

Stormwater Management Application Checklist

Please complete and submit with your application

7.5 Application Form

Any Application for an SMP shall be made in writing and include the completed application form entitled "Application for a Stormwater Management Permit" attached to these Rules. In the case where the Applicant is a person other than the record owner of the property, the Applicant must obtain the owner's signature on the application indicating that the owner has knowledge of and consents to the Application. If the Applicant is acting in the name of a trust, corporation or company, a letter documenting the authorizing vote shall be attached.

An Application for an SMP that lacks information or is incomplete may be denied or delayed. The Applicant shall be responsible for factually supporting all points relied upon in the Application including references for methodologies used in design calculations.

- 7.5.1 All plan sheets and engineering calculations shall bear the seal of a Registered Professional Engineer, Registered Land Surveyor or Landscape Architect as appropriate to the data.
- 7.5.2 Entry - Filing an application for an SMP grants the Commission, or its agent, permission to enter the site to verify the information in the application and to inspect for compliance with the resulting SMP

7.6 Application Contents

A complete Application for an SMP shall include the following items listed below and other items required by these Rules.

- 7.6.1 A completed Application Form with original signatures of all owners;
- 7.6.2 A list of abutters;
- 7.6.3 Payment of the application and review fees;
- 7.6.4 Inspection and Maintenance agreement/s;
- 7.6.5 Surety bond, if required, and
- 7.6.6 Other Permits, Approvals and Variances.
- 7.6.7 List and copies of variances, special permits, and other permits previously issued by other Town boards or departments, State and Federal agencies, and a list of any variances or permits required to complete the proposed work.

NOTE: If any other permits are required from the Commission, the Applicant is hereby permitted and encouraged to make the applications for such additional permits concurrently with this SMP application.

7.6.8 Recorded Plans and Deeds

A copy of the most recently recorded plan(s) and deed(s) for the lot(s) on which the work will take place bearing the book number(s), page number(s), and date(s) of recording(s) or registration(s).

7.6.9 Locus Plan

A locus plan at a scale appropriate for the proposed project showing the area within a 1/2 mile radius of the site, Zoning Districts and property boundary lines, surface water bodies, wetlands,

existing and future planned public wells, private wells, major roadways and other landmarks.

7.6.10 Site Composite Plan

One or more plan sheets with a detailed legend for all symbols used, and a detailed site data table for all relevant dimensional information, showing the following:

- 7.6.10.1 Wellhead Protection Zone(s) in which the site and lot are located, if any;
- 7.6.10.2 Total lot area and areas of Wetlands and Flood Plain District (Section 174-8.9. of the Bylaw) on the lot (in percent and square feet);
- 7.6.10.3 Existing/Proposed areas (in percent and square feet) of impervious cover, open space, undisturbed open space with such areas clearly delineated on plan. Limits of clearance and disturbance as it will be staked and marked in the field for construction purposes;
- 7.6.10.4 Natural Features, including surface water bodies, wetlands, land within the Flood Plain District, natural drainage courses, ledge outcropping, vegetation, soils;
- 7.6.10.5 Existing and Proposed structures and impervious cover;
- 7.6.10.6 Pre and Post Development topography in two (2) foot contours, or as appropriate to the proposed development, with reference to the NGVD of 1929;
- 7.6.10.7 A sufficient number of test pits and test information shall be provided to demonstrate the reasonable accuracy of the groundwater elevation in areas where stormwater runoff is proposed to be infiltrated into the ground. The applicant shall demonstrate that at least 2-feet of separation is present from the bottom of the infiltration device to the maximum groundwater elevation;
- 7.6.10.8 Location of existing and proposed area on site with the shortest distance between the surface and the maximum groundwater elevation;
- 7.6.10.9 Reference of location of nearest public wells, and known private wells on abutting properties with distance and direction to them;
- 7.6.10.10 Storm drainage and runoff water renovation plan, showing the location and elevations of the various features of the site storm drainage and renovation system;
- 7.6.10.11 Erosion, sedimentation and siltation control devices to be utilized during construction, and
- 7.6.10.12 Existing/proposed water supply on site, if any.

7.6.11 Construction Detail Sheet

Construction details for entire site drainage and surface runoff renovation system including: pipe sizes; catch basins; manholes; detention/retention ponds with lining, vegetation and overflow structure; leaching facilities; floor drains; diversion boxes; slide gates; etc. Sedimentation, siltation, and erosion control devices. Details of tanks, containment structures, vapor recovery systems as applicable and of any other pollution control/prevention devices.

7.6.12 Drainage Calculations, Treatment of Runoff

Storm drainage runoff calculations and description of proposed surface runoff renovation concept. The calculations must be based on a recognized standard method (rational formula or Soil Conservation Service (SCS) method) and must contain a written summary explaining the rationale of the design approach. Full documentation is required including charts, tables, diagrams and the name/type of computer software application used.

7.6.13 Earth Removal/Fill Calculations

Calculations for determining the volume of earth to be removed from or introduced to the site with full documentation of calculations including reference of method used. The source and description

of the fill material to be used. A written summary is required.

7.6.14 Land Use description

Detailed and specific description of existing and proposed land use(s) understandable by a lay person.

7.6.15 Emergency Response Plan

If deemed necessary by the Commission, a complete Emergency Response Plan with profile of events that could adversely affect the groundwater or surface water. Location of emergency response equipment stored on site and list of equipment shall be included. A plan to educate employees on the general concept of stormwater management and groundwater protection, and to train employees for the specific events expected to be incurred during an emergency situation on the site shall be included.

7.6.16 Stormwater and Erosion Control Management Plan Contents

The application for an SMP shall include the submittal of a Stormwater Management and Erosion Control Plan to the Conservation Commission. This Stormwater Management and Erosion Control Plan shall contain sufficient information for the Conservation Commission 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 Civil or Environmental Engineer (PE) licensed in the Commonwealth of Massachusetts.

- a) The Stormwater and Erosion Control Management Plan shall ensure that the Massachusetts Surface Water Quality Standards (314 CMR 4.00) are met in all seasons. Refer to the latest version of the *Massachusetts Erosion & Sediment Control Guidelines for Urban & Suburban Areas*, for detailed guidance. The Stormwater Management and Erosion Control Plan shall fully describe the project in drawings, narrative, and calculations.
- b) It shall include:
 - 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) A locus map, north arrow, map scale;
 - 3) The existing zoning, and land use at the site;
 - 4) The proposed land use;
 - 5) The location(s) of existing and proposed property lines and easements;
 - 6) The location of existing and proposed utilities, roads, Scenic Roads, structures and other impervious areas;
 - 7) The site's existing and proposed topography, including existing and proposed slopes with contours at 2 foot intervals;
 - 8) The existing site hydrology;
 - 9) A description and delineation of existing stormwater conveyances, impoundments, and wetlands on or adjacent to the site or into which stormwater flows;
 - 10) A delineation of 100-year flood plains, if applicable;
 - 11) Estimated seasonal high groundwater elevation in areas to be used for stormwater retention, detention, or infiltration;
 - 12) A drainage area map showing pre and post construction watershed boundaries, drainage area and stormwater flow paths, including municipal drainage system flows;
 - 13) A description and drawings of all components of the proposed stormwater management and erosion control systems including:

- (a) Locations, cross sections, and profiles of all brooks, streams, drainage swales and their method of stabilization;
- (b) Detailed drawings, structural details, materials to be used, construction specifications, and design calculations of all temporary and permanent stormwater, erosion and sediment control structures and devices;
- (c) Narrative that includes a discussion of each measure, its purpose, its construction sequence and installation timing as they relate to soil disturbance;
- (d) A plan showing areas of vegetation alteration, soil disturbance and areas of cut and fill;
- (e) The project's phases as they relate to vegetation alteration, soil disturbance, cut and fill, including protected designated stockpile locations with a tabulated sequence of construction and construction schedule, including earthworks;
- (f) Proposed schedule for the inspection and maintenance of erosion control measures for the project throughout the construction period;
- (g) Name and 24hr/7day contact information of the person responsible for the site's development;
- (h) The structural details for all components of the proposed drainage systems;
- (i) Notes on drawings specifying materials to be used, construction specifications, and expected hydrology with supporting calculations;
- (j) Proposed improvements including location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable;
- (k) Any other information requested by the Conservation Commission.

c) 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:

- 1) Description of the design storm frequency, intensity and duration;
- 2) Time of concentration;
- 3) Soil Runoff Curve Number (RCN) based on land use and soil hydrologic group;
- 4) Peak runoff rates and total runoff volumes for each watershed area;
- 5) Information on construction measures used to maintain the infiltration capacity of the soil where any kind of infiltration is proposed;
- 6) Infiltration rates, where applicable;
- 7) Culvert capacities;
- 8) Flow velocities;
- 9) Data on the increase in rate and volume of runoff for the specified design storms;
- 10) Documentation of sources for all computation methods and field test results;
- 11) Post-Development downstream analysis if deemed necessary by the Conservation Commission;
- 12) 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, and
- 13) Landscaping plan describing the woody and herbaceous vegetative stabilization and management techniques to be used within and adjacent to the stormwater practice.

7.6.17 Operation and Maintenance Plan Contents

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 SMP, this Bylaw and

that the Massachusetts Surface Water Quality Standards, 314, CMR 4.00 are met throughout the life of the system. The Operation and Maintenance Plan shall remain on file with the Commission and shall be an ongoing requirement.

7.6.17.1 The O&M Plan shall include:

- a) The name(s) of the owner(s) for all components of the system;
- b) Name and 24hr/7day contact information of the person responsible for the site's O&M Plan;
- c) A map showing the location of the systems and facilities including catch basins, manholes/access lids, main, and stormwater devices;
- d) 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 and erosion control 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) The signature(s) of the owner(s), and
 - (6) An Inspection and Maintenance Schedule log sheet shall be created at commencement of construction. The log sheets shall be maintained and filled out whenever inspection or maintenance is performed, and the log sheets shall be made available for inspection upon request;
- e) Stormwater Management Easement(s) - Stormwater management easements shall be provided by the property owner(s) as necessary for:
 - (1) Access for facility inspections and maintenance;
 - (2) Preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event, and
 - (3) Direct maintenance access by heavy equipment to structures requiring regular maintenance;
- f) The purpose of each easement shall be specified in the maintenance agreement signed by the property owner;
- g) Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the Commission;
- h) Easements shall be recorded with the Worcester County Registry of Deeds prior to issuance of a Certificate of Completion by the Commission;
- i) A Spill Prevention Control and Countermeasures (SPCC) Plan shall be created for all sites that store hazardous materials during construction and/or post-development;

7.6.17.2 Changes to Operation and Maintenance Plans

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

8.0 Post-Development Stormwater Management Criteria

At a minimum all projects shall comply with the performance standards of the most recent version of Massachusetts Department of Environmental Protection (DEP) Stormwater Management Policy,

as well as the following.

8.1 General Criteria - Are these items addressed? Please include a stamped Stormwater Checklist in your submission

The following general performance criteria shall be applicable to all stormwater management plans, unless otherwise provided for in this Regulation.

- 8.1.1 No Untreated Discharges - All stormwater runoff generated from land development and land use conversion activities shall not discharge untreated stormwater runoff directly to a wetland, local water body, municipal drainage system, or abutting property, without adequate treatment.
- 8.1.2 Channel Protection - Protection of channels from bank and bed erosion and degradation shall be provided by controlling the peak discharge rate from the 2-yr storm event to the pre-development rate as required by the MA DEP Stormwater Management Policy.
- 8.1.3 Overbank Flooding Protection - Downstream overbank flood and property protection shall be provided by attenuating the post-development peak discharge rate to the pre-development rate for the 10-year, 24-hour return frequency storm event as required by the MA DEP Stormwater Management Policy.
- 8.1.4 Extreme Flooding Protection - Extreme flooding and public safety protection shall be provided by evaluating the 100-year, 24-hour return frequency storm event to demonstrate no increased flooding impacts off-site, as required by the MA DEP Stormwater Management Policy.
- 8.1.5 Recharge - Annual groundwater recharge rates shall be maintained, by promoting infiltration through the use of structural and non-structural methods. At a minimum, annual recharge from the post-development site shall mimic the annual recharge from pre-development site conditions.
- 8.1.6 Structural Practices for Water Quality - Presumed Compliance with Massachusetts Water Quality Standards. All structural stormwater management facilities shall be selected and designed using the appropriate criteria from the most recent version of the Massachusetts DEP Stormwater Management Manual.

Applicants are encouraged to meet water quality standards through the use of low impact techniques such as bio-retention cells and vegetated filter strips. For structural stormwater controls not included in the Massachusetts Stormwater Management Manual, or for which pollutant removal rates have not been previously documented by prior applicants, the applicant must document the effectiveness and pollutant removal of the structural control by providing scientific studies, literature reviews, or other citations, in order to receive approval from the Commission before including such techniques in the design of a stormwater management system.

Structural best management practices (BMPs) must be designed to remove 80% of the average annual post-development total suspended solids (TSS) and 40% for total phosphorus (TP), and 30% for total nitrogen (TN). It is presumed that a BMP complies with this performance goal if it is:

- a) Sized to capture the prescribed water quality volume;
- b) Designed according to the specific performance criteria outlined in the Massachusetts Stormwater Management Manual;
- c) Constructed properly, and
- d) Maintained regularly.

8.1.7 Sensitive Areas - Stormwater discharges to critical areas with sensitive resources (i.e., swimming areas, aquifer recharge areas, water supply reservoirs) may be subject to additional criteria, or may need to utilize or restrict certain stormwater management practices at the discretion of the Conservation Commission. The Conservation Commission

may designate sensitive areas and specific criteria for these areas after conducting a public hearing in accordance with the provisions of The Bylaw.

8.1.8 Hotspots - Stormwater discharges from land uses or activities with higher potential pollutant loadings, known as "hotspots", 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, as defined in the most recent version of the MA DEP Stormwater Management Manual or superseding manual require the use of specific stormwater management BMPs as specified in the most recent version of the MA DEP Stormwater Management Manual or superseding manual. The use of infiltration practices without pretreatment is prohibited.