

# **REGULATIONS**

## **For Stormwater Management and Erosion Control Bylaw**

### **PURPOSE of the REGULATIONS**

The purposes of these Stormwater and Erosion Control Regulations are to:

1. Protect, maintain and enhance the public health, safety, environment, and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased post-development stormwater runoff, decreased groundwater recharge, and non-point source pollution associated with new development and redevelopment;
2. Protect, maintain and enhance the public safety, environment and general welfare by establishing minimum standards and procedures to control runoff and prevent soil erosion and sedimentation resulting from site construction/alteration and development, as more specifically addressed in the Town of Rowley General Bylaws, Stormwater Management and Erosion Control Bylaw.

These Regulations were adopted for implementation of the Stormwater Management and Erosion Control Bylaw of the Town of Rowley by the Rowley Conservation Commission by majority vote on January 29, 2008, and filed with the Town Clerk on January 30, 2008.

### **DEFINITIONS**

**AREA OF CRITICAL ENVIRONMENTAL CONCERN: (ACEC)** shall mean a designated geographic area as defined by 301 CMR 12.00 including without limitation the Parker River /Plum Island Sound ACEC, as amended from time to time.

**HOTSPOTS:** land uses or activities with higher potential pollutant loadings, as defined in the most recent version of the MA DEP Stormwater Management Manual, as amended from time to time.

### **PART I. APPLICATION**

#### **Stormwater Management Permit**

The applicant shall file with the Conservation Commission ten (10) copies of a completed application package for a Stormwater Management Permit (SMP). Permit issuance is required prior to any land disturbance or site altering activity.

The application package for a SMP shall consist of:

1. Ten (10) copies of a completed Application Form with signatures of all property owners and the signature of the applicant if different;
2. Ten (10) copies each of a list of abutters within 100 feet with accompanying parcel map, certified by the Assessors 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 100 feet of the property line of the applicant, including any in another municipality or across a body of water);
3. Ten (10) copies each of the Erosion and Sediment Control Plan, Stormwater Management Plan, and Operation and Maintenance Plan as specified in PARTS II, III, and IV of these regulations adopted under the Bylaw, and a descriptive project narrative;
4. Payment of the application fee and professional review fee, which may include the creation of an

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escrow account in accordance with Section 7 B of the Bylaw;

5. A project that has been reviewed and approved by the Conservation Commission under the authority of the Wetlands Protection Act and the Wetlands Protection Bylaw, may be deemed as acceptable under the Stormwater Management and Erosion Control Bylaw only if the entire project and construction activities, including all land disturbance, adhere fully and meet the requirements as specified in PARTS II, III, and IV of these regulations adopted under the Bylaw. The applicant must submit to the Conservation Commission only two (2) completed copies of the SMP application form along with two (2) copies of the Conservation Commission's issued Order of Conditions and Final Approved Plans. The Conservation Commission may issue a Stormwater and Erosion Control Permit at its next regularly scheduled meeting after receipt and review of said materials. The filing fee shall be waived;
6. A project that has been reviewed and definitively approved by the Planning Board under the Massachusetts Subdivision Control Law or the special permit provisions of the Rowley Protective Zoning Bylaws, may be deemed as acceptable under the Stormwater Management and Erosion Control Bylaw only if the entire project and construction activities, including all land disturbance, adhere fully and meet the requirements as specified in PARTS II, III, and IV of these regulations adopted under the Bylaw. The applicant must submit to the Conservation Commission only two (2) completed copies of the SMP application form along with two (2) copies of the Planning Board's issued Definitive Subdivision Permit, Final Approved Plans, and/or applicable Special Permit. The Conservation Commission may issue a Stormwater and Erosion Control Permit at its next regularly scheduled meeting after receipt and review of said materials. The filing fee shall be waived; and
7. The Conservation Commission reserves the right to request additional copies as necessary.

**PART II. EROSION AND SEDIMENTATION CONTROL PLANS**

**A. Standards**

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 Plan must be prepared in accordance with the following standards:

1. The total area of disturbance shall be minimized;
2. Activities shall be sequenced to minimize simultaneous areas of disturbance;
3. Soil erosion shall be minimized and sedimentation will be controlled during construction, with the understanding that prevention of erosion is preferred over sedimentation control;
4. Uncontaminated surface water shall be diverted around disturbed areas, degraded surface water shall be contained and appropriately treated prior to release or discharge;
5. All Erosion and Sediment Control measures shall be installed and maintained in accordance with Town specifications and good engineering practices;

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6. Off-site transport of sediment shall be prevented, including sediment tracked by vehicles leaving the site;
7. On and off-site stockpile areas shall be managed to provide protection from erosion and sediment transport (overburden and stockpiles of dirt, borrow areas, or other areas used solely by the permitted project are considered a part of the project);
8. Applicable Federal, State and local laws and regulations shall be complied with fully including waste disposal, sanitary sewer or septic system regulations, and air quality requirements (including dust control);
9. The proposed activities shall not be permitted to have adverse impacts to 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;
10. Interim and permanent stabilization measures shall be instituted on a disturbed area as soon as practicable but no more than fourteen (14) days after construction activity has temporarily or permanently ceased on that portion of the site; and
11. On-site construction and waste materials shall be handled properly, which includes but is not limited to, appropriate containment, prevention of harborage and vermin control, protection from the elements, and timely off-site disposal at a permitted and approved waste disposal facility.

**B. Contents**

The Erosion and Sediment Control Plan shall contain the following information:

1. Names, addresses, and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the plan;
2. Title, date, north arrow, names of abutters with Assessors information, scale no greater than one inch equals forty feet (1"=40'), legend, and locus map (1"=200');
3. Location and description of natural features including:
  - a. Watercourses and water bodies, wetland resource areas, riparian zones and all floodplain information, including the 100-year flood elevation based upon the most recent Flood Insurance Rate Map, or as calculated by a professional engineer for areas not assessed on these maps;
  - b. Existing vegetation of various kinds including tree lines, shrub layer, ground cover and herbaceous vegetation, and trees over twelve (12) inch diameter measured at four (4) feet above the ground level, noting specimen trees and forest communities; and
  - c. 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, Potential Vernal Pools, and Priority Habitats of Rare Species within five hundred (500) feet of any construction activity.
4. Lines of existing abutting streets showing drainage and driveway locations and curb cuts;

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5. Existing soils (type, hydrologic group, erodibility) and the volume and nature of imported soil materials;
6. Topographical features including existing and proposed contours at intervals no greater than two (2) feet with spot elevations provided when needed;
7. Surveyed property lines showing distances and monument locations, all existing and proposed easements (any easement must either be shown on a plan with a metes and bounds description or preferably a written easement with metes and bounds stated), rights-of-way, and other encumbrances, the size of the entire parcel, and the delineation and number of square feet of the land area to be disturbed;
8. Drainage patterns, watersheds and subwatersheds, with calculations of proposed land disturbance within each subwatershed and areas of soil to be disturbed in each watershed throughout the duration of the proposed land disturbance activity;
9. Location and details of erosion and sediment control measures with a narrative of the construction sequence/phasing of the project, including both operation and areas;
10. Path and mechanism to divert uncontaminated water around disturbed areas, to the maximum extent practicable;
11. Location and description of and implementation schedule for temporary and permanent seeding, vegetative controls, and other stabilization measures;
12. A description of construction and waste materials expected to be stored on-site. The Plan shall include a description of controls to reduce pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater, and spill prevention and response;
13. A description of provisions for phasing the project where a proposed disturbance of a 20,000 square foot area or larger and/or a land disturbance that will alter an area of 10,000 square feet or more on existing or proposed slopes steeper than 15 %, forms a contiguous area that is to be altered or disturbed;
14. Plans, reports, and calculations must be stamped and certified by a qualified registered professional engineer (PE) or a qualified professional land surveyor (PLS) as defined in Section 4 of the Town of Rowley Stormwater Management and Erosion Control Bylaw; and
15. Such other information as is required by the Conservation Commission.

**C. Minimum Erosion and Sedimentation Control Requirements**

Minimum Erosion and Sedimentation Control Requirements for projects less than 20,000 square feet or a land disturbance that will alter an area of less than 10,000 square feet on existing or proposed slopes steeper than 15% as required under Section 3B of the Bylaw:

1. Siltation and erosion controls shall be employed prior to the commencement of land disturbing

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activities on the site, siltation controls shall be placed to prevent soils or other eroded matter from being deposited onto adjacent properties, rights-of-ways, public storm drainage system, or wetland or watercourse.

2. Filter fabric shall be installed as recommended by the manufacturer except as otherwise directed by the Conservation Commission or its Agent. The bottom six (6) inches of the material shall be buried by excavating a six (6) inch deep trench along the toe of the fabric line and placing the bottom six (6) inches of filter fabric into the trench. The trench shall then be backfilled with the spoil material and compacted. In no instance shall the bottom of the filter fabric be laid on the ground surface and simply covered with backfill or stone.
3. Individual hay bales shall remain tied with twine, placed with ends tightly abutting adjacent hay bales, without leaving appreciable space for sediment to travel through the barrier. Hay bales shall be anchored in place by two (2) wooden stakes. The first stake in each bale shall be angled toward the previously staked bale to pin the bales together.
4. Adequate erosion and sedimentation control measures shall be implemented and maintained in their proper effectiveness during the entire construction phase for a project. Such erosion control measures shall be monitored on a daily basis, or as needed, and be reinforced or replaced when needed, per judgment of the site foreman, owner, and/or Conservation Commission or its Agent.
5. The adequacy of various erosion control methodologies shall be evaluated on a site-specific basis and shall be subject to review and approval by the Conservation Commission or its Agent and adherence to construction site Best Management Practices.
6. Such erosion and sedimentation control devices shall remain in place until the site has become stabilized with an adequate vegetative cover.

**PART III. STORMWATER MANAGEMENT PLANS**

**A. Standards**

The Stormwater Management Plan shall be prepared in accordance with the Massachusetts DEP Stormwater Management Standards and Stormwater Policy Handbook Volumes One and Two as revised.

**B. Stormwater Management Plan Requirements**

The Stormwater Management Plan shall contain the following information:

1. A locus map, at a scale of one inch equals two hundred feet (1"=200'), north arrow, legend, and map scale no greater than one inch equals forty feet (1"=40');
2. The existing zoning, and land use at the site;
3. The proposed land use;
4. The location(s) of existing and proposed property line and easements (any easement must either be shown on a plan with a metes and bounds description or preferably a written easement with metes and bounds stated);

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5. The location of existing and proposed utilities, roads, Scenic Roads, structures and other impervious areas;
6. The site's existing and proposed topography, including existing and proposed slopes with contours at two (2) foot intervals;
7. The existing site hydrology;
8. A description and delineation of existing stormwater conveyances, impoundments, and wetlands on or adjacent to the site or into which stormwater flows;
9. A delineation of 100-year flood plains, if applicable;
10. 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;
11. The existing and proposed vegetation, including all trees over twelve (12) inch diameter measured at four (4) feet above the ground level, and proposed vegetation and ground surfaces with runoff coefficients for each;
12. Habitats mapped by the Massachusetts Natural Heritage and 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 and any Area of Critical Environmental Concern within five hundred (500) feet of any construction activity;
13. A drainage area map showing pre-construction and post-construction watershed boundaries, drainage area and stormwater flow paths, including municipal drainage system flows;
14. A description and drawings of all components of the proposed drainage system 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, including all measures for the protection of water quality;
  - c. Narrative that includes a discussion of each measure, its purpose, 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, including all

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- measures for the detention, retention or infiltration of water;
- i. Notes on drawings specifying materials to be used, construction specifications, and expected hydrology with supporting calculations; and
  - j. Any other information requested by the Conservation Commission.
15. The proposed improvements including location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable;
16. 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.
17. Landscaping plan describing the woody and herbaceous vegetative stabilization and management techniques to be used within and adjacent to the stormwater practices;
18. Post-development downstream analysis if deemed necessary by the Conservation Commission; and
19. Any other information requested by the Conservation Commission.

**C. Post-Development Stormwater Management Criteria**

1. At a minimum all projects shall comply with the performance standards of the most recent version of Massachusetts Department of Environmental Protection (MA DEP) Stormwater Management Policy, as well as the following:

**2. General Criteria**

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

**a. 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.

**b. 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 predevelopment rate as required by the MA DEP Stormwater Management Policy.

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c. 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.

d. 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.

e. Recharge

- i. 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 equal the annual recharge from pre-development site conditions.

The recharge volume may be reduced for developments where clean rooftop runoff (as defined by the MA DEP Stormwater Management Policy) is directed to pervious areas where it can either infiltrate into the soil or flow over it with sufficient time and velocity to allow for filtering. In such a situation, the effective impervious area of the site may be reduced by the roof area to be infiltrated. To use this credit the following conditions must be met:

- The rooftop contributing area to any one-discharge location cannot exceed one thousand (1000) square feet.
- The contributing length of a rooftop to a single discharge location cannot exceed seventy-five (75) feet.
- Slopes must be less than 5.0% to permit infiltration.
- Discharges must be located at least ten (10) feet away from the nearest impervious surface, and the rooftop runoff must not commingle with any runoff from paved surfaces at any designated “hotspot” land use.
- Dry wells or infiltration trenches can be used where necessary to ensure infiltration into less permeable soils.
- The use of rain gardens and bio-retention cells to receive and infiltrate rooftop runoff is encouraged.

- ii. The stormwater runoff volume to be recharged to groundwater should be determined using the methods prescribed in the latest version of the MA DEP Stormwater Management Manual. The recharge requirements shall apply to all activities within the jurisdiction of this Regulation except as noted, and unless specifically waived by the Conservation Commission. The recharge criteria is not required for any portion of a site designated as a stormwater hotspot (see Part III. C. 2. g. Water Quality Volume & j. Hotspots of these Regulations). In addition, the Conservation Commission may relax or eliminate the recharge requirement at its discretion, if the site is situated on unsuitable soils or is in a redevelopment area with documentation of prior contaminated soils.

f. Structural Practices for Water Quality

- i. Presumed Compliance with Massachusetts Water Quality Standards



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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 Conservation 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:

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

#### ii. Pollutant Loading Calculation Assessment

1. For residential developments of twenty (20)-acres or more, any commercial project with a building ten thousand (10,000) square feet or more, or any project in an area designated by the Conservation Commission as a sensitive/critical area, a pollutant loading calculation may be conducted upon the request of the Conservation Commission to document compliance with water quality standards by calculating pre-development loads, calculating uncontrolled post-development loads and then applying a prescribed pollutant removal efficiency to selected practices to arrive at a net pollutant load delivery. The post-developed load must be equal to or less than the pre-developed load.
2. The methodology for this calculation shall be in accordance with The Simple Method, located in the Massachusetts Stormwater Management Manual entitled: Method of Pollutant Control Calculation for Compliance with Water Quality Standards

#### g. Water Quality Volume

The prescribed water quality volume required in the sizing of a structural stormwater practice shall be 0.50 inches times the total impervious area of the drainage area and 1.0 inches times the total impervious area of the drainage area in critical areas, as specified in the Massachusetts DEP Stormwater Policy.

The water quality volume may be reduced for developments where clean rooftop runoff (as defined by the MA DEP Stormwater Management Policy) is directed to pervious areas where it can either infiltrate into the soil or flow over it with sufficient time and velocity to allow for filtering. In such a situation, the total impervious area of the site may be reduced by the roof area to be infiltrated. To use this credit the following conditions must be met:

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- The rooftop contributing area to any one-discharge location cannot exceed one thousand (1000) square feet.
- The contributing length of a rooftop to a single discharge location cannot exceed seventy-five (75) feet.
- Slopes must be less than 5.0% to permit infiltration.
- Discharges must be located at least ten (10) feet away from the nearest impervious surface, and the rooftop runoff must not commingle with any runoff from paved surfaces at any designated “hotspot” land use.
- Dry wells or infiltration trenches can be used where necessary to ensure infiltration into less permeable soils.
- The use of rain gardens and bio-retention cells to receive and infiltrate rooftop runoff is encouraged.

#### **h. Hydrologic Basis for Design of Structural Practices**

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

- 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: parking lots, sidewalks, roof tops, driveways, patios, and paved, gravel and compacted dirt surfaced roads.
- 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.
- Off-site areas draining to a proposed facility should be modeled as "present condition" for peak-flow attenuation requirements.
- The length of sheet flow used in time of concentration calculations is limited to no more than fifty (50) feet for predevelopment conditions and 50 feet for post development conditions.
- Detention time for the one-year storm is defined as the center of mass of the inflow hydrograph and the center of mass of the outflow hydrograph.
- The models TR-55 and TR-20 (or approved equivalent) will be used for determining peak discharge rates.
- The standard for characterizing pre-development land use for on-site areas shall be woods.
- 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.
- If an off-site area drains to a facility, off-site areas should be modeled, assuming an "ultimate build out condition" upstream.

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- 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.
- 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 State and Southeastern Canada”.
- 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.

i. 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 Town of Rowley General Bylaws, Stormwater Management and Erosion Control Bylaw, Section 6.

j. Hotspots

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

**PART IV. OPERATION AND MAINTENANCE PLANS and AGREEMENTS**

**A. Operation and Maintenance Plan Requirements**

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 and the Stormwater and Erosion Control Bylaw and that the Massachusetts Surface Water Quality Standards, 314, CMR 4.00 are met in all seasons and throughout the life of the system. Once approved by Conservation Commission, the Operation and Maintenance Plan shall be recorded at the Registry of Deeds. The O&M Plan shall remain on file with the Conservation Commission and adherence to the O&M Plan shall be an ongoing requirement.

The O&M Plan shall include:

1. The name(s) of the owner(s) for all components of the system;

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2. Maintenance agreements that specify:
  - a. The names and addresses of the person(s) responsible for operation and maintenance;
  - b. The person(s) responsible for financing inspections, maintenance, and emergency repairs;
  - c. An Inspection and Maintenance Schedule for all stormwater management facilities, including swales and ponds, and including routine and non-routine maintenance tasks to be performed;
  - d. A list of easements with the purpose and location of each (any easement must either be shown on a plan with a metes and bounds description or preferably a written easement with metes and bounds stated); and
  - e. The signature(s) of the owner(s).

**B. Stormwater Management Easement(s)**

1. Stormwater management easements shall be provided by the property owner(s) as areas that are 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; and
  - c. Direct maintenance access by heavy equipment to structures requiring regular cleanout maintenance.
2. The purpose of each easement shall be specified in the maintenance agreement signed by the property owner;
3. Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the Conservation Commission; and
4. Easements shall be recorded with the Registry of Deeds prior to issuance of a Certificate of Completion by the Conservation Commission.

**PART V. REVIEW FEE SCHEDULE**

The following fee schedule is established by the Conservation Commission to accomplish appropriate review and administration of applications and issued permits. Fees for professional review will be established in accordance with G.L. c. 44§53G. Application fees are payable at the time of application and are non-refundable.

Disturbed Area	Application Fee	Completion Review Fee
Less Than 20,000 Square Feet or less than 10,000 Square Feet sloped 15%	No Charge	No Charge
20,000 Square Feet to 2 Acres or 10,000 Square Feet or more sloped at 15% or greater	\$ 250	\$ 150
2 Acres or greater in area	\$ 500	\$ 200

The Conservation Commission may waive the application fee, completion review fee and professional review fee for a permit or other application filed by a government agency.