Town of Plainville, MA

Stormwater Management Program (SWMP): Volume 1

NPDES Phase II Small MS4 General Permit

June 2025

STORMWATER MANAGEMENT PLAN

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Town of Plainville, MA
NPDES Phase II Small MS4 General Permit

STORMWATER MANAGEMENT PLAN

Prepared by: BETA GROUP, INC.
Prepared for: Town of Plainville

June 2025

Contact Person: William O'Rourke Title: Department of Public Works Director

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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, 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.

Signature: _____ Date: _____

Printed Name: William O'Rourke Title: DPW Director

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Summary of Revisions

Revision #	Change	Date / Permit Year
0	SWMP Volumes 1 & 2 Issued (SWMP & IDDE)	June 2019 / Year 1
1	SWMP Volume 3 Issued (O&M)	June 2020 / Year 2
2	SWMP Volumes 1, 2, 3, 4 Updated. Reflects 2018/2020 List of Impaired Waters, IDDE & O&M Progress Volume 3, SWPPP Update	June 2022 / Year 4
3	SWMP Volume 1 Updated Updated Appendix A, Reflects 2022 List of Impaired Waters, IDDE & O&M Progress	June 2025 / Year 7

1.0 EXECUTIVE SUMMARY

Each community with a municipal separate storm sewer system (MS4) in designated urbanized areas must develop a Stormwater Management Program (SWMP) that will guide its activities under the 2016 MS4 general permit. This SWMP was developed by the Town of Plainville to protect water quality and reduce the discharge of pollutants from the municipality's storm sewer system to the maximum extent practicable (MEP) as described herein.

The SWMP is comprised of four volumes. This report is Volume 1 of 4.

- SWMP Volume 1 – Stormwater Management Plan
- SWMP Volume 2 – Illicit Discharge Detection and Elimination (IDDE) Plan
- SWMP Volume 3 – Good Housekeeping and Pollution Prevention
- SWMP Volume 4 – Annual Reporting

Written plans for SWMP Volumes 1 and 2 are required to be completed by the end of year 1 of the permit term (June 30, 2019). Written plan for Volume 3 is required to be completed by the end of year 2 of the permit term (June 30, 2020). Volume 4 compiles the documentation required over each reporting period (July 1 to June 30) for assembly of annual reports due September 30th each year.

All documents are available for review and comment on the Town of Plainville Stormwater (PSW) Website as follows:

PSW Website is located here:
https://www.plainville.ma.us/201/MS4-Stormwater-Management-Program
PSW Bylaw is located here:
https://www.plainville.ma.us/1417/Plainville-Stormwater-Management-Bylaws
PSW Regulations are located here:
https://ecode360.com/37925207

2.0 Introduction & Background

2.1 Stormwater Regulation

The Stormwater Phase II Final Rule was promulgated in 1999 and was the next step after the 1987 Phase I Rule in EPA's effort to preserve, protect, and improve the Nation's water resources from polluted stormwater runoff. The Phase II program expands the Phase I program by requiring additional operators of MS4s in urbanized areas and operators of small construction sites, through the use of 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 are required to seek NPDES permit coverage for those stormwater discharges.

2.2 Permit Program Background

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

2.3 Town Specific MS4 Background

Approximately 75% of the Town of Plainville is designated as urbanized area by the 2010 census. This area regulated under the MS4 permit is highlighted on the MS4 Overview Map in Appendix A. The western quarter of the Town which is not identified as urbanized, is not subject to the requirements of the permit.

Plainville has six (6) water body segments that receive flow from the MS4 with three (3) designated as a Category 5 Water and one (1) designated Category 4C Water, as listed in the Massachusetts Year 2018/2020 Integrated List of Waters. According to the 2022 Integrated Waters Listings, impairments include bacteria/pathogens, Metals and Phosphorus in the Ten Mile River, Turbidity in Cargill Pond and Ten Mile River, and Mercury in Fish Tissue for Whiting Pond. Additionally, the Permit has requirements to address Phosphorus, Bacteria and Metals based on out of state TMDLs for the Ten Mile River Watershed which covers more than half of the Town's designated MS4 area. Additional impairments and required actions are described in detail in Section 5.0 of this report.

The Town of Plainville's MS4 is composed of pipes, catch basins, manholes, culverts, swales and outfalls discharging to wetland areas, streams, lakes, ponds and rivers. A storm sewer system map is included as part of the Illicit Discharge Detection and Elimination (IDDE) report, which is located in SWMP Volume 2. The map includes the location of outfalls and identifies the impaired water bodies and the MS4 areas tributary to each. Complete mapping of the MS4 stormwater system is in progress, final structure counts will be included in this report once finalized.

Massachusetts Department of Transportation (MassDOT) has two major roadways within Plainville including Interstates 495 and Washington Street (MA Route 1). MassDOT is required to have their own NPDES MS4 Permit for their properties, which are therefore not the responsibility of the Town.

2.4 STORMWATER MANAGEMENT PROGRAM (SWMP)

The Town was previously authorized by the MS4-2003 permit which had established six minimum control measures, Best Management Practice (BMPs) and measurable goals to meet the terms and conditions of that permit. This SWMP is a modification and update to the previous plan and efforts.

The SWMP describes and details the activities and measures that will be implemented to meet the terms and conditions of the Permit. The SWMP accurately describes the Town's plans and activities. The document will be updated and/or modified during the Permit term as the permittee's activities are modified, changed or updated to meet Permit conditions during the Permit term. The main elements of the stormwater management program are (1) a public education program in order to change public behavior causing stormwater pollution, (2) an opportunity for the public to participate in and provide comments on the stormwater program, (3) a program to effectively find and eliminate illicit discharges within the MS4, (4) a program to effectively control construction site stormwater discharges to the MS4, (5) a program to ensure that stormwater from development projects entering the MS4 is adequately controlled by the construction of stormwater controls, and (6) a good housekeeping program to ensure that stormwater pollution sources on municipal properties and from municipal operations are minimized.

This document will be made available at the office of the Community & Economic Development Department and on the Town website. The Permit covers the following which are included in this SWMP Plan:

- Identification of Responsible Parties;
- Endangered and Threatened Species and Historic Properties Protection;
- Increased Discharges and Discharges to Waters with TMDLs or Subject to Additional Requirements;
- Implementation of Six Minimum Control Measures;
- Sanitary Sewer Overflow Inventory;
- Surface Drinking Water Supply Protection; and
- Annual Program Evaluation.

2.5 IMPLEMENTATION SCHEDULE AND STATUS

MS4 General Permit implementation timeline and current status is shown in Figure 2-1.

Figure 2-1: Town of Plainville MS4 Permit Compliance Schedule

CM	Task	Date Required	Complete During/By Year (Yr 1 is July 2018- June 2019) 1 2 3 4 5 6 7 8 9 10
	Notice of Intent (NOI)	9/30/2018	
	Stormwater Management Plan - SWMP (update/develop)	6/30/2019	
	SWMP update	Annually	
MINIMUM CONTROL MEASURES			
1	**Public Education and Outreach Messages**		
	Residents - 2 messages*	By yr 5, min. 1 year apart	
	Businesses & Institutions- 2 messages*	By yr 5, min. 1 year apart	
	Developers - 2 messages	By yr 5, min. 1 year apart	
	Industrial Facilities - 2 messages	By yr 5, min. 1 year apart	
2	**Public Involvement and Participation**		
	Public Review of SWMP & Annual Report	Annually	
	Opportunities for Public Participation	Annually	
3	**Illicit Discharge Detection & Elimination (IDDE)***		
	Sanitary Sewer Overflows Inventory	6/30/2019	
	System Mapping - Phase 1, including catchment delineations	6/30/2020	
	System Mapping - Phase 2	Update Annually	
	Written IDDE Program	6/30/2019	
	Outfall/Interconnects Inventory & Initial Catchment Ranking*	6/30/2019	
	Outfall/Interconnects Catchment Ranking Updates	Update Annually	
	Dry Weather Screening & Sampling	By yr 3 & every 5 yrs	
	Catchment Investigations Procedures	12/31/2019	
	Catchment Investigations Problem Outfalls	6/30/2025	
	Catchment Investigations All Outfalls	6/30/2028	
	Wet Weather Sampling	part of catchment invest.	
	Illicit Discharge Elimination (Locate & Remove)	60 Days from source ID	
	Confirmatory Dry Weather Screening	1 yr after removal	
	Training	Annually	
4	**Construction Site Runoff Control**		
	Construction Site Inspections & Enforcement Proceedures	6/30/2019	
	Site Plan Review Procedures	6/30/2019	
	Requirement for Construction Site Erosion Controls	6/30/2019	
	Construction Site Waste Control Requirements	6/30/2019	
5	**New Development and Redevelopment**		
	Update Regulations - Retention/Treatment	6/30/2022	
	Assess Street Design & Parking Guidelines	6/30/2022	
	Assess Regulations to allow Green Infrastructure	6/30/2022	
	Locate 5 Properties for Impervious Area Reduction	6/30/2022	
6	**Good Housekeeping**		
	Winter Road Maintenance Procedures	6/30/2019	
	O&M, SWPPP & Infrastructure Program	6/30/2020	
	Training for O&M and SWPPP Program Activities	Regularly / As Needed	
	Catch Basin Cleaning Schedule	6/30/2019	
	Catch Basin Cleaning	when 50% full	
	Street Sweeping*	Spring & Fall	
	Inspections for SWPPP	Quarterly	
	Inspection of Structural BMPs	Annually	
	Maintenance of Structural BMPs	as needed	
Phosphorous Source Identification Report			
	Report		
	Evaluate Properties for BMP retrofits, provide plan & schedule		
	Implement Plan		
Annual Reports		by 9/30 annually	
	*Supplement requirements for Bacteria Impairment to Ten Mile River and Phosphorus TMDL for Ten Mile River Watershed, all receiving waters.		Due 6/30/2025 Future Yr Task Complete

3.0 SMALL MS4 AUTHORIZATION

The Notice of Intent (NOI) containing the information in Appendix E of the Permit was submitted to EPA on March 29, 2019.

EPA has completed its initial review and posted the NOI on the following website: https://www.epa.gov/npdes-permits/regulated-ms4-massachusetts-communities.

The Town will be authorized to discharge under the Permit upon receipt of written notice from EPA following a 30-day public review and comment. Responses to comments received and the authorization letter will also be posted to the above website.

4.0 Identification of Responsible Parties for Implementation of Program

The implementation and coordination of this program is the responsibility of Community & Economic Development Department, specifically the Town Engineer.

SWMP Team Coordinator

Name:	Bill O'Rourke	Title:	Director	Department:	Department of Public Works
Phone:	508-699-2071	Email:	worourke@plainville.ma.us		
Responsibilities: MS4 Coordinator, IDDE Program, Good housekeeping, Reporting & Record Keeping					

SWMP Team

Name:	Bill O'Rourke	Title:	Director	Department:	Department of Public Works
Phone:	508-699-2071	Email:	mailto:worourke@plainville.ma.us		
Responsibilities: Public Education & Outreach, Public Participation, Stormwater Bylaw/Regulations, Good Housekeeping, Reporting & Record Keeping					

Name:	Kevin Baldwin	Title:	Conservation Agent	Department:	Conservation Commission
Phone:	508-695-3010	Email:	kbaldwin@plainville.ma.us		
Responsibilities: Stormwater Bylaw/Regulations, Construction Site SW Control, Post Construction SWM, Plan Review, Inspection					

5.0 Resource Protection

5.1 Endangered and Threatened Species

The Permit requires applicants to assess the impacts of their stormwater discharges and discharge related activities on federally listed endangered and threatened species and designated critical habitat.

An ESA section 7 consultation with U.S. Fish and Wildlife Service (USFWS) was provided for the March, 2019 NOI. Based on correspondence with USFWS, two federally listed endangered species of concern that may occur within the Town boundary were identified. These species include the Northern Long-eared Bat and the Plymouth Redbelly Turtle. The ESA section 7 consultation provided for the NOI determined eligibility for Endangered Species Act (ESA) under Criterion B and certified that the proposed activities under the permit, and as described in this SWMP, are not likely to adversely affect the Northern Long-eared Bat or the Plymouth Redbelly Turtle if the following project requirements are met:

- All stormwater discharges are pre-existing or previously permitted by the EPA;
- Any planned operations and maintenance work covered by this permit will only affect previously disturbed areas where stormwater controls are already installed. In these situations the chance of encountering any of the subject species is discountable;
- The project implements EPA MS4 BMPs and meets Clean Water Act and Massachusetts Water Quality Standards. Although permitted discharges may reach the environment used by these species, BMPs reduce pollutants to the extent that discharges are not known to have measurable impacts on these species or their habitat;
- No new construction or structural BMPs are proposed under this permit at this time; and
- If, during the course of the Permit term, the Town plans to install a structural BMP not identified in the NOI, the Town will re-initiate consultation with USFWS as necessary.

The aforementioned requirements are all met under this Permit and as such there is no reason to believe that the stormwater discharges, allowable non-stormwater discharges and discharge related activities will have any adverse effect on the aforementioned species or any other listed species or critical habitat. If any future stormwater projects or activities are proposed the Town acknowledges that they will have to re-initiate either informal or formal consultation with USFWS as required under the MA MS4 General Permit Appendix C: Step 2(5).

The Environmental Overview Map in Appendix A includes Natural Heritage and Endangered Species Program (NHESP) estimated habitats of rare wildlife, priority habitats of rare species, certified vernal pools and wetlands. Future stormwater projects and activities proposed within these areas will require review for compliance with the Massachusetts ESA and the Wetlands Protection Act.

5.2 Historic Properties

The MS4 Permit requires applicants to take into account the effects of Federal undertakings on historical properties that are either listed on or eligible for listing on the National Register of Historic Places. The NOI identified eligibility for National Historic Preservation Act under Criteria A. The proposed BMPs outlined in this program have no potential to affect any historic properties because no changes to the existing MS4 infrastructure are being proposed at this time.

The Environmental Overview Map in Appendix A includes the Massachusetts Historical Commission's (MHC) inventory of historic points and areas. Future stormwater projects and activities proposed in and around these properties should be referenced against this map as well as the state register. The state

register provides an up to date comprehensive listing of buildings, structures objects and sites that have received local, state or national designations based on their historical or archaeological significance.

5.3 Summary of Receiving Waters and Impairments

Surface Water Quality Standards (SWQS) are provided by the Massachusetts Department of Environmental Protection (DEP). They are determined for a water body's designated use. The SWQS designate the uses that surface waters are protected for, and an assessment is performed to determine if the designated uses are met by the water bodies. The use is not assessed in instances when there is insufficient data or information. Assessment information is maintained by the DEP in the Water Body System (WBS) database, which is updated every two years. Designated uses include:

- Aquatic Life
- Fish Consumption
- Primary Contact Recreation (Swimming)
- Secondary Contact Recreation (Boating)
- Aesthetics

The aquatic life use is supported when suitable habitat is available in the water body to sustain a native and diverse aquatic environment. Impairments to the aquatic life use can result from anthropogenic sources of pollution. Organic enrichment, flow and habitat alteration, sedimentation (habitat destruction), and whole effluent toxicity are potential causes of water body impairment for this use.

The fish consumption use is met when pollutant concentrations are acceptable for edible marketable fish or shellfish or for the use of recreationally caught fish or other aquatic life for human ingestion.

The primary contact recreational use is any activity that involves prolonged contact with the water with a significant risk of ingestion. Activities include swimming, diving, water skiing, and wading, among others. The secondary contact recreational use includes any activity with incidental water contact including boating, fishing, and other activities.

The aesthetic use is supported when water bodies do not contain objectionable deposits, floating debris, scum, or other matter, which produces offensive odors, colors, taste or turbidity or produces noxious aquatic life.

Total Maximum Daily Loads (TMDLs) are the amount of a pollutant allowed to be discharged into a water body per day to assure attainment of the SWQS. The sum total of all pollutant load allocations cannot exceed the total maximum allowable pollutant load calculated for the water body.

Impaired water bodies are those that are not expected to meet the SWQS due to specific pollutants or stressors. However, numerical data is not available for every pollution indicator, so best available guidance in the literature may be applied. Not all water bodies are assessed; many small and/or unnamed water bodies are currently not assessed.

According to the Massachusetts Year 2022 Integrated List of Waters, there are five categories for water quality assessment.

- Category 1 — Waters attaining all designated uses
- Category 2 — Attaining some uses; other uses not assessed
- Category 3 — No uses assessed
- Category 4A — TMDL is completed
- Category 4B — Impairment controlled by alternative pollution control requirements

- Category 4C — Impairment not caused by a pollutant – TMDL not required
- Category 5 — Waters requiring a TMDL (i.e. the 303(d) List)

Within the designated MS4 area, Plainville has six water body segments that receive flow from the MS4 with that are on the Massachusetts Integrated List of Waters. Table 5-1 summarizes these water bodies and the associated impairments and TMDLs requiring action as described in the Permit and this SWMP based on the Massachusetts Year 2022 Integrated List of Waters.

These impaired water bodies and the MS4 areas tributary to them can be found on the storm sewer system map included as part of the IDDE report, which is located in SWMP Volume 2.

Appendix H of the Permit identifies specific requirements for water bodies that are Water Quality Limited in five categories of impairments (Nitrogen, Phosphorus, Bacteria/Pathogens, Chloride and Solids, Metals or Oil and Grease). These requirements apply to water bodies and their tributaries that do not meet applicable water quality standards, including but not limited to waters listed in category 5 and waters without an EPA approved TMDL.

Plainville WQLW Impairment(s)
Phosphorus
Bacteria/Pathogens
Turbidity & Metals

Appendix F of the Permit identifies specific requirements for discharges to impaired waters or their tributaries with an in or out of state approved TMDL.

Out of State TMDL(s)
Ten Mile River TMDL - Phosphorus
Ten Mile River TMDL – Bacteria/Pathogen
Ten Mile River TMDL – Metals

5.4 Requirements to Address Impairments

The requirements specific to impairments and TMDLs of Plainville's receiving waters are summarized as follows:

Table 5-1: Town Impaired Water Bodies

Name	Category	Segment ID	Impairment Cause (EPA TMDL No.)
Cargill Pond	5	MA52004	Turbidity (WQLW)
Whiting Pond	4A	MA52042	Mercury in Fish Tissue (33880)
Turnpike Lake	4C	MA62198	Fanwort Non-native Aquatic Plants
Lake Mirimichi	4C	MA62118	Fanwort
Ten Mile River	5	MA52-01	Metals
Ten Mile River	5	MA52-02	Escherichia Coli (WQLW) Fecal Coliform (WQLW) Metals
Ten Mile River	-	Watershed	Phosphorus (TMDL for Ten Mile River Watershed)

NOTE: Based on the Massachusetts Year 2022 Integrated List of Waters. Certain Pollutants (in BOLD) result in Total Maximum Daily Load (TMDL) or Water Quality Limited Water Bodies (WQLW) requirements defined in Appendix H & F of the Permit.

Phosphorus WQLW and Out of State TMDL Requirements
Applicable Receiving Waters: Ten Mile River (MA52-02), Out of State Ten Mile River in Rhode Island whose watershed includes: Upper Ten Mile River, Lower Ten Mile River, Central Pond, Omega Pond and Turner Reservoir

Requirement: Any catchment area that discharges to a water body impaired for phosphorus must comply with enhanced BMPs in addition to the requirements to reduce pollutants to the maximum extent practicable outlined in Section 2.3 of the Permit and covered in Section 7.0 of this report. Required additional and enhanced BMPs include:

Public education and outreach: Supplement Residential and Business/Commercial/Institution program with annual timed messages on specific topics. Distribute an annual message in the spring (March/April/May) timeframe that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release fertilizers. Distribute an annual message in the summer (June/July) timeframe encouraging the proper management of pet waste, including noting any existing ordinances where appropriate. Distribute an annual message in the fall (August/September/October) timeframe encouraging the proper disposal of leaf litter. Deliver an annual message on each of these topics, unless the Town determines that one or more of these issues is not a significant contributor of phosphorus to discharges from the MS4 and the Town retains documentation of this finding in the SWMP.

Stormwater Management in New Development and Redevelopment: Adoption/amendment of the Town's ordinance or other regulatory mechanism shall include a requirement that new

development and redevelopment stormwater management BMPs be optimized for phosphorus removal; retrofit inventory and priority ranking under 2.3.6.1.b shall include consideration of BMPs that infiltrate stormwater where feasible.

Good Housekeeping and Pollution Prevention for Permittee Owned Operations: Permittee Owned Operations: Establish procedures to properly manage grass cuttings and leaf litter on permittee property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces; increased street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year, once in the spring (following winter activities such as sanding) and at least once in the fall (Sept 1 – Dec 1; following leaf fall).

Phosphorus Source Identification Report: Within four years of the Permit effective date the Town shall complete a Phosphorus Source Identification Report. The report shall include the following elements:

1. Calculation of total MS4 area draining to the water quality limited receiving water segments or their tributaries, incorporating updated mapping of the MS4 and catchment delineations produced pursuant to part 2.3.4.6;
2. All screening and monitoring results pursuant to part 2.3.4.7.d., targeting the receiving water segment(s);
3. Impervious area and Directly Connected Impervious Area (DCIA) for the target catchment;
4. Identification, delineation and prioritization of potential catchments with high phosphorus loading; and
5. Identification of potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment, including the removal of impervious area.

The final Phosphorus Source Identification Report shall be submitted to EPA as part of the year 4 annual report.

Potential Structural BMPs: Within five years of the permit effective date, the permittee shall evaluate all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMP installation under permit part 2.3.6.d.ii or identified in the Phosphorus Source Identification Report that are within the drainage area of the water quality limited water or its tributaries. The evaluation shall include:

1. The next planned infrastructure, resurfacing or redevelopment activity planned for the property (if applicable) OR planned retrofit date;
2. The estimated cost of redevelopment or retrofit BMPs; and
3. The engineering and regulatory feasibility of redevelopment or retrofit BMPs.

The Town shall provide a listing of planned structural BMPs and a plan and schedule for implementation in the year 5 annual report. The Town shall plan and install a minimum of one structural BMP as a demonstration project within the drainage area of the water quality limited water or its tributaries within six years of the permit effective date. The demonstration project shall be installed targeting a catchment with high phosphorus load potential. The Town shall install the remainder of the structural BMPs in accordance with the plan and schedule provided in the year 5 annual report.

Any structural BMPs installed in the regulated area by the permittee or its agents shall be tracked and the permittee shall estimate the phosphorus removal by the BMP consistent with Attachment 3 to Appendix F. The permittee shall 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 by the BMP in each annual report.

Status: The Town has incorporated these enhancements into the BMPs in Section 7.0 of this report.

Bacteria and Pathogen WQLW and Out of State TMDL Requirements

Applicable Receiving Waters: Ten Mile River (MA52-02), and Out-of-State Ten Mile River in Rhode Island whose watershed includes: Upper Ten Mile River, Lower Ten Mile River, and Omega Pond

Requirement: Any catchment area that discharges to a water body impaired for bacteria or pathogens must comply with enhanced BMPs in addition to the requirements to reduce pollutants to the maximum extent practicable outlined in Section 2.3 of the Permit and covered in Section 7.0 of this report. Required enhancement of BMPs include:

Public Education – Supplement residential program with an annual message encouraging proper management of pet waste, including noting any existing ordinances where appropriate. Distribute education materials to dog owners at the time of licensing. Education materials shall describe the detrimental impacts of improper management of pet waste, requirements for waste collection and disposal, and penalties of non-compliance. Provide information to owners of septic systems about proper maintenance.

Illicit Discharge – Automatic designation of either "Problem Catchment" or "HIGH Priority" in the implementation of the IDDE program.

Status: The Town has incorporated these enhancements into the BMPs in Section 7.0 of this report.

Solids (turbidity) and Metals WQLW and Metals Out of State TMDL Requirements

Applicable Receiving Waters: Cargill Pond (MA52004), Ten Mile River (MA52-01), Ten Mile River (MA52-02) and Out-of-State Ten Mile River in Rhode Island whose watershed includes: Upper Ten Mile River, Lower Ten Mile River, Central Pond, Omega Pond and Turner Reservoir.

Requirement: Any catchment area that discharges to a water body impaired for solids, oil and grease or metals must comply with enhanced BMPs in addition to the requirements to reduce pollutants to the maximum extent practicable outlined in Section 2.3 of the permit and covered in Section 7.0 of this report.

Stormwater Management in New Development and Redevelopment: stormwater management systems designed on commercial and industrial land use area draining to the water quality limited waterbody shall incorporate designs that allow for shutdown and containment where appropriate to isolate the system in the event of an emergency spill or other unexpected event. EPA also encourages the permittee to require any stormwater management system designed to infiltrate stormwater on commercial or industrial sites to provide the level of pollutant removal equal to or greater than the level of pollutant removal provided through the use of biofiltration of the same volume of runoff to be infiltrated, prior to infiltration.

Good House Keeping and Pollution Prevention for Permittee Owned Operations: increased street sweeping frequency of all municipal owned streets and parking lots to a schedule determined by the permittee to target areas with potential for high pollutant loads. This may include, but is not limited to, increased street sweeping frequency in commercial areas and high

density residential areas, or drainage areas with a large amount of impervious area. Prioritize inspection and maintenance for catch basins to ensure that no sump shall be more than 50 percent full. Clean catch basins more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings. Each annual report shall include the street sweeping schedule determined by the permittee to target high pollutant loads.

Status: The Town has incorporated these enhancements into the BMPs in Section 7.0 of this report.

Mercury TMDL Requirements

Applicable Receiving Waters: Whiting Pond (MA52042)

Requirement: No requirements related to this TMDL are imposed on MS4 discharges under this part. The Northeast Regional Mercury TDML does not specify a wasteload allocation or other requirements either individually or categorically for MS4 discharges and specifies that load reductions are to be achieved though reduction in atmospheric deposition sources.

If it is identified that an MS4 discharge is causing or contributing to such impairment to an extent that cannot be explained by atmospheric deposition, the Town shall comply with the requirements outlined in part 2.1.1.d and 2.3.4 of the Permit.

Status: No further action required at this time.

Relief of Requirements to Address Impairments

The permit states that at any time during the permit term the permittee may be relieved of additional requirements in Appendix F and H as follows:

TMDLs (Appendix F):

a. The permittee is relieved of its additional requirements as of the date when the following conditions are met:
    i. The applicable TMDL has been modified, revised or withdrawn and EPA has approved a new TMDL applicable for the receiving water that indicates that no additional stormwater controls for the pollutant causing the impairment are necessary for the permittee's discharge based on wasteload allocations in the newly approved TMDL.
b. In such a case, the permittee shall document the date of the approved TMDL in its SWMP and is relieved of any remaining requirements of Appendix F as of that date and the permittee shall comply with the following:
    i. The permittee shall identify in its SWMP all activities implemented in accordance with the requirements of Appendix F to date to reduce the pollutant load in their discharges including implementation schedules for non-structural BMPs and any maintenance requirements for structural BMPs.
    ii. The permittee shall continue to implement all requirements of Appendix F required to be implemented prior to the date of the newly approved TMDL, including ongoing implementation of identified non-structural BMPs and routine maintenance and replacement of all structural BMPs in accordance with manufacturer or design specifications.

Water Quality Limited Waterbodies (Appendix H):

a. The permittee is relieved of its additional requirements as of the date when one of the following criteria are met:

    i. The receiving water and all downstream segments are determined to no longer be impaired due to the named pollutant by MassDEP and EPA concurs with such determination.

    ii. An EPA approved TMDL for the receiving water or downstream receiving water indicates that no additional stormwater controls for the control of said pollutant are necessary for the permittee's discharge based on wasteload allocations as part of the approved TMDL.

b. In such a case, the permittee shall document the date of the determination provided for in the paragraph above or the approved TMDL date in its SWMP and is relieved of any additional requirements of Appendix H as of the applicable date and the permittee shall comply with the following:

    i. The permittee shall identify in its SWMP all activities that have been implemented in accordance with the requirements of Appendix H. as of the applicable date to reduce the pollutant in its discharges, including implementation schedules for non-structural BMPs and any maintenance requirements for structural BMPs

The permittee shall continue to implement all requirements of Appendix H required to be done prior to the date of determination or the date of the approved TMDL, including ongoing implementation of identified nonstructural BMPs and routine maintenance and replacement of all structural BMPs in accordance with manufacturer or design specifications.

6.0 DISCHARGES

EPA has written the Permit to meet Massachusetts state water quality standards. Antidegradation provisions at 314 CMR § 4.04 are part of the current EPA-approved water quality standards for Massachusetts. As such, the Permit requires compliance with 314 CMR § 4.04 and increased discharges from MS4s remain subject to 314 CMR § 4.04.

6.1 INCREASED DISCHARGES AUTHORIZATION

The Massachusetts Stormwater Management regulations, current site development review practices and new stormwater regulations drafted by the Town prohibit increased discharges. They all require that any new development or re-development (including new impervious area) is subject to the Post-Construction Stormwater Management requirements, which include infiltration standards that are intended to mimic pre-development conditions. New impervious areas require the implementation of best management practices (BMPs). In a case where these conditions cannot be met, authorization for an increased discharge may be required.

Several water bodies in Town are identified as impaired waters on the Massachusetts Year 2018/2020 Integrated List of Waters. As discussed in Section 5.4, this SWMP incorporates the required actions outlined in Appendix F and H of the Permit aimed at decreasing pollutants causing impairments to those water bodies. These actions combined with the implementation of post construction stormwater requirements will decrease the overall pollutant loading to all receiving waters over time. Town compliance with these requirements of the Permit, including all reporting and documentation, demonstrates no net increase in pollutant loading from the MS4.

6.2 DISCHARGES TO TMDL OR WATER QUALITY LIMITED WATERS

As previously noted, portions of the MS4 discharges in Town are to either TMDL or Water Quality Limited Waters. Table 5-1 highlights the TMDL(s) and/or Water Quality Limitations for each of Plainville's listed water bodies. The MS4 area tributary to each water body is subject to the TMDL and/or Water Quality Limited Waters requirements (described in Section 5.4) based that water body's stormwater related impairments. A map of the MS4 discharge locations (i.e. outfalls and interconnections), the MS4 area tributary to each receiving water and the TMDL and/or Water Quality Limitation triggering additional requirements to reduce pollutant loading and protect water quality can be found in the IDDE report, which is located in SWMP Volume 2.

7.0 Implementation of Minimum Control Measures

The 2016 MS4 Permit states that the permittee shall continue to implement their 2003 MS4 SWMP while updating it pursuant to meet the requirements of the new permit. Upon adoption, this new SWMP supersedes the 2003 SWMP and all related deadlines and expectations. As indicated in the 2003 and 2016 MS4 permits, the permittee shall reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP) using these 6 minimum control measures (MCM):

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

7.1 Public Education and Outreach (MCM 1)

The DPW Director is responsible for ensuring the implementation of the public education and outreach program including measurable goals and reporting. Assisting departments for particular BMPs are listed below.

Public education and outreach materials can be found on the PSW Website (https://www.plainville.ma.us/201/MS4-Stormwater-Management-Program).

Reporting forms and logs to document public education and outreach efforts can be found in Appendix B. Requirements and documentation measures for specific BMPs are identified below and annual reporting requirements are described in Section 10.

Objective and Requirements

The main objective of this control measure is to implement an education program that includes education goals based on stormwater issues of significance within the MS4 area. The ultimate objective of a public education program is to increase knowledge and change behavior of the public so that pollutants in stormwater are reduced.

The minimum requirements specified in section 2.3.2 of the Permit are as follows:

1. Distribute at a minimum two (2) educational messages over the five (5) year Permit term to each of the following audiences: (1) residents, (2) businesses, institutions (churches, hospitals), and commercial facilities, (3) developers (construction), and (4) industrial facilities. Message shall focus on topics most relevant to the community.
2. Document in each annual report the message for each audience, method of distribution, the measures/methods used to assess the effectiveness of the messages, and the method/measures used to assess the overall effectiveness of the education program.
3. Comply with enhanced requirements related to WQLW Impairment Requirements for nitrogen and phosphorous which includes:
    - Supplement Residential and Business/Commercial/Institution program with annual timed messages on specific topics.

In Plainville, this applies to the Ten Mile River (MA52-02) and Out-of-State Ten Mile River in Rhode Island which flows through the following watersheds: Upper Ten Mile River, Lower Ten Mile River, Central Pond, Omega Pond and Turner Reservoir.

4. Comply with enhanced requirements related to approved TMDL for bacteria and pathogens which include:
    - Supplementing residential education program with an annual message encouraging proper management of pet waste.
    - Distributing education materials to dog owners at the time of licensing.
    - Providing information to owners of septic systems about proper maintenance.

    In Plainville, this applies to Ten Mile River (MA52-02), and Out-of-State Ten Mile River in Rhode Island which flows through the following watersheds: Upper Ten Mile River, Lower Ten Mile River, and Omega Pond.

Best Management Practices and Measurable Goals

BMP-1.1. Educate Residents I

Distribute first education message targeted to residents within the Town's MS4 area.

Media/Location:	Mailing, website, event, phone contact, site visit, and/or other means.
Responsible Party:	DPW Director
Measurable Goal(s):	• Distribute message to all residents within the Town's MS4 area. • Record number of hard copies distributed, locations posted, attendance, webpage hits, etc. as applicable. • Completed within 1 year of effective date of Permit.

BMP-1.2. Educate Businesses, Institutions, and Commercial Facilities I

Distribute first education message targeted to business, institution, and commercial facility property owners within the Town's MS4 area.

Media/Location:	Mailing, website, event, phone contact, site visit, and/or other means.
Responsible Party:	DPW Director
Measurable Goal(s):	• Distribute message to all business, institution, and commercial facility property owners within the Town's MS4 area. • Record number of hard copies distributed, locations posted, attendance, webpage hits, etc. as applicable. • Completed within 1 year of effective date of Permit.

BMP-1.3. Educate Developers and Contractors I

Distribute first education message targeted to developers and contractors within the Town's MS4 area.

Media/Location:	Mailing, website, event, phone contact, site visit, and/or other means.
Responsible Party:	DPW Director
Measurable Goal(s):	• Distribute message to all developers and contractors with active projects within the Town's MS4 area. • Record number of hard copies distributed, locations posted, attendance, webpage hits, etc. as applicable. • Completed within 4 years of effective date of Permit.

BMP-1.4. Educate Industrial Facility Owners I

Distribute first education message targeted to industrial property owners within the Town's MS4 area.

Media/Location:	Mailing, website, event, phone contact, site visit, and/or other means.
Responsible Party:	DPW Director
Measurable Goal(s):	• Distribute message to all industrial property owners within the Town's MS4 area. • Record number of hard copies distributed, locations posted, attendance, webpage hits, etc. as applicable. • Completed within 1 year of effective date of Permit.

BMP-1.5. Educate Residents II

Distribute second education message targeted to residents within the Town's MS4 area.

Media/Location:	Mailing, website, event, phone contact, site visit, and/or other means.
Responsible Party:	DPW Director
Measurable Goal(s):	• Distribute message to all residents within the Town's MS4 area. • Record number of hard copies distributed, locations posted, attendance, webpage hits, etc. as applicable. • Completed within 5 years of effective date of Permit.

BMP-1.6. Educate Businesses, Institutions, and Commercial Facilities II
Distribute second education message targeted to business, institution, and commercial facility property owners within the Town's MS4 area.

Media/Location:	Mailing, website, event, phone contact, site visit, and/or other means.
Responsible Party:	DPW Director
Measurable Goal(s):	• Distribute message to all business, institution, and commercial facility property owners within the Town's MS4 area. • Record number of hard copies distributed, locations posted, attendance, webpage hits, etc. as applicable. • Completed within 5 years of effective date of Permit.

BMP-1.7. Educate Developers and Contractors II
Distribute second education message targeted to developers and contractors within the Town's MS4 area.

Media/Location:	Mailing, website, event, phone contact, site visit, and/or other means.
Responsible Party:	DPW Director
Measurable Goal(s):	• Distribute message to all developers and contractors with active projects within the Town's MS4 area. • Record number of hard copies distributed, locations posted, attendance, webpage hits, etc. as applicable. • Completed within 5 years of effective date of Permit

BMP-1.8. Educate Industrial Facility Owners II
Distribute second education message targeted to industrial property owners within the Town's MS4 area.

Media/Location:	Mailing, website, event, phone contact, site visit, and/or other means.
Responsible Party:	DPW Director
Measurable Goal(s):	• Distribute message to all industrial property owners within the Town's MS4 area. • Record number of hard copies distributed, locations posted, attendance, webpage hits, etc. as applicable. • Completed within 5 years of effective date of Permit.

Appendix F of the Permit requires implementation of the following BMPs due to bacteria impairments:

BMP-1.9. Educate Residents Annually on Proper Management of Pet Waste with Dog License Applications

Distribute annual education message targeted to pet owners in watershed areas with bacteria/pathogens TMDL or impairments.

Media/Location:	Brochures or pamphlets distributed with dog license
Responsible Party:	DPW Director & Town Clerk
Measurable Goal(s):	• Distributed message to all residents when they (re)apply for a dog license. • Record number of hard copies distributed and locations posted.

BMP-1.10. Educate Residents Annually on Proper Management of Septic Systems

Distribute annual education message targeted to septic system owners in watershed areas with bacteria/pathogens TMDL or impairments.

Media/Location:	Brochures or pamphlets by mail and posted to website
Responsible Party:	Board of Health
Measurable Goal(s):	• Distributed message to all residents who have septic systems. • Record number of hard copies distributed and locations posted.

Appendix H of the Permit requires implementation of the following BMPs due to a nitrogen, phosphorous or bacteria/pathogens TMDL or impairment:

BMP-1.11. Educate Residents, Businesses, Institutions, and Commercial Audiences Annually on Proper Lawn Care

Distribute annual spring education message regarding proper use and disposal of lawn clippings and proper use of slow-release fertilizers targeted to Residents, Businesses, Institutions, and Commercial Facilities in watershed areas with a nitrogen or phosphorous TMDL or impairment.

Media/Location:	Brochures or pamphlets by mail and posted to website
Responsible Party:	DPW Director
Measurable Goal(s):	• Distributed message to all residents in watershed areas with a nitrogen and/or phosphorous TMDL or impairment in the spring (April/May – nitrogen or March/April - phosphorous). • Record number of hard copies distributed and locations posted.

BMP-1.12. Educate Residents, Businesses, Institutions, and Commercial Audiences Annually on Proper Management of Pet Waste

Distribute annual summer education message regarding proper management of pet waste with regulation cited targeted to Residents, Businesses, Institutions, and Commercial Facilities in watershed areas with a bacteria/pathogens TMDL or impairment.

Media/Location:	Brochures or pamphlets posted to website
Responsible Party:	DPW Director
Measurable Goal(s):	• Distributed message in watershed areas with a bacteria/pathogens TMDL or impairment in the summer (June/July). • Record locations posted and number of hits on website.

BMP-1.13. Educate Residents, Businesses, Institutions, and Commercial Audiences Annually on Proper Disposal of Leaf Litter

Distribute annual fall education message targeted to Residents, Businesses, Institutions, and Commercial Facilities in watershed areas with a nitrogen or phosphorous TMDL or impairment.

Media/Location:	Brochures or pamphlets by mail and posted to website
Responsible Party:	DPW Director
Measurable Goal(s):	• Distributed message in watershed areas with a nitrogen and/or phosphorous TMDL or impairment in the Fall (Aug/Sept/Oct). • Record number of hard copies distributed and locations posted.

7.2 PUBLIC INVOLVEMENT AND PARTICIPATION (MCM 2)

The Community & Economic Development Department is responsible for ensuring the implementation of proposed BMPs including measurable goals and reporting. Assisting departments for particular BMPs are listed below.

Reporting forms and logs to document public involvement and participation efforts can be found in Appendix B. Web Links, posting locations, requirements and documentation measures for specific BMPs are identified below and annual reporting requirements are described in Section 10.

Objective and Requirements

The main objective of this control measure is for the Town to provide opportunities to engage the public to participate in the review and implementation of the Town's Stormwater Management Program (SWMP).

The minimum requirements specified in section 2.3.3 of the Permit are as follows:

1. Public involvement activities shall comply with state notice requirements (MGL Chapter 30A, Section 18-25 effective 7/10/2010). The SWMP and all annual reports shall be available to the public.

2. Annually provide the public an opportunity to participate in the review and implementation of the SWMP. Public participation opportunities may include, but are not limited to, websites; hotlines; clean-up teams; monitoring teams; or an advisory committee.

3. Report on the activities undertaken to provide public participation opportunities including compliance with state public notice requirements referenced above.

Best Management Practices and Measurable Goals

BMP-2.1. Public Review of Stormwater Management Program
Make SWMP available to review by Town residents.

Media/Location:	PSW Website and at Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Provide opportunity for residents to view the SWMP online and provide public access to the printed document. • Record web page hits and requests to view printed document. • Update posted plan annually.

BMP-2.2. Public Participation and Comment of Stormwater Management Program
Record and review comments received by residents upon review of SWMP.

Media/Location:	PSW Website and at Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Keep a log of comments for review and consideration when annually updating the SWMP. • Include comment log in the annual report.

BMP-2.3. Public Participation Activities
Public participation activities may include meetings, cleanup teams, monitoring teams, hazmat drop off events, watershed organization events, hotlines, or an advisory committee.

Media/Location:	Town Web page News and Announcements https://www.plainville.ma.us/CivicAlerts.aspx?CID=1
Responsible Party:	DPW Director
Measurable Goal(s):	• Advertise at least one activity per year. • Record method of advertising. Record the number of attendees and/or quantity of cleanup achieved. • Record compliance with state public notice requirements where applicable.

7.3 Illicit Discharge Detection and Elimination (IDDE) Program (MCM 3)

The Department of Public Works is responsible for ensuring the implementation of proposed BMPs including measurable goals and reporting. Assisting departments for particular BMPs are listed below.

Reporting forms and logs to document IDDE efforts can be found in Appendix B and are expanded on in SWMP Volume 2. Requirements and documentation measures for specific BMPs are identified below and annual reporting requirements are described in Section 10.

Objective and Requirements

The main objective of this control measure is to systematically find and eliminate illicit sources of non-stormwater discharge to its municipal storm sewer system and implement procedures to prevent such discharges.

The minimum requirements specified in section 2.3.4 of the Permit are as follows:

1. Develop and implement a regulatory mechanism to provide adequate legal authority to the Town to implement and enforce the Illicit Discharge Detection and Elimination (IDDE) Program.
2. Develop an SSO inventory covering the previous five (5) years within one (1) year of the effective date of the Permit.
3. Update storm sewer system map for Phase I mapping requirements within two (2) years of the effective date of the Permit, annually update the mapping as new information is discovered, and develop a system wide storm sewer system map for Phase II mapping requirements within ten (10) years of Permit effective date.
4. Develop an IDDE Program within one (1) year of the effective date of the Permit.
5. Develop an initial inventory and a priority ranking of outfalls/interconnections within one (1) year of the effective date of the Permit and update annually.
6. Develop a catchment investigation program within 18 months of the effective date of the Permit and implement according to the IDDE program.
7. Record and report in each annual report about the IDDE program progress and overall effectiveness.
8. Ongoing screening plan of outfalls once every five years.
9. Provide training to employees involved in the IDDE program annually. The training frequency and type shall be reported in the annual report.
10. Comply with enhanced requirements as specified in the appendix F and H of the Permit regarding Impaired Waters and TMDL requirements as follows:
    - Automatic designation of either “Problem Catchment” or “High Priority” in the implementation of the IDDE program for catchments discharging to waters impaired for bacteria. In Plainville, this includes Ten Mile River (MA52-02), and Out-of-State Ten Mile River Watershed.
11. Comply with additional requirements specified in Section 3.0 of the Permit for discharges to surface drinking water supplies and their tributaries including the following:
    - Automatic designation of “High Priority” in the implementation of the IDDE program for catchments discharging to public surface drinking water supply sources and their tributaries.

Best Management Practices and Measurable Goals

BMP-3.1. IDDE Legal Authority

The IDDE Legal Authority is identified as the Department of Public Works, its employee or designated agents.

Media/Location:	PSW Bylaw/Regulations
Responsible Party:	Board of Health
Measurable Goal(s):	• Bylaw Adopted (June 2019)

BMP-3.2. Sanitary Sewer Overflow (SSO) Inventory

Develop and maintain a SSO inventory that covers the previous five years in accordance with Permit conditions.

Media/Location:	Appendix G of the SWMP Volume 2: IDDE Plan. PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Inventory completed (Year 1). • In the event of an overflow or bypass, provide notification within 24 hours to MassDEP & EPA followed by a written report within 5 calendar days. • Update annually.

BMP-3.3. Storm Sewer System Map

Update storm sewer system map in accordance with Permit mapping requirements.

Media/Location:	Appendix A of the SWMP Volume 2: IDDE Plan. PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Updated map within 1 year of effective date of Permit for Phase 1 mapping. • Update annually as new/corrected information is discovered. • Complete full system map (Phase 2) within 10 years of effective date of Permit

BMP-3.4. Written IDDE program
Develop/update written IDDE program.

Media/Location:	SWMP Volume 2: IDDE Plan. PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Written program completed (Year 1). • Update as required.

BMP-3.5. Implement IDDE Program
Implement catchment investigations according to IDDE program and Permit conditions and based on the outfall/interconnection inventory, initial ranking and dry weather outfall and interconnection screening and sampling results.

Media/Location:	SWMP Volume 2: IDDE Plan. PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Conduct 100% of catchment investigations for "Problem" outfalls within 7 years of effective date of Permit. • Conduct 100% of catchment investigations for all outfalls within 10 years of effective date of Permit. • Report results and progress in annual report.

BMP-3.6. Employee Training
Provide annual training on IDDE implementation in accordance with IDDE program.

Media/Location:	SWMP Volume 2: IDDE Plan. PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Conduct annual IDDE training. • Provide record of training and attendance in annual report.

BMP-3.7. Dry Weather Screening and Sampling

Conduct dry outfall screening and sampling of outfalls/interconnections in MS4 area in accordance IDDE program.

Media/Location:	SWMP Volume 2: IDDE Plan. PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Completed dry outfall screening and sampling within 2 years of effective date of Permit. • Reported results and progress in annual report.

BMP-3.8. Wet Weather Sampling of Outfalls

Conduct wet weather outfall sampling in accordance with IDDE program. This sampling can be done upon completion of any dry weather investigation but must be completed before the catchment investigation is marked as complete.

Media/Location:	SWMP Volume 2: IDDE Plan. PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Completed wet weather outfall sampling of "Problem" outfalls within 7 years of effective date of Permit. • Complete wet weather outfall sampling of all outfalls within 10 years of effective date of Permit. • Report results and progress in annual report.

BMP-3.9. Ongoing Screening

Conduct ongoing dry weather and wet weather screening and sampling (as necessary) of outfalls in accordance with IDDE program.

Media/Location:	SWMP Volume 2: IDDE Plan. PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Complete ongoing outfall screening within 5 years of completing catchment investigations. • Report results and progress in annual report.

7.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL (MCM 4)

The Planning Board and the Board of Health are responsible for ensuring the implementation of proposed BMPs and measurable goals. Assisting departments for particular BMPs are listed below.

Regulations, requirements and guidance on construction site stormwater runoff control can be found on the PSW Website and at Town Hall. Web Links and locations for specific BMPs identified below are listed in the Executive Summary.

Reporting forms and logs to document these efforts can be found in Appendix B. Reporting measures for specific BMPs are identified below and reporting requirements are described in Section 10.

Objective and Requirements

The objective of this construction stormwater runoff control program is to minimize or eliminate erosion and maintain sediments on site so that it is not transported in stormwater and allowed to discharge to a water of the U.S through the Town's MS4.

The minimum Permit requirements in accordance to MS4-2016 section 2.3.5 are as follow:

1. Implement and enforce a program to reduce pollutants in stormwater runoff discharge to the MS4 from all construction activities that result in land disturbance greater than or equal to one acre within regulated area.
2. Develop and implement a construction site runoff control program with written procedures and a regulatory mechanism for site plan review and enforcement within one (1) year from effective date of the Permit. Program must include the following elements for sediment and erosion control:
    a. Regulatory mechanism that requires the use of sediment and erosion control practices at construction sites including controls for other wastes on construction sites;
    b. Written procedures for site inspection and enforcement;
    c. Sediment and erosion control requirements for construction site operators performing land disturbance activities;
    d. Requirements to control waste from construction sites; and
    e. Written procedures for site plan review and inspection and enforcement.
3. Comply with additional requirements for discharges to surface drinking water supplies and their tributaries include the following:
    - Pretreatment and spill control measures shall be provided to the extent feasible to stormwater discharges to public drinking water supply sources or their tributaries.
    - Direct discharges to Class A waters should be avoided to the extent feasible.

Best Management Practices and Measurable Goals

BMP-4.1. Sediment and Erosion Control Regulation
A bylaw/regulation is necessary to meet Permit requirements for sediment and erosion control practices.

Media/Location:	Town Bylaws • Division 2: Zoning Bylaws, CH 500-39. Site Plan Review • Division 4: Planning Board Regulations, CH 540 Subdivision of Land • Division 5: Board of Health Regulations, CH 680 Public and Environmental Health • Division 7: Conservation Commission Regulations, CH 900 Wetland Protection Regulations
Responsible Party:	Planning Board, Board of Health, Conservation Commission
Measurable Goal(s):	• Regulation Adopted (September 2019). • Implement for 100% of applicable projects.

BMP-4.2. Site Inspections and Enforcement of Erosion and Sediment Control Measures.
Provide/update written requirements for site inspections and enforcement procedures.

Media/Location:	PSW Website & Town Hall
Responsible Party:	Planning Board and Board of Health
Measurable Goal(s):	• Written procedures completed (Year 1). • Implement for 100% of applicable projects. • Conduct construction site inspections consistent with the written procedures. Keep records of inspections.

BMP-4.3. Site Plan Review
Provide/update written procedures for site plan review and begin implementation.

Media/Location:	PSW Website & Town Hall
Responsible Party:	Planning Board and Board of Health
Measurable Goal(s):	• Written procedures completed (Year 1). • Implement for 100% of applicable projects. • Keep records of projects submitted for site plan review.

BMP-4.4. Construction Site Operators Erosion and Sediment Control Program

Provide/update written requirements for construction operators to implement a sediment and erosion control program.

Media/Location:	PSW Website & Town Hall
Responsible Party:	Planning Board and Board of Health
Measurable Goal(s):	• Written procedures completed (Year 1). • Implement for 100% of applicable projects. • During construction site inspections review for erosion controls and make note of compliance status. Keep records of inspections.

BMP-4.5. Construction Waste Control

Adopt requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes.

Media/Location:	PSW Website & Town Hall
Responsible Party:	Planning Board and Board of Health
Measurable Goal(s):	• Written procedures completed (Year 1). • Implement for 100% of applicable projects. • During construction site inspections review for waste control and make note of compliance status. Keep records of inspections.

7.5 Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management) (MCM 5)

The Department of Public Works, Planning Board, and Department of Health are responsible for ensuring the implementation of proposed BMPs and measurable goals. Assisting departments for particular BMPs are listed below.

Regulations, requirements and guidance on post construction stormwater management can be found on the Town's stormwater webpage https://www.plainville.ma.us/199/Stormwater-Management and at Town Hall. Web Links and locations for specific BMPs are listed below.

Reporting forms and logs to document these efforts can be found in Appendix B. Reporting measures for specific BMPs are identified below and reporting requirements are described in Section 10. As part of the MS4 Permit Year 4 requirements, an assessment of current regulations for the Town of Plainville was completed and is provided in Appendix C.

Objective and Requirements

The objective of an effective post construction stormwater management program is to reduce the discharge of pollutants found in stormwater to the MS4 through the retention or treatment of stormwater after construction on new or redeveloped sites and to ensure proper maintenance of installed stormwater controls.

The minimum Permit requirements in accordance to MS4-2016 section 2.3.6 are as follows:

1. Develop, implement, and enforce a program to address post-construction stormwater runoff from all new development and redevelopment sites that disturb one or more acres and discharge into the permittees MS4 at a minimum.
    - Update Permit requirement and regulations to require for development projects the use of LID techniques to the maximum extent feasible
    - Develop/update Permit requirements and stormwater regulations to meet new development and redevelopment design requirements of Permit
    - Update Permit requirement and regulations to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP
2. Develop a report assessing current street design and parking lot guidelines and other local requirements that affect the creation of impervious cover within four (4) years from effective date of the Permit.
3. Develop a report assessing existing local regulation to determine if green infrastructures are allowable when appropriate site conditions exist. This report shall be completed within four (4) years from the effective date of the Permit.
4. Identify within four (4) years from the effective date of the Permit a minimum of 5 permittee-owned properties that could potentially be modify or retrofitted with BMPs.
5. Comply with enhanced requirements related to WQLW Impairment Requirements for Nitrogen which includes:
    - Adopt/amend the Town's ordinance or other regulatory mechanism to include a requirement that new development and redevelopment stormwater management BMPs be optimized for nitrogen removal
    - Include consideration of BMPs to reduce nitrogen discharges retrofit inventory and priority ranking.

In Plainville, this applies to the Ten Mile River (MA52-02), and Out-of-State Ten Mile River in Rhode Island whose watershed includes: Upper Ten Mile River, Lower Ten Mile River, Central Pond, Omega Pond and Turner Reservoir.

6. Comply with enhanced requirements related to WQLW Impairment Requirements for Phosphorous which includes:
    - Adopt/amend the Town's ordinance or other regulatory mechanism to include a requirement that new development and redevelopment stormwater management BMPs be optimized for phosphorous removal.
    - Include consideration of BMPs to reduce phosphorous discharges retrofit inventory and priority ranking.

In Plainville, this applies to Cargill Pond (MA52004), Ten Mile River (MA52-01), Ten Mile River (MA52-02), and Out-of-State Ten Mile River in Rhode Island whose watershed includes: Upper Ten Mile River, Lower Ten Mile River, Central Pond, Omega Pond and Turner Reservoir.

Best Management Practices and Measurable Goals

BMP-5.1. Low Impact Development (LID) Techniques
Update Permit requirement and regulations to require for development projects the use of LID techniques to the maximum extent feasible.

Media/Location:	PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Completed within 2 years of the effective date of Permit. • Implement for 100% of applicable projects. • Keep records of development projects approved with LIDs.

BMP-5.2. New Development and Redevelopment (Post-Construction) Design Regulations
Develop/update Permit requirements and stormwater regulations to meet new development and redevelopment design requirements of Permit.

Media/Location:	PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Completed within 2 years of the effective date of Permit. • Implement for 100% of applicable projects. • Keep records of development projects approved to meet regulations.

BMP-5.3. As-Built Plans

Update Permit requirement and regulations to require submission of as-built drawings and ensure long term operation and maintenance will be a part of the SWMP.

Media/Location:	PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Completed within 1 year of the effective date of Permit. • Implement for 100% of applicable projects. • Keep records of projects requiring and fulfilling as-built and O&M requirements.

BMP-5.4. Street Design and Parking Lot Guidelines Report

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.

Media/Location:	PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Completed within 4 years of the effective date of Permit. • Implement recommendations of the report. • Report progress of implementation annually.

BMP-5.5. Green Infrastructure Report

Develop a report assessing local regulations to determine feasibility of allowing green roofs, raingardens, water harvesting and other similar practices.

Media/Location:	PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Completed within 4 years of the effective date of Permit. • Implement recommendations of the report. • Report progress of implementation annually.

BMP-5.6. List of 5 properties to Provide (effective) Reduction of Impervious area

Identify and maintain a list of at least 5 permittee-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas and update annually

Media/Location:	DPW Office
Responsible Party:	DPW Director
Measurable Goal(s):	• Completed list within 4 years of the effective date of Permit. • Update list as needed and report annually on retrofitted

	properties.

7.6 Good Housekeeping and Pollution Prevention for Permittee Owned Operations (MCM 6)

The Department of Public Works is responsible for ensuring the implementation of proposed BMPs and measurable goals. Assisting departments for particular BMPs are listed below.

Reporting forms and logs to document these efforts can be found in Appendix B and are to be expanded upon in SWMP Volume 3. Reporting measures for specific BMPs are identified below and reporting requirements are described in Section 10. As part of the Nutrient Source Identification Report (NSIR) completed for MS4 Permit Year 4, BMP retrofit locations were developed. A table of these findings is included in Appendix G – BMP Retrofit Matrix of SWMP Volume 3.

Objective and Requirements

The Town will implement an operations and maintenance program for permittee-owned operations that has a goal of preventing or reducing pollutant runoff and protecting water quality from all Town-owned operations.

The minimum Permit requirements in accordance with MS4-2016 section 2.3.7 are as follows:

1. Develop an Operations and Maintenance (O&M) Program for Town-owned facilities within two (2) years from effective date of the Permit.
2. Inventory of all Town-owned facilities within two (2) years from the effective date of the Permit.
3. Develop an Infrastructure Operations and Maintenance Program within two (2) years from the effective date of the Permit.
4. Optimize routine inspections, cleaning and maintenance of catch basins.
5. Establish and implement procedures for sweeping and/or cleaning streets and Town-owned parking lots.
6. Ensure proper storage of catch basins cleanings and street sweepings prior to disposal or reuse.
7. Establish and implement procedures for winter road maintenance.
8. Establish and implement inspections and maintenance of stormwater treatment structures.
9. Develop Stormwater Pollution Prevention Plans (SWPPPs) for Town-owned or -operated facilities within two (2) years from effective date of the Permit.
10. Comply with enhanced requirements related to WQLW Impairment Requirements for nitrogen which includes:
    - Establish requirements for use of slow-release fertilizers on Town owned property currently using fertilizer
    - Reduce and manage fertilizer use
    - Establish procedures to properly manage grass cuttings and leaf litter on Town property
    - Prohibit blowing organic waste materials onto adjacent impervious surfaces
    - Increase street sweeping frequency of all municipal owned streets and parking

    In Plainville, this applies to the Ten Mile River (MA52-02), Out-of-State Ten Mile River in Rhode Island whose watershed includes: Upper Ten Mile River, Lower Ten Mile River, Central Pond, Omega Pond and Turner Reservoir.
11. Comply with enhanced requirements related to WQLW Impairment Requirements for phosphorous which includes:

- Establish requirements for use of slow-release fertilizers on Town owned property currently using fertilizer
- Reduce and manage fertilizer use
- Establish procedures to properly manage grass cuttings and leaf litter on Town property
- Prohibit blowing organic waste materials onto adjacent impervious surfaces
- Increase street sweeping frequency of all municipal owned streets and parking

In Plainville, this applies to Ten Mile River (MA52-01), and Ten Mile River (MA52-02), and Out-of-State Ten Mile River in Rhode Island whose watershed includes: Upper Ten Mile River, Lower Ten Mile River, Central Pond, Omega Pond and Turner Reservoir.

12. Comply with additional requirements specified in Section 3.0 of the Permit for discharges to surface drinking water supplies and their tributaries including the following:
    - Pretreatment and spill control measures shall be provided to the extent feasible to stormwater discharges to public drinking water supply sources or their tributaries.
    - Direct discharges to Class A waters should be avoided to the extent feasible.

    In Plainville, this includes the Turnpike Lake (MA62198), and Lake Mirimichi (MA62118).

Best Management Practices and Measurable Goals

BMP-6.1. Parks and Open Space Operations and Maintenance Procedures
Create written O&M procedures including all requirements of the Permit for Town owned parks and open spaces.

Media/Location:	SWMP Volume 3: O&M Plan. PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Completed within 2 years of effective date of Permit. • Implement on 100% of Town owned parks and open spaces. • Keep records of O&M performed and report annually.

BMP-6.2. Buildings and Facilities Operations and Maintenance Procedures
Create written O&M procedures including all requirements of the Permit for Town owned buildings and facilities.

Media/Location:	SWMP Volume 3: O&M Plan. PSW Website & Town Hall
Responsible Party:	Buildings & Facilities Department
Measurable Goal(s):	• Completed within 2 years of effective date of Permit. • Implement on 100% of Town owned buildings and facilities. • Keep records of O&M performed and report annually.

BMP-6.3. Vehicles and Equipment Operations and Maintenance Procedures
Create written O&M procedures including all requirements of the Permit for Town owned vehicles and equipment.

Media/Location:	SWMP Volume 3: O&M Plan. PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Completed within 2 years of effective date of Permit. • Implement on 100% of Town owned vehicles and equipment. • Keep records of O&M performed and report annually.

BMP-6.4. Inventory all Permittee-Owned Parks and Open Spaces, Buildings and Facilities, and Vehicles and Equipment
Create an inventory of Town owned parks and open spaces, buildings and facilities, and vehicles and equipment facilities for implementation of O&M Plan.

Media/Location:	SWMP Volume 3: O&M Plan PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Completed within 2 years of effective date of Permit. • Update inventory annually.

BMP-6.5. Municipal Infrastructure Operation and Maintenance Program
Develop and implement program to ensure proper function of the MS4 stormwater infrastructure.

Media/Location:	SWMP Volume 3: O&M Plan PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Completed within 2 years of effective date of Permit. • Implement so that 100% of infrastructure is maintained and functioning properly. • Keep records of O&M performed and report annually.

BMP-6.6. Catch Basin Cleaning Program

Develop written program for catch basin cleaning with a goal that each catch basin is no more than 50% full at any given time. In the tributary areas of Ten Mile River (MA52-01), Ten Mile River (MA52-02), and the Ten Mile River Watershed prioritize inspection and maintenance for catch basins to target high pollutant load areas to address solids and metals impairments.

Media/Location:	SWMP Volume 3: O&M Plan PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Written program completed (Year 1). • Clean catch basins on established schedule. • Report number of catch basins cleaned and volume of material moved annually.

BMP-6.7. Street Sweeping Program

Develop and implement a street sweeping program so that all streets and municipal parking lots are swept in accordance with Permit conditions. In the tributary areas of the Ten Mile River (MA52-02) and Out-of-State Ten Mile River whose watershed includes: Upper Ten Mile River, Lower Ten Mile River, Central Pond, Omega Pond and Turner Reservoir sweeping is to be done twice per year due to phosphorus impairment. In the tributary areas of Cargill Pond (MA52004), Ten Mile River (MA52-01), and Ten Mile River (MA52-02) street sweeping frequency is to be increased for all municipal owned streets and parking lots to a schedule determined by the town to target areas with potential for high pollutant loads to address solids and metals impairments.

Media/Location:	SWMP Volume 3: O&M Plan PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Written program completed (Year 1). • Annually sweep all streets and municipal parking lots in accordance with established schedule. • Keep records of sweeping performed and report annually.

BMP-6.8. Winter Road Maintenance Program

Develop and implement a program to manage storage and use of road salt.

Media/Location:	SWMP Volume 3: O&M Plan PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Written program completed (Year 1). • Implement program as necessary. • Evaluate at least one salt/chloride alternative for use in the Town.

BMP-6.9. Stormwater Treatment Structures Inspections and Maintenance Procedures
Develop and implement inspection and maintenance procedures and frequencies for Town-owner stormwater BMPs (excluding catch basins).

Measurable Goals: Complete within 1 year of effective date of Permit. Inspect and maintain 100% of BMPs treatment structures at least annually.

Media/Location:	SWMP Volume 3: O&M Plan PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Written procedures complete (Year 1). • Inspect and maintain 100% of BMPs treatment structures at least annually. • Keep records of inspection and maintenance performed and report annually.

BMP-6.10. Stormwater pollution prevention plan (SWPPP)
Develop and implement SWPPPs for maintenance garages, transfer stations, and other waste-handling facilities.

Measurable Goal: Complete and implement within 2 years of effective date of Permit implement SWPPPs for all required facilities.

Media/Location:	SWMP Volume 3: O&M Plan PSW Website & Town Hall
Responsible Party:	DPW Director
Measurable Goal(s):	• Developed and implemented SWPPPs within 2 years of effective date of Permit. • Keep records of inspection and maintenance performed and report as required in the SWPPPs.

8.0 Sanitary Sewer Overflows Inventory

The Town has identified and inventoried all known locations where SSOs have discharged to the MS4 within the previous five (5) years. This inventory is provided and maintained as part of SWMP Volume 2: IDDE Plan.

9.0 Surface Drinking Water Supply Sources

Section 3.0 of the Permit addresses requirements for MS4 systems that discharge to public surface drinking water supply sources (Class A and Class B surface waters used for drinking water) or their tributaries. According to 314 CMR 4.00, Massachusetts Surface Water Quality Standards, 4.05: Classes and Criteria and 4.06: Basin Classification and Maps, within the MS4 regulated area, Plainville has two (2) Class A surface waters (Turnpike Lake, Lake Mirimichi) as shown on the Storm Sewer System Map included as part of the IDDE report, which is located in SWMP Volume 2. There is also one (1) Class B surface water in Plainville (Ten Mile River), however, it is not listed as used for drinking water.

The Town has incorporated these requirements into the BMPs in Section 5.0 of this report.

Additional Requirements

Additional requirements for discharges to surface drinking water supplies and their tributaries include the following:

1. Public surface drinking water supply sources and their tributaries should be considered a priority in the implementation of the SWMP;
2. Pretreatment and spill control measures shall be provided to the extent feasible to stormwater discharges to public drinking water supply sources or their tributaries; and
3. Direct discharges to Class A waters should be avoided to the extent feasible.

10.0 Annual Program Evaluation

Program evaluation, record keeping and reporting are required annually to document what the Town has done during the previous reporting period, judge compliance with Permit provisions, and to verify that efforts are resulting in an improvement to the stormwater, and ultimately the receiving water's quality.

The Town is required to submit annual reports each year of the Permit term. The reporting period is a one-year period commencing on the Permit effective date (July 1, 2018) and each anniversary thereafter. The exception is that the first annual report will also include the period from May 1, 2018 to June 30, 2019. Annual reports are due ninety days from the close of the reporting period (September 30). The annual reports will review compliance with the Permit terms and conditions including assessment of selected BMPs, status and progress assessment of planned activities, description of IDDE and O&M program activities, evaluation of construction and post construction stormwater management, and the method/measures used to assess the overall effectiveness of the education program. Description of activities for the next reporting cycle and any changes in identified BMPs or measurable goals will be included. The following data will be collected and reported by the Town using the reporting forms in Appendix B to support the ongoing efforts mandated by the Permit:

- Public education and outreach materials with dated distribution/attendance list(s)
- Public involvement and participation materials with dated distribution/attendance list(s)
- Data related to Implementation of the IDDE Program including:
  - SSO reporting forms and updated inventory table;
  - Illicit discharge reporting forms and inventory table;
  - Outfall screening and sampling data;
  - Record of mapping updates;
  - Inventory of catchment investigations, data collected and illicit connections removed;
  - Outfall and catchment ranking and assessment updates (Updated Matrix); and
  - IDDE program training attendance log.
- Inventory of construction runoff management including number of projects reviewed, inspected and enforcement actions
- Inventory of site plan review and BMP implementation for new/re-development projects
- O&M inspection and maintenance forms and logs including:
  - Catch basin cleaning and activities;
  - Street sweeping and parking lot sweeping logs;
  - MS4 infrastructure BMP inspection forms and logs;
  - Town facilities inspection forms and logs; and
  - SWPPP inspection reports.

EPA has indicated they are developing an annual report template for MS4s which will populate information from the NOI and be in the form of an electronic fillable PDF. When it is available, the Town will review the annual report template to determine the best method for data management to be compatible.

APPENDIX A

- Environmental Overview Map

Town of Plainville, Massachusetts

SWMP Appendix A

Environmental Overview Map

Map Legend

Plainville Stormwater Layouts
- Drain Outfall
- BMPs
- Drain Inlet
- Basin Inlet
- Drain Manhole
- Drain Catch Basin
- Drain Pipe
- Drain Culvert

NHESP
- Certified Vernal Pools
- Estimated Habitat of Rare Wildlife
- NHESP Priority Habitat v15 Effective Aug 1st 2021

MassDEP 2022 Integrated List of Waters Bodies
- 5 - Impaired - TMDL required
- 3 - No uses assessed
- 4A - Impaired - TMDL is completed
- 4C - Impairment not caused by a pollutant
- 5 - Impaired - TMDL required

MassDEP Wetlands
- Shoreline
- Hydrologic Connection
- Wetland Limit
- Closure Line
- Marsh/Bog
- Wooded marsh
- Cranberry Bog
- Open Water

Mass Historic Commission
- Historic Areas
- Historic Buildings, Burial Grounds, Structures, and Objects

Roads
- Highway
- Major road
- Local Road

Boundary
- MS4 Area
- Non MS4 Area

Data Source: MassDEP Wetlands, MassDEP 2022 Integrated Last of Water Bodies, MassDOT, MassGIS, MassHistoric Commission Inventory, Natural Heritage & Endangered Species Program, Town of Plainville Stormwater Data

Wrentham

Foxborough

Cumberland

Mansfeld

North Atleborough

Thurston Street Pond

Cargill Pond

Turnpike Lake

Plain Street Pond

Greenwood Lake

Whiting Pond

Issue Date: 4/10/2025

This Map is Intended for Planning Purposes Only

BETA

0 0.1 0.2 0.4 Miles

N W E S

APPENDIX B

- Reporting Forms

Index

MCM 1: PUBLIC EDUCATION AND OUTREACH LOG

Reporting Period: _____ – _____

BMP #	Title/Description	Audience	Responsible Party	Method of Delivery	Date	Record of Measurable Goal*
1.9	Management of Pet Waste: Dog License	Residents	Town Clerk	Distributed with Dog Licenses	Ongoing	
1.10	Septic System Maintenance	Residents	Board of Health	Mail and post to website		
1.11	Lawn Care: grass clippings & fertilizer	Residents & Bus/Inst/Com	Town Planner	Mail and post to website		
1.12	Management of Pet Waste	Residents & Bus/Inst/Com	Town Planner	Post to website		
1.13	Disposal of Leaf Litter	Residents & Bus/Inst/Com	Town Planner	Mail and post to website		

**May include: # distributed, attendees, web page hits, social media likes, etc.*

Note: See section 7.1 of SWMP for BMP reporting descriptions and requirements.

PUBLIC EDUCATION REPORTING FORM

Reporter Name:		Dept.		Date	
Target Audience					
☐ Residents	☐ Businesses, Institutions (Churches, Hospitals), and Commercial Facilities	☐ Developers (Construction)	☐ Industrial Facilities		
Requirement*					
☐ Standard	Impairments: ☐ Spring (Apr/May) ☐ Summer (Jun/Jul) ☐ Fall (Aug/Sep/Oct)				
Document Publishing/Distribution:				Dater	
Developed/Provided By:	☐ Town ☐ NepRWA ☐ EPA ☐ NSP ☒ Other:_____				

BMP Media/Category*	Title/Description
☐ Brochure/Pamphlet	
☐ Flyer	
☐ Web Page Article/Notice	
☐ Social Media	
☐ Newspaper Articles/Press Releases	
☐ Local Public Service Announcements	
☐ School Curricular/Programs	
☐ Contests	
☐ Special Events/Festivals/Fairs	
☐ Displays/Posters/Kiosks	
☐ Videos	
☐ Other	

**Please attach a printed copy of the BMP to this form.*

PUBLIC EDUCATION REPORTING FORM (CONT.)

Method of Delivery				
☐ Printed hard copy	Location:		Quantity:	
☐ Mailed hard copy	Recipient Group:		# Recipients:	
☐ Email	Recipient Group:		# Recipients:	
☐ Digital: E-News	Recipient Group:		# Recipients:	
☐ Digital: Website	Web Page URL:		# Hits	
☐ Digital: Social Media	Network Site:		User/Profile Name:	
☐ Event	Description:		# Attendees	
☐ Other:				

Comments:

MCM 2: Public Involvement & Participation Log

Reporting Period: _____ – _____

Record of SWMP and Annual Report posting for Public Review

Date	Responsible Party	Public Notice Provided	Location of Posting	Record of Measurable Goal*

**May include: web page hits, requests to view printed document, # of comments received*

Record of Public Comments

Date	Comment From	Received Via	Comment

Record of Public Participation Activities

Date	Responsible Party	Public Notice Provided	Activity	Record of Measurable Goal*

**May include: # of participants, attendees, and/or quantity of cleanup achieved*

Note: See section 7.2 of SWMP for BMP reporting descriptions and requirements.

PUBLIC PARTICIPATION OPPORTUNITY REPORTING FORM

Reporter Name:		Dept.		Date	

Public Participation Minimum Control Measure:		
☐ Notice of Intent	☐ Stormwater Management Program	☐ Public Education
☐ Public Involvement and Participation	☐ IDDE	☐ Construction Site Runoff Control
☐ New Development	☐ Good Housekeeping	☐ Other:

Title of Document:	
Date of Public Participation:	

Type/Location of Public Participation Posting:		
☐ Web Page	☐ Town Office	☐ Public Venue
☐ Mass Media (newspaper, public service announcement, etc.)	☐ Other:	

PUBLIC PARTICIPATION COMMENT FORM

Reporter Name:		Dept.		Date	

Date of Public Participation:	
Date(s) of Comment Period:	
Title of Document:	

Type/Location of Public Participation Posting:		
☐ Web Page	☐ Town Office	☐ Public Venue
☐ Mass Media (newspaper, public service announcement, etc.)	☐ Other:	

Comments Made By:		Date:	
Comments Received via:			
☐ Email	☐ Phone	☐ Web Page	
☐ Letter/hard copy	☐ Other:		

Comment:

Action Taken (if any):

MCM 3: IDDE Program Reporting Summary Log

Reporting Period: _____ – _____

Employee Training

Date	# of Attendees	Location	Presenter	Topic/Discussion Items

SSO Inventory

Report #	Date	Reporter	Location	Status & Comments

Illicit Discharge Inventory

Report #	Date	Reporter	Location	Status & Comments

STORM SEWER MAPPING UPDATES

Type	Date	Updated by	Location	Description

OUTFALL SCREENING AND SAMPLING

Dry/Wet	Date(s)	Inspector	Location(s)	Comments

CATCHMENT INVESTIGATIONS

Category	Date(s)	Inspector	Location	Description/Results

Note: See section 7.3 of SWMP for BMP reporting descriptions and requirements.

SANITARY SEWER OVERFLOWS (SSOS) – INVENTORY

Incident No.	Location (Closest Address)	Discharge to: (Yes or No)		Occurrence			Volume Discharge (gal. ±)	Mitigation / Corrective Measures		
					Time			Measures	Date:	
		Waters	MS4	Date:	Start	End			Complete	Planned

This Inventory includes reported SSO's from 2014 to Present

ILLICIT DISCHARGE INCIDENT REPORTING FORM

Incident ID		Logged By:			
Location, Nearest Street Address,:				Outfall #	
				Latitude	
				Longitude	
Reported by:				Date:	
Contact Info					
Discharge Type:	☐ Sewer Overflow ☐ Sewer Connection	☐ Spill ☐ Dumping		☐ Wash ☐ Other	
Incident Description:					
Area Impacted	☐ Stream/River (name)_____ ☐ Upland (name) _____	☐ Wetland (near) _____ ☐ Other _____			
Stormwater System Impacted	☐ Catchbasin (ID #)_____ ☐ Drain Manhole (ID #)_____ ☐ Surface Basin (ID #)_____	☐ Subsurface Basin (near) _____ ☐ Outfall (ID #)_____ ☐ None			
Recent Rain:					
Add. Info:					

AREA ACTIVES – POSSIBLE CAUSE OF ISSUE

Dumping:	☐ Yes ☐ No	Oil/Chemicals	☐ Yes ☐ No	Sewerage	☐ Yes ☐ No
Septic System:	☐ Yes ☐ No	Wash Water:	☐ Yes ☐ No	Staining	☐ Yes ☐ No
Other:				Suds:	☐ Yes ☐ No

INDICATORS OF POTENTIAL ISSUES – FURTHER INVESTIGATION RECOMMENDED

Odor:	☐ None ☐ Sewer ☐ Eggs ☐ Petroleum ☐ Laundry ☐ Unknown			Floatables	☐ Yes ☐ No
Oil Sheen:	☐ Yes ☐ No	Cloudy::	☐ Yes ☐ No	Staining	☐ Yes ☐ No
Other:				Suds:	☐ Yes ☐ No

SUSPECTED VIOLATOR KNOWN: ☐ YES ☐ NO

Name		Address	
Description		License Plate	

ILLICIT DISCHARGE INCIDENT INVESTIGATION REPORT FORM (CONT.)

LOCATION MAP/SKETCH/PHOTOS

RESPONSE ACTION(S)

Date Investigated:		Investigator:	
☐ No Investigation		Reason:	
☐ Referred to another Department		Department	
☐ Investigated – No Action Required		Action Description	
☐ Investigated – Action Required			
☐ Action Completed		Date:	
☐ Incident Closed		Date:	
Notes:			

SCREENING AND SAMPLING FORM

Type:	☐ Outfall ☐ Interconnection ☐ Key Junction	☐ Pipe ☐ DMH ☐ CB ☐ Other		ID:	
Location:		Material:		Size:	
Inspector:		Date:		Time:	
Weather:	☐ Sunny ☐ Cloudy ☐ Rain ☐ Snow	Recent Rainfall:			

ENVIRONMENTAL INSPECTION

Area:	☐ Residential ☐ Commercial ☐ Industrial ☐ Municipal ☐ Open Space ☐ Unknown				
Flowing To:	☐ Upland ☐ Wetland/Marsh ☐ Stream/River ☐ Lake/Pond ☐ Open Space ☐ Other MS4 ☐ Outfall				
Submerged:	☐ Yes ☐ No	Accessible:	☐ Yes…☐ No	Other Info:	

FLOW

Amount:	☐ None ☐ Drip ☐ Trickle ☐ Moderate ☐ Substantial	Clarity:	☐ None ☐ Clear ☐ Cloudy ☐ Opaque
Color:		Other Info:	

INDICATORS OF POTENTIAL ISSUES – FURTHER INVESTIGATION RECOMMENDED

Sediment:	☐ Yes ☐ No	Scouring:	☐ Yes ☐ No	Staining	☐ Yes ☐ No
Algae Growth:	☐ Yes ☐ No	Stressed Vegetation	☐ Yes ☐ No	Floatables:	☐ Yes ☐ No
Oil Sheen:	☐ Yes ☐ No	Turbidity:	☐ Yes ☐ No	Other:	☒ Yes ☐ No
Odor:	☐ None ☐ Sewer ☐ Eggs ☐ Fuel ☐ Laundry ☐ Unknown				

SAMPLING

Sampling Required:	☐ Yes ☐ No	Sampling Performed:	☐ Yes ☐ No	Struct. ID	

RECORDED DATA

Ammonia:		Salinity:		Temp:		pH:	
Chlorine:		Conductivity:		Surfactant:			

LAB SAMPLES TAKEN

☐ E. coli		☐ Phosphorus		☐ Nitrogen		☐ DO	
☐ Enterococcus		☐ Fecal Coliform		☐ Metals		☐ TSS	
Sent To		Date:		Date Received:			

EMPLOYEE TRAINING RECORD

Topic: _____ Date: _____ Duration: _____ Sheet ___ of ___.

Name	Title	Signature

IDDE Training Summary Form

Training By:		Dept./ Organization	
Date		Time:	
Location:			

Public Participation Minimum Control Measure:			
Subject:			
Audience:		No. Participants	
Goals:			

Summary of Training:	•
Handouts	•

Comments:	•

MCM 4: Construction Site Inspection Log

Reporting Period: _____ – _____

Report #	Date	Inspector	Project/Location	Status & Comments

Note: See section 7.4 of SWMP for BMP reporting descriptions and requirements.

Report No. _____

CONSTRUCTION SITE INSPECTION FORM

Project:			Date:		Last Insp:	
Location:			Arrive:		Leave:	
Operator:			Site Rep:			
Inspector:						
Type	☐ Regular	☐ Pre-Storm	☐ During Storm		☐ Post Storm	
Recent Rainfall:			Current Weather:			
Description of Current Site Work:						
Add. Info:						

EROSION AND SEDIMENT CONTROL MAINTENANCE/ACTION REQUIRED: ☐ YES ☐ NO

(Inspect for all applicable controls listed – ECB = Erosion Control Barrier)

Control	Condition	Required Action	Completed (by)	Date
☐ SWPPP Report(s)			☐	
☐ Adjacent Street			☐	
☐ Const. Access Dr.			☐	
☐ Perimeter ECB			☐	
☐ Outside ECB			☐	
☐ Sediment Basin(s)			☐	
☐ CB Protection			☐	
☐ Stockpiles			☐	
☐ Exposed Soils			☐	
☐ Exposed Slopes			☐	
☐ Outlet(s)			☐	
☐ Receiving Waters			☐	
☐ Other			☐	

CONSTRUCTION WASTE CONTROL MAINTENANCE/ACTION REQUIRED: ☐ YES ☐ NO

(Inspect for all applicable controls listed)

Control	Condition	Required Action	Completed (by)	Date
☐ Trash/Litter			☐	
☐ Dumpsters			☐	
☐ Fueling Areas			☐	
☐ Sanitary Facilities			☐	
☐ Dewatering			☐	
☐ Haz Mat Storage			☐	

SITE PHOTOS

MCM 4: Construction Site Enforcement Action Log

Year 1 Reporting Period: _____ – _____

Project/Location	Date	Action Taken	Status & Comments

Note: See section 7.4 of SWMP for BMP reporting descriptions and requirements.

MCM 4: Site Plan Review Log

Year 1 Reporting Period: _____ – _____

Project/Location	Filing Date	Reviewer	Comments	Status

Note: See section 7.4 of SWMP for BMP reporting descriptions and requirements.

MCM 5: Post Construction Stormwater Management Implementation Log

Reporting Period: ___________ – ____________

Project/Location	Filing Date	Reviewer	Requirements Met	Project Status
			☐ LIDs ☐ SW Design Regs ☐ As-built ☐ Long-term O&M	
Description/Comments:				
			☐ LIDs ☐ SW Design Regs ☐ As-built ☐ Long-term O&M	
Description/Comments:				
			☐ LIDs ☐ SW Design Regs ☐ As-built ☐ Long-term O&M	
Description/Comments:				
			☐ LIDs ☐ SW Design Regs ☐ As-built ☐ Long-term O&M	
Description/Comments:				
			☐ LIDs ☐ SW Design Regs ☐ As-built ☐ Long-term O&M	
Description/Comments:				
			☐ LIDs ☐ SW Design Regs ☐ As-built ☐ Long-term O&M	
Description/Comments:				
			☐ LIDs ☐ SW Design Regs ☐ As-built ☐ Long-term O&M	
Description/Comments:				

Note: See section 7.4 of SWMP for BMP reporting descriptions and requirements.

MCM 6: Town Facilities Operations and Maintenance Log

Reporting Period: _____ – _____

Parks and Open Space

Report #	Date	Inspector	Location	Status & Comments

Buildings and Facilities

Report #	Date	Inspector	Location	Status & Comments

Vehicles and Equipment

Report #	Date	Inspector	Location	Status & Comments

Note: See section 7.6 of SWMP for BMP reporting descriptions and requirements.

MCM 6: Municipal Infrastructure Operations and Maintenance Log

Reporting Period: _____ – _____

Record of Catchbasin Cleaning

Date(s)	Location(s)	Responsible Party	# CBs Cleaned	Volume of Cleaning

Record of Street and Parking Lot Sweeping

Date(s)	Location(s)	Responsible Party	Length/# lots	Volume of Cleaning

BMP Inspection and Maintenance

Report #	Date	Inspector	BMP/Location	Status & Comments

SWPPP Inspection and Maintenance

Report #	Date	Inspector	Location	Status & Comments

Note: See section 7.6 of SWMP for BMP reporting descriptions and requirements.

CATCHBASIN INSPECTION FORM

Inspector: ______________________ Date: ________________ Sheet ___ of ___.

CB ID	<25%	25-50%	>50%		CB ID	<25%	25-50%	>50%		CB ID	<25%	25-50%	>50%
______________ St/Rd/Ave					______________ St/Rd/Ave					______________ St/Rd/Ave			
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STREET/PAVEMENT SWEEPING RECORD FORM

Operator: ______________________ Date: ________________ Sheet ___ of ___.

Street/Location		Street/Location		Street/Location

STORMWATER BMP INSPECTION FORM – SURFACE STRUCTURES

BMP ID:						
Location:			Length	**±ft.**	Depth	**±ft.**
Description:			Top Width	**±ft.**	Bot Width	**±ft.**
Type:	☐ **Detention**	☐ **Retention**	☐ **Infiltration**	☐ **Bioretention**		
	☐ **Swale**	☐ **Infiltration Trench**	☐ **Other**			
Inspector:				Date:		
Recent Rainfall:						
Notes:						

LOCATION MAP

MAINTENANCE REQUIRED: ☐ YES ☐ NO

(Inspect for all problems listed – provide information for required maintenance only)

Problem	Description	Quantity (±)	Completed (personnel)	Date
☐ Sediment/Debris			☐	
☐ Vegetation			☐	
☐ Erosion			☐	
☐ Water Pond			☐	
☐ Sediment Forebay			☐	
☐ Outlet Struct			☐	
☐ Intlet			☐	
☐ Outlet			☐	
☐ Riprap			☐	
☐ Check Dam			☐	
☐ Access			☐	
☐ Fence			☐	
☐ Other			☐	

BMP PHOTOS

STORMWATER BMP INSPECTION FORM – SUBSURFACE STRUCTURES

BMP ID:					
Location:		Cover/Grate size	**±ft.**	Cover/Grate shape	**±ft.**
Description:		Structure Diameter	**±ft.**	Depth	**±ft.**
		Structure Material			
Type:	☐ **Oil-Grit Separator**	☐ **Proprietary Structure**	☐ **Leaching CB**		
	☐ **Infiltration Chamber/Pipe**	☐ **Sand Filter**	☐ **Other**		
Inspector:			Date:		
Recent Rainfall:					
Add. Info:					

LOCATION MAP

MAINTENANCE REQUIRED: ☐ YES ☐ NO

(Inspect for all problems listed – provide information for required maintenance only)

Problem	Description	Quantity (±)	Completed (personnel)	Date
☐ Grate/Cover			☐	
☐ Structure			☐	
☐ Hood/Trap/Insert			☐	
☐ Pipes & Joints			☐	
☐ Ladder			☐	
☐ Sediment/Debris			☐	
☐ Vegetation/Roots			☐	
☐ Contaminants/Pollution			☐	
☐ Infiltration Capability			☐	
☐ Discharge			☐	
☐ Fence			☐	
☐ Access			☐	
☐ Other			☐	

BMP PHOTOS

APPENDIX C

- Delegation of Authority

TOWN OF PLAINVILLE

www.plainville.ma.us
190 SOUTH STREET, P.O. BOX 1717
PLAINVILLE, MASSACHUSETTS 02762

BRIAN S. NOBLE
Town Administrator

bnoble@plainville.ma.us
508.576.8470

April 22, 2025

Courtney Botelho, EIT
Project Enginerr
BETA Group, Inc.

Re: Documentation for delegation of "Authorized Representative" for NPDES **2016 Massachusetts** Small Municipal Separate Storm Sewer System (MS4) General Permit

This document serves to affirm that **the DPW Director** has responsibility for the operation of the MS4 and is hereby designated as an authorized person for signing all reports including but not limited to the Stormwater Management Plan (SWMP), Stormwater Pollution Prevention Plans (SWPPPs), inspection reports, annual reports, monitoring reports, reports on training, and other information required by the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in **Massachusetts** for **the Town of Plainville.** This authorization cannot be used for signing a NPDES permit application (e.g., Notice of Intent (NOI)) in accordance with 40 CFR 122.22).

By signing this authorization, I confirm that I meet the following requirements to make such a designation as set forth in Part B.11 of Appendix B of the Small MS4 General Permit:

> *For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official.*

"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."

Brian S. Noble
Town Administrator

4/22/25
Date

APPENDIX D

- Assessment of Current Regulations

Plainville, MA

ASSESSMENT OF CURRENT REGULATIONS

NPDES Phase II Small MS4 General Permit

June 2022

LID & GREEN INFRASTRUCTURE

BETA
315 Norwood Park South
2nd Floor
Norwood, Massachusetts 02062
781.255.1982
www.BETA-Inc.com

ASSESSMENT OF CURRENT REGULATIONS
Plainville, MA
NPDES Phase II Small MS4 General Permit

LID & GREEN INFRASTRUCTURE

Prepared by: BETA GROUP, INC.
Prepared for: Town of Plainville, Massachusetts

June 2022

TABLE OF CONTENTS

LIST OF APPENDICES

1.0 INTRODUCTION

This assessment has been developed by the Town of Plainville (the Town) to assess local requirements in relation to the creation of impervious cover and the feasibility allowing the use of low-impact-design (LID) and green infrastructure. This is done in accordance with the 2016 MS4 General Permit (the Permit) Stormwater Management in New Development and Redevelopment Section 2.3.6.b & c requirements and shall be part of the Town's Stormwater Management Plan (SWMP).

OBJECTIVE

The objective is to identify opportunities to revise municipal regulations to better support LID and green infrastructure options. As stated in the Mass Audubon tool, the key areas of analysis include:

1. Overall site design: Open Space Conservation Development (OSCD) vs. conventional subdivisions
2. Project design and layout standards in relation to LID: road layout and width, curbing, drainage, sidewalks, parking, landscaping
3. Maintenance and operations, mechanisms for enforcement: Who is responsible for maintaining drainage/LID (municipal or homeowner); easements, homeowner association option; municipal inspection and administration systems.

The following report sections summarize the current regulations and includes recommendations to update those regulations.

2.0 CURRENT REGULATIONS

The General Code for the Town is available to view here: https://ecode360.com/PL2720.

Regulations reviewed as part of this task include:

- Chapter 500 Zoning (2011)
- Chapter 540 Subdivision of Land (2006)
- Chapter 896 Stormwater Management Regulations (2021)

3.0 REVIEW STANDARDS AND METHODOLOGY

The analysis compares the existing regulations to the state's recommended best practices within the Smart Growth/Smart Energy Toolkit. This was completed using the tool developed by Mass Audubon: Bylaw Review for LID & Climate Smart, Nature-Based Solutions. The Excel tool provides a structured evaluation of the existing town regulations in a "Conventional", "Better" and "Best Practice" format in relation to over 30 best practice considerations. The tool can be downloaded from the following webpage:

https://www.massaudubon.org/our-conservation-work/policy-advocacy/shaping-climate-resilient-communities/publications-community-resources/bylaw-review

The tool includes a description of the assessment standards as follows.

OPEN SPACE RESIDENTIAL DESIGN (OSRD) OVERVIEW

This section reviews how local bylaws for cluster, Open Space Residential Design (OSRD), or Natural Resource Protection Zoning (NRPZ) compared to the state's recommended best practices. Communities may currently have multiple bylaws that cover this in different residential areas, in which case they can

each be compared to the model regulations. However, in most cases, we would encourage simplification and the use of a single OSRD bylaw with local priorities clearly defined.

Communities may also have no cluster, OSRD, or NRPZ bylaws on the books. In this case, the state's best practice model can be used to create one. If the community closely follows the model, they'll meet the characteristics described within the analysis. However, the analysis still provides a quick checklist.

Some of the most important aspects of OSRD in any community include: the four-step review process that carefully considers the natural landscape before drawing lot lines; the minimum amount of open space protected; the incorporation of LID practices; and allowing this type of development by right instead of special permit.

ZONING, SUBDIVISION, SITE PLAN REVIEW, AND STORMWATER OVERVIEW

This section reviews not only the individual bylaws and regulations, but also how they work together and how consistent they are. Communities often update portions of bylaws or regulations in a piecemeal way over decades, leading to inconsistencies among various provisions. This color-coded analysis provides a quick overview of not only which rules are out of date and not meeting best practices for LID and preservation of Green Infrastructure, but also how certain topics (such as siting of LID) may be inconsistent between different parts of land use rules.

Not all factors (such as road width, siting of LID, limits on clearing and grading, or allowing common drives) may be addressed in each of the sections considered (Zoning bylaws, Subdivision Rules and Regulations, Site Plan Review (SPR), and Stormwater/LID bylaw). Where that factor is not usually included within a regulation or bylaw, you'll notice that "(Not Applicable)" will appear in that box. For example, setbacks and frontage requirements are addressed under Zoning, but often not under other bylaws or regulations. Those boxes are available for editing where desired. The sections identified for review may also need to be adjusted for your analysis, and you may need to add or remove columns to reflect the unique set of bylaws and regulations applicable in your community.

This review may also help towns identify best practices that comply with MS4 permit requirements, issued by EPA and Mass DEP, though it is not comprehensive in relation to the permit requirements and additional actions may be needed. Consultation with EPA and/or DEP is strongly recommended. Visit www.mass.gov/guides/municipal-compliance-fact-sheet-stormwater for more info.

The analysis is broken into five goals, each with factors that address the goal:

Goal 1: Protect Natural Resources and Open Space

The focus of this section is to limit clearing and grading and encourage soil management, the use of native species, and revegetation of disturbed areas. Often, communities have language such as "due regard shall be shown for natural features" without any specific limitations or guidelines that can be used by local boards to ensure developers are following the true intent of the community. The retention of natural vegetation and soils is the single most efficient means of reducing development impacts on water resources, avoiding costs associated with piping and other "grey" stormwater management features as well as the need for irrigation. There are also many other benefits – including habitat for birds and pollinators, trees for shade and clean air, and protection of natural scenery that contributes to property values and a high quality of life.

Goal 2: Promote Efficient, Compact Development Patterns and Infill

Often, making dimensional requirements such as setbacks, lot size, and frontage more flexible as well as allowing common drives will help allow the community to encourage efficient, compact designs. These help to decrease the amount of impervious surfaces and increase infiltration, while still supporting new development.

Goal 3: Smart Designs that Reduce Overall Imperviousness

This section reviews site design such as street location, road width, cul-de-sac design, curbing, roadside swales, and sidewalk design and location. There are many opportunities for communities to minimize impervious surfaces and allow for infiltration through curb cuts, swales, and cul-de-sacs with bioretention, among other things.

Goal 4: Adopt Green Infrastructure Stormwater Management Provisions

This section looks to explicitly discuss LID as a preferred method, such as requiring roof runoff to be directed into vegetated areas, and a preference for infiltration wherever soils allow or can be amended. Bylaws and/or regulations should clearly specify what LID is and which BMPs are preferred or required. Communities should also require an operations and maintenance plan to encourage effective use of LID methods. Adopting a specific LID bylaw can help clearly define and incorporate LID as a preferential stormwater management technique. Defining LID within this bylaw also decreases the need to explain LID throughout each of the Zoning bylaws, SPR, and subdivision rules and regulations and reduce the potential for any conflict between regulations and bylaws. This section also includes additional stormwater management considerations relevant to the MS4 permit.

Goal 5: Encourage Efficient Parking

Parking accounts for a large amount of impervious surface within new and redevelopment projects and offers an enormous opportunity for using LID. By reducing the amount of required parking - or even including parking maximums instead of minimums, communities can drastically reduce their impervious surfaces and runoff. Many communities already require landscaping in parking areas, which also offers an opportunity to allow curb cuts and infiltration in these areas - improving water quality and reducing the need for irrigation.

4.0 Open Space Development Assessment

The Town regulates their open space with residential design through Residential Cluster Development in §500-22 of the Zoning Bylaws. The Residential Cluster Development bylaw lists the following objectives:

1) Flexible and sensitive site design;
2) Promotion of measures to ensure compatibility of growth and sensitivity to the natural environment;
3) Enhancement of residential and community amenities by provision of open space;
4) Promotion of economical and efficient use of roads, water and sewer lines and other related infrastructure;
5) Promotion of diverse and energy-efficient housing at a variety of costs; and

6) Protection of water bodies and supplies, wetlands, floodplains, agricultural

These areas of open space development are an opportunity for towns to protect open space and incorporate LID practices in consideration of the natural landscape.

The Residential Cluster Development Analysis in Appendix A compares the Residential Cluster Development bylaw to MA Best Practice Factors based on various qualities that make the factor "Conventional", "Better" or "Best Practice". The rules included in the Town bylaw are color coded to match "Conventional", "Better" and "Best Practice" (orange, yellow, green, respectively) which correspond to the categories explained in Mass Audubon's tool. In addition to those colors, some items are highlighted in red. This indicates the existing bylaw falls below the conventional regulations.

As shown in Appendix A, 5 of the 18 factors are currently at best practices for open space residential design.

The Town exercises better practices in 2 factors:

- Minimum parcel size of 5-10 acres, where best practice has no minimum
- Review process requires a cluster layout, where best practice follows a Flexible "OSRD" 4 Step

The bylaw exercises conventional practices in 10 factors:

- Special permit required, where better practice is by right, and best practice is mandatory
- Dimensional standards include minimums less than conventional, where better practices include formulas with specified minimums, and best practice includes no or very small minimums
- Quality of open space has no indication of local conservation priorities, where better practice includes some reference to local conservation priorities with no specifics, and best practice includes mapped priority areas for site design
- Contiguity of open space to previously protected open space is not addressed, where better practice requires contiguity within the development, and best practice requires contiguity within development and adjacent open space parcels
- Quality of open space conserved requires little to no documentation, where better practice requires some but not comprehensive mapping and documentation, and best practice requires specific plans, maps and comprehensive documents be included in the submission
- Relationship to open space or master plan goals is not discussed, where better practices include optional considerations, and best practices require these considerations
- Inclusion of low impact design (LID) is not addressed, where better practice encourages LID, and best practices require LID be used
- Bonus incentive to increase number of units is not allowed, where better practice includes bonus by special permit, and best practice allows for automatic or formulaic bonus
- Flexibility of open space to facilitate wastewater treatment facilities is not provided, where better practice allows aggregated calculation by Board of Health, or best practice allows for the reduction of open space by up to 10% to accommodate sewer disposal with deed restriction and aggregate calculation

- Monitoring of open space is not specified, where better practice provides loose or nonspecific monitoring provisions, and best practice requires specific monitoring requirements at stated intervals

The Town exercises below conventional practices in 1 factor:

- Cluster developments require 40% open space, where conventional 50-65%, better 65-75%, and best practice ≥75%

5.0 Bylaws and Regulations Assessment

Appendix B outlines the regulations in a similar format ("Conventional", "Better", and "Best Practice") against sets of factors that address 5 goals. Findings for each regulation are color coded to match "Conventional", "Better" and "Best Practice" factors. The 5 goals are:

1. Protect Natural Resources and Open Space
2. Promote Efficient, Compact Development Patterns and Infill
3. Smart Designs that Reduce Overall Imperviousness
4. Adopt Green Infrastructure Stormwater Management Provisions
5. Encourage Efficient Parking

This analysis indicates where specific requirements rate relative to best practices for LID and green infrastructure.

Each bylaw may cover different parts of each goal, so the analysis compared any differences between regulations as well.

6.0 Recommendations

As shown in Appendices A and B, there is room for improvement to better promote LID and green infrastructure within the Zoning Bylaws, Subdivision of Land, and Stormwater Management Regulations.

More acknowledgement and emphasis of the importance of natural green infrastructure will help limit stormwater impacts. This can be accomplished by implementing some or all of the recommendations included below. Reference should be made to Appendices A and B for a complete analysis of areas that need improvement.

General Coordination of Bylaws and Regulations

To avoid current or potential conflicts and facilitate a consistent review of all projects to meet the best practices as it relates to stormwater management and low impact development (LID) techniques, it is recommended that the Stormwater Management Regulations be updated as outlined below and the Zoning Bylaw and Subdivision remove stormwater management design standards and provide a reference in other bylaws requiring compliance with the Towns stormwater management bylaw and/or regulations.

Goal 1: Protect Natural Resources and Open Space

The following are factors the Town may want to consider to provide increase protection of natural resources and open space:

1. 1. Consider updating §500-22 Open Space Residential Development regulations to include more "better" and "best" practices outlined in Section 3.0 Open Space Development

1. 2. Require soil management plan as part of large developments
1. 3. Limit clearing, lawn size and require retention of vegetation
1. 4. Require at least 75% native plantings

GOAL 2: PROMOTE EFFICIENT, COMPACT DEVELOPMENT PATTERNS AND INFILL

The following are factors the Town may want to consider to promote efficient, compact development patterns and infill:

2. 1. Allow lot size, frontage and setbacks be set through Cluster Development process by right
2. 2. Allow common driveways in residential districts

GOAL 3: SMART DESIGNS THAT REDUCE OVERALL IMPERVIOUSNESS

The following are factors the Town may want to consider to promote smart designs that reduce overall imperviousness:

3. 1. Set impervious cover limits based on zoning district and use
3. 2. Allow street location set through Cluster Development process by right
3. 3. Allow one-way loops with lower right of way width
3. 4. Allow hammerhead turn around
3. 5. Require bioretention at cul-de-sac islands
3. 6. Allow country drainage and or opening in curbing to all roadside swales/bioretention
3. 7. Allow and encourage permeable sidewalks or slope sidewalks to drain to lots

GOAL 4: ADOPT GREEN INFRASTRUCTURE STORMWATER MANAGEMENT PROVISIONS

The following are factors the Town may want to consider to including provision to promote green infrastructure stormwater management:

4.1. Require minimum recharge of 1 inch of all roof runoff except in soil with a hydrologic soil group rating of D
4.2. Develop site design checklist to review project site constraints and require inclusion of LID techniques and/or infiltration
4.3. Allow pervious pavements in select conditions
4.4. Require interdepartmental plan review

GOAL 5: ENCOURAGE EFFICIENT PARKING

The following are factors the Town may want to consider to encourage efficient parking:

5.1. Provide provisions to reduce parking spaces numbers based on need and/or allow portions of required parking areas to remain lawn area and not be constructed until needed.
5.2. Restrict parking space size to (9 ft x 18 ft) and allow a percentage of smaller size (compact) spaces
5.3. Allow shared parking in where demand time for uses differ
5.4. Develop site design checklist to review project site constraints and require inclusion of LID techniques or infiltration

The Town can further help encourage better practices by creating a Site Plan Review Process that addresses the items in Appendices A and B.

7.0 IMPLEMENTATION

It is encouraged that when changes are being made to any of the analyzed bylaws and regulations, the Town will consult this report to incorporate open space, green infrastructure, and reduction in impervious cover.

APPENDIX A

- Open Space Design Review Matrix

Best Practices Factors	Conventional	Better	Best Practice	Residential Cluster Development §500-22
Permit Type	Special Permit	By Right	Mandatory	§500-22.A Special Permit
Land area to which the zoning is applicable	Only a small amount of developable land	Land of particular environmental sensitivity	All developable land zoned residential	§500-22.B(1) All residential districts (RA, RB, RC, RD)
Minimum Open Space	50-65%	65-75%	≥ 75%	§500-22.B(3) 40%
Yield Calculation	Full plan with full percolation tests	Sketch plan with selected percolation test(s)	By formula	§500-22.B(2) By Formula
Minimum parcel size	≥ 10 acres	5-10 acres	None	§500-22.B(1) 10 acres: RA, RB, RC & 5 acres in RD
Review Process	No detailed analysis of site characteristics in relation to design	Cluster layout	Flexible "OSRD" 4 Step	Cluster Layout
Ownership of Open Space	Appropriate to the resources present. For example, agricultural land by the farmer, watershed land by a water dept. or district, habitat land by the conservation commission, or recreational open space by a parks and recreation commission or homeowners association.			§500-22.C(2) Valuable natural resource land, such as wetlands not suitable for any public use or suitable for extensive public recreational use, should be conveyed to the Town or to a trust, whereas land which will be principally used by the residents of the cluster should be conveyed to any of the following: corporation or trust comprising a homes association where membership includes the owners of all lots or units contained in the tract; any nonprofit organization, the principal purpose of which is the conservation of open space; to the Town for park or open space use.
Dimensional Standards; area, frontage, etc.	Specified, < than for standard subdivision	Formulaic reduction with specified minimums	None set or small minimums	Specified, standards are less than a standard subdivision
Quality of open space conserved: Specificity of local priorities for natural, cultural, and historic resource conservation	No indication of local conservation priorities, or language that refers only to regulated resource areas.	Lack of specificity regarding local conservation priorities; no map of priority locations	Local priorities clearly and unambiguously stated and mapped for use in site design.	Not addressed
Contiguity of open space; relationship to previously protected open space	No contiguity requirement	Contiguity required within subdivision	Contiguity required; adjacent land considered	No contiguity requirement
Quality of open space conserved: Allowed uses of open space	Allowed use of open space not addressed	Vague language regarding use of conserved open space	Clear list of allowed uses consistent with conservation and recreation goals	Open space shall be restricted to recreational uses such as parks, playgrounds and conservation areas and shall not be built upon except as approved by the
Quality of open space conserved: Submission requirements - GIS maps, data, etc. to inform the review process	Vague or no language regarding submission of information on site resources and no specified process for the use of the data submitted	General non-comprehensive data and mapping requirements; vague process for the application of the data to site design and open space conservation	Specific plans, maps, & comprehensive data regarding natural, cultural, and historic resources required and used as the basis for open space conservation	No language regarding submission of information on site resources, and no specified process for the use of the data submitted.
Relationship to Plans	Relationship to plans not discussed	Optional consideration of open space goals of OSRP, master, and/or regional policy plan	Required consideration of open space goals of OSRP, master, and/or regional policy plan	Not discussed
Low Impact Design	Not addressed	Encouraged	Required	Not addressed
Density bonus for enhanced public benefit(s)	No bonus offered	Bonus by special permit	Automatic or formulaic bonus	No bonus offered
Review Entity	ZBA, council or selectmen as special permit authority	Planning Board	Planning Board	§500-22.E Planning Board
Flexibility re: open space protection to facilitate wastewater treatment facilities	No flexibility provided	Aggregate calculations allowed by board of health	If necessary, required open space may be reduced by < 10% to accommodate; disposal area deed restricted; aggregate calculations allowed by BoH, etc.	No flexibility provided
Monitoring of open space	No specified monitoring requirements and no requirements that would assist the party responsible for monitoring	Loose provisions to facilitate, municipal monitoring, or no specificity regarding monitoring interval	Specific provisions to aid endowed monitoring by a conservation org at stated intervals	§500-22.C(5) The applicant shall submit a plan for maintenance of the open space area.

APPENDIX B

- Municipal Regulations Review Matrix

Factors	Conventional	Better	Best	Chapter 500 Zoning	Chapter 540 Subdivision of Land	Chapter 386 Stormwater Management & Stormwater Management Regulations (2021)
GOAL 1: PROTECT NATURAL RESOURCES AND OPEN SPACE						
Soils managed for revegetation	Not addressed	Limitations on removal from site, and/or requirements for stabilization and revegetation	Prohibit removal of topsoil from site. Require prep of soils compacted during construction	Not addressed	§540-42.E. Stabilize and protect disturbed areas quickly. Exposed areas and stockpiles should be revegetated within 30 to 60 days. Two methods are available for stabilizing disturbed areas ...	not addressed
Limit clearing, lawn size, require retention or planting of native vegetation/naturalized areas	Not addressed or general qualitative statement not tied to other design standards	Encourage minimization of clearing/ grubbing	Require minimization of clearing/grubbing with specific standards	§500-26.1.E.(8) Clearing limited for solar facilities otherwise not addressed	Not addressed	§9(F)(4) minimize soil erosion
Require native vegetation and trees	Require or recommend invasives	Not addressed, or mixture of required plantings of native and nonnative	Require at least 75% native plantings	Not addressed	§540-43. New trees shall be of species consistent with the existing trees in the area	not addressed.
GOAL 2: PROMOTE EFFICIENT, COMPACT DEVELOPMENT PATTERNS AND INFILL						
Lot size	Required minimum lot sizes	OSRD/NRPZ preferred. Special permit with incentives to utilize	Flexible with OSRD/NRPZ by right, preferred option	§500-22 Cluster development by special permit	(Not applicable)	(Not applicable)
Housing density	Multi-family housing not allowed, or only in/adjacent to commercial and industrial uses	Multi-family and cluster developments allowed by special permit	Multi-family housing allowed by right in most residential areas; cluster developments encouraged with density bonuses for LID features and no maximum lot coverage	§500-26 Multifamily limited to Center districts by special permit; §500-26 Residential Cluster Development by special permit in residential districts; §500-24.C(1) allows for Senior Village affordable housing bonus.	(Not applicable)	(Not applicable)
Setbacks	Required minimum front, side, and rear setbacks	Minimize, allow flexibility	Clear standards that minimize and in some instances eliminate setbacks	§500-26 Required minimums	(Not applicable)	(Not applicable)
Frontage	Required minimum frontage for each lot/unit	Minimize especially on curved streets and cul-de-sacs	No minimums in some instances, tied into other standards like OSRD design and shared driveways.	§500-26 Minimums. Cluster development option with reduced frontage requirements.	(Not applicable)	(Not applicable)
Common driveways	Often not allowed, or strict limitations	Allow for 2-3 residential units	Allow for up to 4 residential units, preferably constructed with permeable pavers or pavement	§500-26 Allowed in residential cluster developments, encouraged in Senior Village Overlay District.	Not addressed	(Not applicable)
GOAL 3: SMART DESIGNS THAT REDUCE OVERALL IMPERVIOUSNESS						
Impervious cover limits and infiltration rates	Not usually addressed in zoning and subdivision regs for rural/suburban residential	Require no net increase in site run-off from pre- to post-development	Impervious cover limits tailored to the community and district type (i.e. <10% total impervious cover in rural districts, but higher in urban and redevelopment districts); post-development infiltration should be equal to or greater than pre-development. Following best practice may also help communities comply with MS4 permit requirements	Not addressed	§540-42.A.(3) & (4) Infiltration required where feasible §540-42.A.(7) No increase in volume of runoff	§11(A)(8) Must comply with Stormwater Management Bylaw (which requires no increase in peak rate and volume of runoff)

Factors	Conventional	Better	Best	Chapter 500 Zoning	Chapter 540 Subdivision of Land	Chapter 386 Stormwater Management & Stormwater Management Regulations (2021)
Street location	Numeric and geometric standards based primarily on vehicular travel and safety, with basic pedestrian requirements e.g. sidewalks	Flexibility in applying standards, to reduce area of impact, grading, avoid key natural features	OSRD design preferred by-right. Require locating streets to minimize grading and road length, avoid important natural features	(Not applicable)	§540-34 Street layouts shall generally follow (parallel) the existing contours, or existing stream valley and natural swales, and should be designed with the objective of the preservation of natural features identified on the plan, as required above. All streets in the subdivision shall be designed so that, in the opinion of the Board, they shall provide safe vehicular travel.	(Not applicable)
Road width	Major and minor categories, 24-30’	Wide, medium, narrow categories. 22-24’ max, plus 2’ shoulders	Wide, medium, narrow, and alley categories. 20-24’ widest for 2 travel lanes, 18-20’ low traffic residential neighborhood, plus 2’ shoulders. Allow alleys and other low traffic or secondary emergency access and all shoulders to use alternative, permeable materials.	(Not applicable)	§540 Attachment 12 Table 1 28-36' pavement width	(Not applicable)
Road ROW width	50-75’, fully cleared and graded	40-50’, some flexibility in extent of clearing	20-50’depending on road type	(Not applicable)	§540 Attachment 12 Table 1 50-80' right-of-way width	(Not applicable)
Access Options	No common drives allowed, dead end allowed with limit on length and # of units	Allow dead end with limit on length and # of units. Allow common drives up to 2-3 units	Allow one way loop streets. Allow common drives up to 4 units, and alleys and rear-loading garages where suitable.	(Not applicable)	§540-36 Common driveways not addressed. Dead end allowed with limit on length and # of units.	(Not applicable)
Dead Ends/Cul-de-sacs	120 ft or more minimum turnaround	Minimize end radii – 35 ft	Allow hammerhead turnaround	(Not applicable)	§540-36 Pavement dia. of 120 feet, unless an alternative special design has been approved by the Planning Board.	(Not applicable)
Cul-de-sacs	Full pavement standard	Encourage center landscaping with bioretention	Require center landscaping with bioretention	(Not applicable)	Not addressed assumed full pavement	(Not applicable)
Curbing	Curbing required full length both sides of road	Allow curb breaks or curb flush with pavement to enable water to flow to vegetated LID features	Open drainage with roadside swales and no curbs preferred	(Not applicable)	§540-70 Table I Street Design Standards Appendix Not specified, curbing required on all types of streets.	not addressed
Roadside Swales	Allowed as an option	Preferred over closed drainage	Preferred, with criteria for proper design. Adoption of technical specifications and design templates for green infrastructure recommended	(Not applicable)	Not addressed	Not addressed
Utilities	Off sets required contributing to wide road ROWs	Not specified, flexible	Allow under road, sidewalks or immediately adjacent to roads to enable placement of roadside swales.	(Not applicable)	§ 540-35. Underground wiring. The main line location of these utilities within the street ROW shall be as shown on the plate for the respective street cross section. The utilities shall not be located under sidewalks. For streets of 50' and 60' ROWs, with 2 sidewalks, it is required that a 5' wide communication utilities easement be provided adjacent to the ROW, for the installation of these utilities.	(Not applicable)
Sidewalks	Concrete or bituminous	Some flexibility in material and design	Prefer permeable pavement or permeable pavers	(Not applicable)	§540-46 Bituminous concrete or equivalent	(Not applicable)

Factors	Conventional	Better	Best	Chapter 500 Zoning	Chapter 540 Subdivision of Land	Chapter 386 Stormwater Management & Stormwater Management Regulations (2021)
Sidewalk location	Required both sides of road	Allow on only 1 side of road especially in low density neighborhoods	Prefer siting with land contours and for best pedestrian utility (e.g. connect with common areas and shared open spaces) – not necessarily immediately parallel to road.	(Not applicable)	§540 Attachment 12 Table 1 Allow only on one side local and minor residential streets	(Not applicable)
Sidewalk drainage	Drains to road closed drainage system	Not addressed	Disconnect drainage from road system – e.g. adjacent green strips or within vegetated areas that can absorb sheet flow	(Not applicable)	Not addressed	Not addressed
GOAL 4: ADOPT GREEN INFRASTRUCTURE STORMWATER MANAGEMENT PROVISIONS						
Rooftop runoff	Prohibit directing clean roof runoff into closed municipal drainage systems.	Allow clean roof runoff to be directed to landscaped or naturally vegetated areas capable of absorbing without erosion, or infiltration	Require directing clean roof runoff to landscaped or naturally vegetated areas capable of absorbing, or infiltration	(Not applicable)	§540-42 Roof drains may be connected to the drainage system, but no industrial or domestic waste shall be discharged to or allowed to enter storm drains.	not specifically addressed §11(A)(7) Must comply with Stormwater Management Bylaw (which requires no increase in peak rate and volume of runoff)
Overall stormwater design; piping and surficial retention vs. LID	Conventional stormwater system design standards	Encourage LID features and BMPs; design standards often not specified	LID design standard encouraging infiltration, allowing surficial ponding of retained runoff for up to 72 hours; systems designed for larger volume storms, accounting for future precipitation predictions; credit for green roofs towards stormwater requirements. Following best practice may also help communities comply with MS4 permit requirements	(Not applicable)	§540-42.A.(3) & (4) Infiltration required where feasible §540-42.A.(7) No increase in volume of runoff	§11(A)(6) LID must be implemented where adequate soil, groundwater, topographic conditions allow.
Site Plan/Design Requirements	LID not addressed	Encourage LID features in site design - such as reduced imperviousness, maintaining natural hydrology, preserving open space, & rainwater reuse	Include bioretention and other vegetated LID features in site landscaping/open space requirements. Following best practice may also help communities comply with MS4 permit requirements. See section 2.3.5 of the MS4 permit for more information	(Not applicable)	(Not applicable)	§11(A)(6) LID must be implemented where adequate soil, groundwater, topographic conditions allow.
Allow easy siting of LID features (bioretention, swales, etc.)	Often not addressed, may require waivers from subdivision standards	Encouraged along road ROW	Allowed on lots, common open space, or road ROW, easement recorded. For commercial development, allow an increase in floor area ratio or other developmental incentives for green roofs	Not addressed	Not addressed	(Not applicable)
Permeable paving	Often not addressed, may require waivers from subdivision standards	Allowed on private residential lots for parking, patios, etc.	Allowed for residential drives, parking stalls, spillover parking spaces, emergency access ways (with proper engineering support for emergency vehicles) Two track design allowed for driveways and secondary emergency access ways (where required)	(Not applicable)	§540-26.G.(3)(c)[2][e] porous pavement shall be used to the extent feasible in Town Center District	not specifically addressed.
Stormwater management O&M plan	Typically only addressed if municipality has a stormwater or LID bylaw, or for areas subject to wetlands permitting	Required	Required, contents specified in alignment with current MassDEP Stormwater Handbook. Following best practice may also help communities comply with MS4 permit requirements	(Not applicable)	§540-42 A stormwater management plan shall be designed by a registered professional engineer for a subdivision or site to the satisfaction of the Planning Board	§10 Required and contents specified

Factors	Conventional	Better	Best	Chapter 500 Zoning	Chapter 540 Subdivision of Land	Chapter 386 Stormwater Management & Stormwater Management Regulations (2021)
Construction Erosion and Sedimentation Plan, and stormwater control	Basic general requirements	Required, contents specified - the site design process should include soil erosion and sedimentation control measures	Goes beyond minimum NPDES requirements. Requires minimization of site disturbance, reduction of construction waste, control measures not removed until proof of soil stabilization or reestablishment of vegetation. Written procedures for site inspection and enforcement included. Following best practice may also help communities comply with MS4 permit requirements. See section 2.3.5 of the MS4 permit for more information	(Not applicable)	Not addressed	§9 Required and contents specified
Stormwater discharge detection & elimination	Not addressed	Discharges and connections noted and/or limits set on quantity and quality	Illicit discharges and connections are prohibited and enforced. Following best practice may also help communities comply with MS4 permit requirements. Find more information in section 2.3.4.a of the MS4 permit	(Not applicable)	(Not applicable)	§II Prohibited and enforced. (Stormwater Management Ordinance)
Post- construction stormwater management and drainage patterns	Not addressed	Allow LID	Resemble pre-existing conditions of volume, velocity, quality and location, as nearly as possible, requiring LID to the max extent feasible. Retain vol of runoff >1in. per sq.ft. of impervious surface and/or remove 90% TSS post-construction & 50% TP generated on the site for new development, or >0.8in. per sq.ft and/or remove 80% TSS and 50% of TP load for redevelopment. Following best practice may also help communities comply with MS4 permit requirements.	(Not applicable)	§540-42.A.(2) No increase or decrease in runoff	§10 & 11 Resemble pre-existing conditions of volume, velocity, quality and location, as nearly as possible, requiring LID to the max extent feasible. Retain vol of runoff >1in. per sq.ft. of impervious surface and/or remove 90% TSS post-construction & 50% TP generated on the site for new development, or >0.8in. per sq.ft and/or remove 80% TSS and 50% of TP load for redevelopment.
As-built surveys	Not addressed	Recommended	Required, with written instructions for process; electronic submittal allowed	§500-41.E.(4) As-built required	§500-81 As-built required	§14 Drainage As-built required
Intra-departmental communication and coordination	Not addressed	Informally or loosely occurring	Required for plan review and/or permit approvals	§540-22.F. Submission to Board of Health §540-36.I. Special Permit submission to all Departments	§540-48 Submission to Board of Health	not addressed
Enforcement	No	Yes	Yes with fines. Same entity should oversee permit approvals and enforcement	§500-2 Enforcement and penalties described	§540.64 Enforcement by Building Inspector	§I.7 of Stormwater Bylaw
GOAL 5: ENCOURAGE EFFICIENT PARKING						
Parking	Specific minimums set based on projected maximum use times	Encourage minimum # needed to serve routine use (e.g. 2/residential unit with any additional/visitors parking behind in driveway or on street).	Establish Maximum Parking spaces allowed. Do not require more than 2/residence. Allow tenants separate, optional lease agreements for parking.	§500-31.C. Specific minimums set for different uses.	(Not applicable)	(Not applicable)

Factors	Conventional	Better	Best	Chapter 500 Zoning	Chapter 540 Subdivision of Land	Chapter 386 Stormwater Management & Stormwater Management Regulations (2021)
Commercial Parking	Specific minimums set based on projected maximum use times adding all on-site uses together.	Some flexibility to reduce minimums based on street or other available nearby parking or transit.	Allowed shared parking for uses with different peak demand times. Provide model agreements/deed restrictions. Reduce parking requirements near transit. Limit parking stall size (9ftx18ft max), with up to 30% smaller for compact cars	§500-31.C. Specific minimums set for different uses.	(Not applicable)	(Not applicable)
LID in Parking Areas	Often not addressed, may require waivers e.g. for planting islands to drain down rather than built up surrounded by curbs	Allow LID/bioretention within parking areas.	Require landscaping within parking areas, as LID/bioretention, at a minimum of 10% of the interior area landscaped and a minimum of 25 square feet for island planting areas.	Not addressed	Not addressed	not specifically addressed. §11.A.1)(a) LID required for all applicable projects unless infeasible.