

# Article 8 Draft

PROPOSED REVISIONS 11/19/20

Revised 10/2/20

Changes in red and highlighted

## CHAPTER XXVI - Stormwater Management By-Law

### Section 1.0 Purpose

The purpose of this local regulation is to safeguard persons, protect property, and prevent damage to the environment in Mendon by establishing minimum requirements and procedures, including maintenance, to control the adverse effects of soil erosion and sedimentation, construction site runoff, increased post-development stormwater runoff, decreased groundwater discharge, and non-point source pollution associated with new development and redevelopment.

Eroded soil endangers water resources by reducing water quality and causing the siltation of aquatic habitat for fish and other desirable species. Eroded soil can also overload municipal catch basins and storm drainage systems. Sediment from construction sites can reduce the amount of sunlight reaching aquatic plants, clog fish gills, and smother spawning areas. Post –development runoff associated with developed land uses and the accompanying increase in impervious surfaces are major causes of impairment of water quality in receiving waters and loss of groundwater recharge.

The objectives of this by law are to protect groundwater and surface water by:

- a. Encouraging the use of environmentally sensitive site design that preserves natural areas to the maximum extent practicable;
- b. Requiring practices that eliminate soil erosion and sedimentation and control the volume and rate of stormwater runoff resulting from land disturbance activities.
- c. Requiring practices to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
- d. Requiring that new development, redevelopment and all land conversion activities maintain the natural hydrologic characteristics of the land to the maximum extent feasible;
- e. Encourage Low Impact Development techniques that minimize impervious surfaces, mimic natural conditions and promote the recharge of groundwater;
- f. Ensure adequate long-term operation and maintenance of structural stormwater best management practices so they work as designed;
- g. Comply with state and federal statutes relating to stormwater discharges; and
- h. Establish the Town of Mendon’s legal authority to ensure compliance with the provisions of this by-law through inspection, monitoring, and enforcement.

### Section 2.0 Definitions

Section 2.1 *Abutter*: The owner(s) of land whose property immediately abuts the activity.

Section 2.2 *Applicant*: Any person, individual, partnership, association, firm, company, corporation, trust, authority, agency, department, or political subdivision, of the Commonwealth or the Federal government to the extent permitted by law requesting a soil erosion and sediment control permit for proposed land-disturbing activity.

Section 2.3 *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. “Structural” BMPs are devices that are engineered and constructed to provide temporary storage and treatment of stormwater

runoff. “Nonstructural” BMPs include environmentally sensitive site design and use natural, Low Impact Development techniques that do not require extensive construction efforts.

Section 2.4 *Certified Professional in Erosion and Sediment Controls (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.

Section 2.5 *Clearing:* Any activity that removes the vegetative surface cover.

Section 2.6 *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 storm runoff.

Section 2.7 *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.

Section 2.8 *Erosion and Sediment Control Plan:* A document containing narrative, drawings and details developed by a qualified professional engineer (PE) or a Certified Professional in Erosion and Sedimentation Control (CPESC), which includes best management practices, or equivalent measures designed to control surface runoff, erosion and sedimentation during pre-construction and construction related land disturbance activities.

Section 2.9 *Estimated Habitat of Rare Wildlife and Certified Vernal Pools:* Habitats delineated for state-protected rare wildlife and certified vernal pools for use with the Wetlands Protection Act Regulations (310 CMR 10.00) and the Forest Cutting Practices Act Regulations (304 CMR 11.00).

Section 2.10 *Land-Disturbing Activity:* Any activity that causes vegetation clearing (including tree cutting) or a change in the position or location of soil, sand, rock, gravel, or similar earth material.

Section 2.11 *Low Impact Development Techniques:* The Wetlands Protection Regulations, 310 CMR 10.04, and the Water Quality Certification Regulations, 314 CMR 9.02, define low impact development (LID) techniques to mean innovative stormwater management systems that are modeled after natural hydrologic features. LID techniques manage rainfall at the source using uniformly distributed decentralized micro-scale controls. LID techniques use small cost-effective landscape features located at the lot level.

Section 2.12 *Massachusetts Endangered Species Act (G.L. c. 131A)* and its implementing regulations at (321 CMR 10.00) which prohibit the “taking” of any rare plant or animal species listed as Endangered, Threatened, or of Special Concern.

Section 2.13 *Massachusetts Stormwater Management Policy:* The Policy issued by the Department of Environmental Protection, as amended, that coordinates the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act G.L. c. 131 §. 40 and Massachusetts Clean Waters Act G.L. c. 21, §. 23-56. The Policy addresses stormwater impacts through implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

Section 2.14 *Municipal Separate Storm Sewer System (MS4)* or municipal storm drain system shall mean a conveyance or 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 Mendon.

Section 2.15 *New Development*: Any construction of land disturbance on a parcel of land that is currently in a natural vegetated state and does not contain alteration by man-made activities.

Section 2.16 *Operation and Maintenance Plan*: A plan setting up the functional, financial and organizational mechanisms for the ongoing operation and maintenance of a stormwater management system to ensure that it functions as designed.

Section 2.17 *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 new development or redevelopment project after completion and does not refer to the construction phase of the project.

Section 2.18 *Pre-Construction*: All activity in preparation for construction.

Section 2.19 *Priority Habitat of Rare Species*: Habitats delineated for rare plant and animal populations protected pursuant to the Massachusetts Endangered Species Act and its regulations.

Section 2.20: *Redevelopment*: As defined in 310 CMR 10.00, redevelopment includes the following projects:

(a) maintenance and improvement of existing roadways including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems and repaving;

(b) development, rehabilitation, expansion and phased projects on previously developed sites provided the redevelopment results in no net increase in impervious area; and

(c) remedial projects specifically designed to provide improved stormwater management such as projects to separate storm drains and sanitary sewers and stormwater retrofit projects.

For the purposes of 310 CMR 10.58, governing work in the riverfront area, redevelopment means replacement, rehabilitation, or expansion of existing structures, improvement of existing roads or reuse of degraded or previously developed areas.

Section 2.21 *Runoff*: Rainfall, snowmelt, or irrigation water flowing over the ground surface.

Section 2.22 *Sediment*: Mineral or organic soil material that is transported by wind or water, from its origin to another location; the product of erosion processes.

Section 2.23 *Sedimentation*: The process or act of deposition of sediment.

Section 2.24 *Site*: Any lot or parcel of land or area of property where land-disturbing activities are, were, or will be performed.

Section 2.25 *Slope*: The incline of a ground surface expressed as a ratio of horizontal distance to vertical distance.

Section 2.26 *Small MS4 General Permit*: The United States Environmental Agency (EPA) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts, dated April 2016, as amended.

Section 2.27 *Soil*: Any earth, sand, rock, gravel, or similar material.

Section 2.28 *Stabilization*: The use, singly or in combination, of mechanical, structural, or vegetative methods,

to prevent or retard erosion.

Section 2.29 *Stormwater*: Storm water runoff, snowmelt runoff, and surface water runoff and drainage.

Section 2.30 *Stormwater Management Plan*: A plan required as part of the application for a Storm Water Management Permit.

Section 2.31 *Strip*: Any activity which removes the vegetative ground surface cover, including tree removal, clearing, grubbing, and storage or removal of topsoil.

Section 2.32 *Watercourse*: A natural or man-made channel through which water flows or a stream of water, including a river, brook, or underground stream.

Section 2.33 *Wetland Resource Area*: Areas specified in the Massachusetts Wetlands Protection Act G.L. c. 131, § 40 and, if applicable, in the Town of Mendon's wetland bylaw/ordinance.

Section 2.32 *Wetlands*: Tidal and non-tidal areas characterized by saturated or nearly saturated soils most of the year that are located between terrestrial (land-based) and aquatic (water-based) environments, including freshwater marshes around ponds and channels (rivers and streams), brackish and salt marshes; common names include marshes, swamps and bogs.

### **Section 3.0 Authority**

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

### **Section 4.0 Applicability**

This by-law shall apply to:

- a. All activities that result in disturbance of one or more acres of land that drains to the municipal storm drain system or to a public way within the Town of Mendon;
- b. Any activities that result in a land disturbance of less than one acre if the project is part of a larger common plan of development which will disturb one acre or more associated with construction or re-construction of structures, development or re-development involving multiple, separate activities in discontinuous locations or on different schedules if the activities; drain to a single discharge point.
- c. Paving or other change in surface material over an area of one acre or more causing a significant reduction of permeability or increase in runoff.

### **Section 5.0 Exemptions**

- a. Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulations 310 CMR 10.04 and MGL Chapter 40A, section 3;
- b. Maintenance of existing landscaping, gardens, or lawn areas associated with a **single-family** dwelling;
- c. Normal maintenance of Town owned public land, ways and appurtenances;
- d. Maintenance, reconstruction or resurfacing of any public way; and the installation of drainage structures or utilities within or associated with public ways that have been approved by the appropriate authorities;
- e. Repair of septic systems when required by the Board of Health for the protection of public health;
- f. Activities that are subject to jurisdiction under the Wetlands Protection Act **that demonstrate compliance with the Stormwater Management Standards through submission of documentation consistent with the Massachusetts Stormwater Handbook** as reflected in an Order of Conditions

issued by the Conservation Commission.

## **Section 6.0 Administration**

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

Section 6.1 *Waiver*. The Planning Board may waive strict compliance with any requirement of this by-law or the rules and regulations promulgated hereunder, where:

- a. Such action is allowed by federal, state and local statutes and/or regulations,
- b. Is in the public interest, and
- c. Is not inconsistent with the purpose and intent of this bylaw.

Section 6.2 *Rules and Regulations*. The Planning Board may adopt, and periodically amend rules and regulations to effectuate the purposes of this by-law. Failure by the Planning Board to promulgate such rules and regulations shall not have the effect of suspending or invalidating this by-law.

Section 6.3 *Massachusetts Stormwater Handbook*. The Planning Board will utilize the Massachusetts Stormwater Management Handbook, as amended from time to time, for criteria and information including specifications and standards for the execution of provisions of this bylaw. These include a list of acceptable stormwater treatment practices, with specific design criteria for each. The Stormwater Management Handbook establishes standards that require the implementation of a wide variety of stormwater management strategies that include environmentally sensitive site design and Low Impact Development techniques. Unless specifically altered by this Stormwater Management By-Law, the stormwater management practices that are designed, constructed, and maintained in accordance with the Massachusetts Stormwater Handbook shall be presumed by the Planning Board to be protective of Massachusetts water quality standards.

## **Section 7.0 Permits and Procedure**

Section 7.1 *Application* The applicant shall file with the Planning Board a completed application for a Stormwater Management Permit (SMP). A permit must be obtained prior to the commencement of land disturbing activity that may result in the disturbance of an area of one acre or more. The 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;
- c. three (3) copies of the Stormwater Management Plan;
- d. three (3) copies of the Erosion and Sediment Control Plan;
- e. three (3) copies of the Operation and Maintenance Plan;
- f. payment of the application and review fees.

Section 7.2 *Entry*. Filing an application for a permit grants the Planning Board or its agent, permission to enter the site throughout the term of the permit to verify the information in the application and to inspect for compliance with permit conditions.

Section 7.3 *Other Boards*. The Planning Board shall give one copy of the application package to the Conservation Commission, Highway Department and/or Board of Health, as appropriate.

Section 7.4 *Public Hearing*. The Planning Board shall hold a public hearing within twenty-one (21) days of the receipt of a complete application and shall take final action within twenty-one (21) days from the time of the close of the hearing unless such time is extended by agreement between the applicant and the Planning Board. Notice of the public hearing shall be given by publication and posting and by first-class mailings to abutters at least seven (7) days prior to the hearing. The Planning Board shall

make the application available for inspection by the public during business hours at the office of the Mendon Town Clerk.

Section 7.5 *Information requests.* The applicant shall submit all additional information requested by the Planning Board to issue a decision on the application.

Section 7.6 *Action by the Planning Board.* The Planning Board may:

- a. Approve the SMP Application and issue a permit if it finds that the proposed plan will protect water resources and meets the objectives and requirements of this by-law;
- b. Approve the SMP Application and issue a permit with conditions, modifications or restrictions that the Planning Board determines are required to ensure that the project will protect water resources and meets the objectives and requirements of this by-law;
- c. Disapprove the SMP Application and deny the permit if it finds that the proposed plan will not protect water resources or fails to meet the objectives and requirements of this by-law.
- d. Failure of the Planning Board to take final action upon an Application within the time specified above shall be deemed to be approval of said Application. Upon certification by the Town Clerk that the allowed time has passed without the Planning Board's action, the SMP shall be issued by the Planning Board.

Section 7.7 *Review Fees* Each application must be accompanied by the appropriate application fee as established by the Planning Board.

- a. Applicants shall pay review fees as determined by the Planning Board sufficient to cover any expenses connected with the public hearing and review of the SMP Application before the review process commences.
- b. Failure of an applicant to pay a review fee shall be grounds for disapproval of the plan or application.
- c. The Planning Board is authorized to require an applicant to pay a review fee to pay for the reasonable costs and expenses for specific expert engineering and other consultant services deemed necessary by the Planning Board to come to a final decision on the application.
- d. The services for which a fee may be utilized include, but are not limited to, wetland survey and delineation, hydrologic and drainage analysis, wildlife evaluation, stormwater quality analysis, site inspections, as-built plan review, and analysis of legal issues.
- e. The review fees collected under this section shall be in accordance with MGL Chapter 44, 53G. The Planning Board will impose a fee to pay for its anticipated expenses in retaining a consultant, will draw upon the funds collected for the stated purpose, and will return unused portions to the applicant.

Section 7.8 *Project Changes.* The permittee, or their agent, must notify the Planning Board in writing of any drainage change or alteration in a SMP before any change or alteration occurs. If the Planning Board determines that the change or alteration is significant, based on the Stormwater Management Standards listed in Section (8) and accepted construction practices, the Planning Board may require that an amended SMP application be filed and a public hearing held.

Section 7.9 *Stormwater Management Plan*

- a. The Stormwater Management Plan shall contain sufficient information for the Planning Board to evaluate the environmental impact, effectiveness, and acceptability of the measures proposed by the applicant for reducing adverse impacts from stormwater runoff. This plan shall be in accordance with the criteria established in these regulations and must be submitted with the stamp and signature of a professional Engineer licensed in the Commonwealth of Massachusetts.
- b. The Stormwater Management Plan shall fully describe the project in drawings, narrative, and calculations. It 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 current 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 and proposed topography with contours at 2-foot intervals;
  10. The existing site hydrology;
  11. A description and delineation of existing stormwater conveyances, impoundments, wetlands, or other critical environmental resource areas on or adjacent to the site or into which stormwater flows.
  12. A delineation of the 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;
  16. A description and drawings of all the components of the proposed stormwater management system including:
    - a. Location, 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 of all components of the proposed drainage system 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

Section 7.10 *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:

- c. Description of the design storm frequency, intensity and duration;
- d. Time of concentration;
- e. Soil Runoff Curve Number based on land use and soil hydrologic group;
- f. Peak runoff rates and total runoff volumes for each watershed area;
- g. Information on construction measures used to maintain the infiltration capacity of the soil where any kind of infiltration is proposed;
- h. Infiltration rates, where applicable;
- i. Culvert capacities;
- j. Flow velocities;
- k. Data on the increase in rate and volume of runoff for the specified design storms; and
- l. Documentation of sources for all computation methods and field test results.
- m. Post development downstream analysis if deemed necessary by the Planning Board;
- n. 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 valuator, or a Massachusetts Registered Professional Engineer;
- o. Landscaping plan describing the woody and herbaceous vegetative stabilization and management techniques to be used within and adjacent to the stormwater practice.

- p. Stamp and signature of a Professional Engineer licensed in the Commonwealth of Massachusetts to certify that the Stormwater Management Plan is in accordance with the criteria established in these Regulations.

Section 7.11 *Erosion and Sediment Control Plan* The Erosion and Sediment Control Plan shall contain sufficient information to describe the nature and purpose of the proposed development, pertinent conditions of the site and the adjacent areas, and proposed erosion and sedimentation controls. The applicant shall submit such material as is necessary to show that the proposed development will comply with the design requirements listed in Section 8.2

(Additional Erosion and Sediment Control Criteria). The Erosion and Sediment Control Plan shall also include a legible site map, showing the entire site, identifying at a minimum:

- a. Direction(s) of stormwater flow and approximate slopes anticipated after major grading activities;
- b. Areas of soil disturbance and areas that will not be disturbed;
- c. Locations of all structural and nonstructural erosion and sediment control measures and BMP's;
- d. Locations where stabilization practices are expected to occur;
- e. Locations for storage of materials, waste, (including but not limited to discarded building materials, concrete truck or mixer wash out, chemicals, litter, and sanitary wastes), vehicles, equipment, soil snow;
- f. Locations of bodies of water, including wetlands;
- g. 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 off site);
- h. Habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or of Special Concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species within five hundred (500) feet of any construction activity.
- i. Location of any storm water discharge associated with industrial activity other than construction at the site.
- j. Description of the following in narrative, calculations or drawings, as appropriate:
  - 1. Estimates of the total area expected to be disturbed by excavation, grading, or other construction activities, including dedicated off-site borrow and fill areas;
  - 2. All pollution control measures (structural and non-structural BMP's) 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.
  - 3. 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;
  - 4. Structural practices to divert flows from exposed soils, retain/detain flows or otherwise limit runoff and the discharge of pollutants from the exposed areas of the site. Placement of structural practices in floodplains must be avoided to the degree practicable;
  - 5. Interim and permanent stabilization practices for the site, including a schedule of when the practices will be implemented. Site plans should ensure that the existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. Use of impervious surfaces for stabilization should be avoided.
  - 6. Construction and waste materials expected to be stored on-site with updates as appropriate, including a description of controls, including storage and discharge practices, to minimize exposure of the materials to stormwater, and spill prevention and response practices;
  - 7. Measures to minimize, to the extent practicable, off-site vehicle tracking of sediments onto paved surfaces and the generation of dust;
  - 8. Stamp and signature of a Professional Engineer licensed in the Commonwealth of



Massachusetts to certify that the Stormwater management Plan is in accordance with the criteria established in this Stormwater By-Law.

Section 7.12 *Operation and Maintenance Plan* An Operation and Maintenance Plan (O&M Plan) is required at the time of application for all projects. The maintenance plan shall be designed to ensure compliance with the Permit, this By-Law 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 remain on file with the Planning Board and shall be an ongoing requirement. The O&M Plan shall include:

- a. The name (s) of the owner(s) for all components of the system;
- b. A map showing the location of the systems and facilities including easements, catch basins, manholes/access lids, main, and stormwater devices;
- c. Maintenance agreements that specify:
  1. The names and addresses of the person(s) responsible for operation and maintenance;
  2. The person(s) responsible for financing maintenance and emergency repairs;
  3. An Inspection and Maintenance Schedule for all stormwater management facilities including routine and non-routine maintenance tasks to be performed;
  4. A list of easements with the purpose and location of each;
  5. 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; and
  6. The signature of the owner(s).

Section 7.13 *Stormwater Management Easement(s)* Stormwater management easements shall be provided by the property owner(s) as necessary for:

- a. Access for facility inspections and maintenance;
- b. Preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event;
- c. Direct maintenance access by heavy equipment to structures requiring regular maintenance.

Section 7.14 Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the Planning Board.

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

Section 7.15 *Changes to Operation and Maintenance Plans*

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

### **Section 8.0 Stormwater Management Criteria**

For compliance with the Performance Standards of this By-Law, the applicant must meet the current Massachusetts Department of Environmental Protection's Stormwater Management Standards and document compliance based on the Handbook. Projects must also comply with the Post-Construction Stormwater Management Requirements of the current Small MS4 General Permit, whichever is more stringent, using appropriate Stormwater Best Management Practices.

Section 8.1 *Additional Post-Development Criteria* The following performance criteria shall be applicable to all

stormwater management plans, unless otherwise provided for in this Regulation:

a. Hydrologic Basis for Design of Structural Practices

For facility sizing criteria, the basis for hydrologic and hydraulic evaluation of development sites are as follows:

1. Impervious cover is measured from the site plan and includes 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.
2. Off-site areas shall be assessed based on their “pre-developed condition” for computing the water quality volume (i.e., treatment of only on-site areas is required). However, if an offsite area drains to a proposed BMP, flow from that area must be accounted for in the sizing of a specific practice.
3. Off-site areas draining to a proposed facility should be modeled as “present condition” for peak flow attenuation requirements.
4. The length of sheet flow used in time of concentration calculations is limited to no more than 50 feet for predevelopment conditions and 50 feet for post development conditions.
5. Detention time for the one- year storm is defined as the center of mass of the inflow hydrograph and center of mass of the outflow hydrograph.
6. The models TR-55 and TR-20 (or approved equivalent) will be used for determining peak discharge rates.
7. The standard for characterizing pre-development land use for on-site areas shall be woods.
8. For purposes of computing runoff, all pervious lands in the site shall be assumed prior to development to be in good condition regardless of conditions existing at the time of computation.
9. If an off-site area drains to a facility, off-site areas should be modeled assuming an “ultimate build out condition” upstream.
10. Determination of flooding and channel erosion impacts to receiving streams due to land development projects shall be measured at each point of discharge from the development project and such determination shall include any runoff from the balance of the watershed which also contributes to that point of discharge.
11. The specified design storms shall be defined as a 24-hour storm using the rainfall distribution recommended by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) or the Northeast regional Climate center “Atlas of Precipitation Extremes for the Northeastern United States and Southeastern Canada.”
12. Proposed residential, commercial, or industrial subdivisions shall apply these stormwater management criteria to the land development as a whole. Individual lots in new subdivisions 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.

**b. Additional Pollutant Removal Requirements**

1. New development and redevelopment stormwater management BMPs that discharge to waterbodies impaired by total phosphorus shall be optimized for phosphorus removal. The applicant shall document the BMP type, total area treated by the BMP, the design storage volume of the BMP, and the estimated phosphorus removed in mass per year consistent with Attachment 3 to Appendix F of the Small MS4 General Permit.

Section 8.2 *Additional Erosion and Sediment Control Criteria*

- a. The following are the minimum Erosion and Sediment Control criteria:

1. Minimize total area of disturbance and protect natural resources;
2. Stabilize sites when projects are complete or operations have temporarily ceased;
3. Protect slopes on the construction site;
4. Protect all storm drain inlets and armor all newly constructed outlets;
5. Use perimeter controls at the site;
6. Stabilize construction site entrances and exits to prevent off-site tracking;
7. Inspect stormwater controls at consistent intervals.
8. Sequence activities to minimize simultaneous areas of disturbance. Mass clearings and grading of the entire site shall be avoided.
9. Minimize peak rate of runoff in accordance with the Massachusetts Stormwater Standards.
10. Minimize soil erosion and control sedimentation during construction, provided that prevention of erosion is preferred over sedimentation control;
11. Divert uncontaminated water around disturbed areas;
12. Maximize groundwater recharge;
13. Install and maintain all Erosion and Sediment Control measures in accordance with the manufacturer's specifications and good engineering practices;
14. Prevent off-site transport of sediment;
15. Protect and manage on and off-site material storage areas (overburden and stockpiles of dirt, borrow areas, or other areas used solely by the permitted project are considered a part of the project);
16. Comply with applicable Federal, State and local laws and regulations including waste disposal, sanitary sewer or septic system regulations, and air quality requirements, including dust control;
17. Prevent significant alteration of habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or of Special Concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species from the proposed activities;
18. Institute interim and permanent stabilization measures, which shall be instituted on a disturbed area as soon as practicable but no more than 14 days after construction activity has temporarily or permanently ceased on that portion of the site;
19. Properly manage on-site construction and waste materials;
20. Prevent off-site vehicle tracking of sediments.
21. Divert offsite runoff from highly erodible soils and steep slopes to stable areas.
22. BMPs used during construction must be different from the BMPs that will be used to handle stormwater after construction is completed. Many stormwater 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.

## **Section 9.0 Surety**

a. The Planning Board may require the permittee to post before the start of land disturbance activity, a surety bond, irrevocable letter of credit, cash, or other acceptable security. The form of the bond shall be approved by town counsel and be in an amount deemed sufficient by the Planning Board to ensure that the work will be completed in accordance with the permit. If the project is phased, the Planning Board 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 has received the final report as required by Section 10.1 and issued a certificate of completion.

### **b. Stormwater Maintenance Surety**

The Planning Board may also require the permittee to secure the future maintenance of the stormwater system by a perpetual surety bond or by deposit of money of an amount as determined by the Planning Board. This shall be named the Stormwater Maintenance Surety.

In the event that the permittee does not follow maintenance procedures and programs as approved by the Planning Board, the Board shall have authority to expend any portion of said security to provide such

maintenance.

### **Section 10.0 Construction Inspections**

a. Pre-Construction Meeting. Prior to starting clearing, excavation, construction, or land disturbing activity, the applicant, the applicant's technical representative, the general contractor or any other person with authority to make changes to the project, shall meet with the Planning Board, to review the permitted plans and their implementation. There shall be an initial site inspection prior to approval of any plan.

#### **Section 10.1 Stormwater Management System Construction Inspection**

- a. At the discretion of the Planning Board, periodic inspections of the stormwater management system construction shall be conducted by the Board's agent, designee or a professional engineer who has been approved by the Planning Board. An inspection will be made of the completed stormwater management system, prior to backfilling of any underground drainage or stormwater conveyance structures. All inspections shall be documented and written reports must be submitted to the Planning Board within 48 hours of the inspection. The owner must retain all inspection records and reports for a minimum of 5 years. The written inspection reports shall contain the following:
  1. The date and location of the inspection;
  2. Names, titles, and qualifications of personnel making the inspection;
  3. Whether construction is in compliance with the approved stormwater management plan;
  4. Variations from the approved construction specifications; and
  5. Any other variations or violations of the conditions of the approved stormwater management plan.
- b. An Inspection will be made of the completed stormwater management system, prior to backfilling of any underground drainage or stormwater conveyance structures.
- c. Final Inspection. 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 **as consistent with the approved plan(s)** by a Professional Engineer.
- d. The Board's agent/representative 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 adequate, a report to this effect shall be submitted to the Planning Board which will issue a Certificate of Completion. As built plans shall be full sized plans which reflect the "as built" conditions, including all final grades developed 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.

#### **Section 10.2 Erosion and Sediment Control Inspection**

- a. To ensure erosion control practices are in accord with the filed Erosion and Sediment Control Plan, Erosion Control Inspections will be conducted by qualified personnel as authorized by the Planning Board at least once every 7 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 or runoff is unlikely due to winter conditions.
- b. 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 tracking.

- c. For each inspection required above, an inspection report must be submitted to the Planning Board within 48 hours of the inspection. The report shall include the following information, at a minimum:
  1. The inspection date;
  2. Names, titles, and qualifications of personnel making the inspection;
  3. Weather information and a description of any discharges occurring at the time of the inspection;
  4. Location(s) of discharges of sediment or other pollutants from the site;
  5. Location(s) of BMPs that need to be maintained;
  6. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
  7. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
  8. Corrective action required including any changes to the Stormwater Pollution Prevention Plan (SWPPP) necessary and implementation dates.
- d. If a project requires a SWPPP per the NPDES general permit for Stormwater Discharges from Construction Activities (Construction General Permit) then the permittee is required to submit all Inspection reports to the Planning Board. If the Inspection reports meet the requirements of Section 3.10 of the Construction General Permit, it will be considered equivalent to the Erosion Control Inspection as described above.
- e. A record of each inspection and of any actions taken must be retained for at least five years from the date of the certificate of completion. 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.
- f. 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.
- g. If the 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.
- h. If existing BMPs need to be modified, or if additional BMPs are necessary for any reason, implementation must be completed before the next storm event whenever practicable. If implementation before the next storm event is impracticable, the situation must be documented and alternative BMPs must be implemented as soon as possible.

**Section 10.3 *Inadequacy of System*** If the system is found to be inadequate by virtue of physical evidence of operational failure, even though it was built as called for in the Stormwater Management Plan, it shall be corrected by the permittee before the Certificate of Completion is released. If the permittee fails to act the Planning Board may use the surety bond to complete the work.

**Section 10.4 *Right-of Entry for Inspection*** The term of the inspection and maintenance agreement as specified in Section 7.12 of these regulations shall provide for the Planning Board or its designee 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 the authority enter upon privately owned property 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 deems reasonably necessary, subject to the constitutions and laws of the United States and the Commonwealth.

### **Section 11.0 *Certificate of Completion.***

- a. Upon completion of the project, the applicant is responsible for certifying that the completed project is in accordance with the approved plans and specifications and that all required inspections have been performed.

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

Section 11.1 *Failure to Maintain* If a responsible person fails to meet the requirements of the operation and maintenance agreement, the Planning Board, after thirty (30) days written notice 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. In the event that the responsible person, permittee or subsequent owners do not follow maintenance procedures and programs as approved by the Planning Board, the Board or its agents shall have the authority to expand any portion of the Stormwater Management Surety to provide such maintenance and repairs as needed. In the event the repairs exceed the value of the surety, the Planning Board may assess the owner(s) of the facility for the additional cost of repair work which shall be a lien on the property.

Section 12.0 *Enforcement* The Planning Board or an authorized agent of the Planning Board shall enforce this by-law, regulations, orders, violation notices, and enforcement orders, and may pursue all civil and criminal remedies for such violations.

- a. *Criminal Penalty.* Any person who violates any provision of this by-law, regulation, order or permit issued there under, shall be punished by a fine of not more than \$300. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.
- b. *Non-Criminal Disposition.* As an alternative to criminal prosecution or civil action, the Town of Mendon may elect to utilize the non-criminal disposition procedure set forth in G.L. Ch.40, 21D. The Planning Board of the Town of Mendon shall be the enforcing entity. The penalty for the 1st violation shall be \$100. The penalty for the 2nd violation shall be \$200. The penalty for the 3rd and subsequent violations shall be \$300. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.
- c. *Appeals.* The decisions or orders of the Planning Board shall be final. Further relief shall be to a court of competent jurisdiction.

Section 13.0 *Severability* If any provision, paragraph, sentence, or clause of this by-law shall be held invalid for any reason, all other provisions shall continue in full force and effect.