

# WESTFORD PLANNING BOARD RULES & REGULATIONS FOR STORMWATER MANAGEMENT

## UNDER THE GENERAL BYLAWS OF THE TOWN OF WESTFORD, CHAPTER 147: STORMWATER MANAGEMENT BYLAW

(Stormwater Management Bylaw adopted at Town Meeting on May 10, 2008 and approved by the Massachusetts Attorney General's Office on August 5, 2008)

### Notes on July 2011 Revisions:

We have made every attempt to incorporate the comments provided to the Town from local and regional stakeholders as described in our May 23, 2011 letter. Based on our May 25<sup>th</sup> meeting with Paul and Angus and additional research, we made additional revisions to the June 2010 Regulations that include the following considerations.

- **Definitions:** We have capitalized all terms defined in the Bylaw and Regulations. We have deleted all terms that are no longer used in these Regulations or that are defined in the Bylaw.
- **Administrative Process:** We have allowed the Planning Board to designate the Town Engineer or the Town Planner as its designee or agent as much as possible. This allows Town staff to use their professional judgment throughout the application process and during construction and save the applicant time by avoiding extra meetings before the Board.
- **Public Hearings:** In our opinion, the Town is not obligated under Massachusetts General Law to hold an advertised Public Hearing or notify abutters to issue a Stormwater Management Permit. Please verify that this is the case with your Town Counsel.
- **Consultant Review Fees:** A review by the attorney general of a bylaw for the Town of Scituate stated that the provisions of 53G were not available to planning boards acting under the authority conferred solely by a local bylaw. For example, Planning Boards acting under authority granted by the zoning enabling act (40A) or Conservation Commissions enforcing the Wetlands Protection Act can collect fees, hold them in escrow, use them to pay consultants, and then refund unused fees to the applicant. In other cases, fees must be deposited into the general fund and then budgeted at Town Meeting. In light of this opinion, we have deleted the Professional Peer Review Fees section. We recommend that a tiered Application Fee be developed in the future based on staff time spent on each project based on size and complexity.
- **Streamlined Permit Procedure for Homeowners:** There were several comments from the Stakeholder group requesting a streamlined process for homeowner-based projects. We believe that by 1) allowing for the Planning Board to delegate some decisions to an agent, 2) not requiring Public Hearings, and 3) eliminating the consulting review fee we have made the entire Stormwater Management Permitting process less onerous for all applicants.
- **Consistency with EPA Draft Stormwater Permit Requirements.** To address the two pending EPA stormwater permits (Draft Massachusetts Interstate, Merrimack, and South Coastal Small MS4 General Permit and the Draft General Permit for Discharges from Construction Activities), we added definitions and provisions to track Impervious Area/Directly Connection Impervious Area, address discharges to impaired waterbodies (including those with TMDLs), and modified the construction inspections section to be consistent with the draft Construction General Permit.
- **Plan Changes.** We have given thought to what might constitute a "significant" change or alternation to a plan that might require filing of an amended application. Based on our experience developing and implementing these types of bylaws, we recommend the Town does not define "significant" in order to allow the Board flexibility in determining this on a case-by-case basis. Even adding language that says something like "a significant change includes but is not limited to changes in stormwater flow, stormwater BMPs, area of disturbance...etc" may ultimately do more harm than good.
- **Items for the Town to Address:**
  - Section 6.0 B.1, Filing Application - Decide on number, size, and format of application copies.
  - Section 6.0 C.3, Application Fee - Determine fee.
  - Section 6.0 E, Actions - Decide on a time period whereby failure of the Planning Board to take final action upon an Application shall be deemed to be approval of said Application.
  - Section 9.0 E, Non criminal disposition - Based on recent Town Meeting vote, does this section need to be revised?

## 1.0 PURPOSE

The purpose of these Regulations is to protect, maintain and enhance the public health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased construction SITE and POST-DEVELOPMENT stormwater RUNOFF, decreased groundwater RECHARGE, and NONPOINT SOURCE pollution associated with NEW DEVELOPMENT and REDEVELOPMENT, as more specifically addressed in the Stormwater Management Bylaw of the Town of Westford.

## 2.0 DEFINITIONS

Terms defined herein and in the Bylaw are presented in all CAPITAL LETTERS. The definitions contained herein apply to issuance of a STORMWATER MANAGEMENT PERMIT established by the Town of Westford Stormwater Management Bylaw and implemented through these Regulations. Terms not defined in this section shall be construed according to their customary and usual meaning. The following terms are defined in the Massachusetts Wetlands Regulations (310 CMR 10.00): Cold-water fishery, Critical areas, Environmentally sensitive SITE design, Flood control, Ground water, Illicit discharge, Land uses with higher potential pollutant loads, LOW IMPACT DEVELOPMENT (LID) TECHNIQUES, Maintenance of a stormwater management system, REDEVELOPMENT, STORMWATER BEST MANAGEMENT PRACTICE, Stormwater management system, Surface waters, and Vernal pool habitat.

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

**CONVEYANCE:** Any natural or human-made structure or device, including pipes, drains, culverts, curb breaks, paved swales or vegetated swales of all types designed or utilized to move or direct stormwater RUNOFF or existing water flow.

**DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA):** According to the U.S. EPA, the portion of IMPERVIOUS SURFACE with a direct hydraulic connection to the MS4 or a waterbody, via continuous paved surfaces, gutters, pipes and other impervious features. DCIA typically does not include isolated impervious areas with an indirect hydraulic connection to the MS4 (e.g., swale or detention basin) or that otherwise drain to a pervious area.

**GRADING:** Changing the level or shape of the ground surface.

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

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

**IMPAIRED WATERS:** According to EPA, Impaired Waters are waterbodies that do not meet one or more of its designated uses(s) in the applicable surface water quality standards. These waterbodies are listed in categories 4 and 5 of the most recent Massachusetts Integrated List of Waters. See the Massachusetts Department of Environmental Protection website for the most recent Integrated List of Waters: <http://www.mass.gov/dep/water/resources/tmdls.htm>

**IMPERVIOUS SURFACE or IMPERVIOUS COVER (IC) or IMPERVIOUS AREA (IA):** 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 surfaces (parking lots, sidewalks, driveways), roof tops, swimming pools, patios, and paved, gravel and compacted dirt surfaced roads.

**INVASIVE SPECIES:** Those plant species whose introduction does, or is likely to, cause economic or environmental harm or harm to human health. For the purpose of this bylaw, a plant species is considered "invasive" only when it occurs on the List of Federal Noxious Weeds (available at <http://plants.usda.gov/java/noxious?rptType=Federal>) or on the Massachusetts Prohibited Plant List (available at <http://www.mass.gov/agr/farmproducts/prohibitedplantlist.htm>).

**INFILTRATION:** The act of conveying surface water into the ground to permit groundwater RECHARGE and the reduction of stormwater RUNOFF from a project SITE.

**MASSACHUSETTS STORMWATER HANDBOOK (HANDBOOK):** The Stormwater Handbook, and as amended from time to time, that was produced by MassDEP to be used as guidance for controlling stormwater. Implementation of the STORMWATER MANAGEMENT STANDARDS shall be in accordance with the Stormwater Handbook.

**NEW DEVELOPMENT:** Any construction or LAND DISTURBANCE on a parcel of land that is currently in a natural vegetated state and does not contain alteration by man-made activities.

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

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

**POST-DEVELOPMENT:** The conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific SITE or tract of land. Post-development refers to the phase of a NEW DEVELOPMENT or REDEVELOPMENT project after completion, and does not refer to the construction phase of a project.

**RECHARGE:** The replenishment of underground water reserves.

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

**RUNOFF:** Rainfall or snowmelt flowing over the ground surface.

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

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

**STOP WORK ORDER:** An order issued by the Planning Board or an authorized agent of the Planning Board which requires that all construction activity on a site be stopped.

**SUBDIVISION:** Defined in the Subdivision Control Law of Massachusetts (M.G.L. – Chapter 41, Section 81L Definitions).

**TOTAL MAXIMUM DAILY LOAD (TMDL):** A total maximum daily load (TMDL) is the greatest amount of a pollutant that a water body can accept and still meet water quality standards for protecting public health and maintaining the designated beneficial uses of those waters for drinking, swimming, recreation, and fishing. A TMDL is implemented by specifying how much of that

pollutant can come from point, nonpoint, and natural sources. See section 303(d) of the Clean Water Act and 40 CFR §130.2 and §130.7.

**WATER QUALITY VOLUME (WQ<sub>v</sub>):** The storage volume needed to capture a specified average annual stormwater RUNOFF volume. Numerically (WQ<sub>v</sub>) will vary as a function of drainage area or IMPERVIOUS AREA.

### **3.0 AUTHORITY**

- A) The Rules and Regulations contained herein have been adopted by the Planning Board in accordance with the Town of Westford Stormwater Management Bylaw.
- B) Nothing in these Rules and Regulations is intended to replace or be in derogation of the requirements of the Town of Westford Zoning Bylaw, Subdivision Rules and Regulations, Wetlands Protection Bylaw, Board of Health Bylaws, or any Rules and Regulations adopted there under.
- C) These Stormwater Regulations may be periodically amended by the Planning Board in accordance with the procedures outlined in Section 147.5 (B) of the Town of Westford Stormwater Management Bylaw.

### **4.0 ADMINISTRATION**

The Planning Board is designated as the STORMWATER AUTHORITY under the Stormwater Management Bylaw. The Planning Board shall administer, implement and enforce these Regulations. The Planning Board may designate the Town Engineer or an outside consultant as its authorized agent for the purposes of reviewing all stormwater submittals and conducting inspections described in Section 11.0.

### **5.0 APPLICABILITY**

- A) These Stormwater Management Regulations apply to all activities in accordance with the Scope and Applicability of Section 147.4 of the Stormwater Management Bylaw as described in this section. Projects and/or activities not specifically under the currently regulated jurisdiction of any of the Town of Westford boards, commissions or departments but still within the jurisdiction of the Town of Westford Stormwater Management Bylaw must obtain a STORMWATER MANAGEMENT PERMIT from the Planning Board in accordance with the permit procedures and requirements defined in Section 6.0 of these Regulations.
- B) If a portion of a project or activity meets the Scope and Applicability of Section 147.4 of the Stormwater Management Bylaw and it is within the specific jurisdiction of another Town board, then the Planning Board will remain the STORMWATER AUTHORITY, responsible for facilitating stormwater review and approval of the STORMWATER MANAGEMENT PERMIT. The specific application submission requirements, public notices, and fee requirements of the applicable board, commission, and/or department shall remain in effect in addition to the requirements of the Stormwater Management Bylaw. To the extent possible, the Planning Board and other Town boards shall coordinate any necessary expert engineering and other consultant services and resulting Professional Peer Review Fees. The Planning Board will make every effort to review the STORMWATER MANAGEMENT PERMIT application in a timely manner, as not to unnecessarily delay permit approval process of other Town boards. No SITE ALTERING activity may commence without a STORMWATER MANAGEMENT PERMIT from the Planning Board.

### **6.0 PERMIT PROCEDURES AND REQUIREMENTS**

- A) Projects requiring a STORMWATER MANAGEMENT PERMIT per Section 147.4 of the Stormwater Management Bylaw shall be required to submit the materials as specified in this Section, and are required to meet the Performance Standards: Stormwater and LID Criteria as specified in Section 7.0 of these Regulations.
- B) Filing Application

1. The applicant shall file with the Planning Board, five (5) copies and one (1) electronic copy in Portable Document Format (PDF) of a completed application package for a STORMWATER MANAGEMENT PERMIT. While the applicant can be a representative, the permittee must be the OWNER of the SITE or holder of an easement. The Stormwater Management application package shall include:
  - a) A completed Application Form with original signatures of all OWNERS;
  - b) Stormwater Report to document compliance with the STORMWATER MANAGEMENT STANDARDS;
  - c) Payment of the application fee;
  - d) Draft Maintenance Agreement; and
  - e) Surety bond (if required).

#### C) Fees

##### 1. General

The Planning Board shall obtain with each submission an Application Fee established by the Planning Board to cover expenses connected with the review of the STORMWATER MANAGEMENT PERMIT.

##### 2. Rules

- a) Application Fees are payable at the time of application and are non-refundable.
- b) All fees shall be calculated by the Planning Board in accordance with the fee schedule below.
- c) These fees are in addition to any other local or state fees that may be charged under any other law, regulation, or local Bylaw.
- d) Federal, State, and Municipal projects shall be exempt from Application Fees associated with a STORMWATER MANAGEMENT PERMIT.

##### 3. Application Fees

- a) A non-refundable Application Fee of \$300.00 shall be due and payable to the Town of Westford at the time an application is filed. The Application Fee will be used for processing of the application, coordination of Town staff, posting hearings, and other clerical work by Town staff.

##### 4. Revision of Fee Schedules and Regulations Governing Fees

- a) The Planning Board may review and revise its Regulations and fee schedules periodically as it sees fit.
- b) Amendments shall be preceded by a posted public hearing of the Planning Board not less than 15 days prior to the date upon which the change is to be effective.
- c) A copy of the written decision of revised Regulations and/or fee schedules will be filed with the Town Clerk within 12 business days after final action by the Board is taken.

#### D) Public Meetings

The Planning Board shall hold a public meeting within thirty (30) days of the receipt of a complete application and shall take final action within twenty-one (21) days from the close of the meeting unless such time is extended by agreement between the applicant and the Planning Board.

#### E) Actions

The Planning Board's action, rendered in writing, shall consist of either:

1. Approval of the STORMWATER MANAGEMENT PERMIT Application based upon determination that the proposed plan will adequately protect the water resources of the community and is in compliance with the requirements set forth in the Bylaw and these Regulations;
2. Approval of the STORMWATER MANAGEMENT PERMIT Application subject to any conditions, modifications or restrictions required by the Planning Board which will ensure that the project will adequately protect the water resources of the community and is in compliance with the requirements set forth in the Bylaw and these Regulations; or
3. Disapproval of the STORMWATER MANAGEMENT PERMIT Application based upon a determination that the proposed plan, as submitted, does not adequately protect water resources, as set forth in the Bylaw and these Regulations, or the application is deemed incomplete.

Failure of the Planning Board to take final action upon an Application within [*specify time period – 30 days?*] shall be deemed to be approval of said Application. Upon certification by the Town Clerk that the allowed time has passed without Planning Board action, the Planning Board must issue a STORMWATER MANAGEMENT PERMIT.

F) Appeals of Actions of the Planning Board

Appeal of a decision by the Planning Board made under these Regulations shall be reviewable in Superior Court in an action filed within 60 days thereof, in accordance with M.G.L. Ch 249 § 4. An appeal of an action by a board, commission or department that has current regulatory authority for a project and/or activity shall be conducted under the applicable appeal provisions of said board, commission and/or department of the Town of Westford. Such an appeal shall result in a stay of the written approval as described under Section 6.E of these Regulations, until such time as the appeal process of the applicable board, commission and/or department has been resolved.

G) Plan Changes

The permittee must notify the Planning Board or its designee in writing of any drainage change or alteration in the system authorized in a STORMWATER MANAGEMENT PERMIT before any change or alteration is made. If the Planning Board or its designee determines in writing that the change or alteration is significant, based on the STORMWATER MANAGEMENT STANDARDS, Performance Standards in Section 7.0, and accepted construction practices, the Planning Board may require that an amended application be filed.

H) Entry

To the extent permitted by state law, or if authorized by the OWNER or other party in control of the property, Planning Board or its agents, officers, and employees may enter upon privately owned property for the purpose of performing their duties under the Stormwater Management Bylaw and these Regulations and may make or cause to be made such examinations, surveys or sampling as Planning Board deems reasonably necessary to determine compliance with the permit.

I) Project Completion

At completion of the project the permittee shall submit as-built record drawings of all structural best management practices required in the STORMWATER MANAGEMENT PERMIT and an updated Maintenance Agreement noting any changes and new responsible parties. As-built Plans shall be full size plans at a scale approved by the Planning Board that reflect the "as built" conditions, including all final grades, developed by a Registered Professional Engineer. All changes to project design shall be recorded in red ink on plans to define changes made or otherwise noted as changes. All work deleted,

corrections in elevations, and changes in materials, shall be shown on the as-built drawings. Deviations from the approved plans, if any, shall be certified in writing by a Registered Professional Engineer. Surveyed latitude and longitude position of all structural STORMWATER BEST MANAGEMENT PRACTICES, including drainage structures, conveyances, outfalls, catch basins, curbing and headwalls compatible with Westford's Geographic Information System (GIS) shall be submitted digitally to the Westford GIS Department. Record drawings shall also include a calculation of IMPERVIOUS AREA (IA) and DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA) in square feet (ft<sup>2</sup>) for pre- and post-development conditions. Additional requirements for as-built plans are in the Westford Subdivision Rules and Regulations.

J) Permit Expiration

If work has not been completed within three (3) years, the Applicant shall notify the Planning Board. The Board may re-evaluate the originally approved Stormwater Report to determine whether the plan still satisfies local program requirements. Permits may be renewed without Hearings at the discretion of the Board. If the Planning Board finds the previously filed Plan to be inadequate, a modified plan shall be submitted and approved prior to the commencement of land-disturbing activities per the procedure in Section 6.0 of these Regulations.

K) Stormwater Report Contents

1. The application for a STORMWATER MANAGEMENT PERMIT shall include the submittal of a Stormwater Report to the Planning Board prepared in accordance with the MASSACHUSETTS STORMWATER HANDBOOK and the criteria established in these Regulations. This Stormwater Report shall document compliance with each of the STORMWATER MANAGEMENT STANDARDS as provided in the HANDBOOK and shall contain sufficient information for the Planning Board to evaluate the environmental impact, effectiveness, and acceptability of the SITE planning process and the measures proposed by the applicant for reducing adverse impacts from stormwater RUNOFF. The Stormwater Report shall remain on file with the Planning Board.
2. The Stormwater Report shall fully describe the project in drawings, narrative, and calculations. To demonstrate compliance to the Planning Board, the applicant shall include the following in addition to the Stormwater Report requirements in the HANDBOOK:
  - a) Locus Map;
  - b) Existing SITE Plan;
  - c) The existing zoning, and land use at the SITE and abutting properties;
  - d) The proposed land use;
  - e) The location(s) of existing and proposed easements;
  - f) The location of existing and proposed utilities;
  - g) The SITE's existing & proposed topography with contours at 2-foot intervals;
  - h) The existing SITE hydrology (both groundwater RECHARGE and surface RUNOFF);
  - i) A description and delineation of existing stormwater conveyances, impoundments, wetlands, drinking water protection areas, swimming beaches, and other protected RESOURCE AREAS, on or adjacent to the SITE or into which stormwater flows;
  - j) A delineation of 100-year flood plains, if applicable;
  - k) The existing and proposed vegetation and ground surfaces with RUNOFF coefficients for each; (including all IMPERVIOUS COVER – parking, driveways, etc.)
  - l) A drainage area map showing pre- and post-construction watershed boundaries (as governed by topography, not the property line), drainage areas, time of concentration (tc) path, and stormwater flow paths, including MUNICIPAL STORM DRAIN SYSTEM flows;
  - m) A description and drawings of all components of the proposed Stormwater Management system including:
    - i. All measures for the detention, retention or INFILTRATION of water;
    - ii. Description of non-structural BMPs;
    - iii. All measures for the protection of water quality;

- iv. The structural details for all components of the proposed drainage systems and Stormwater Management facilities;
  - v. Notes on drawings specifying materials to be used, construction specifications, and expected hydrology with supporting calculations;
  - vi. Proposed SITE plan including location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable;
  - vii. Any other information requested by the Planning Board.
- n) Hydrologic and hydraulic design calculations for the PRE-DEVELOPMENT and POST-DEVELOPMENT conditions for the design storms specified in the MASSACHUSETTS STORMWATER HANDBOOK. Such calculations shall include:
- i. Description of the design storm frequency, intensity and duration;
  - ii. Time of concentration;
  - iii. Soil Runoff Curve Number (RCN) based on land use and soil hydrologic group;
  - iv. Peak RUNOFF rates and total RUNOFF volumes for each watershed area;
  - v. Provisions for protecting, during construction, the INFILTRATION capacity of the soil where INFILTRATION is proposed;
  - vi. INFILTRATION rates, where applicable;
  - vii. Culvert capacities;
  - viii. Flow velocities;
  - ix. Data on the increase in rate and volume of RUNOFF for the specified design storms, and
  - x. Documentation of sources for all computation methods and field test results.
- o) Landscaping plan describing the woody and herbaceous vegetative stabilization and management techniques to be used within and adjacent to the stormwater practice.
3. If in the applicant's opinion one or more of the Stormwater Management Standards or other requirements can not be reasonably met, the applicant shall provide a detailed explanation in the Stormwater Report. This narrative shall include reasons that the requirement or Standard could not be met and a description of potential consequences if no mitigating measures are provided.

L) Maintenance Agreement

The Maintenance Agreement shall include the signature(s) of the OWNER(s) and the party or parties responsible for operation and maintenance as specified in the Stormwater Report and party or parties responsible for perpetual inspections as specified under Section 13.B of these Regulations.

**7.0 PERFORMANCE STANDARDS: STORMWATER AND LID CRITERIA**

A) For compliance with Performance Standards of the Westford Stormwater Management Bylaw, the applicant must meet all standards of the Massachusetts Department of Environmental Protection's STORMWATER MANAGEMENT STANDARDS and HANDBOOK using current Best Management Practices (BMPs).

B) Additional Design Criteria

1. Landscape Design

SITE plans and landscape plans for all proposed projects must take appropriate steps to minimize water use for irrigation and to allow for natural RECHARGE of groundwater. Native species and habitat-creating species shall be used in all landscape plans to the maximum extent possible as SITE conditions allow. INVASIVE SPECIES shall not be planted in the Town of Westford under any circumstances.

2. Hydrologic Basis for Design

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

- a) All hydrological calculations shall be completed and certified to by a Registered Engineer licensed to practice in this field. Typically the procedures to follow will include Technical Release Number 55 (TR55) and/or TR20 (as amended); with pipe design flows calculated using the Rational Method.
- b) The rainfall amounts shall be determined using Type III 24-hour storm precipitation as referenced in Technical Release Number 55 and 20. Precipitation amounts shall be defined by the Northeast Regional Climate Center "Atlas of Precipitation Extremes for the Northeastern United States and Southeastern Canada."
- c) The minimum time of concentration for street drainage (Rational Method) shall be five (5) minutes.
- d) Water velocities in pipes and gutters shall be between two (2) and ten (10) feet per second, not more than five (5) feet per second on paved surfaces, and not more than four (4) feet per second in vegetated areas.
- e) 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.
- f) Off-site areas shall be assessed based on their "pre-developed condition" for computing the WATER QUALITY VOLUME (i.e., treatment of only onsite 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.
- g) Off-site areas draining to a proposed facility should be modeled as "present condition" for peak-flow attenuation requirements.
- h) The length of sheet flow used in time of concentration calculations is limited to no more than 50 feet.
- i) Detention time is defined as the time between the center of mass of the inflow hydrograph and the center of mass of the outflow hydrograph.
- j) For purposes of choosing a Runoff Curve Number, all pervious lands in the SITE shall be assumed prior to development to be in "good" hydrologic condition regardless of conditions existing at the time of computation.
- k) Flooding and channel erosion impacts to receiving streams due to land development projects shall be determined 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.
- l) Proposed residential, commercial, or industrial subdivisions or ANRs 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.

### 3. Sensitive Areas – Additional Design Criteria

Stormwater discharges to Critical Areas with sensitive resources as defined in the Massachusetts STORMWATER MANAGEMENT STANDARD No. 6 are subject to additional criteria, and may need to utilize or restrict certain STORMWATER MANAGEMENT practices at the discretion of the Planning Board. The Planning Board has also designated the following Sensitive Areas with specific design criteria. The Planning Board may designate additional Sensitive Areas and specific criteria for these areas by amending these Regulations.

#### a) Cold Water Fisheries

Stormwater BMPs must mitigate potential temperature impacts of development and land use conversions to Cold Water Fisheries. Elevated temperatures are caused by reduced shading in developed riparian areas, warming of stormwater as it runs over hot roofs and pavement, and heating of water stored in STORMWATER MANAGEMENT ponds. Traditional peak reduction outlet

structures and simple spillway outlets do nothing to cool the water before discharge. To address this problem, alternative BMPs, such as buffers, INFILTRATION or under-drained filters can be used, or, if ponds are required, under-drained outlet structures can provide effective cooling. Equally important to maintaining cool stream temperature is preservation and/or restoration of riparian trees and shrubs to provide shade.

Cold Water Fisheries located in the Town of Westford include, but are not limited to, Reed Brook. The Town of Westford Engineering Department has current maps of Westford's watersheds and the locations of Cold Water Fisheries.

b) Discharges to Water Quality Impaired Waters

The Applicant must determine whether stormwater discharges from the proposed SITE will contribute, either directly or indirectly, to an IMPAIRED WATER body. Structural and non-structural stormwater BMPs shall be selected that will control the discharge of the pollutants of concern and ensure that the discharges will not cause an instream exceedances of applicable water quality standards. Pollutants of concern refer to the pollutant identified as causing the impairment. For information on impaired waterbodies and the most recent Integrated List of Impaired Waterbodies, see MassDEP's TMDL website:  
<http://www.mass.gov/dep/water/resources/tmdls.htm#info>

## 8.0 WAIVERS

- A) The Planning Board may in its discretion and after due consideration decide to waive and exempt strict compliance with any requirement of the Stormwater Management Bylaw and these Regulations, where it makes a written finding that such action is:
1. Allowed by federal, state and local statutes and/or regulations;
  2. In the public interest; and
  3. Consistent with the purpose and intent of the Town of Westford Stormwater Management Bylaw and these Regulations.
- B) Any applicant shall submit a written request to be granted such a waiver. Such a request shall be accompanied by an explanation or documentation supporting the waiver request and demonstrating that strict application of the Bylaw does not further the purposes or objectives of the Bylaw.
- C) All waivers requested shall be discussed and voted on at the public hearing for the project.
- D) If in the Planning Board's opinion, additional time or information is required for review of a waiver request, the Planning Board may continue a hearing to a date announced at the meeting. In the event the applicant objects to a continuance, or fails to provide requested information, the waiver request shall be denied.
- E) Waivers described herein shall not constitute an exemption from any applicable Federal or State permitting requirements.

## 9.0 ENFORCEMENT

- A) Enforcement powers of the Planning Board or an authorized agent of the Planning Board are granted in the Stormwater Management Bylaw, Section 147.9.
- B) Notices and Orders
1. The Planning Board or an authorized agent of the Planning Board may issue a written notice of violation or enforcement order to enforce the provisions of the Stormwater Management Bylaw and these Regulations, which may include requirements to:

- a) Suspend or revoke approval of any STORMWATER MANAGEMENT PERMIT;
- b) Cease and desist from or a portion of construction or land disturbing activity until there is compliance with the Bylaw and the STORMWATER MANAGEMENT PERMIT;
- c) Repair, maintain, or replace the stormwater management system or portions thereof in accordance with the Maintenance Agreement;
- d) Perform monitoring, analyses, and reporting; and/or
- e) Fix adverse impact resulting directly or indirectly from malfunction of the stormwater management system.

The suspension or revocation of the STORMWATER MANAGEMENT PERMIT shall not relieve the Applicant of his obligation there under except at the discretion of the Board.

- 2. If the Planning Board determines that abatement or remediation of adverse impacts is required, the order may set forth a deadline by which such abatement or remediation must be completed. Said order may further advise that, should the OWNER fail to abate or perform remediation within the specified deadline, the Town of Westford may, at its option, undertake such work, and the OWNER shall reimburse the Town of Westford for expenses incurred.
- 3. Within thirty (30) days after completing all measures necessary to abate the violation or to perform remediation, the OWNER shall be notified of the costs incurred by the Town of Westford, including administrative costs. The OWNER may file a written protest objecting to the amount or basis of costs with the Planning Board within thirty (30) days of receipt of the notification of the costs incurred. If the amount due is not received by the expiration of the time in which to file a protest or within thirty (30) days following a decision of the Planning Board affirming or reducing the costs, or from a final decision of a court of competent jurisdiction, the costs shall become a special assessment against the property OWNER and shall constitute a lien on the OWNER's property for the amount of said costs. Interest shall begin to accrue on any unpaid costs at the statutory rate provided in G.L. Ch. 59, § 57, after the thirty-first day at which the costs first become due.
- C) Any PERSON who purchases, inherits or otherwise acquires real estate upon which work has been done in violation of the provisions of the Stormwater Management Bylaw and these Regulations, or in violation of the approved Plans under this Section shall forthwith comply with any such Order, and restore such real estate to its condition prior to such violation, as the Planning Board deems necessary to remedy such violation.
- D) Any PERSON who violates any provision of the Town of Westford Stormwater Management Bylaw, these Regulations, or order or permit issued thereunder, may be ordered to correct the violation and/or shall be punished by a fine of not more than \$300.00, excluding the cost of damages. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.
- E) Non-Criminal Disposition. As an alternative to criminal prosecution or civil action, the Town of Westford may elect to utilize the non-criminal disposition procedure set forth in G.L. Ch. 40, §21D and the Town of Westford General Bylaws Chapter 1.2 A in which case the Planning Board shall be the enforcing PERSON. The provisions of the General Bylaws Chapter 1.2 A as to the monetary penalties shall prevail. The penalty for the 1st violation shall be \$100.00. The penalty for the 2nd and subsequent violations shall be \$300.00. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.
- F) Appeals. The decisions or orders of the Planning Board shall be final. Further relief shall be to a court of competent jurisdiction.
- G) Remedies Not Exclusive. The remedies listed in this Bylaw are not exclusive of any other remedies available under any applicable federal, state or local law.

## 10.0 SURETY

The Planning Board may require as a condition to approving a Stormwater Report that the Applicant shall furnish a Performance Bond of cash, certified check, a Surety Company, or other acceptable security to the Town as obligee in a penal sum to be fixed by said Board as it shall deem sufficient to cover the cost of the performance of all labor and materials as shall be required to carry out all the conditions, limitations and safeguards as may be imposed by said Board in connection with the control of erosion and SEDIMENTATION and post-construction STORMWATER MANAGEMENT.

If the project is phased, the Planning Board may release part of the bond as each phase is completed in compliance with the Plan but the bond may not be fully released until the Planning Board has received the final inspection report as required by Section 11 of these Regulations and issued a CERTIFICATE OF COMPLETION.

## 11.0 CONSTRUCTION INSPECTIONS

A) Notice of Construction Commencement. The applicant must notify the Planning Board or its authorized Agent 14 days prior to the commencement of construction. In addition, the applicant must notify the Planning Board 14 days in advance of construction of critical components of any stormwater management facility.

B) At the discretion of the Planning Board, periodic inspections of the stormwater management system construction shall be conducted by qualified personnel (a Town Officer, a professional engineer, or their designee who has been approved by the Planning Board). All inspections shall be documented and written reports prepared that contain the following information:

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 Report;
4. Variations from the approved construction specifications; and
5. Any other variations or violations of the conditions of the approved Stormwater Report.

C) EROSION CONTROL Inspection

1. If a project is covered by the EPA NPDES General Permit for Stormwater Discharges From Construction Activities (Construction General Permit), the permittee is required to conduct inspections in accordance with requirements of the Construction General Permit, and must submit reports of all inspections required thereunder to the Planning Board.

2. If a project is not covered by the Construction General Permit, to ensure EROSION CONTROL practices are in accord with the filed Stormwater Report, EROSION CONTROL Inspections will be conducted by the SITE OWNER or an authorized representative at least once every seven (7) calendar days or at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater, from the start of construction until the SITE is permanently stabilized. Inspection frequency may be reduced to at least once a month if the SITE is determined by the Board or its designee to be temporarily stabilized, such as RUNOFF is unlikely due to winter conditions (e.g., SITE is covered with snow, ice, or the ground is frozen), or if construction is occurring during seasonal dry periods. The permittee is required to notify the Planning Board or its designee of any change in inspection frequency, including termination of inspections due to SITE stabilization.

a. The inspection form will include:

- i. Date of inspection
- ii. Name, title, qualifications, and signature of inspector;

- iii. Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
- iv. Weather information and a description of any discharges occurring at the time of the inspection
- v. Location(s) of discharges of sediment or other pollutants from the SITE;
- vi. Location(s) of BMPs that need to be maintained;
- vii. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
- viii. Location(s) where additional BMPs are needed that did not exist at prior inspection; and
- ix. Corrective action required including any changes to the Stormwater Report necessary and implementation dates.

D) The Planning Board or its designee shall inspect the project SITE at the following stages, at a minimum:

- 1. Initial SITE Inspection: prior to approval of any plan;
- 2. Stormwater Management System Inspection: An inspection will be made of the completed stormwater management system, prior to backfilling of any underground drainage or stormwater conveyance structures.
- 3. Final Inspection
  - a) After the stormwater management system has been constructed and before the surety has been released, all applicants are required to submit actual "as built" plans for any stormwater management facilities or practices after final construction is completed and must be certified by a Professional Engineer.
  - b) The Planning Board or an authorized agent shall inspect the system to confirm its "as-built" features. This inspector shall also evaluate the effectiveness of the system in an actual storm. If the inspector finds the system to be adequate he shall so report to the Planning Board before a CERTIFICATE OF COMPLETION is issued.

E) Inadequacy of System

- 1. If the system is found to be inadequate by virtue of physical evidence of operational failure, even though it was built in accordance with the Stormwater Report, it shall be corrected by the applicant before the CERTIFICATE OF COMPLETION is released. If the applicant fails to act the Planning Board may use the surety bond to complete the work.
- 2. If the Planning Board determines that there is a failure to comply with the plan, the property OWNER shall be notified in writing of the nature of the violation and the required corrective actions. A Stop Work Order shall be issued until any violations are corrected and all work previously completed has received approval by the Planning Board.

## 12.0 CERTIFICATE OF COMPLETION

A) Upon completion, the Applicant is responsible for certifying that the completed project is in accordance with the approved plans and specifications by submitting As-built Plans to the Planning

Board as described in Section 6.I and shall provide regular inspections sufficient to adequately document compliance.

- B) The Planning Board will issue a letter certifying completion upon receipt and approval of the As-Built Plans, final inspection and reports and/or upon otherwise determining that all work of the permit has been satisfactorily completed in conformance with this Bylaw.

### **13.0 PERPETUAL INSPECTION AND MAINTENANCE**

#### **A) Maintenance Responsibility**

1. The Town of Westford will not accept ownership of stormwater BMPs located outside of street rights of way, and the maintenance of such facilities shall remain the permanent responsibility of the applicant or his successors and/or assigns. The OWNER of the property on which work has been done pursuant to these Regulations for private stormwater management facilities, or any other PERSON or agent in control of such property, shall maintain in good condition and promptly repair and restore all grade surfaces, walls, drains, dams and structures, vegetation, erosion and SEDIMENTATION controls, and other protective devices. Such repairs or restoration and maintenance shall be in accordance with approved plans.

#### **B) Maintenance Inspections**

1. Stormwater management facilities and practices included in a Stormwater Report with a Maintenance Agreement in accordance with Section 6.L of these Regulations must undergo ongoing inspections to document maintenance, repair, replacement and disposal needs and ensure compliance with the requirements of the agreement, these Regulations, and the MASSACHUSETTS STORMWATER HANDBOOK.
2. A Maintenance Agreement as specified under Section 6.L of these Regulations between the OWNER and the Planning Board shall be executed for privately-owned stormwater management systems that specify the Responsible Party for conducting long term inspections.
3. At a minimum, inspections shall occur once during the first year of operation and at least once every three years thereafter. Some BMPs may require more frequent inspection, as specified in the Stormwater Report.
4. Inspection reports shall be submitted to the Planning Board for all stormwater management systems. Inspection reports for stormwater management systems shall include at a minimum:
  - a) The date of inspection;
  - b) Name and signature of inspector;
  - c) The condition of:
    - i. Pretreatment devices
    - ii. Vegetation or filter media
    - iii. Fences or other safety devices
    - iv. Spillways, valves, or other control structures
    - v. Embankments, slopes, and safety benches
    - vi. Reservoir or treatment areas
    - vii. Inlet and outlet channels and structures
    - viii. Underground drainage
    - ix. Sediment and debris accumulation in storage and fore bay areas (including catch basins)
    - x. Any nonstructural practices
    - xi. Any other item that could affect the proper function of the stormwater management system
  - d) Description of the need for maintenance.

C) Right-of-Entry for Inspection

The terms of the Maintenance Agreement as specified in Section 6.L 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 authority to enter upon privately owned land for the purpose of performing their duties under these Regulations and may make or cause to be made such examinations, surveys, or sampling as the Planning Board deems necessary, subject to the constitutions and laws of the United States and the Commonwealth.

D) Records of Inspections and Maintenance, Repair, Replacement and Disposal Activities

Parties responsible for the operation and maintenance of a stormwater management facility shall prepare records of the installation and of all inspections, maintenance, repairs, replacement, and disposal activities, and shall retain the records for at least five years. These records shall be made available to the Planning Board during inspection of the facility and upon request. For disposal, the record must indicate the type of material, quantity of material, and disposal location.

E) Failure to Maintain

1. If a Responsible Party fails or refuses to meet the requirements of the Maintenance Agreement, the Planning Board, after 30 days written notice (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours notice shall be sufficient), may correct a violation of the design standards or maintenance requirements by performing the necessary work to place the facility or practice in proper working condition. The Planning Board may assess the OWNER(s) of the facility for the cost of repair work, which shall be a lien on the property.
2. After notification is provided to the PERSON responsible for carrying out the maintenance plan of any deficiencies discovered from an inspection of a stormwater management system, the PERSON responsible for carrying out the maintenance plan shall have 30 days or other time frame mutually agreed to between the Planning Board and the PERSON responsible for carrying out the maintenance plan to correct the deficiencies. The Planning Board shall then conduct a subsequent inspection to ensure completion of repairs.

**14.0 SEVERABILITY**

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