Measurable Goal(s): Inform and assist builders and developers to utilize LID site planning and design concepts to better manage stormwater and reduce the need for structural BMPs. Email messages will include response form to measure the effectiveness of brochure/fact sheet. Track the # and date of emails sent and responses received from targeted audience.

Message Date(s): Email developers and home builders in FY2023.

BMP 1-5: Stormwater Management Email for Industrial Facilities

Document Name and/or Web Address: <https://www.lunenburgma.gov/boards-commissions-committees/stormwater-task-force>

Description: Email industrial facilities a brochure/fact sheet about Industrial Stormwater Best Management Practices, which is available from the MADEP Stormwater Outreach Materials website and the Think Blue Massachusetts website.

Targeted Audience: Industrial Facilities

Responsible Department/Parties: Lunenburg Land Use Department and Assessors office

Measurable Goal(s): Inform and assist industrial facilities to utilize practices to better manage stormwater and protect local water resources. Email messages will include response form to measure the effectiveness of brochure/fact sheet. Track # and date of emails sent and responses received from targeted audience.

Message Date(s): Email industrial facilities in FY2020.

BMP 1-6: Fleet Management Email for Industrial Facilities

Document Name and/or Web Address: <https://www.lunenburgma.gov/boards-commissions-committees/stormwater-task-force>

Description: Email industrial facilities a brochure/fact sheet about Industrial Fleet Management practices, which is available from the MADEP Stormwater Outreach Materials website and the Think Blue Massachusetts website.

Targeted Audience: Industrial Facilities

Responsible Department/Parties: Lunenburg Land Use Department and Assessors office

Measurable Goal(s): Inform and assist industrial facilities to utilize fleet management practices to prevent polluted runoff and protect local water resources. Email message will include response form to measure the effectiveness of brochure/fact sheet. Track # and date of emails sent and responses received from targeted audience.

Message Date(s): Email industrial facilities in FY2022.

BMP 1-7: Stormwater Guide for Residents

Document Name and/or Web Address: Lunenburg SWTF website address

Description: Mail insert with Town bills – “Stormwater Pollution Prevention Guide for Homeowners”, which is available from the MADEP Stormwater Outreach Materials website, the Think Blue Massachusetts website and other sources.

Targeted Audience: Residents

Responsible Department/Parties: Lunenburg Land Use Department

Measurable Goal(s): Inform and assist residents to utilize simple household practices to prevent polluted runoff and protect local water resources. Track # and date of brochures mailed and any responses received from targeted audience. Goal: 5,000 households will receive brochure in mail and Survey Monkey will measure effectiveness of messaging.

Message Date(s): Arrange mailing to residents in FY2019.

BMP 1-8: Stormwater Display for Residents

Document Name and/or Web Address: Lunenburg SWTF website address

Description: Prepare 5 displays that offer brochures/fact sheets at Town Hall, Town Library and other public places. Materials about lawn maintenance, pet wastes, rain gardens, car care and additional topics are available from MADEP Stormwater Outreach website, the Think Blue Massachusetts website and other websites.

Targeted Audience: Residents

Responsible Department/Parties: Lunenburg Land Use Department

Measurable Goal(s): Inform and assist residents to utilize simple household practices to reduce stormwater pollution. Track # of brochures and fact sheets that are taken from the displays as well as any responses received from targeted audiences. Goal: 500 brochures and fact sheets will be distributed annually by displays. Survey Monkey will measure effectiveness of messaging.

Message Date(s): Displays will be placed in FY2022.

5.0 MCM2: PUBLIC INVOLVEMENT AND PARTICIPATION

The SWMP addresses the importance of public involvement with respect to control of stormwater. Community participation provides for broader public support, shorter implementation schedules, a broader base of expertise and the development of important relationships with other community and government programs. The BMPs described in this section include opportunities for the public to play an active role in the Town's stormwater program.

5.1 Summary of Tasks

This MCM complements the Public Education and Outreach Program, providing for public input into the stormwater program as well as some active community programs. The following BMPs describe tasks to be completed by Lunenburg for Public Involvement and Participation. Progress towards the measurable goals will be documented in the Annual Report.

BMP 2-1: BMP: Public Review of Stormwater Management Program

Document Name and/or Web Address: SWTF website address

Responsible Department/Parties: Lunenburg Land Use Department

Description: Provide opportunity for public to review and comment on the SWMP and other regulatory mechanisms for SWMP implementation. The proposed Lunenburg SWMP will be posted on Lunenburg's SWTF website in June 2019 and available for public comment. Comments will be reviewed and incorporated as appropriate.

Measurable Goal(s): Stormwater Management Plan is publicly available.

BMP 2-2: Public Participation in Stormwater Management Program Development

Document Name and/or Web Address: SWTF website address

Description: Public meeting will be arranged annually to present the Stormwater Management Plan and provide opportunity to participate in the review and implementation of the SWMP.

Responsible Department/Parties: Board of Selectmen

Measurable Goal(s): Annual public input provided. (i.e. All Permit Years)

BMP 2-3: Community Stormwater Survey

Document Name and/or Web Address: SWTF website address

Description: Survey Monkey designed to assess public attitudes, interests and foster community participation in the Town's SWMP. The survey will be posted on the Town website and Town Facebook page in 2019 and survey responses will be tracked.

Responsible Department/Parties: SWTF

Measurable Goal(s): Survey Monkey will be updated in FY2021 and posted again on Town website and Town Facebook page. Survey responses in FY2019 and FY2021 will be correlated to measure the effectiveness of messaging. Goal: 500 people will participate in these Town surveys.

6.0 MCM3: ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

The Illicit Discharge Detection and Elimination (IDDE) Program addresses non-stormwater flows that are discharged to receiving waters via stormwater conveyance systems. This program includes implementation of BMPs to assist in the identification of illicit discharges and removal of these discharges. This program will also focus on prevention of new illicit discharges to the stormwater system by means of education, regulations, and through spill prevention and response.

BMP 3-1: IDDE Legal Authority

Document Name: Town Code §204-2: Discharges to Municipal Storm Sewer System.

Web Address: <https://ecode360.com/33613912>

Responsible Department/Parties: Lunenburg Planning Board

BMP 3-2: Sanitary Sewer Overflow (SSO) Inventory

Document Name and/or Web Address: SWTF website address

Description: There are no known SSO locations to surface water or into the MS4 during the past 5 years. This initial SSO inventory will be documented as an appendix of the SWMP.

Responsible Department/Parties: DPW

Measurable Goal(s): In the event a SSO occurs, the town will track and report the following SSO information: the location; a clear statement of whether the discharge entered a surface water directly or entered the MS4; date(s) and time(s) of each known SSO occurrence; estimated volume(s) of the occurrence; description of the occurrence indicating known or suspected cause(s); mitigation and corrective measures completed with dates implemented; and mitigation and corrective measures planned with implementation schedules. Update inventory as needed.

SSO Reporting: in the event of an overflow or bypass, a notification must be reported within 24 hours by phone to MDEP, EPA, and other relevant parties. Follow up the verbal notification with a written report following MDEP's Sanitary Sewer Overflow (SSO)/Bypass notification form within 5 calendar days of the time you become aware of the overflow, bypass, or backup.

The MADEP contacts are: Central Region (508) 792-7650 8 New Bond Street, Worcester, MA 01606; 24-hour Emergency Line 1-888-304-1133

The EPA contacts are: EPA New England 5 Post Office Square, Boston, MA 02109; (617) 918-1510.

BMP 3-3: Map of Storm Sewer System

Document Location and/or Web Address: Assessors Online GIS Maps

Description: Work in progress to complete Phase I and Phase II storm sewer system mapping per MS4 Permit criteria, as described in the IDDE Plan. Phase I will be completed by 2020; Phase II by 2028

Responsible Department/Parties: DPW

Measurable Goal(s): Map 100% of outfalls and receiving waters, open channel conveyances, interconnections with other MS4s and other storm sewer systems, municipally-owned stormwater treatment structures, water bodies identified by name and indication of all use impairments, and initial catchment delineations June 30, 2020. Map 100% of outfall spatial locations, pipes, manholes, catch basins, refined catchment delineations, municipal sanitary sewer system, and municipal combined sewer system (if applicable) June 30, 2028.

BMP 3-4: IDDE Program

Document Name and/or Web Address: Stormwater Task Force website

Description: IDDE Plan, which includes: initial outfall inventory & ranking; outfall screening procedure; catchment investigation procedure; illicit discharge removal procedure; follow up ranking of outfalls and interconnections procedure. To be completed by June 30, 2019. These IDDE Program procedures will be an attached appendix of this Stormwater Management Program.

Responsible Department/Parties: DPW

Measurable Goal(s): Conduct 100% of outfall screening on High and Low Priority Outfalls within 3 years of the permit's effective date. Complete catchment investigations for 100% of the Problem Outfalls within 7 years of the permit's effective date. Complete 100% of all catchment investigations within 10 years of the permit's effective date.

BMP 3-5: Employee Training

Description: Annual IDDE training of DPW personnel as required by MS4 Permit 2.3.4.11

Responsible Department/Parties: DPW

Measurable Goal(s): Annual training will be completed by June 30 each year.

BMP 3-6: Outfall Ranking for Water Quality Limited Waters with Phosphorus Impairment

Document Name and/or Web Address: SWTF website

Description: Rank outfalls to receiving waters with phosphorus impairment as high priority for IDDE implementation. Per by MS4 Permit requirement 2.3.4.7.a.iii

Responsible Department/Parties: DPW

Measurable Goal(s): Conduct 100% of outfall screening on High and Low Priority Outfalls by June 30, 2021.

7.0 MCM4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

The Construction Site Stormwater Runoff Control Program section of the SWMP addresses water quality concerns for construction sites greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development. Polluted stormwater runoff from construction sites often flows to storm drains and into receiving waters. This runoff can contribute more sediment to receiving waters than would otherwise naturally infiltrate into the ground, and can cause physical, chemical and biological harm to receiving waters. The BMPs described in this section of the SWMP includes a construction site program designed to reduce pollutants in stormwater runoff from construction site activities.

BMP 4-1: Sediment and Erosion Control Bylaw

Bylaw Reference: Town Code §204-1 E (2) Stormwater Management; NPDES Phase II permits

Location: <https://ecode360.com/33599550>

Department Responsible for Enforcement: Lunenburg Planning Board

BMP 4-2: Site Plan Review Procedures

Bylaw Reference: Town Code §204-1 Stormwater Management; Town Code §250 Zoning

Description: Describe current site plan review procedures in §204-1 D (6) and §250-8.4 C; also include §250-8.4 D (5) that encourages use of low impact design, infiltration and impervious surface reduction to prevent sediment transport to MS4 system.

Location: <https://ecode360.com/33599550>

Department Responsible for Enforcement: Lunenburg Planning Board

Measurable Goal(s): Conduct site plan review of 100% of projects according to the procedures outlined above. These existing site plan review procedures will be an attached appendix of this Stormwater Management Program.

BMP 4-3: Site Inspections and Enforcement of Sediment and Erosion Control Measures Procedures

Bylaw Reference: Town Code §204-1 Stormwater Management; NPDES Phase II permits

Description: Describe current inspection procedure §204-1 H (2) b; and enforcement procedure §204-1 K, M, N.

Location: <https://ecode360.com/33599550>

Responsible Department/Parties: Lunenburg Land Use Department

Measurable Goal(s): Inspect 100% of construction sites as outlined in the above document and take enforcement actions as needed. These existing site inspection and enforcement procedures will be an attached appendix of this Stormwater Management Program.

BMP 4-4: Construction Site Waste Control

Bylaw Reference: Town Code §204-2 Discharges to Municipal Storm Sewer System

Description: Describe current §204-2 B definition and §204-2 G (1) provisions that prohibit illicit discharge of debris, truck wash-out, litter and sanitary waste control on constructions sites.

Location: <https://ecode360.com/33599550>

Responsible Department/Parties: Lunenburg Land Use Department

Measurable Goal(s): Inspect 100% of construction sites as outlined in the above document and take enforcement actions as needed.

8.0 MCM5: STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT PROGRAM (Post Construction Stormwater Management)

The Stormwater Management in New Development and Redevelopment Program (Post Construction Stormwater Management) addresses the importance of stormwater runoff management following the completion of construction activities. This program applies to areas with land disturbances of greater than or equal to one acre and projects less than one acre that are part of a larger common plan of development or sale or areas known to have sensitive soils and watershed issues. Post-construction stormwater management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly impact receiving waterbodies. There are two forms of impacts associated with post-construction runoff; one is caused by an increase of pollutants in stormwater runoff; the second type occurs by the increase in the quantity of stormwater. Prior planning and design for the minimization of pollutants in post-construction stormwater discharges is an effective approach to stormwater quality management. The BMPs described in this section include the development of structural and non-structural stormwater runoff strategies and the development of programs that consider water quality impacts of new development and redevelopment projects.

BMP 5-1: Post-Construction Bylaw

Bylaw Reference: Town Code §204-1 Stormwater Management; NPDES Phase II permits

Location: <https://ecode360.com/33599550>

Department Responsible for Enforcement: Lunenburg Planning Board

BMP 5-2: Street Design and Parking Lot Guidelines Report

Document Name and/or Web Address: Lunenburg Stormwater Task Force website

Description: Prepare report assessing requirements that affect the creation of impervious cover. This assessment will determine if design standards for streets and parking lots can be modified to support low impact design options. When completed, the report will be part of this Stormwater Management Plan.

Responsible Department/Parties: Lunenburg Land Use Dept. and DPW

Measurable Goal(s): The report will be completed by June 2022 and shall include recommendations to incorporate policies and standards into Town documents and procedures, which can lessen impervious cover created by parking areas and streets. The report will include a proposed implementation schedule for recommendations with progress reported annually.

BMP 5-3: Green Infrastructure Report

Document Name and/or Web Address: Lunenburg Stormwater Task Force website

Description: Prepare report assessing existing local regulations to determine the feasibility of making green infrastructure - such as green roofs, infiltration practices and water harvesting devices - allowable when appropriate site conditions exist.

Responsible Department/Parties: Lunenburg Land Use Dept. and DPW

Measurable Goal(s): The report will be completed by June 2022 and shall determine barriers to green infrastructure, as well as changes that can be made in Town regulations to make the practices allowable. Report recommendations will be implemented based on proposed schedules contained in the assessment, with progress reported annually.

BMP 5-4: List of Municipal Retrofit Opportunities

Document Name and/or Web Address: Lunenburg Stormwater Task Force website

Description: Identify minimum of five town properties that can be retrofitted to reduce pollutant loads of discharges into and from MS4 infrastructure (including street right-of-ways, conventional conveyances, outfalls and controls). Evaluate and rank retrofits for control of stormwater discharges to first or second order streams, public swimming beaches, water supply sources, water quality limited waters and other critical areas.

Responsible Department/Parties: Lunenburg Land Use Department

Measurable Goal(s): The priority ranking for BMP retrofits will be completed by June 2022 and consider factors including site conditions and timetables for planned capital improvements to storm sewer infrastructure and paving projects. The list of retrofits will estimate the reductions of pollutant loads by BMP recommendations that will be implemented according to the schedule contained in this inventory with progress reported annually.

BMP 5-5: Stormwater Bylaw Performance Standards

Document Name and/or Web Address: Town Code §204-1 Stormwater Management; NPDES Phase II permits; www.lunenburgma.gov

Location: <https://ecode360.com/33599550>

Description: Modify town bylaw §204-1 E (2) performance standards per new MS4 Permit provisions for new development and redevelopment BMPs. Include §204-1 D (7) requirement for

submission of as-built plans; and §204-1 F requirement for O&M Plans as part of this Stormwater Management Program.

Responsible Department/Parties: Lunenburg Land Use Department

Measurable Goal(s): Revise the bylaw standards for runoff volume and pollutant removal by June 2020. Also require BMPs to be optimized for phosphorus removal including stormwater infiltration practices where feasible.

9.0 MCM6: POLLUTION PREVENTION & GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

The Pollution Prevention & Good Housekeeping Program of the Stormwater Management Plan addresses routine activities in the operation and maintenance of drainage systems, roadways, and other municipal operations to help ensure a reduction in pollutants entering the storm drain system.

BMP 6-1: Parks and Open Spaces Operations and Maintenance Procedures

Document Name and/or Web Address: Lunenburg Stormwater Task Force website

Description: Prepare written procedures (electronic and hard copy) for the operations and maintenance of town-owned parks and open space. When completed, the O&M procedures will be part of this Stormwater Management Program.

Responsible Department/Parties: Lunenburg DPW, Parks Commission and Town Departments

Measurable Goal(s): Create electronic document by June 2020 for O&M procedures that prevent polluted runoff from town operations, and implement the procedures for 100% of town-owned parks and open spaces. The electronic document will include standard operation procedures. (SOPs).

Properties List: Stormwater Task Force will compile list of town-owned parks and open spaces.

BMP 6-2: Buildings and Facilities Operations and Maintenance Procedures

Document Name and/or Web Address: Lunenburg Stormwater Task Force website

Description: Prepare written procedures for the operations and maintenance of town-owned buildings and facilities (town offices, parking, etc.). When completed, the O&M procedures will be part of this Stormwater Management Program.

Responsible Department/Parties: Lunenburg DPW and Town Departments

Measurable Goal(s): Create electronic document by June 2020 for O&M procedures that prevent polluted runoff from town operations, and implement the procedures for 100% of town-owned buildings and facilities. The electronic document will include (SOPs).

Properties List: Stormwater Task Force will compile list of town-owned buildings and facilities.

BMP 6-3: Vehicles and Equipment Operations and Maintenance Procedures

Document Name and/or Web Address: Lunenburg Stormwater Task Force website

Description: Prepare written procedures for the operations and maintenance (O&M) of town-owned vehicles and equipment. When completed, the O&M procedures will be part of this Stormwater Management Program.

Responsible Department/Parties: Lunenburg DPW and Town Departments

Measurable Goal(s): Create electronic document by June 2020 for O&M procedures that prevent polluted runoff from town operations, and implement the procedures for 100% of town-owned vehicles and equipment. The electronic document will include SOPs.

Properties List: Stormwater Task Force will compile list of town-owned vehicles and equipment.

INFRASTRUCTURE

BMP 6-4: Infrastructure Operations and Maintenance Procedures

Document Name and/or Web Address: Lunenburg DPW website

Description: Prepare written program of procedures to maintain MS4 infrastructure in a timely manner. When completed, the O&M procedures will be part of this Stormwater Management Program.

Responsible Department/Parties: Lunenburg DPW

Measurable Goal(s): Create electronic document by June 2020 for O&M procedures that prevent polluted runoff, and implement the procedures for 100% of town-owned MS4 infrastructure. The electronic document will utilize the Municipal Stormwater Infrastructure Operation and Maintenance Plan template that is available from Central MA Regional Stormwater Coalition website.

BMP 6-5: Catch Basin Cleaning Program

Document Name and/or Web Address: Lunenburg DPW website

Description: Prepare written program to optimize routine inspections, cleaning and maintenance of town-owned catch basins. When completed, the catch basin program schedule will be part of this Stormwater Management Program.

Responsible Department/Parties: Lunenburg DPW

Measurable Goal(s): Create electronic document by June 2019 for O&M procedures that prevent polluted runoff, and implement the procedures for 100% of town-owned MS4 infrastructure.

BMP 6-6: Street Sweeping Program

Document Name and/or Web Address: Lunenburg DPW website

Description: Develop and implement sweeping procedures for town-owned streets and parking lots in accordance with Permit conditions, and maintain a town log of street and parking sweeping activities.

Responsible Department/Parties: Lunenburg DPW

Measurable Goal(s): All town-owned parking lots and streets, except rural uncurbed roads, will be swept twice per year: in the spring after winter sanding and in autumn after leaf fall. Sweeping procedures and log records will be in accordance with the Municipal O&M Plan. Written procedure will be completed by June 2019.

BMP 6-7: Winter Road Maintenance Program

Document Name and/or Web Address: Lunenburg DPW website

Description: Prepare written program for winter road maintenance including procedures for the use and storage of sand and salt; and for Town snow disposal activities.

Responsible Department/Parties: Lunenburg DPW

Measurable Goal(s): Winter road maintenance program will reduce application of salt and evaluate at least one salt/chloride alternative for use in the Town. Procedures for the use and storage of sand and salt will be in accordance with the Municipal O&M Plan. Written procedure will be completed by June 2019.

BMP 6-8: Stormwater Treatment Structures Inspection and Maintenance Procedures

Document Name and/or Web Address: Lunenburg DPW website

Description: Prepare and implement procedures for the annual inspection and maintenance of town-owned stormwater treatment structures including water quality swales, retention/detention basins, infiltration structures and proprietary devices.

Responsible Department/Parties: Lunenburg DPW

Measurable Goal(s): Inspect and maintain 100% of town-owned stormwater treatment structures to ensure proper function. The procedures for annual inspection and maintenance will be in accordance with the Municipal O&M Plan. Written procedures will be completed by June 2019.

BMP 6-9: Stormwater Pollution Prevention Plan

Document Name and/or Web Address: Lunenburg DPW website

Description: Prepare a SWPPP for each Town operated public works yard and other waste handling facilities that are exposed to stormwater. When completed, the SWPPPs will be separate and different documents from this SWMP.

Responsible Department/Parties: Lunenburg DPW

Measurable Goal(s): Develop and implement SWPPPs for 100% of Town operated facilities. Written records of all required activities will be retained by the Town for a period of at least five years. Written SWPPPs will be completed by June 2020.

BMP 6-10: Phosphorus Source Identification Report

Document Name and/or Web Address: Lunenburg DPW website

Description: Prepare a Phosphorus Source Identification Report per requirements in Part II of Appendix H for the MS4 Permit. This report will include MS4 catchment delineations, outfall screening and monitoring results, impervious area for target catchments, and prioritize potential catchments with high phosphorus loading.

Responsible Department/Parties: Lunenburg DPW

Measurable Goal(s): The report will identify retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment, including the removal of impervious area. The phosphorus source identification report shall be submitted to EPA as part of the Permit Year 4 annual report.

BMP 6-11: Phosphorus Source Structural BMPs Listing

Document Name and/or Web Address: Lunenburg DPW website

Description: Evaluate town-owned properties identified by Phosphorus Source Identification Report for retrofit opportunities per requirements in Part II of Appendix H for the MS4 Permit. This evaluation will consider planned road paving or redevelopment activity; the estimated cost of redevelopment or retrofit BMPs; and engineering/regulatory feasibility of redevelopment or retrofit BMPs.

Responsible Department/Parties: Lunenburg DPW

Measurable Goal(s): Evaluation will provide a listing of planned structural BMPs and a plan/schedule for implementation. At least one structural BMP will be identified as a demonstration project for a catchment with high phosphorus load potential. The listing and schedule of planned structural BMPs shall be submitted to EPA as part of Permit Year 5 annual report.

10.0 ANNUAL EVALUATION

Year 1 Annual Report

Document Name and/or Web Address: Lunenburg Stormwater Task Force website

Year 2 Annual Report

Document Name and/or Web Address: Lunenburg Stormwater Task Force website

Year 3 Annual Report

Document Name and/or Web Address: Lunenburg Stormwater Task Force website

Year 4 Annual Report

Document Name and/or Web Address: Lunenburg Stormwater Task Force website

Year 5 Annual Report

Document Name and/or Web Address: Lunenburg Stormwater Task Force website

Additional Annual Reports to be listed.

11.0 WATER QUALITY LIMITED WATERS

TABLE 11-1 WATER QUALITY LIMITED WATERS			
Applicable Waterbodies	303d Category	Pollutants	Notes
Nashua River	5	Phosphorus	Draft TMDL prepared – the entire Lunenburg MS4 is in the Nashua River watershed
Nashua River	5	Escherichia coli	NPS wet weather discharges
Hickory Hills Lake	4A	Mercury in Fish Tissues	TMDL# CN376 Atmospheric deposition
Lake Shirley	4A	Mercury in Fish Tissues	TMDL# CN377 Atmospheric deposition
Lake Shirley	5	Turbidity	Source unknown
Lake Shirley	5	Dissolved Oxygen	Source unknown
Lake Shirley	5	Excess algae growth	Source unknown

Appendix H: Phosphorus Impaired Waters Requirements***Annual Requirements Beginning Year 1*****MCM 1 Public Education and Outreach**

MS4 General Permit excerpts: The ultimate objective of a public education program is to increase knowledge and change behavior of the public so that pollutants in stormwater are reduced. ... The program shall identify steps and/or activities that the public can take to reduce the pollutants in stormwater runoff and their impacts to the environment.

Appendix H, §II.1.a.i.1 Seasonal Messages: The permittee shall supplement its Residential and Business/ Commercial/Institution program with annual timed messages on specific topics. Annual timed messages to be delivered by one or more of following options: Town Facebook page; **Town website**; Stormwater Task Force webpage; insert with Town bills; press release; signs placed on major roads in Town center.

Description:

Website posting of fact sheet in the **spring** (April/May), which will promote the proper use and disposal of grass clippings and encourage the proper use of slow-release and phosphorus-free fertilizers.

Measurable Goal:

Enable Town residents, businesses, institutions and commercial facilities to learn effective practices that reduce phosphorus in stormwater runoff and protect local water resources. Town webmaster will track # of people who view materials and # of people that download materials. Goal: 100 fact sheets will be downloaded by website visitors annually, and Survey Monkey will measure effectiveness of messaging.

Description:

Annual website posting of fact sheet in **summer** (June/July), which promote the proper management of pet waste and cite Town regulations including § 204-1 Stormwater management.

Measurable Goal:

Enable Town residents, businesses, institutions and commercial facilities to reduce phosphorus and bacteria in stormwater runoff and protect local water resources. Town webmaster will track # of people who view materials and # of people that download materials. Goal: 100 fact sheets will be downloaded by website visitors annually, and Survey Monkey will measure effectiveness of messaging.

Description:

Annual website posting of fact sheet in the **fall** (September/October), which will promote the proper management of leaf litter and yard waste.

Measurable Goal:

Enable Town residents, businesses, institutions and commercial facilities to learn yard waste practices that prevent clogging of stormwater drainage and reduce phosphorus released to local water resources. Town webmaster will track # of people who view materials and # of people that download materials. Goal: 100 fact sheets will be downloaded by website visitors annually, and Survey Monkey will measure effectiveness of messaging.

MCM 3 Illicit Discharge Detection and Elimination (IDDE) Program

Rank outfalls to these receiving waters as high priority for IDDE implementation in the initial outfall ranking.

The relevant BMP number(s) are listed above in the Stormwater Management Program.

MCM 5 Stormwater Management in New Development and Redevelopment

Retrofit inventory and priority ranking under 2.3.6.1.b. shall include consideration of BMPs to reduce phosphorus discharges.

The relevant BMP number(s) listed above in the Stormwater Management Program.

MCM 6 Good Housekeeping and Pollution Prevention for Permittee Owned Operations

Increase street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year (spring and fall).

The relevant BMP number(s) listed above in the Stormwater Management Program.

Establish procedures to properly manage grass cuttings and leaf litter on permittee property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces

The relevant BMP number(s) listed above in the Stormwater Management Program.

Any structural BMPs listed in Attachment 3 to Appendix F already existing or installed in the regulated area by the permittee or its agents shall be tracked and the permittee shall estimate the

phosphorus removal by the BMP consistent with Attachment 3 to Appendix F. The BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated phosphorus removed in mass per year by the BMP is found in the following document or website and is updated yearly at a minimum:

Requirements Due by Year 2

MCM 5 Stormwater Management in New Development and Redevelopment

The requirement for adoption/amendment of the permittee's ordinance or other regulatory mechanism shall include a requirement that new development and redevelopment stormwater management BMPs be optimized for phosphorus removal.

The relevant BMP number(s) listed above in the Stormwater Management Program.

Requirements Due by Year 4

MCM 5 Stormwater Management in New Development and Redevelopment

Retrofit inventory and priority ranking under 2.3.6.1.b. shall include consideration of BMPs that infiltrate stormwater where feasible.

The relevant BMP number(s) listed above in the Stormwater Management Program

MCM 6 Good Housekeeping and Pollution Prevention for Permittee Owned Operations

Complete a Phosphorus Source Identification Report.

The relevant BMP number(s) listed above in the Stormwater Management Program.

Requirements Due by Year 5

MCM 6 Good Housekeeping and Pollution Prevention for Permittee Owned Operations

Evaluate all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMP installation under Permit part 2.3.6.d.ii or identified in the Phosphorus Source Identification Report that are within the drainage area of the impaired water or its tributaries.

The relevant BMP number(s) listed above in the Stormwater Management Program

Complete a listing of planned structural BMPs and a plan and schedule for implementation. The relevant BMP number(s) listed above in the Stormwater Management Program.

Appendix H: Solids, Oil and Grease (Hydrocarbons) Requirements

Annual Requirements Beginning Year 1

MCM 3 Illicit Discharge Detection and Elimination (IDDE) Program

Rank outfalls to these receiving waters as high priority for IDDE implementation in the initial outfall ranking. The relevant BMP number(s) are listed above in the Stormwater Management Program.

MCM 6 Good Housekeeping and Pollution Prevention for Permittee Owned Operations

Increase street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year (spring and fall).

The relevant BMP number(s) listed above in the Stormwater Management Program.

Prioritize inspection and maintenance for catch basins to ensure that no sump shall be more than 50 percent full; clean catch basins more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

Requirements Due by Year 2

MCM 5 Stormwater Management in New Development and Redevelopment

Stormwater management systems designed on commercial and industrial land use area draining to the water quality limited water body shall incorporate designs that allow for shutdown and containment where appropriate to isolate the system in the event of an emergency spill or other unexpected event.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: