

**WESTFORD PLANNING BOARD RULES & REGULATIONS  
FOR STORMWATER MANAGEMENT**

(Adopted November 5, 2012; Amended June 21, 2021)

**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)

**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 shown 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, in the Bylaw, or in the Massachusetts Wetlands Regulations 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.

The following terms are *in addition* to the terms defined in Chapter 147 of the Westford General Bylaws.

**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.

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

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**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.

**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, but is not limited to: 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 these Regulations, a plant species is considered "invasive" only when it occurs on the List of Federal Noxious Weeds (available on the U.S. Department of Agriculture Natural Resources Conservation Service website) or on the Massachusetts Prohibited Plant List (available on the Massachusetts Department of Agricultural Resources website).

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

**LOW IMPACT DEVELOPMENT (LID):** Site planning and design strategies that use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product. See also LID TECHNIQUES.

**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.

**OWNER:** An individual, firm, association, syndicate, partnership, or corporation having sufficient proprietary interest to seek development of land.

**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 its designee 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):** 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 Section 147.5 (B) of 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 designee 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 and as further 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. 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, three (3) copies and one (1) digital 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) Draft Stormwater Pollution Prevention Plan.

### **C) Fees**

1. **General.** A non-refundable application fee 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 expenses connected with the review of the application.

#### **2. Rules**

- a) Application Fees are non-refundable.
- b) All fees shall be calculated by the Planning Board in accordance with the fee schedule in Table 1 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.

**Table 1. Fee Schedule for Stormwater Management Permits**

<b>Application Type</b>	<b>Fee</b>
Subject proposal also has a Conservation Commission review of Stormwater Facilities.	\$300
Disturbance area is 1.0 to 4.9 acres	\$700
Disturbance area is 5.0 to 9.9 acres	\$1,100
Disturbance area is 10.0 acres and greater	\$1,550
Construction approval/inspection fees	To be determined for each application if applicable

3. Revision of Fee Schedules and Regulations Governing Fees

- a) The Planning Board may review and revise its Regulations and fee schedules periodically at its discretion.
- b) Amendments to these Regulations shall be preceded by a posted public hearing of the Planning Board not less than 14 days prior to the date upon which the change is to be effective.
- c) A copy of any 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.

4. Fund for Consultant Services.

The Planning Board may, at its discretion, require deposit of funds in accordance with M.G.L. Chapter 44, Section 53G to pay for peer review of projects. Generally, such projects are more complicated and require extensive review; however the Board may also consider such peer review upon the recommendation of the Town Engineer or Town Planner. The Planning Board will strive to make such reviews concurrent with other permits being sought by the applicant, and not duplicate efforts of peer reviewers.

D) Public Hearings and Meetings

- 1. For projects or activities within the currently regulated jurisdiction of the Planning Board (including but not limited to projects requiring Site Plan Review, Subdivision Approval, or a Special Permit), the Planning Board should strive to review the STORMWATER MANAGEMENT PERMIT concurrently with other permits in order to streamline the review process for the applicant.
- 2. For projects that are not otherwise subject to Planning Board review, a STORMWATER MANAGEMENT PERMIT application shall be reviewed by the Planning Board at a regular meeting of the Planning Board within forty-five (45) days of the receipt of a complete application. The Planning Board may continue its consideration of the application to a further meeting on a date certain, in order to receive additional information as deemed necessary by the Planning Board. The Planning Board expects to take final action within twenty-one (21) days from the

close of the last meeting at which information is presented. However, failure of the Planning Board to take final action within that period shall not result in constructive approval of the application.

**E) Actions**

The Planning Board's action, rendered in writing, shall be filed with the Town Clerk and 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.

**F) 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.

**G) 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 designee, 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.

H) As-Built Record Drawings and Project Completion

Following completion of the project, but no later than two (2) years after completion of construction projects, 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 (see Section 6.K) 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, catchment area delineations, 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) 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.

I) 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 MANAGEMENT PERMIT to determine whether the plan still satisfies local program requirements. Permits may be extended by the Board at a scheduled meeting. If the Planning Board finds the previously filed Plan to be inadequate, a modified plan shall be submitted and approved prior to the commencement or continuation of land-disturbing activities per the procedure in Section 6.0 of these Regulations.

J) 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 with these Regulations 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. Identification of the watershed basin where the project is located and the immediate down gradient waterbodies that stormwater runoff from the project site discharges to, EPA's watershed and waterbody assessment and TMDL and/or impairment status of the watershed and waterbody(ies), and the LID TECHNIQUES and BMPs included in the project to address the pollutant(s) of concern.
  - v. The structural details for all components of the proposed drainage systems and Stormwater Management facilities;
  - vi. Notes on drawings specifying materials to be used, construction specifications, and expected hydrology with supporting calculations;
  - vii. Proposed SITE plan including location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable;
  - viii. Explanation of how LID site planning and design strategies are being utilized to the maximum extent feasible and an explanation as to why LID TECHNIQUES were included or excluded from the project; and
  - ix. 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 cannot 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.

**K) 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 MANAGEMENT PERMIT and party or parties responsible for perpetual inspections as specified under Section 12.B of these Regulations. The Maintenance Agreement shall include a map showing the "as-built" location of the systems and facilities including all structural and nonstructural stormwater best management practices (BMPs), catch basins, manholes/access lids, pipes, and other stormwater devices. The Maintenance Agreement and plan showing such systems and facilities to be privately maintained, including associated easements shall be recorded, by the OWNER with the Middlesex North Registry of Deeds as conditioned in the STORMWATER MANAGEMENT PERMIT. Evidence of recording shall be presented to the Planning Board or its designee prior to project completion according to Section 6.H.

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

- A) For compliance with Performance Standards of these Regulations, the applicant must show that site design, construction site stormwater runoff control, and post-construction stormwater management will meet the standards set by the Planning Board in these Regulations, which include all applicable standards of the Massachusetts Department of Environmental Protection's STORMWATER MANAGEMENT STANDARDS and HANDBOOK and shall be at least as stringent as the relevant requirements of the MS4 Permit.
- B) Additional Design Criteria
1. Low Impact Development
    - a) LID site planning and design strategies must be utilized to the maximum extent feasible.
    - b) Projects must use LID TECHNIQUES where adequate soil, groundwater, and topographic conditions allow. These may include but not be limited to reduction in impervious surfaces, disconnection of impervious surfaces, bioretention, and infiltration systems.
    - c) 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.
- C) Performance Standards for New Development.
- a) Stormwater management systems on new development shall be designed to meet an average annual pollutant removal equivalent to 90% of the average annual load of Total Suspended Solids (TSS) related to the total post-construction impervious area on the site AND 60% of the average annual load of Total Phosphorus (TP) related to the total postconstruction impervious surface area on the site. Average annual pollutant removal requirements shall be achieved through one of the following methods:
    - i. installing stormwater BMPs that meet the pollutant removal percentages required in Section 7.C.a based on calculations developed consistent with EPA Region 1's BMP Accounting and Tracking Tool (2016) or other BMP performance evaluation tool provided by EPA Region 1, where available. If EPA Region 1 tools do not address the planned or installed BMP performance, then any federally or State-approved BMP design guidance or performance standards (e.g., State stormwater handbooks and design guidance manuals) may be used to calculate BMP performance; or
    - ii. retaining the volume of runoff equivalent to, or greater than, one (1.0) inch multiplied by the total post-construction impervious surface area on the new development site; or

- iii. meeting a combination of retention and treatment that achieves the above standards.

D) Performance Standards for Redevelopment Sites.

- a) Stormwater management systems on redevelopment sites shall be designed to meet an average annual pollutant removal equivalent to 80% of the average annual postconstruction load of Total Suspended Solids (TSS) related to the total post-construction impervious area on the site AND 50% of the average annual load of Total Phosphorus (TP) related to the total post-construction impervious surface area on the site. Average annual pollutant removal requirements shall be achieved through one of the following methods:
  - i. installing BMPs that meet the pollutant removal percentages based on calculations developed consistent with EPA Region 1's BMP Accounting and Tracking Tool (2016) or other BMP performance evaluation tool provided by EPA Region 1, where available. If EPA Region 1 tools do not address the planned or installed BMP performance, then any federally or State-approved BMP design guidance or performance standards (e.g., State stormwater handbooks and design guidance manuals) may be used to calculate BMP performance; or
  - ii. retaining the volume of runoff equivalent to, or greater than, 0.8 inch multiplied by the total post-construction impervious surface area on the redeveloped site; or
  - iii. meeting a combination of retention and treatment that achieves the above standards.
- b) Unless specifically exempt from the Stormwater Management Bylaw under §147.4.B.6, redevelopment activities that are exclusively limited to maintenance and improvement of existing roadways (including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems, and repaving projects) shall improve existing conditions where feasible and are exempt from Section 7.D.a and may be exempt from Massachusetts Stormwater Standards 1, 2, 3, 5, and 6.

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 by a Massachusetts Registered Professional 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 the 24-hour rainfall data taken from National Oceanic and Atmospheric Administration Atlas 14, Precipitation-Frequency Atlas of the United States (Vol. 10, Northeastern States, published

2015, revised 2019), as it may be amended or rainfall data as specified by the MA Stormwater Handbook, whichever is more stringent.

- 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, 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. The applicant shall address the following design considerations for sites located near Cold Water Fisheries:

- i. To mitigate thermal impacts to Cold Water Fisheries from stormwater, alternative BMPs to stormwater ponds, such as buffers, infiltration or under-drained filters should be used, or, if ponds are required, under-drained outlet structures can provide effective cooling.
- ii. Equally important to maintaining cool stream temperature is preservation and/or restoration of riparian trees and shrubs to provide shade. To the maximum extent feasible, trees and other existing vegetation shall be conserved. To the extent that existing vegetation cannot be conserved, new natural areas shall be established by planting additional vegetation, establishing no-mow zones, clustering tree areas, and using native plants in revegetation.

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 or water subject to a TMDL. 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. To the extent that the project will discharge, directly or indirectly, to a water body subject to one or more pollutant-specific TMDLs, implement structural and non-structural STORMWATER BMPs that are consistent with each such TMDL. To the extent the project will discharge, directly or indirectly, to an impaired water body not subject to a TMDL, implement structural and non-structural STORMWATER BMPs optimized to remove the pollutant or pollutants responsible for the impairment. Pollutants of concern refer to the pollutant(s) identified as causing the impairment. For information on impaired waterbodies and the most recent Integrated List of Impaired Waterbodies, see MassDEP's TMDL website.

## **8.0 WAIVERS**

- A) The Planning Board may in its discretion and after due considerations 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 and the MS4 Permit;
  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) An applicant may submit a written request to be granted such a waiver. Such a request shall be accompanied by an explanation or documentation supporting the waiver request and demonstrating that strict application of the Bylaw and/or Regulations does not further the purposes or objectives of the Bylaw and/or Regulations.
- C) All waivers requested shall be discussed and voted on at the public meeting 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 its designee 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 all or a portion of construction or land disturbing activity until there is compliance with the Bylaw, Regulations 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 any adverse impact resulting directly or indirectly from malfunction of the stormwater management system.
2. If the Stormwater Authority, or its authorized agent determines that abatement or remediation of adverse impacts is required, the order shall set forth a deadline by which such abatement or remediation must be completed. Said order shall further provide that, should the violator or property owner fail to abate or perform remediation within the specified deadline, the Town may, at its option, pursue a Court Order allowing the Town to undertake such work, and expenses thereof shall be charged to the violator.
- i. If the Stormwater Authority takes action upon failure of the violator or owner to abate or remediate, notice shall be given to the violator and owner of the costs, including administrative costs, incurred by the Town. Said notice shall be sent within thirty (30) days of completion of all measures necessary to abate the violation or to perform remediation. The violator or owner shall also be notified if they may, within thirty (30) days of receipt of said notice, file an appeal in writing to the Select Board objecting to either the amount or basis of the costs incurred. If the amount due is not received by the expiration of the time in which to file an appeal or within thirty (30) days following a decision by the Select Board affirming or reducing the costs, or form 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 by M.G.L. c. 59, §57 after the thirty-first day at which the costs first become due.
3. The suspension or revocation of the STORMWATER MANAGEMENT PERMIT shall not relieve the Applicant of its obligations thereunder except at the discretion of the Board as stated in writing.
- 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) Non-Criminal Disposition. As an alternative to criminal prosecution or civil action, the Planning Board or its designee 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 all subsequent violations shall be \$300.00. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

- E) Remedies Not Exclusive. The remedies listed in these Regulations are not exclusive of any other remedies available under any applicable federal, state or local law.

## **10.0 SURETY**

- A) Performance Bond. The Planning Board may require the applicant to post a performance bond, issued by a surety or guarantee company properly qualified and licensed to issue such a bond in the state of Massachusetts, before the start of any land disturbing activity. The form of the bond/surety, and the terms of an accompanying performance agreement among the Applicant, the surety, and the Planning Board, shall be approved by Town Counsel, and be in an amount deemed sufficient by the Planning Board to ensure that all conditions and requirements imposed by the STORMWATER MANAGEMENT PERMIT will be carried out. In the alternative, the Planning Board may permit the applicant to provide equivalent cash security, to be held by a designated escrow agent approved by the Planning Board, pursuant to an agreement that authorizes the agent to complete the work in accordance with the STORMWATER MANAGEMENT PERMIT.
- B) Phased Project. 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.
- C) Duration of Bond. The Planning Board may hold the Surety through the successful operation of the STORMWATER FACILITY.

## **11.0 CONSTRUCTION INSPECTIONS**

- A) Notice of Construction Commencement. The applicant must notify the Planning Board or its designee not less than 14 days prior to the commencement of construction and schedule a pre-construction meeting. In addition, the applicant must notify the Planning Board or its designee 48 hours 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 MANAGEMENT PERMIT;
4. Variations from the approved construction specifications; and
5. Any other variations or violations of the conditions of the approved STORMWATER MANAGEMENT PERMIT.

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 accordance with the STORMWATER MANAGEMENT PERMIT, EROSION CONTROL Inspections will be conducted by the OWNER or an authorized representative at least once every seven (7) calendar days 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). 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 MANAGEMENT PERMIT 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 its designee 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, it will be reported to the Planning Board.
- 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 MANAGEMENT PERMIT, it shall be corrected by the applicant. If the applicant fails to act, the Planning Board may use the surety bond to complete the necessary work.
  2. If the Planning Board or its designee determines that there is a failure to comply with the plan, the OWNER shall be notified in writing of the nature of the violation and the required corrective actions. The Planning Board or its designee shall issue a STOP WORK ORDER until any violations are corrected and all work previously completed has received approval by the Planning Board or its designee.

## **12.0 CONTINUING INSPECTION AND MAINTENANCE REQUIREMENTS**

### **A) Maintenance Responsibility**

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 its 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 the STORMWATER MANAGEMENT PERMIT with a Maintenance Agreement in accordance with Section 6.K 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.K of these Regulations between the OWNER and the Planning Board shall be executed for privately-owned stormwater management systems that specify the PERSON for conducting long term inspections.
3. At a minimum, inspections shall occur annually. Some BMPs may require more frequent inspection, as specified in the STORMWATER MANAGEMENT PERMIT.
4. Inspection reports shall be submitted to the Planning Board for all stormwater management systems according to Section 12.D. 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.K 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.

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

OWNERS that are 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 in accordance with the Stormwater Management Permit and approved Operation & Maintenance plan. The OWNERS must file an annual Operation & Maintenance Report with the Planning Board and Town Engineer. The Planning Board may require the report to be prepared and certified by a licensed professional engineer. For disposal, the record must indicate the type of material, quantity of material, and disposal location. Reports are due on or before January 15 for the prior calendar year, and the OWNER shall retain records of annual reports for at least five years.

**E) Failure to Maintain**

1. If the OWNER 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.

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.

**13.0 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.

