

Stormwater Management Program (SWMP) Plan

Town of Clinton, Massachusetts

June 30, 2019

Prepared For:

Town of Clinton
242 Church St.
Clinton, MA 01510



Prepared By:

Comprehensive Environmental Inc.
41 Main Street
Bolton, MA 01740



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Stormwater Management Program (SWMP) Plan Certification

“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.”

Name: Christopher McGowan Title: Superintendent of Public Works

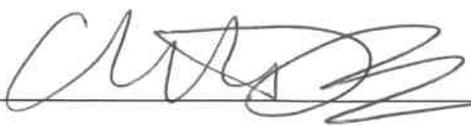
Signature:  Date: 6/30/19

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1 Introduction

Clinton is one of many Massachusetts communities regulated under the Environmental Protection Agency's (USEPA) National Pollutant Discharge Elimination System (NPDES) Phase II rule (40 CFR 122). The rule requires regulated operators of municipal separate storm sewer systems (MS4) to develop a Stormwater Management Program (SWMP) and Best Management Practices (BMPs) to reduce the impacts of stormwater discharges. The requirements are outlined in the NPDES General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts, which was signed on April 4, 2016, with an effective date of July 1, 2018, hereinafter referred to as the 2016 MS4 Permit.

This SWMP Plan describes and details the activities and measures that will be implemented to meet the terms and conditions of the permit.

1.1 Regulatory Background

The Stormwater Phase II Final Rule was promulgated in 1999 and was the next step after the 1987 Phase I Rule in USEPA'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 operators of Small MS4s in urbanized areas, through the use of National Pollutant Discharge Elimination System (NPDES) permits, 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 the use of 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 Areas (UAs) are required to seek NPDES permit coverage for those stormwater discharges.

On May 1, 2003, EPA Region 1 issued its Final General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (2003 MS4 Permit) consistent with the Phase II rule. The 2003 MS4 Permit covered "traditional" (i.e., cities and towns) and "non-traditional" (i.e., certain Federal and state agencies and/or facilities) 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 Permit.

The 2016 MS4 Permit was signed on April 4, 2016 with an effective date of July 1, 2018. The permit was cosigned by the Massachusetts Department of Environmental Protection (MassDEP) and thus is jointly regulated by EPA and MassDEP.

1.2 MS4 Program Requirements

This permit requires each regulated community to submit a Notice of Intent (NOI) briefly outlining how it will meet the Six Minimum Control Measures (MCMs) and impaired waters requirements of the permit and requesting authorization to discharge under the new permit.

The six MCMs include the following:

1. Public Education and Outreach;
2. Public Involvement and Participation;
3. Illicit Discharge Detection and Elimination Program;
4. Construction Site Stormwater Runoff Control;
5. Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management); and
6. Good Housekeeping and Pollution Prevention for Permittee Owned Operations.

Permittees must also address water quality impacts from waterbodies with approved Total Maximum Daily Loads (TMDLs) and certain impairments, generally known as water quality limited waterbodies.

As required by the 2016 MS4 Permit, The Town of Clinton submitted a NOI and required accompanying information, including endangered species, historic preservation, and an outfall map to EPA Region 1 by the September 29, 2018 deadline (**Appendix A**) requesting authorization to discharge under the new permit. Clinton received official authorization to discharge stormwater from its MS4 on March 5, 2019 as per the letter from USEPA provided in **Appendix A**. Authorization to discharge expires on June 30, 2022.

This Stormwater Management Program (SWMP) Plan has been developed by the Town of Clinton to detail the activities and measures outlined in the NOI to address the requirements of the 2016 MS4 Permit. This SWMP Plan documents BMPs, plans, activities, and measures that have been implemented to date, those that are ongoing, and those proposed for the future to comply with the 2016 MA MS4 Permit. This is a “living” document and will be updated and/or modified as required during the permit term as the Town’s activities are modified, changed or updated to meet permit conditions. The plan has been organized to allow these updates to primarily occur within the appendices.

1.3 Regulated Area

Requirements of the 2016 MS4 Permit are limited to a regulated area, defined as the Town’s Urbanized Area (UA) which generally constitute the largest and most dense areas of settlement in a region. The Bureau of the Census determines UAs by applying a detailed set of published UA criteria to the latest decennial census data. Although the full UA definition is complex, the Bureau of the Census’ general definition of a UA, based on population and population density, is provided below:

“An urbanized area (UA) is a densely settled core of census tracts and/or census blocks that have population of at least 50,000, along with adjacent territory containing non-residential urban land uses as well as territory with low population density included to link outlying densely settled territory with the densely settled core. It is a calculation used by the Bureau of the Census to determine the geographic boundaries of the most heavily developed and dense urban areas.”

The MS4 permit regulates UA areas based on both the 2000 and 2010 Census. Thus, areas that are identified as non-urbanized under the 2010 Census but urbanized under the 2000 Census are

still regulated areas. In short, the regulated UA cannot shrink and can only expand. The UA is subject to change every ten years based on the application of the Census definition, thus a larger area may be covered in the future. A map showing the UA in Clinton is provided with the NOI in **Appendix A**.

1.4 How to Use this Plan

For the purposes of the 2016 MS4 Permit and ease of use, the Town's SWMP encompasses three separate written documents:

1. SWMP Plan (this document);
2. Illicit Discharge Detection and Elimination (IDDE) Plan; and
3. Operation and Maintenance (O&M) Plan.

Both the IDDE Plan and O&M Plan are prepared as separate standalone documents to this SWMP Plan. This SWMP Plan is divided into several sections and includes the following components:

- Section 2** **Town Characteristics** – Section 2 provides an overview of relevant characteristics, focusing on those aspects related to stormwater runoff and the water quality of surface waters.
- Section 3** **MCM 1: Public Education and Outreach** – regulated operators of MS4s are required to implement a public education program. Section 3 discusses activities to comply with this measure.
- Section 4** **MCM 2: Public Participation and Involvement** – regulated MS4s are required to obtain public participation throughout the stormwater management program. Section 4 discusses activities to comply with this measure.
- Section 5** **MCM 3: Illicit Discharge, Detection, and Elimination** – regulated MS4s must develop and implement an illicit discharge detection and elimination program and develop a regulation to prohibit illicit discharges to the storm drain system. Section 5 discusses activities to comply with this measure. A separate standalone IDDE Plan has also been prepared.
- Section 6** **MCM 4: Construction Site Stormwater Runoff Control** – regulated MS4s are required to implement and enforce a program to reduce pollutants in stormwater runoff from construction activities that disturb one or more acres. This requires the development of a local regulation requiring implementation of proper erosion and sediment controls. Permittees are also responsible for inspections and enforcement. Section 6 discusses activities to comply with this measure.
- Section 7** **MCM 5: Stormwater Management in New Development and Redevelopment** – regulated MS4s are required to develop and enforce a regulation requiring implementation of post-construction runoff controls at

sites where construction activities disturb one or more acres. The controls must be designed to treat stormwater runoff from post-development sites and must be maintained over the long-term. Section 7 discusses activities to comply with this measure.

Section 8 **MCM 6: Good Housekeeping and Pollution Prevention** – regulated MS4s must review their infrastructure operations and those at specific facilities and make improvements where needed to minimize pollution to stormwater runoff. Operations and maintenance procedures must be documented in writing. Section 8 discusses activities to comply with this measure.

Section 9 **TMDL and Impaired Waters Controls** – regulated MS4s are required to evaluate and address stormwater contributions to impaired waters. Section 9 discusses activities to comply with this measure.

Section 10 **Annual Reporting** – Section 10 provides a summary of annual reporting requirements in order to meet the 2016 MS4 Permit.

Section 11 **Implementation of Best Management Practices** – Section 11 provides a summary of proposed BMPs outlined in Sections 3 through 9 in a concise format for easy reference.

1.5 Program Responsibilities

This plan is intended to be used by Town of Clinton staff whose job involves administering the MS4 permit and associated requirements. The Town’s MS4 program will be headed by the following personnel (**Table 1-1**):

Table 1-1. MS4 Responsible Personnel

Name	Title, Department	Contact
Christopher J. McGown	Superintendent of Public Works	(978) 365-4110 cmcgown@clintonma.gov

The Town of Clinton has 10 departments responsible for implementing portions of its MS4 program as identified in the NOI. **Table 1-2** provides a list of responsible departments and their general responsibilities within the MS4 program. The responsible person is the most senior person within each department listed below. The names of the responsible personnel are not provided so as to avoid the plan frequently becoming out of date due to changes in personnel and positions.

Table 1-2. Program Responsibilities

Department / Division	General Responsibilities
Board of Selectmen	Public education and public participation; ordinance and regulation development
Building Department	Site inspection and enforcement procedures
Conservation Commission	Public education and public participation; erosion and sediment control procedures; waste control procedures; ordinance and regulation development; green infrastructure allowance; street design and parking lot guideline development; stormwater controls and management procedures; TMDL requirements; water quality limited waterbody requirements
Department of Public Works	Public education and public participation; Sanitary Sewer Overflow (SSO) inventory; system mapping; IDDE program; ordinance and regulation development; target properties to reduce impervious area; green infrastructure assessment; street design and parking lot LID assessment; operation and maintenance procedures; catch basin cleaning; street sweeping; road salt optimization program (winter O&M); BMP inspections and maintenance; SWPPP development and implementation; TMDL requirements; water quality limited waterbody requirements
Planning Board	Information distribution for public education; site plan review procedures; erosion and sediment control procedures; waste control procedures; ordinance and regulation development; as-built submittal; green infrastructure allowance; street design and parking lot guideline development; stormwater controls and management procedures
Recycling Committee	Public participation and involvement
School Department	Public education – school curricula program
Town Clerk	Public education – pet waste information distribution

2 Town Characteristics

This section provides some background information useful in understanding the Town of Clinton's characteristics and resources to develop a tailored Stormwater Management Plan.

2.1 Community Information

Clinton is located in central Massachusetts within Worcester County, approximately 45 miles west of Boston. It is bordered by Bolton and Berlin, Massachusetts to the east; Boylston, Massachusetts to the south; Sterling, Massachusetts to the west; and Lancaster, Massachusetts to the north/northwest. Clinton is located within the Nashua and Concord watershed. Select relevant community profile information is provided below:

- Total Area = 7.3 square miles (*source: MA Department of Housing and Community Development*)
- 2010 Population = 13,606 (*source: US Census Bureau, 2010 Census Estimate*)

2.2 Land Use

Based on the land uses within the Town, as shown in **Figure 2-1**, the Town is developed with a mix of residential, commercial and industrial uses, with a significant portion of open space. Impervious area is shown on **Figure 2-2**. The education program will target each of these audiences, as well as developers.

2.3 303(d) Impaired Waterbodies

The ultimate goal of this Stormwater Management Plan is to outline a program to effectively maintain the Town's stormwater infrastructure and to improve the water quality of receiving waters (waters which receive stormwater discharges from the MS4) in compliance with the 2016 MS4 Permit. 303(d) impaired waters are those surface waters identified by the MassDEP as priority waters that do not meet water quality criteria. As part of the 2016 MS4 Permit, communities must implement BMPs to address waters with an approved TMDL as of the issuance date of the permit (April 4, 2016) and to address water quality limited waters, including but not limited to waters listed in categories 5 or 4a on the Massachusetts Integrated Report of waters listed pursuant to Clean Water Act section 303(d) and 305(b). **Table 2-1** lists the "impaired waters" for which Clinton must meet MS4 permit requirements based on the Final 2014 Massachusetts Integrated List of Waters produced by MassDEP every two years¹. These waterbodies are shown on **Figure 2-3**. Clinton will review changes as new lists are published and record these changes and any new permit requirements in **Appendix B**.

¹Note that at the time of preparation of this report (June 2019), the 2014 303d list is the most up to date finalized 303d List as approved by USEPA on February 23, 2016.

Table 2-1. Impaired Waters Based on 2014 Integrated List of Waters

Waterbody Name	Segment ID and Category ¹		Impairment(s)	Approved TMDL ²
Nashua River (“South Branch”) Clinton WWTP to Confluence with North Nashua River, Lancaster	MA81-09	5	<i>E. coli</i>	
			Phosphorus (Total)	
Wachusett Reservoir	MA81147	4a	(Eurasian Water Milfoil, <i>Myriophyllum spicatum</i> *)	
			(Non-Native Aquatic Plants*)	
			Mercury in Fish Tissue	33880

1. Category 4a Waters – impaired waters with an approved TMDL.

Category 5 Waters – impaired waters that require a TMDL.

2. EPA TMDL # from the 303(d) list. TMDL 33880 is the “Northeast Regional Mercury Total Maximum Daily Load.”

* TMDL not required (Non-pollutant)

Per the table above, Clinton is subject to the water quality limited waterbody requirements of the 2016 MS4 Permit for phosphorus and *E. coli*. Additionally, Clinton is subject to the TMDL requirements of the 2016 MS4 Permit for phosphorus for the Assabet River. TMDL and water quality limited waterbody requirements are outlined further in **Section 9**. Eurasian water milfoil, non-native aquatic plants and mercury are not directly covered or addressed by the 2016 MS4 Permit.

2.4 Endangered Species Act Determination

To be eligible to discharge stormwater under the 2016 MS4 Permit, the Town of Clinton must certify that its stormwater system is not impacting federally listed rare or endangered species habitat or other critical environmental locations. This was completed in the summer of 2018 as meeting “Criterion C” on the NOI with the results also documented in the NOI (**Appendix A**). The Northern Long-eared Bat (*Myotis septentrionalis*) was the only species identified as potentially being present within Clinton’s regulated area. No critical habitats were identified.

2.5 National Historic Preservation Act Determination

Regulated MS4s must also evaluate whether its discharges have the potential to affect historic properties. If there have been no relevant changes in existing discharges since the 2003 MS4 General Permit, the discharge can still be considered to have no potential effect on historic properties. This has been documented as “Criterion A” on the Notice of Intent (**Appendix A**) and thus no additional information is required for documentation.

Where there is disturbance of land through the construction and/or installation of control measures, there is a possibility that artifacts, records, or remains associated with historic

properties could be impacted. In these cases, such as during future construction of structural stormwater BMPs, the Town will ensure that historic properties will not be impacted by their activities, or that they are in compliance with a written agreement with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), or other tribal representative that outlines all measures the applicant will carry out to mitigate or prevent any adverse effects on historic properties. This will be completed as required.

3 MCM 1: Public Education and Outreach

3.1 Summary of Permit Requirements

3.1.1 Core Permit Requirements

Under MCM 1, permittees must develop an educational program, define educational goals, express specific messages, define the targeted audience for each message, and identify responsible parties for program implementation. At a minimum, the program must provide information concerning the impact of stormwater discharges on water bodies within the community, especially those waters that are impaired or identified as priority waters. The program must identify steps and/or activities that the public can take to reduce the pollutants in stormwater runoff and their impacts to the environment.

Permittees must address four core target audiences, unless one of these audiences is not present in the MS4 community. The targeted audiences and educational topics requiring consideration under the permit are outlined below:

1. Residents
 - Effects of outdoor activities such as lawn care (use of pesticides, herbicides, and fertilizers) on water quality;
 - Benefits of appropriate on-site infiltration of stormwater;
 - Effects of automotive work and car washing on water quality;
 - Proper disposal of swimming pool water;
 - Proper management of pet waste; and
 - Maintenance of septic systems.

2. Businesses, Institutions, and Commercial Facilities
 - Proper lawn maintenance (use of pesticides, herbicides and fertilizer);
 - Benefits of appropriate on-site infiltration of stormwater;
 - Building maintenance and storage of materials;
 - Proper use and storage of salt or other de-icing and anti-icing materials;
 - Proper management of waste materials and dumpsters;
 - Proper management of parking lot surfaces;
 - Proper car care activities; and
 - Proper disposal of swimming pool water by entities such as motels, hotels, and health and country clubs.

3. Developers and Construction
 - Proper sediment and erosion control management practices;
 - Information about Low Impact Development (LID) principles and technologies; and
 - Information about EPA's construction general permit (CGP).

4. Industrial facilities

- Equipment inspection and maintenance;
- Proper storage of industrial materials (emphasizing pollution prevention);
- Proper management of dumpsters;
- Minimization of use of salt or other de-icing/anti-icing materials;
- Proper storage of salt or other de-icing/anti-icing materials;
- Benefits of appropriate on-site infiltration of stormwater runoff from areas with low exposure to industrial materials such as roofs or employee parking;
- Proper maintenance of parking lot surfaces (sweeping); and
- Requirements for coverage under EPA's MSGP.

At least two educational messages must be distributed to each audience over the permit term spaced at least a year apart.

3.1.2 TMDL and Water Quality Limited Waterbody Requirements

Public education and outreach programs must also address impaired waterbodies which are shown in **Table 2-1**, with updates provided in **Appendix B** as they become available. As noted in **Table 2-1**, Clinton has one waterbody listed as impaired for *E. coli* and phosphorous. Clinton must also meet TMDL requirements for phosphorus within the Assabet River watershed. Each of these impairments have specific education topic requirements as outlined in the 2016 MS4 Permit, and summarized below, and will be included within the education program.

Bacteria Water Quality Limited Waterbody Requirements (Residents)

- Annual message encouraging the proper management of pet waste, including noting any existing bylaws where appropriate;
- Disseminate educational materials to dog owners at the time of issuance or renewal of a dog license;
- Describe detrimental impacts of improper pet waste management, requirements for waste collection and disposal, and penalties for non-compliance; and
- Provide information to owners of septic systems about proper maintenance

Phosphorus Water Quality Limited Waterbody & Assabet River TMDL Requirements (Residents & Businesses)

- Spring (March/April): encourage proper use and disposal of grass clippings and use of slow-release and phosphorus-free fertilizers;
- Summer (June/July): encourage proper management of pet waste, including noting any existing ordinances; and
- Fall (August/September/October): encourage the proper disposal of leaf litter.

3.2 Past Public Education Program

In response to requirements under the 2003 permit, Clinton has enacted a multifaceted approach to stormwater public education and outreach. The following summarizes the Town's past public education activities:

- **Class Room Education** – the Town has a partnership with the Nashua River Watershed Association in which members of the association conduct educational programs for the middle and high school students.
- **Local Cable Access** – the Town has posted stormwater related bulletins on the Local Cable Access Channel.
- **Educational Display** – the Town has posted Surface and Ground Water Pollution Prevention Measures on the Town Hall bulletin board and the planning and conservation committee displayed a poster entitled “Stormwater and the Construction Industry” in their conference room.

3.3 Ongoing Public Education Program

Tables 3-1 through 3-4 summarize Clinton’s public education program, by targeted audience, to meet the requirements of the 2016 MS4 Permit. Measurable goals, responsible departments and a schedule for implementation of all BMPs under the SWMP are provided in Section 11.

Table 3-1. Residential Public Outreach Program

BMP ID	BMP Materials/Distribution	BMP Topic Description	Responsible Department
1-1	Classroom Education	Provide stormwater education presentations to classrooms on stormwater-related topics.	Schools, DPW
	Pet Waste Fact Sheet	Provide pet waste information with dog registrations and renewals.	Town Clerk
	Stormwater Brochures/Pamphlets	Provide fact sheets, brochures, and/or posters on surface and groundwater pollution prevention at Town Hall.	DPW
	Webpage	Provide information on septic system maintenance, illicit discharges, pet waste disposal, lawn care, pesticide and fertilizer use, grass clippings and leaf litter disposal, car washing, disposal of swimming pool water, and benefits of onsite infiltration.	Conservation Commission, Planning Board
	Newspaper Articles/Press Releases	Issue periodic press releases using materials generated under Think Blue.	DPW

Table 3-2. Businesses, Institutions, & Commercial Public Outreach Program

BMP ID	BMP Materials/Distribution	BMP Topic Description	Responsible Department
1-2	Newspaper Articles/Press Releases	Issue periodic press releases using materials generated under Think Blue.	DPW
	Webpage	Provide web information on lawn care, pesticide and fertilizer use, grass clippings and leaf litter disposal, building maintenance, management of parking lot surfaces, salt usage, storage of materials and wastes, car washing, disposal of swimming pool water, and benefits of onsite infiltration.	Board of Selectmen, DPW

Table 3-3. Developers Public Outreach Program

BMP ID	BMP Materials/Distribution	BMP Topic Description	Responsible Department
1-3	Displays/Posters	Provide educational stormwater displays aimed at developers.	Conservation Commission, Planning Board
	Brochures/Pamphlets with Permit Applications	Provide materials on sediment and erosion control, Low Impact Development, and the EPA Construction General Permit with construction permit applications.	DPW
	Webpage	Provide information on erosion and sediment control, Low Impact Development, and the Construction General Permit.	Board of Selectmen, DPW
	Newspaper Articles/Press Releases	Issue periodic press releases using materials generated under Think Blue.	DPW

Table 3-4. Industrial Public Outreach Program

BMP ID	BMP Materials/Distribution	BMP Topic Description	Responsible Department
1-4	Webpage	Provide information on equipment maintenance and inspection, material storage, solid waste handling, salt usage, benefits of onsite information, management of parking lot surfaces, and EPA's MSGP.	Board of Selectmen, DPW
	Newspaper Articles/Press Releases	Issue periodic press releases using materials generated under Think Blue.	DPW

4 MCM 2: Public Participation and Involvement

4.1 Summary of Permit Requirements

Under MCM 2, permittees must provide annual opportunities for public participation in the review and implementation of the Town's SWMP as part of a public education and involvement program. All public involvement activities must comply with state public notice requirements. The SWMP and annual reports must be made available so that the public has opportunities to review and comment.

4.2 Past Public Participation and Involvement Opportunities

The following summarizes Clinton's past public participation activities:

- **Hazardous Waste Collection Day** – the Town has joined the Devens Regional Household Hazardous Products Collection Center to allow residents to dispose of hazardous waste.
- **House Hold Recycling Day** – the Town implemented a curbside recycling collection program.
- **Yard Waste Collection Day** – the Town allows year-long yard waste drop off at the recycling facility.
- **Stream Clean Up Days** – the Town has solicited local businesses and groups to volunteer their time and effort to clean up the Town's streams.
- **Storm Drain Marking** – the Town has worked with local Boy Scout Troops to stencil storm drains.
- **Volunteer Clean Up Days** – the Town has sponsored and participated in annual Clean-Up Days.
- **Work with Watershed and Wildlife Organizations** – the Town has contacted watershed and wildlife organizations in town to discuss stormwater related topics.

4.3 Ongoing Public Participation and Involvement Opportunities

This written SWMP Plan and annual reports are available for review and comment via the Town's website. This allows the public to comment on the program at least once per year. An updated SWMP Plan will be posted to the website as additional tasks are completed.

Table 4-1 summarizes Clinton’s proposed Public Participation and Involvement Opportunities BMPs to meet the requirements of the 2016 MS4 Permit. Measurable goals, responsible departments and a schedule for implementation of all BMPs under the SWMP are provided in **Section 11**.

Table 4-1. Public Participation and Involvement Program

BMP ID	BMP	BMP Description	Responsible Parties
2-1	Public Review	Post SWMP Plan on Town website for annual review.	DPW, Board of Selectmen
2-2	Public Participation	Allow public to comment on stormwater management plan annually.	DPW, Board of Selectmen
2-3	Public Participation	Continue to hold cleanup events at conservation areas and along streets and water bodies.	DPW
2-4	Public Participation	Continue to sponsor hazardous waste and used oil collections.	DPW, Recycling Committee
2-5	Public Participation	Continue to allow yard waste to be dropped at the recycling facility.	DPW, Recycling Committee

5 MCM 3: Illicit Discharge, Detection, and Elimination

5.1 Summary of Permit Requirements

Under MCM 3, permittees must implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its MS4 and implement procedures to prevent such discharges. An “illicit discharge” is any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a separate NPDES permit and discharges resulting from fire-fighting activities. A summary of the required IDDE activities and timelines are provided below.

- **Legal Authority** – the IDDE program shall include adequate legal authority in the form of a currently effective ordinance, bylaw, or other regulatory mechanism to prohibit, investigate, and eliminate illicit discharges. For permittees authorized by the MS4-2003 permit such as Clinton, the ordinance, bylaw, or other regulatory mechanism was required to be effective by May 1, 2008.
- **Sanitary Sewer Overflow** – SSOs are discharges of untreated sanitary wastewater from a municipal sanitary sewer that can contaminate surface waters, cause serious water quality problems and property damage, and threaten public health. SSOs can be caused by blockages, line breaks, sewer defects that allow stormwater and groundwater to overload the system, power failures, improper sewer design, and vandalism. Regulated communities must identify all known locations where sanitary sewer overflows (SSOs) have discharged to the MS4 within the previous 5-years. Permittees must also develop an inventory within 1-year of the effective date and update it annually. Upon detection of an SSO, the permittee must eliminate it as quickly as possible and take interim mitigation measures to minimize or eliminate the discharge of pollutants until remediation work is complete.
- **System Mapping** – regulated communities must complete a comprehensive map of their stormwater system in two phases. Phase 1 must be completed within two years and include infrastructure such as outfalls and preliminary catchment delineations, waterbodies, open channel conveyances, interconnections with other MS4s, and structural stormwater BMPs. Phase 2 must be completed within ten years and include information such as outfalls with high accuracy GPS location and refined catchment delineations, catch basins, manholes, pipe connectivity, and sanitary or combined sewer systems as available/applicable.
- **Written Illicit Discharge, Detection, and Elimination Plan** – the 2016 MS4 Permit requires preparation of a comprehensive written IDDE Program or IDDE Plan that provides detailed procedures for assessment and priority ranking of outfalls and interconnections, dry and wet weather outfall sampling, catchment investigation procedures, system vulnerability factor (SVF) assessment, identification of an illicit discharge, illicit discharge removal, and ongoing screening requirements. The Town has prepared a standalone IDDE Plan separate from this SWMP Plan.

- **Annual IDDE Training** – the 2016 MS4 Permit requires annual IDDE training to be provided to all employees involved in the IDDE program. Training will, at a minimum, include information on how to identify illicit discharges and SSOs and may also include additional training specific to the functions of particular personnel and their function within the framework of the IDDE program.
- ***E. coli* Water Quality Limited Waterbody Requirements** - the 2016 MS4 Permit requires the Town to designate catchments draining to pathogen impaired segments as “Problem Catchments” or “High” priority.

5.2 Past IDDE Program

The Town of Clinton has conducted multiple efforts to identify and eliminate illicit discharges under the previous permit. The following summarizes Clinton’s past IDDE activities:

- **Stormwater System Mapping** – the Town has completed mapping of the stormwater system with culverts, manholes, catch basins, and outfalls. Results have been incorporated into a town-wide GIS system. A copy of the stormwater system mapping is provided in **Appendix C**.
- **Outfall Inspections** – the Town has performed outfall inspections under dry weather conditions.
- **Legal Authority** – the Town has adopted a “Municipal Separate Storm Sewer System Bylaw” and “Illicit Discharge Detection and Elimination By-Law” that provides the Town with legal authority to address illicit discharges. Both bylaws are provided in **Appendix D**.

5.3 Ongoing IDDE Program

Clinton has a separate written IDDE plan that outlines legal authority, program responsibilities, ranks catchment areas, and outlines procedures for investigation and removal in accordance with the permit. This written plan will be updated and refined as needed to incorporate findings of field investigations.

Table 5-1 outlines Clinton’s IDDE program to meet permit requirements. The measurable goals, responsible departments and schedule for implementation of all BMPs under the SWMP are provided in **Section 11**.

Table 5-1. IDDE Program

BMP ID	BMP	BMP Description	Responsible Parties
3-1	SSO Inventory	Develop SSO inventory in accordance with permit conditions. An ongoing inventory is maintained in Appendix E .	DPW
3-2	Storm Sewer System Map	Create map and update during IDDE program completion. The Town has completed mapping of the stormwater system with culverts, manholes, catch basins, and outfalls. The Town will continue to update mapping as new information becomes available.	DPW
3-3	Written IDDE Program	Prepare a written IDDE Plan to include procedures on assessing and priority ranking outfalls and interconnections, dry and wet weather outfall sampling, catchment investigations, system vulnerability factor assessment, identification of an illicit discharge, illicit discharge removal, and ongoing screening requirements. A written IDDE program has been developed as a separate document from this SWMP.	DPW
3-4	Implement IDDE Program	The IDDE program will be implemented following the program plan developed in the IDDE Plan. All illicit discharges will be documented and follow-up catchment investigations will be conducted.	DPW
3-5	Employee Training	The Town will provide annual training to employees involved in the IDDE program.	DPW
3-6	Conduct Dry Weather Screening	Clinton will conduct dry weather screening in accordance with screening procedures as outlined in the IDDE Plan and permit conditions.	DPW
3-7	Wet Weather Screening	Clinton will conduct wet weather screening in accordance with screening procedures as outlined in the IDDE Plan.	DPW
3-8	Ongoing Screening	Clinton will conduct ongoing dry weather and wet weather screening (as necessary) as outlined in the IDDE Plan.	DPW
3-9	Enact and Enforce IDDE Ordinance/Bylaw	Clinton will continue to enforce the existing IDDE ordinance.	DPW, Board of Selectmen

6 MCM 4: Construction Site Stormwater Runoff Control

6.1 Summary of Permit Requirements

Under MCM 4, permittees are required to implement and enforce a program to reduce pollutants in stormwater runoff discharged to the MS4 from all construction activities that result in a land disturbance of greater than or equal to one acre within the regulated area. This program shall also regulate disturbances less than one acre if they are part of a larger common plan of development or sale that would disturb one or more acres. A summary of the required Construction Site Stormwater Runoff Control Program activities and timelines are provided below:

- **Legal Authority** – the Construction Site Stormwater Runoff Control Program shall include adequate legal authority in the form of a currently effective ordinance, bylaw, or other regulatory mechanism to:
 - Require the use of sediment and erosion control practices at construction sites; and
 - Include controls for other wastes on construction sites.

For permittees authorized by the 2003 MS4 permit such as Clinton, the ordinance, bylaw, or other regulatory mechanism was required to be effective by May 1, 2008.

- **Construction Site Stormwater Runoff Control Program** – the 2016 MS4 Permit requires preparation of written Construction Site Stormwater Runoff Control Program procedures that include the following:
 - Pre-construction plan review of the site design, planned operations, planned BMPs during the construction phase, and planned BMPs to manage runoff after development that includes consideration of potential water quality impacts, and procedures for the receipt and consideration of information submitted by the public. The site plan review procedure shall also include evaluation of opportunities for use of low impact design and green infrastructure;
 - Site inspections and enforcement actions to take place both during construction of BMPs and after construction of BMPs. Procedures must define the person responsible for site inspections, qualifications necessary to perform inspections, who has authority to implement enforcement procedures, the ability to impose sanctions to ensure program compliance, the use of standardized inspection forms (if appropriate), and how the number of inspections and enforcement actions will be tracked for reporting in the Annual Report; and
 - Requirements for construction site operators to implement a sediment and erosion control program that includes BMPs appropriate for the conditions at the construction site.

6.2 Past Construction Site Stormwater Runoff Control Measures

The following summarizes Clinton’s past Construction Site Stormwater Runoff Control Program activities:

- **Stormwater Management Legal Authority** – the Town of Clinton enacted the “Municipal Separate Storm Sewer System” bylaw for all activities disturbing one acre or more. The bylaw meets the requirements of the 2016 MS4 Permit.
- **Plan Reviews** – the “Municipal Separate Storm Sewer System” bylaw established procedures for plan reviews. Plan reviews are conducted in accordance with the bylaw.
- **Construction Site Inspections** – the “Municipal Separate Storm Sewer System” bylaw requires site inspections during construction, which are reviewed by the Town.
- **Building Permit Applications** – the Town ensures that building permit applications are also aware of and comply with the “Municipal Separate Storm Sewer System Bylaw”.

6.3 Ongoing Construction Site Stormwater Runoff Control Program

Table 6-1 outlines Clinton’s plan to meet the requirements of the 2016 MS4 Permit to establish a Construction Site Stormwater Runoff Control Program. Measurable goals, responsible department and schedule for implementation of all BMPs under the SWMP are provided in **Section 11**.

Table 6-1. Construction Site Stormwater Runoff Control Program

BMP ID	BMP	BMP Description	Responsible Parties
4-1	Site Inspection and Enforcement	Clinton has an existing Stormwater Bylaw that outlines site inspections and enforcement procedures. The bylaw was reviewed for completeness and compliance with the permit (Appendix D). The authority for site inspection and enforcement is designated to the Planning Board or its agent. Written procedures for site inspections have been prepared and are also included in Appendix D .	Building Department
4-2	Procedures for Site Plan Review	The existing bylaw outlines the requirements for application submittal and procedures for site plan review. Clinton will track the number of site reviews for annual reporting purposes.	Planning Board
4-3	Erosion and Sediment Control	The existing Stormwater Bylaw currently meets the 2016 MS4 Permit. The existing bylaw requires applicants to submit a Land Disturbance Permit and Erosion and Sediment Control Plan that meets the design requirements of the bylaw.	Planning Board, Conservation Commission
4-4	Develop Procedures for Waste Control	The existing Stormwater Bylaw currently meets the 2016 MS4 Permit. The existing bylaw requires applicants to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes and to outline controls in a plan.	Planning Board, Conservation Commission
4-5	Construction Ordinance/ Bylaw	The existing Stormwater Bylaw currently meets the 2016 MS4 Permit. Clinton will continue to enforce the existing bylaw.	Planning Board, Conservation Commission

7 MCM 5: Stormwater Management in New Development and Redevelopment

7.1 Summary of Permit Requirements

7.1.1 Core Permit Requirements

Under MCM 5, permittees shall develop, implement, and enforce a program to address post-construction stormwater runoff from new development and redevelopment sites that disturb one or more acres and discharge into an MS4 system. This program shall also regulate disturbances less than one acre if they are part of a larger common plan of development or sale that would disturb one or more acres. A summary of the required Stormwater Management in New Development and Redevelopment, also known as Post Construction Stormwater Management, activities and timelines are provided below:

- **Legal Authority** – the Post Construction Stormwater Management Program shall include adequate legal authority in the form of a currently effective ordinance, bylaw, or other regulatory mechanism enacted or updated within two years of the effective permit date to:
 - Require LID site planning and design strategies to the maximum extent feasible;
 - Meet many of the requirements of the Massachusetts Stormwater Handbook and associated stormwater standards;
 - Incorporate runoff volume storage and/or pollutant removal requirements, specifically:
 1. Stormwater management systems on new development sites shall be designed to:
 - a) Not allow untreated stormwater discharges (Standard 1), control peak runoff rates (Standard 2), recharge groundwater (Standard 3), eliminate or reduce discharge of pollutants from land uses with higher pollutant loads (Standard 5), protect Zone II or Interim Wellhead Protection Areas (Standard 6), and implement long term maintenance practices (Standard 9); and
 - b) Require that all stormwater management systems be designed to:
 - Retain the volume of runoff equal to at least 1.0 inches over the total post-construction impervious surface area on the site and/or
 - Remove 90% of the average annual Total Suspended Solids (TSS) load and 60% of the average annual Total Phosphorus (TP) load from the total post-construction impervious surface area on the site.

2. Redevelopment Requirements:
 - a) Stormwater management systems on Redevelopment sites shall meet the following to the maximum extent feasible:
 - Standards 1, 2, and 3, and pretreatment and structural BMP requirements of Standards 5 and 6.
 - b) Stormwater management systems on Redevelopment sites shall also improve existing conditions by requiring stormwater BMPs be designed to:
 - Retain the volume of runoff equal to at least 0.80 inches over the total post-construction impervious surface area on the site and/or
 - Remove 80% of the average annual TSS load and 50% of the TP load from the total post-construction impervious area on the site.
 - c) Redevelopment activities that are limited to maintenance and improvement of existing roads, (including widening less than a single lane, adding shoulders, improving existing drainage systems, and repaving projects) shall improve existing conditions where feasible and are exempt from other parts above.

- **As-Built Submittals** – the permittee must require the submission of as-built drawings within two years after completion of construction projects and include structural and non-structural controls.
- **Operation and Maintenance** – the program must include procedures to ensure adequate long-term operation and maintenance of BMPs are established after completion of a construction project, along with a dedicated funding source within two years of the effective permit date.
- **Regulatory Assessment** – the permittee must complete an assessment of existing regulations that could affect creation of impervious cover to determine if changes are required to support LID. Additionally, the permittee must assess current regulations to ensure that certain green infrastructure is allowable where feasible. A report documenting the assessment must be completed within four years of the effective permit date.
- **Identification of Potential Retrofit Sites** – the permittee must identify municipal properties and infrastructure within four years of the effective permit date to determine at least five properties that could be modified or retrofitted with stormwater BMP improvements. The permittee must report on all properties that have been modified or retrofitted with BMPs to mitigate impervious area and maintain an ongoing list of five sites until such time as less than five sites remain.

7.1.2 TMDL and Water Quality Limited Waterbody Requirements

The Town of Clinton must also address requirements for impaired waterbodies which are shown in **Table 2-1**. As noted in **Table 2-1**, Clinton has waterbodies with impairments for phosphorus and *E. coli* and must meet the following additional as outlined in the 2016 MS4 Permit.

- **Regulatory Mechanism (Phosphorus)** – the Town’s regulatory mechanism shall include a requirement that new development and redevelopment stormwater management BMPs be optimized for phosphorus removal.
- **Retrofit Sites (Phosphorus)** – the retrofit inventory and priority ranking must consider BMPs that infiltrate stormwater where feasible.

7.2 Past Post Construction Stormwater Management

The Town of Clinton has established some measures for post construction stormwater management. The following summarizes Clinton’s past Post-Construction Site Stormwater Management Program activities:

- **Legal Authority** – the Town of Clinton enacted the “Municipal Separate Storm Sewer System” bylaw for all activities disturbing one acre or more to address post construction runoff for all activities disturbing one acre or more. The bylaw includes design standards and references the Massachusetts Stormwater Policy Handbook. It also includes requirements for the submission of as-built record drawings of all structural stormwater controls and treatment best management practices required for the site, and the submission of operation and maintenance (O&M) Plans.
- **Site Plan Review** – the “Municipal Separate Storm Sewer System” bylaw established procedures for plan reviews. Plan reviews are conducted in accordance with the bylaw.

7.3 Ongoing Post-Construction Stormwater Management Program

Table 7-1 outlines Clinton’s Post-Construction Stormwater Management Program to meet the requirements of the 2016 MS4 Permit. Measurable goals, responsible department and schedule for implementation of all BMPs under the SWMP are provided in **Section 11**.

Table 7-1. Post-Construction Site Stormwater Management Program

BMP ID	BMP	BMP Description	Responsible Parties
5-1	As-built plans for on-site stormwater control	<p>Clinton currently requires the submittal of as-built record drawings of all structural stormwater controls and treatment BMPs required for the site.</p> <p>Clinton also requires the submission of O&M Plans. As part of its Post Construction Stormwater Management Program, Clinton will review the current requirements and update as necessary to ensure that the adequate long-term operation and maintenance of BMPs is accounted for at the conclusion of a construction project, along with a dedicated funding source.</p>	Planning Board
5-2	Target properties to reduce impervious areas	Clinton will complete an inventory of municipal properties (Appendix F) that could be retrofitted with stormwater BMPs, along with a review of existing site conditions. This inventory will be updated continuously starting in Year 5.	Department of Public Works
5-3	Allow Green Infrastructure	Clinton will develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist. The report will be included in Appendix D .	Planning Board, Conservation Commission, Department of Public Works
5-4	Street Design and Parking Lot Guidelines	Clinton will develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support LID options. The report will be included in Appendix D .	Planning Board, Conservation Commission, Department of Public Works
5-5	Stormwater Controls to Meet Permit Requirements	Clinton is reviewing its existing regulations and a sample bylaw and determining changes that must be made to suit the Town. Ongoing progress on legal authority is documented in Appendix D .	Planning Board, Conservation Commission

8 MCM 6: Good Housekeeping and Pollution Prevention

8.1 Summary of Permit Requirements

Under MCM 6, permittees shall develop and implement an operations and maintenance program to reduce stormwater pollution from permittee activities. This includes developing procedures related to parks and open space, buildings and facilities, vehicles and equipment, and stormwater infrastructure maintenance. A summary of the required Good Housekeeping and Pollution Prevention for Permittee Owned Operations activities and timelines is provided below.

8.1.1 Stormwater Operation and Maintenance Plans

The permittee must complete an inventory of all parks and open space, buildings and facilities where pollutants are exposed to stormwater runoff, and vehicles and equipment within two years of the permit effective date. The inventory must be reviewed annually and updated as necessary. Upon completion, the permittee must establish written procedures as part of an O&M Plan within two years of the permit effective date for the following items:

Parks and Open Space

- Proper use, storage, and disposal of pesticides, herbicides, and fertilizers;
- Lawn maintenance and landscaping activities to protect water quality, such as reducing mowing, lawn clippings handling, and use of alternative landscaping materials;
- Pet waste handling collection and disposal locations at all locations where pets are permitted, including signage;
- Control of waterfowl in areas where they congregate to reduce waterfowl droppings from entering the MS4s;
- Management of trash containers; and
- Addressing erosion or poor vegetative cover, particularly near a surface waterbody.

Buildings and Facilities

- Use, storage, and disposal of petroleum products and other potential pollutants.
- Materials handling training to applicable employees;
- Ensuring that Spill Prevention, Control, and Countermeasures (SPCC) Plans are in place if needed (aboveground petroleum storage greater than 1,320 gallons or underground petroleum storage greater than 42,000 gallons);
- Dumpsters and other waste management equipment; and
- Sweeping parking lots and keep facility areas clean to reduce pollutants in runoff.

Vehicles and Equipment

- Storage of vehicles to prevent fluid leaks to stormwater;
- Fueling area evaluation, including feasibility of fueling under cover; and
- Preventing vehicle wash waters from entering surface waters or the MS4.

Phosphorus Water Quality Limited Waterbody Requirements

- Reducing fertilizer and/or using slow release fertilizers on Town-owned properties;
- Properly managing grass cuttings and leaf litter on Town-owned property; and
- Prohibiting blowing organic waste onto impervious surfaces.
- Street sweeping must be completed at least twice a year

8.1.2 Infrastructure Operation and Maintenance Plan

The permittee must establish written procedures as part of an Operation and Maintenance Plan within one year of the permit effective date to ensure that MS4 infrastructure is maintained in a timely manner to reduce the discharge of pollutants from the MS4 for the following items:

Catch Basin Cleaning

- Prioritization of catch basins located near construction activities for more frequent inspection and maintenance;
- Establishing a schedule with a goal that at the time of maintenance, no catch basin is more than 50% full;
- For catch basins that are more than 50% full during two consecutive inspections or cleaning events, methods for investigating the contributing drainage area for sources of excessive sediment loads; and
- Establishing a plan for optimizing catch basin cleaning, inspections, and documentation.

Street Sweeping

- Sweeping all streets and permittee-owned parking lots, with the exception of rural uncurbed roads with no catch basins or high-speed limited access highways at least once per year in the spring following winter sanding events;
- More frequent sweeping of targeted areas based on inspections, land use, or known water quality impacts;
- Increasing street sweeping frequency of all municipal owned streets and parking lots to a minimum of two times per year; once in the spring (following winter activities such as sanding) and at least once in the fall (following leaf fall) for areas that discharge to water quality limited waterbodies and their tributaries where phosphorus is the cause of the impairment; and
- Increasing street sweeping to a schedule determined by the permittee to target areas with potential for high pollutant loads for areas that discharge to water quality limited waterbodies and their tributaries where solids, oil and grease, or metals is the cause of impairment.

Catch Basin and Street Sweeping Residuals Management

- Ensure proper storage of catch basin cleanings and street sweepings prior to disposal or reuse such that they do not discharge to receiving waters.

Winter Operation and Maintenance

- Establish and implement procedures for winter road maintenance including the use and storage of salt and sand
- Minimize the use of sodium chloride and other salts and evaluate of opportunities to use alternative materials; and
- Ensure that snow disposal activities do not result in disposal of snow into waters of the United States.

8.1.3 Stormwater Pollution Prevention Plans

The permittee must establish written Stormwater Pollution Prevention Plans (SWPPPs) within two years of the permit effective date for the following permittee-owned or operated facilities: maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater as determined by the permittee. SWPPPs must address a number of components, including the following:

- Pollution Prevention Team;
- Facility description, identification of potential pollutant sources, and identification of stormwater controls;
- Stormwater management practices, including measures to minimize or prevent exposure, good housekeeping and preventative maintenance, spill prevention and response, erosion and sediment control, management of runoff, salt storage, employee training, and control measure maintenance; and
- Procedures for site inspections and sampling.

8.1.4 Stormwater BMP Inspections

The permittee must establish and implement written inspection and maintenance procedures and frequencies for all structural stormwater treatment structures, such as infiltration and detention basins, proprietary stormwater treatment structures, gravel wetlands, etc. All permittee-owned stormwater treatment structures (excluding catch basins) shall be inspected at least annually.

8.2 Past Good Housekeeping and Pollution Prevention Program

The following summarizes Clinton's past good housekeeping and pollution prevention activities:

- **Street and Parking Lot Sweeping** – Clinton sweeps all of its streets at least once a year. Major streets are cleaned multiple times a year.

- **Catch Basin Cleaning** – the Town cleans its catch basins as needed using a Vactor truck. The truck has been used in conjunction with the Town’s catch basin cleaner to clean drain lines and structures.
- **Used Oil Collection** – The Town collects oil from its residents and uses it to heat the DPW garage on Woodlawn Street.
- **Illegal Dumping** – signage has been posted at common dumping areas indicating the dumping of waste is illegal and prohibited. The DPW has removed furniture, tires, appliances, and other rubbish when reported.
- **Trash and Recycling Programs** – the Town has a curbside trash pick-up program and a curbside recycling program.
- **Culvert Cleaning** – The Town monitors culverts for blockages, especially during high rain flows. Blockages are removed and washouts repaired as needed.

8.3 Ongoing Good Housekeeping and Pollution Prevention Program

Table 8-1 outlines Clinton’s plans to meet the requirements of the 2016 MS4 Permit to establish a Good Housekeeping and Pollution Prevention Program. Measurable goals, responsible department and schedule for implementation of all BMPs under the SWMP are provided in **Section 11**.

Table 8-1. Good Housekeeping and Pollution Prevention Program

BMP ID	BMP	BMP Description	Responsible Parties
6-1	O&M Procedures	Clinton will create written O&M procedures for parks and open spaces, buildings and facilities, and vehicles and equipment. These will be incorporated into a separate O&M Plan.	DPW
6-2	Inventory all permittee-owned parks & open spaces, buildings & facilities, & vehicles & equipment	Clinton will create an inventory of all Town facilities for incorporation into the O&M Plan.	DPW
6-3	Infrastructure O&M	Establish and implement program for repair for repair and rehabilitation of MS4 infrastructure. Infrastructure O&M SOPs will be included in the Town’s O&M Plan as they are developed.	DPW
6-4	Stormwater Pollution Prevention Plans (SWPPPs)	Clinton will perform a preliminary analysis of its maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater to determine which facilities, if any, are located within areas that drain to the MS4. This assessment will take place during the first half of Year 2 to determine which facilities require SWPPPs. Should SWPPPs for any facility be required, they will be prepared by the end of Year 2. A listing of facilities evaluated and status of SWPPPs will be maintained in Appendix G .	DPW
6-5	Catch Basin Cleaning	Clinton currently cleans and inspects catch basins as needed. The Town has developed a plan for prioritizing catch basin cleaning with a goal that no catch basins are more than 50% full of sediment at any time, which is provided in Appendix H . Catch basin cleaning SOPs are also included in the prioritization plan and will be included in the Town’s O&M Plan.	DPW
6-6	Street Sweeping Program	Clinton sweeps all streets and permittee-owned lots at least once a year, with major streets swept more frequently. Street sweeping schedule and SOPs are in the Town’s separate O&M Plan.	DPW
6-7	Road Salt Use Optimization Program	Clinton developed a SOP for winter road maintenance that optimizes the use of salt. This is included in the Town’s separate O&M Plan.	DPW
6-8	Inspection & maintenance of stormwater treatment structures	An inventory of known structural stormwater BMPs within the Town’s regulated area is included in Appendix I . SOPs for performing inspections and maintenance are included in the separate O&M Plan.	DPW

9 TMDL and Impaired Waters Controls

9.1 Permit Requirements

The 2016 MS4 Permit requires regulated operators of MS4s to determine whether stormwater discharges from their MS4 contribute to any impaired waterbodies, including those waterbodies subject to an approved TMDL and certain water quality limited waterbodies. Water quality limited waters are any waterbodies that do not meet applicable water quality standards, including waterbodies listed in categories “4a” and “5” on the Massachusetts Integrated List of Waters, also known as the “303(d) List”. MassDEP is responsible for preparing TMDLs for many of these listed waters to identify the problem pollutant and establish water quality goals. As shown in **Table 2-1**, the Town of Clinton has two waterbodies on the Massachusetts Integrated List, therefore is subject to the Water Quality Limited Requirements of the 2016 MS4 Permit (**Table 9-1**). Additionally, the Town is located within the Assabet River watershed, therefore must also meet the requirements associated with the Assabet River TMDL (**Table 9-2**).

Table 9-1. Water Quality Limited Requirements

Waterbody Names	Impairment	2016 Permit Requirements	Responsible Parties
Nashua River (MA81-09)	<i>E. coli</i>	Appendix H, Part III	DPW, Conservation Commission
Nashua River (MA81-09)	Phosphorus	Appendix H, Part II	DPW, Conservation Commission

Table 9-2. TMDL Requirements

Waterbody Names	Impairment	2016 Permit Requirements	Responsible Parties
Assabet River	Phosphorus	Appendix F, Part A.V	DPW, Conservation Commission

9.1.1 *E. coli* Limited Water Quality Requirements

To address the discharge of bacteria to the Nashua River from its MS4, the Town of Clinton must implement the following requirements as outlined under Appendix H, Part III of the 2016 Permit.

- **Public Education** – supplement the Residential education program with an annual message encouraging the proper management of pet waste and disseminate educational materials to dog owners at the time of issuance or renewal of a dog license. Education materials shall describe the detrimental

impacts of improper management of pet waste, requirements for waste collection and disposal, and penalties for non-compliance. The Town also must provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria or pathogens.

- **Illicit Discharge, Detection, and Elimination** – designate catchments draining to pathogen impaired segments as “Problem Catchments” or “High” priority.

Public education requirements have been incorporated into future public education outreach components as described in Section 3. IDDE requirements have been incorporated into Clinton’s IDDE Plan.

9.1.2 Phosphorus TMDL & Water Quality Limited Waterbody Requirements

Phosphorus TMDL and water quality limited waters have the same requirements under the permit. To address the discharge of phosphorus to the Assabet River, the Nashua River, and their tributaries from its MS4, the Town of Clinton must implement the following requirements as outlined under Appendix F, Part A.V and Appendix H, Part II of the 2016 Permit.

- **Public Education** – supplement the Residential and Business/Commercial/Institution education programs with additional annual messages as follows:
 - Spring (March/April): Encourage the proper use and disposal of grass clippings and use of slow-release and phosphorus-free fertilizers;
 - Summer (June/July): Encourage proper management of pet waste, including noting any existing ordinances where appropriate; and
 - Fall (August-October): Encourage proper disposal of leaf litter.
- **Stormwater Management in New Development and Redevelopment** – supplement standard permit bylaw requirements to also mandate the use of stormwater BMPs optimized for phosphorus removal as part of new development and redevelopment projects. Additionally, retrofit opportunities must consider opportunities for constructing infiltration BMPs for properties within the Assabet River watershed.
- **Good Housekeeping and Pollution Prevention** – establish procedures for properly managing grass cuttings and leaf litter on Town-owned property, and prohibit blowing organic waste onto impervious surfaces. Additionally, street sweeping must be increased to at least twice per year, once in the spring and once in the fall.

The Town of Clinton will also prepare a Phosphorus Source Identification Report for discharges to the Nashua River and its tributaries (note a Phosphorus Source Identification Report is not required for discharges within the Assabet River watershed) by the end of Year 4 that generally does the following:

- Calculates the total MS4 area draining to the water quality limited receiving water segments or their tributaries and incorporate update mapping of the MS4 and catchment delineations.
- Accounts for any screening results performed under MCM 3 when developing conclusions;
- Identifies, delineates, and prioritizes areas of town at the catchment-level that have the highest phosphorus loading potential based on land use and other factors;
- Determines impervious area based on catchment delineations; and
- Identifies potential retrofit opportunities for installing structural BMPs during redevelopment.

Upon completion of the Phosphorus Source Identification Report, the Town will evaluate all properties identified under the report and under BMP 5-2 as presenting retrofit opportunities to:

- Identify the next planned redevelopment activity or planned retrofit date;
- Determine an estimated cost of redevelopment or retrofit BMPs; and
- Determine the engineering and regulatory feasibility of BMP installation.

Upon completion, the Town will provide a list of planned structural BMPs, along with a plan and schedule for implementation by the end of Year 5. At least one BMP must be designed and constructed as a demonstration project by the end of Year 6 that targets a catchment with a high phosphorus load potential. Remaining structural BMPs must be constructed according to the provided plan and schedule. Phosphorus removals must be tracked and reported annually. In the reports, the Town will estimate the phosphorus removal by the BMP and document 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.

10 Annual Reporting

The Town of Clinton will submit annual reports each year of the permit term. The reporting period will be a one-year period commencing on the permit effective date, and subsequent anniversaries thereof, except that the first annual report under this permit shall also cover the period from May 1, 2018 to the permit effective date. The annual report is due 90 days from the close of each reporting period, or by September 29 of each year. The annual reports must contain the following relevant information which should be tracked throughout the year, with documentation maintained within **Appendix J**:

- A self-assessment review of compliance with the permit terms and conditions.
- An assessment of the appropriateness of the selected BMPs.
- The status of any plans or activities, including:
 - Identification of all discharges determined to be causing or contributing to an exceedance of water quality standards and description of response;
 - For discharges subject to TMDL or water quality limited waterbody requirements, identification of BMPs used to address the impairment and assessment of the BMPs effectiveness;
 - For discharges to water quality limited waters a description of each BMP and any deliverables required.
- An assessment of the progress towards achieving the measurable goals and objectives of each of the six MCMs:
 - Evaluation of the public education program including a description of the targeted messages for each audience; method and dates of distribution; methods used to evaluate the program; and any changes to the program.
 - Description of the activities used to promote public participation including documentation of compliance with state public notice regulations.
 - Description of IDDE activities including: status of mapping and results of the ranking and assessment; identification of problem catchments; status of all IDDE Plan components; number and identifier of catchments evaluated; number and identifier of outfalls screened; number of illicit discharges located and removed; gallons of flow removed; identification of tracking indicators and measures of progress; and employee training.
 - Evaluation of construction runoff management including number of project plans reviewed; number of inspections; and number of enforcement actions.
 - Evaluation of stormwater management for new and redevelopment including status of ordinance development; review and status of the street design and barriers to green infrastructure assessment; and inventory status.
 - Status of the O&M Programs.
 - Status of SWPPPs, including inspection results.
- All outfall screening and monitoring data during the reporting period and cumulative for the permit term; and a description of any additional monitoring data received by the Town during the reporting period.
- Description of activities for the next reporting cycle.
- Description of any changes in identified BMPs or measurable goals.
- Description of activities undertaken by any entity contracted for achieving any measurable goal or implementing any control measure.

11 Implementation of Best Management Practices

The Town of Clinton's Best Management Practices Plan as outlined in the Town's NOI (**Appendix A**) is summarized in **Table 11-1**.

For consistency with the six MCMs and impaired water requirements, the BMPs are broken down into seven categories:

1. Public Education and Outreach;
2. Public Participation and Involvement;
3. Illicit Discharge Detection and Elimination;
4. Construction Site Stormwater Runoff Control;
5. Stormwater Management in New Development and Redevelopment;
6. Good Housekeeping and Pollution Prevention; and
7. TMDL and Water Quality Limited Waterbodies Controls

The BMP tables also outline the measurable goals for each BMP to gauge permit compliance, the responsible party(ies) for implementing each BMP, and an implementation schedule to be used throughout the permit period. In addition to the implementation activities outlined in this plan, the Town will also perform the following activities throughout the duration of the permit:

1. **Program Evaluation** – conduct annual evaluations of the Stormwater Management Program for compliance with permit conditions. The evaluation must include a determination of the appropriateness of the selected BMPs in efforts towards achieving the measurable goals outlined in **Table 11-1**.
2. **Record Keeping** – maintain records that pertain to the Stormwater Management Program for a period of at least five years. Records need to be made available to the public and the Town may charge a reasonable fee for copying. Records need not be submitted to EPA or MassDEP unless specifically requested.
3. **Reporting** – submit an annual report to EPA and MassDEP, including the information as noted in Section 10.

Table 11-1. Best Management Practices Summary

BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Year / Schedule					
					1	2	3	4	5	6+
					7/1/18-6/30/19	7/1/19-6/30/20	7/1/20-6/30/21	7/1/21-6/30/22	7/1/22-6/30/23	7/1/23-6/30/24
1. Public Education and Outreach										
1-1	Residential Education Program	1. Provide classroom education on topics including watershed protection and pollution prevention, stormwater management, stream protection, and impacts on water quality.	Schools, DPW	Continue to provide stormwater education for a minimum of one presentation included in the yearly curriculum	*	*	*	*	*	*
		2. Distribute pet waste fact sheets with dog registrations and renewals.	Town Clerk	Provide information with all applications and renewals	*	*	*	*	*	*
		3. Distribute fact sheets, brochures, and/or posters on surface and groundwater pollution prevention at the Town Hall.	DPW	Continue to display fact sheets, brochures, and/or posters with updated stormwater information.	*	*	*	*	*	*
		4. Provide web information on septic system maintenance, illicit discharges, pet waste disposal, lawn care, pesticide and fertilizer use, grass clippings and leaf litter disposal, car washing, disposal of swimming pool water, and benefits of onsite infiltration.	Board of Selectmen, DPW	Continue to update and maintain the websites.		*	*	*	*	*
		5. Distribute fact sheets, brochures, and/or posters on surface and groundwater pollution prevention at the Town Hall.	DPW	Issue periodic press releases in the local newspaper.		*	*	*	*	*
1-2	Businesses, Institutions, and Commercial Education Program	1. Issue periodic press releases using materials generated under Think Blue.	DPW	Issue periodic press releases in the local newspaper.		*	*	*	*	*
		2. Provide web information on lawn care, pesticide and fertilizer use, grass clippings and leaf litter disposal, building maintenance, management of parking lot surfaces, salt usage, storage of materials and wastes, car washing, disposal of swimming pool water, and benefits of onsite infiltration.	Board of Selectmen, DPW	Continue to update and maintain the website.		*	*	*	*	*
1-3	Developer and Construction Education Program	1. Display poster outlining the impacts of construction on stormwater water runoff.	Conservation Commission, Planning Board	Continue to maintain educational stormwater displays aimed at developers.	*	*	*	*	*	*
		2. Distribute materials on sediment and erosion control, LID, and EPA's Construction General Permit (CGP) to developers applying for construction permits.	DPW	Distribute with permit application materials		*	*	*	*	*
		3. Provide web information on erosion and sediment control, Low Impact Development, and the NPDES CGP.	Board of Selectmen, DPW	Continue to update and maintain the website.		*	*	*	*	*
		4. Issue periodic press releases using materials generated under Think Blue.	DPW	Issue periodic press releases in the local newspaper.		*	*	*	*	*
1-4	Industrial Education Program	1. Provide web information on equipment maintenance and inspection, material storage, solid waste handling, salt usage, benefits of onsite infiltration, management of parking lot surfaces, and EPA's MSGP.	Board of Selectmen, DPW	Continue to update and maintain the website.		*	*	*	*	*
		2. Issue periodic press releases using materials generated under Think Blue.	DPW	Issue periodic press releases in the local newspaper.		*	*	*	*	*

Table 11-1. Best Management Practices Summary

BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Year / Schedule					
					1	2	3	4	5	6+
					7/1/18-6/30/19	7/1/19-6/30/20	7/1/20-6/30/21	7/1/21-6/30/22	7/1/22-6/30/23	7/1/23-6/30/24
2. Public Participation & Involvement										
2-1	SWMP Public Review	Post SWMP Plan on Town website for annual review.	Board of Selectmen, DPW	Annual review of stormwater management plan and posting of stormwater management plan on website.		*	*	*	*	*
2-2	SWMP Public Participation	Post SWMP Plan on Town website and allow public to comment on stormwater management plan annually.	Board of Selectmen, DPW	Allow public to comment on stormwater management plan annually.		*	*	*	*	*
2-3	Cleanups - Roadside/General	Hold annual cleanup events at local conservation areas and along streets and water bodies.	DPW	Continue to hold annual cleanup events at local conservation areas and along streets and water bodies	*	*	*	*	*	*
2-4	Household hazardous waste and Used Oil Collection	Sponsor hazardous waste and used oil collections.	Recycling Committee, DPW	Continue to sponsor hazardous waste and used oil collection periodically throughout the year	*	*	*	*	*	*
2-5	Yard Waste Collection	Allow yard waste to be dropped at town facility.	Recycling Committee, DPW	Continue to allow yard waste drop off at town facility	*	*	*	*	*	*

Table 11-1. Best Management Practices Summary

BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Year / Schedule					
					1	2	3	4	5	6+
					7/1/18-6/30/19	7/1/19-6/30/20	7/1/20-6/30/21	7/1/21-6/30/22	7/1/22-6/30/23	7/1/23-6/30/24
3. Illicit Discharge Detection and Elimination										
3-1	Complete SSO Inventory	Develop SSO inventory in accordance with permit conditions.	DPW	Complete within 1 year of effective date of permit.	*					
3-2	Storm Sewer System Map	A storm sewer system map has been completed and will be updated as new information becomes available.	DPW	Updated map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit.	*	*	*	*	*	*
3-3	Written IDDE Program	A written IDDE program has been developed as a separate document from this SWMP. The plan will be updated as needed and as information becomes available.	DPW	Complete within 1 year of the effective date of permit and update as required.	*					
3-4	Implement IDDE Program	Implement catchment investigations according to program and permit conditions.	DPW	Complete 10 years after effective date of permit.				*	*	*
3-5	Perform Employee IDDE Training	Provide annual training to employees involved in the IDDE program.	DPW	Train applicable employees annually.	*	*	*	*	*	*
3-6	Conduct Dry Weather Screening	Conduct dry weather screening in accordance with outfall screening procedures and permit conditions.	DPW	Complete 3 years after effective date of permit.		*	*			
3-7	Conduct Wet Weather Screening	Conduct wet weather screening in accordance with outfall screening procedures and permit conditions.	DPW	Complete 10 years after effective date of permit.						*
3-8	Ongoing Screening	Conduct ongoing dry weather and wet weather screening (as necessary).	DPW	Conduct ongoing dry and wet weather outfall screening upon completion of the IDDE program.						*
3-9	Enact and Enforce IDDE Ordinance/Bylaw	The Town has adopted a Stormwater bylaw and Illicit Discharge Detection and Elimination bylaw and will continue to enforce them.	DPW, Board of Selectmen	Continue to enforce existing IDDE ordinance	*	*	*	*	*	*

Table 11-1. Best Management Practices Summary

BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Year / Schedule					
					1	2	3	4	5	6+
					7/1/18-6/30/19	7/1/19-6/30/20	7/1/20-6/30/21	7/1/21-6/30/22	7/1/22-6/30/23	7/1/23-6/30/24
4. Construction Site Stormwater Runoff Control										
4-1	Site Inspections and Enforcement	The Town's Stormwater bylaw includes procedures for site inspections and enforcement.	Building Department	Complete within 1 year of the effective date of permit.	*					
4-2	Procedures for Site Plan Review	The Town's Stormwater bylaw includes procedures for site plan review.	Planning Board	Complete within 1 year of the effective date of the permit.	*					
4-3	Erosion and Sediment Control	The Town's Stormwater bylaw includes requirements for applicants to submit an Erosion and Sediment Control Plan and outlines design requirements for sediment control.	Planning Board, Conservation Commission	Complete within 1 year of the effective date of the permit.	*					
4-4	Develop Procedures for Waste Control	The Town's Stormwater bylaw requires applicants to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes and to outline controls in a plan.	Planning Board, Conservation Commission	Complete within 1 year of the effective date of the permit.	*					
4-5	Construction Ordinance/Bylaw	The existing Stormwater bylaw meets the 2016 MS4 Permit requirements. Clinton will continue to enforce the existing bylaw.	Planning Board, Conservation Commission	Continue to enforce existing bylaw.	*	*	*	*	*	*

Table 11-1. Best Management Practices Summary

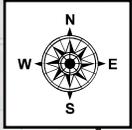
BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Year / Schedule					
					1	2	3	4	5	6+
					7/1/18-6/30/19	7/1/19-6/30/20	7/1/20-6/30/21	7/1/21-6/30/22	7/1/22-6/30/23	7/1/23-6/30/24
5. Stormwater Management in New Development and Redevelopment										
5-1	Require Stormwater As-Built Plan Submittal	Require submittal of as-built drawings for structural and non-structural stormwater controls and ensure long term maintenance. A review of existing regulations was performed. Existing regulations require final submittal of as-built drawings of all structural stormwater controls and treatment BMPs required for the site and that they be certified by a Professional Engineer. Regulations also require submission of an O&M Plan to the Town. These requirements will be reviewed further and updated as needed.	Planning Board	Require submittal of as-built plans for completed projects.	*	*	*	*	*	*
5-2	Target Properties to Reduce Impervious Area	Identify at least 5 permittee-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas and update annually.	DPW	Complete within 4 years of the permit effective date and update annually on retrofitted properties.				*		
5-3	Allow Green Infrastructure	Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist	Planning Board, Conservation Commission, DPW	Complete 4 years after effective date of permit and implement recommendations of report				*		
5-4	Street Design and Parking Lot Guidelines	Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support low impact design options.	Planning Board, Conservation Commission, DPW	Complete 4 years after effective date of permit and implement recommendations of report				*		
5-5	Stormwater Controls to Meet Permit Requirements	Ensure any stormwater controls or management practices for new development and redevelopment meet the retention or treatment requirements of the permit and all applicable requirements of the Massachusetts Stormwater Handbook.	Planning Board, Conservation Commission	Complete 2 years after effective date of permit.		*				

Table 11-1. Best Management Practices Summary

BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Year / Schedule					
					1	2	3	4	5	6+
					7/1/18-6/30/19	7/1/19-6/30/20	7/1/20-6/30/21	7/1/21-6/30/22	7/1/22-6/30/23	7/1/23-6/30/24
6. Good Housekeeping and Pollution Prevention										
6-1	Establish Operation and Maintenance Procedures	Create written O&M procedures for parks and open spaces, buildings and facilities, and vehicles and equipment.	DPW	Complete and implement 2 years after effective date of permit.		*				
6-2	Inventory Open Spaces, Buildings and Facilities, and Vehicles and Equipment	Inventory all permittee-owned parks and open spaces, building and facilities, and vehicles and equipment in the regulated area.	DPW	Complete 2 years after effective date of permit and implement annually.		*				
6-3	Infrastructure O&M Procedures	Establish and implement a program for repair and rehabilitation of MS4 infrastructure.	DPW	Complete 2 years after effective date of permit.		*				
6-4	Develop SWPPPs for Applicable Facilities	Review facilities and develop SWPPPs as needed for maintenance garages, transfer stations, and other waste-handling facilities.	DPW	Complete and implement 2 years after effective date of permit.		*				
6-5	Catch Basin Cleaning	1. Develop a plan for gathering data to optimize catch basin cleaning.	DPW	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually.	*					
		2. Collect data.				*	*			
		3. Develop a catch basin cleaning optimization plan using the data collected.					*			
		4. Implement the catch basin cleaning optimization plan.						*	*	*
6-6	Street Sweeping	Sweep all streets and permittee-owned parking lots in accordance with permit conditions.	DPW	Sweep all streets and permittee-owned parking lots once per year in the spring.	*	*	*	*	*	*
6-7	Road Salt Optimization Program	1. Establish procedures for proper winter road maintenance, including use and storage of salt and sand, and procedures to minimize the use of road salt.	DPW	Implement salt use optimization during deicing season.	*					
		2. Implement winter road maintenance procedures.				*	*	*	*	*
6-8	Inspect and Maintain Stormwater BMPs	Establish and implement inspection and maintenance procedures and frequencies.	DPW	Inspect and maintain treatment structures at least annually.	*	*	*	*	*	*

Table 11-1. Best Management Practices Summary

BMP ID	BMP Description	Implementation	Responsible Dept./Person	Measurable Goal	Year / Schedule					
					1	2	3	4	5	6+
					7/1/18-6/30/19	7/1/19-6/30/20	7/1/20-6/30/21	7/1/21-6/30/22	7/1/22-6/30/23	7/1/23-6/30/24
7. TMDL and Impaired Waters Controls										
E.coli Water Quality Limited - Nashua River										
7-1	Public Education	Include management of pet waste and septic system maintenance with the Residential public education program.	DPW, Conservation Commission	Issue additional annual messages.	*	*	*	*	*	*
7-2	IDDE Catchment Prioritization	Designate catchment draining to bacteria/pathogen impaired segments as "Problem Catchments" or "High" priority catchments in IDDE ranking.	DPW, Conservation Commission	Include in the IDDE Plan.	*					
Phosphorus TMDL and Water Quality Limited - Assabet River, Nashua River										
7-3	Public Education	Supplement the Residential and Business/Commercial/Institution education programs with additional annual messages: - Spring (March/April): Proper management of grass clippings, use of fertilizers - Summer (June/July): Proper management of pet waste - Fall (August-October): Proper disposal of leaf litter	DPW, Conservation Commission	Distribute materials with Residential and Commercial education programs.		*	*	*	*	*
7-4	Regulatory Updates	Include a requirement in the regulatory mechanism that new development and redevelopment stormwater management BMPs be optimized for phosphorus removal.	DPW, Conservation Commission	Complete bylaw updates within 2 years of the permit effective date.		*				
7-5	Retrofit Opportunities	Consider BMPs to reduce phosphorus discharges when identifying MS4 properties for retrofits.	DPW, Conservation Commission	Evaluate stormwater BMPs for phosphorus removal during facility inventory within 2 years of the permit effective date.		*	*	*	*	*
7-6	Grounds Maintenance	Incorporate phosphorus reduction practices into Town good housekeeping practices such as fertilizer use and managing grass cuttings and leaf litter.	DPW, Conservation Commission	Create written O&M Plan for open spaces, buildings and facilities, and vehicles and equipment within 2 years of the permit effective date.		*	*	*	*	*
7-7	Street Sweeping	Increase street sweeping to twice per year (spring and fall) for catchment areas within phosphorus-impaired waterbody watersheds.	DPW, Conservation Commission	Sweep all streets and parking lots within phosphorus-impaired waterbody watersheds twice per year.		*	*	*	*	*
Phosphorus Water Quality Limited - Nashua River										
7-8	Phosphorus Source Identification Report	Prepare a Phosphorus Source Identification Report to identify high priority areas within the community, determine impervious areas, evaluate results of screening activities performed under MCM 3, and outline potential retrofit opportunities.	DPW, Conservation Commission	Complete Phosphorus Source Identification Report within 4 years of the permit effective date.					*	
7-9	Demonstration BMP	1. Evaluate municipal properties for potential BMPs to construct one that will treat phosphorus, determine estimated costs, and determines engineering and regulatory feasibility.	DPW, Conservation Commission	Evaluate municipal facilities within 5 years of the permit effective date to determine candidates for a phosphorus BMP.					*	
		2. Design and construct at least one BMP as a public demonstration project.		Installed BMP within 6 years of the permit effective date.				*	*	
		3. Track BMPs installed, including type, location, total area treated, design storage volume and estimated phosphorus removal and report annually.		Summary progress table.					*	



LANCASTER

Goodridge Brook

Mossy Pond

South Meadow Pond

Coachlace Pond

Clamshell Pond

BERLIN

Legend

- | | |
|--|--|
|  Industrial |  Water |
|  Transportation |  Wetland |
|  Residential |  Disturbed Land |
|  Commercial |  Other Cleared Land |
|  Agriculture |  Stream, Brook |
|  Forest | |

**Figure 2-1.
Land Use**

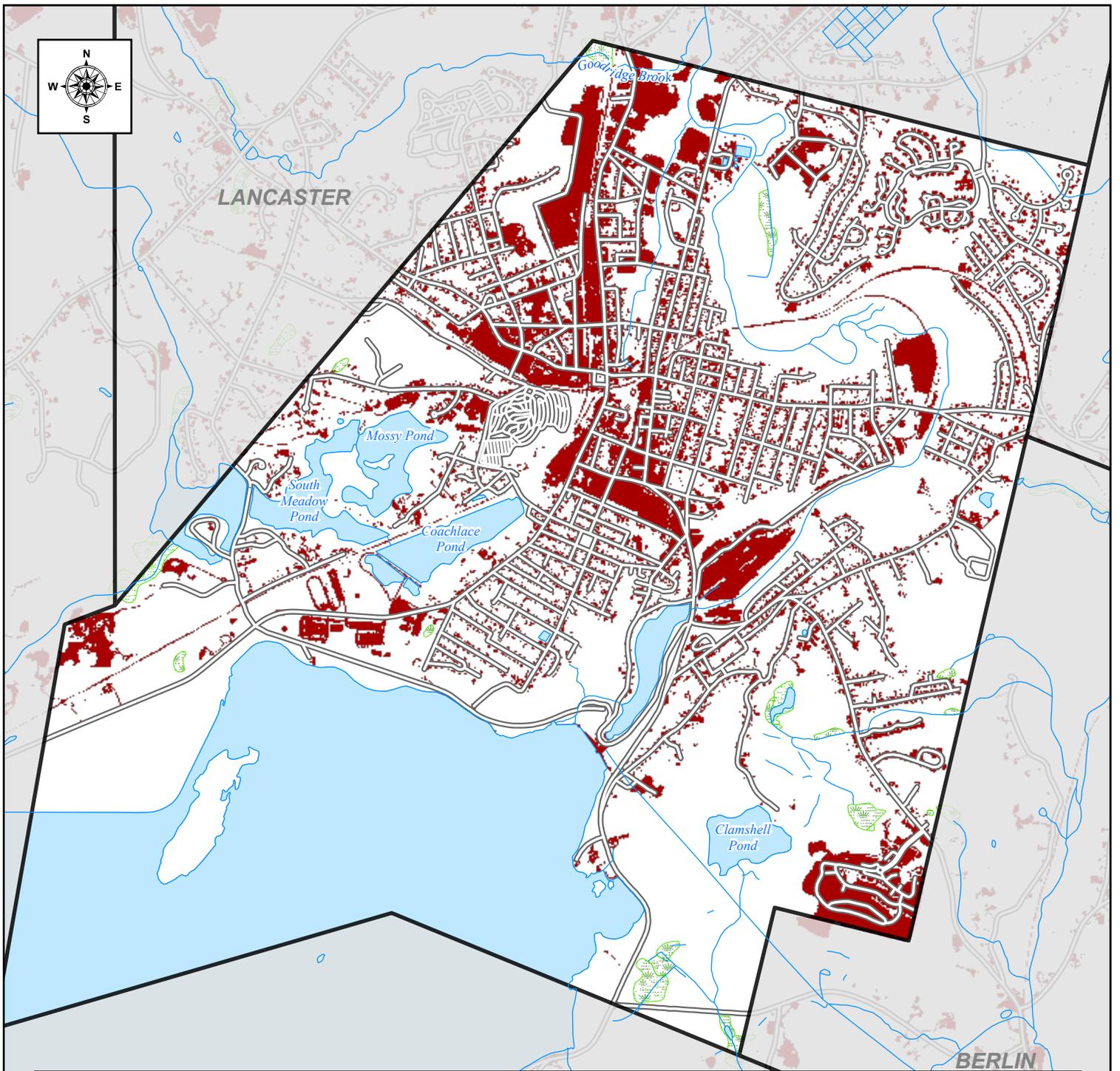
Clinton, MA



**Comprehensive
Environmental
Incorporated**



Data Source: MassGIS



Legend

- Impervious Surface
- Town Boundaries
- Lake, Pond, Reservoir
- Wetland
- Stream, Brook

**Figure 2-2.
Impervious Area**

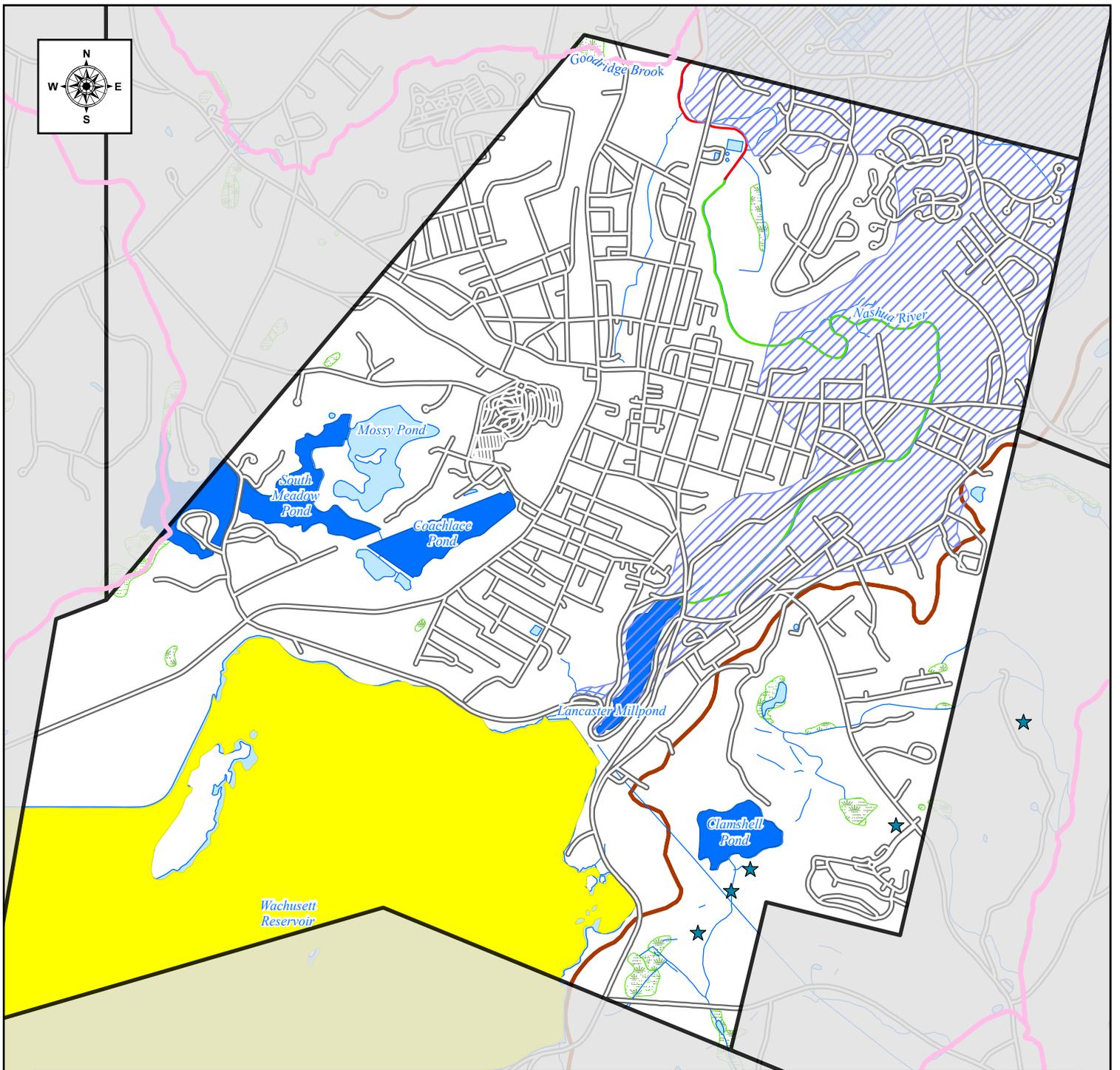
Clinton, MA



**Comprehensive
Environmental
Incorporated**



Data Source: MassGIS



Legend

- ★ Certified Vernal Pool
- MA DFW Coldwater Fisheries
- MassDEP Zone II
- MassDEP 303(d) Waters:
- Category 2
- Category 3
- Category 4A
- Category 4C
- Category 5
- Category 2
- Category 3
- Category 4A
- Category 4C
- Category 5
- Lake, Pond
- Wetland
- Stream, Brook
- Watersheds

**Figure 2-3.
Resource Waters**

Clinton, MA



**Comprehensive
Environmental
Incorporated**

Data Source: MassGIS



Appendix A

Notice of Intent and Authorization to Discharge

Part I: General Conditions

General Information

Name of Municipality or Organization: State:

EPA NPDES Permit Number (if applicable):

Primary MS4 Program Manager Contact Information

Name: Title:

Street Address Line 1:

Street Address Line 2:

City: State: Zip Code:

Email: Phone Number:

Fax Number:

Other Information

Stormwater Management Program (SWMP) Location (web address or physical location, if already completed):

Eligibility Determination

Endangered Species Act (ESA) Determination Complete? Eligibility Criteria (check all that apply): A B C

National Historic Preservation Act (NHPA) Determination Complete? Eligibility Criteria (check all that apply): A B C

Check the box if your municipality or organization was covered under the 2003 MS4 General Permit

MS4 Infrastructure (if covered under the 2003 permit)

Estimated Percent of Outfall Map Complete? If 100% of 2003 requirements not met, enter an estimated date of completion (MM/DD/YY):

Web address where MS4 map is published:

If outfall map is unavailable on the internet an electronic or paper copy of the outfall map must be included with NO. submission (see section V for submission options)

Regulatory Authorities (if covered under the 2003 permit)

Illicit Discharge Detection and Elimination (IDDE) Authority Adopted? Effective Date or Estimated Date of Adoption (MM/DD/YY):

(Part II, III, IV or V, Subpart B.3.(b.) of 2003 permit)

Construction/Erosion and Sediment Control (ESC) Authority Adopted? Effective Date or Estimated Date of Adoption (MM/DD/YY):

(Part II, III, IV or V, Subpart B.4.(a.) of 2003 permit)

Post-Construction Stormwater Management Adopted? Effective Date or Estimated Date of Adoption (MM/DD/YY):

(Part II, III, IV or V, Subpart B.5.(a.) of 2003 permit)

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part II: Summary of Receiving Waters

Please list the waterbody segments to which your MS4 discharges. For each waterbody segment, please report the number of outfalls discharging into it and, if applicable, any impairments.

Massachusetts list of impaired waters: [Massachusetts 2014 List of Impaired Waters- http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf](http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf)

Check off relevant pollutants for discharges to impaired waterbodies (see above 303(d) lists) without an approved TMDL in accordance with part 2.2.2.a of the permit. List any other pollutants in the last column, if applicable.

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Pollutants										Other pollutant(s) causing impairments
		Chloride	Chlorophyll-a	Dissolved Oxygen/DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus		
Coachlace Pond	6	<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"/>	<input type="checkbox"/>	
Counterpane Brook	13	<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"/>	<input type="checkbox"/>	
Goodridge Brook	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"/>	<input type="checkbox"/>	
Lancaster Mill 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"/>	<input type="checkbox"/>	
Nashua River	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
North Brook	1	<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"/>		
Rigby 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"/>		
South Meadow Pond	1	<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"/>		
Unnamed Brook to Lancaster Mill Pond	1	<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"/>		
Unnamed Brook to Mossy Pond	1	<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"/>		
Unnamed Tributary to Nashua River on Lancaster Road	1	<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"/>		
Unnamed Tributary to Nashua River on Plain Street	1	<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"/>		
Unnamed Tributary to North 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"/>		
Unnamed Wetland Between Nashua River and Hillside Ave.	1	<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"/>		
Unnamed Wetland North of Candice Street Loop	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"/>		
Unnamed Wetlands to Coachlace Pond	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"/>		
		<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"/>		
		<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"/>		

Click to lengthen table

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary

Identify the Best Management Practices (BMPs) that will be employed to address each of the six Minimum Control Measures (MCMs). For municipalities/organizations whose MS4 discharges into a receiving water with an approved Total Maximum Daily Load (TMDL) and an applicable waste load allocation (WLA), identify any additional BMPs employed to specifically support the achievement of the WLA in the TMDL section at the end of part III.

For each MCM, list each existing or proposed BMP by category and provide a brief description, responsible parties/departments, measurable goals, and the year the BMP will be employed (public education and outreach BMPs also requires a target audience). **Use the drop-down menus in each table or enter your own text to override the drop down menu.**

MCM 1: Public Education and Outreach

BMP Media/Category <small>(enter your own text to override the drop down menu)</small>	BMP Description	Targeted Audience	Responsible Department/Parties <small>(enter your own text to override the drop down menu)</small>	Measurable Goal	Beginning Year of BMP Implementation
School Curricula/Programs	Classroom education on topics including watershed protection and pollution prevention, stormwater management, stream protection, and impacts on water quality.	Residents	Schools, Department of Public Works	Continue to provide stormwater education for a minimum of one presentation included in the yearly curriculum	2018
Brochures/Pamphlets	Distribute pet waste fact sheets with dog registrations and renewals	Residents	Town Clerk	Provide information with all applications and renewals	2018
Brochures/Pamphlets	Distribute fact sheets or brochures on surface and ground water pollution prevention to residents in addition to their availability at the Town Hall	Residents	Department of Public Works	Continue to distribute brochures and fact sheets with updated stormwater information	2018
Displays/Posters/Kiosks	Display poster outlining the impacts of construction on stormwater water runoff	Developers (Construction)	Conservation Commission, Planning Board	Continue to maintain educational stormwater displays aimed at developers	2018

<p>Brochures/Pamphlets</p>	<p>Distribute materials on sediment and erosion control, LID, and EPA's CGP to developers applying for construction permits.</p>	<p>Developers (Construction)</p>	<p>Department of Public Works</p>	<p>Distribute with permit application materials</p>	<p>2019</p>
<p>Web Page</p>	<p>Provide web information on septic system maintenance, illicit discharges, pet waste disposal, lawn care, pesticide and fertilizer use, grass clippings and leaf litter disposal, car washing, disposal of swimming pool water, and benefits of onsite infiltration.</p>	<p>Residents</p>	<p>Board of Selectmen, Department of Public Works</p>	<p>Continue to update and maintain the website</p>	<p>2019</p>
<p>Web Page</p>	<p>Provide web information on lawn care, pesticide and fertilizer use, grass clippings and leaf litter disposal, building maintenance, management of parking lot surfaces, salt usage, storage of materials and wastes, car washing, disposal of swimming pool water, and benefits of onsite infiltration.</p>	<p>Businesses, Institutions, and Commercial Facilities</p>	<p>Board of Selectmen, Department of Public Works</p>	<p>Continue to update and maintain the website</p>	<p>2019</p>
<p>Web Page</p>	<p>Provide web information on erosion and sediment control, Low Impact Development, and the NPDES Construction General Permit.</p>	<p>Developers (construction)</p>	<p>Board of Selectmen, Department of Public Works</p>	<p>Continue to update and maintain the website</p>	<p>2019</p>

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 2: Public Involvement and Participation

BMP Categorization	Brief BMP Description <small>(enter your own text to override the drop down menu)</small>	Responsible Department/Parties <small>(enter your own text to override the drop down menu)</small>	Additional Description/ Measurable Goal	Beginning Year of BMP Implementation
Public Review	SWMP Review	Board of Selectmen, Department of Public Works	Allow annual review of stormwater management plan and posting of stormwater management plan on website	2019
Public Participation	SWMP Review	Board of Selectmen, Department of Public Works	Allow public to comment or stormwater management plan annually	2019
Public Participation	Cleanups - Roadside/General	Department of Public Works	Continue to hold annual cleanup events at local conservation areas and along streets and water bodies	2018
Public Participation	Household haz. waste/used oil collection	Recycling Committee, Department of Public Works	Continue to sponsor hazardous waste and used oil collection periodically throughout the year	2018
Public Participation	Yard waste collection	Recycling Committee, Department of Public Works	Continue to allow yard waste drop off at town facility	2018
▼	▼	▼		▼
▼	▼	▼		▼
▼	▼	▼		▼
▼	▼	▼		▼
▼	▼	▼		▼
▼	▼	▼		▼
▼	▼	▼		▼

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

BMP Categorization <small>(enter your own text to override the drop down menu)</small>	BMP Description	Responsible Department/Parties <small>(enter your own text to override the drop down menu)</small>	Measurable Goal <small>(all text can be overwritten)</small>	Beginning Year of BMP Implementation
SSO inventory	Develop SSO inventory in accordance of permit conditions	Department of Public Works	Complete within 1 year of effective date of permit	2018
Storm sewer system map	Create map and update during IDDE program completion	Department of Public Works	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit	2018
Written IDDE program	Create written IDDE program	Department of Public Works	Complete within 1 year of the effective date of permit and update as required	2018
Implement IDDE program	Implement catchment investigations according to program and permit conditions	Department of Public Works	Complete 10 years after effective date of permit	2019
Employee training	Train employees on IDDE implementation	Department of Public Works	Train annually	2018
Conduct dry weather screening	Conduct in accordance with outfall screening procedure and permit conditions	Department of Public Works	Complete 3 years after effective date of permit	2019
Conduct wet weather screening	Conduct in accordance with outfall screening procedure	Department of Public Works	Complete 10 years after effective date of permit	2023
Ongoing screening	Conduct dry weather and wet weather screening (as necessary)	Department of Public Works	Complete ongoing outfall screening upon completion of IDDE program	2028
IDDE Ordinance/Bylaw	Develop IDDE ordinance	Department of Public Works, Board of Selectmen	Continue to enforce existing IDDE ordinance	2018

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 4: Construction Site Stormwater Runoff Control

BMP Categorization (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
Site inspection and enforcement of Erosion and Sediment Control (ESC) measures	Complete written procedures of site inspections and enforcement procedures	Building Department	Complete within 1 year of the effective date of permit	2018
Site plan review	Complete written procedures of site plan review and begin implementation	Planning Board	Complete within 1 year of the effective date of permit	2018
Erosion and Sediment Control	Adoption of requirements for construction operators to implement a sediment and erosion control program	Planning Board, Conservation Commission	Complete within 1 year of the effective date of permit	2018
Waste Control	Adoption of requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	Planning Board, Conservation Commission	Complete within 1 year of the effective date of permit	2018
Construction Ordinance/Bylaw	Develop a regulatory mechanism requiring sediment and erosion controls at construction sites disturbing >1 acre	Planning Board, Conservation Commission	Continue to enforce existing bylaw.	2018

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 5: Post-Construction Stormwater Management in New Development and Redevelopment

BMP Categorization (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
As-built plans for on-site stormwater control	The procedures to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP	Planning Board	Require submission of as-built plans for completed projects	2018
Target properties to reduce impervious areas	Identify at least 5 permittee-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas and update annually	Department of Public Works	Complete 4 years after effective date of permit and report annually on retrofitted properties	2020
Allow green infrastructure	Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist	Planning Board, Conservation Commission, Department of Public Works	Complete 4 years after effective date of permit and implement recommendations of report	2020
Street design and parking lot guidelines	Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support low impact design options.	Planning Board, Conservation Commission, Department of Public Works	Complete 4 years after effective date of permit and implement recommendations of report	2020

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 6: Municipal Good Housekeeping and Pollution Prevention

BMP Categorization (enter your own text to override the drop down menu or entered text)	BMP Description	Responsible Department/Parties (enter your own text to override the drop down menu)	Measurable Goal (all text can be overwritten)	Beginning Year of BMP Implementation
O&M procedures	Create written O&M procedures including all requirements contained in 2.3.7.a.ii for parks and open spaces, buildings and facilities, and vehicles and equipment	Department of Public Works	Complete and implement 2 years after effective date of permit	2019
Inventory all permittee-owned parks and open spaces, buildings and facilities, and vehicles and equipment	Create inventory	Department of Public Works	Complete 2 years after effective date of permit and implement annually	2019
Infrastructure O&M	Establish and implement program for repair and rehabilitation of MS4 infrastructure	Department of Public Works	Complete 2 years after effective date of permit	2019
Stormwater Pollution Prevention Plan (SWPPP)	Create SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities	Department of Public Works	Complete and implement 2 years after effective date of permit	2019
Catch basin cleaning	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule	Department of Public Works	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2018
Street sweeping program	Sweep all streets and permittee-owned parking lots in accordance with permit conditions	Department of Public Works	Sweep all streets and permittee-owned parking lots once per year in the spring	2018
Road salt use optimization program	Establish and implement a program to minimize the use of road salt	Department of Public Works	Implement salt use optimization during deicing season	2018

Part IV: Notes and additional information

Use the space below to indicate the part(s) of 2.2.1 and 2.2.2 that you have identified as not applicable to your MS4 because you do not discharge to the impaired water body or a tributary to an impaired water body due to nitrogen or phosphorus. Provide all supporting documentation below or attach additional documents if necessary. Also, provide any additional information about your MS4 program below.

The Town of Clinton obtained an official species list for threatened and endangered species via the IPaC system (Consultation Code: 05E1NE00-2018-SLI-2994) within the regulated urbanized area. Per the IPaC system, one species exists within the MS4 regulated area: the Northern Long-eared Bat (*Myotis septentrionalis*). Based on the following reasons, it is our opinion that the current stormwater discharges will have "no effect" on the listed species:

1. No new construction is proposed under this permit that would disturb the terrestrial habitats of the long-eared bat.
2. Any repair work covered by this permit will only affect previously disturbed areas where stormwater controls are already installed. Due to the nature of stormwater systems, this work falls primarily along roads within urbanized areas, where the risk of encountering and adversely impacting endangered species is limited.
3. Repair work that falls within the wetlands or 100-foot buffer zone is regulated by the Massachusetts Wetlands Protection Act, which triggers a project specific endangered species review, providing more specific protection for those species within the wetlands or buffer zone.
4. All stormwater discharges are pre-existing and Clinton was previously permitted under the 2003 MS4 NOI.
5. If structural Best Management Practices (BMPs) not identified on the NOI are proposed for installation or construction during the course of the permit term, the Town of Clinton agrees to conduct endangered species screening for the proposed site and contact USFWS if it is determined that the new activity "may affect" or is "not likely to adversely affect" listed species or critical habitat under jurisdiction of the USFWS.

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part V: Certification

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 gather and evaluate 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, I certify that 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.

Name:

Michael Ward

Title:

Town Administrator

Signature:

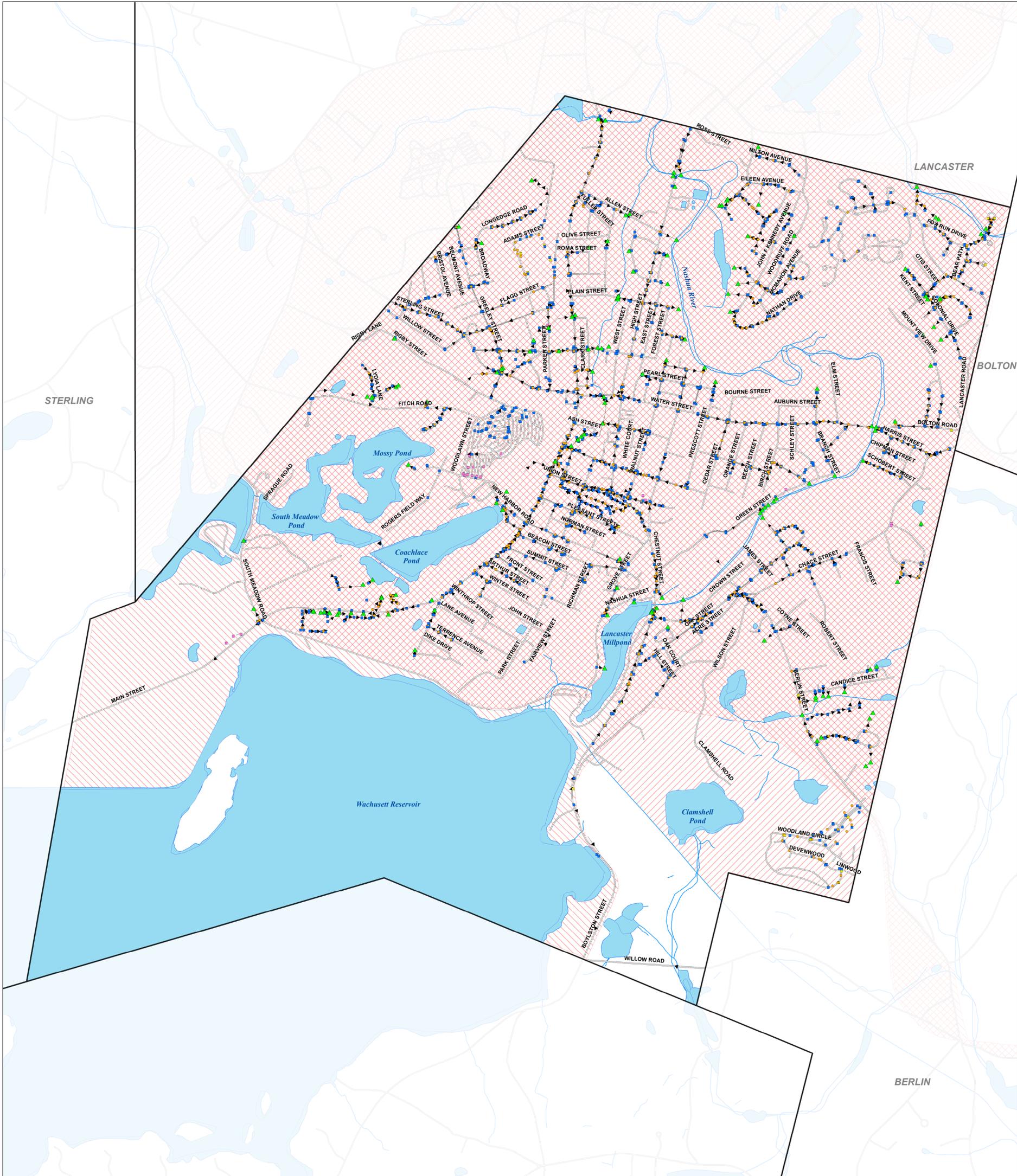


Date:

9-27-18

[To be signed according to Appendix B, Subparagraph B.11, Standard Conditions]

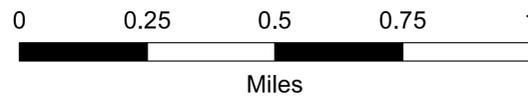
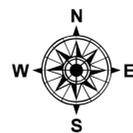
Note: When prompted during signing, save the document under a new file name



Legend

- ▲ Outfalls
- CB
- DCB
- DMH
- LCB
- Other
- Stormwater Pipe
- Lake, Pond, Reservoir
- Swamp, Marsh
- Stream
- ▨ 2010 Urbanized Area
- ▨ 2000 Urbanized Area

**Stormwater Map
Clinton, MA**



Comprehensive
Environmental
Incorporated



Data Sources: CEI, MassGIS, Town of Clinton



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:

September 07, 2018

Consultation Code: 05E1NE00-2018-SLI-2994

Event Code: 05E1NE00-2018-E-07074

Project Name: Clinton MS4 Endangered Species Review

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-2994

Event Code: 05E1NE00-2018-E-07074

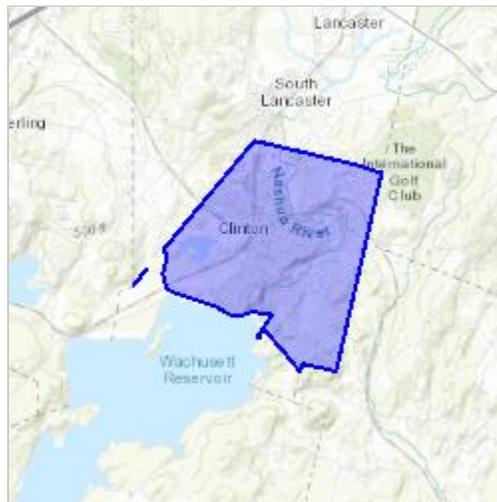
Project Name: Clinton MS4 Endangered Species Review

Project Type: LAND - DRAINAGE

Project Description: Determination of impact of stormwater discharges and discharge related activities to threatened and endangered species per Appendix C of the MA MS4 General Permit. Stormwater discharge occurs from pre-existing outfalls within the regulated zone, as shown on the map.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.415718458518N71.68566571194037W>



Counties: Worcester, MA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary

Identify the Best Management Practices (BMPs) that will be employed to address each of the six Minimum Control Measures (MCMs). For municipalities/organizations whose MS4 discharges into a receiving water with an approved Total Maximum Daily Load (TMDL) and an applicable waste load allocation (WLA), identify any additional BMPs employed to specifically support the achievement of the WLA in the TMDL section at the end of part III.

For each MCM, list each existing or proposed BMP by category and provide a brief description, responsible parties/departments, measurable goals, and the year the BMP will be employed (public education and outreach BMPs also requires a target audience). **Use the drop-down menus in each table or enter your own text to override the drop down menu.**

MCM 1: Public Education and Outreach

BMP Media/Category <small>(enter your own text to override the drop down menu)</small>	BMP Description	Targeted Audience	Responsible Department/Parties <small>(enter your own text to override the drop down menu)</small>	Measurable Goal	Beginning Year of BMP Implementation
School Curricula/Programs	Classroom education on topics including watershed protection and pollution prevention, stormwater management, stream protection, and impacts on water quality.	Residents	Schools, Department of Public Works	Continue to provide stormwater education for a minimum of one presentation included in the yearly curriculum	2018
Brochures/Pamphlets	Distribute pet waste fact sheets with dog registrations and renewals	Residents	Town Clerk	Provide information with all applications and renewals	2018
Brochures/Pamphlets	Display fact sheets, brochures and/or posters on surface and ground water pollution prevention at the Town Hall	Residents	Department of Public Works	Continue to display fact sheets, brochures and/or posters with updated stormwater information	2018
Displays/Posters/Kiosks	Display poster outlining the impacts of construction on stormwater water runoff	Developers (Construction)	Conservation Commission, Planning Board	Continue to maintain educational stormwater displays aimed at developers	2018

<p>Web Page</p>	<p>Provide web information on equipment maintenance and inspection, material storage, solid waste handling, salt usage, benefits of onsite infiltration, management of parking lot surfaces, and EPA's MSGP.</p>	<p>Industrial</p>	<p>Board of Selectmen, Department of Public Works</p>	<p>Continue to update and maintain the websites</p>	<p>2019</p>
<p>Newspaper Articles/Press Releases</p>	<p>Issue periodic press releases using materials generated under ThinkBlue.</p>	<p>Residents, Institutions and Commercial Facilities</p>	<p>Department of Public Works</p>	<p>Issue periodic press releases in the local newspaper</p>	<p>2019</p>
<p>Newspaper Articles/Press Releases</p>	<p>Issue periodic press releases using materials generated under ThinkBlue.</p>	<p>Industrial Facilities</p>	<p>Department of Public Works</p>	<p>Issue periodic press releases in the local newspaper</p>	<p>2019</p>



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912**

VIA EMAIL

March 5, 2019

Michael Ward
Town Administrator

And;

Christopher J. McGown
Superintendent of Public works
242 Church Street
Clinton, MA. 01510
cmcgown@clintonma.gov

Re: National Pollutant Discharge Elimination System Permit ID #: MAR041186, Town of Clinton

Dear Christopher J. McGown:

The 2016 NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts (MS4 General Permit) is a jointly issued EPA-MassDEP permit. Your Notice of Intent (NOI) for coverage under this MS4 General Permit has been reviewed by EPA and appears to be complete. You are hereby granted authorization by EPA and MassDEP to discharge stormwater from your MS4 in accordance with the applicable terms and conditions of the MS4 General Permit, including all relevant and applicable Appendices. This authorization to discharge expires at midnight on **June 30, 2022**.

For those permittees that certified Endangered Species Act eligibility under Criterion C in their NOI, this authorization letter also serves as EPA's concurrence with your determination that your discharges will have no effect on the listed species present in your action area, based on the information provided in your NOI.

As a reminder, your first annual report is due by **September 30, 2019** for the reporting period from May 1, 2018 through June 30, 2019.

Information about the permit and available resources can be found on our website: <https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit>. Should you have any questions regarding this permit please contact Newton Tedder at tedder.newton@epa.gov or (617) 918-1038.

Sincerely,

A handwritten signature in blue ink that reads "Thelma Murphy". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Thelma Murphy, Chief
Stormwater and Construction Permits Section
Office of Ecosystem Protection
United States Environmental Protection Agency, Region 1

and;

A handwritten signature in black ink that reads "Lealdon Langley". The signature is cursive and somewhat stylized, with a large loop at the end.

Lealdon Langley, Director
Wetlands and Wastewater Program
Bureau of Water Resources
Massachusetts Department of Environmental Protection

Appendix B

Impaired Waterbodies

Table 11-1. Impaired Waters Based on 2014 Integrated List of Waters

Waterbody Name	Segment ID and Category¹		Impairment(s)	Approved TMDL²
Nashua River (“South Branch”) Clinton WWTP to Confluence with North Nashua River, Lancaster	MA81-09	5	<i>E. coli</i>	
			Phosphorus (Total)	
Wachusett Reservoir	MA81147	4a	(Eurasian Water Milfoil, <i>Myriophyllum spicatum</i> *)	
			(Non-Native Aquatic Plants*)	
			Mercury in Fish Tissue	33880

1. Category 4a Waters – impaired waters with an approved TMDL.

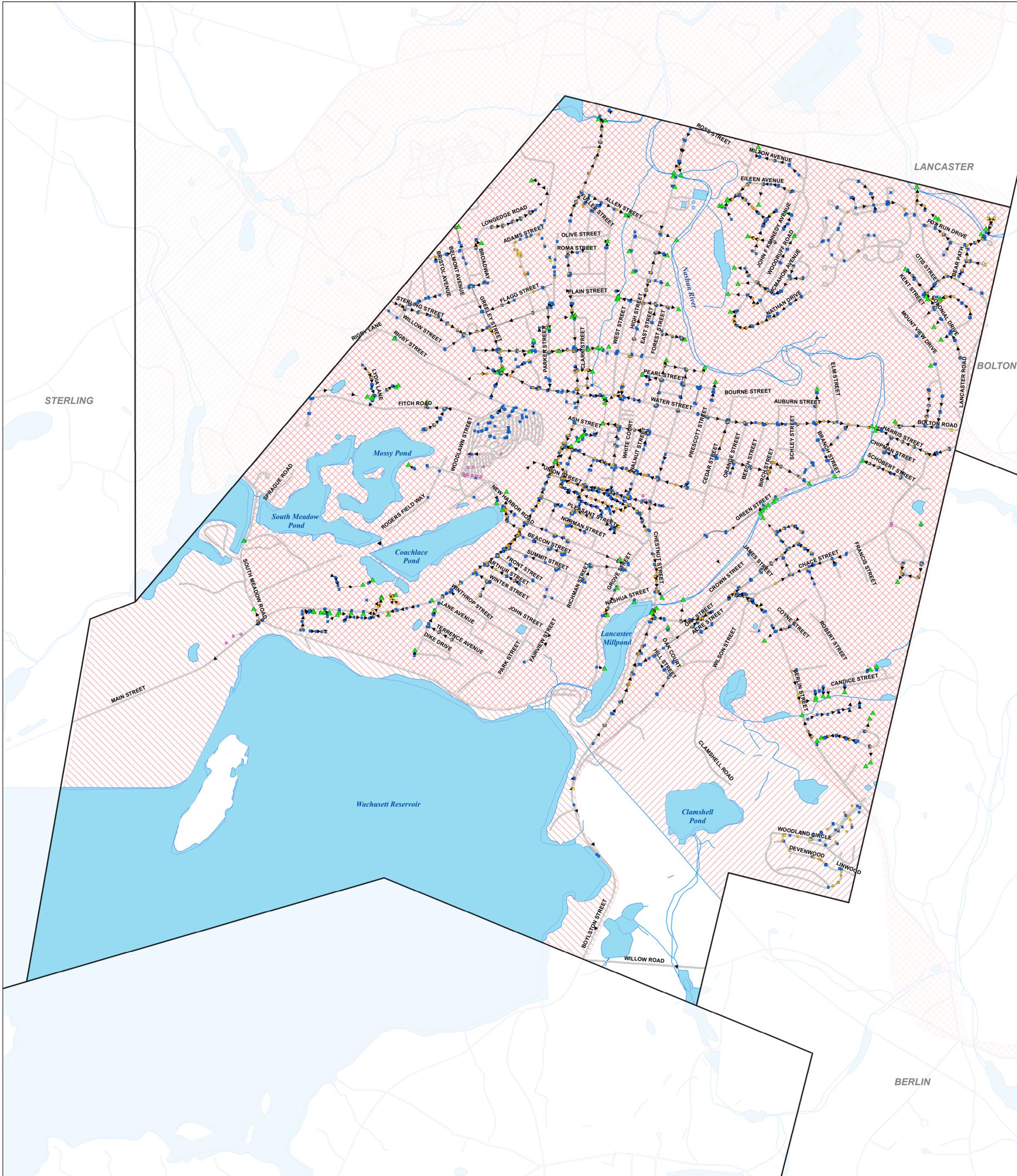
Category 5 Waters – impaired waters that require a TMDL.

3. EPA TMDL # from the 303(d) list. TMDL 33880 is the “Northeast Regional Mercury Total Maximum Daily Load.”

* TMDL not required (Non-pollutant)

Appendix C

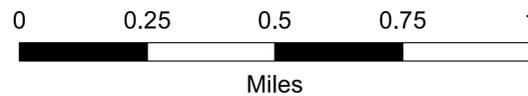
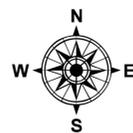
Stormwater System Mapping



Legend

- ▲ Outfalls
- CB
- DCB
- DMH
- LCB
- Other
- Stormwater Pipe
- Lake, Pond, Reservoir
- Swamp, Marsh
- Stream
- ▨ 2010 Urbanized Area
- ▨ 2000 Urbanized Area

**Stormwater Map
Clinton, MA**



Comprehensive
Environmental
Incorporated



Data Sources: CEI, MassGIS, Town of Clinton

Appendix D

Regulatory Review and Legal Authority

Regulations
Inspection Checklist

Regulations

MS4 REGULATORY REVIEW – TOWN OF CLINTON

TO: Town of Clinton
FROM: Rebecca Balke P.E., CEI
DATE: June 19, 2019
SUBJECT: MS4 Regulatory Review

Comprehensive Environmental, Inc. has performed a preliminary review of Clinton’s existing bylaws and applicable regulations to determine compliance with Section 2.3.4.a of Minimum Measure 3 – Illicit Discharge Detection and Elimination (IDDE) Program, and Section 2.3.5 of Minimum Measure 4 – Construction Site Stormwater Runoff Control of the 2016 Massachusetts MS4 General Permit. To this end, CEI reviewed Clinton’s Municipal Separate Stormwater System Bylaw.

The MS4 Permit requires regulated communities to develop or modify, as appropriate, its regulatory mechanism for post construction stormwater management by the end of Year 2 of the permit term. The revisions will include the incorporation of specific design criteria as outlined in the permit. Given the minor nature of the comments below, CEI recommends that all updates be performed at the same time during Year 2. Written procedures outside of the regulations, such as inspection checklists, can be developed in the interim to satisfy the MS4 requirements.

The following table summarizes the requirements of the permit, existing regulatory mechanisms in the Town that address the requirements and to what extent, and recommendations for regulatory updates or supplemental information for full compliance.

Minimum Measure 3 – Illicit Discharge, Detection, and Elimination		
Required Elements	Current Municipal Regulatory Requirements	Recommended Changes
<p>Section 2.3.4.a. Have adequate legal authority to:</p> <ul style="list-style-type: none"> • Prohibit illicit discharges. • Investigate suspected illicit discharges. • Eliminate illicit discharges, including those from properties not owned or controlled by the Town. • Implement appropriate enforcement procedure and actions. 	<p><u>Municipal Separate Stormwater System Bylaw, Section 4, “Discharges to the Municipal Storm Drain System”</u> prohibits illicit connections. and gives the town the authority to investigate and eliminate illicit connects, and enforce the bylaw.</p>	<p>No changes recommended. Current bylaws meet requirements of Section 2.3.4.a.</p>

MS4 REGULATORY REVIEW – TOWN OF CLINTON

Minimum Measure 4 – Construction Site Stormwater Runoff Control		
Required Elements	Current Municipal Regulatory Requirements	Recommended Changes
<p>Section 2.3.5.a. Implement program that reduces stormwater pollutants at construction sites >1 acre, or < 1 acre if part of a common plan that will disturb >1 acre.</p>	<p><u>Municipal Separate Stormwater System Bylaw, Section 5, “Stormwater Management and Land Disturbance”</u> establishes a program that regulates all activities that disturb ≥ 1.0 acre of land. Common plans are not specifically regulated as part of this section.</p>	<p>On preliminary review, the current bylaws appear to meet the requirements of section 2.3.5.a. as written. CEI recommends that the Town consider adding specific text for common plans within this section, similar to text in Section 6 of the bylaw, to increase clarity.</p>
<p>Section 2.3.5.c.i. and iv. Regulatory mechanism that requires the use of sediment and erosion control practices at construction sites. Ordinance must include requirement for construction site operators to control other wastes on construction sites, such as demolition debris, litter, concrete truck wash-out, and chemicals.</p>	<p><u>Section 5D, “Erosion and Sediment Control Plan”</u> requires that erosion and sediment controls must be implemented. This section also requires a plan which must be designed to properly manage on-site construction and waste materials which specifically includes concrete truck washout, chemicals, litter and sanitary waste.</p>	<p>Current bylaws meet the requirements of section 2.3.5.c.i and iv. as written. No changes are recommended.</p>

MS4 REGULATORY REVIEW – TOWN OF CLINTON

Minimum Measure 4 (continued) – Construction Site Stormwater Runoff Control		
Required Elements	Current Municipal Regulatory Requirements	Recommended Changes
<p>Section 2.3.5.c.ii. and v. Written procedures for site inspections and enforcement:</p> <ul style="list-style-type: none"> • Inspection procedures. • Procedures for tracking number of site reviews, inspections, and enforcement actions. • Who’s responsible for inspecting. • Inspector qualifications. • Inspections to occur during and after BMP construction. <ul style="list-style-type: none"> • Who has authority to implement enforcement. • Statement that sanctions may be imposed. <ul style="list-style-type: none"> • Using standard inspection form (if appropriate). 	<p><u>Municipal Separate Stormwater System Bylaw, Section 5E, “Inspection and Site Supervision,”</u> requires inspections certifying that the site is in compliance with the stormwater management permit.</p> <p>This section designates 2 inspectors. The Planning Board’s agent conducts the inspections and reviews the inspections of the permittee’s inspector. Either the applicant or their inspector must conduct weekly inspections. Inspections are currently required after, but not during, BMP construction. Qualifications are not given for the inspectors.</p> <p><u>Municipal Separate Stormwater System Bylaw, Section 7, “Enforcement”</u> gives the Planning Board, its employees, or designated agent the authority to enforce the bylaw, and states that sanctions may be imposed.</p> <p>No standard inspection form is publicly available.</p>	<p>Current bylaws and regulations meet the permit requirements. CEI recommends that the Town develop a standardized inspection form, and procedures for tracking the number of inspections and enforcement actions, if it hasn’t done so already. Qualifications for both inspectors should be developed and added to the text.</p>

MS4 REGULATORY REVIEW – TOWN OF CLINTON

Minimum Measure 4 (continued) – Construction Site Stormwater Runoff Control		
Required Elements	Current Municipal Regulatory Requirements	Recommended Changes
<p>Section 2.3.5.c.iii. Requirements for construction site runoff control programs to include BMPs. Program may reference state or Town BMP design standards.</p>	<p><u>Municipal Separate Stormwater System Bylaw, Section 5D, “Erosion and Sediment Control Plan”</u> includes design requirements of the Erosion and Sediment Control Plan.</p>	<p>Current bylaws meet the permit requirements.</p>
<p>Section 2.3.5.c.v. Written procedures for site plan review:</p> <ul style="list-style-type: none"> • Pre-construction review of the site design. • Procedures for the receipt and consideration of information submitted by the public. <ul style="list-style-type: none"> • Evaluation of Low Impact Development (LID) and Green Infrastructure (GI) opportunities. <ul style="list-style-type: none"> • Planned construction site operations. • Consideration of water quality impacts. • Planned BMPs to manage stormwater after development. 	<p><u>Municipal Separate Stormwater System Bylaw, Section 6, “Post-construction Stormwater Management of New Developments and Redevelopments”</u> lays out the procedures for the site plan review, including a pre-construction review of the site design with a public hearing and notification of abutters. The Planning Board must find that the plan is consistent with the purpose of the bylaw and meets the design requirements.</p> <p>While an evaluation of LID/GI opportunities is not specifically listed in the procedures, the plans are evaluated for compliance with the Massachusetts Stormwater Management Handbook, which encourages LID/GI.</p> <p><u>Section 6D, “Stormwater Management Plan”</u> requires the plan to include:</p> <ul style="list-style-type: none"> • Planned construction site operations and phasing. • Information for the evaluation of water quality impacts. • Planned BMPs during construction. • Planned BMPs to manage stormwater after development. 	<p>The current Town bylaws and regulations are generally in compliance with the permit requirements of section 2.3.5.c.v. For clarity, CEI recommends that a specific evaluation of LID/GI opportunities be incorporated into the site plan review procedures.</p>

(continued on next page)

MS4 REGULATORY REVIEW – TOWN OF CLINTON

Minimum Measure 4 (continued) – Construction Site Stormwater Runoff Control		
Required Elements	Current Municipal Regulatory Requirements	Recommended Changes
Section 2.3.5.c.v. (continued) <ul style="list-style-type: none">Planned BMPs during construction.	<u>Municipal Separate Stormwater System Bylaw, Section 5C, “Erosion and Sediment Control Plan Content”</u> requires showing the planned BMPs during construction.	

MUNICIPAL SEPARATE STORM SEWER SYSTEM

SECTION 1. DEFINITIONS

For the purposes of this by-law, the following shall mean:

ABUTTER: The owner(s) of land abutting the activity.

AGRICULTURE: The normal maintenance or improvement of land in agricultural or aquacultural use, as defined by the Massachusetts Wetlands Protection Act and its implementing regulations.

ALTERATION OF DRAINAGE CHARACTERISTICS: Any activity on an area of land that changes the water quality, force, direction, timing or location of runoff flowing from the area. Such changes include: change from distributed runoff to confined, discrete discharge, change in the volume of runoff from the area; change in the peak rate of runoff from the area; and change in the recharge to groundwater on the area.

APPLICANT: Any person, individual, partnership, association, firm, company, corporation, trust, authority, agency, department, or political subdivision, of the Commonwealth or the Federal government to the extent permitted by law requesting a soil erosion and sediment control permit for proposed land-disturbance activity.

AUTHORIZED ENFORCEMENT AGENCY: The Board of Selectmen (hereafter [the Board]), its employees or agents designated to enforce this by-law.

BEST MANAGEMENT PRACTICE (BMP): An activity, procedure, restraint, or structural improvement that helps to reduce the quantity or improve the quality of stormwater runoff.

THE BOARD – Town of Clinton Board of Selectmen or its authorized agent(s).

CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC): A certified specialist in soil erosion and sediment control. This certification program, sponsored by the Soil and Water Conservation Society in cooperation with the American Society of Agronomy, provides the public with evidence of professional qualifications.

CLEARING: Any activity that removes the vegetative surface cover.

CLEAN WATER ACT: The Federal Water Pollution Control Act (33 U.S.C. § 1251 *et seq.*) as hereafter amended.

CONSTRUCTION AND WASTE MATERIALS: Excess or discarded building or site materials, including but not limited to concrete truck washout, chemicals, litter and sanitary waste at a construction site that may adversely impact water quality.

DEVELOPMENT: The modification of land to accommodate a new use or expansion of use, usually involving construction.

DISCHARGE OF POLLUTANTS: The addition from any source of any pollutant or combination of pollutants into the municipal storm drain system or into the waters of the United States or Commonwealth from any source.

DISTURBANCE OF LAND: Any action that causes a change in the position, location, or arrangement of soil, sand rock, gravel or similar earth material.

EROSION: The wearing away of the land surface by natural or artificial forces such as wind, water, ice, gravity, or vehicle traffic and the subsequent detachment and transportation of soil particles.

EROSION AND SEDIMENTATION CONTROL PLAN: A document containing narrative, drawings and details developed by a qualified professional engineer (PE) or a Certified Professional in Erosion and Sedimentation Control (CPESC), which includes best management practices, or equivalent measures designed to control surface runoff, erosion and sedimentation during pre-construction and construction related land disturbance activities.

ESTIMATED HABITAT OF RARE WILDLIFE AND CERTIFIED VERNAL POOLS: Habitats delineated for state-protected rare wildlife and certified vernal pools for use with the Wetlands Protection Act Regulations (310 CMR 10.00) and the Forest Cutting Practices Act Regulations (304 CMR 11.00).

GRADING: Changing the level or shape of the ground surface.

GROUNDWATER: Water beneath the surface of the ground.

GRUBBING: The act of clearing land surface by digging up roots and stumps.

ILLCIT CONNECTION: A surface or subsurface drain or conveyance, which allows an illicit discharge into the municipal storm drain system, including without limitation sewage, process wastewater, or wash water and any connections from indoor drains, sinks, or toilets, regardless of whether said connection was previously allowed, permitted, or approved before the effective date of this by-law.

ILLCIT DISCHARGE: Direct or indirect discharge to the municipal storm drain system that is not composed entirely of stormwater, except as exempted in Section 7. The term does not include a discharge in compliance with an NPDES Storm Water Discharge Permit or a Surface Water Discharge Permit, or resulting from fire fighting activities exempted pursuant to Section 7, subsection 4, of this by-law.

IMPERVIOUS SURFACE: Any material or structure on or above the ground that prevents water infiltrating the underlying soil. Impervious surface includes without limitation roads, paved parking lots, sidewalks, and rooftops.

LAND-DISTURBING ACTIVITY: Any activity that causes a change in the position or location of soil, sand, rock, gravel, or similar earth material.

MASSACHUSETTS ENDANGERED SPECIES ACT: (G.L. c. 131A) and its implementing regulations at (321 CMR 10.00) which prohibit the "taking" of any rare plant or animal species listed as Endangered, Threatened, or of Special Concern.

MASSACHUSETTS STORMWATER MANAGEMENT POLICY: The Policy issued by the Department of Environmental Protection, and as amended, that coordinates the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act G.L. c. 131 §. 40 and Massachusetts Clean Waters Act G.L. c. 21, §. 23-56. The Policy addresses stormwater impacts through implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) or MUNICIPAL STORM DRAIN SYSTEM: The system of conveyances designed or used for collecting or conveying stormwater, including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel, reservoir, and other drainage structure that together comprise the storm drainage system owned or operated by the Town of Clinton.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER DISCHARGE PERMIT: A permit issued by United States Environmental Protection Agency or jointly with the State that authorizes the discharge of pollutants to waters of the United States.

NON-STORMWATER DISCHARGE: Discharge to the municipal storm drain system not composed entirely of stormwater.

OPERATION AND MAINTENANCE PLAN: A plan setting up the functional, financial and organizational mechanisms for the ongoing operation and maintenance of a stormwater management system to insure that it continues to function as designed.

OUTFALL: The point at which stormwater flows out from a point source discernible, confined and discrete conveyance into waters of the Commonwealth.

OUTSTANDING RESOURCE WATERS (ORWs): Waters designated by Massachusetts Department of Environmental Protection as ORWs. These waters have exceptional sociologic, recreational, ecological and/or aesthetic values and are subject to more stringent requirements under both the Massachusetts Water Quality Standards (314 CMR 4.00) and the Massachusetts Stormwater Management Standards. ORWs include vernal pools certified by the Natural Heritage Program of the Massachusetts Department of Fisheries and Wildlife and Environmental Law Enforcement, all Class A designated public water supplies with their bordering vegetated wetlands, and other waters specifically designated.

OWNER: A person with a legal or equitable interest in property.

PERSON: An individual, partnership, association, firm, company, trust, corporation, agency, authority, department or political subdivision of the Commonwealth or the federal government, to the extent permitted by law, and any officer, employee, or agent of such person.

POINT SOURCE: Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, or container from which pollutants are or may be discharged.

POLLUTANT: Any element or property of sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter whether originating at a point or nonpoint source, that is or may be introduced into any sewage treatment works or waters of the Commonwealth. Pollutants shall include without limitation:

- (1) paints, varnishes, and solvents;
- (2) oil and other automotive fluids;
- (3) non-hazardous liquid and solid wastes and yard wastes;
- (4) refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordnances, accumulations and floatables;
- (5) pesticides, herbicides, and fertilizers;
- (6) hazardous materials and wastes; sewage, fecal coliform and pathogens;
- (7) dissolved and particulate metals;
- (8) animal wastes;
- (9) rock, sand; salt, soils;
- (10) construction wastes and residues;
- (11) and noxious or offensive matter of any kind.

PRE-CONSTRUCTION: All activity in preparation for construction.

PRIORITY HABITAT OF RARE SPECIES: Habitats delineated for rare plant and animal populations protected pursuant to the Massachusetts Endangered Species Act and its regulations.

PROCESS WASTEWATER: Water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any material, intermediate product, finished product, or waste product.

RECHARGE: The process by which groundwater is replenished by precipitation through the percolation of runoff and surface water through the soil.

REDEVELOPMENT: Development, rehabilitation, expansion, demolition or phased projects that disturb the ground surface or increase the impervious area on previously developed sites.

RUNOFF: Rainfall, snowmelt, or irrigation water flowing over the ground surface.

SEDIMENT: Mineral or organic soil material that is transported by wind or water, from its origin to another location; the product of erosion processes.

SEDIMENTATION: The process or act of deposition of sediment.

SITE: Any lot or parcel of land or area of property where land-disturbing activities are, were, or will be performed.

SLOPE: The incline of a ground surface expressed as a ratio of horizontal distance to vertical distance.

SOIL: Any earth, sand, rock, gravel, or similar material.

STABILIZATION: The use, singly or in combination, of mechanical, structural, or vegetative methods, to prevent or retard erosion.

STORMWATER: Storm water runoff, snow melt runoff, and surface water runoff and drainage.

STORMWATER MANAGEMENT PLAN: A plan required as part of the application for a Stormwater Management Permit.

STRIP: Any activity which removes the vegetative ground surface cover, including tree removal, clearing, grubbing, and storage or removal of topsoil.

SURFACE WATER DISCHARGE PERMIT. A permit issued by the Department of Environmental Protection (DEP) pursuant to 314 CMR 3.00 that authorizes the discharge of pollutants to waters of the Commonwealth of Massachusetts.

TOXIC OR HAZARDOUS MATERIAL or WASTE: Any material, which because of its quantity, concentration, chemical, corrosive, flammable, reactive, toxic, infectious or radioactive characteristics, either separately or in combination with any substance or substances, constitutes a present or potential threat to human health, safety, welfare, or to the environment. Toxic or hazardous materials include any synthetic organic chemical, petroleum product, heavy metal, radioactive or infectious waste, acid and alkali, and any substance defined as Toxic or Hazardous under G.L. Ch.21C and Ch.21E, and the regulations at 310 CMR 30.000 and 310 CMR 40.0000.

TSS: Total Suspended Solids

VERNAL POOLS: Temporary bodies of freshwater which provide critical habitat for a number of vertebrate and invertebrate wildlife species.

WATERCOURSE: A natural or man-made channel through which water flows or a stream of water, including a river, brook or underground stream.

WATERS OF THE COMMONWEALTH: All waters within the jurisdiction of the Commonwealth, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, costal waters, and groundwater.

WASTEWATER: Any sanitary waste, sludge, or septic tank or cesspool overflow, and water that during manufacturing, cleaning or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct or waste product.

WETLAND RESOURCE AREA: Areas specified in the Massachusetts Wetlands Protection Act G.L. c. 131, § 40.

WETLANDS: Tidal and non-tidal areas characterized by saturated or nearly saturated soils most of the year that are located between terrestrial (land-based) and aquatic (water-based) environments, including freshwater marshes around ponds and channels (rivers and streams), brackish and salt marshes; common names include marshes, swamps and bogs.

SECTION 2. ADMINISTRATON

A. The Board, shall administer, implement and enforce this bylaw. Any powers granted to or duties imposed upon the Board may be delegated in writing by the Board to its employees or agents.

B. Rules and Regulations. The Board may adopt, and periodically amend, rules and regulations relating to the procedures and administration of this Stormwater Management By-law, by majority vote of the Board, after conducting a public hearing to receive comments on any proposed revisions. Such hearing dates shall be advertised in a newspaper of general local circulation, at least seven (7) days prior to the hearing date.

SECTION 3. AUTHORITY

This bylaw is adopted under the authority granted by the Home Rule Amendment of the Massachusetts Constitution and the Home Rule Procedures Act, and pursuant to the regulations of the federal Clean Water Act found at 40 CFR 122.34.

SECTION 4. DISCHARGES TO THE MUNICIPAL STORM DRAIN SYSTEM

SECTION 4A. PURPOSE

Increased and contaminated stormwater runoff is a major cause of

- (1) impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater;
- (2) contamination of drinking water supplies;
- (3) alteration or destruction of aquatic and wildlife habitat; and
- (4) flooding.

Regulation of illicit connections and discharges to the municipal storm drain system is necessary for the protection of the Town of Clinton's water bodies and groundwater, and to safeguard the public health, safety, welfare and the environment.

The objectives of Section 2 of this by-law are:

- (1) to prevent pollutants from entering the Town of Clinton's municipal separate storm sewer system (MS4);
- (2) to prohibit illicit connections and unauthorized discharges to the MS4;
- (3) to require the removal of all such illicit connections;
- (4) to comply with state and federal statutes and regulations relating to stormwater discharges; and
- (5) to establish the legal authority to ensure compliance with the provisions of this by-law through inspection, monitoring, and enforcement.

SECTION 4B APPLICABILITY

Section 2 of this by-law shall apply to flows entering the municipally owned storm drainage system.

SECTION 4C. PROHIBITED ACTIVITIES

- A. Illicit Discharges.** No person shall dump, discharge, cause or allow to be discharged any pollutant or non-stormwater discharge into the municipal separate storm sewer system (MS4), into a watercourse, or into the waters of the Commonwealth.
- B. Illicit Connections.** No person shall construct, use, allow, maintain or continue any illicit connection to the municipal storm drain system, regardless of whether the connection was permissible under applicable law, regulation or custom at the time of connection.
- C. Obstruction of Municipal Storm Drain System.** No person shall obstruct or interfere with the normal flow of stormwater into or out of the municipal storm drain system without prior written approval from The Board.
- D. Exemptions**
 1. Discharge or flow resulting from fire fighting activities;
 2. The following non-stormwater discharges or flows are exempt from the prohibition of non-stormwaters provided that the source is not a significant contributor of a pollutant to the municipal storm drain system:
 - (a) Waterline flushing;
 - (b) Flow from potable water sources;
 - (c) Springs;
 - (d) Natural flow from riparian habitats and wetlands;
 - (e) Diverted stream flow;
 - (f) Rising groundwater;
 - (g) Uncontaminated groundwater infiltration as defined in 40 CFR 35.2005(20), or uncontaminated pumped groundwater;

- (h) Water from exterior foundation drains, footing drains (not including active groundwater dewatering systems), crawl space pumps, or air conditioning condensation.
- (i) Discharge from landscape irrigation or lawn watering;
- (j) Water from individual residential car washing;
- (k) Discharge from dechlorinated swimming pool water (less than one ppm chlorine) provided the water is allowed to stand for one week prior to draining and the pool is drained in such a way as not to cause a nuisance;
- (l) Discharge from street sweeping.
- (m) Dye testing, provided verbal notification is given to the Board prior to the time of the test;
- (n) Non-stormwater discharge permitted under an NPDES permit or a Surface Water Discharge Permit, waiver, or waste discharge order administered under the authority of the United States Environmental Protection Agency or the Department of Environmental Protection, provided that the discharge is in full compliance with the requirements of the permit, waiver, or order and applicable laws and regulations; and
- (o) Discharge for which advanced written approval is received from the Board as necessary to protect public health, safety, welfare or the environment.

SECTION 4D. EMERGENCY SUSPENSION OF STORM DRAINAGE SYSTEM ACCESS

The Board may suspend municipal storm drain system access to any person or property without prior written notice when such suspension is necessary to stop an actual or threatened discharge of pollutants that presents imminent risk of harm to the public health, safety, welfare or the environment. In the event any person fails to comply with an emergency suspension order, the Authorized Enforcement Agency may take all reasonable steps to prevent or minimize harm to the public health, safety, welfare or the environment.

SECTION 4E. NOTIFICATION OF SPILLS

Notwithstanding other requirements of local, state or federal law, as soon as a person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of or suspects a release of materials at that facility or operation resulting in or which may result in discharge of pollutants to the municipal drainage system or waters of the Commonwealth, the person shall take all necessary steps to ensure containment, and cleanup of the release. In the event of a release of oil or hazardous materials, the person shall immediately notify the municipal fire and police departments and the department of public works. In the event of a release of non-hazardous material, the reporting person shall notify the Authorized Enforcement Agency no later than the next business day. The reporting person shall provide to the Authorized Enforcement Agency written confirmation of all telephone, facsimile or in-person notifications within three business days thereafter. If the discharge of prohibited materials is from a commercial or industrial facility, the facility owner or operator of the facility shall retain on-site a written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

SECTION 4F TRANSITIONAL PROVISIONS

Residential property owners shall have sixty days from the effective date of the by-law to comply with the provisions of Section 4 provided good cause is shown for the failure to comply with Section 4 of the by-law during that period.

SECTION 5. STORMWATER MANAGEMENT AND LAND DISTURBANCE

SECTION 5A. PURPOSE

A. The harmful impacts of soil erosion and sedimentation are:

1. impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater;
2. contamination of drinking water supplies;
3. alteration or destruction of aquatic and wildlife habitat;
4. flooding; and,
5. overloading or clogging of municipal catch basins and storm drainage systems.

B. The objectives of Section 5 of this bylaw are to:

1. protect water resources;
2. require practices that eliminate soil erosion and sedimentation and control the volume and rate of stormwater runoff resulting from land disturbance activities;
3. promote infiltration and the recharge of groundwater;
4. ensure that soil erosion and sedimentation control measures and stormwater runoff control practices are incorporated into the site planning and design process and are implemented and maintained;
5. require practices to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
6. comply with state and federal statutes and regulations relating to stormwater discharges; and,
7. establish the Town of Clinton's legal authority to ensure compliance with the provisions of this by-law through inspection, monitoring, and enforcement.

SECTION 5B. APPLICABILITY

Section 5 of this bylaw shall apply to all activities that result in disturbance of one or more acres of land that drains to the municipal separate storm sewer system. Except as authorized by the Board of Selectmen, hereafter known as "The Board", in a Land Disturbance Permit or as otherwise provided in this bylaw, no person shall perform any activity that results in disturbance of an acre or more of land. Normal maintenance and improvement of land in agricultural or aquacultural use, as defined by the Wetlands Protection Act regulation 310 CMR 10.4, are exempt. In addition, as authorized in the Phase II Small MS4 General Permit for Massachusetts, storm water discharges resulting from the above activities that are subject to jurisdiction under the Wetlands Protection Act and demonstrate compliance with the

Massachusetts Storm Water Management Policy as reflected in an Order of Conditions issued by the Conservation Commission are exempt from compliance with Section 5 of this bylaw.

SECTION 5C.

PERMITS and PROCEDURE

A. Application A completed application for a Land Disturbance Permit shall be filed with the Board. A permit must be obtained prior to the commencement of land disturbing activity that may result in the disturbance of an area of one acre or more. The Land Disturbance Permit Application package shall include:

1. a completed Application Form with original signatures of all owners;
2. a list of abutters, certified by the Assessors Office;
3. three (3) copies of the Erosion and Sediment Control Plan as specified in Section VI of this bylaw;
4. payment of the application and review fees; and,
5. one (1) copy each of the application Form and the list of abutters filed with the Town Clerk.

B. Entry. Filing an application for a permit grants the Board or its agent, permission to enter the site to verify the information in the application and to inspect for compliance with permit conditions.

C. Other Boards. The Board shall notify the Town Clerk of receipt of the application, and shall give one copy of the application package to the Planning Board, the Conservation Commission, or Department of Public Works as appropriate.

D. Public Hearing. The Board shall hold a public hearing within twenty-one (21) days of the receipt of a complete application and shall take final action within twenty-one (21) days from the time of the close of the hearing unless such time is extended by agreement between the applicant and the Board. Notice of the public hearing shall be given by publication and posting and by first-class mailings to abutters at least seven (7) days prior to the hearing. The Board shall make the application available for inspection by the public during business hours at the Town Clerk's Office.

E. Information requests. The applicant shall submit all additional information requested by the Board to issue a decision on the application.

F. Action by the Board The Board may:

1. Approve the Land Disturbance Permit Application and issue a permit if it finds that the proposed plan will protect water resources and meets the objectives and requirements of this by-law;
2. Approve the Land Disturbance Permit Application and issue a permit with conditions, modifications or restrictions that the Board determines are required to ensure that the project will protect water resources and meets the objectives and requirements of this by-law;
3. Disapprove the Land Disturbance Permit Application and deny the permit if it finds that the proposed plan will not protect water resources or fails to meet the objectives and requirements of this by-law.

G. Failure of the Board to take final action upon an Application within the time specified above shall be deemed to be approval of said Application. Upon certification by the Town Clerk that the allowed time has passed without the Board's action, the Land Disturbance Permit shall be issued by the Board.

H. Fee Structure. Each application must be accompanied by the appropriate application fee as established by the Board. Applicants shall pay review fees as determined by the Board sufficient to cover

any expenses connected with the public hearing and review of the Land Disturbance Permit Application before the review process commences. The Board is authorized to retain a Registered Professional Engineer or other professional consultant to advise the Board on any or all aspects of the Application.

I. Project Changes. The permittee, or their agent, must notify the Board in writing of any change or alteration of a land-disturbing activity authorized in a Land Disturbance Permit before any change or alteration occurs. If the Board determines that the change or alteration is significant, based on the design requirements listed in Section 5.D.B. and accepted construction practices, the Board may require that an amended Land Disturbance Permit application be filed and a public hearing held. If any change or alteration from the Land Disturbance Permit occurs during any land disturbing activities, the Board may require the installation of interim erosion and sedimentation control measures before approving the change or alteration.

SECTION 5D. EROSION AND SEDIMENT CONTROL PLAN

A. The Erosion and Sediment Control Plan shall contain sufficient information to describe the nature and purpose of the proposed development, pertinent conditions of the site and the adjacent areas, and proposed erosion and sedimentation controls. The applicant shall submit such material as is necessary to show that the proposed development will comply with the design requirements listed in Section 5.D.B. below.

B. The **design requirements** of the Erosion and Sediment Control Plan are:

1. Minimize total area of disturbance;
2. Sequence activities to minimize simultaneous areas of disturbance;
3. Minimize peak rate of runoff in accordance with the Massachusetts Stormwater Policy;
4. Minimize soil erosion and control sedimentation during construction, provided that prevention of erosion is preferred over sedimentation control;
5. Divert uncontaminated water around disturbed areas;
6. Maximize groundwater recharge;
7. Install, and maintain all Erosion and Sediment Control measures in accordance with the manufacturers specifications and good engineering practices;
8. Prevent off-site transport of sediment;
9. Protect and manage on and off-site material storage areas (overburden and stockpiles of dirt, borrow areas, or other areas used solely by the permitted project are considered a part of the project);
10. Comply with applicable Federal, State and local laws and regulations including waste disposal, sanitary sewer or septic system regulations, and air quality requirements, including dust control;
11. Prevent significant alteration of habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or Of Special Concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species from the proposed activities;
12. Institute interim and permanent stabilization measures, which shall be instituted on a disturbed area as soon as practicable but no more than 14 days after construction activity has temporarily or permanently ceased on that portion of the site;

13. Properly manage on-site construction and waste materials; and
14. Prevent off-site vehicle tracking of sediments.

C. Erosion and Sedimentation Control Plan Content. The Plan shall contain the following information:

1. Names, addresses, and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the plan;
2. Title, date, north arrow, names of abutters, scale, legend, and locus map;
3. Location and description of natural features including:
 - (a) Watercourses and water bodies, wetland resource areas and all floodplain information, including the 100-year flood elevation based upon the most recent Flood Insurance Rate Map, or as calculated by a professional engineer for areas not assessed on these maps;
 - (b) Existing vegetation including tree lines, canopy layer, shrub layer and ground cover, and trees with a caliper twelve (12) inches or larger, noting specimen trees and forest communities;
 - (c) Habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or of Special Concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species within five hundred (500) feet of any construction activity.
4. Lines of existing abutting streets showing drainage and driveway locations and curb cuts;
5. Existing soils, volume and nature of imported soil materials
6. Topographical features including existing and proposed contours at intervals no greater than two (2) feet with spot elevations provided when needed;
7. Surveyed property lines showing distances and monument locations, all existing and proposed easements, rights-of-way, and other encumbrances, the size of the entire parcel, and the delineation and number of square feet of the land area to be disturbed;
8. Drainage patterns and approximate slopes anticipated after major grading activities (Construction Phase Grading Plans);
9. Location and details of erosion and sediment control measures with a narrative of the construction sequence/phasing of the project, including both operation and maintenance for structural and non-structural measures, interim grading, and material stockpiling areas;
10. Path and mechanism to divert uncontaminated water around disturbed areas, to the maximum extent practicable;
11. Location and description of industrial discharges, including stormwater discharges from dedicated asphalt plants and dedicated concrete plants, which are covered by this permit;
12. Stormwater runoff calculations in accordance with the Department of Environmental Protection's Stormwater Management Policy;
13. Location and description of and implementation schedule for temporary and permanent seeding, vegetative controls, and other stabilization measures;

14. A description of construction and waste materials expected to be stored on-site. The Plan shall include a description of controls to reduce pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater, and spill prevention and response;
15. A description of provisions for phasing the project where one acre of area or greater is to be altered or disturbed;
16. Plans must be stamped and certified by a qualified Professional Engineer registered in Massachusetts or a Certified Professional in Erosion and Sediment Control and

Such other information as is required by the Board.

SECTION 5E. INSPECTION AND SITE SUPERVISION

A. Pre-construction Meeting

Prior to starting clearing, excavation, construction, or land disturbing activity the applicant, the applicant's technical representative, the general contractor or any other person with authority to make changes to the project, shall meet with The Board, to review the permitted plans and their implementation.

B. Board Inspection

The Board or its designated agent shall make inspections as hereinafter required and shall either approve that portion of the work completed or shall notify the permittee wherein the work fails to comply with the land disturbance permit as approved. The Permit and associated plans for grading, stripping, excavating, and filling work, bearing the signature of approval of the Board, shall be maintained at the site during the progress of the work. In order to obtain inspections, the permittee shall notify the Board at least two (2) working days before each of the following events:

1. Erosion and sediment control measures are in place and stabilized;
2. Site Clearing has been substantially completed;
3. Rough Grading has been substantially completed;
4. Final Grading has been substantially completed;
5. Close of the Construction Season; and
6. Final Landscaping (permanent stabilization) and project final completion.

C. Permittee Inspections

The permittee or his/her agent shall conduct and document inspections of all control measures no less than weekly or as specified in the permit, and prior to and following anticipated storm events. The purpose of such inspections will be to determine the overall effectiveness of the control plan, and the need for maintenance or additional control measures.

D. Access Permission

To the extent permitted by state law, or if authorized by the owner or other party in control of the property, the Board its agents, officers, and employees may enter upon privately owned property for the purpose of performing their duties under this by-law and may make or cause to be made such examinations, surveys or sampling as the Board deems reasonably necessary to determine compliance with the permit.

SECTION 5F. FINAL REPORTS

Upon completion of the work, the permittee shall submit a report (including certified as-built construction plans) from a Professional Engineer (P.E.), surveyor, or Certified Professional in Erosion and Sediment Control (CPESC), certifying that all erosion and sediment control devices, and approved changes and modifications, have been completed in accordance with the conditions of the approved permit. Any discrepancies should be noted in the cover letter.

SECTION 6. POST-CONSTRUCTION STORMWATER MANAGEMENT OF NEW DEVELOPMENTS & REDEVELOPMENTS

SECTION 6A. PURPOSE

A. Regulation of discharges to the municipal separate storm sewer system (MS4) is necessary for the protection of the Town of Clinton's water bodies and groundwater, and to safeguard the public health, safety, welfare and the environment. Increased and contaminated stormwater runoff associated with developed land uses and the accompanying increase in impervious surface are major causes of impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater;

1. impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater,
2. contamination of drinking water supplies,
3. erosion of stream channels;
4. alteration or destruction of aquatic and wildlife habitat; and
5. flooding.

Therefore, section 6 of this bylaw establishes stormwater management standards for the final conditions that result from development and redevelopment projects to minimize adverse impacts offsite and downstream which would be born by abutters, townspeople and the general public.

B. The objectives of Section 6 of this by-law are:

1. To require practices to control the flow of stormwater from new and redeveloped sites into the Town of Clinton's storm drainage system in order to prevent flooding and erosion;
2. To protect groundwater and surface water from degradation;
3. To promote groundwater recharge;
4. (4) To prevent pollutants from entering the Town of Clinton's municipal separate storm sewer system (MS4) and to minimize discharge of pollutants from the MS4;
5. To ensure adequate long-term operation and maintenance of structural stormwater best management practices so that they work as designed;

6. To comply with state and federal statutes and regulations relating to stormwater discharges; and
7. To establish the Town of Clinton's legal authority to ensure compliance with the provisions of this by-law through inspection, monitoring, and enforcement.

SECTION 6B. APPLICABILITY

A. No person may undertake a construction activity, including clearing, grading and excavation that results in a land disturbance that will disturb equal to or greater than one acre of land or will disturb less than one acre of land but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one acre of land draining to the Town of Clinton's municipal separate storm sewer system without a permit from the Board. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity or the original purpose of the site

B. Exemptions

1. Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulation 310 CMR 10.04;
2. Maintenance of existing landscaping, gardens or lawn areas associated with a single family dwelling
3. The construction of fencing that will not substantially alter existing terrain or drainage patterns;
4. Construction of utilities other than drainage (gas, water, electric, telephone, etc.) which will not alter terrain or drainage patterns;
5. As authorized in the Phase II Small MS4 General Permit for Massachusetts, storm water discharges resulting from the activities identified in Section 4 that are wholly subject to jurisdiction under the Wetlands Protection Act and demonstrate compliance with the Massachusetts Storm Water Management Policy as reflected in an Order of Conditions issued by the Conservation Commission are exempt from compliance with this bylaw.

SECTION 6C. PERMITS and PROCEDURE

A. Filing Application. The site owner or his agent shall file with the Board three (3) copies of a completed application package for a Stormwater Management Permit (SMP). Permit issuance is required prior to any site altering activity. While the applicant can be a representative, the permittee must be the owner of the site. The SMP Application package shall include:

1. a completed Application Form with original signatures of all owners;
2. a list of abutters, certified by the Assessors Office;
3. three (3) copies of the Stormwater Management Plan and project description
4. three (3) copies of the Operation and Maintenance Plan
5. one (1) copy of the application form, the Stormwater Management Plan, the Operation & Maintenance Plan, and the list of abutters filed with the Town Clerk; and
6. payment of the application and review fees.

B. Entry. Filing an application for a permit grants the Board, or its agent, permission to enter the site to verify the information in the application and to inspect for compliance with the resulting permit

C. Other Boards. The Board shall notify the Town Clerk of receipt of the application, and shall give one copy of the application package to the Planning Board, the Conservation Commission, and/or Department of Public Works as appropriate.

D. Fee Structure. The Board shall obtain with each submission an Application Fee established by the Board to cover expenses connected with the public hearing and application review of the Stormwater Management Permit and a technical Review Fee sufficient to cover professional review. The Board is authorized to retain a Registered Professional Engineer or other professional consultant to advise the Board on any or all aspects of these plans. Applicants must pay review fees before the review process may begin.

E. Public Hearing. The Board shall hold a public hearing within twenty-one (21) days of the receipt of a complete application and shall take final action within twenty-one (21) days from the close of the hearing unless such time is extended by agreement between the applicant and the Board. Notice of the public hearing shall be given by publication in a local paper of general circulation, by posting and by first-class mailings to abutters at least seven (7) days prior to the hearing.

F. Actions. The Board's action, rendered in writing, shall consist of either:

1. Approval of the Stormwater Management Permit Application based upon determination that the proposed plan is in compliance with the requirements set forth in this by-law and will adequately protect the water resources of the community.
2. Approval of the Stormwater Management Permit Application subject to any conditions, modifications or restrictions required by the Board which will ensure that the project meets the Standards in Section 6 and adequately protect water resources, set forth in this by-law;
3. Disapproval of the Stormwater Management Permit Application based upon a determination that the proposed plan, as submitted, does not meet the Standards in Section 6 or adequately protect water resources, as set forth in this by-law.

G. Failure of the Board to take final action upon an Application within the time specified above shall be deemed to be approval of said Application. Upon certification by the Town Clerk that the allowed time has passed without Board action, the Board must issue a Stormwater Management Permit.

H. Plan Changes. The permittee, must notify the Board in writing of any drainage change or alteration in the system authorized in a Stormwater Management Permit before any change or alteration is made. If the Board determines that the change or alteration is significant, the Board may require that an amended application be filed and a public hearing held.

I. Project Completion. At completion of the project the permittee shall submit as-built record drawings of all structural stormwater controls and treatment best management practices required for the site. The as-built drawing shall show deviations from the approved plans, if any, and be certified by a Registered Professional Engineer.

SECTION 6D. STORMWATER MANAGEMENT PLAN

A. The application for a stormwater management permit shall consist of submittal of a Stormwater Management Plan to the Board. This Stormwater Management Plan shall contain sufficient information for the Board to evaluate the environmental impact, effectiveness, and acceptability of the measures proposed by the applicant for reducing adverse impacts from stormwater. The Plan shall be designed to meet the Massachusetts Stormwater Management Standards as set forth in Part B of this section and DEP Stormwater Management Handbook Volumes I and II. The Stormwater Management Plan shall fully describe the project in drawings, and narrative. It shall include:

1. A locus map,
2. The existing zoning, and land use at the site,
3. The proposed land use,
4. The location(s) of existing and proposed easements,
5. The location of existing and proposed utilities,

6. The site's existing & proposed topography with contours at 2 foot intervals,
7. The existing site hydrology,
8. A description & delineation of existing stormwater conveyances, impoundments, and wetlands on or adjacent to the site or into which stormwater flows.
9. A delineation of 100-year flood plains, if applicable
10. Estimated seasonal high groundwater elevation (November to April) in areas to be used for stormwater retention, detention, or infiltration.
11. The existing and proposed vegetation and ground surfaces with runoff coefficient for each,
12. A drainage area map showing pre and post construction watershed boundaries, drainage area and stormwater flow paths,
13. A description and drawings of all components of the proposed drainage system including:
 - a. locations, cross sections, and profiles of all brooks, streams, drainage swales and their method of stabilization,
 - b. all measures for the detention, retention or infiltration of water,
 - c. all measures for the protection of water quality,
 - d. the structural details for all components of the proposed drainage systems and stormwater management facilities,
 - e. notes on drawings specifying materials to be used, construction specifications, and typicals, and
 - f. expected hydrology with supporting calculations.
14. Proposed improvements including location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable,
15. Timing, schedules, and sequence of development including clearing, stripping, rough grading, construction, final grading, and vegetative stabilization,
16. A maintenance schedule for the period of construction, and
17. Any other information requested by the Board.

B. Standards

Projects shall meet the Standards of the Massachusetts Stormwater Management Policy, which are as follows:

1. No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or water of the Commonwealth.
2. Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.
3. Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable. The annual recharge from the post-development site should approximate the annual recharge rate from the pre-development or existing site conditions, based on soil types.
4. For new development, stormwater management systems must be designed to remove 80% of the average annual load (post development conditions) of Total Suspended Solids (TSS). It is presumed that this standard is met when:
 - a. Suitable nonstructural practices for source control and pollution prevention and implemented;
 - b. Stormwater management best management practices (BMPs) are sized to capture the prescribed runoff volume; and
 - c. Stormwater management BMPs are maintained as designed.
5. Stormwater discharges from areas with higher potential pollutant loads require the use of specific stormwater management BMPs (see Stormwater Management Volume I: Stormwater Policy Handbook). The use of infiltration practices without pretreatment is prohibited.
6. Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas (see Stormwater Management Volume I: Stormwater Policy Handbook). Critical areas are

Outstanding Resource Waters (ORWs), shellfish beds, swimming beaches, cold water fisheries and recharge areas for public water supplies.

7. Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. However, if it is not practicable to meet all the Standards, new (retrofitted or expanded) stormwater management systems must be designed to improve existing conditions.

8. Erosion and sediment controls must be implemented to prevent impacts during disturbance and construction activities.

9. All stormwater management systems must have an operation and maintenance plan to ensure that systems function as designed.

When one or more of the Standards cannot be met, an applicant may demonstrate that an equivalent level of environmental protection will be provided.

C. Project Changes

The permittee, or their agent, shall notify the Board in writing of any change or alteration of a land-disturbing activity authorized in a Stormwater Management Permit before any change or alteration occurs. If the Board determines that the change or alteration is significant, based on the design requirements listed in Section _____ and accepted construction practices, the Board may require that an amended Stormwater Management Permit application be filed and a public hearing held. If any change or deviation from the Stormwater Management Permit occurs during a project, [the Board may require the installation of interim measures before approving the change.

SECTION 6E. OPERATION AND MAINTENANCE PLANS

An Operation and Maintenance plan (O&M Plan) is required at the time of application for all projects. The maintenance plan shall be designed to ensure compliance with the Permit, this Bylaw and that the Massachusetts Surface Water Quality Standards, 314, CMR 4.00 are met in all seasons and throughout the life of the system. The Board shall make the final decision of what maintenance option is appropriate in a given situation. The Board will consider natural features, proximity of site to water bodies and wetlands, extent of impervious surfaces, size of the site, the types of stormwater management structures, and potential need for ongoing maintenance activities when making this decision. The Operation and Maintenance Plan shall remain on file with the Board and shall be an ongoing requirement. The O&M Plan shall include:

A. The name(s) of the owner(s) for all components of the system

B. Maintenance agreements that specify:

1. The names and addresses of the person(s) responsible for operation and maintenance
2. The person(s) responsible for financing maintenance and emergency repairs.
3. A Maintenance Schedule for all drainage structures, including swales and ponds.
4. A list of easements with the purpose and location of each.
5. The signature(s) of the owner(s).

C. Stormwater Management Easement(s).

1. Stormwater management easements shall be provided by the property owner(s) as necessary for:
 - a. access for facility inspections and maintenance,
 - b. preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event.
 - c. direct maintenance access by heavy equipment to structures requiring regular cleanout.
2. The purpose of each easement shall be specified in the maintenance agreement signed by the property owner.
3. Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the The Board.

4. Easements shall be recorded with the Worcester County Registry of Deeds prior to issuance of a Certificate of Completion by the Board.

D. Changes to Operation and Maintenance Plans

1. The owner(s) of the stormwater management system must notify the Board of changes in ownership or assignment of financial responsibility.
2. The maintenance schedule in the Maintenance Agreement may be amended to achieve the purposes of this by-law by mutual agreement of the Board and the Responsible Parties. Amendments must be in writing and signed by all Responsible Parties. Responsible Parties shall include owner(s), persons with financial responsibility, and persons with operational responsibility.

SECTION 6F. INSPECTIONS

The Board shall inspect the project site at the following stages:

- A. Initial Site Inspection: prior to approval of any plan.
- B. Erosion Control Inspection: to ensure erosion control practices are in accord with the filed plan.
- C. Bury Inspection: prior to backfilling of any underground drainage or stormwater conveyance structures.
- D. Final Inspection. After the stormwater management system has been constructed and before the surety has been released, the applicant must submit a record plan detailing the actual stormwater management system as installed. The Board shall inspect the system to confirm its "as-built" features. This inspector shall also evaluate the effectiveness of the system in an actual storm. If the inspector finds the system to be adequate he shall so report to the Board which will issue a Certificate of Completion.

If the system is found to be inadequate by virtue of physical evidence of operational failure, even though it was built as called for in the Stormwater Management Plan, it shall be corrected by the permittee before the performance guarantee is released. If the permittee fails to act the Town of Clinton may complete the work. Examples of inadequacy shall be limited to: errors in the infiltrative capability, errors in the maximum groundwater elevation, failure to properly define or construct flow paths, or erosive discharges from basins.

SECTION 6G. WAIVERS

- A. The Board may waive strict compliance with any requirement of Section 6 of this by-law or the rules and regulations promulgated hereunder, where:
 1. such action is allowed by federal, state and local statutes and/or regulations,
 2. is in the public interest, and
 3. is not inconsistent with the purpose and intent of this by-law.
- B. Any applicant may submit a written request to be granted such a waiver. Such a request shall be accompanied by an explanation or documentation supporting the waiver request and demonstrating that strict application of the by-law does not further the purposes or objectives of this bylaw.
- C. All waiver requests shall be discussed and voted on at the public hearing for the project.

D. If in the Board's opinion, additional time or information is required for review of a waiver request, the Board may continue a hearing to a date certain announced at the meeting. In the event the applicant objects to a continuance, or fails to provide requested information, the waiver request shall be denied.

SECTION 6H. CERTIFICATE OF COMPLETION

The Board will issue a letter certifying completion upon receipt and approval of the final inspection reports and/or upon otherwise determining that all work of the permit has been satisfactorily completed in conformance with this bylaw.

SECTION 7. ENFORCEMENT

The Board or an authorized agent of the Board shall enforce this by-law, regulations, orders, violation notices, and enforcement orders, and may pursue all civil and criminal remedies for such violations.

- A. **Civil Relief** If a person violates the provisions of this by-law, regulations, permit, notice, or order issued thereunder, the Board may seek injunctive relief in a court of competent jurisdiction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.
- B. **Orders** The Board or an authorized agent of the Board may issue a written order to enforce the provisions of this by-law or the regulations thereunder.
If the enforcing person determines that abatement or remediation of contamination is required, the order shall set forth a deadline by which such abatement or remediation must be completed. Said order shall further advise that, should the violator or property owner fail to abate or perform remediation within the specified deadline, the Town of Clinton may, at its option, undertake such work, and expenses thereof shall be charged to the violator.
Within thirty (30) days after completing all measures necessary to abate the violation or to perform remediation, the violator and the property owner will be notified of the costs incurred by the Town of Clinton, including administrative costs. The violator or property owner may file a written protest objecting to the amount or basis of costs with the Board within thirty (30) days of receipt of the notification of the costs incurred. If the amount due is not received by the expiration of the time in which to file a protest or within thirty (30) days following a decision of the Board affirming or reducing the costs, or from a final decision of a court of competent jurisdiction, the costs shall become a special assessment against the property owner and shall constitute a lien on the owner's property for the amount of said costs. Interest shall begin to accrue on any unpaid costs at the statutory rate provided in G.L. Ch. 59, § 57 after the thirty-first day at which the costs first become due.
- C. **Criminal Penalty** Any person who violates any provision of this by-law, regulation, order or permit issued thereunder, shall be punished by a fine of not more than \$1,000.00. Each day or part thereof that such violation occurs or continues shall constitute a separate offense
- D. **Entry to Perform Duties Under this By-Law** To the extent permitted by state law, or if authorized by the owner or other party in control of the property, the Board, its agents, officers, and employees may enter upon privately owned property for the purpose of performing their duties under this by-law and regulations and may make or cause to be made such examinations, surveys or sampling as the Board deems reasonably necessary.
- E. **Appeals** The decisions or orders of the Board shall be final. Further relief shall be to a court of competent jurisdiction.
- F. **Remedies Not Exclusive** The remedies listed in this by-law are not exclusive of any other remedies available under any applicable federal, state or local law.

SECTION 8. SEVERABILITY

If any provision, paragraph, sentence, or clause of this by-law shall be held invalid for any reason, all other provisions shall continue in full force and effect

STORMWATER MANAGEMENT PERMIT APPLICATION

To The Board of Selectmen:

The undersigned wishes to submit a Stormwater Management Permit Application as defined in the By-Laws of the Town of Clinton and requests a review and determination by The Board of the Stormwater Management Plan.

The Stormwater Management Plan involves property where owner's title to the land is derived under deed from _____, dated _____, and recorded in the [Insert] County Registry of Deeds, Book _____, Page _____, or Land Court Certificate of Title No. _____, Registered in District, Book _____, Page _____.

Give a brief summary of the nature of the project.

The property (building) is described as being located at _____; it is currently used as _____, and the changes proposed to be made are _____.

The project is located on the parcel shown on Assessors Map _____, Parcel _____.

Applicant's Signature _____ Owners' Signature(s) _____
Applicant's Name (print) _____ Owners' Names(s) _____
Applicant's Address _____ Owners' Address _____

Date Received by Town Clerk: _____

Signature _____

Please note: 1) An applicant for a Stormwater Management Plan Review must file with the Board a completed Stormwater Management Permit Application Form, a list of abutters, three (3) copies of the Stormwater Management Plan Package, three (3) copies of the Operation and Maintenance Plan, and the Application and Review Fees as noted in the Stormwater Management Plan Review Fee Schedule. 2) The applicant shall also file a copy of the Stormwater Management Plan, Operation & Maintenance Plan, and the Application Form with the Town Clerk. The date of receipt by the Town Clerk shall be the official filing date. 3) This application grants the Board and its agents permission to enter the property for inspection and verification of information submitted in the application.

Stormwater Management Plan Review Fee Schedule

The following fee schedules are minimum fees. The Board may require higher fees if deemed necessary for proper review of an application or to ensure compliance.

<u>Lot Area</u>	<u>Professional Review Fee</u>	<u>Application Fee</u>
Less Than 3 Acres	\$ _____	\$ _____
3 to 10 Acres	\$ _____	\$ _____
Greater than 10 Acres	\$ _____ times the acreage	\$ _____
Resubmittal /Amendment		
Filing Fee	\$ _____	
Review Fee	\$ _____	

GENERAL

1. Any application not accompanied by the appropriate fee shall be deemed incomplete. Payment must be made to The Board in cash, money order, bank or certified check payable to the Town of Clinton.
2. An Applicant’s failure to pay any additional review or inspection fee within five business days of receipt of the notice that further fees are required shall be grounds for disapproval.
3. The Board will publish the public notice and send abutter notifications. Abutter notification shall be by certified mail-return receipt requested. The applicant shall pay all costs associated with the publication and notification requirements. These costs shall not be imposed on the applicant if the applicant completes the public notice and abutter notification requirements, and provides The Board with copies of the public notices and the return receipt cards.

Professional review fees include engineering review, legal review, and clerical fees associated with the public hearing and permit processing. A fee estimate may be provided by The Board’s consulting engineer.

LAND DISTURBANCE PERMIT APPLICATION

To: The Board of Selectmen:

The undersigned wishes to submit a Land Disturbance Permit Application as defined in the By-Laws of the Town of Clinton and requests a review and determination by the Board of said Land Disturbance Plan.

The Land Disturbance Plan involves property where owner's title to the land is derived under deed from, dated _____, and recorded in the [Insert] County Registry of Deeds, Book _____, Page _____, or Land Court Certificate of Title No. _____, Registered in _____ District, Book _____, Page _____

Give a brief summary of the nature of the project.

The property (building) is described as being located at _____; it is currently used as _____, and the changes proposed to be made are _____.

The project is located on the parcel shown on Assessors Map _____, Parcel _____.

Applicant's Signature _____ Owners' Signature(s) _____
Applicant's Name (print) _____ Owners' Names(s) _____
Applicant's Address _____ Owners' Address _____

Date Received by Town Clerk: _____

Signature _____

Please note: 1) An applicant for a Land Disturbance Plan Review must file with the Board a completed Land Disturbance Permit Application, a list of abutters, three (3) copies of the Land Disturbance Plan Package, and the application and review fees as noted in the Land Disturbance Plan Review Fee Schedule. 2) The applicant shall also file a copy of the Land Disturbance Plan and the application with the Town Clerk. The date of receipt by the Town Clerk shall be the official filing date.

Land Disturbance Plan Review Fee Schedule

The following fee schedules are minimum fees. The Board may require higher fees if deemed necessary for proper review of an application or to ensure compliance.

<u>Lot Area</u>	<u>Professional Review Fee</u>	<u>Application Fee</u>
Less Than 3 Acres	\$ ____.	\$ ____.
3 to 10 Acres	\$ ____.	\$ ____.
Greater than 10 Acres	\$ ____ times the acreage	\$ ____.
 Resubmittal/Amendment		
	Filing Fee	\$ ____
	Review Fee	\$ ____

GENERAL

1. Any application not accompanied by the appropriate fee shall be deemed incomplete. Payment must be made to the Board in cash, money order, bank or certified check payable to the Town of Clinton.
2. An Applicant's failure to pay any additional review or inspection fee within five business days of receipt of the notice that further fees are required shall be grounds for disapproval.
3. The Board will publish the public notice and send abutter notifications. Abutter notification shall be by certified mail-return receipt requested. The applicant shall pay all costs associated with the publication and notification requirements. These costs shall not be imposed on the applicant if the applicant completes the public notice and abutter notification requirements, and provides the Board with copies of the public notices and the return receipt cards.

Professional review fees include engineering review, legal review, and clerical fees associated with the public hearing and permit processing. A fee estimate may be provided by the Board's consulting engineer.

**Town of Clinton, Massachusetts
ILLCIT DISCHARGE DETECTION
AND ELIMINATION BY-LAW**

I. AUTHORITY

This By-Law is adopted in accordance with the authority granted, inter alia, by Amendment Article 89 to Article II of the Massachusetts Constitution and M.G.L. Chapter 43B Section 13. The Board of Selectmen is delegated hereby the responsibility and authority to enforce and administer this By-Law. The Board of Selectmen may delegate such aspects of By-Law enforcement and administration to the Superintendent of Public Works and such of his subordinates as the Board of Selectmen may from time-to-time determine and designate in writing.

II. PREAMBLE

In partial fulfillment of the obligations of the Town under the Clean Water Act (33 U.S.C. 1251 & seq.) (the "Act") and under the Town's National Pollutant Discharge Elimination System Storm Water Permit, the Town hereby establishes a comprehensive and fair system of regulation of Discharge to the Town's Municipal Separate Storm Sewer System (sometimes referred to herein as the "MS4").

III. PURPOSE

The purpose and intent of this By-Law is to:

- a. Protect the waters of the U.S. as defined in the Act and implementing Regulations from uncontrolled Discharges of Storm Water or Discharges of Contaminated Water which have a negative impact on the receiving waters by changing the physical, biological and chemical composition of the water resulting in an unhealthy environment for aquatic organisms, wildlife and people, and
- b. Reduce Discharges of Contaminated Water into the MS4 and resultant discharges from the MS4 into waters of the U.S. and improve surface water quality, and
- c. Permit and manage reasonable access to the MS4 to facilitate proper drainage, and
- d. Assure that the Town can continue to fairly and responsibly protect the public health, safety and welfare.

IV. DEFINITIONS

BOARD: The Board of Selectmen and, to the extent delegated and designated, shall include the Superintendent of Public Works and his subordinates.

CONTAMINATED WATER: Water that contains higher levels of Pollutants, including without limitation implied, heavy metals, toxics, oil and grease, solvents, nutrients, viruses and bacteria than permitted in waters of the U.S. by the Act and implementing Regulations.

DIRECT CONNECTION: Any discernible, confined and discrete conveyance including but not limited to any pipe, drain, channel, conduit, tunnel, or swale whether above ground or below ground which directs water into the MS4.

DIRECT CONNECTION LICENSE: A license granted by the Town for the continued maintenance by an Owner of a Direct Connection to the MS4.

DISCHARGE: Any non-naturally occurring addition of water or of Storm Water to the MS4.

DUMPING: An act or omission of any person or entity the proximate result of which is the introduction of a Pollutant into the MS4.

EXEMPTED DISCHARGES: Discharges from the following sources unless in any instance such Discharge would result in a substantial and continuing increase in the level of a Pollutant in the waters of the U.S.:

1. water line flushing
2. landscape irrigation
3. diverted stream flows
4. rising ground water
5. pumped ground water
6. discharges from potable water sources
7. foundation drains
8. air conditioning condensation
9. irrigation water
10. springs
11. water from crawl space pumps
12. footing drains
13. lawn watering
14. individual residential car washing
15. flows from riparian habitats and wetlands
16. dechlorinated swimming pool discharges (e.g. where the Discharge contains less than 1 ppm of chlorine.)
17. street wash water
18. rain run-off from roofs

EXISTING SOURCE: Any building, structure, facility or installation from which there is a flow of Storm Water or Exempted Discharge the construction of which building, structure, facility or installation occurred prior to the promulgation of this By-Law.

ILLCIT CONNECTION: Any drain or conveyance, whether on the surface or subsurface, which allows an Illicit Discharge to enter the MS4.

ILLCIT DISCHARGE: Any release into the MS4 of Contaminated Water, any Discharge of Storm water from a Direct Connection for which a Direct Connection License is not in force and effect, any Discharge which is not an Exempted Discharge, or any Discharge from an Indirect Connection not in compliance with this By-Law.

INDIRECT CONNECTION: The natural drainage of Storm Water over or under the surface of the ground (whether instigated by human endeavor or not) via gravity into the MS4.

MUNICIPAL SEPARATE STORM SEWER SYSTEM OR MS4: The Storm Water collection system which is made up of open water courses, swales, ditches, culverts, canals, streams, catch basins and pipes through which the storm water flows and the Town Public Ways over which it flows which is owned and operated by the Town for the purpose of collecting or conveying storm water to a discharge point.

NEW SOURCE: Any building, structure, facility or installation from which there is or may be a Discharge of Storm Water the construction of which building, structure, facility or installation commenced after adoption of this By-Law.

NPDES PERMIT: The National Pollution Discharge Elimination System Permit issued by the federal Environmental Protection Agency to the Town.

OWNER: The owner of a parcel of land recorded in the Assessor's Office of the Town.

POLLUTANT: Dredged spoil, solid waste, incinerator residue, filter back-wash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, rock, sand, animal or agricultural waste, oil, grease, gasoline or diesel fuel.

PUBLIC WAYS: Any road (including such appurtenances such as berms, curbs, drains, catch basins, sewers, water mains, sidewalks and paved and unpaved shoulders within the paper lay-out) to which the public has access and that the Town is responsible for maintaining.

STORM WATER: Rainfall that exceeds the soil's capacity contemporaneously to absorb it and which, instead, runs across the surface of the ground as run-off.

V. PROHIBITIONS

a. No person or entity shall do or suffer to be done any Dumping into the MS4, including without limitation implied, the placing or emptying into any catch basin or other portal to the MS4, of any Pollutant.

b. No Owner shall cause an Illicit Discharge to be made to the MS4 whether from a Direct or Indirect Connection.

c. No Direct Connections whether from a New or Existing Source shall be installed after the Effective Date of this By-Law.

d. Direct Connection from an Existing Source shall be allowed to continue after the Effective Date provided that:

- (i) Owner must disclose the Direct Connection and must within 30 days of the effective date of this By-Law apply for and thereafter be granted a Direct Connection License, and
- (ii) Owner must Discharge only Storm Water which is not Contaminated Water via the Direct Connection.

e. Indirect Connections from Existing Sources shall be allowed provided that:

- (i) only Storm Water which is not Contaminated Water is Discharged or a Discharge constituting an Exempted Discharge occurs, and
- (ii) the Discharge does not cause safety problems due to icing or flooding of the Public Ways or cause damage to the Town's property.

f. Indirect Connections from New Sources shall be allowed provided that:

- (i) sub-surface infiltration trenches are used which comply with criteria established in the Town's Sub-Division Rules and Regulations, and
- (ii) only Storm Water which is not Contaminated Water is discharged or a Discharge constituting an Exempted Discharge occurs.

Inspection Checklist

Description

This SOP describes procedures for reducing or eliminating erosion and sedimentation during municipal projects that disturb soils.

Note that if site disturbance is equal to or greater than one acre, the EPA requires the Town and (if applicable) its contractor to prepare a SWPPP and to file for coverage under the NPDES program Construction General Permit (CGP). No work can proceed until 14 days after filing for such coverage, and all work must be conducted in accordance with the SWPPP and the requirements of the CGP.

Procedures and Practices

- On site personnel should review and understand the conditions of any permit governing the site disturbance.
- If there is a SWPPP or sediment/erosion control plan that applies to the site:
 - Personnel working on the site should be made familiar with the plan's requirements.
 - Keep a copy in a location readily accessible to the personnel working on the site.
- If the work requires an outside contractor, follow the SOP.CM-2.
- Install erosion and sediment control features such as silt fences before initiating activities that remove vegetated cover or otherwise disturb the site.
- Existing vegetation should be maintained on site as long as possible.
- Vegetation should be allowed to establish before introducing flows to channels.
- Construction should proceed progressively on the site in order to minimize exposed soil, and disturbed areas should be restored as soon as possible after work has been completed. As a rule, any area that will remain un-worked for a period greater than 14 days should be stabilized with vegetation or an alternative approved practice for long-term stability.
- Vegetated and wooded buffers must be protected.
- Excessive soil compaction with heavy machinery should be avoided, to the extent possible.
- Construction activities should occur during dryer periods, such as summer months, to limit potential runoff.
- Responsibility for maintaining erosion and sediment control devices shall be clearly identified.
- Soils, including stockpiles, should be stabilized by mulching and/or seeding when they would be exposed for more than one week during the dry season, or more than two days during the rainy season.
- Use regular, light watering for dust control, as this is more effective than infrequent heavy watering.

Inspection and Maintenance

- Inspect erosion and sediment control devices weekly and following heavy rainfall events to ensure they are working properly.
- Inspect silt fence for depth of sediment, tears, secure attachment of fabric to posts, and to ensure fence posts are firmly in the ground. Remove accumulated sediment from silt fencing when it has reached one third the height of the fence.
- Inspect other sediment barriers (e.g., silt socks) according to manufacturer's recommended practices.
- Inspect catch basin silt traps for sediment accumulation and clean out to maintain flow capacity and prevent failure of the trap.
- Temporary construction sediment traps and sediment barriers should be cleaned out regularly based on inspection to reduce clogging and maintain design function.
- Easements and service routes should be maintained, to enable maintenance equipment to access BMPs for regular cleaning.
- Ensure staff are trained on proper erosion and sedimentation control procedures and practices.
- Use the checklist in SOP CM-2 to guide the inspection process and record the findings of the inspection.

Description

This SOP outlines a municipal stormwater Construction Site Inspection program to track, inspect, and enforce local stormwater requirements at construction sites.

General**1. Preconstruction Meeting**

Prior to the initiation of construction activities, the Commission or its representative should conduct a pre-construction meeting with the project owner/applicant and the contractor, to address the following:

- a. Identify persons who will serve as contacts for the Town, the Owner, and the Contractor throughout the project, including compiling contact information for around the clock coverage for contingency events;
- b. Review the requirements of applicable permits;
- c. Review the Contractor's SWPPP for protecting the Clinton MS4 and Waters of the Commonwealth from construction activity impacts;
- d. Brief the owner/applicant and contractor about how this SOP applies to the project, and establish a schedule for regular inspections;
- e. Conduct an initial inspection of the site. If consistent with the requirements of permits or orders of conditions issued for the project, the Contractor may install initial erosion and sediment controls prior to this meeting, with those measures inspected as a part of the initial site walk.

2. Periodic Inspections

Periodic inspections should be performed according to the following SOP throughout the project, and after any rainfall event that constitutes a threshold for inspection under the Contractor's SWPPP.

3. Final Inspection

The SOP measures listed below should be followed during an inspection of the site at completion of the project, prior to the owner/applicant and the contractor filing for certificates of completion and (if applicable) a Notice of Termination under the US EPA Construction General Permit.

Procedures and Practices for Inspections

1. Plan the inspection before visiting the construction site.
 - Obtain and review permits, site plans, previous inspection reports, and any other applicable information.
 - Inform the contractor of the planned site visit.

2. Meet with the contractor
 - Review the Construction SWPPP (Stormwater Pollution Prevention Plan) or other document, as required by the municipality's legal authority. Compare BMPs in the approved site plans with those shown in the SWPPP.
 - Review the following, as applicable, and confirm that information shown continues to be accurate:
 - the project's Order of Conditions (issued under Notice of Intent (NOI) under State and Local Wetlands Protection Regulations;
 - the project's Stormwater Permit and supporting documents.
 - Get a general overview of the project from the contractor.
 - Review inspections done by the contractor.
 - Review the status of any issues or corrective actions noted in previous inspection reports.
 - Discuss any complaints or incidents since the last meeting.

3. Inspect perimeter controls
 - Examine perimeter controls to determine if they are adequate, properly installed, and properly maintained.
 - For each structural BMP, check structural integrity to determine if any portion of the BMP needs to be replaced or requires maintenance.

4. Inspect slopes and temporary stockpiles
 - Determine if sediment and erosion controls are effective.
 - Look for slumps, rills, and tracking of stockpiled materials around the site.

5. Compare BMPs in the site plan with the construction site conditions
 - Determine whether BMPs are in place as specified in the site plan and if the BMPs have been adequately installed and maintained.
 - Note any areas where additional BMPs may be needed which are not specified in the site plans.

6. Inspect site entrances/exits
 - Determine if there has been excessive tracking of sediment from the site.
 - Look for evidence of additional entrances/exits which are not on the site plan and are not properly stabilized.
 - If vehicle carriage washing stations are provided at entrances/exits, verify that they are being used and maintained; look for evidence that washing activities are not being conducted and contained within designated areas.

7. Inspect sediment basins
 - Look for signs that sediment has accumulated beyond 50% of the original capacity of the basin.
 - Look for evidence of overflows, embankment erosion, outlet structure mis-function.

8. Inspect pollution prevention and good housekeeping practices
 - Inspect trash areas and material storage/staging areas to ensure that materials are properly maintained and that pollutant sources are not exposed to rainfall or runoff.
 - Inspect vehicle/equipment fueling and maintenance areas for the presence of spill control measures and for evidence of leaks or spills.

9. Inspect discharge points and downstream, off-site areas
 - Walk down the street and/or in other directions off-site to determine if erosion and sedimentation control measures are effective in preventing off-site impacts.
 - Inspect down-slope catch basins to determine if they are protected, and identify whether sediment buildup has occurred.
 - Inspect resource areas (wetlands, streams, ponds, other water bodies) within or adjacent to site for signs of site disturbance or sediment deposition.

10. Meet with the contractor again prior to leaving
 - Discuss the effectiveness of current controls and whether modifications are needed.
 - Discuss possible violations or concerns noted during the site inspection, including discrepancies between approved site plans, the SWPPP, applicable Orders of Conditions or Stormwater Permit conditions and/or the implementation of stormwater controls.
 - Agree on a schedule for addressing all discrepancies, and schedule a follow-up inspection.

11. Provide a written copy of the inspection report to the site owner/applicant.

12. Follow up, as determined, and provide copy of subsequent inspection to the contractor.
13. Utilize the resources of USEPA Region 1 to enforce the contractor's compliance with the Construction General Permit and/or other document, as required by the municipality's legal authority.

Inspection and Maintenance

- Use the attached Construction Site Stormwater Inspection Report to perform and document inspections.

CONSTRUCTION SITE STORMWATER INSPECTION REPORT

(Adapted from Central Massachusetts Regional Stormwater Collaborative SOP 5: Construction Site Inspection)

General Information

Project Name			
Project Location			
Site Operator			
Inspector's Name			
Date of Inspection		Date of Last Inspection	
Start Time		End Time	
Subject to USEPA Construction General Permit? Yes No If yes, has NOI been approved? Yes No If yes, attach approved NOI to this report. <p style="text-align: center;">If no, contact site operator immediately to determine status of NOI.</p> If NOI approved, is SWPPP available at site? Yes No <p style="text-align: center;">If no, contact site operator immediately to determine status of SWPPP.</p>			
Type of Inspection: <div style="display: flex; justify-content: space-around; text-align: center;"> Regular Pre-Storm Event During Storm Event Post-Storm Event </div>			
Describe the weather conditions at time of inspection			
Describe the current phase of construction			
Do any of the observations of this site visit warrant an update of the SWPPP (if yes, list)?	Yes	No	

Site Specific BMP

Customize the following BMP checklist to be consistent with the SWPPP or plans for the site being inspected.

	BMP Description	Installed and Operating Properly?	Corrective Action Needed
1		Yes <input type="checkbox"/> No <input type="checkbox"/>	
2		Yes <input type="checkbox"/> No <input type="checkbox"/>	
3		Yes <input type="checkbox"/> No <input type="checkbox"/>	
4		Yes <input type="checkbox"/> No <input type="checkbox"/>	
5		Yes <input type="checkbox"/> No <input type="checkbox"/>	
6		Yes <input type="checkbox"/> No <input type="checkbox"/>	
7		Yes <input type="checkbox"/> No <input type="checkbox"/>	
8		Yes <input type="checkbox"/> No <input type="checkbox"/>	
9		Yes <input type="checkbox"/> No <input type="checkbox"/>	
10		Yes <input type="checkbox"/> No <input type="checkbox"/>	
11		Yes <input type="checkbox"/> No <input type="checkbox"/>	
12		Yes <input type="checkbox"/> No <input type="checkbox"/>	
13		Yes <input type="checkbox"/> No <input type="checkbox"/>	
14		Yes <input type="checkbox"/> No <input type="checkbox"/>	
15		Yes <input type="checkbox"/> No <input type="checkbox"/>	
16		Yes <input type="checkbox"/> No <input type="checkbox"/>	
17		Yes <input type="checkbox"/> No <input type="checkbox"/>	
18		Yes <input type="checkbox"/> No <input type="checkbox"/>	

Erosion and Sedimentation Control

Document any of the following issues found on the construction site and the corrective action(s) required for each.

Issue	Status	Corrective Action Needed
Have all ESC features been constructed before initiating other construction activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is the contractor inspecting and maintaining ESC devices regularly?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is existing vegetation maintained on the site as long as possible?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is construction staged so as to minimize exposed soil and disturbed areas?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are disturbed areas restored as soon as possible after work is completed?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is clean water being diverted away from the construction site?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are sediment traps and sediment barriers cleaned regularly?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are vegetated and wooded buffers protected and left undisturbed?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are soils stabilized by mulching and/or seeding when they are exposed for a long time?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Has vegetation been allowed to establish itself before flows are introduced to channels?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is regular, light watering used for dust control?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is excessive soil compaction with heavy machinery avoided, to the extent possible?	Yes <input type="checkbox"/> No <input type="checkbox"/>	

(continued)

Issue	Status	Corrective Action Needed
Are erosion control blankets used when seeding slopes?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are trees and vegetation that are to be retained during construction adequately protected?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are areas designated as off-limits to construction equipment flagged or easily distinguishable?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
If excavated topsoil has been salvaged and stockpiled for later use on the project, are stockpiles adequately protected?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are temporary slope drains or chutes used to transport water down steep slopes?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Do all entrances to the storm sewer system have adequate protection?	Yes <input type="checkbox"/> No <input type="checkbox"/>	

Overall Site Conditions

Document any of the following issues found on the construction site and the corrective action(s) required for each.

Issue	Status	Corrective Action Needed
Are slopes and disturbed areas not being actively worked properly stabilized?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are material stockpiles covered or protected when not in use?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are natural resource areas protected with sediment barriers or other BMPs?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are perimeter controls and sediment barriers installed and maintained?	Yes <input type="checkbox"/> No <input type="checkbox"/>	

(continued)

Issue	Status	Corrective Action Needed
Are discharge points and receiving waters free of sediment deposits and turbidity?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are storm drain inlets properly protected?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is there evidence of sediment being tracked into streets?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is trash/litter from the construction site collected and placed in dumpsters?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are dumpsters closed/covered at the end of the working day?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are vehicle/equipment fueling and maintenance areas free of spills and leaks?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are potential stormwater contaminants protected inside or under cover?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is dewatering from site properly controlled?	Yes No	
Are portable restroom facilities properly sited and maintained?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are all hazardous materials and wastes stored in accordance with local regulations?	Yes <input type="checkbox"/> No <input type="checkbox"/>	

Non-Compliance Actions

The municipality shall provide the site operator with a copy of this report, and notice of the corrective action(s) to be taken. The site operator shall have thirty days from the receipt of the notice to commence curative action of the violation.

Appendix E

SSO Inventory

Appendix F

Inventory of Town-Owned Property

Appendix G

SWPPP Facilities

Appendix H

Catch Basin Optimization Plan

Plan for Optimizing Catch Basin Cleaning

Clinton, MA

June 30, 2019

Prepared For:

Town of Clinton
242 Church St
Clinton, MA 01510

Prepared by:

Comprehensive Environmental Inc.
41 Main Street
Bolton, MA 01740



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List of Appendices

Appendix A. Map of Drainage Infrastructure

Appendix B. Standard Operating Procedures for Catch Basin Cleaning and Inspection

1 Introduction

This Catch Basin Cleaning Optimization Plan has been prepared by Clinton, MA to address the catch basin inspection, cleaning and maintenance requirements of the United States Environmental Protection Agency's (USEPA's) 2016 National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in Massachusetts, hereafter referred to as the "2016 MS4 Permit."

The 2016 MS4 Permit requires the permittee to document its plan for optimizing catch basin cleaning, inspections, or its schedule for gathering information to develop the optimization plan. This plan documents the Town's existing catch basin cleaning program and its plans for gathering additional information to refine its program to meet the requirements of the permit.

2 Permit Requirements

This Catch Basin Cleaning Optimization Plan addresses Section 2.3.7.1.a.iii.2 of the 2016 MS4 Permit (Infrastructure Operations and Maintenance), which includes the following requirements:

- **Establish a schedule** with the goal that the frequency of routine cleaning will ensure that no catch basin at any time will be more than 50 percent full¹;
- **Prioritize** inspection and maintenance for catch basins:
 - located near construction activities². These should be cleaned more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings;
 - discharging to impaired waters where the pollutant of concern is E. coli or enterococcus; and
 - with sumps more than 50% full during consecutive inspections.
- **Establish proper documentation** of catch basin inspections to include:
 - the location and total number of catch basins;
 - the location and total number of catch basins cleaned or inspected; and
 - the total volume or mass of material removed from catch basin
- **Develop an optimization plan** for catch basin cleaning, inspection plans, or a schedule for gathering information to develop the optimization plan in the first annual report and in the SWMP.

¹ A catch basin sump is more than 50 percent full if the contents within the sump exceed one half the distance between the bottom interior of the catch basin to the invert of the deepest outlet of the catch basin.

² Roadway construction; residential, commercial, or industrial development or redevelopment.

3 Existing Catch Basin Management Program

The Town has approximately 1,275 catch basins to clean and maintain. Refer to the map in **Appendix A**. The Town uses a Vactor truck in conjunction with the Town-owned clamshell to complete yearly cleanings of all catch basins starting in the spring. Catch basins on critical streets are cleaned more frequently, approximately twice a year. Typically, about 80% of the basins are cleaned with the clamshell and the remainder are cleaned with the Vactor truck. The program is ongoing except in the winter season and all of the catch basins are inspected and cleaned as needed.

4 Plans to Refine Catch Basin Cleaning Optimization

4.1 Optimization Methodology

Clinton will continue to implement its existing annual catch basin cleaning. During this time, it will collect data on the sump depth and sediment depth in each catch basin. A spreadsheet will be used to track sediment depth at each location. The catch basin inspection form included with the standard operating procedure (SOP) in **Appendix B** will be used to document data collected during cleaning.

A minimum of two years of data will be collected and evaluated to determine the status of the catch basins and whether the sump was more than half full. The catch basins that are more than 50% full will be evaluated for potential factors that may have contributed to it being 50% full (i.e., smaller sump, nearby construction, surrounding land uses, location in town). The evaluation will be used to identify catch basins that require more frequent inspection and/or cleaning and to develop an optimization plan that prioritizes these structures accordingly.

4.2 Catch Basin Cleaning Standard Operation Procedure (SOP)

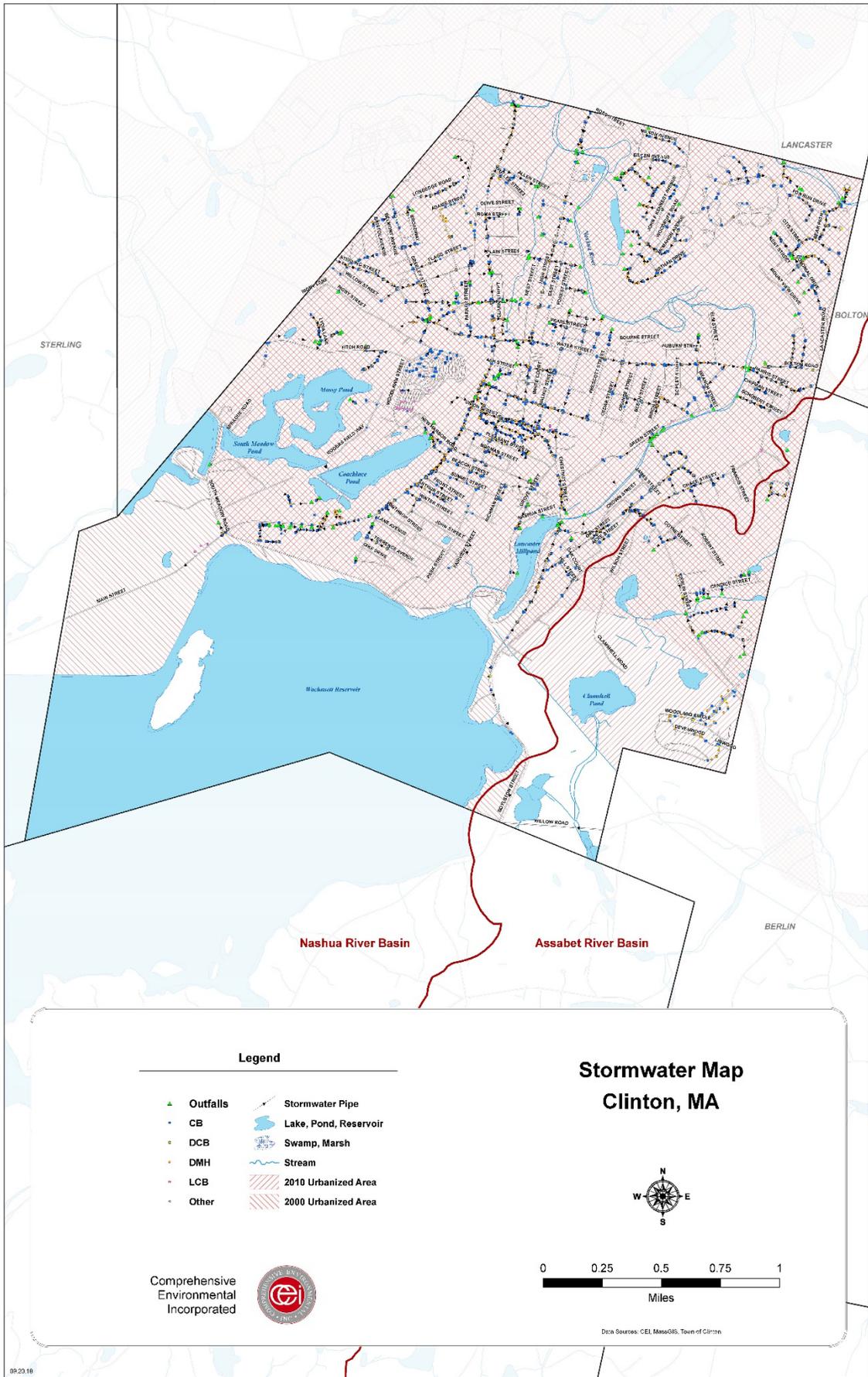
All catch basins will be inspected and cleaned following the standard operating procedures (SOP) provided in **Appendix B**.

4.3 Catch Basin Cleanings Storage and Disposal

Clinton will explore possible beneficial uses for its collected catch basin cleanings.

Appendix A

Map of Drainage Infrastructure



Appendix B: SOPs

Standard Operating Procedures for Catch Basin Cleaning and Inspection

Permit Requirements

As required by the 2016 MS4 Permit, catch basin inspection and cleaning requirements include the following:

- **Inspect and clean catch basins** to ensure that no catch basin is not more than 50 percent full;
- **Prioritize inspection and maintenance** for catch basins:
 - located near construction activities;
 - discharging to impaired waters; and
 - with sumps more than 50% full during consecutive inspections.
- **Establish proper documentation** of catch basin inspections; and
- **Develop an optimization plan** for catch basin cleaning and inspection.

Before Cleaning and/or Inspection

- **Notify residents and business** of catch basin cleaning schedule to restrict parking that could obstruct catch basin cleaning operations.
- **Gather** all required forms and maps.
 - Catch Basin Inspection Form; and
 - Maps of area to be cleaned/inspected

Cleaning and Inspection during Cleaning

1. Clean sediment and trash off of grate.
2. Remove grate.
3. Fill out **Catch Basin Inspection Form** with basin-specific information:
 - **Before cleaning:**
 - Do a visual inspection of outside of grate.
 - Do a visual inspection of the inside of the catch basin to determine cleaning needs and structural issues.
 - Measure depth from rim of catch basin to top of sediment.
 - Measure depth from rim of catch basin to the top of the outlet pipe.
 - Take photo of catch basin.
 - **Clean catch basin:**
 - For manual removal, place removed material in a location protected from potential runoff and place cleanings in a vehicle for transport to designated disposal area.
 - OR use a high-powered vac truck to remove sediment.
 - **After cleaning:**

- Measure depth from rim to bottom of catch basin.
 - Measure depth of sump (outlet pipe to bottom of catch basin).
 - Note if the catch basin is more than 50% full with sediment.
 - Note if the catch basin requires maintenance or if there are pollutants present.
 - Take photo of catch basin.
4. **Storage:** Bring cleanings to designated location for storage and disposal.
 5. If any illicit discharges are observed or suspected, notify supervisor.

Interim Inspection between Cleaning Cycles

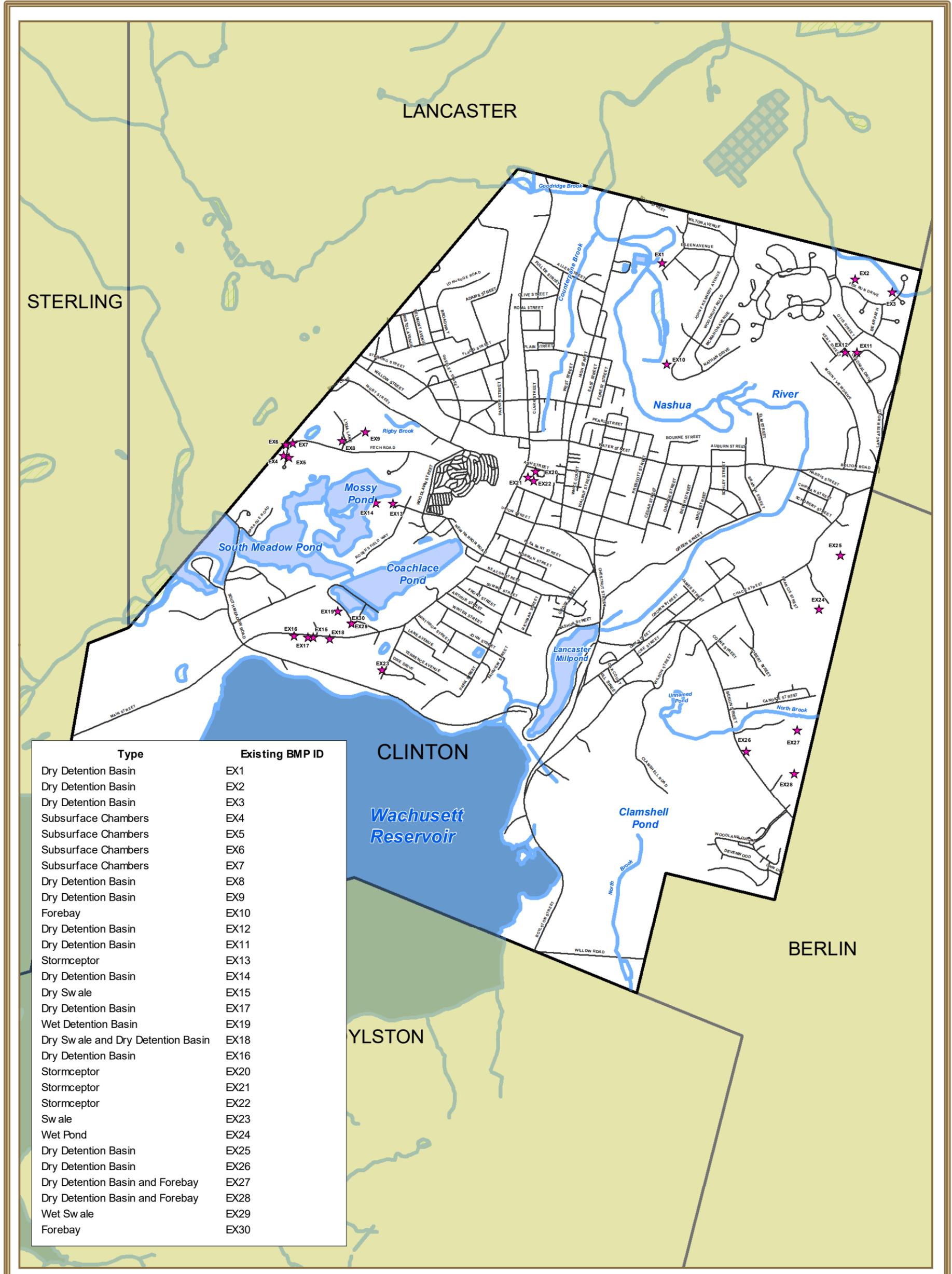
1. Clean sediment and trash off grate.
2. Remove grate.
3. Fill out **Catch Basin Inspection Form** with basin-specific information:
 - Do a visual inspection of outside of grate.
 - Do a visual inspection of the inside of the catch basin to determine cleaning needs and structural issues.
 - Measure depth from rim of catch basin to top of sediment.
 - Using sump depth collected during previous cleaning, note if the catch basin is more than 50% full with sediment.
 - Note if the catch basin requires maintenance or if there are pollutants present.
4. If any illicit discharges are observed or suspected, notify supervisor.

Catch Basin Inspection Form

Inspection Information									
Catch Basin ID									
Street Location		GPS Location							
Inspector's Name									
Date of Inspection		Time of Inspection							
Weather (circle)	Dry	Light Rain	Heavy Rain Snow						
Catch Basin Information									
Location	Surface Type	Grate							
<input type="checkbox"/> Road/Curb <input type="checkbox"/> Alley <input type="checkbox"/> Ditch <input type="checkbox"/> Parking Lot <input type="checkbox"/> Driveway <input type="checkbox"/> Sidewalk Other: _____	<input type="checkbox"/> Asphalt <input type="checkbox"/> Gravel <input type="checkbox"/> Concrete <input type="checkbox"/> Grass/Dirt Other: _____	____ inches x ____ inches Material: _____ Shape: _____							
Catch Basin Condition									
CB Damage: No Yes	Comment:								
	Materials (circle)			Condition (circle)					
Grate	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Frame	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Chimney	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Walls	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Trap/Hood	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Sump	Cast Iron	Brick	Concrete	Aluminum	Fiberglass	Poor	Fair	Good	Excellent
Sediment Depth and IDDE (inches)									
A. Depth from Rim to Top of Sediment: _____						Check those Present:			
B. Depth from Rim to Bottom of Basin (after vac): _____						__ Sanitary Waste/Smell			
C. Sump Depth: _____						__ Excessive Sediment			
D. Depth of Sediment (B-A): _____						__ Oil Sheen			
E. More than 50% Full of Sediment? (D/C): _____						__ Floatables/Trash			
						__ Pet Waste:			
CB Cleaned? No Yes						Other: _____			
Suspected illicit discharge? No Yes						Potential Source: _____			

Appendix I

List of Stormwater BMPs



Type	Existing BMP ID
Dry Detention Basin	EX1
Dry Detention Basin	EX2
Dry Detention Basin	EX3
Subsurface Chambers	EX4
Subsurface Chambers	EX5
Subsurface Chambers	EX6
Subsurface Chambers	EX7
Dry Detention Basin	EX8
Dry Detention Basin	EX9
Forebay	EX10
Dry Detention Basin	EX12
Dry Detention Basin	EX11
Stormceptor	EX13
Dry Detention Basin	EX14
Dry Sw ale	EX15
Dry Detention Basin	EX17
Wet Detention Basin	EX19
Dry Sw ale and Dry Detention Basin	EX18
Dry Detention Basin	EX16
Stormceptor	EX20
Stormceptor	EX21
Stormceptor	EX22
Sw ale	EX23
Wet Pond	EX24
Dry Detention Basin	EX25
Dry Detention Basin	EX26
Dry Detention Basin and Forebay	EX27
Dry Detention Basin and Forebay	EX28
Wet Sw ale	EX29
Forebay	EX30

LEGEND

BMP	Hydrography
Roads	Lake, Pond
Town Boundary	Wetland
Data Source: MassGIS, CEI	Reservoir
	Stream, Brook

Scale and Orientation

0 2,000 4,000 Feet

0 0.25 0.5 0.75 Miles

Attachment 4
 Operations and Maintenance Plan
Existing BMP Locations
 Clinton, Massachusetts

Comprehensive Environmental Inc.

Summary of Existing Water Quality BMPs

BMP ID #	Location	Type of BMP	BMP appears to be working?	Maintenance required?	Maintenance Access	Sediment Accumulation	Sediment Depth	Debris	Structural Condition	Feasibility	Vegetation	Is there excessive algae growth?	Inlet	Outlet	Forebay	Comments	# of Features	Recommendations
EX1	Megan Cir	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input checked="" type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	8 inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input checked="" type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 2-12" Type RCP	Size 1-24" Type Outlet Structure	No	Receives runoff from large subdivision, ~30 houses. Two 12" RCP pipes with flared ends drain to forebay and 1-12" RCP with flared end drains to basin. Large amount of dead vegetation in both forebay and basin.	5	Remove heavy brush in the basin. Remove invasive phragmites. Remove sediment in forebay.
EX2	Fox Run Dr 1	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Easy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input checked="" type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	16 inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input checked="" type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> No Distress <input checked="" type="checkbox"/> Distressed <input checked="" type="checkbox"/> Sparse <input checked="" type="checkbox"/> Undesirable Woody <input checked="" type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 2-24" Type RCP	Size 1-12" Type RCP	YES	Drains ~10 houses. Heavily covered in dead vegetation in forebay and heavy growth in basin. Pipe connecting basin and forebay is 3/4 clogged with sediment.	4	Remove heavy dead vegetation and heavy growth. Address areas with sparse vegetation a plant non-invasive plants. Unclog pipe connecting the forebay and basin.
EX3	Fox Run Dr 2	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input checked="" type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	4 inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input checked="" type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 2-24" Type RCP	Size V-notched Type Stone Overflow spillway	No	Drains ~8 houses. Maintained cut grass with no debris or invasive vegetation. Small amount of bank erosion at the inlet pipe	3	Continue to regularly maintain basin and remove slight buildup of sediment at the inlet pipe. Repair the eroded bank at the inlet pipe.
EX4	Stonebridge Cr 1	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input type="checkbox"/> Detention Basin <input type="checkbox"/> Forebay <input checked="" type="checkbox"/> Subsurface Chambersx4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Easy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input type="checkbox"/> Slight build up <input checked="" type="checkbox"/> Heavy build up UNKNOWN	Unknown	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Exposed Steel <input checked="" type="checkbox"/> UNKNOWN	<input type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input checked="" type="checkbox"/> Displaced Riprap <input checked="" type="checkbox"/> UNKNOWN	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 4-Unknown Type Plastic Chambers	Size Unknown Type Infiltration	No	Drains subdivision, ~10 houses. Four catch basin located with in the subdivision drain to four buried infiltration basins. Info of chambers was found on plans and verified in the field.	0	Determine if chambers are working. May need to TV pipe to determine the amount of sediment and debris build up. Remove all sediment and debris if found.
EX5	Stonebridge Cr 2	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input type="checkbox"/> Detention Basin <input type="checkbox"/> Forebay <input checked="" type="checkbox"/> Subsurface Chambersx4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Easy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input type="checkbox"/> Slight build up <input checked="" type="checkbox"/> Heavy build up UNKNOWN	Unknown	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Exposed Steel <input checked="" type="checkbox"/> UNKNOWN	<input type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input checked="" type="checkbox"/> Displaced Riprap <input checked="" type="checkbox"/> UNKNOWN	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 4-Unknown Type Plastic Chambers	Size Unknown Type Infiltration	No	Drains subdivision, ~10 houses. Four catch basin located with in the subdivision drain to four buried infiltration basins. Info of chambers was found on plans and verified in the field.	0	Determine if chambers are working. May need to TV pipe to determine the amount of sediment and debris build up. Remove all sediment and debris if found.
EX6	Stonebridge Cr 3	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input type="checkbox"/> Detention Basin <input type="checkbox"/> Forebay <input checked="" type="checkbox"/> Subsurface Chambersx4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Easy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input type="checkbox"/> Slight build up <input checked="" type="checkbox"/> Heavy build up UNKNOWN	Unknown	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Exposed Steel <input checked="" type="checkbox"/> UNKNOWN	<input type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input checked="" type="checkbox"/> Displaced Riprap <input checked="" type="checkbox"/> UNKNOWN	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 4-Unknown Type Plastic Chambers	Size Unknown Type Infiltration	No	Drains subdivision, ~10 houses. Four catch basin located with in the subdivision drain to four buried infiltration basins. Info of chambers was found on plans and verified in the field.	0	Determine if chambers are working. May need to TV pipe to determine the amount of sediment and debris build up. Remove all sediment and debris if found.
EX7	Stonebridge Cr 4	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input type="checkbox"/> Detention Basin <input type="checkbox"/> Forebay <input checked="" type="checkbox"/> Subsurface Chambersx4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Easy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input type="checkbox"/> Slight build up <input checked="" type="checkbox"/> Heavy build up UNKNOWN	Unknown	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Exposed Steel <input checked="" type="checkbox"/> UNKNOWN	<input type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input checked="" type="checkbox"/> Displaced Riprap <input checked="" type="checkbox"/> UNKNOWN	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 4-Unknown Type Plastic Chambers	Size Unknown Type Infiltration	No	Drains subdivision, ~10 houses. Four catch basin located with in the subdivision drain to four buried infiltration basins. Info of chambers was found on plans and verified in the field.	0	Determine if chambers are working. May need to TV pipe to determine the amount of sediment and debris build up. Remove all sediment and debris if found.
EX8	Lydia Ln	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input type="checkbox"/> Slight build up <input checked="" type="checkbox"/> Heavy build up	12 inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input checked="" type="checkbox"/> Bank Erosion <input checked="" type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input checked="" type="checkbox"/> Undesirable Woody <input checked="" type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 2-12" Type RCP	Size 2-12" Type RCP	Yes	Receives runoff from , ~12 houses or so in the subdivision. Heavy phragmites present in basin. Some vegetation growth on the banks. Two 24" RCP pipes drain the pond to a unknown tributary located next to the pond.	8	Remove heavy sediment at end of inlet pipe from Lydia Rd in forebay and replace riprap at end of pipe. Remove invasive phragmites and dead vegetation. Remove brush and keep area clean
EX9	Wilkatte Pl	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	0 inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 12" Type RCP	Size 2-12" Type RCP	Yes	Receives runoff from , ~8 houses or so in the subdivision. Two 24" RCP pipes drain basin.	5	Remove heavy brush and dead vegetation in the basin. Remove invasive phragmites. Maintain sediment forebay.
EX10	Nathan Drive	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input type="checkbox"/> Detention Basin <input checked="" type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Easy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input checked="" type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	0 inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input checked="" type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input checked="" type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 12" Type RCP	Size V-notched Type Riprap Channel	No	Receives runoff from approximately 20 houses. Wide overgrown forebay with substantial wooded growth. Outlet of forebay goes to a riprap lined channel down a hill to the Nashua river.	3	Remove heavy brush in the basin. Remove sediment in forebay.

Summary of Existing Water Quality BMPs

BMP ID #	Location	Type of BMP	BMP appears to be working?	Maintenance required?	Maintenance Access	Sediment Accumulation	Sediment Depth	Deposits	Structural Condition	Feasibility	Vegetation	Is there excessive algae growth?	Inlet	Outlet	Forebay	Comments	# of Features	Recommendations
EX11	Colonial Drive2	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input checked="" type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	20 inches	<input type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input checked="" type="checkbox"/> Grass ___Clippings/Compost <input checked="" type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> No Distress <input checked="" type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 24" x1 12" x2 Type RCP Headwall	Size 12" Type RCP at Outlet Weir Structure	No	Drains ~10 houses. Heavily overgrown. Large amount of trash, debris and tree clippings. Could not observe one inlet pipe, possibly buried in debris, however appeared to be a single pipe at the opposite end from outlet. Large amount of sediment has accumulated at the headwall with the two 12" inlet pipes. Part of the overflow structure is buried and drains to Town stormwater pipes on Lorraine Ave .	3	Remove heavy growth, dead vegetation, debris and sediment in the basin. Remove sediment in inlet pipes.
EX12	Colonial Drive1	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input checked="" type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	6 inches	<input type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input checked="" type="checkbox"/> Grass ___Clippings/Compost <input checked="" type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input checked="" type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 2-12" Type RCP	Size 12" Type Outlet flow Structure	No	Receives runoff from ~ 12 houses in the subdivision. Pond is drained by an outlet structure at the opposite end of the inlet. Pond is covered in heavy growth. Inlet pipe is 1/2 buried in sediment.	3	Remove heavy growth in the basin. Remove sediment in pipe and clear basin of dead vegetation
EX13	Pine St 2	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input checked="" type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	0 inches	<input type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass ___Clippings/Compost <input checked="" type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 12" Type RCP	No Outlet	N/A	Receives runoff from paved undeveloped residential area into two catch basins. Flow enters through a 12" RCP into a underground storage stormceptor.	1	Perform routine inspections and remove all sediment and water accumulation inside the vault.
EX14	Pine St 1	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	0 inches	<input type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass ___Clippings/Compost <input checked="" type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 12" Type RCP	Size multi Type RCP	Yes	Receives runoff from paved undeveloped residential area. Vegetation has established and construction of forebay and detention basin has been completed. Overflow of the detention pond goes to a hillside along South Meadow Pond	1	Maintain sediment free forebay remove sediment when it accumulates. Inspect forebay and detention ponds after neighborhood development to assure basin is working properly and no erosion has occurred. Provided maintenance when vegetation becomes excessive. Inspect overflow
EX15	High School 1	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input checked="" type="checkbox"/> Dry Swale <input type="checkbox"/> Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> Unknown	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	0 inches	<input type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass Clippings/Compost <input checked="" type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size: multi Type: RCP	Size: 24" Type: HDPE	No	Catches runoff from High School parking lot. Dry grass swale	1	Remove sediment at the outlet of all inlet pipes in swale. Uncover partially buried pipes in swale. Continue to maintain grass and remove dead vegetation.
EX16	High School	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*														Located in front of High School		
EX17	High School Recreation Parking Lot	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Wet Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	<input type="checkbox"/> Easy <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Difficult	<input type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	0 inches	<input type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass ___Clippings/Compost <input checked="" type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> None <input checked="" type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input checked="" type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input checked="" type="checkbox"/> Undesirable Woody <input checked="" type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size: 1-12" Type: HDPE	Size 18" Type Wier 12" RCP	Yes	Catches runoff from High School Recreation parking lot. Wet Detention pond The bank separating the forebay has been destroyed and a channel has developed with bank erosion.	5	Repair berm separating the forebay and basin. Repair riprap at the end of the inlet pipe. Remove invasive plants and remove heavy growth in basin.
EX18	Middle School	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input checked="" type="checkbox"/> Dry Swale and Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> Unknown	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	0 inches	<input type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass ___Clippings/Compost <input checked="" type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size: multi Type: RCP	Size: 24" Type: HDPE	No	Catches runoff from Middle School parking lot. Dry grass swale. Grass has been maintained and appears that it is cut frequently.	1	Remove sediment at the outlet of all inlet pipes in swale. Uncover partially buried pipes in swale. Continue to maintain grass and brush cleanup in swale.
EX19	High School	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*														Located in front of High School		

Summary of Existing Water Quality BMPs

BMP ID #	Location	Type of BMP	BMP appears to be working?	Maintenance required?	Maintenance Access	Sediment Accumulation	Sediment Depth	Deposits	Structural Condition	Feasibility	Vegetation	Is there excessive algae growth?	Filter	Outlet	Forebay	Comments	# of Features	Recommendations	
EX20	Elementary School 1	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input type="checkbox"/> Wet Detention Basin <input type="checkbox"/> Forebay <input checked="" type="checkbox"/> Stormceptor	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> Unknown	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input checked="" type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up <input type="checkbox"/> Unknown	<input type="checkbox"/> 0 inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size: 4 dia Catch Basin Type: Plastic	Size: 4 dia Catch Basin Type: Plastic	N/A	Water quality device located in three catch basin inside the School Parking Lot. Contains a plastic shirt with a metal grate and pvc stand pipe	1	Contaminants and sediment build-up needs to be removed on a regular basis from the 4" pvc cleanout stand pipe to ensure the stormceptor is working properly.	
EX21	Elementary School 2	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input type="checkbox"/> Wet Detention Basin <input type="checkbox"/> Forebay <input checked="" type="checkbox"/> Stormceptor	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> Unknown	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input checked="" type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up <input type="checkbox"/> Unknown	<input type="checkbox"/> 0 inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size: 4 dia Catch Basin Type: Plastic	Size: 4 dia Catch Basin Type: Plastic	N/A	Water quality device located in three catch basin inside the School Parking Lot. Contains a plastic shirt with a metal grate and pvc stand pipe	1	Contaminants and sediment build-up needs to be removed on a regular basis from the 4" pvc cleanout stand pipe to ensure the stormceptor is working properly.	
EX22	Elementary School 3	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input type="checkbox"/> Wet Detention Basin <input type="checkbox"/> Forebay <input checked="" type="checkbox"/> Stormceptor	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> Unknown	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up <input type="checkbox"/> Unknown	<input type="checkbox"/> 0 inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size: 4 dia Catch Basin Type: Plastic	Size: 4 dia Catch Basin Type: Plastic	N/A	Water quality device located in three catch basin inside the School Parking Lot. Contains a plastic shirt with a metal grate and pvc stand pipe	1	Contaminants and sediment build-up needs to be removed on a regular basis from the 4" pvc cleanout stand pipe to ensure the stormceptor is working properly.	
EX23	Main Street South	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input checked="" type="checkbox"/> Swale <input type="checkbox"/> Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*																	
EX24	Bufon Farm Rd 1	<input type="checkbox"/> None <input checked="" type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	<input type="checkbox"/> 0 inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 12" Type RCP	Size V-notch weir Type To wooded area	No	Receives runoff from , -12 houses or so in the subdivision. Newly constructed.	2	Remove debris in front of the inlet pipe.	
EX25	Bufon Farm Rd 2	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input checked="" type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	<input type="checkbox"/> 0 inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input checked="" type="checkbox"/> Undesirable Woody <input checked="" type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 24" Type RCP	Size V-notch weir Type To rear pond	No	Pond receives runoff from ~10 houses. Both forebay and basin were full of water and appeared undersized lot still under construction. Sediment build-up in pond was observed possible from construction. Basin outlets to a v-notched overflow structure at rear of the pond then to a wooded area.	0	Remove brush in the basin. Remove invasive phragmites. Remove sediment from forebay	
EX26	W Ledge Rd 1	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Moderate <input type="checkbox"/> Difficult	<input type="checkbox"/> None <input checked="" type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	<input type="checkbox"/> 6 inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> None <input checked="" type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> No Distress <input checked="" type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size 2-12" Type RCP	Size V-notch weir	No	Receives runoff from a portion of the street, ~8 houses or so in the subdivision. Grass has been cut. Outlet structure of Detention Pond connects to Town system on Berlin St.	8	Remove sediment in the basin especially at the inlet pipes. Repair large depression the middle of basin. Remove brush in basin and dead vegetation.	

Summary of Existing Water Quality BMPs

BMP ID #	Location	Type of BMP	BMP appears to be working?	Maintenance required?	Maintenance Access	Sediment Accumulation	Sediment Depth	Deposits	Structural Condition	Feasibility	Vegetation	Is there excessive algae growth?	Filter	Outlet	Forebay	Comments	# of Poles	Recommendations
EX27	W Ledge Rd 2	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input checked="" type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Easy <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Difficult	<input checked="" type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	<input type="checkbox"/> inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> No Distress <input checked="" type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size: 12" Type: RCP	Size: 1-12" 1-8" Type: PVC pipes at Headwall	<input checked="" type="checkbox"/> Yes	Receives runoff from , -12 houses or so in the subdivision. Two pvc pipes drain the basin at a headwall to a wooded area located next to the basin.	2	Maintain a sediment free forebay. Clear basin of all dead vegetation
EX28	W Ledge Rd 3	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input checked="" type="checkbox"/> Dry Detention Basin <input checked="" type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Easy <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Difficult	<input checked="" type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	<input type="checkbox"/> inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> No Distress <input checked="" type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size: 12" Type: RCP	Size: V-notch weir Type: To rear pond	<input type="checkbox"/> No	Receives runoff from , -12 houses or so in the subdivision. Two pvc pipes drain the basin at a headwall to a wooded area located next to the basin.	2	Maintain a sediment free forebay. Clear basin of all dead vegetation
EX29	Water Treatment Plant 1	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input checked="" type="checkbox"/> Wet Swale <input type="checkbox"/> Detention Basin <input type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	<input type="checkbox"/> Easy <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Difficult	<input checked="" type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	<input type="checkbox"/> inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input checked="" type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> No Distress <input checked="" type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size: 1-48" 24" Type: HDPE	Size: 1- V-notched Type: Stone Swale	<input type="checkbox"/> No	Discharges flows from Water Treatment plant lagoons and the outlet pipe from swales located in front of the High School and Middle School parking lot. Flow discharges to a V-notched wet rip rap swale and then enters the Couchlace Pond	4	Repair displaced riprap and remove all invasive venation.
EX30	Water Treatment Plant 2	<input type="checkbox"/> None <input type="checkbox"/> Wet Pond <input type="checkbox"/> Swale <input type="checkbox"/> Detention Basin <input checked="" type="checkbox"/> Forebay <input type="checkbox"/> Other*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	<input type="checkbox"/> Easy <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Difficult	<input checked="" type="checkbox"/> None <input type="checkbox"/> Slight build up <input type="checkbox"/> Heavy build up	<input type="checkbox"/> inches	<input checked="" type="checkbox"/> None <input type="checkbox"/> Grease/Oil <input type="checkbox"/> Grass _Clippings/Compost <input type="checkbox"/> Trash/Debris <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good <input type="checkbox"/> Corroded <input type="checkbox"/> Cracked <input type="checkbox"/> Exposed Steel <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> None <input type="checkbox"/> Channeling/Depressions <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Displaced Riprap <input type="checkbox"/> Other*	<input type="checkbox"/> N/A <input type="checkbox"/> No Distress <input checked="" type="checkbox"/> Distressed <input type="checkbox"/> Sparse <input type="checkbox"/> Undesirable Woody <input type="checkbox"/> Invasive Plants	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	Size: 12" Type: HDPE	Size: V-notched Type: Riprap	<input type="checkbox"/> No	Discharges flow from Water Treatment plant parking lot. Flared End to riprap forebay covered in dead vegetation.	2	Remove sediment and dead vegetation at outlet of the pipe. Unslug riprap and fix the displacement to improve water flow.

Appendix J

Annual Reports