

CHAPTER 6
STORMWATER MANAGEMENT REGULATIONS

SECTION 1 PURPOSE

6.1.001 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 runoff, decreased ground water recharge, erosion and sedimentation, and nonpoint source pollution associated with new development and redevelopment of land, pursuant to the Stormwater Management By-law of the Town of Billerica.

SECTION 2 DEFINITIONS

6.2.001 The definitions contained herein apply to issuance of a Stormwater Management Permit established by the Town of Billerica Stormwater Management By-law and implemented through these Regulations. Terms not defined in this section shall be construed according to their customary and usual meaning unless the context indicates a special or technical meaning.

6.2.002 ALTER: Any activity, which will measurably change the ability of a ground surface area to absorb water or will change existing surface drainage. Alter may be similarly represented as “alteration of drainage characteristics,” and “conducting land disturbance activities.”

6.2.003 APPROVAL NOT REQUIRED (ANR): A plan of land that does not require approval under the Subdivision Control Law of Massachusetts (M.G.L. - Chapter 41, Sections 81K through 81GG).

6.2.004 APPLICANT: A property owner, or agent of a property owner, who has filed an application for a Stormwater Management Permit.

6.2.005 BEST MANAGEMENT PRACTICE (BMP): Structural and nonstructural techniques that are recognized to be effective and practical means to prevent and/or reduce increases in stormwater volumes and flows, reduce point source and nonpoint source pollution, and promote good stormwater quality and protection of the environment. “Structural” BMPs are devices that are engineered and constructed to provide permanent or temporary storage and treatment of stormwater runoff. “Nonstructural” BMPs use natural measures to reduce pollution levels, do not require extensive construction efforts, and/or promote pollutant reduction by eliminating the pollutant source. Nonstructural BMPs include managerial techniques that focus on the preservation and protection of natural features.

6.2.006 CERTIFICATE OF COMPLIANCE (COC): A document issued by the Board of Health in accordance with Chapter 1 Section 1.2.008 of these regulations. A COC will not be issued until all conditions of an issued Stormwater Management Permit have been met and the project has been completed in compliance with the conditions of the Permit and the Stormwater Management By-law.

6.2.007 COMMON PLAN: Any announcement or piece of documentation (including a sign, public notice or hearing, advertisement, drawing, ANR plan, or permit application, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor marking, etc.) indicating imminent or future construction activities.

6.2.008 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.

6.2.009 CRITICAL AREAS: Outstanding Water Resources (OWRs), shellfish beds, swimming beaches, Coldwater Fish Resources, and recharge areas for public drinking water supplies.

6.2.010 DEVELOPER: A person who undertakes or proposes to undertake land disturbance activities.

6.2.011 DEVELOPMENT: The modification of land to accommodate a new use or expansion of use.

6.2.012 DRAINAGE EASEMENT: A legal right granted by a landowner to a grantee allowing the use of private land for Stormwater Management purposes.

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

6.2.014 EROSION CONTROL PLAN: A plan that shows the location and detail(s) of the erosion and sediment reduction controls to be utilized for a construction site during and after construction.

6.2.015 FLOOD CONTROL: The prevention or reduction of flooding and flood damage.

6.2.016 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.

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

6.2.018 GROUNDWATER: All water beneath any land surface including water in the soil and bedrock beneath water bodies.

6.2.019 ILLICIT DISCHARGE: Direct or indirect discharge to the municipal storm drain system that is not composed entirely of stormwater, as defined in the Discharges to the Municipal Storm Sewer System By-law, Article XXVI of the General By-laws of the Town of Billerica. The term does not include a discharge in compliance with an NPDES Storm Water Discharge Permit or a Surface Water Discharge Permit, or resulting from firefighting activities.

6.2.020 IMPERVIOUS SURFACE: Any surface that prevents or significantly impedes the infiltration of water into the underlying soil. This can include but is not limited to: roads, driveways, parking areas and other areas created using nonporous material; buildings, rooftops, structures, artificial turf and compacted gravel or soil.

6.2.021 INFILTRATION: The act of conveying surface water into the ground to permit groundwater recharge and the reduction of stormwater runoff from a project site.

6.2.022 LAND DISTURBANCE: Any action that causes a change in the position, location, or arrangement of soil, ground cover, sand, rock, gravel or similar earth material. See also ALTER.

6.2.023 LOW IMPACT DEVELOPMENT TECHNIQUES: 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. LID practices include but are not limited to bioretention facilities, rain gardens, vegetated rooftops, rain barrels and permeable pavements.

6.2.024 LAND USES WITH HIGHER POTENTIAL POLLUTANT LOADS (LUHPPL): mean the following land uses: land uses identified in 310 CMR 22.20B(2), 310 CMR 22.20C (2)(a) - (k) and (m), 310 CMR 22.21(2)(a) 1 - 8, and 310 CMR 22.21(2)(b) 1 - 6; areas within a site that are the location of activities that are subject to an individual National Pollutant Discharge Elimination System (NPDES) permit or the NPDES Multi-Sector General Permit; auto fueling facilities (gas stations); exterior fleet storage areas; exterior vehicle service and equipment cleaning areas; marinas and boatyards; parking lots with high intensity use; confined disposal facilities and disposal sites. Refer to Massachusetts Stormwater Management Standard 5 for higher potential pollutant loads, or the most current Stormwater Handbook.

6.2.025 MASSACHUSETTS STORMWATER HANDBOOK (STORMWATER HANDBOOK): The Stormwater Handbook, and as amended from time to time, that were produced by the Massachusetts Department of Environmental Protection (D.E.P.) and the Massachusetts Office of Coastal Zone Management to be used as guidance for controlling stormwater. Implementation of the Stormwater Management Standards shall be in accordance with the Stormwater Handbook.

6.2.026 MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS: The requirements described in the Stormwater Handbook, as they may be amended from time to time, that address water quality (pollutants) and water quantity (flooding, low base flow and recharge) by establishing standards that require the implementation of a wide variety of stormwater management strategies. These strategies include environmentally sensitive site design and LID techniques to minimize impervious surface and land disturbance, source control and pollution prevention, structural Best Management Practices, construction period erosion and sedimentation control, and the long-term operation and maintenance of stormwater management systems. The Stormwater Management Standards have been incorporated in the Wetlands Protection Act Regulations, 310 CMR 10.05(6)(k) and the Water Quality Certification Regulations, 314 CMR 9.06(6)(a).

6.2.027 MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4), MUNICIPAL STORM DRAIN SYSTEM, or MUNICIPAL DRAINAGE SYSTEM: The system of conveyances designed or used for collecting or conveying stormwater, including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel, reservoir, and other drainage structure that together comprise the storm drainage system owned or operated by the Town of Billerica.

6.2.028 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 human-made activities.

6.2.029 NONPOINT SOURCE POLLUTION: Pollution from many diffuse sources caused by rainfall or snowmelt moving over and/or through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into water resource areas.

6.2.030 OPERATION AND MAINTENANCE PLAN: A plan that defines the functional, financial and organizational mechanisms for the ongoing operation and maintenance of a stormwater management system to ensure that it continues to function as designed.

6.2.031 OUTSTANDING RESOURCE WATER (ORWs): Waters designated by Massachusetts Department of Environmental Protection as ORWs. These waters have exceptional sociologic, recreational, ecological and/or aesthetic values and are subject to more stringent requirements under both the Massachusetts Water Quality Standards (314 CMR 4.00) and the Massachusetts Stormwater Management Standards. ORWs include vernal pools certified by the Natural Heritage Program of the Massachusetts Department of Fisheries and Wildlife and Environmental Law Enforcement, all Class A designated public water supplies with their bordering vegetated wetlands, and other waters specifically designated.

6.2.032 OWNER: A person with a legal or equitable interest in a property.

6.2.033 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 By-laws, codes, administrative agency, public or quasi-public corporation or body, the Town of Billerica, and any other legal entity, its legal representatives, agents, or assigns.

6.2.034 PRE-DEVELOPMENT: The conditions that exist at the time that plans for the land development of a tract of land are submitted to the Board of Health. 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.

6.2.035 POINT SOURCE: Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, or container from which pollutants are or may be discharged.

6.2.036 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.

6.2.037 RECHARGE: The replenishment of groundwater reserves.

6.2.038 REDEVELOPMENT: Development, rehabilitation, expansion, demolition, construction, land alteration, or phased projects that disturb the ground surface, including impervious surfaces, on previously developed sites. Standards for Redevelopment only apply to those portions of the parcel that currently contain alteration by human activities.

6.2.039 RESOURCE AREA: Any area protected under, including without limitation: the Massachusetts Wetlands Protection Act, Massachusetts Rivers Act, or Town of Billerica Wetlands Protection By-law.

6.2.040 RESPONSIBLE PARTY: Entity, person, or agent identified in an Operation and Maintenance Plan and /or Maintenance Agreement as being responsible for Operation and Management including inspections, of privately owned and managed stormwater control measures.

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

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

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

6.2.044 STORMWATER AUTHORITY: Board of Health or authorized agent(s), as defined in the Stormwater Management By-law. The Board of Health, or its agent(s), is responsible for coordinating the review, approval and permit process as defined in these Regulations authorized by the Stormwater Management By-law. Other Boards and/or departments may participate in the review process as defined in the Stormwater Management By-law.

6.2.045 STORMWATER BEST MANAGEMENT PRACTICE (BMP): See Definition 4. Best Management Practice.

6.2.046 STORMWATER MANAGEMENT: The use of structural or nonstructural practices that are designed to reduce stormwater runoff pollutant loads, discharge volumes, and/or peak flow discharge rates. Stormwater Management includes the use of structural and nonstructural stormwater management practices.

6.2.047 STORMWATER MANAGEMENT PERMIT: A permit issued by the Board of Health, after review of an application, plans, calculations, and other supporting documents, which show that the proposed project is designed to protect the environment of the Town from the deleterious impacts of uncontrolled and untreated stormwater runoff.

6.2.048 STORMWATER MANAGEMENT SYSTEM: A system for conveying, collecting, storing, discharging, recharging or treating stormwater on-site including stormwater best management practices and any pipes and outlets intended to transport and discharge stormwater to the ground water, a surface water, or a municipal separate storm sewer system.

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

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

6.2.051 TOTAL MAXIMUM DAILY LOAD or TMDL: Section 303(d) of the Clean Water Act authorizes the E.P.A. to assist states, territories and authorized tribes in listing impaired waters and developing Total Maximum Daily Loads (TMDLs) for these waterbodies. A TMDL establishes the maximum 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 includes Waste Load Allocations for point source

discharges, Load Allocations for nonpoint sources and/or natural background, and must include a margin of safety and account for seasonal variations.

6.2.052 TSS: Total Suspended Solids.

6.2.053 WATER QUALITY VOLUME (WQV): The storage volume needed to capture a specified average annual stormwater runoff volume. Numerically (WQV) will vary as a function of drainage area or impervious area.

SECTION 3 AUTHORITY

6.3.001 The Rules and Regulations contained herein have been adopted by the Board of Health in accordance with the Town of Billerica Stormwater Management By-law.

6.3.002 Nothing in these Rules and Regulations is intended to replace or be in derogation of the requirements of the Town of Billerica Zoning By-law, Subdivision Control Law, Wetlands Protection By-law, or any Rules and Regulations adopted thereunder.

6.3.003 These Stormwater Regulations may be periodically amended by the Board of Health in accordance with the procedures outlined in Section 2.2 of the Town of Billerica Stormwater Management By-law.

SECTION 4 ADMINISTRATION

6.4.001 The Board of Health is designated as the Stormwater Authority under the Stormwater Management By-law. The Board of Health shall administer, implement and enforce these Regulations. Any powers granted to or duties imposed upon the Board, except the power to hear appeals, may be delegated in writing by the Board to employees or authorized agents of the Town. The Department of Public Works Engineering Division is considered an authorized agent of the Board for the purposes of reviewing stormwater submittals, conducting inspections described in Section 9, and enforcing the Stormwater Management By-law and these Regulations per Section 8.

SECTION 5 APPLICABILITY

6.5.001 These Stormwater Management Regulations apply to all activities in accordance with the Scope and Applicability section of the Stormwater Management By-law as described in this section.

6.5.002 If any portion of a project or activity meets the Scope and Applicability of Section 1 of the Stormwater Management By-law and it is within the specific jurisdiction of the Planning Board, the Zoning Board of Appeals, or another Town board, commission, or department, the Board of Health will remain the Stormwater Authority, responsible for facilitating stormwater review and approval, and issuance of the Stormwater Management Permit. The specific application submission requirements, public notice, and fee requirements of the applicable board, commission, and/or department shall remain in effect in addition to the requirements of the Stormwater Management By-law. The applicant may submit copies of the plans prepared for and submitted to the Planning Board for subdivision approval, under the condition that the requirements of a Stormwater Management Permit application, as described in Section 6.6.002 are otherwise met. The Board of Health and other Town boards shall coordinate any necessary engineering and other consultant services and resulting Fees as set forth in Chapter 1 Section 4. Board of Health will make every effort to review the Stormwater Management Permit application in timely manner, as not to unnecessarily delay permit approval process of other Town Boards. No work may commence without a Stormwater Management Permit from the Board of Health.

6.5.003 Projects exempt from the Stormwater Management By-law according to Section 1.2 of the By-law may still be subject to the requirements of Chapter 5 Sections 2.010 and 2.011 of these Regulations.

SECTION 6 PERMIT PROCEDURES AND REQUIREMENTS

6.6.001 Developers of projects requiring a Stormwater Management Permit per Section 1 of the Stormwater Management By-law shall be required to submit the materials as specified in this Section, and are required to meet the Performance Standards: Stormwater Criteria as specified in Section 7 of this chapter of the Board of Health regulations.

6.6.002 Filing Application.

- (1) The applicant shall file with the Board of Health, two (2) copies of a completed application package for a Stormwater Management Permit. A Stormwater Management Permit must be obtained prior to the commencement of any construction activity, tree clearing, or land disturbance for which such a permit is required. While the applicant can be a representative, the permittee must be the owner of the site or holder of an easement. The Stormwater Management Permit application package shall include:
 - (a) A completed Application Form with original signatures of all owners,
 - (b) Certified Abutters list from the Assessor's Office, as defined in Chapter 1, which must be dated within sixty (60) days of submission,
 - (c) Stormwater Management Plan and project description,
 - (d) Erosion and Sediment Control Plan,
 - (e) Operation and Maintenance Plan,
 - (f) Payment of the application fee and a signed Consultant Agreement form,
 - (g) Inspection and Maintenance agreement, and
 - (h) Bond (if required according to Chapter 1, Section 7).
- (2) In lieu of (c), (d), and (e), the applicant may submit a completed Stormwater Report to document compliance with the Massachusetts Stormwater Management Standards, as provided in the Stormwater Handbook, and the Town of Billerica's Performance Standards given in Section 7 of these regulations. The Stormwater Report Certification and Checklist must be stamped and signed by a Registered Professional Engineer.
- (3) No work proposed shall be undertaken until the final Stormwater Management Permit with respect to such work has been recorded by the applicant in the Middlesex Northern Registry of Deeds. The applicant shall furnish certification of such recording.
- (4) Determination of Completeness: The Board of Health shall make a determination as to the completeness of the application and adequacy of the materials submitted. No review shall take place until the application is determined complete.
- (5) Information Requests. The applicant shall submit all additional information requested by the Board of Health to issue a decision on the application.

6.6.003 Fees. The Board of Health shall obtain with each submission an Application Fee as set forth in Chapter 1 Section 7 of these Board of Health Regulations to cover expenses connected with the review of the Stormwater Management Permit application. Consulting Engineer/Consultant Review Fees for the project may also be required to be paid by the applicant in accordance with Chapter 1 Section 4 of these Regulations. An Annual Operation and Maintenance Record Processing fee shall be paid and collected to cover expenses related to conducting stormwater management facility operation and maintenance record reviews and to conduct inspections if needed.

- (1) Rules.
 - (a) Application Fees are payable at the time of application and are non-refundable.

- (b) All fees shall be calculated by the Board of Health in accordance with its fee schedule.
 - (c) These fees are in addition to any other local or state fees that may be charged under any other law, regulation, or local By-law.
 - (d) Municipal projects shall be exempt from Application Fees associated with a Stormwater Management Permit.
- (2) Application Fees.
- (a) A non-refundable Stormwater Management Permit Application Fee, per the Fee Schedule set forth in Chapter 1, Section 7 of these Board of Health Regulations, shall be due and payable to the Town of Billerica 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.
- (3) Consulting Engineer/Consultant Review Fees.
- (a) As provided in Chapter 1, Section 4 of these Board of Health Regulations, the Stormwater Authority may impose reasonable fees for the employment of outside consultants, engaged by the Stormwater Authority, for specific expert services to assist the Stormwater Authority in its review of applications for Stormwater Management Permits and oversight of permit compliance.
- (4) Annual Operation and Maintenance Record Fees.
- (a) A non-refundable fee, per the Fee Schedule set forth in Chapter 1, Section 7 of these Regulations shall be paid with the annual submission of Operation and Maintenance Records. The fee will be used for ensuring adequate operation and maintenance of the stormwater management facilities.

6.6.004 Public Hearings. The Board of Health shall hold a public hearing after receipt of a complete application according to the timeline set forth in Chapter 1, Section 1.2.009 of these regulations. The Board of Health shall take final action within forty-five (45) days from the close of the hearing unless such time is extended by agreement between the applicant and the Board of Health. Notice of the public hearing shall be given by a publication in a local newspaper of general circulation, by posting, and by hand delivery or a certified mailing, return receipt requested, to abutters at least ten (10) days prior to the hearing. Notice of the public hearing is the responsibility of the applicant.

6.6.005 Actions.

- (1) The Board of Health's action, rendered in writing, shall consist of either:
 - (a) 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 these Regulations;
 - (b) Approval of the Stormwater Management Permit Application subject to any conditions, modifications or restrictions required by the Board of Health, 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 these Regulations; or
 - (c) 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 these Regulations, or
 - (d) The application is deemed incomplete.
- (2) Failure of the Board of Health to take any of the above actions upon an Application within the time specified above shall be deemed to be approval of said Application. Upon

certification by the Town Clerk that the allowed time has passed without Board of Health action, the Board of Health must issue a Stormwater Management Permit.

6.6.006 Appeals of Actions of the Board of Health. A decision of the Board of Health shall be final. Further relief of a decision by the Board of Health made under these Regulations shall be reviewable in a court of competent jurisdiction within the time allowed by law. 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 Billerica. Such an appeal shall result in revocation of the written approval as described under Section 6.6.005 of these Regulations, until such time as the appeal process of the applicable board, commission and/or department has been resolved.

6.6.007 Plan Changes. The permittee must notify the Board of Health in writing of any site or drainage design change or alteration in the system authorized in a Stormwater Management Permit before any change or alteration is made. If the Board of Health determines that the change or alteration is significant, based on the Stormwater Management Standards, Performance Standards in Section 7, and accepted construction practices, the Board of Health may require that an amended application be filed, and shall notify the applicant of their decision within 10 days of being notified of the change.

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

6.6.009 Project Completion. At completion of the project, but no later than two (2) years after completion of construction projects, the permittee shall submit an updated Maintenance Agreement noting any changes, including designation of new responsible parties, and a final report (including certified as-built construction plans) from a registered Professional Engineer (PE) or surveyor, certifying that all erosion and sediment control devices, and approved changes and modifications, have been completed in accordance with the conditions of the approved permit. The as-built drawings must depict all on site controls, both structural and non-structural, designed to manage the stormwater associated with the completed site (post construction stormwater management). They shall be full size plans, at a scale approved by the Board of Health, that reflect the “as-built” conditions, including all final grades. All work deleted, corrections in elevations, and changes in materials, shall be shown on the as-built drawings. All changes to project design shall be recorded on plans in red ink, or otherwise noted, to define the changes made. Deviations from the approved plans, if any, shall be certified in writing by a Registered Professional Engineer and any discrepancies should be noted in the cover letter.

6.6.010 Permit Expiration. Should a land-disturbing activity permitted in accordance with these Regulations not begin during a 180-day period following permit issuance, or if work is not completed within three (3) years, the Applicant shall notify the Board of Health. The Board of Health may re-evaluate the originally approved Stormwater Management Plan to determine whether the plan satisfies the regulation requirements in effect. If the Board of Health finds the previously filed Plan to be inadequate, a modified plan shall be submitted for review and approval prior to the commencement, or continuation, of land-disturbing activities.

6.6.011 Stormwater Management Plan Contents.

- (1) The application for a Stormwater Management Permit shall include the submittal of a Stormwater Management Plan to the Board of Health. This Stormwater Management Plan shall contain sufficient information for the Board of Health to evaluate the environmental impact, effectiveness, and acceptability of the site planning process and the measures proposed by the applicant to reduce adverse impacts from stormwater runoff during construction, and on a long-term basis. The plan shall be in accordance with the criteria

established in these Regulations. The Stormwater Management Plan shall remain on file with the Board of Health.

- (2) The Stormwater Management Plan shall fully describe the project in drawings, narrative, and calculations. It shall include, at a minimum:
- (a) Contact Information. The name, address, and telephone number of all persons having a legal interest in the property and the tax reference number and parcel number of the property or properties affected;
 - (b) Narrative describing:
 - i. Purpose;
 - ii. Methodologies and assumptions;
 - iii. Existing and proposed uses and conditions;
 - iv. Project impacts and mitigation techniques including:
 - 1. Summary of proposed land area to be cleared, existing and proposed impervious area, work within proximity of regulated wetland resources, aquifer protection zones, earthwork within 4 feet of seasonal high groundwater elevations, and other sensitive environmental areas;
 - 2. LID techniques considered for this project and an explanation as to why they were included or excluded from the project;
 - 3. Proposed best management practices;
 - 4. Identifying the watershed basin that the project is located in and the immediate down gradient waterbody(s) that stormwater runoff from the project site discharges to, E.P.A.'s watershed and waterbody assessment and TMDL and/or impairment status of the watershed and waterbody(s), and the LIDs and BMPs included in the project to address the pollutant(s) of concern;
 - v. Summary of pre- and post-development peak rates and volumes of stormwater runoff demonstrating no adverse impacts to down-gradient properties, stormwater management systems and wetland resources; and
 - vi. Summary of how project meets stormwater management criteria.
 - (c) Plans
 - i. Portion of the USGS Map indicating the site locus and properties within a minimum of 500 feet of project property line;
 - ii. Existing conditions and proposed design plans showing:
 - 1. Buildings and/or structures including materials, approximate height;
 - 2. Utilities including size, material and invert data; and
 - 3. Regulated wetland resource areas within proximity of the site
 - iii. Stormwater management design plan(s) and details showing:
 - 1. Location, size, material, inverts data and details for all existing and proposed stormwater management system components including structures, pipes, swales, detention, retention, and infiltration systems and any other LID techniques or BMPs;
 - 2. Profiles of drainage trunk lines; and

3. The location(s) of existing and proposed easements.
- iv. Separate Pre- and Post- Condition Watershed Plans indicating:
 1. Structures, pavements, surface vegetation and other ground cover materials;
 2. Topography sufficient to delineate watershed areas;
 3. Point(s) of analysis;
 4. Watershed areas including upgradient areas that contribute stormwater flow onto the project site, labeled to be easily identified in calculations. Total pre and post watershed areas should be equivalent;
 5. Breakdown summary of various surface conditions by soil hydrologic group rating; and
 6. Flow path for time of concentration (Tc) calculation.
- (d) Calculations
 - i. Hydrologic calculation to determine pre and post peak rates and volumes of stormwater runoff for 2-, 10-, 25- and 100-year 24-hour storm events;
 - ii. Groundwater recharge calculations and BMP drawdown (time to empty);
 - iii. Water quality calculations including (if applicable):
 1. TSS removal calculation for each watershed;
 2. Specific BMPs utilized in critical areas;
 3. Specific BMPs utilized for land uses with higher potential pollutant loads (LUHPPL); and
 4. Specific treatment for pollutant causing impairment of down-gradient waterbody identified by U.S. Environmental Protection Agency and Massachusetts Department of Environmental Protection.
 - iv. Hydraulic calculations to size drainage pipes, swales and culverts; and
 - v. Supplemental calculations for sizing LID and BMPs and addressing impairments to water bodies.
- (e) Soil mapping and test data;
- (f) Massachusetts Department of Environmental Protection Checklist for Stormwater Report completed, stamped and signed by a registered Professional Engineer (PE) licensed in the Commonwealth of Massachusetts to certify that the Stormwater Management Plan is in accordance with the criteria established in the Massachusetts Stormwater Management Standards, Town of Billerica Stormwater Management By-Law and these regulations; and
- (g) Any other information requested by the Board of Health.

6.6.012 Operation and Maintenance Plan Contents

- (1) An Operation and Maintenance Plan (O&M Plan) is required at the time of application for all projects with constructed stormwater BMPs and stormwater management practices. The O&M Plan shall be designed to ensure compliance with the Permit and these Regulations and ensure that the Massachusetts Surface Water Quality Standards (314 CMR 4.00) are met in all seasons and throughout the life of the system. The Operation and Maintenance Plan shall remain on file with the Board of Health and shall be an ongoing requirement. The Applicant shall provide copies of the Operation and Maintenance Plan to all persons responsible for

maintenance and repairs.

(2) The O&M Plan shall include:

- (a) The name(s) of the owner(s) for all components of the system;
- (b) A map showing the location of the systems and facilities including all structural and nonstructural stormwater best management practices (BMPs), catch basins, manholes/access lids, pipes, and other stormwater devices. The plan showing such systems and facilities to be privately maintained, including associated easements shall be recorded with the Middlesex Northern Registry of Deeds prior to issuance of a Certificate of Compliance by the Board of Health.
- (c) Maintenance Agreement with the Board of Health that specifies:
 - i. The names and addresses of the person(s) responsible for operation and maintenance;
 - ii. The person(s) financially responsible for maintenance and emergency repairs;
 - iii. All stormwater BMPs are to follow the minimum requirements for inspection and maintenance in accordance with the latest edition of the Massachusetts Stormwater Handbook. An Inspection and Maintenance Schedule for all stormwater management facilities including routine and non-routine maintenance tasks to be performed. Where applicable, this schedule shall refer to the Maintenance Criteria provided in the Stormwater Handbook or the E.P.A. National Menu of Stormwater Best Management Practices or equivalent;
 - iv. Instructions for routine and long-term operation and maintenance shall have sufficient detail for responsible parties to perform necessary maintenance activities and prevent actions that may adversely affect the performance of each structural and/or nonstructural stormwater BMP.
 - v. A list of easements with the purpose and location of each; and
 - vi. The signature(s) of the owner(s) and all persons responsible for operation and maintenance, financing, and emergency repairs, as defined in the Maintenance Agreement, if maintenance is to be performed by an entity other than the owner.
- (d) Stormwater Management Easement(s)
 - i. Stormwater Management easements shall be provided by the property owner(s) as necessary for:
 - 1. Access for facility inspections and maintenance;
 - 2. Preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event; and
 - 3. Direct maintenance access by heavy equipment to structures requiring maintenance.
 - ii. The purpose of each easement shall be specified in the Maintenance Agreement signed by the property owner.
 - iii. Stormwater Management easements are required for all areas used for permanent stormwater control, unless a waiver is granted by the Board of Health.
 - iv. Easements shall be recorded with the Middlesex Northern Registry of Deeds prior to issuance of a Certificate of Compliance by the Board of Health.
- (e) Changes to Operation and Maintenance Plans

- i. The owner(s) of record of the Stormwater Management system must notify the Board of Health of changes in ownership, assignment of Operation and Maintenance responsibilities, or assignment of financial responsibility within 30 days of the change in ownership. The owner of record shall be responsible for Operation and Maintenance activities until a copy of the updated Operation and Maintenance Plan has been furnished to the Board of Health signed by the new owner or any new responsible person.
 - ii. The maintenance schedule in the Maintenance Agreement may be amended to achieve the purposes of the Stormwater Management By-law by mutual agreement of the Board of Health and the Responsible Parties. Amendments must be in writing and signed by all Responsible Parties. Responsible Parties shall include owner(s), persons with financial responsibility, and persons with operational and/or maintenance responsibility.
- (f) Enforcement. To ensure adequate long-term operation and maintenance of stormwater management practices, applicants are required to implement one or more of the following procedures, as directed by the Stormwater Authority:
- i. Filing by the applicant of an annual Operation and Maintenance Report with the Stormwater Authority on a form specified by the Board of Health, accompanied by an annual filing fee established by the Stormwater Authority for administration and enforcement of the Operation and Maintenance plan.
 - ii. Submission by the applicant of an annual certification documenting the work that has been done over the last 12 months to properly operate and maintain the stormwater control measures. The certification shall be signed by the person(s) or authorized agent of the person(s) named in the permit as being responsible for ongoing operation and management;
 - iii. Recording of Operation and Maintenance Plans at the appropriate Registry of Deeds or Land Court.

6.6.013 Erosion and Sediment Control Plan Contents

- (1) If a project requires a Stormwater Pollution Prevention Plan (SWPPP) per the NPDES General Permit for Storm Water Discharges From Construction Activities (and as amended), then the permittee is required to submit a complete copy of the SWPPP (including the signed Notice of Intent and approval letter). If the SWPPP meets the requirements of the General Permit, it will be considered equivalent to the Erosion and Sediment Control Plan described in this section.
- (2) The Erosion and Sediment Control Plan shall be designed to ensure compliance with these Regulations and if applicable, the NPDES General Permit for Storm Water Discharges From Construction Activities. In addition, the plan shall ensure that the Massachusetts Surface Water Quality Standards (314 CMR 4.00) are met in all seasons. The Erosion and Sediment Control Plan shall remain on file with the Board of Health. Refer to the latest version of the Massachusetts Erosion and Sediment Control Guidelines for Urban & Suburban Areas for detailed guidance.
- (3) The Erosion and Sediment Control Plan shall be submitted in writing, and contain an accurate description of the topography, geology, soils, hydrology, and vegetation of the portion of land to be altered. It shall state fully the purpose for the land disturbance, and shall contain detailed Site Specification Plans, schedules and descriptions of methods proposed to control erosion and sediment. The following items shall be included in, or with an Erosion and Sediment Control Plan:
 - (a) Names, addresses, and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the plan;

- (b) Title, date, north arrow, names of abutters, scale, legend, and locus map;
- (c) Location and description of natural features including:
 - i. Watercourses and water bodies, wetland resource areas and all floodplain information, including the 100-year flood elevation based upon the most recent Flood Insurance Rate Map, or as calculated by a registered Professional Engineer (PE) for areas not assessed on these maps;
 - ii. Existing vegetation including tree lines, canopy layer, shrub layer, and ground cover, and trees with a caliper twelve (12) inches or larger, noting specimen trees and forest communities; and
 - iii. Habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or of Special Concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species within five hundred (500) feet of any construction activity.
- (d) Lines of existing abutting streets showing drainage and driveway locations and curb cuts;
- (e) Existing soils, volume and nature of imported soil materials;
- (f) Topographical features including existing and proposed contours at intervals no greater than two (2) feet with spot elevations provided when needed;
- (g) Surveyed property lines showing distances and monument locations, all existing and proposed easements, rights-of-way, and other encumbrances, the size of the entire parcel, and the delineation and number of square feet of the land area to be disturbed;
- (h) Drainage patterns and approximate slopes anticipated after major grading activities (Construction Phase Grading Plans);
- (i) Location and details of erosion and sediment control measures with a narrative of the construction sequence/phasing of the project, including both operation and maintenance for structural and non-structural measures, interim grading, and material stockpiling areas;
- (j) Path and mechanism to divert uncontaminated water around disturbed areas, to the maximum extent practicable. When determining whether the requirements have been met, the Stormwater Authority shall consider all stormwater management practices available and capable of being implemented after taking into consideration costs, existing technology, proposed use, and logistics in light of overall project purposes. Project purposes shall be defined generally (e.g., single family home or expansion of a commercial development).;
- (k) Location and description of industrial discharges, including stormwater discharges from dedicated asphalt plants and dedicated concrete plants, which are covered by this permit;
- (l) Stormwater runoff calculations in accordance with the Massachusetts Department of Environmental Protection's Stormwater Management Handbook and Stormwater Standards;
- (m) Location and description of and implementation schedule for temporary and permanent seeding, vegetative controls, and other stabilization measures;
- (n) A description of construction and waste materials expected to be stored on-site. The Plan shall include a description of controls to reduce pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater, and spill prevention and response;
- (o) A description of provisions for phasing the project where one acre of area or greater is to

- be altered or disturbed;
- (p) Plans must be stamped and certified by a qualified Professional Engineer registered in Massachusetts or a Certified Professional in Erosion and Sediment Control; and
 - (q) Such other information as is required by the Stormwater Authority.
- (4) Erosion Controls Design Standards. The Sediment and Erosion Control Plan shall be developed to comply with the Small MS4 General Permit and shall meet the following standards:
- (a) Minimize total area of disturbance;
 - (b) Sequence activities to minimize simultaneous areas of disturbance;
 - (c) Minimize peak rate of runoff in accordance with the Massachusetts Department of Environmental Protection Stormwater Standards;
 - (d) Minimize soil erosion and control sedimentation during construction;
 - (e) Divert uncontaminated water around disturbed areas;
 - (f) Maximize groundwater recharge;
 - (g) Install and maintain all Erosion and Sediment Control measures in accordance with the Massachusetts Erosion and Sedimentation Control Guidelines for Urban and Suburban Areas, manufacturers specifications and good engineering practices;
 - (h) Prevent off-site transport of sediment;
 - (i) Protect and manage on and off-site material storage areas (overburden and stockpiles of dirt, borrow areas, or other areas used solely by the permitted project are considered a part of the project);
 - (j) Comply with applicable Federal, State and local laws and regulations including waste disposal, sanitary sewer or septic system regulations, and air quality requirements, including dust control;
 - (k) Protect natural resources and prevent significant alteration of habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or Of Special Concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species from the proposed activities;
 - (l) Institute interim and permanent stabilization measures, which shall be instituted on a disturbed area as soon as practicable but no more than 14 days after construction activity has temporarily or permanently ceased on that portion of the site;
 - (m) Properly manage on-site construction and waste materials, including truck washing and cement concrete washout facilities;
 - (n) Inspect stormwater controls at consistent intervals.
 - (o) Prevent off-site vehicle tracking of sediments; and
 - (p) Incorporate appropriate BMPs designed to comply with the Massachusetts Stormwater Handbook.

SECTION 7 PERFORMANCE STANDARDS: STORMWATER CRITERIA

6.7.001 At a minimum, stormwater management shall be designed in accordance with the requirements of the NPDES Small MS4 General Permit for Massachusetts and the Stormwater Management Standards described in the Stormwater Handbook using current Best Management

Practices (BMP). In case of conflicting requirements with applicable federal and state statutes and regulations, the more restrictive or more protective of human health and the environment shall take precedence. The applicant must submit the computations required to document compliance with the Standards as described in Volume 3, Chapter 1 of the Stormwater Handbook.

6.7.002 The applicant may propose alternative BMPs not listed in the Stormwater Handbook, subject to a full technical review and approval by the Board of Health. The performance of specific proprietary commercial devices and systems must be provided by the manufacturer and should be verified by independent third-party sources and data, such as through International Stormwater BMP Database. The Board of Health will use the process established by the D.E.P. in the Stormwater Handbook to approve or deny the use of proprietary BMPs.

6.7.003 Increases in stormwater runoff resulting from development shall be minimized and retained or detained within the development, rather than being piped to existing surface waters. The order of preference by the Board for handling stormwater runoff is as follows:

- (1) Infiltration
- (2) Retention
- (3) Detention

6.7.004 All stormwater from public rights of way, LUHPPLs, impervious areas within Industrial, Industrial Park, Commercial, and Highway Business Zoning Districts, and where a potential pollution problem exists, as deemed by the Board of Health, shall pass through a pre-treatment device to reduce oil, sediment, and trash loadings. All stormwater treatment devices shall have a convenient vehicular access and if necessary a twenty foot (20') wide access easement. All stormwater shall be conveyed in ditches or storm drain lines to stormwater BMPs for water quality treatment, infiltration, and/or flow attenuation. Permanent easements and provisions for vehicular access shall be provided along the entire length of ditches and storm drain lines.

6.7.005 Lot Drainage

- (1) Lots shall be prepared and graded in such a manner that development of one shall not cause detrimental drainage on another; if provision is necessary to carry drainage to or across a lot, an easement or drainage right-of-way of a minimum width of twenty feet (20') with additional allowance as needed for proper side slope shall be provided.
- (2) The Applicant shall furnish evidence that adequate provision has been made for the proper drainage of surface and underground waters from any lot or lots. Use of on-lot drywells for disposal of roof runoff is encouraged. Stormwater shall not discharge overland across lot lines. Drainage conveyances and easements shall be provided to convey stormwater to the nearest permanent stream or municipal drainage system.

6.7.006 General Criteria. All projects and activities that meet the Scope and Applicability of Section 1 of the Stormwater Management By-law must meet the following general performance criteria unless otherwise provided for in these Regulations:

- (1) LID site planning and design strategies must be utilized to the maximum extent feasible.
- (2) The selection, design and construction of all pre-treatment, treatment and infiltration BMPs shall be in accordance with Massachusetts Stormwater Handbook and shall be consistent with all elements of the Massachusetts Stormwater Standards including but not limited to those regarding new stormwater conveyances, peak runoff rates, recharge, land uses with higher potential pollutant loads, discharges to Zone II or interim wellhead protection areas, sediment and erosion control, and illicit discharges.
- (3) Tree Protection and Preservation. Trees can be an important tool for retention and detention

of stormwater runoff. Trees provide additional benefits, including cleaner air, reduction of heat island effects, carbon sequestration, reduced noise pollution, reduced pavement maintenance needs, and cooler cars in shaded parking lots. The Town therefore deems that the preservation and protection of certain trees on private property and the effort to replant trees to replace those removed to the extent practicable are public purposes that protect the public health, welfare, environment, and aesthetics.

- (4) Protection of Riparian Buffers. Riparian buffers, also known as a vegetated buffer or forest buffers, are vegetated areas along a stream, usually forested, which helps shade and partially protect a stream from the impact of adjacent land uses. Where possible, establish and protect a naturally vegetated buffer system along all perennial streams and other water features that encompass critical environmental features such as the 100-year floodplain, steep slopes (in excess of 15%), lake shorelands, and wetlands.
- (5) Riparian stream buffers should be preserved or restored with native vegetation. Buffers are most effective when maintained in an undisturbed condition, mowing and brush hogging should not take place within a buffer. Mitigation of Thermal Impacts of Stormwater Runoff. Stormwater BMPs must mitigate potential temperature impacts of development and land use conversions to Coldwater Fish Resources. 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. Coldwater Fish Resources located in the Town of Billerica include, but are not limited to, Content Brook near the Tewksbury-Billerica border. The Engineering Division has current maps of Town's watersheds and the locations of Coldwater Fish Resources. Stormwater Management Permit sites located near Coldwater Fish Resources shall address the following additional design considerations.
 - (a) To mitigate thermal impacts to Coldwater Fish Resources 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.
 - (b) 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.

6.7.007 Performance Standards for New Development

- (1) 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:
 - (a) installing stormwater BMPs that meet the pollutant removal percentages required in 9.D.(1) based on calculations developed consistent with E.P.A. Region 1's BMP Accounting and Tracking Tool (2016) or other BMP performance evaluation tool provided by E.P.A. Region 1, where available. If E.P.A. 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

- (b) 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
- (c) meeting a combination of retention and treatment that achieves the above standards.

6.7.008 Performance Standards for Redevelopment Sites

- (1) 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:
 - (a) installing BMPs that meet the pollutant removal percentages based on calculations developed consistent with E.P.A. Region 1's BMP Accounting and Tracking Tool (2016) or other BMP performance evaluation tool provided by E.P.A. Region 1, where available. If E.P.A. 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
 - (b) 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
 - (c) meeting a combination of retention and treatment that achieves the above standards.

6.7.009 Stormwater Management Design Standards

- (1) Projects must be designed to collect and dispose of stormwater runoff from the project site in accordance with Massachusetts Stormwater Management Standards, the Small MS4 General Permit, recognized engineering methodologies, and these regulations with an emphasis on including LID techniques in the design.
- (2) To the extent that the project will discharge, directly or indirectly, to a water body subject to one or more pollutant-specific Total Maximum Daily Loads (TMDLs), implement structural and non-structural stormwater best management practices (BMPs) that are consistent with each such TMDL.
- (3) 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.
- (4) Projects must manage surface runoff so that no proposed flows are conducted over public ways, nor over land not owned or controlled by the Applicant unless a drainage easement in proper form is obtained permitting such discharge.
- (5) 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 (rain gardens) and infiltration systems.

The use of one or more LID site design measures by the applicant may allow for a reduction in the water quality treatment volume required by these regulations. The applicant may, if approved by the Stormwater Authority, take credit for the use of stormwater LID measures to reduce some of the requirements specified in these regulations. The site design practices that qualify for these credits and procedures for applying and calculating credits are identified in the Massachusetts Stormwater Handbook.

- (6) Projects must use TR-55 and TR-20 methodologies to calculate peak rate and volume of runoff from pre-development to post-development conditions.
- (7) Stormwater management systems shall be designed to avoid disturbance of areas susceptible to erosion and sediment loss, avoiding, to the greatest extent practicable: the damaging of large forest stands; building on steep slopes (15% or greater); and disturbing land in wetland buffer zones and floodplains.
- (8) Watershed area for hydrologic analysis and BMP sizing calculations must include at a minimum the site area and all upgradient areas from which stormwater runoff flows onto the site.
- (9) For purposes of computing runoff, all pervious lands in the site are assumed prior to Development to be in “good hydrologic condition” regardless of the conditions existing at the time of the computation.
- (10) Length of sheet flow used for times of concentration is to be no more than 50 feet.
- (11) Utilize 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.
- (12) Soils tests to be conducted by a Registered Professional Engineer or Massachusetts Soil Evaluator, performed at the location of all proposed LID techniques and BMPs, to identify soil descriptions, depth to estimated seasonal high groundwater, depth to bedrock, and soil texture.
- (13) The design infiltration rate shall be determined from the on-site soil texture and Rawls rates as published in the Massachusetts Stormwater Handbook or saturated hydraulic conductivity tests.
- (14) Size drainage pipes to accommodate the 25-year storm event and maintain velocities between 2.5 and 10 feet per second, and provide calculations using the Mannings Equation.
- (15) Size drainage swales to accommodate the 25-year storm event and velocities below 4 feet per second.
- (16) Size culverts to accommodate the 50-year storm event and design adequate erosion protection. Design stream crossing culverts in accordance with the latest addition of the Massachusetts Stream Crossing Handbook.
- (17) Size stormwater basins to accommodate the 100-year storm event with a minimum of one foot of freeboard.
- (18) All drainage structures are to be able to accommodate HS-20 loading.
- (19) Catch basins structures are to be constructed as specified by Massachusetts Department of Transportation (MassDOT) and spaced a maximum of 250 feet apart in roadways.
- (20) Catch basin to catch basin pipe configuration is prohibited.
- (21) Catch basins adjacent to curbing are to be built with a granite curb inlet as specified by MassDOT.
- (22) Catch basins in low points of road and on roads with profile grades greater than 5 percent are to be fitted with double grates (parallel with curb) as specified by MassDOT.
- (23) All drainpipes are to be reinforced concrete pipe or High Density Polyethylene (HDPE) pipe and have a minimum diameter of 12 inches.

- (24) Drainage pipes are to be installed with a minimum of 2.5 feet of cover and O-rings as specified by MassDOT.
- (25) Drainage manholes structures are to be as specified by MassDOT and spaced at a maximum of every 300 feet.
- (26) Outfalls are to be designed to prevent erosion of soils, and pipes 24 inches or larger are to be fitted with grates or bars to prevent ingress.
- (27) Drainage easements are to provide sufficient access for maintenance and repairs of system components and be at least 20 feet wide.
- (28) Minimize permanently dewatering soils by:
 - (a) Limiting grading within 4 feet of seasonal high groundwater elevation (SHGWE);
 - (b) Raising roadways to keep roadway section above SHGWE; and
 - (c) Setting bottom floor elevation of building(s) a minimum of 2 feet above SHGWE.

6.7.010 Recharge Criteria

- (1) Annual groundwater recharge rates shall be maintained, by promoting infiltration and recharge through the use of structural and nonstructural methods to the maximum extent practicable.
- (2) The stormwater runoff volume to be recharged to groundwater shall be determined using the methods prescribed in the latest version of the Massachusetts Stormwater Handbook. The recharge requirements shall apply to all activities within the jurisdiction of the Stormwater Management By-law except as noted, and unless specifically waived by the Board of Health. The recharge criterion is not required for any portion of a site designated as a stormwater LUHPPL (see Section 6.7.012 of these Regulations). In addition, the Board of Health may relax or eliminate the recharge requirement at its discretion, if the site is situated on unsuitable soils or is in a redevelopment area with documentation of prior contaminated soils.

6.7.011 Sensitive Areas. Stormwater discharges to Critical Areas with sensitive resources as defined in the Stormwater Handbook (e.g., Outstanding Resource Waters) are subject to additional criteria, and may need to utilize or restrict certain Stormwater Management practices at the discretion of the Board of Health. The Board of Health may designate additional Sensitive Areas and specific criteria for these areas by amending these Regulations.

6.7.012 LUHPPLs. Stormwater discharges from land uses or activities with higher potential pollutant loadings require the use of specific Stormwater Management BMPs as specified in the most recent version of the Stormwater Handbook. The use of infiltration practices without pretreatment is prohibited.

6.7.013 Illicit Discharges. Illicit discharges and other activities that might interfere with the municipal separate storm sewer system, or impact receiving water quality, are prohibited in the Billerica By-Law Governing Discharges to the Municipal Storm Sewer System, Article XXVI of the General By-laws of the Town of Billerica.

SECTION 8 ENFORCEMENT

6.8.001 Enforcement powers of the Board of Health or an authorized agent of the Board of Health are granted in the Stormwater Management By-law, Article XXV. The Board of Health designates the Department of Public Works Engineering Division as an authorized agent for enforcement.

6.8.002 Notices and Orders

- (1) In addition to enforcement authority in Chapter 1 Section 1.2.003(a) and (b), the Board of

Health or an authorized agent of the Board of Health may issue a written notice of violation or enforcement order to enforce the provisions of the Stormwater Management By-law 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 By-law and the Stormwater Management Permit;
- (c) Repair, maintain, or replace the stormwater management system or portions thereof in accordance with the O&M Plan;
- (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 thereunder except at the discretion of the Board of Health.

- (2) If the Board of Health 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 violator or property owner fail to abate or perform remediation within the specified deadline, the Town of Billerica may, at its option, undertake such work, and the property owner shall reimburse the Town of Billerica for expenses incurred.
- (3) Within thirty (30) days after completing all measures necessary to abate the violation or to perform remediation, the violator and the property owner shall be notified of the costs incurred by the Town of Billerica, including administrative costs. The violator or property owner may file a written protest objecting to the amount or basis of costs with the Board of Health 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 Board of Health 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. 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. Failure to pay shall cause a lien to be placed on the real property located in the Town of Billerica pursuant to G.L. Ch. 40, Section 58.

6.8.003 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 Board of Health deems necessary to remedy such violation.

6.8.004 Any person who violates any provision of the Town of Billerica Stormwater Management By-law, these Regulations, or order or permit issued thereunder, may be ordered to correct the violation and/or shall be punished by fine in an amount allowable under M.G.L c. 40, § 21, excluding the cost of damages. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

- (1) Non-Criminal Disposition. As an alternative to criminal prosecution or civil action, the Town of Billerica may elect to utilize the non-criminal disposition procedure set forth in Chapter 1, Section 19 of these Board of Health Regulations, and Town of Billerica General By-laws Article XIV.
- (2) Appeals. The decisions or orders of the Board of Health shall be final. Further relief shall be

to a court of competent jurisdiction.

- (3) Remedies Not Exclusive. The remedies listed in this By-law are not exclusive of any other remedies available under any applicable federal, state or local law.

SECTION 9 CONSTRUCTION INSPECTIONS

6.9.001 Notice of Construction Commencement. The applicant must notify the Board of Health or its Authorized Agent in writing 14 days prior to the commencement of construction. In addition, the applicant must notify the Board of Health 14 days in advance of construction of critical components of any stormwater management facility.

6.9.002 Pre-Construction Meeting. The applicant and his construction supervisor/contractor and project engineer shall request and attend a preconstruction meeting with the Director of Public Health, the Board of Health's Consulting Engineer and any other interested parties prior to beginning any construction in order to review the construction sequence for the project, establish an inspection schedule and address any other concerns.

6.9.003 Construction may not commence until the applicant has submitted E.P.A.'s approval of the Construction General Permit Notice of Intent to the Stormwater Authority and the final SWPPP is posted at the site.

6.9.004 Stormwater Authority Inspections. The Stormwater Authority or its designated agent shall make inspections as herein required and shall either approve that portion of the work completed or shall notify the applicant wherein the work fails to comply with the Erosion and Sedimentation Control Plan or the Stormwater Management Plan as approved.

- (1) Inspections will be conducted by a "qualified person" from the Stormwater Authority or a third party hired to conduct such inspections. A "qualified person" is a person knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention, who possesses the appropriate skills and training to assess conditions at the construction site that could impact stormwater quality, and the appropriate skills and training to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of these Regulations.
- (2) The approved Erosion and Sedimentation Control Plan and associated plans for grading, stripping, excavating, and filling work, bearing the signature of approval of the Stormwater Authority, shall be maintained at the site during the progress of the work.
- (3) In order to obtain inspections, the applicant shall notify the Stormwater Authority at least two (2) working days before each of the following events:
 - (a) Erosion and sedimentation control measures are in place and stabilized;
 - (b) Site Clearing has been substantially completed;
 - (c) Rough Grading has been substantially completed;
 - (d) Final Grading has been substantially completed;
 - (e) Close of the Construction Season; and,
 - (f) Final Landscaping (permanent stabilization) and project final completion.

6.9.005 Applicant Inspections. The applicant or his/her agent shall conduct and document inspections of all control measures no less than weekly or as specified in the permit, and prior to and following anticipated storm events. The purpose of such inspections will be to determine the overall effectiveness of the Erosion and Sedimentation Control Plan, and the need for maintenance or additional control measures as well as verifying compliance with the Stormwater Management Plan. The applicant or

his/her agent shall submit monthly reports to the Stormwater Authority or designated agent in a format approved by the Stormwater Authority.

SECTION 10 CERTIFICATE OF COMPLIANCE

6.10.001 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 Board of Health as described in Section 6.6.009 and shall provide regular inspections sufficient to adequately document compliance.

6.10.002 The Board of Health will issue a Certificate of Compliance per Section 1.2.008 of these Regulations 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 the Stormwater Management By-law and these Regulations.

SECTION 11 PERPETUAL INSPECTION AND MAINTENANCE

6.11.001 Maintenance Responsibility. The Town of Billerica 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 graded 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.

6.11.002 Maintenance Inspections.

- (1) Stormwater management facilities and practices included in an Operation and Maintenance Plan with a Maintenance Agreement in accordance with Section 6.6.012 of these Regulations must undergo ongoing inspections to document maintenance and repair needs and ensure compliance with the requirements of the agreement, the Plan, and these Regulations.
- (2) A Maintenance Agreement as specified under Section 6.6.012 of these Regulations between the owner and the Board of Health 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 O&M Plan.
- (4) Inspection reports shall be submitted annually to the Board of Health 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, and
- xii. Description of the required maintenance.

6.11.003 Right-of-Entry for Inspection. The terms of the Maintenance Agreement as specified in Section 6.6.012 of these Regulations shall provide for the Board of Health, or its designee, to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. The Board of Health, 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 Board of Health deems necessary, subject to the constitutions and laws of the United States and the Commonwealth.

6.11.004 Records of Maintenance and Repair Activities. Parties responsible for the operation and maintenance of a stormwater management facility shall provide records of all maintenance and repairs to the Board of Health on an annual basis. Submission of the records shall be accompanied by a processing fee as set forth on the current Board of Health Fee Schedule. Parties responsible for the operation and maintenance of a stormwater management facility shall prepare records of the installation of the facilities and of all maintenance and repairs, and shall retain the records on-site for at least five years. These records shall be made available to the Board of Health during inspections of the facility, and at other reasonable times upon request.

6.11.005 Failure to Maintain.

- (1) If a Responsible Party fails or refuses to meet the requirements of the Maintenance Agreement, the Board of Health, after 30 days written notice (except, that in the event the violation constitutes an immediate danger to public health, public safety, or the environment, 24-hour 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 Board of Health may assess the owner(s) of the facility for the cost of repair work. Failure to pay shall cause a lien to be placed on the real property located in the Town of Billerica pursuant to G.L. Ch. 40, Section 58.
- (2) The person responsible for carrying out the maintenance plan shall have 30 days, or other mutually agreed to time frame, after notification of any deficiencies discovered during an inspection of a stormwater management system, to correct the deficiencies. The Board of Health shall then conduct a subsequent inspection to ensure proper completion of repairs.

SECTION 12 EFFECTIVE DATE

This regulation shall take effect immediately upon adoption by the Board of Health.

The Board of Health reviewed the amendments to this Regulation on June 7, 2021.

The Board of Health held a Public Hearing on the amendments of this Regulation on December 6, 2021.

The Board of Health adopted the amendments to this Regulation on December 6, 2021, by a 4-0 vote.

Promulgation of this Regulation was advertised in the Lowell Sun on January 27, 2022.