

**STORMWATER MANAGEMENT BYLAW
REGULATIONS**

Town of Sudbury, MA
Adopted September 9, 2009
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TABLE OF CONTENTS

1.0	PURPOSE	2
2.0	DEFINITIONS	2
3.0	AUTHORITY	2
4.0	ADMINISTRATION	2
5.0	APPLICABILITY	3
6.0	GENERAL STORMWATER MANAGEMENT PERMIT	3-6
7.0	PERMIT PROCEDURES FOR STORMWATER MANAGEMENT PERMITS	6
	A. Permit Required	6
	B. Filing Application	7
	C. Entry	7
	D. Fees	7
	E. Public Hearings	9
	F. Actions	9
	G. Deadline for Action	9
	H. Plan Changes	9
	I. Appeals of Actions of the Planning Board	10
	J. Project Delay	10
	K. Project Completion	10
8.0	STORMWATER MANAGEMENT PERMIT STANDARDS AND REQUIREMENTS	10
	A. Stormwater Management Plan	10
	B. Erosion and Sediment Control Plan	12
	C. Operation and Maintenance Plan	13
9.0	INSPECTIONS	14
	A. Construction Commencement	14
	B. Erosion and Sedimentation Control Inspections	15
	C. Construction Inspections	16
10.0	SURETY	17
11.0	CERTIFICATE OF COMPLETION	17
12.0	ENFORCEMENT	18
13.0	SEVERABILITY	19
	Appendix A: Definitions	20-22
	Appendix B: Stormwater Management Plan Contents	23-24
	Appendix C: Erosion and Sediment Control Plan Contents	24-25
	Appendix D: Low Impact Development Practices	25-28

1.0 PURPOSE

The purpose of these Regulations is to protect, maintain and enhance the public health, safety, environment, and general welfare by establishing minimum requirements and procedures to control the adverse effects of soil erosion and sedimentation, construction site runoff, increased post-development stormwater runoff, decreased groundwater recharge, and nonpoint source pollution associated with new development, redevelopment and other land alterations, as more specifically addressed in the Stormwater Management Bylaw (Bylaw) of the Town of Sudbury.

2.0 DEFINITIONS

The definitions contained herein apply to issuance of a Stormwater Management Permit (SMP) or for permits for coverage under the General Stormwater Management Permit (GSMP) established by the Town of Sudbury Stormwater Management Bylaw and implemented through these Regulations. Terms not defined in this section shall be construed according to their customary and usual meaning unless the context indicates a special or technical meaning.

All definitions are provided in the Appendix A of the Regulations.

3.0 AUTHORITY

- A.** The Rules and Regulations contained herein have been adopted by the Planning Board and the Conservation Commission in accordance with the Town of Sudbury Stormwater Management Bylaw.
- B.** Nothing in the Bylaw or these Regulations is intended to replace the requirements of the Town of Sudbury Zoning Bylaw, the Town of Sudbury Wetlands Administration Bylaw, the Town of Sudbury General Bylaw, any other Bylaw that may be adopted by the Town of Sudbury, or any Rules and Regulations adopted there under. Any activity subject to the provisions of the above-cited Bylaws or Rules and Regulations must comply with the specifications of each.
- C.** These Stormwater Regulations may be periodically amended by the Planning Board in accordance with the procedures outlined in Section 4.0 of the Town of Sudbury Stormwater Management Bylaw.
- D.** Waivers

The Planning Board or its designated Reviewing Agent may waive strict compliance with any requirement of the Town of Sudbury Stormwater Management Rules and Regulations promulgated hereunder, where such action is:

1. Allowed by federal, state and local statutes and/or,
2. In the public interest, and
3. Not inconsistent with the purpose and intent of the Town of Sudbury Stormwater Management Bylaw.

Any applicant may submit a written request to be granted such a waiver. Such a request shall be accompanied by an explanation or documentation supporting the waiver request and demonstrating that strict application of these Regulations does not further the purposes or objectives of the Bylaw and these Regulations.

4.0 ADMINISTRATION

The Planning Board shall administer, implement and enforce these Regulations. The Planning Board may designate the Conservation Commission or any other authorized Town employee, board or agent for the purposes of reviewing stormwater submittals and issuing stormwater permits. Any Town employee, board or agent so designated by the Planning Board shall be defined as the "Reviewing Agent". The "Reviewing Agent" shall be considered the Planning Board for the purposes of compliance with sections 4.0 through 8.0 of the Bylaw.

If a portion of a project or activity meets the Applicability Section of the Stormwater Management Bylaw and it is within the specific jurisdiction of the Conservation Commission, then the entire project and all related projects required as a result of the activity proposed by the applicant may be designated to the jurisdiction of the Conservation Commission without further action needed by the Planning Board. The specific application submission requirements, public notices, and fee requirements of the Conservation Commission shall govern. The Planning Board reserves the right to retain review and approval authority for any application.

When a Reviewing Agent is designated by the Planning Board, as outlined above, the Applicant shall submit all Stormwater Management Permit application submittals in compliance with these Regulations to the Reviewing Agent.

The Reviewing Agent will review the submittal for compliance with the standards and requirements of Section 8.0 of these Regulations as part of its public hearing process on the proposed project. If the proposed project complies with these Regulations, the Reviewing Agent shall grant a Stormwater Management Permit, in addition to any other approval or permit it may grant.

The Reviewing Agent shall notify the Planning Board of all Stormwater Management Permits it approves. Both the Planning Board and the Reviewing Agent shall have authority to enforce the Stormwater Management Bylaw and these Regulations.

5.0 APPLICABILITY

These Stormwater Regulations apply to all activities subject to the Applicability Section of the Stormwater Management Bylaw. Projects and/or activities not specifically under the currently regulated jurisdiction of any of the Town of Sudbury boards, commissions or departments but still within the jurisdiction of the Town of Sudbury Stormwater Management Bylaw must obtain a Stormwater Management Permit from the Planning Board or its designated Reviewing Agent in accordance with the permit procedures and requirements defined in Sections 7.0 and 8.0 of these Regulations.

No work may commence without written approval of the Planning Board or its designee, confirming that the project or activity is in compliance with the Performance Standards in Section 8.0 of these Regulations.

6.0 GENERAL STORMWATER MANAGEMENT PERMITS (GSMP)

A. Authority

By the authority granted in the Stormwater Management Bylaw, the Planning Board has developed a General Stormwater Management Permit (GSMP) for small projects within the thresholds of Section 5.B. of the Bylaw.

B. Applicability

Projects eligible for coverage under the GSMP in lieu of a Stormwater Management Permit are identified in the Stormwater Management Bylaw, Section 5.B. If a project cannot meet each of the requirements set forth in this Section, then a Stormwater Management Permit will be required.

C. Administration

The Planning Board shall administer the GSMP. The Planning Board will distribute one copy of the GSMP application package to each of the other relevant boards, including the Conservation Commission, Department of Public Works, Board of Health, and the Building Department.

D. Filing Application

The applicant shall file with the Planning Board six (6) copies of a completed application package for a GSMP. Permit issuance is required prior to any site altering activity. While the applicant can be a

representative, the permittee must be the owner of the site. The GSMP Application package shall include:

1. A completed Application Form for coverage under GSMP with original signatures of all owners
2. Plans, drawings or specifications for the project
3. Site specific soil conditions where infiltration of stormwater is proposed
4. Pre and Post development topography at 2 foot contour intervals
5. Calculations demonstrating compliance with the thresholds for and conditions of the GSMP. Calculations will be dependent on the disturbance activity contemplated in the application. For example, amount of impervious surface, amount of vegetation removal, amount of slope disturbed, etc.
6. Other materials as the Planning Board may require to determine the eligibility of the proposed work for coverage under the GSMP

E. Fees

Permits issued under the GSMP do not require an application fee.

F. Public Hearings

Permits issued under the GSMP do not require a public hearing.

G. Actions

The Planning Board's action, rendered in writing, shall consist of either approval, approval with conditions, or disapproval of the permit. The Planning Board will render a decision within 30 days of receipt of a complete application package.

H. Construction Inspections

Unless specifically required by a condition in the GSMP, permits issued under the GSMP do not require construction inspection by the Town or its agent and do not require construction inspection reporting.

I. Stormwater Certificate of Completion

Unless specifically required by a condition in the GSMP, no Certificate of Completion is required to close out the GSMP once the work is completed.

J. Standard Permit Conditions

By submitting an application for coverage under the GSMP, the applicant agrees to the following standard conditions. The Planning Board may require additional conditions as part of the permit as necessary:

1. Standard Conditions for any residential development or associated activity and accessory structures that will disturb or alter from 5,000 square feet to 40,000 square feet of land or which is part of a common plan for development that will disturb or alter from 5,000 square feet to 40,000 square feet of land shall be as follows:
 - a. The activity shall not increase either the rate or volume of stormwater runoff leaving the site, nor shall it alter the stormwater flow to any adjoining properties, public ways, or any wetland resource areas, unless otherwise permitted based on improvement over existing conditions.
 - b. The activity shall, to the maximum extent feasible, treat all stormwater runoff on site using recommended Best Management Practices (BMPs) in accordance with the latest edition of the Massachusetts DEP Stormwater Handbook.
 - c. The activity, to the maximum extent feasible, minimizes impervious surfaces and provides on-site infiltration of stormwater in accordance with the latest edition of the Massachusetts DEP Stormwater Handbook.
 - d. The Applicant shall provide and maintain Erosion and Sedimentation controls, in accordance with the latest edition of the Massachusetts DEP Stormwater Handbook, as necessary until the site is permanently stabilized. BMPs selected for erosion control shall be chosen to minimize site disturbance from erosion control installation. Once the site is stabilized, such measures shall be removed.

- e. The applicant shall ensure that the site and stormwater management systems are perpetually inspected and maintained to function as designed.
 - f. The following source control and pollution prevention measures shall be employed on the site to prevent contamination of stormwater runoff:
 - Store lawn and deicing chemicals under cover
 - Apply fertilizers and pesticides sparingly to prevent washoff
 - Use of slow release nitrogen and low phosphorus fertilizers is encouraged
 - No fertilization or pesticide application in or near any wetland resource area
 - Pick up pet waste, dispose of in the toilet or trash
 - Store, use and dispose of household hazardous wastes properly
 - Limit exterior washing of vehicles to locations that drain to pervious surfaces and away from storm drains
 - Maintain vehicles and clean up fluid spills/drips from pavement areas
 - Pump and maintain septic systems
 - Use alternative deicers such as calcium chloride and magnesium chloride in lieu of sodium based deicers
 - No coal tar-based pavement sealants are to be used on any site subject to the GSMP.
2. Standard Conditions for disturbance or alteration, including paving or resurfacing, of from 500 square feet to 5,000 square feet of land in a commercial, industrial, institutional or exempt use provided there is no net increase in impervious surface; unless such use is an existing non-conforming use prohibited under Section 4242 of the Town of Sudbury Zoning Bylaw (Water Resource Protection District), shall be as follows:
- a. The activity shall not increase either the rate or volume of stormwater runoff leaving the site, nor shall it alter the stormwater flow to any adjoining properties, public ways, or any wetland resource areas, unless otherwise permitted based on improvement over existing conditions.
 - b. The activity shall, to the maximum extent feasible, treat all stormwater runoff on site using recommended Best Management Practices in accordance with the latest edition of the Massachusetts DEP Stormwater Handbook.
 - c. The activity shall, to the maximum extent feasible, minimize impervious surfaces and provide on-site infiltration of stormwater in accordance with the latest edition of the Massachusetts DEP Stormwater Handbook.
 - d. The Applicant shall provide and maintain Erosion and Sedimentation controls in accordance with the latest edition of the Massachusetts DEP Stormwater Handbook, as necessary until the site is permanently stabilized. BMPs selected for erosion control shall be chosen to minimize site disturbance from erosion control installation. Once the site is stabilized, such measures shall be removed.
 - e. The applicant shall ensure that the site and stormwater management systems are perpetually inspected and maintained to function as designed.
 - f. To the maximum extent feasible, the project shall be designed to improve/upgrade existing stormwater management on the site.
 - g. The following source control and pollution prevention measures shall be employed on the site to prevent contamination of stormwater runoff:
 - Sweep pavement areas regularly, preferably with a vacuum or regenerative air sweeper
 - Employ measures to control litter on the site
 - Cover dumpsters and maintain them to prevent leaks
 - Cover loading docks and fueling areas
 - Store lawn and deicing chemicals under cover
 - Apply fertilizers and pesticides sparingly to prevent washoff
 - Use of slow release nitrogen and low phosphorus fertilizers is encouraged
 - No fertilization or pesticide application in or near any wetland resource area
 - Limit exterior washing of vehicles and equipment to locations that drain to pervious surfaces and away from storm drains
 - Clean up spills immediately with absorbent materials; avoid washing of pavement
 - Educate personnel on implementation of spill abatement and containment procedures
 - Pump and maintain septic systems

- Use alternative deicers such as calcium chloride and magnesium chloride in lieu of sodium based deicers
 - Designate areas for snow storage in upland locations where meltwater can drain onto pervious surfaces away from water resources and wells
 - No coal tar based pavement sealants are to be used on any site subject to the GSMP.
3. Standard Conditions for construction or maintenance and repair of utility lines (gas, water, sewer, electric, telephone, etc.) other than drainage lines or systems, which will alter terrain, ground cover, or drainage patterns, shall be as follows:
- a. Erosion and Sedimentation controls shall be employed, in accordance with the latest edition of the Massachusetts DEP Stormwater Handbook, as necessary until the site is permanently stabilized. BMPs selected for erosion control shall be chosen to minimize site disturbance from erosion control installation. Once the site is stabilized, such measures shall be removed.
 - b. Following construction, grades in land surface shall be restored to their original condition to preserve hydrology.
 - c. No increases in the rate or volume of stormwater runoff shall be incurred unless otherwise permitted based on improvement over existing conditions.
 - d. Following completion of work, the Applicant shall restore or improve vegetation on site in areas of disturbance. Native species shall be utilized for any areas requiring revegetation.
 - e. All activity shall be conducted in such a manner as to minimize soil compaction and total area of disturbance.
 - f. Long term stockpiling of excavated material shall be prohibited.
4. Standard Conditions for septic system construction or modification which will alter the existing grade by two (2) or more feet over an area of 500 or more contiguous square feet, shall be as follows:
- a. The grade change shall not alter the flow of stormwater runoff leaving the site, nor shall it alter the stormwater flow to any adjoining properties, public ways, or any wetland resource areas, unless otherwise permitted resulting in improvement over existing conditions.
 - b. Perimeter drains, or other drains designed to intercept groundwater, shall not be allowed within fifty feet (50') of a septic system, per 310 CMR 15.211.
 - c. Any runoff from a mounded septic area shall be retained on-site, to the maximum extent feasible, using BMPs in accordance with the latest edition of the Massachusetts DEP Stormwater Handbook.
 - d. The Applicant shall provide and maintain Erosion and Sedimentation controls in accordance with the latest edition of the Massachusetts DEP Stormwater Handbook, as necessary until the site is permanently stabilized. BMPs selected for erosion control shall be chosen to minimize site disturbance from erosion control installation. Once the site is stabilized, such measures shall be removed.
5. Standard Conditions for increased discharge of groundwater or surface water directly or indirectly into the Town of Sudbury's Municipal Separate Storm Sewer System (MS4), including but not limited to discharge of sump pumps or perimeter drains shall be as follows:
- a. To the maximum extent feasible, discharges from sump pumps or perimeter drains shall be discharged on-site using one of the following methods:
 - rain garden
 - drywell or other infiltration system
 - cistern or rain barrel
 - b. If the applicant has successfully documented that discharging a sump pump or perimeter drain on-site is not feasible, then a permit for connection to the municipal drainage system must be obtained from the Director of Public Works, subject to available capacity in the municipal system.

7.0 PERMIT PROCEDURES FOR STORMWATER MANAGEMENT PERMITS

A. Permit Required

1. Projects that exceed the thresholds for a GSMP shall require a Stormwater Management Permit in accordance with Section 5C of the Bylaw.
2. Permit issuance is required prior to any site altering activity.
3. No land owner or land operator shall receive any of the building, clearing, grading or other land development permits required for land disturbance activities without first meeting the requirements of the Bylaw and these Regulations prior to commencing the proposed activity.

B. Filing Application

1. Applications for a Stormwater Management Permit (SMP) shall include the materials as specified in this section and must meet the stormwater management criteria as specified in Section 8.0. The applicant shall file with the Planning Board or its designated Reviewing Agent, ten (10) copies of a completed application package for a Stormwater Management Permit (SMP). Additional copies may be requested by the Planning Board or its designated Reviewing Agent. While the applicant can be a representative, the permittee must be the owner of the site. The SMP Application package shall include:
 - a. A completed Application Form with original signatures of all owners;
 - b. A list of abutters, certified by the Assessor's Office (abutters at their mailing addresses shown on the most recent applicable tax list of the assessors, including owners of land directly opposite on any public or private street or way, and abutters to the abutters within 300 feet of the property line of the applicant, including any in another municipality or across a body of water);
 - c. Payment of the application and review fees;
 - d. Stormwater Management Plan (complete requirements listed in Appendix B);
 - e. Erosion and Sediment Control Plan (complete requirements listed in Appendix C);
 - f. Operation and Maintenance Plan (complete requirements listed in Section 8C of these Regulations).

C. Entry

Filing an application for a permit grants the Planning Board, its Reviewing Agent, or designee as specified per Section 4.0 of these Regulations, permission to enter the site throughout the term of the permit to verify the information in the application and to inspect for compliance with the resulting permit.

D. Fees

The Planning Board, its Reviewing Agent, or designee shall obtain with each submission an Application Fee established by the Planning Board to cover expenses connected with the review of the Stormwater Management Permit (SMP) and a technical review fee sufficient to cover professional review services for the project, if needed. Applicants must pay review fees before the review process may begin. Fees shall be as follows:

1. Application Fees

Single family residential lot:	\$100.00 non-refundable, plus public hearing legal notice fee, if applicable.
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Subdivision:	The larger of \$100.00, or \$0.0030 per square foot of the total parcel size to which the permit will be issued, up to a maximum of \$500.00, non-refundable, plus public hearing legal notice fee, if applicable.
Commercial/Industrial/ Institutional/Exempt property:	The larger of \$100.00, or \$0.0030 per square foot of the total parcel size to which the permit will be issued, up to a maximum of \$500.00 non-refundable, plus public hearing legal notice fee, if applicable.
Multi-family project:	The larger of \$100.00 or \$0.0030 per square foot of the total parcel size to which the permit will be issued, up to a maximum of \$500.00 non-refundable, plus public hearing legal notice fee, if applicable.
Other projects subject to the Bylaw:	The larger of \$100.00 or \$0.0030 per square foot of the total parcel size to which the permit will be issued, up to a maximum of \$500.00 non-refundable, plus public hearing legal notice fee, if applicable.
Permit Extensions/Modifications:	\$50.00 non-refundable, plus public hearing legal notice fee, if applicable.

2. Engineering and Consultant Reviews and Fees

- a. In addition to the above fees, the Planning Board or its designated Reviewing Agent is authorized to require an applicant to pay a fee for the reasonable costs and expenses for specific expert engineering and other consultant services deemed necessary by the Planning Board or its designated Reviewing Agent to come to a final decision on the application. Payment may be required at any point in the deliberations prior to a final decision. The initial amount of this technical review fee shall be two thousand dollars (\$2,000.00).
- b. Such fee shall be held in escrow, to be used to engage independent consultants should the Reviewing Agent determine this to be necessary, based on the characteristics or complexity of the issues raised by the application. Such fee shall be governed and administered in accordance with M.G.L.,c.44, § 53G or § 53E ½ .
- c. If prior to final action on the plan, the Reviewing Agent finds that the initial deposit is not sufficient to cover actual costs incurred by the Town during the review of the application, the applicant shall be required to submit forthwith such additional amount as is deemed required by the Reviewing Agent to cover such costs. The Reviewing Agent shall notify the applicant of such additional amount in writing by certified mail. Failure to submit such additional amount as required by the Board within fourteen (14) days of receipt of said notice shall be deemed reason by the Board to deny said application. If the actual cost incurred by the Town for review of said application is less than the amount on deposit as specified above, the Reviewing Agent shall authorize that such excess amount be refunded to the applicant concurrently with final action on said application.
- d. The services for which a fee may be utilized include, but are not limited to, review of wetland survey and delineation, hydrologic and drainage analysis, wildlife evaluation, stormwater quality analysis, site inspections, as-built plan review, and analysis of legal issues.

3. Maintenance Fees for Municipally Operated Systems

Any development subject to a Stormwater Management Permit which will require Town inspection, maintenance, ownership or operation of the stormwater system shall be subject to a non-refundable

charge based on an O&M Plan prepared in accordance with DEP standards and any specific conditions of a SMP granted under the Bylaw for a 3 year period. The funds for maintenance shall be paid to the Town for disbursement by the Director of Public Works to either the Department of Public Works, or to contracted services.

4. Revision of Fee Schedules and Regulations Governing Fees

- a. The Planning Board may review and revise its Regulations and fee schedules periodically as it sees fit.
- b. Amendments shall be preceded by a public hearing.
- c. A copy of any amendment will be filed with the Town Clerk within [10] days after final action is taken.
- d. The Reviewing Agent may waive or discount its fees at its discretion, particularly for minor projects that do not warrant significant additional review.

E. Public Hearings

A public hearing is required for all Stormwater Management Permits (SMP). Public hearings shall be published in a newspaper of general circulation for two (2) consecutive weeks. The first publication date shall be published not less than fourteen (14) days before the day of the hearing. A copy of the hearing notice shall be posted in the Office of the Town Clerk for a period of not less than fourteen (14) days before the date of the hearing. Copies of the notice shall be mailed, postage prepaid, to the applicant, property owner (if different) and to direct abutters and owners of land directly opposite on a public or private way as they appear on the most recent Assessor's list.

If an application for a SMP is reviewed by the Conservation Commission, the public hearing procedures under the Sudbury Wetland Administration Bylaw shall govern.

F. Actions

The Planning Board or its designated Reviewing Agent's action, rendered in writing, shall consist of either:

1. Approval of the Stormwater Management Permit Application based upon determination that the proposed plan meets the Standards in Section 8.0 of these Regulations and will adequately protect the water resources of the community and is in compliance with the requirements set forth in the Bylaw and these Regulations;
2. Approval of the Stormwater Management Permit Application subject to any conditions, modifications or restrictions required by the Planning Board or its designated Reviewing Agent which will ensure that the project meets the Standards in Section 8.0 of these Regulations and adequately protects water resources, set forth in the Bylaw and these Regulations;
3. Disapproval of the Stormwater Management Permit Application based upon a determination that the proposed plan, as submitted, does not meet the Standards in Section 8.0 of these Regulations or adequately protect water resources, as set forth in the Bylaw and these Regulations.

G. Deadline for Action

Failure of the Planning Board or its designated Reviewing Agent to take final action upon an application within 30 calendar days of receipt of a complete application for a General Stormwater Management Permit under Section 5.B of the Bylaw, or 90 days of receipt of a complete application for a Stormwater Management Permit under Section 5.C of the Bylaw, shall be deemed to be approval of said application, unless extension of said deadline date is mutually agreed upon in writing by the Reviewing Agent and the applicant. Upon certification by the Town Clerk that the allowed time has passed without Planning Board action, the Planning Board or its designated Reviewing Agent must issue a Stormwater Management Permit.

Notwithstanding, if the Conservation Commission is the designated Reviewing Agent, the time frame for issuance of a SMP by the Conservation Commission shall be in accordance with the Sudbury Wetlands Administration Bylaw.

H. Plan Changes

The permittee must notify the Planning Board in writing of any drainage change or alteration in the system authorized in a Stormwater Management Permit before any change or alteration is made. If the Planning Board determines that the change or alteration is significant, based on the Stormwater Management Standards in Section 8.0 of these Regulations and accepted construction practices, the Planning Board may require that an amended application be filed.

I. Appeals of Actions of the Planning Board or its designated Reviewing Agent

A decision of the Planning Board or its designated Reviewing Agent shall be final. Further relief of a decision by the Planning Board or its designated Reviewing Agent made under these Regulations shall be reviewable in the Superior Court in an action filed within sixty (60 days) thereof, in accordance with M.G.L. Ch 249. § 4. An appeal of an action by a board, commission or department that has current regulatory authority for a project and/or activity shall be conducted under the applicable appeal provisions of said board, commission and/or department of the Town of Sudbury. Such an appeal shall result in revocation of the written approval as described under Section 7.F of these Regulations, until such time as the appeal process of the applicable board, commission and/or department has been resolved.

J. Project Delay

Should a land-disturbing activity associated with an approved plan in accordance with this Section not begin within 12 months following permit issuance, the Planning Board or its designated Reviewing Agent may evaluate the existing stormwater management plan to determine whether the plan still satisfies local program requirements and to verify that all design factors are still valid. If the Reviewing Agent finds the previously filed plan to be inadequate, a modified plan shall be submitted and approved prior to the commencement of land-disturbing activities. If the project associated with an approved Stormwater Management Permit granted under the Bylaw has not been substantially completed within three (3) years of permit issuance, a new permit or a permit extension will be required by the Planning Board or its designated Reviewing Agent.

K. Project Completion

At completion of the project the permittee shall request a Certificate of Completion from the Planning or its designated Reviewing Agent pursuant to the requirements of Section 11 of these Regulations. The Board will issue a letter certifying completion upon review and approval of the final inspection reports and/or upon otherwise determining that all work of the permit has been satisfactorily completed in conformance with the Bylaw.

8.0 STORMWATER MANAGEMENT PERMITS STANDARDS AND REQUIREMENTS

A. Stormwater Management Plan

1. The application for a Stormwater Management Permit shall include the submittal of a Stormwater Management Plan to the Planning Board or its designated Reviewing Agent. This Stormwater Management Plan shall contain sufficient information for the Planning Board or its designated Reviewing Agent to evaluate the environmental impact, effectiveness, and acceptability of the measures proposed by the applicant for mitigating adverse impacts from stormwater runoff. This plan shall be designed to meet the Massachusetts Stormwater Standards and additional criteria established in Section 8.A.3 of these Regulations, and must be submitted with the stamp and signature of a Professional Engineer (PE) licensed to conduct such work in the Commonwealth of Massachusetts.

2. The Stormwater Management Plan shall fully describe the project in drawings, narrative, and calculations. Required contents of the Stormwater Management Plan are provided in Appendix B of the Regulations.
3. Design and Performance Criteria: At a minimum all projects subject to a SMP shall comply with the performance standards of the most recent version of Massachusetts Stormwater Management Standards and accompanying Stormwater Management Handbook, as well as the criteria contained herein. The following criteria shall be used in the submittal of an application for a Stormwater Management Permit under the Town of Sudbury Bylaws:
 - a. The design of the project shall, to the maximum extent feasible, employ environmentally sensitive site design as outlined in the DEP handbook 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 is required, to the maximum extent practicable and where it provides a substantially equivalent alternative. Guidance on these practices is provided in Appendix D and the MA Stormwater Management Handbook.
 - c. The Stormwater Management Plan shall incorporate source controls of contaminants and employ Best Management Practices (BMPs) to minimize stormwater pollution.
 - d. The water quality volume for sizing of BMPs shall be based on 1-inch of runoff from the tributary area.
 - e. 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.
 - f. The analyses shall be analyzed for the 1 inch, and the 2, 10, 25 and 100-year design storms under pre-development and post-development conditions. The 24-hour rainfall amounts for the 2, 10, 25 and 100 year storms are to be based on the Northeast Regional Climate Center "Atlas of Precipitation Extremes for the Northeastern United States and Southeastern Canada." For Sudbury, the 24 hr rainfall amounts are as follows (rounded to the nearest one-tenth of an inch):
 - 2 yr, 24 hr event = 3.2 inches
 - 10 yr, 24 hr event = 4.8 inches
 - 25 yr, 24 hr event = 6.0 inches
 - 100 yr, 24 hr event = 8.6 inches
 - g. The analysis is to be performed on a pre and post sub-watershed basis with designated control points at each location where runoff leaves the site.
 - h. The same land area shall be used in the analysis to facilitate comparison of existing and proposed conditions.
 - i. The total volume of discharge as well as peak rate shall be evaluated at each control point.
 - j. Redevelopment Standards: Projects involving redevelopment of existing sites shall be designed in accordance with the redevelopment checklist provided in the latest MA Stormwater Handbook. All redevelopment projects must provide a net improvement to stormwater conditions at the site, either in the area of disturbance or to other areas on the site. The Planning Board or its designated Reviewing Agent may require improvements to areas outside of disturbance activity where known problems exist and reasonable solutions are available. Such opportunities might include:
 - Reduce impervious surfaces
 - Implement source controls of potential stormwater pollutants on the entire site
 - Reroute drainage to maximize treatment efficiencies
 - Segregate roof runoff for direct infiltration or capture and re-use.
 - Update Operation and Maintenance plans and procedures for the entire site
4. Water Reuse/Water Conservation: In order to conserve potable water supplies and maximize recharge, it may be appropriate on some sites to store and reuse clean runoff (e.g. from roofs) for reuse on the site for irrigation or other graywater 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.

5. Landscape Design

- a. Landscape designs shall be developed based on soil, light and other site specific conditions. Plant species shall be chosen for their ability to thrive in the post-development soil, water and use conditions of the site without significant supplemental water or fertilizer, once established.
- b. Plant species shall be native to inland Middlesex County or shall be cultivars of these native species.
- c. Wildflower meadows and shrubs are advisable to reduce the amount of lawn or turf on a site.
- d. For landscape areas adjacent to roadways, salt tolerant plants shall be used.
- e. Irrigation shall be provided by the use of a rain water harvesting system to the extent feasible.

B. Erosion and Sediment Control Plan

1. An Erosion and Sediment Control Plan is required at the time of application for all projects. Plan approval by the Planning Board or its designated Reviewing Agent is required prior to any site altering activity. The plan shall be designed to ensure compliance with the Permit, these Regulations, and if applicable, the NPDES General Permit for Storm Water Discharges from Construction Activities. In addition, the plan shall ensure that the Massachusetts Surface Water Quality Standards (314 CMR 4.00) are met in all seasons.
2. If a project requires a Stormwater Pollution Prevention Plan (SWPPP) per the NPDES General Permit for Storm Water Discharges from Construction Activities, then the permittee is required to submit a complete copy of the SWPPP (including the signed Notice of Intent and approval letter) as part of its application for a SMP. If the SWPPP meets the requirements of the NPDES General Permit, it will be considered equivalent to the Erosion and Sediment Control Plan described in this Section.
3. The Erosion and Sediment Control Plan shall contain sufficient information to describe the nature and purpose of the proposed development, pertinent conditions of the site and the adjacent areas, and proposed erosion and sedimentation controls. The applicant shall submit such material as is necessary to show that the proposed development will comply with the design requirements listed below.
4. For larger developments where construction phasing occurs, the Erosion and Sediment Control Plan shall be updated as needed based on changing conditions at the site.
5. Required contents of the Erosion and Sediment Control Plan are provided in the Appendix C of the Regulations.
6. The Erosion and Sediment Control Plan shall be designed to meet the following criteria and guidelines.
 - a. Minimize total area of disturbance and minimize unnecessary clearing and grading from all construction sites. Clearing and grading shall only be performed within areas needed to build the project, including structures, utilities, roads, recreational amenities, post-construction stormwater management facilities, and related infrastructure.
 - b. Prior to any land disturbance activities commencing on the site, the developer shall physically mark limits of no land disturbance on the site with tape, signs, or orange construction fence, so that workers can see the areas to be protected. The physical markers shall be inspected daily.
 - c. Erosion and Sediment Control measures shall be installed and maintained in accordance with the manufacturer's specifications and good engineering practices to ensure they perform as intended.
 - d. Erosion and Sediment Control measures used shall be chosen based on the goal of minimizing site disturbance from installation of such measures, such as the use of filter mitts where appropriate.

- e. Keep Stormwater Runoff Velocities Low. The removal of existing vegetative cover during development and the resulting increase in impermeable surface area after development will increase both the volume and velocity of runoff. These increases must be taken into account when providing for erosion control.
- f. Protect Disturbed Areas from Stormwater Runoff. Best management practices can be utilized to prevent water from entering and running over the disturbed area. Diversions and other control practices intercept runoff from higher watershed areas, store or divert it away from vulnerable areas, and direct it toward stabilized outlets.
- g. Sediment trapping and settling devices shall be employed to trap and/or retain suspended sediments and allow time for them to settle out in cases where perimeter sediment controls (e.g., silt fence and hay bales) are deemed to be ineffective in trapping suspended sediments on-site. Sediment basins shall also be used to minimize peak rate of runoff in accordance with the Massachusetts Stormwater Standards.
- h. BMPs to be used for infiltration after construction shall not be used as BMPs during construction unless otherwise approved by the Board. Many infiltration technologies are not designed to handle the high concentrations of sediments typically found in construction runoff, and thus must be protected from construction related sediment loadings.
- i. Sediment shall be removed once the volume reaches $\frac{1}{4}$ to $\frac{1}{2}$ the height of a hay bale. Sediment shall be removed from silt fence prior to reaching the load-bearing capacity of the silt fence which may be lower than $\frac{1}{4}$ to $\frac{1}{2}$ the height.
- j. Sediment from sediment traps or sedimentation ponds shall be removed when design capacity has been reduced by 50 percent.
- k. On and off-site material storage areas, including construction and waste materials, shall be properly protected and managed.
- l. Soil stockpiles must be stabilized or covered at the end of each workday. Stockpile side slopes shall not be greater than 2:1. All stockpiles shall be surrounded by sediment controls.
- m. Projects must comply with applicable Federal, State and local laws and regulations including waste disposal, sanitary sewer or septic system regulations, and air quality requirements, including dust and debris control;
- n. A tracking pad shall be constructed at all entrance/exist points of the site to reduce the amount of soil carried onto roadways and off the site.
- o. Permanent seeding shall be undertaken in the spring from March through May, and in late summer and early fall from August to October 15. During the peak summer months and in the fall after October 15, when seeding is found to be impractical, appropriate temporary mulch shall be applied. Permanent seeding may be undertaken during the summer if plans provide for adequate mulching and watering.
- p. Slopes (greater than 3:1) shall be protected from erosion by limiting clearing of these areas in the first place or, where grading is unavoidable, by providing special techniques to prevent upland runoff from flowing down a steep slope and through immediate stabilization to prevent gullyng. Offsite runoff shall be diverted from highly erodible soils and steep slopes to stable areas.
- q. Interim and permanent stabilization measures shall be instituted on a disturbed area immediately after construction activity has temporarily or permanently ceased on that portion of the site. Two methods are available for stabilizing disturbed areas: mechanical (or structural) methods and vegetative methods. In some cases, both are combined in order to retard erosion.
- r. Temporary sediment trapping devices must not be removed until permanent stabilization is established in all contributory drainage areas.
- s. All temporary erosion and sediment control measures shall be removed after final site stabilization. Disturbed soil areas resulting from the removal of temporary measures shall be permanently stabilized within 30 days of removal.

C. Operation and Maintenance Plan

1. An Operation and Maintenance Plan (O&M Plan) is required at the time of application for all projects. The O&M Plan shall be designed to ensure compliance with the Permit, the Bylaw and these Regulations and that the Massachusetts Surface Water Quality Standards, 314, CMR 4.00 are met in all seasons and throughout the life of the system. The O&M Plan shall be a stand-alone document, and shall remain on file with the Planning Board or its designated Reviewing Agent and shall be an ongoing requirement. To ensure that all BMPs continue to function as designed a final O&M Plan

shall be submitted prior to issuance of a Certificate of Completion and reflect any modifications made during the permitting process and the site specific conditions.

2. The Operation and Maintenance Plan shall include, at a minimum:
 - a. The name(s) of the owner(s) for all components of the system.
 - b. The signature(s) of the owner(s).
 - c. The names and addresses of the person(s) responsible for operation and maintenance; if responsibility is contracted to a third party, a copy of the maintenance agreement(s) must be provided.
 - d. A plan or map showing the location of the systems and facilities including easements, catch basins, manholes/access lids, main, and stormwater devices.
 - e. An Inspection and Maintenance Schedule for all stormwater management facilities including routine and non-routine maintenance tasks to be performed.
 - f. A list of easements with the purpose and location of each. Easements shall be recorded with the Middlesex South District Registry of Deeds prior to issuance of a Certificate of Completion by the Planning Board or its designated Reviewing Agent.
 - g. Provisions for the Planning Board or its designee to enter the property at reasonable times and in a reasonable manner for the purpose of inspection.
 - h. Any other information required by the Planning Board or its designated Reviewing Agent.
3. O&M Plan shall apply to the entire project site, not just area the disturbance area.
4. At a minimum, inspections shall occur during the first year of operation and in accordance with the operation and maintenance plan in the approved stormwater management permit.
5. The owner of the property shall maintain a log of all operation and maintenance activities, including without limitation, inspections, repairs, replacement and disposal (for disposal, the log shall indicate the type of material and the disposal location). This log shall be made available to the MassDEP and the Planning Board or its designated Reviewing Agent upon request.
6. Inspection reports shall be submitted to and maintained by the Planning Board or its designated Reviewing Agent for all stormwater management systems. Inspection reports for stormwater management systems shall include:
 - a. The date of inspection;
 - b. Name of inspector;
 - c. The condition of each BMP, including components such as:
 - i. Pretreatment devices
 - ii. Vegetation or filter media
 - iii. Fences or other safety devices
 - iv. Spillways, valves, or other control structures
 - v. Embankments, slopes, and safety benches
 - vi. Reservoir or treatment areas
 - vii. Inlet and outlet channels and structures
 - viii. Underground drainage
 - ix. Sediment and debris accumulation in storage and forebay areas (including catch basins)
 - x. Any nonstructural practices
 - xi. Any other item that could affect the proper function of the stormwater management system
 - d. Description of the need for maintenance;
7. Changes to Operation and Maintenance Plans: The owner(s) of the stormwater management system must notify the Planning Board or its designated Reviewing Agent of changes in ownership or assignment of financial responsibility.

8. The Planning Board or its Reviewing Agent may require recordation of the O&M Plan depending on the complexity of the systems installed.

9.0 INSPECTIONS

A. Construction Commencement

1. Pre-Construction Meeting

The Planning Board or its designated Reviewing Agent may require a pre-construction meeting prior to starting clearing, excavation, construction or land disturbing activity by the permittee. The Applicant's technical representative, the general contractor or any other person with authority to make changes to the project, shall meet with the Board or its representative to review construction sequencing and the permitted plans and their implementation.

2. Notice of Construction Commencement

The applicant must notify the Planning Board or its designated Reviewing Agent 2 days prior to the commencement of construction. In addition, the applicant must notify the Planning Board or its designated Reviewing Agent 2 days prior to construction of critical components of any stormwater management facility.

3. A copy of the approved and signed plans and permits for a SMP shall be kept on the construction site at all times.
4. The Planning Board or its designee shall be granted the right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. The Planning Board, its agents, officers, and employees shall have authority to enter upon privately owned land for the purpose of performing their duties under this Regulation and may make or cause to be made such examinations, surveys, or sampling as the Planning Board or its designated Reviewing Agent deems necessary, subject to the constitutions and laws of the United States and the Commonwealth.

B. Erosion and Sediment Control Inspections

1. To ensure erosion control practices are in accord with the filed Erosion and Sediment Control Plan, Erosion Control Inspections will be conducted by the site owner or an authorized representative at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater, from the start of construction until the site is permanently stabilized. Inspection frequency may be reduced to at least once a month if the site is temporarily stabilized, runoff is unlikely due to winter conditions (e.g., site is covered with snow, ice, or the ground is frozen), or if construction is occurring during seasonal dry periods. The permittee is required to notify the Planning Board or its designated Reviewing Agent of any change in inspection frequency, including termination of inspections due to site stabilization.
2. Inspections must include all areas of the site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation. Inspectors must look for evidence of, or the potential for, pollutants entering the storm water conveyance system. Sedimentation and erosion control measures identified in the Erosion and Sediment Control Plan must be observed to ensure proper operation. Discharge locations must be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to waters of the United States, where accessible. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.
3. For each inspection required by the Reviewing Agent, an inspection form must be completed by the site owner or an authorized representative with the following information, at a minimum:

- a. The inspection date;
 - b. Names, titles, and qualifications of personnel making the inspection;
 - c. Weather information and a description of any discharges occurring at the time of the inspection;
 - d. Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
 - e. Location(s) of discharges of sediment or other pollutants from the site;
 - f. Location(s) of BMPs that need to be maintained;
 - g. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
 - h. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
 - i. Corrective action required including any changes to the SWPPP necessary and implementation dates.
4. If a project requires a Stormwater Pollution Prevention Plan (SWPPP) per the NPDES General Permit for Storm Water Discharges from Construction Activities (Construction General Permit), then the permittee is required to submit all Inspection Reports to the Planning Board or its designated Reviewing Agent upon request. If the Inspection Reports meet the requirements of the Construction General Permit, it will be considered equivalent to the Erosion Control Inspection as described above.
 5. A record of each inspection and of any actions taken must be retained for at least three (3) years from the date of completion of the project. The inspection reports must identify any incidents of non-compliance with the permit conditions. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the construction project or site is in compliance with this permit.
 6. All erosion and sediment control measures and other protective measures identified in the Erosion and Sediment Control Plan must be maintained in effective operating condition. If site inspections identify BMPs that are not operating effectively, maintenance must be performed as soon as possible and before the next storm event whenever practicable to maintain the continued effectiveness of storm water controls.

C. Construction Inspections

1. At their discretion, the Planning Board or its designated Reviewing Agent, may require periodic inspections of the stormwater management system construction by a professional engineer or other qualified personnel to ensure compliance with the conditions of the SMP, or overall effectiveness and functioning of the system.
2. All inspections performed by the applicant or their designee shall be documented and written reports prepared that contain the following information:
 - a. The date and location of the inspection;
 - b. Names, titles, and qualifications of personnel making the inspection;
 - c. Whether construction is in compliance with the approved stormwater management plan;
 - d. Variations from the approved construction specifications; and
 - e. Any other variations or violations of the conditions of the approved stormwater management plan.
3. The Planning Board or its designated Reviewing Agent or its designee may inspect the project site at the following stages, at a minimum:

- a. Initial Site Inspection of erosion and sedimentation controls prior to any land disturbance to assess overall effectiveness and functioning to protect resources
- b. Stormwater Management System Inspection: An inspection may be made of the completed stormwater management system, prior to backfilling of any underground drainage or stormwater conveyance structures.
- c. Final Inspection
 - i. After the stormwater management system has been constructed and before the surety has been released, all applicants are required to submit actual "as built" plans for any stormwater management facilities or practices after final construction is completed and must be certified by a Professional Engineer.
 - ii. The Planning Board or its designated Reviewing Agent shall inspect the system to confirm its "as-built" features. This inspector shall also evaluate the effectiveness of the system in an actual storm. If the inspector finds the system to be adequate he/she shall so report to the Planning Board or its designated Reviewing Agent which will issue a Certificate of Completion. As built plans shall be full size plans which reflect the "as built" conditions, including all final grades, prepared by a Professional Engineer. All changes to project design should be recorded in red ink on plans to define changes made. All work deleted, corrections in elevations, and changes in materials, should be shown on the as built drawings.

10.0 SURETY

A. Stormwater Completion Surety

Before the start of land disturbance or construction activity, the Planning Board or its designated Reviewing Agent may require the Applicant to post a bond to guarantee completion of the conditions of the approved Stormwater Management Permit. The form of the bond shall be approved by Town Counsel, and be in an amount deemed sufficient by the Planning Board or its designated Reviewing Agent to ensure that the work will be completed in accordance with the permit. If the project is phased, the Planning Board or its designated Reviewing Agent may release part of the bond as each phase is completed in compliance with the permit but the bond may not be fully released until the Planning Board or its designated Reviewing Agent has received a final inspection report as required by Section 9.C.3.c of these Regulations and issued a Certificate of Completion.

B. Stormwater Maintenance Surety

The Planning Board or its designated Reviewing Agent may also require the Applicant to secure the future maintenance of the stormwater system by a surety bond or by a deposit of money of an amount as determined by the Planning Board or its designated Reviewing Agent. In the event that the Applicant does not follow maintenance procedures and programs as approved by the Planning Board or its designated Reviewing Agent, the Board shall have the authority to expend any portion of said security to provide such maintenance for up to five (5) years after completion of the project.

11.0 CERTIFICATE OF COMPLETION

- A. Upon completion of the project, the applicant shall submit the following material to the Planning Board or its designated Reviewing Agent demonstrating that the completed project is in accordance with the approved plans and specifications:
 - 1. Certification by a Registered Professional Engineer that the systems have been installed and are functioning according to the approved plan.
 - 2. As-built plan, stamped by a Registered Professional Engineer or Land Surveyor, to include the following information:
 - a. Limit of work
 - b. Post-construction topography
 - c. Finished grades of all structures

- d. Invert elevations of all stormwater structures
 - e. All structures, pavement, utilities
 - f. Off-site alterations
 - g. Electronic copy of the as-built plan
3. Documentation on compliance with all permit conditions
 4. Maintenance surety has been submitted
 5. All Inspection reports required during construction have been submitted
 6. Final Operation & Maintenance Plan submitted
 7. Maintenance contracts in place
 8. Stormwater Management Permit has been recorded at Registry of Deeds
- B.** The Planning Board reserves the right to require corrections or improvements to a stormwater management system after issuance of any SMP based on the system's performance under actual storm conditions.
- C.** If the system is found to be inadequate by virtue of physical evidence of operational defect and/or failure, even though it was built as called for in the Stormwater Management Plan, it shall be corrected by the applicant before the Certificate of Completion is released. If the applicant fails to act the Planning Board or its designated Reviewing Agent may use the surety bond to complete the work.
- D.** If the Planning Board or its designated Reviewing Agent determines that there is a failure to comply with the plan, the property owner shall be notified in writing of the nature of the violation and the required corrective actions. A Stop Work Order shall be issued until any violations are corrected and all work previously completed has received approval by the Planning Board or its designated Reviewing Agent.
- E.** Parties responsible for the operation and maintenance of a stormwater management facility shall provide records of all maintenance and repairs to the Planning Board or its designated Reviewing Agent upon request. Parties responsible for the operation and maintenance of a stormwater management facility shall make records of the installation and of all maintenance and repairs, and shall retain the records for at least five (5) years. These records shall be made available to the Planning Board or its designated Reviewing Agent during inspection of the facility and at other reasonable times upon request.
- F.** If a responsible person fails or refuses to meet the requirements of the O&M Plan, the Planning Board or its designated Reviewing Agent, after thirty (30) days written notice (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours notice shall be sufficient), may correct a violation of the design standards or maintenance requirements by performing the necessary work to place the facility or practice in proper working condition. The Planning Board or its designated Reviewing Agent may assess the owner(s) of the facility for the cost of repair work, which shall be a lien on the property.
- G.** Upon receipt and approval of the final inspection and reports and/or upon otherwise determining that all work of the permit has been satisfactorily completed in conformance with this Regulation, the Planning Board or its designated Reviewing Agent shall issue a letter certifying completion in conformance with this Regulation.

12.0 ENFORCEMENT

Enforcement powers of the Planning Board are granted in the Stormwater Management Bylaw, Section 8.0.

- A.** The Planning Board, its designated Reviewing Agent or an authorized agent of the Planning Board shall enforce the Bylaw, Regulations, orders, violation notices, and enforcement orders, and may pursue all civil, criminal and non-criminal remedies for such violations.

B. Notices and Orders

1. The Planning Board, its designated Reviewing Agent or an authorized agent of the Planning Board may issue a written notice of violation or enforcement order to enforce the provisions of the Bylaw or the Regulations thereunder, which may include requirements to:
 - a. Cease and desist from construction or land disturbing activity until there is compliance with the Bylaw and the Stormwater Management Permit;
 - b. Repair, maintain; or replace the stormwater management system or portions thereof in accordance with the operation and maintenance plan;
 - c. Perform monitoring, analyses, and reporting;
 - d. Fix adverse impact resulting directly or indirectly from malfunction of the stormwater management system.
 2. If the Planning Board, its designated Reviewing Agent or an authorized agent of the Planning Board determines that abatement or remediation of adverse impacts is required, the order may set forth a deadline by which such abatement or remediation must be completed. Said order may further advise that, should the violator or property owner fail to abate or perform remediation within the specified deadline, the Town of Sudbury may, at its option, undertake such work, and the property owner shall reimburse the Town of Sudbury for expenses incurred.
 3. Within thirty (30) days after completing all measures necessary to abate the violation or to perform remediation, the violator and the property owner shall be notified of the costs incurred by the Town of Sudbury including administrative costs. The violator or property owner may file a written protest objecting to the amount or basis of costs with the Planning Board or its designated Reviewing Agent within thirty (30) days of receipt of the notification of the costs incurred. If the amount due is not received by the expiration of the time in which to file a protest or within thirty (30) days following a decision of the Planning Board or its designated Reviewing Agent affirming or reducing the costs, or from a final decision of a court of competent jurisdiction, the costs shall become a special assessment against the property owner and shall constitute a lien on the owner's property for the amount of said costs. Interest shall begin to accrue on any unpaid costs at the statutory rate provided in G.L. Ch. 59, § 57, after the thirty-first day at which the costs first become due.
- C.** Any person who violates any provision of the Town of Sudbury Stormwater Management Bylaw, or Regulations, order or permit issued there under, may be ordered to correct the violation and/or shall be punished by a fine of not more than \$200. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

D. Non-Criminal Disposition

As an alternative to criminal prosecution or civil action, the Town of Sudbury may elect to utilize the non-criminal disposition procedure set forth in G.L. Ch. 40, §21D. The penalty for the 1st violation shall be \$200. The penalty for the 2nd violation shall be \$500. The penalty for the 3rd and subsequent violations shall be \$1000. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

F. Remedies Not Exclusive

The remedies listed in the Bylaw and these Regulations are not exclusive of any other remedies available under any applicable federal, state or local law.

13.0 SEVERABILITY

The invalidity of any section, provision, paragraph, sentence, or clause of these Regulations shall not invalidate any other section, provision, paragraph, sentence, or clause thereof, nor shall it invalidate any permit or determination that previously has been issued.

**Town of Sudbury
Stormwater Regulations
APPENDICES**

APPENDIX A: DEFINITIONS

ALTER: Any activity that will measurably change the ability of a ground surface area to absorb water, will change existing surface drainage patterns, or will increase or decrease the rate or volume of flow from a site.

APPLICANT: A property owner or agent of a property owner who has filed an application for a Stormwater Management Permit.

BEST MANAGEMENT PRACTICE (BMP): 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 nonpoint source pollution, and promote stormwater quality and protection of the environment. "Structural" BMPs are devices that are engineered and constructed to provide temporary storage and treatment of stormwater runoff. "Nonstructural" BMPs use natural measures to reduce pollution levels, do not require extensive construction efforts, and/or promote pollutant reduction by eliminating the pollutant source.

CERTIFICATE OF COMPLETION (COC): A document issued by the Planning Board after all construction activities have been completed which states that all conditions of an issued Stormwater Management Permit (SMP) have been met and that a project has been completed in compliance with the conditions set forth in a SMP.

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.

DEVELOPER: A person who undertakes or proposes to undertake land disturbance activities.

DEVELOPMENT: Any construction that disturbs or alters a parcel of land.

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

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

EROSION CONTROL: The prevention or reduction of the movement of soil particles or rock fragments due to stormwater runoff.

EROSION 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.

EXEMPT USE: Any use subject to the provisions of M.G.L. chapter 40A, section 3.

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.

GENERAL STORMWATER MANAGEMENT PERMIT (GSMP): A permit issued for an application that meets a set of pre-determined standards outlined in these Regulations. By meeting these pre-determined standards, the proposed project will be presumed to meet the requirements and intent of the Bylaw and these Regulations.

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.

HOTSPOT: Land uses or activities with higher potential pollutant loadings, such as auto salvage yards, auto fueling facilities, fleet storage yards, commercial parking lots with high intensity use, road salt storage areas, commercial nurseries and landscaping, outdoor storage and loading areas of hazardous substances, or marinas.

IMPERVIOUS SURFACE: Any material or structure on, above or below the ground that prevents water from infiltrating through the underlying soil. Impervious surface is defined to include, without limitation: paved surfaces (parking lots, sidewalks, driveways), roof tops, swimming pools, patios, and paved, gravel and compacted dirt surfaced roads.

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

LOW IMPACT DEVELOPMENT (LID): An ecosystem-based approach to land development and stormwater management that ensures that each development site is designed to protect, or restore, the natural hydrology of the site.

MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS: The latest version as may be amended from time to time of the Stormwater Management Standards and accompanying Stormwater Handbook issued by the Department of Environmental Protection pursuant to authority under the Wetlands Protection Act, M.G.L. c. 131, § 40, and the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53. The Stormwater Management Standards are incorporated in the Wetlands Protection Act Regulations, 310 CMR 10.05(6)(k) and the Water Quality Certification Regulations, 314 CMR 9.06(6)(a).

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

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.

NONPOINT SOURCE POLLUTION: Pollution from many diffuse sources caused by rainfall, snowmelt, or other method of pollutant transport 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.

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

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

PERSON: Any individual, group of individuals, association, partnership, corporation, company, business organization, trust, estate, the Commonwealth or political subdivision thereof to the extent subject to Town Bylaws, administrative agency, public or quasi-public corporation or body, the Town of Sudbury, and any other legal entity, its legal representatives, agents, or assigns.

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

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.

POST-DEVELOPMENT: The conditions that reasonably may be expected or anticipated to exist after completion of the land development activity in accordance with approved plans 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.

RECHARGE: The replenishment of underground water reserves.

REDEVELOPMENT: Any construction, alteration, improvement, repaving, or resurfacing on a previously-developed site.

RESOURCE AREA: Any area protected under including without limitation: the Massachusetts Wetlands Protection Act, Massachusetts Rivers Act, or Town of Sudbury Wetlands Protection Bylaw.

REVIEWING AGENT: Any Town employee, board or agent delegated in writing by the Planning Board to administer, implement and enforce the Stormwater Bylaw.

RUNOFF: Rainfall or snowmelt water flowing over the ground surface or other source resulting in transport of other pollutants.

SEDIMENTATION: A process of depositing material that has been suspended and transported in water.

SLOPE: The incline of a ground surface expressed as a ratio of horizontal distance to vertical distance (e.g. a 4:1 slope). It can also be expressed as a percentage of the vertical rise divided by the horizontal distance (e.g. a twenty-five (25) percent slope).

SITE: The parcel of land being developed.

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 includes the use of Low-Impact Development (LID) management practices.

STORMWATER MANAGEMENT PERMIT (SMP): A permit issued by the Planning Board, after review of an application, plans, calculations, and other supporting documents, which is designed to protect the environment of the Town from the deleterious effects of uncontrolled and untreated stormwater runoff.

STOP WORK ORDER: An order issued which requires that all construction activity on a site be stopped.

TSS: Total Suspended Solids.

WATER QUALITY VOLUME (WQv): The storage needed to capture a specified average annual stormwater runoff volume. Numerically (WQv) will vary as a function of drainage area or impervious area.

APPENDIX B: STORMWATER MANAGEMENT PLAN CONTENTS

The Stormwater Management Plan shall include, at a minimum:

1. Contact Information. The name, address, and telephone number of all persons having a legal interest in the property and the tax reference number and parcel number of the property or properties affected;
2. Brief narrative description of the project and description of how and where stormwater will be controlled;
3. A locus map;
4. Existing Site Plan;
5. The existing zoning, and land use at the site and abutting properties;
6. The proposed land use;
7. The location(s) of existing and proposed easements;
8. The location of existing and proposed utilities;
9. The site's existing & proposed topography with contours at 2 foot intervals;
10. The existing site hydrology;
11. A description & delineation of existing stormwater conveyances, impoundments, wetlands, drinking water resource areas, swimming beaches or other critical environmental resource areas on or adjacent to the site or into which stormwater flows;
12. A delineation of 100-year flood plains, if applicable;
13. Estimated seasonal high groundwater elevation in areas to be used for stormwater retention, detention, or infiltration;
14. The existing and proposed vegetation and ground surfaces with runoff coefficients for each;
15. A drainage area map showing pre and post construction watershed boundaries, drainage area and stormwater flow paths, including municipal drainage system flows;
16. A description and drawings of all components of the proposed stormwater management system including:
 - a. Locations, cross sections, and profiles of all brooks, streams, drainage swales and their method of stabilization;
 - b. All measures for the detention, retention or infiltration of water;
 - c. All measures for the protection of water quality;
 - d. The structural details for all components of the proposed drainage systems and stormwater management facilities;
 - e. Notes on drawings specifying materials to be used, construction specifications, and expected hydrology with supporting calculations;
 - f. Proposed improvements including location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable;
 - g. Any other information requested by the Planning Board.
17. Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in this Regulation. Such calculations shall include:
 - a. Description of the design storm frequency, intensity and duration;
 - b. Time of concentration;
 - c. Soil Runoff Curve Number (RCN) based on land use and soil hydrologic group;
 - d. Peak runoff rates and total runoff volumes for each watershed area;

- e. Information on construction measures used to maintain the infiltration capacity of the soil where any kind of infiltration is proposed;
 - f. Infiltration rates, where applicable;
 - g. Culvert capacities;
 - h. Flow velocities;
 - i. Data on the increase in rate and volume of runoff for the specified design storms, and
 - j. Documentation of sources for all computation methods and field test results.
18. Post-Development downstream analysis if deemed necessary by the Planning Board;
19. Soils Information from test pits performed at the location of proposed stormwater management facilities, including but not limited to soil descriptions, depth to seasonal high groundwater, depth to bedrock, and percolation rates. Soils information will be based on site test pits logged by a Massachusetts Registered Soil Evaluator, or a Massachusetts Registered Professional Engineer;
20. Landscaping plan describing the woody and herbaceous vegetative stabilization and management techniques to be used within and adjacent to the stormwater practice.
21. Stamp and signature of a Professional Engineer (PE) licensed in the Commonwealth of Massachusetts to certify that the Stormwater Management Plan is in accordance with the criteria established in the Stormwater & LID Ordinance and these Regulations.
23. Any other information required by the Planning Board or its designated Reviewing Agent.

APPENDIX C: EROSION AND SEDIMENT CONTROL PLAN CONTENTS

The Erosion and Sediment Control Plan shall include, at a minimum:

- 1. A general location map (e.g., USGS quadrangle map, a portion of a city or county map, or other map) with enough detail to identify the location of the construction site and waters of the United States within one mile of the site.
- 2. A legible site map, showing the entire site, identifying at a minimum:
 - a. Proposed grading plan;
 - b. Direction(s) of storm water flow and approximate slopes anticipated after major grading activities;
 - c. Areas of soil disturbance and areas that will not be disturbed;
 - d. Locations of all structural and nonstructural erosion and sediment control measures and BMPs;
 - e. Locations where stabilization practices are expected to occur;
 - f. Locations for storage of materials, waste, vehicles, equipment, soil, snow and other potential pollutants;
 - g. Locations of bodies of water, including wetlands;
 - h. Locations where stormwater discharges to a surface water (include all roads, drains and other structures that could carry stormwater to a wetland or other water body, on or offsite);
 - i. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply;
 - j. Locations of any stormwater discharge associated with industrial activity other than construction at the site; and
 - k. Locations of any proposed dewatering facilities

3. Description of the following in narrative, calculations or drawings, as appropriate:
 - a. Estimates of the total area expected to be disturbed by excavation, grading, or other construction activities, including dedicated off-site borrow and fill areas;
 - b. All pollution control measures (structural and non-structural BMPs) that will be implemented as part of the construction activity to control pollutants in storm water discharges. Appropriate control measures must be identified for each major construction activity and the operator responsible for the implementation of each control measure must also be identified.
 - c. The intended sequence and timing of activities that disturb soils at the site and the general sequence during the construction process in which the erosion and sediment control measures will be implemented;
 - d. Structural practices to divert flows from exposed soils, retain/detain flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Placement of structural practices in floodplains must be avoided to the degree practicable;
 - e. Interim and permanent stabilization practices for the site, including a schedule of when the practices will be implemented. Site plans should ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. Use of impervious surfaces for stabilization should be avoided;
 - f. Construction and waste materials expected to be stored on-site with updates as appropriate, including descriptions of controls, and storage practices to minimize exposure of the materials to stormwater, and spill prevention and response practices;
 - g. Measures to minimize, to the extent practicable, off-site vehicle tracking of sediments onto paved surfaces and the generation of dust;
 - h. Measures to prevent the discharge of solid materials, including building materials, to waters of the United States, except as authorized by a permit issued under Section 404 of the CWA;
 - i. Pollutant sources from areas other than construction and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges; and
 - j. Proposed dewatering operations including proposed locations of discharge.
4. An Operation and Maintenance Schedule for structural and non-structural measures, interim grading, and material stockpiling areas;
5. Stamp and signature of a Professional Engineer (PE) licensed in the Commonwealth of Massachusetts to certify that the Stormwater Management Plan is in accordance with the criteria established in the Stormwater Management Bylaw and these Regulations.
6. Any other information required by the Planning Board or its designated Reviewing Agent.

APPENDIX D: LOW IMPACT DEVELOPMENT PRACTICES

Low Impact Development (LID) strategies use careful site design and decentralized stormwater management to reduce the environmental footprint of new growth. This approach improves water quality, minimizes the need for expensive pipe and pond stormwater systems, and creates more attractive developments. The following are LID strategies and various benefits of implementation.

1. Bioretention cells, commonly known as rain gardens, are relatively small-scale, landscaped depressions containing plants and a soil mixture that absorbs and filters runoff.

Management Objectives:

- Provide quality treatment.
- Remove suspended solids, metals, nutrients.

- Increase groundwater recharge through infiltration.
- Reduce peak discharge rates and total runoff volume.

2. Green roofs are roof-tops partially or completely covered with plants. Used for decades in Europe, green roofs help mitigate the urban "heat island" effect.

Management Objectives:

- Reduce total runoff volume through rainwater storage and evapotranspiration.
- Reduce peak discharge rates
- Reduce heating and cooling costs through roof insulation.
- Extend roof life.

3. Permeable and porous pavements allow water to soak through the paved surface into the ground beneath. Permeable pavement encompasses a variety of mediums including: porous concrete and asphalt, plastic grid systems and interlocking paving bricks.

Management Objectives:

- Reduce stormwater runoff volume from paved surfaces
- Reduce peak discharge through infiltration.
- Reduce pollutant transport through direct infiltration
- Improve site landscaping benefits (grass pavers)

4. Grass swales are broad, open channels sown with erosion resistant and flood tolerant grasses. This has been used alongside roadways for years.

Management Objectives:

- Provide water quality treatment; remove suspended solids; heavy metals, trash.
- Reduce peak discharge rate and total runoff volume.
- Infiltrate water into the ground.
- Provide a location for snow storage.

5. Infiltration Trenches and Dry Wells Dry wells are standard stormwater management structures that store water in the void space between crushed stone or gravel; the water slowly percolates downward into the subsoil.

Management Objectives:

- Remove suspended solids, heavy metals trash, oil, and grease.
- Reduce peak discharge rate and total runoff volume.
- Provide modest infiltration and recharge
- Provide snow storage areas

6. Grass Filter Strips are low-angle vegetated slopes designed to treat sheet flow runoff from adjacent impervious areas.

Management Objectives:

- Remove suspended solids, heavy metals, trash, oil and grease.
- Reduce peak discharge rate and total runoff volume.
- Provide modest infiltration and recharge.
- Provide snow storage areas.

7. Roadway and Parking Lot Design:

Management Objectives:

- Reduce total impervious surface.
- Reduce road/parking construction costs.
- Provide save access and adequate parking.
- Minimize disturbance to natural site hydrology.
- Create opportunities for stormwater treatment and infiltration.
- Improve site appearance.

8. Cisterns and rain barrels harvest and store rainwater collected from roofs.

Management Objectives:

- Storing and diverting runoff
- Reduce flooding and erosion caused by stormwater runoff
- They contain no salts or sediment which provides "soft" chemical- free water for garden or lawn irrigation, reducing water bills and conserving municipal water supplies.

9. Other LID Implementations

- Shared Driveways
- Eliminating curbs and gutters, or minimizing in new construction
- Roughening surfaces
- Creating long flow paths over landscaped areas
- Installing smaller culverts, pipes, and inlets
- Creating terraces and check dams
- Infiltration, Filtration
 - Raingardens
 - Disconnected downspouts (not on hills)
 - Filter Mitts

10. Maintenance of Paved Surfaces

- No coal-tar pavement sealants
- No sodium de-icers

11. Low Impact Landscaping

- Native, drought tolerant species
- Turf area conversion (shrubs, etc.)
- Encouraging longer grass length
- Planting wildflower meadows rather than turf along medians

Conservation Development

Like LID, Conservation Development tries to mitigate the effects of urbanization, but it places additional emphasis on protecting aquatic habitat and other natural resources. Conservation Development subdivisions are characterized by compact clustered lots surrounding a common open space. Conservation Development's goal is to disturb as little land area as possible while simultaneously allowing for the maximum number of residences permitted under zoning laws.

Prior to new construction, conservation developers evaluate natural topography, natural drainage patterns, soils and vegetation. They deploy stormwater best management practices to help prevent flooding and protect natural hydrology. By maintaining natural hydrological processes, Conservation Development creates conditions that slow, absorb, and filter stormwater runoff onsite.

Because future development threatens valuable natural features, Conservation Development provides specific provisions for long-term and permanent resource protection. Conservation easements, transfer of development rights, and other "in perpetuity" mechanisms ensure that protective measures are more than just temporary.

Better Site Design

The goals of Better Site Design are to reduce impervious cover, preserve natural lands, and capture stormwater onsite. To meet these goals, designers employ a variety of methods. To reduce impervious cover, they narrow streets and sidewalks, minimize cul-de-sacs, tighten parking spaces, and reduce the size of driveways and housing lots.

To reduce stormwater runoff, designers preserve natural lands, using them as buffer zones along streams, wetlands and steep slopes. They employ landscaping techniques that flatten slopes and preserve native vegetation and clusters of trees. They create bioretention areas - open channels, filter strips and vegetated swales - to increase stormwater infiltration, helping to protect streams, lakes, and wetlands.