

Town of Braintree
SOP 22 – Construction Site Runoff

Approved By:

Date:

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SOP 22: Construction Site Stormwater Runoff Control

Introduction

Construction sites that lack adequate stormwater controls can contribute a significant amount of sediment to nearby bodies of water. This Standard Operating Procedure (SOP) describes procedures for evaluating compliance of stormwater controls at construction sites to minimize or eliminate erosion and sediment transport.

These procedures address Minimum Control Measure 4, Construction Site Stormwater Runoff Control, by documenting the processes that the Town of Braintree will use for inspection and enforcement of sediment and erosion control measures and review, inspection and enforcement of site plans.

In addition to the inspection and enforcement procedures detailed in this SOP it is important to note that construction site operators within the MS4 jurisdiction are required to control construction wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes. These wastes may not be discharged to the MS4.

Procedures: Site Inspection and Enforcement of Sediment and Erosion Control Measures

Several Town Departments perform routine inspections of sediment and erosion control measures for construction activities, among them the Planning Board, the Conservation Commission and the Stormwater Division. There are overlapping jurisdictions for permits for new construction issued by these entities. Given that the Planning Board and the Conservation Commission are part of the same department, the staff has historically cooperated in inspections of construction sites where both entities have jurisdiction. The Stormwater Division was created in 2018 and since that time has promulgated regulations that include a two-tier Stormwater Permit process for projects that disturb more than 2,500 SF of land area and less than 150 cubic yards of either imported or exported fill. The applicability thresholds are modified if the project requires permits from the Planning Board.

Enforcement of conditions related to sediment and erosion control is authorized by several Town of Braintree Ordinances, among them Chapter 135 Zoning By-law, Chapter 12.2 Wetland By-law and Chapter 13.14 Stormwater Management. In addition to these local Ordinances, MGL Ch. 131 § 40 (the Massachusetts Wetland Protection Act) provides further protections against erosion and sedimentation through the Massachusetts Stormwater Handbook. The staff from all of the listed departments has the authority to enforce sediment and erosion control procedures and/or impose sanctions to ensure compliance when necessary.

Controlling Erosion and Sediment on Construction Sites

During the construction phase, it is important to inspect active sites regularly to ensure that practices are

SOP 22: Construction Site Stormwater Runoff Control

consistent with approved site plans and the site's Stormwater Pollution Prevention Plan (SWPPP) or other documents, as required by the municipality's legal authority. In addition, any project that will disturb more than 1 acre of land area is also subject to an EPA-NPDES Permit. The following guidelines apply:

- Active construction sites should be inspected bi-weekly or monthly to check the status of erosion and sedimentation controls. Inspections should also be conducted after incidents of heavy rainfall (0.25 inches or more in 24 hours).
- Erosion and sediment control features should be constructed before initiating activities that remove vegetated cover or otherwise disturb the site. These should be installed consistent with the approved site plans and with manufacturer's instructions.
- Erosion and sediment control devices should be inspected by the contractor regularly, and maintained as needed to ensure function.
- In the SWPPP or other document, the contractor should clearly identify the party responsible for maintaining erosion and sediment control devices.
- Existing vegetation should be maintained on site as long as possible.
- Construction should proceed progressively on the site in order to minimize exposed soil, and disturbed areas should be restored as soon as possible after work has been completed.
- Stockpiles should be stabilized by seeding or mulching if they are to remain for more than two weeks.
- Disturbed areas should be protected from stormwater runoff by using protective Best Management Practices (BMPs).
- Clean water should be diverted away from disturbed areas on construction sites to prevent erosion and sedimentation.
- Sediment traps and sediment barriers should be cleaned out regularly to reduce clogging and maintain design function.
- Vegetated and wooded buffers should be protected.
- Soils should be stabilized by mulching and/or seeding when they would be exposed for more than one week during the dry season, or more than two days during the rainy season.
- Vegetation should be allowed to establish before introducing flows to channels.
- Regular light watering should be used for dust control, as this is more effective than infrequent heavy watering.
- Excessive soil compaction with heavy machinery should be avoided, to the extent possible.
- Construction activities during months with higher runoff rates should be limited, to the extent possible.

Controlling Erosion and Sediment by Proper Maintenance of Permanent BMPs

Many construction phase BMPs can be integrated into the final site design, but ongoing inspection and maintenance are required to ensure long-term function of any permanent BMP. The Construction Period Operations and Maintenance Plan included as part of the permit approvals for a project should itemize the required maintenance for each BMP used on-site. The following guidelines summarize the requirements for long-term maintenance of permanent BMPs:

- Responsibility for maintaining erosion and sediment control devices should be clearly identified.
- Erosion and sediment control devices should be inspected following heavy rainfall events to ensure they are working properly.
- Erosion control blankets should be utilized when seeding slopes steeper than 3:1.
- Vegetated and wooded buffers should be protected, and left undisturbed to the extent possible.
- Runoff should not be diverted into a sensitive area unless this has been specifically approved.
- Sedimentation basins should be cleaned out once sediment reaches 50% of the basin's design capacity.
- Snow should not be plowed into, or stored within, retention basins, rain gardens, or other BMPs.
- Easements and service routes should be maintained, to enable maintenance equipment to access BMPs for regular cleaning.

Inspection Procedures

Construction sites will be inspected to ensure that sediment and erosion control measures are in place consistent with approved site plans. Inspections will be conducted by the Stormwater Division, the Planning Department, the Conservation Administrator or a qualified member of the site crew. Inspections will be conducted in accordance with the Massachusetts Stormwater Handbook. Inspections may include, but are not limited to:

- Inspection during or immediately following initial installation of sediment controls.
- Inspection following severe rainstorms to check for damage to controls.
- Inspection prior to seeding deadlines, particularly in fall.
- Final inspection of projects nearing completion to ensure that temporary controls have been removed, stabilization is complete, drainage ways are in proper condition, and the final contours agree with the proposed contours on the approved plan.

All inspections will be completed using the Erosion and Sediment Control Inspection Report form and/or the Construction Site Stormwater Inspection Report form, included in the attachments. All completed inspection forms will be maintained on file by Town of Braintree in the Stormwater Division office. During inspection the inspector will verify that sediment and erosion control measures are functioning as intended and are being maintained properly. Specific sediment and erosion control measures that will be assessed during inspection are detailed on the inspection forms.

Enforcement Procedures

In the event that a non-compliance issue is discovered during pre-construction or routine inspection, the Stormwater Division will document the occurrence and inform the site operator of the violation and the required corrective action. The Stormwater Division will provide the site operator with a copy of the inspection form, noting the non-compliance and the required corrective action. The site operator will be given a timeframe within which the corrective action must be performed. The Stormwater Division (or other departmental inspector) will revisit the site for inspection at the end of this period to verify that the corrective action was performed and that the site has achieved compliance. Fines may be levied if compliance is not achieved.

Reporting

The following information will be included in each annual report:

- Number of site inspections conducted
- Number of violations issued
- Record of enforcement actions

Employee Training

- Employees who inspect applicable construction sites are trained once per year on these procedures.

Procedures: Site Plan Review, Inspection, and Enforcement

Under the authority of the Town of Braintree's Zoning By-law and Stormwater Management Ordinance, both departments have the authority to perform construction site plan review, inspection and enforcement.

The Town of Braintree will implement the following construction site plan review, inspection and enforcement procedures:

Controlling Erosion and Sediment through Design and Planning

Prevention of erosion and sedimentation is preferable to installing treatment devices. Consistent application and implementation of the following guidelines during the design and review phases can prevent erosion and sedimentation:

- Avoid sensitive areas, steep slopes, and highly erodible soils to the maximum extent possible when developing site plans.
- Identify potential problem areas before the site plan is finalized and approved.
- Plan to use sediment barriers along contour lines, with a focus on areas where short-circuiting (i.e., flow around the barrier) may occur.
- Use berms at the top of steep slopes to divert runoff away from the slope's edge.
- Design trapezoidal or parabolic vegetated drainage channels, not triangular.
- Use vegetated channels with rip rap check dams, instead of impervious pavement or concrete, to reduce the water velocity of the conveyance system.
- Design a check dam or sediment forebay with level spreader at the exit of outfalls to reduce water velocity of the discharge and collect sediment.
- Use turf reinforcement matting to stabilize vegetated channels, encourage vegetation establishment, and withstand flow velocities without scouring the base of the channel.
- Plan open channels to follow land contours so natural drainage is not disrupted.
- Use organic matting for temporary slope stabilization and synthetic matting for permanent stabilization.
- Provide a stable channel, flume, or slope drain where it is necessary to carry water down slopes.

Site Plan Review Procedure

- The applicant will submit site plans to the Planning Board and Stormwater Division for pre-construction review. Review will be conducted by both departments and the Conservation Commission, if the site is jurisdictional for wetlands. Final conditions of approval will incorporate

comments from each department.

- The following standards with regard to water quality protection and stormwater management will be applicable to site plan review:
 - General site design will include appropriate stormwater drainage system details and calculations.
 - Planned construction operations will include adequate Best Management Practices (BMPs) and Sediment and Erosion Control Measures to reduce water quality impacts.
 - Planned BMPs must be designed to the standards found in the Massachusetts Stormwater Handbook. When possible BMPs should promote on-site infiltration of stormwater runoff from impervious surfaces.
 - BMPs will be selected and prioritized to address bacteria, the pollutant identified as the cause of the impairment to Braintree's surface waters.
 - When possible, low impact designs (LID) and/or Green Infrastructure (GI) should be included in site design. If LID/GI are not included in the site plan, the applicable regulations require that the applicant document LID/GI measures that were considered and rejected.

Site Inspection Procedures

Inspections will be conducted, at a minimum, during BMP construction as well as after construction of BMPs to ensure they are working as described in the approved plans. Inspection will be completed by a Professional Engineer or other qualified person with sufficient training, experience, and/or education to be able to adequately read site plans and assess the installation, operation and maintenance of BMPs in accordance with approved plans. An inspection form will be filled out for each site inspection and stored in the Stormwater Division office. A copy of the Inspection Form is available in the attachments.

Inspection Guidelines

- The inspection should begin at a low point and work uphill, observing all discharge points and any off-site support activities.
- Written and photographic records should be maintained for each site visit.
- During the inspection, the inspector should ask questions of the contractor. Understanding the selection, implementation, and maintenance of BMPs is an important goal of the inspection process and require site-specific input.
- The inspector should not recommend or endorse solutions or products. The inspector may offer appropriate advice but all decisions must be made by the contractor or the engineer of record.
- The inspector should always wear personal protective equipment (PPE) appropriate for the site.
- The inspector should abide by the contractor's site-specific safety requirements.
- The inspector has legal authority to enter the site. However, if denied permission to enter the site, the inspector should never force entry.

Prior to planning a site visit, the inspector should determine if the project is subject to USEPA's 2017 Construction General Permit, which replaces USEPA's 2012 Construction General Permit (for more information, visit: https://www.epa.gov/sites/production/files/2019-05/documents/final_2017_cgp.pdf).

Operators of sites that required coverage under the USEPA's 2012 Construction General Permit that

continue to be active should have submitted a new Notice of Intent (NOI) under the 2017 Permit.

If the site requires this coverage, the inspector should visit the USEPA Region 1 eNOI website to determine if the contractor filed for coverage under the 2017 and/or 2012 Construction General Permit. Print a copy of the project's NOI.

If the project disturbs one or more acres and is under construction but does not show up in the database, the project is in violation of the Construction General Permit. The inspector should call the contractor to determine if the NOI process has been started. If not, notify the contractor verbally of his requirement and the violation. Work cannot proceed on the site until a NOI for coverage under the 2017 Permit has been approved by the USEPA. The inspector shall issue a written Stop Work Order until the NOI has been approved by the USEPA. Once it has been determined that the site is in compliance with the 2017 Construction General Permit, site inspection can continue.

Inspection Process

1. Pre-inspection review
 - Obtain and review permits, site plans, previous inspection reports, and any other applicable information.
 - Print the approved NOI from the USEPA 2017 Construction General Permit website.
2. Meet with site contractor
 - Review the construction Stormwater Pollution Prevention Plan (SWPPP) (if the site includes over one acre of disturbance) or other documents, as required by the municipality's legal authority. Compare BMPs in the approved site plans with those shown in the SWPPP.
 - Review the project's approved NOI and confirm that information shown continues to be accurate.
 - Get a general overview of the project from the contractor.
 - Review inspections done by the contractor.
 - Review the status of any issues or corrective actions noted in previous inspection reports.
 - Discuss any complaints or incidents since the last meeting.
3. Inspect perimeter controls
 - Examine perimeter controls to determine if they are adequate, properly installed, and properly maintained.
 - For each structural BMP, check structural integrity to determine if any portion of the BMP needs to be replaced or requires maintenance.
4. Inspect slopes and temporary stockpiles
 - Determine if sediment and erosion controls are effective.
 - Look for slumps rills, and tracking of stockpiled materials around the site.
5. Compare BMPs in the site plan with the construction site conditions
 - Determine whether BMPs are in place as specified in the site plan, and if the BMPs have been adequately installed and maintained.
 - Note any areas where additional BMPs may be needed that are not specified in the site plans.
 - Inspect BMPs prior to and after construction.
6. Inspect site entrances/exits
 - Determine if there has been excessive tracking of sediment from the site.
 - Look for evidence of additional entrances/exits which are not on the site plan and are not

- properly stabilized.
7. Inspect sediment basins
 - Look for signs that sediment has accumulated beyond 50% of the original capacity of the basin.
 8. Inspect pollution prevention and good housekeeping practices
 - Inspect trash areas and material storage/staging areas to ensure that materials are properly maintained and that pollutant sources are not exposed to rainfall or runoff.
 - Inspect vehicles/equipment fueling and maintenance areas for the presence of spill control measures and for evidence of leaks or spills.
 9. Inspect discharge points and downstream, off-site areas
 - Walk down the street and/or in other directions of-site to determine if erosion and sedimentation control measures are effective in preventing off-site impacts.
 - Inspect down-slope catch basins to determine if they are protected, and identify whether sediment buildup has occurred.
 10. Meet with the contractor again prior to leaving
 - Discuss the effectiveness of current controls and whether modifications are needed.
 - Discuss possible violations or concerns noted during the site inspection, including discrepancies between approved site plans, the SWPPP, and/or the implementation of stormwater controls.
 - Agree on a schedule for addressing all discrepancies and schedule a follow-up inspection.
 11. Provide a written copy of the inspection report to the contractor.
 12. Follow up, as determined, and provide copies of subsequent inspections to the contractor.

Enforcement Procedure

In the event that a non-compliance issue is discovered during inspections, the Stormwater Division will document the occurrence and inform the site operator of the violation and the required corrective action. The Stormwater Division will provide the site operator with a copy of the inspection form, noting the non-compliance and the required corrective action with 7 days. The site operator will be given 30 days from receipt of the inspection form within which the corrective action must be performed. If corrective action cannot be achieved in 30 days, a rationale will be given to the department in 7 days and a timeline for corrective action will be submitted within 30 days. The Stormwater Division (or other departmental inspector) will revisit the site for inspection at the end of this period to verify that the corrective action was performed and that the site has achieved compliance. Fines may be levied if compliance is not achieved.

The number of site reviews, inspections and enforcement actions will be tracked electronically by the Stormwater Division. Records will be maintained and included in the MS4 annual report.

Employee Training

- Employees who inspect applicable construction sites are trained once per year on these procedures.

Reporting

The following information will be included in each MS4 annual report:

- Number of site reviews conducted
- Number of site inspections conducted
- Number of violations issued

- Record of enforcement actions

Attachments

1. Erosion and Sedimentation Control Inspection Report
2. Construction Site Stormwater Inspection Report
3. Town of Braintree Stormwater Regulations

Attachment 1

**Erosion and Sedimentation Control
Inspection Report**

EROSION AND SEDIMENTATION CONTROL INSPECTION REPORT

General Information

Project Name			
Project Location			
Inspector's Name			
Site Operator			
Date of Inspection		Date of Last Inspection	
Start Time		End Time	
Subject to USEPA Construction General Permit? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, has NOI been approved? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, attach approved NOI to this report. <p style="text-align: center;">If no, contact contractor immediately to determine status of NOI.</p>			
Type of Inspection: Regular <input type="checkbox"/> Pre-Storm Event <input type="checkbox"/> During Storm Event <input type="checkbox"/> Post-Storm Event <input type="checkbox"/>			
Describe the weather conditions at time of inspection			
Describe the current phase of construction			



Erosion and Sediment Control (ESC) on Construction Sites

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

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



(continued)

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

Non-Compliance Actions

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



Attachment 2
Construction Site Stormwater
Inspection Report

CONSTRUCTION SITE STORMWATER INSPECTION REPORT

General Information

Project Name			
Project Location			
Site Operator			
Inspector's Name			
Date of Inspection		Date of Last Inspection	
Start Time		End Time	
Subject to USEPA Construction General Permit? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, has NOI been approved? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, attach approved NOI to this report. <p style="text-align: center;">If no, contact site operator immediately to determine status of NOI.</p>			
Type of Inspection: Regular <input type="checkbox"/> Pre-Storm Event <input type="checkbox"/> During Storm Event <input type="checkbox"/> Post-Storm Event <input type="checkbox"/>			
Describe the weather conditions at time of inspection			
Describe the current phase of construction			



Site-Specific BMPs

Customize the following BMPs to be consistent with the SWPPP for the site being inspected.

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



Erosion and Sedimentation Control

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

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



(continued)

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



Overall Site Conditions

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

Issue	Status	Corrective Action Needed
Are slopes and disturbed areas not being actively worked properly stabilized?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are material stockpiles covered or protected when not in use?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are natural resource areas protected with sediment barriers or other BMPs?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are perimeter controls and sediment barriers installed and maintained?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are discharge points and receiving waters free of sediment deposits and turbidity?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are storm drain inlets properly protected?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is there evidence of sediment being tracked into streets?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is trash/litter from the construction site collected and placed in dumpsters?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are vehicle/equipment fueling and maintenance areas free of spills and leaks?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are potential stormwater contaminants protected inside or under cover?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is dewatering from site properly controlled?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are portable restroom facilities properly sited and maintained?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are all hazardous materials and wastes stored in accordance with local regulations?	Yes <input type="checkbox"/> No <input type="checkbox"/>	

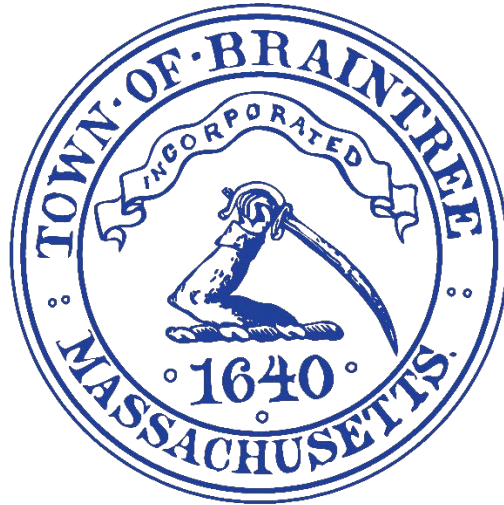


Non-Compliance Actions

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



Attachment 3
Town of Braintree Stormwater
Regulations



Town of Braintree

Stormwater Management Regulations

Department of Public Works
2019

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ARTICLE I Authority and Purpose

Section 1 - Reference to Regulations. These regulations may be referred to as the Town of Braintree's Stormwater Management Regulations.

Section 2 - Authority. Under the Authority of G.L. c. 83, Section 10 and Title 2, Chapters 2.220 and 13.14. of the Town's Ordinances, the Braintree Department of Public Works has established the following regulations governing Stormwater Management Facilities in the Town of Braintree.

Section 3 - Effect on other Town Ordinances. With respect to Stormwater Management Facilities, these Regulations supplement Section X Design Standards – Storm Drainage of the Town of Braintree's Subdivision Rules and Regulations.

Section 4 - Purpose. These Regulations are intended to protect, maintain and enhance the public health, safety and welfare and the environment by establishing minimum requirements and procedures to control the adverse effects of increased post-development stormwater runoff, decreased groundwater recharge and non-point source pollution associated with new development and re-development, to ensure proper and safe operation of the Town's Stormwater Management Facilities and to implement the requirements of the National Pollutant Discharge Elimination System General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems issued by the U.S. EPA by regulating land disturbance activities that may result in soil erosion and sedimentation and stormwater runoff directed to the Town's stormwater management system or the waters of the United States and/or Commonwealth of Massachusetts.

Section 5 - Severability. The provisions of these Regulations are severable. If any provision of these Regulations or any specific application to any person or circumstance is held invalid, such invalidity shall not affect the other provisions or application of said Regulations to the extent permitted by law.

Section 6 - Applicability These Stormwater Management Regulations shall apply to all activities in accordance with Chapter 13.14 of the Town of Braintree General Ordinances.

Section 7 - Right to Amend Regulations. The Department of Public Works reserves the right to amend these Regulations in any manner and to establish more stringent limitations or requirements as are deemed necessary or appropriate.

Section 8 - Required Applications and Permits.

- (a) Applications and permits required in Article V. of these Regulations are in addition to applications and permits that may be required by other federal, state and local laws or regulations. Stormwater Management Permits are required by these Regulations and issued by the Stormwater Division of the Department of Public Works as they apply:
 - i. Building/Drain Connection Permit
 - ii. Stormwater Management Permit - Minor Project

iii. Stormwater Management Permit - Major Project

- (b) These Regulations shall not be construed to require the Town to permit itself or those in its employ for activities done to carry out the Town's responsibilities under any federal or state laws, regulations, or requirements.

Section 9 - Stormwater Enterprise Fee. Pursuant to Title 13 Chapter 13.14 of the Town of Braintree General Ordinances, the Town has established a Stormwater Enterprise Fee for the purposes of funding the Town's stormwater management facilities and services.

Section 10 - The Department of Public Works shall enforce, pursuant to Article VII. of these Regulations and other applicable local, state, and federal laws, these regulations and the terms and conditions of a permit issued under these Regulations.

ARTICLE II
Use of Municipal Stormwater Management System

Section 1 - Municipal Stormwater Management Facilities/MS4 (Municipal Separate Storm Sewer System). The use of all MS4 Facilities in the Town shall be controlled by the Department. No person shall uncover, excavate over, block access to, or make any connection with or opening into, use, alter, or disturb any municipal stormwater management facility or appurtenance thereof within the Town's stormwater management system, without a permit issued by the Department.

No person shall maliciously, willfully or negligently break, damage, destroy, uncover, deface or tamper with any structure, appurtenance, or equipment which is part of the Town's MS4 system. Any person violating this provision shall be subject to immediate arrest under charge of disorderly conduct.

Section 2 - Permit Required. No person shall make any connection to the Town's MS4 system without first obtaining a Stormwater Management Permit from the Department pursuant to Article V.

Section 3 - Private Stormwater Management Facilities.

- (a) All private Stormwater Management Facilities that connect directly or indirectly to the Town's MS4 system shall be controlled as to discharge by the Department, but constructed, installed, maintained, repaired, and operated by their owners, at the owner's expense. All private Stormwater Management Facilities that connect to the Town's MS4 system shall be constructed, installed, maintained, repaired, and operated to the satisfaction of the Department.
- (b) Repairs to private Stormwater Management Facilities in the Town, including repairs required to comply with these Regulations, shall be made by a contractor on the Water and Sewer Division's approved list.

Section 4 - Ownership and Maintenance of Private Stormwater Management Facilities.

- (a) Private Stormwater Management Facilities, whether located on public or private property, are owned by the owner of the premises served. In the case where more than one premise is connected to the same building storm drain, the owners of the respective premises shall be jointly and severally responsible for the maintenance and repair of the building storm drain.
- (b) The owner of a Private storm drain shall at all times keep such drains clean and in good repair in order not to cause depletion of groundwater, damage to property, odor, or harm to the Town's Stormwater Management Facilities.
- (c) The owner shall maintain, repair, modify or replace an existing Private storm drain whenever it is determined by the Department that such drains may endanger public health, create a public nuisance, result in public or private property damage, or impair water quality or the environment and in such other circumstances as the Department deems appropriate.
- (d) The owner shall develop mechanisms and procedures designed to prevent spills whenever the Department determines that it is necessary. This includes identification of spills, reporting and containment procedures, documentation and training.

ARTICLE III General Requirements

A. PROHIBITED ACTIVITIES

Section 1 - Illicit discharge. No person shall dump, discharge, cause or allow to be discharged any contaminated water or non-stormwater discharge (except as exempted in B. § 1 below) into the MS4 system, into a watercourse, or into the waters of the Commonwealth.

Section 2 - Illicit connection. No person shall construct, use, allow, maintain or continue an illicit connection to the municipal storm drain system, regardless of whether the connection was permissible under applicable law, regulation or custom at the time of connection.

Section 3 - Roof Leader connections. No person shall connect building roof leaders directly to the municipal storm drain system.

B. AUTHORIZED DISCHARGES

Section 1 - Authorized Discharges to MS4 Facilities.

Discharges to MS4 Facilities which are authorized by these regulations are as follows:

- (a) Unless otherwise determined by the Department, discharges composed entirely of stormwater that were connected prior to the enactment of these regulations.

- (b) Discharges composed entirely of stormwater that are free from sediments related to erosion from construction sites.
- (c) Discharges for which the owner has obtained a Stormwater Management Permit from the Department, are in compliance with any requirements contained in the Town's Stormwater Management Plan, and if appropriate, an Industrial Activity Permit, Construction Activity Permit, or a NPDES Permit Exclusion from EPA.
- (d) Discharges from the following sources:
 - (i) Department of Public Works ice and snow control operations;
 - (ii) Flow resulting from firefighting activities;
 - (iii) Street and pavement wash waters;
 - (iv) Natural flow from riparian habitats and wetlands;
 - (v) Diverted tide, river or stream flows;
 - (vi) Water main, hydrant flushing and other discharges from potable water sources associated with routine maintenance of the water distribution system;
 - (vii) Uncontaminated groundwater or infiltration of groundwater;
 - (viii) Uncontaminated springs;
 - (ix) Rising groundwater;
 - (x) Uncontaminated water from sump pumps and other pumps that remove floodwaters from basements;
 - (xi) Water discharge from irrigation or watering of lawns, trees, landscaping and gardens;
 - (xii) Noncommercial car washing;
 - (xiii) Waters from residential property management activities, including washing walkways, patios, house siding and windows, provided the wash water does not contain detergents and
 - (xiv) Swimming pool discharges that have been de-chlorinated.

C. REQUIREMENTS FOR ALL STORMWATER DISCHARGES

Section 1 - Notification of Changed Discharge. Every property owner who directly or indirectly discharges stormwater to the Town's stormwater management system shall notify the Department in writing in advance of:

- (a) Any substantial change in the rate and/or volume of discharge; and
- (b) Any change in the location of the discharge to a different storm drain connection.
- (c) Any change in the total amount of impervious cover of areas connected to the storm drain.

Existing discharges authorized in Article III.B. may be required to obtain a Stormwater Management Permit as a result of the above changes.

Section 2 - Notification of Violations.

- (a) Property owners shall notify the Department by telephone or email immediately upon discharging stormwater in violation of these Regulations or their permits and of any upset, or spill that may reasonably be expected to discharge to the storm drainage system.
- (b) Each notification shall be followed within 10 business days of the date of occurrence by a detailed written statement addressed to the Department describing the causes of the discharge and the measures being taken to prevent a recurrence. Such notification will not relieve property owners of liability for any expense, loss or damage to the Town stormwater management system or for any fines imposed on the Town due to such discharge.

Section 3 - Preventive Measures. Each property owner shall provide reasonable and appropriate protection from any discharge, including accidental discharges, in violation of these Regulations.

Section 4 - NPDES Notice of Intent and Permit. Every person who is required to be covered under an Industrial Activity Permit shall submit to the Department a copy of the completed Notice of Intent or individual application as submitted to EPA, and the information identified in items (a) through (h) below, as applicable.

- (a) Address of the building (or premises) where the discharge will take place and the name and address of the building (or premises) owner;
- (b) Name of a contact person, title and phone number;
- (c) A site plan or sketch which shows the location of the connection of the building storm drain or the point(s) of discharge to the Town's storm drainage system, including the street name, and the size of the storm drain to which the stormwater will discharge;

- (d) Standard Industrial Code (SIC Code) of the facility;
- (e) A description of the product or services provided by the facility;
- (f) A description of the nature of the discharge;
- (g) Existing NPDES permit number, if any;
- (h) Facility's Assessor's Map and Parcel Number.

Section 5 - Compliance with Treatment Standards. Every property owner, if so directed by the Department, must implement structural and non-structural stormwater BMPs that are consistent with the Town's Stormwater Plan. BMPs must be selected and designed using the appropriate criteria from the most recent Massachusetts Stormwater Handbook, as amended.

ARTICLE IV

Private Storm Drains and Stormwater Runoff Facilities, Connections and Appurtenances

Section 1 - Separate Building Sewers and Building Storm Drains. Separate and independent building sewers and building storm drains shall be provided for all new or substantially rehabilitated buildings.

Section 2 - Gravity Discharge to Storm Drains. No building storm drains shall discharge by gravity to the Town storm drains. In all buildings in which the building storm drain is lower than the street grade in front of the building, stormwater shall be lifted by an approved means to a manhole or catch basin in the Town storm drain system.

Section 3 - Connections to Manholes. Private storm drain connections for new or substantially rehabilitated buildings shall be made directly to Town-owned manholes or catch basins unless otherwise approved by the Department.

Section 4 - Wastewater-Stormwater Separation.

- (a) The plumbing of any existing or new building shall be so constructed as to keep all stormwater, surface water, groundwater, roof and surface runoff, subsurface drainage, uncontaminated cooling water, and uncontaminated industrial process water, non-contact cooling water, and non-contact industrial process water separate from sanitary sewage and industrial wastes, and from the building sewer.
- (b) The building drain conveying wastewater from plumbing fixtures within the building shall discharge to a building sewer, while the building drain conveying stormwater and other drainage listed in (a) shall discharge to a building storm drain.
- (c) In accordance with Town Ordinances, on-site disposal of stormwater is required to the extent feasible. Where separate storm drains and sanitary sewers are provided, and site conditions do not permit on-site disposal of the required amount of stormwater, the

Town will allow treated stormwater or a treated overflow from the on-site system which shall be connected to a storm drain. Connection of a private storm drain to a sanitary sewer is prohibited.

- (d) Connection of a building sewer to a storm drain is prohibited.
- (e) The Department shall require an owner to eliminate a discharge to the storm drain whenever the Director determines that the discharge violates the provisions of Article III.

Section 5 - Cleanouts. Where a new building is to be constructed which is set back from the property line, the Department may require the owner to install a clean-out on the owner's property at every 100 linear feet of pipe length and at every 22 1/2° or greater change in direction.

Section 6 - Floor Drains. Floor drains shall be connected to the building sewer.

ARTICLE V

Permit Procedures and Requirements

All permits issued by the Department pursuant to Ch. 13.14 will be referred to as “Stormwater Management Permits”.

Section 1 - General

- (a) **Timing of Application.** A Stormwater Management Permit (“Permit”) must be obtained prior to the commencement of any activity for which a Permit is required under Ch. 13.14 Stormwater Management or these regulations.
- (b) **Owner Responsibility.** While application may be made by a representative, the permittee must be the Owner of the property. If the applicant has less than a fee interest in all parcels on which work will occur, the applicant shall provide written consent from the fee owner of each affected parcel, or evidence of an interest in the parcels sufficient to establish the applicant’s right to conduct the work. It is the property Owner or agent’s responsibility to determine if other Town, state or federal permits or applications are required and to secure them.
- (c) **Burden of Proof.** It is the applicant’s responsibility to be aware of and meet the requirements of the Stormwater Management Ordinance and the Regulations. The applicant has the burden of proving that the proposed project or activity will comply with the Ordinance and the Regulations.
- (d) With the exception of discharges authorized under Article III. B, no person shall cause or allow any new stormwater discharges to the Town's storm drainage system without having first obtained all necessary approvals from the Planning Board and Conservation Commission and a Stormwater Management Permit from the Department. The decision

to issue a Stormwater Management Permit rests entirely with the Department. Such discharges shall comply with all other applicable federal, state and local requirements.

- (e) The Stormwater Management Permit issued to an applicant may stipulate Special Conditions and terms as deemed necessary or appropriate by the Department. These may include start and completion dates.
- (f) The Department may deny a permit for any discharge which it believes can reasonably be expected to result in significant harm to public health, safety, the environment, to the Town's MS4 system or a tributary to the Town's storm drainage system.
- (g) An applicant may request reconsideration of the terms and conditions in an issuance, renewal, or modification of a permit issued by the Town, and an applicant may request reconsideration of the denial of a permit by the Town.
- (h) A Stormwater Management Permit may be revoked, suspended or reissued with additional Special Conditions if the Department determines that the discharge, whether singly or in combination with others, is contributing to a water quality problem, is causing violation of the Town's MS4 Permit or has not been executed in compliance with the conditions of the Permit.
- (i) All Stormwater Management Permit applications shall include the appropriate fee as provided in Article VIII.

Section 2 – Pre-Application Meeting

Applicants are strongly encouraged to schedule a pre-application meeting with the Department at the earliest feasible time for the following purposes:

- (a) Discussion of the proposed development plans and requirements for a Permit and the anticipated fees.
- (b) Advise the engineer and/or applicant of the Town's design standards (see Appendices), goals with respect to stormwater management at the site, and to the extent practicable, of any known concerns or issues regarding stormwater management at the site.
- (c) Advise the engineer and/or applicant of application submission requirements or of additional information needed as part of the application at the time of filing.
- (d) Encourage the use of Low Impact Development (LID) Best Management Practices and Green Infrastructure in the proposed stormwater management design. Unlike conventional development and stormwater controls, an LID approach to design begins with an assessment of environmental and hydrologic conditions at the site and how best to address these conditions. Green Infrastructure includes water treatment systems that use vegetation, soils, and other nature-based elements to filter and treat polluted

stormwater runoff before it is discharged into a local water body. Applicants are reminded that the objectives of the LID approach are to:

1. Develop a site plan that reflects natural hydrology
2. Minimize impervious surfaces
3. Treat stormwater in numerous small, decentralized structures
4. Use natural topography for drainage ways and storage areas
5. Preserve portions of the site in undisturbed, natural conditions
6. Lengthen travel paths to increase time of concentration and attenuate peak rates

Section 3 - Application Procedure

(a) Building/Drain Connection Applications

1. Any new connection to the Town's MS4 storm drain system involving sump pump or groundwater discharge shall require approval from the Department.

(b) Minor Applications which involve either:

1. Land Disturbance of more than 2,500 square feet but less than 5,000 square feet and less than 150 cubic yards of imported or exported material, or
2. Land disturbance greater than 5,000 square feet but less than 1 acre or greater than 150 cubic yards of imported or exported material with Site Plan Approval or a Grading Permit from the Planning Board.
3. Any proposed connection to the MS4 system

Minor Permit Requirements

At least 30 days prior to initiating any work the applicant shall submit two copies of the completed Stormwater Management Permit – Minor Project application form along with the following:

1. Copy of Site Plan Approval or a Grading Permit from the Planning Board (if required)
2. A sketch plan illustrating:
 - a. Existing features of the site including structures, pavement and landscaped areas

- b. Proposed areas of land disturbance, stormwater management measures for new impervious areas and limit of work boundary
- c. Erosion control measures to prevent sediment from entering the MS4 system
- d. Details of an on-going maintenance program for the stormwater management measures with the name and contact information of the person responsible

(c) Major Permits

Major projects are those which involve either:

- a. Land disturbance greater than 5,000 square feet but less than 1 acre not requiring Site Plan Approval from the Planning Board or
- b. Land Disturbance greater than one acre, or
- c. Existing or new connections required to implement structural and non-structural BMPs to be consistent with the Town's Stormwater Plan.
- d. Extensions or relocations of a Town storm drain

At least 60 days prior to initiating any work the applicant shall submit two hard copies and one digital copy of the completed Stormwater Management Permit – Major Project application form along with the following:

- a. Copies of any approvals received from the Conservation Commission.
- b. Project Narrative describing existing conditions, proposed development and methods used to mitigate stormwater impacts as well as an evaluation and implementation of Low Impact Development Best Management Practices
- c. Stormwater Management Plan in accordance with Appendix B that includes:
 - 1. Existing Conditions Plan with property line information, existing topography (2 foot contour interval), existing utilities, drainage, tree line, wetland boundaries, stamped and signed by a MA registered Professional Land Surveyor
 - 2. Site Plan with site layout, proposed grading (2 foot contour interval) proposed utilities, proposed clearing, stormwater management measures, soil testing data and limit of work line, signed and stamped by a MA registered Professional Engineer

- d. Erosion and Sedimentation Control Plan in accordance with Appendix C
- e. Construction Sequence
- f. Stormwater Report that includes
 - 1. Completed Mass DEP Stormwater Checklist signed and stamped by a MA registered Professional Engineer
 - 2. Pre and Post-development hydrologic calculations in accordance with Article VI of these Regulations
 - 3. Operations and Maintenance Plan in accordance with Appendix D

Section 4 – Peer Reviews

In accordance with MGL Ch. 44 § 53G, the Department may impose reasonable fees for the employment of outside consultants to assist the Department in its review of permit applications and may deposit such fees in a special account. Any such account shall be established by the Town Treasurer in the Town treasury and shall be kept separate and apart from other monies. The special account, including accrued interest, if any, shall be expended at the direction of the Department without further appropriation; provided, however, that such funds are to be expended by it only in connection with carrying out its responsibilities under the Ordinance and these regulations to review the particular permit application. Any excess amount in the account shall be repaid to the applicant or to the applicant's successor in interest at the conclusion of the application review. The applicant may appeal the selection of the consultant to the Town Council, but solely on grounds that the consultant has a conflict of interest or lacks necessary qualifications to undertake the review. The Department's determination that consultant review is necessary is not subject to appeal.

Section 5 – Inspections

Minor Permit

Inspections shall be conducted by the Department or its agent at the following stages

- (a) After the erosion control measures have been installed
- (b) During the installation of stormwater management measures as required by the conditions of the permit
- (c) After the work has been completed and the site is stabilized

Major Permit

- (a) Pre-construction Meeting

Prior to the commencement of land disturbance, clearing, excavation, or construction, the applicant, the applicant’s technical representative, the general contractor and any other person with authority to make changes to the project, shall meet with the Stormwater Manager to review the permitted plans and their implementation. A copy of the Stormwater Management Permit and approved plans shall be kept on the project site during the progress of the work. A copy of the NPDES Construction General Permit and Stormwater Pollution Prevention Plan (for projects greater than 1 acre) shall be kept at the site as well. This meeting may be combined with pre-construction meetings required by other town Boards and officials.

(b) Inspections

The Department or its agent shall perform inspections as listed below, and shall either approve that portion of the work completed or shall notify the permittee of any noncompliance with Permit requirements. In order to obtain inspections, the permittee shall notify the Department at least two business days prior to the requested inspection. Inspections shall occur at the following stages:

- 1) Erosion and sediment control measures are in place and stabilized
- 2) Site clearing has been substantially completed
- 3) Stormwater Management System
 - i) Rough grading has been substantially completed
 - ii) Subsurface Infiltration Systems
 - iii) Excavation of area for system
 - iv) Placement of stone below system and installation of filter fabric
 - v) Backfilling and installation of inspection port(s)
 - vi) Final grading has been substantially completed
 - vii) Final Landscaping (permanent stabilization) and project final completion

(c) Final Inspection and “As-built” Plans

- 1) Within one year of the completion of the project, after the stormwater management system has been constructed, the permittee shall submit an “as-built” plan for any stormwater management facilities or practices to the Department. This plan shall be accompanied by an Engineer’s Certification, stamped and signed by a Professional Engineer registered in the Commonwealth of Massachusetts, stating that the stormwater management system has been inspected during a storm event, is functional as designed and that the completed project complies with all aspects of the Permit. Any discrepancies between the approved plan and the “as-built” plan must be described in the Engineer’s Certification.
- 2) “As-built” plans shall be full-sized plans which reflect the “as-built” conditions, including all final grades and pipe inverts. All work deleted, correction in elevations and changes in materials shall be shown on the “as-built” plan.

- 3) If the stormwater system is found to be inadequate by virtue of physical evidence of operational failure, even though it was built as called for in the approved plans, the deficiencies shall be addressed and corrected by the permittee before any performance guarantee is released and a Certificate of Completion is issued.

Section 6– Certificate of Completion

Prior to the request for Certificate of Completion, the permittee shall provide to the Department for its review and written approval, a revised Operations and Maintenance Plan of all “as-built” structural BMP systems, as well as anticipated non-structural BMPs, such as sweeping, and applications of winter de-icing agents. The O&M plan, at a scale of 1” = 20’, or as approved of in advance by the Department, shall include a depiction of each structural BMP element. The O&M Plan shall also indicate those areas within which applications of fertilizers, herbicides and pesticides are anticipated, and those areas to be designated as chemical and/or fertilizer free. Materials, application rates and total amounts to be used of each material shall be provided. The permittee shall also provide some documentation to the Department of adequate funding for required maintenance.

Section 7– Continuing Conditions

- (a) Adherence to the provisions of the approved O&M Plan is a continuing requirement of the Permit. Failure to adhere to these provisions will constitute a violation of the Stormwater Management Ordinance and these Regulations, and be subject to enforcement action.
- (b) A request to modify the requirements of the O&M Plan shall be submitted to the Department, which may approve the requested modification if it is determined to be an insignificant change. If the Department determines that the requested modification is significant, it may require that the permittee submit a request to amend the Permit, which shall be subject to the formal review procedures set forth in these Regulations.
- (c) The licensed contractor responsible for the operation and maintenance of a stormwater facility shall make and keep a record of all operation and maintenance activities showing compliance with the O&M Plan and shall submit a detailed annual report to the Department no later than January 31 each year.

ARTICLE VI

Post-Development Stormwater Management Criteria

At a minimum, all projects subject to a Major Stormwater Management Permit shall comply with the criteria, specifications and performance standards of the most recent version of the Massachusetts Stormwater Management Standards and accompanying Stormwater Management Handbook, as well as the criteria contained herein. The following general performance criteria shall be applicable to all stormwater management plans, unless otherwise provided for in these Regulations

Section 1 – Low Impact Design and Green Infrastructure

- (a) The design of the project shall, to the maximum extent feasible, employ environmentally sensitive site design as outlined in the Mass. DEP Stormwater Handbook, as amended, and shall attempt to reproduce natural hydrologic conditions with respect to ground and surface waters.
- (b) Evaluation of Low Impact Development practices is required and implementation of such practices to the maximum extent practicable is encouraged. If the proposed stormwater management system design does not fully utilize Low Impact Development techniques, the applicant shall provide written documentation of which Low Impact Development Best Management Practices were evaluated for the proposed project and the reasons such practices were found to be infeasible. Guidance on these practices is provided in the 2008 Mass DEP Stormwater Management Handbook.
- (c) In order to conserve potable water supplies and maximize recharge, it may be appropriate on some sites to store clean runoff (e.g. from roofs) for reuse on the site for irrigation or other gray water purposes. This can be accomplished, through the use of cisterns and rain barrels. Where appropriate, a water budget may be required to be prepared to determine applicability.

Section 2 – Hydrologic and Hydraulic Criteria

- (a) Hydrologic analyses using TR-55/TR-20 methodology shall be performed on the entire project site and include any off-site areas that drain to or through the project site.
- (b) The analyses shall be performed for the 2, 10, 25 and 100-year design storms under pre-development and post-development conditions. The specified design storms shall be defined as a 24-hour storm using the most recent rainfall distribution recommended by the National Oceanic and Atmospheric Administration Atlas 14, as amended.
- (c) The post-development peak discharge rate shall be equal to or less than the pre-development peak discharge rate, based on 2-year, 10-year, 25-year and 100-year 24-hour storms.
- (d) Hydrologic analyses are to be performed in a pre and post sub-watershed basis with designated control points at each location where runoff leaves the site or enters a water body.

- (e) The same land area shall be used in the analysis to facilitate comparison of existing and proposed conditions.
- (f) The total volume of discharge, as well as peak rate, shall be evaluated at each control point.
- (g) The site shall be designed to ensure that all runoff from the site up to the 100-year storm enters the control structure. For example, the drainage system may only be sized to handle a 25-year storm, with larger storms flooding the distribution system and traveling overland. This overland flow, or overflow, must be directed into the peak control structure or otherwise managed to attenuate flow.
- (h) For purposes of computing runoff, all pervious lands on the site shall be assumed, prior to development, to be in “good” condition regardless of conditions existing at the time of computation.
- (i) Off-site areas should be modeled as their present land use condition in good hydrologic condition.
- (j) The length of overland sheet flow used in time of concentration (TC) calculations shall be limited to not more than 50 feet for pre and post development conditions.
- (k) Stormwater Management Systems shall be designed to retain and/or treat the first one inch (1”) of runoff from all impervious surfaces on the site. The portion of the first one inch (1”) which cannot be feasibly retained and/or infiltrated shall be treated using treatment methods consistent with the Final Total Maximum Daily Loads for affected receiving waters and any additional treatment requirements in the Town of Braintree’s MS4 Permit. Pre-treatment of runoff from paved surfaces is required to remove 44% of the Total Suspended Solids prior to infiltration. Driveways associated with applications for single-family dwellings are exempt from this requirement as per the 2008 Mass DEP Stormwater Handbook, but to the extent practicable, runoff from such driveways shall be directed to adjacent pervious surfaces.
- (l) Stormwater outlets shall be designed to prevent erosion.
- (m) For other structural stormwater controls not included in the Mass DEP Stormwater Handbook, or for which pollutant removal rates have not been provided, the effectiveness and pollutant removal of the structural control must be documented through third party studies and receive approval from the Department before being included in the design of a stormwater management system.

Section 3 – Segmentation

Proposed residential, commercial or industrial subdivisions shall apply these stormwater management criteria to the land development as a whole. Individual lots in new subdivision shall not be considered separate land development projects, but rather the entire subdivision shall be considered a single land development project. Hydrologic parameters shall reflect the ultimate land development and shall be used in all engineering calculations.

Section 4 – Sensitive Areas

Stormwater discharges to critical areas with sensitive resources (i.e. shellfish beds, swimming beaches, aquifer recharge areas, water supply reservoirs, Areas of Critical Environmental Concern) may be subject to additional criteria, or may need to utilize or restrict certain stormwater management practices at the discretion of the Department.

ARTICLE VII Enforcement

The Department or an authorized agent of the Department shall enforce these Regulations and may pursue all civil, criminal, and non-criminal remedies for violations of said Regulations.

A. INSPECTIONS

Section 1 - Right of Access.

- (a) To the extent permitted by law or with the consent of the property owner, duly authorized representatives of the Town may inspect the property or facilities of any property owner (including facilities under construction) to ascertain compliance with these Regulations or compliance with any permit issued pursuant to these Regulations.
- (b) Owners or occupants of premises where stormwater is either generated or discharged shall allow properly identified Town representatives safe and ready access, at all reasonable times during normal business hours and at such other times as the Town reasonably suspects that a violation of these Regulations or a permit issued pursuant to these Regulations may be occurring. Access shall be allowed to all such parts of the premises as would enable Town personnel to inspect, observe, measure, sample and test all such other facilities as the Town reasonably believes may be contributing to a violation of these Regulations or a permit issued pursuant to these Regulations.
- (c) The Town may conduct routine, periodic inspections of facilities such as building storm drains, catch basins, treatment systems, pre-treatment facilities or other stormwater components. Owners or occupants shall provide any labor or equipment needed by Town personnel to open, inspect, and operate such facilities.

B. MONETARY LIABILITY

Section 1 - Penalties.

Any person who violates any provision of these Regulations or a permit issued pursuant to these Regulations shall forfeit and pay to the Town an amount set forth in Chapter 13.14.0501 of the Town's Ordinances. For purposes of this section, each day of a continuous violation shall be deemed to be a separate violation. If a violation is intermittent, each occurrence shall be deemed to be a separate violation.

Section 2 - Reimbursement for Costs to the Town.

Failure to comply with any portion of these Regulations, or with any permit or order issued thereunder, shall be sufficient cause for the Town to levy on and collect from each violator any additional cost for any expense, loss, or damage occasioned by such violation, including assessments or penalties levied or imposed on the Town by any state or federal agency.

C. ENFORCEMENT ACTIONS

Section 1 - Multiple Alternatives. When the Department determines that a person has a violation the Town may take any one or more of the following actions, in any sequence or simultaneously:

- (i) The Town may issue a request or an order to cease and desist any such violation or any actions that cause or threaten to cause a violation, and/or an implementation schedule for undertaking specific actions or practices.
- (ii) The Town may require the person to obtain a storm drain connection permit.
- (iii) The Town may require the person in question to submit a detailed time schedule setting forth specific actions to be taken and specific dates upon which such actions will be undertaken in order to prevent or correct a violation. The Town may issue an implementation schedule containing or modifying such specific actions and time schedule, or requiring such other actions within such times as the Town deems appropriate.
- (iv) The Town may issue an order directing the person to pay to the Department penalties and costs in accordance with Section C.
- (v) The Town may revoke, modify, deny, suspend, or refuse to renew a permit issued to the person under these Regulations.
- (vi) The Town may take direct enforcement action by filing suit in any court of competent jurisdiction for civil or criminal fines and reimbursement of costs or damages resulting from the violation or threatened violation and/or injunctive relief.
- (vii) The Town may take any other action available to it under any applicable statute or regulation.

**ARTICLE VIII
Permit Fees
STORMWATER PERMIT FEE SCHEDULE**

Section 1 – Each Stormwater Management Permit application must include the required filing fee.

a) Application Fee

- (1) An Application Fee is payable at the time of application. It is non-refundable.
- (2) The purpose of the Application Fee is to offset the Department’s costs incurred by the Town in reviewing, approving and monitoring the permit and compliance therewith.
- (3) The Application Fee is in addition to any other local or state fees that may be charged under any other law or ordinance.
- (4) The Application Fee shall be paid according to the following schedule:

<u>Activity</u>	<u>Application Fee</u>
Existing Building/Drain Connection	No charge
Land Disturbance more than 2,500 SF but less than 6,000 SF	\$100.00
New or Re-developed Single/Two Family House	\$250.00
Residential Development other than SF House	
Residential Subdivision	
2 – 3 Lots	\$300.00
4 – 10 Lots	\$1,000.00
11 or more Lots	\$1,500.00
Multi-Family Structures (townhouses, condominiums, apartments larger than 2 units per building)	
3 – 10 Units	\$700.00
11 – 23 Units	\$900.00
24 – 40 Units	\$2,000.00
41 or more Units	\$2,750.00
Commercial and Industrial Projects	
Disturbance of 2,500 SF to 5,000	\$400.00
Disturbance of 5,001SF to 21,779 (1/2 AC)	\$500.00
Disturbance of 21,780 SF (1/2 AC) – 1 AC	\$600.00
Disturbance of 1.1 to 2 AC	\$700.00
Disturbance of 2.1 to 10 AC	\$1,000.00
Disturbance of more than 10 AC	\$1,500.00

Request for Certificate of Completion

Single or Two Family House	\$100.00
All others	\$200.00

b) Review Fee

- (1) A Review Fee may be charged to cover outside professional consultant review services for a project if the Department, after consultation with the Town Engineer, determines that such services are necessary due to the scope and complexity of the project. The consultant services may include, but are not limited to review by engineers, hydrologists, attorneys, or other professionals for hydrologic and drainage analysis, stormwater quality analysis, site inspections, as-built plan review , and analysis of legal issues.
- (2) The applicant will be provided with an estimate of the Review Fee as determined by the Department and the Town Engineer. This estimated fee must be paid to the town prior to the start of the review process, unless the Department approves other arrangements for the applicant to pay consultants directly when services are provided.

c) Inspection Fees

An Inspection Fee of fifty (50) dollars shall be paid by the applicant for each site inspection conducted by Town personnel during the construction of the project. The cost of any inspection conducted by a professional consultant shall be paid for by the applicant as provided in Section 1.b).

ARTICLE IX
Adoption

Section 1 - Effective Date.

These Regulations shall be in full force and effect after their adoption in accordance with Section 8-4 of the Town Charter.

END

APPENDIX A - DEFINITIONS

Definitions. Terms which are not defined herein shall be interpreted as commonly used. Throughout these Regulations, *shall* is mandatory, and *may* is permissive. Definitions shown in italics are taken from Chapter 13.14 of the Town of Braintree Ordinances. Unless the content specifically indicates otherwise, the meaning of the terms used in these Regulations shall be as follows:

Alter: Any activity which will measurably change the ability of a ground surface area to absorb water or will change existing surface drainage patterns. Alter may be similarly represented as “alteration of drainage characteristics”, and “conducting land disturbance activities.”

Applicant: Any person, individual, partnership, association, firm, company, corporation, trust, authority, agency, department, or political subdivision of the Commonwealth or the Federal government (to the extent permitted by law), requesting a Stormwater Management Permit.

Best Management Practices (BMPs): Structural, non-structural and managerial techniques that are recognized to be the most effective and practical means to prevent and/or reduce increases in stormwater volumes and flows, reduce point source and non-point source pollution, and promote stormwater quality and protection of the environment. “Structural” BMPs are devices that are engineered and constructed to provide the temporary storage and treatment of stormwater runoff. “Non-structural” BMPs use natural measures to reduce pollution levels, do not require extensive construction efforts, and/or promote pollutant reduction by eliminating the pollutant source

Building Storm Drain: The pipe which connects a building drain conveying stormwater to a storm drain or other place of disposal. The building storm drain begins 10 feet outside the inner face of the building foundation wall and extends to and includes the connection to the Town's storm drain. It may include leaders from roof drains, downspouts, trench drains or similar, but not floor drains collecting flow considered to be sewage.

Certified Professional I Erosion and Sediment Control (CPESC): a certified specialist in soil erosion and sediment control. This certification program, sponsored by the Soil and Water Conservation Society in cooperation with the American Society of Agronomy, provides the public with evidence of professional qualifications.

Cleanout: A device or structure designed to provide access to a building storm drain for the purpose of eliminating blockages and removing deposited or accumulated materials.

Clean Water Act: *The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.) as it is amended from time to time.*

Conservation Commission: Town of Braintree Conservation Commission through its staff within the Department of Planning and Community Development.

Construction Activity Stormwater Permit: An EPA NPDES General Permit for the discharge of pollutants in stormwater runoff from areas where the soil disturbing activities, construction materials, or equipment storage or maintenance, or other industrial stormwater directly related to the construction process are located.

Conveyance: Any structure or device including pipes, drains, culverts, curb breaks, paved swales or man-made swales of all types designed or utilized to move or direct stormwater runoff or existing water flow.

Cooling water: The water discharged from any system of condensation, air conditioning, cooling, refrigeration, or other system of heat transfer.

DEP: The Massachusetts Department of Environmental Protection.

Department: The Braintree Department of Public Works.

Dewatering Discharge: Groundwater or surface water which is removed from a site and discharged beyond the limits of the site by means of gravity or pumping.

Director: The Director of the Braintree Department of Public Works, or his/her designee.

Discharge of Pollutants: The addition, from any source, of any pollutant or combination of pollutants into the MS4 or into the waters of the United States or Commonwealth from any source.

Drainage Easement: A legal right granted by a landowner to a grantee allowing the use of private land for stormwater management purposes.

EPA: The United States Environmental Protection Agency.

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

Erosion Control: The prevention or reduction of the movement of soil particles or rock fragments.

Erosion and Sediment Control Plan: A plan that shows the location and construction detail(s) of the erosion and sediment reduction controls to be utilized for a construction site.

Flood Control: The prevention or reduction of flooding and flood damage.

Flooding: A local and temporary inundation or a rise in the surface of a body of water such that it covers land not usually under water.

Floor drain: An intended drainage point in an otherwise impervious floor which serves as the point of entry into any subsurface drainage, sewage, treatment, disposal, containment, or other plumbing system.

General Permit: *The National Pollutant Discharge Elimination System General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems issued by the United States Environmental Protection Agency.*

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

Groundwater: All water beneath any land surface including water in the soil and bedrock beneath water bodies.

Hazardous Waste: A waste, or combination of wastes, that at the time of discharge:

- (a) Is identified as a hazardous waste by EPA pursuant to the *Resource Conservation and Recovery Act, 42 USC 6901, et seq.*, and is listed in *40 CFR Part 261*, as amended from time to time;
- (b) Has any of the hazardous waste characteristics identified by EPA in *40 CFR Part 261* as amended from time to time;
- (c) Has been identified by DEP as a hazardous waste pursuant to M.G.L. c. 21C and is listed in 310 CMR 30.000; as amended from time to time; or
- (d) Has any of the hazardous waste characteristics identified by DEP in 310 CMR 30.000, as amended from time to time.
- (e) A waste that would be a hazardous waste pursuant to the EPA or DEP criteria but for the fact that it is discharged to the sanitary sewer system shall be, for purposes of this definition, a hazardous waste.

Hotspot: Land uses or activities with higher potential pollutant loadings, including but not limited to auto salvage yards, auto fueling facilities, fleet storage yards, commercial parking lots with high intensity use, road salt storage areas, commercial nurseries and landscaping companies, marinas and boat yards, outdoor storage and loading areas of hazardous substances.

Illicit Connection: *Any surface or subsurface drain or conveyance which allows an illicit discharge into a storm drain, including without limitation, sewage, process wastewater, or wash water and any connections from indoor drains, sinks, or toilets regardless of whether said connection was previously allowed, permitted, or approved before the effective date of this regulation.*

Illicit Discharge: *the dumping or discharging of any pollutant or non-stormwater discharge into the municipal storm drain system, into a watercourse, or into waters of the United States and/or the Commonwealth, except as exempted in § 13.14.030.*

Impaired Water : A water body that does not meet the quality standards for one or more of its designated uses and is therefore listed in categories 4 or 5 of the five part categorization approach used for classifying the water quality standards attainment status for water segments under the TMDL program.

Impervious Surface: Any material or structure on or above the ground that prevents water from infiltrating through the underlying soil. Impervious surface is defined to include, without limitation: paved parking lots, sidewalks, rooftops, driveways, patios and paved, gravel and compacted dirt surfaced roads.

Industrial Activity Stormwater Permit: An EPA NPDES General Permit for the discharge from any conveyance activity that is used for collecting and conveying stormwater that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant.

Infiltration: The act of conveying surface water into the ground to permit groundwater recharge and the reduction of stormwater runoff from a project site.

Land Disturbance: *Any activity that removes the surface cover from land, changes the grade or exposes soil to the potential influence of stormwater.*

Massachusetts Stormwater Standards: *The performance standards issued by the Massachusetts Department of Environmental Protection (DEP), codified in the regulations at 310 CMR 10.05(6)(k)-(q), and further defined and specified in the Massachusetts Stormwater Handbook issued by the DEP.*

Municipal Storm Drain System or Municipal Separate Storm Sewer System (MS4): *The system of conveyances designed or used for collecting or conveying stormwater, including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel, reservoir, and other drainage structure that together comprise the storm drainage system owned or operated by the Town.*

National Pollutant Discharge Elimination System (NPDES) Permit: The permit required and issued by EPA and/or DEP to control point source discharges of pollutants to waters of the United States or separate storm drain systems. It shall also mean the permit issued to the Town by the EPA and/or DEP for its combined sewer and stormwater discharges.

New Development: Any construction or land disturbance of a parcel of land that is currently in a natural vegetated state and does not contain alteration by man-made activities.

Non-point Source Pollution: Pollution from many diffuse sources caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into water resource areas.

NPDES Notice of Intent (NOI): The form completed and submitted to the EPA by a person seeking to include a discharge under an NPDES General Permit.

Oil trap: Shall mean a receptacle designed to separate petroleum-based oil and grease, from water. Also called a separator in the Uniform State Plumbing Code, 248 CMR 2.00.

Operation and Maintenance (O&M) Plan: A plan that defines the functional, financial and organizational mechanisms for the ongoing operation and maintenance for a stormwater management system to ensure that it continues to function as designed.

Outfall: The point at which stormwater flows out from a point source into the waters of the United States and/or Commonwealth.

***Owner :** A person who alone or jointly or severally with others has the legal title to any premises or has care, charge or control of any premises as agent, executor, administrator, trustee, lessee or guardian of the estate of the holder of legal title.*

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

Planning Board: The Planning Board within the Braintree Department of Planning and Community Development.

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

Pollutant(s): Any element or property of sewage, residential, agricultural, industrial, or commercial waste, runoff, leachate, heated effluent, or other matter whether originating at a point or non-point source, that is or may be introduced into any storm drain system, waters of the United States, and/or Commonwealth. Pollutants shall include without limitation:

1. paints, varnishes, solvents;
2. oil, grease, antifreeze, other automotive fluids and/or products;
3. non-hazardous liquid and solid wastes;
4. refuse, garbage, litter, rubbish, yard wastes, or other discarded or abandoned objects, ordnances, accumulations and floatables;
5. pesticides, herbicides and fertilizers;
6. hazardous materials and wastes;
7. sewage;

8. dissolved and particulate metals;
9. metal objects or materials;
10. animal wastes;
11. rock, sand, salt, soils, or other products/materials that mobilize in surface water runoff;
12. construction wastes and/or residues.
13. And any substance that causes or contributes to the impairment of the waters of the Commonwealth.

Pollutant of Concern: A pollutant which causes or contributes to a violation of a water quality standard, including a pollutant which is identified as causing impairment in the State's Integrated List of Waters (303(d) list).

Pre-Development: The conditions that exist at the time that plans for the land development of a tract of land are submitted to the Department. Where phased development or plan approval occurs (preliminary grading, roads and utilities, et.) the existing conditions at the time prior to the first plan submission shall establish pre-development conditions.

Post-Development: The conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific site or tract of land. Post-development refers to the phase of a new development or redevelopment project after completion and does not refer to the construction phase of a project.

Private storm drain: A storm drain and components which are not owned by the Town. Private Storm Drains and stormwater runoff facilities include, but are not limited to, building storm drains, drains, catch basins and manholes located on private property and not located within an easement held by the Town, and storm drains owned by other municipalities and public agencies. The connection from a private storm drain to the public storm drain system is also owned and maintained by the owner of the private storm drain.

Receiving waters shall mean any watercourse, river, pond, wetland, ditch, lake, aquifer, ocean or other body of surface water or groundwater that receives a discharge of stormwater.

Recharge: The replenishment of underground water reserves.

Redevelopment: Development, rehabilitation, expansion, demolition or phased projects that disturb the ground surface on previously developed sites.

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

Sanitary Sewer or Sewer: A pipe designed to carry wastewater, including but not limited to sanitary sewage and industrial wastes.

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

Sedimentation: The process or act of deposition of sediment.

Site: The parcel of land being developed, or a designated planning area in which the land development project is located.

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

State Clean Water Act: *Massachusetts General Laws Chapter 21.*

Storm drain: A pipe or conduit designed to carry stormwater, surface water or runoff.

Stormwater: *Stormwater runoff, snow melt runoff and drainage of any water resulting from rainfall or other precipitation that runs off surfaces during or after a storm. and surface runoff and drainage.*

Stormwater Authority: The Braintree Department of Public Works or its authorized agent(s). The Department of Public Works is responsible for coordinating the review, approval and permit process as defined in these Regulations. Other Boards and/or departments participate in the review process as defined in these regulations.

Stormwater Management: The use of structural or non-structural practices that are designed to reduce stormwater runoff, pollutant loads, discharge volumes, and/or peak flow discharge rates.

Stormwater Management Permit (SMP): The permit required and issued by the Department authorizing the connection the Town's storm drainage systems.

Stormwater Management Permit Application: The form provided by the Department and completed and submitted, along with any required attachments, to the Department by the property owner or by the owner's agent prior to construction, reconstruction, repair or modification of a connection or an appurtenance to the Town's storm drains and stormwater runoff facilities.

Surface water: All water appearing on the earth's surface exposed to the atmosphere, such as rivers, lakes, streams, and oceans.

Total Maximum Daily Load (TMDL): A calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards.

Town: The Town of Braintree.

Treatment system or pretreatment system: Any and all devices, equipment, or works, including Best Management Practices, used in the pumping, storing, treating, recycling, and reclaiming of stormwater.

TSS: Total Suspended Solids.

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

Water Quality Standards: The standards contained in 314 CMR 4.00 that define the water goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses.

Water Quality Volume (WQV): The volume of runoff that must be used to determine the design of a Best Management Practice (or series of practices) to achieve a specified level of treatment (in this case 80% removal of total suspended solids – TSS) under the Massachusetts DEP Stormwater Management Policy.

APPENDIX B – STORMWATER MANAGEMENT PLAN DESIGN CRITERIA

The following additional requirements apply to all Major Projects unless otherwise determined by the Department:

Section 1- Treatment Requirements.

Every property owner who directly or indirectly discharges stormwater to the Town stormwater system or a private infiltration system shall provide the treatment system necessary to ensure that the discharge complies with the requirements of the Planning Board, Conservation Commission and these Regulations including but not limited to: Stormwater management systems designed on sites with documented soil contamination or systems designed on industrial sites shall not include BMPs that promote infiltration and shall instead require use of treatment BMPs on site.

Stormwater management systems designed to include infiltration near environmentally sensitive areas, including public water supplies, Interim Wellhead Protection Areas, and Zones II, A, B, and C, swimming beaches, and cold water fisheries, 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. In order to protect these resources, any stormwater management system designed to infiltrate stormwater near environmentally sensitive areas must, prior to infiltration, provide the level of pollutant removal equal to or greater than the level provided through the use of bio-filtration of the same volume of runoff.

Treatment systems shall be designed to avoid disturbance of areas susceptible to erosion and sediment loss.

All BMPs installed as part of the sites stormwater treatment system shall be selected and constructed in accordance with the Massachusetts Stormwater Handbook Volume 2 Chapter 2, as amended.

Section 2 – Treatment Standards for New Development and Re-development.

Stormwater Management Systems shall be designed to retain and/or treat the first one inch (1") of runoff from all impervious surfaces on the site. The portion of the first one inch (1") which cannot be feasibly retained and/or infiltrated shall be treated using treatment methods consistent with the Draft or Final Total Maximum Daily Loads for affected receiving waters and any additional treatment requirements in the Town of Braintree's MS4 Permit. Pre-treatment of runoff from paved surfaces is required to remove 44% of the Total Suspended Solids prior to infiltration. Driveways associated with applications for single-family dwellings are exempt from this requirement as per the 2008 Mass DEP Stormwater Handbook, but to the extent practicable, runoff from such driveways shall be directed to adjacent pervious surfaces.

These standards shall be met through a combination of practices designed to retain runoff on site (environmentally sensitive site design, low impact development techniques, green infrastructure) where technically feasible, and stormwater BMPs designed to treat the remainder of the runoff that cannot be retained on site due to site constraints. The level of pollutant removal from BMPs shall

be calculated consistent with EPA Region 1's BMP Performance Extrapolation Tool. BMPs must be chosen to maximize reduction of pollutants identified in the approved TMDL. BMPs must be selected and designed using the appropriate criteria from the most recent Massachusetts Stormwater Handbook. For other structural stormwater controls not included in the Handbook or for which approximate pollutant removal capabilities have not been provided, the pollutant removal effectiveness must be documented through prior studies, literature reviews, or other means and must receive approval from the Department. The Department may issue one or more Guidances identifying BMPs or combinations of BMPs that will maximize reduction of each pollutant of concern.

Section 3 – Major Permit Conditions.

The Department may condition permits as it deems necessary. All major permits will, at a minimum, include the following conditions:

- 1) The treatment system shall include the development of a long term Operation and Maintenance plan to inspect and repair installed BMPs to ensure that they are functioning according to manufacturer or design specifications. Any subsequent proposed changes in a treatment system or method of operation shall be approved by the Director before modification of such a facility.
- 2) Permittees shall submit as-built drawings no later than one year after completion of construction projects. The as-built drawings must depict all on site controls, both structural and non-structural, designed to manage stormwater associated with the completed site.
- 3) The treatment system shall be continuously maintained in satisfactory and effective operation. All costs associated with treatment system planning, design, construction, operation and maintenance shall be borne by the owner or property owner. The Town shall have the right to inspect such facilities in accordance with Article VII of these Regulations.

Section 4 – NPDES Notice of Intent and Permit.

Every person who is required to be covered under a Construction Activity Permit shall submit to the Department a copy of the completed Notice of Intent or individual application as submitted to EPA, and the information identified in items 1 through 5 below, as applicable.

- 1) Address of the building (or premises) where the discharge will take place and the name and address of the building (or premises) owner;
- 2) Name of a contact person, title and phone number;
- 3) A site plan or sketch which shows the location of the connection of the building storm drain or the point(s) of discharge to the Town's storm drainage system, including the street name, and the size of the storm drain to which the Stormwater will discharge;

4) Existing NPDES permit number, if any;

4) Facility's Assessor's Parcel Number

Section 5 – Storm Drain Extensions.

Any person may propose an extension, replacement or relocation of a Town storm drain to serve a new or rehabilitated building. At least 60 days prior to initiating any work the applicant shall submit two copies of the Stormwater Management Permit – Major Project application form. Every extension, replacement or relocation of a Town storm drain shall be designed and constructed in accordance with the Department's design requirements, specifications and standard details. Any tests, studies, investigations and inspections required for design and construction shall be conducted in accordance with the Department's requirements. All expenses incurred pursuant to the extension, replacement or relocation of a Town storm drain including but not limited to application, engineering, legal, permitting, construction and inspection costs, shall be borne by the applicant.

After constructing a Town approved public storm drain extension, replacement or relocation, the owner shall, upon approval and acceptance by the Director, transfer ownership of the storm drain to the Town through a Release Agreement in a form prescribed by the Town. The Release Agreement shall be accompanied with as-built plans for the extended, replaced or relocated storm drain and any other information required by the Town. Until such time as the Release Agreement is signed by the Town, the extended, replaced or relocated storm drain shall be considered to be privately owned by the applicant and shall be subject to the requirements pertaining to private Storm Drains and Stormwater Runoff Facilities contained in these Regulations.

APPENDIX C – EROSION AND SEDIMENT CONTROL PLAN REQUIREMENTS

1. General

The application for a Stormwater Permit (**Major**) shall include an Erosion and Sediment Control Plan (ESCP) to describe the nature and purpose of the proposed development, pertinent conditions of the site and the adjacent areas, and proposed erosion and sediment controls. The applicant shall submit such material as is necessary to show that the proposed development will comply with the design requirements as specified herein and in accordance with the Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas – A Guide for Planners, Designers and Municipal Officials, latest edition. The applicant may submit the SWPPP in place of the ESCP, if the NPDES General Permit for Discharges for Construction Activities applies.

2. Applicability

Single-family Applicants – Single-family applicants shall submit the ESCP as outlined in this section. However, the requirement for stamped and certified plans shall not apply to single-family applicants.

Commercial and Other Non-Single-Family Applicants – Commercial and other non-single-family applicants shall submit the ESCP as outlined in this section.

3. Contents

The ESCP shall include the following:

- (a) Contact Information. Names, addresses and telephone numbers of the property owner/applicant, and applicant's technical representative(s) or firms(s) preparing the ESCP, if different from the Permit.
- (b) Drainage patterns of surface runoff and approximate slopes anticipated after major grading activities (Construction Phase Grading Plans)
- (c) Location and details of erosion and sediment control measures with a narrative of the construction sequence/phasing of the project, including both operation and maintenance for structural and non-structural measures, interim grading and construction and waste material stockpiling areas.
- (d) Path and mechanism to divert uncontaminated water around disturbed areas, to the maximum extent practicable.
- (e) Location and description of an implementation schedule for temporary and permanent seeding, vegetative controls and other stabilization measures.

- (f) A description of construction and waste materials expected to be stored on-site and intended disposal methods. The ESCP shall include a description of controls to reduce pollutants from these materials, include a description of controls to reduce pollutants for these materials, including storage practices to minimize exposure of the materials to stormwater and spill prevention and response.
- (g) Plan must be stamped and certified by a Professional Engineer registered in the Commonwealth of Massachusetts or a Certified Professional in Erosion and Sediment Control (CPESC)
- (h) Such other information as is required by the Department.

APPENDIX D – OPERATIONS AND MAINTENANCE PLAN REQUIREMENTS

1. General

An Operation and Maintenance Plan (O&M Plan) is required at the time of application for all **Major** projects. Once approved by the Department the O&M Plan shall be recorded at the Norfolk County Registry of Deeds, shall remain on file with the Department and shall be an ongoing requirement.

2. Applicability

Single-family Applicants – Single-family applicants shall be exempt from submitting the O&M Plan as outlined in this section.

Commercial and other Non-single-family Applicants – Commercial and other non-single-family applicants shall submit the O&M Plan as outlined in this section.

3. Contents

The O&M Plan shall include:

- (a) The names(s) of the property owner(s) for all components of the system.
- (b) Maintenance agreements that specify:
 - i. The names and addresses of the person(s) responsible for operation and maintenance.
 - ii. The person(s) responsible for financing maintenance and emergency repairs.
 - iii. A Maintenance Schedule listing actions to be taken and a timeline for all drainage structures, include swales and ponds.
 - iv. A listing of easements with the purpose and location of each.
 - v. The signature(s) of the owner(s).
 - vi. Requirement to notify the Department in writing of changes in ownership or assignment of financial responsibility.

4. Modifications

Amendments to the O&M Agreement shall be made in writing to the Department and shall be signed by the responsible parties. The amended O&M Plan shall then be filed at the Norfolk County Registry of Deeds when approved.

5. Reporting

Annual reports with maintenance logs shall be sent to the Department by January 31 of each calendar year. Failure to comply with the reporting requirement shall be considered a violation of these regulations and may be subject to fines as per Ch. 13.14.050.D.