STORMWATER MANAGEMENT REGULATIONS

UNDER THE GENERAL BYLAWS OF THE TOWN OF BEDFORD, ARTICLE 55: STORMWATER MANAGEMENT

(Stormwater Management Bylaw adopted at Town Meeting on March 27, 2012 and approved by the Massachusetts Attorney General's Office on July 23, 2012)

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 non-point source pollution associated with new development and redevelopment and illicit discharges and illegal connections, as more specifically addressed in the Town of Bedford Stormwater Management Bylaw, General Bylaws Article 55.

2.0 EFFECTIVE DATE

Regulations adopted at a public hearing on April 11, 2022 by vote of the Select Board.

3.0 DEFINITIONS

The definitions contained herein apply to issuance of a Stormwater Permit established by the Town of Bedford Stormwater Management Bylaw, General Bylaws Article 55, and implemented through these Regulations. Defined terms below supplement the definitions in Article 55.2 of the Bylaw, and applicants should consult the Bylaw to review other defined terms. Terms not defined in this section or the Bylaw shall be construed according to their customary and usual meaning.

CERTIFICATE OF COMPLETION: A document issued by the Stormwater Agency after all construction activities have been completed which states that all conditions of an issued Stormwater Permit have been met and that a project has been completed in compliance with the conditions set forth in the Stormwater Management Bylaw.

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

CRITICAL AREAS: These areas are defined in 310 CMR 10.00 and include Outstanding Resource Waters as designated in 314 CMR 4.00, Special Resource Waters as designated in 314 CMR 4.00, recharge areas for public water supplies as defined in 310 CMR 22.02 (Zone I, Zone II and Interim Wellhead Protection Areas for groundwater sources and Zone A's for surface water sources), and bathing beaches as defined in 105 CMR 445.000.

ENVIRONMENTALLY SENSITIVE SITE DESIGN: Design that incorporates low impact development techniques to prevent the generation of stormwater and non-point source pollution by reducing impervious surfaces, disconnecting stormwater sheet flow paths and treating stormwater at its source, maximizing open space, minimizing disturbance, protecting natural features and processes, and/or enhancing wildlife habitat, as defined in 310 CMR 10.00.

EROSION CONTROL: The prevention or reduction of the movement of soil particles or rock fragments due to natural or artificial forces including wind, stormwater runoff, and vehicular traffic.

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.

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

IMPAIRED WATERS: 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.

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 or on the Massachusetts Prohibited Plant List.

LOW IMPACT DEVELOPMENT: 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 re-creating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treats stormwater as a resource rather than a waste product.

MASSACHUSETTS STORMWATER HANDBOOK (STORMWATER HANDBOOK): The Stormwater Handbook, 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.

PRE-DEVELOPMENT: The conditions that exist at the time that plans for the land development are submitted to the Stormwater Agency. 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. 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.

QUALIFIED PERSON: A person knowledgeable in the principles and practices of erosion and sediment control and pollution prevention, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of these Regulations.

RECHARGE VOLUME: The stormwater volume that shall be captured and infiltrated into the underlying soils to replenish groundwater and reduce runoff.

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 land being altered, or a designated planning area in which the land development project is located.

SMALL MS4 GENERAL PERMIT: The United States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NDPES) General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) in Massachusetts, dated April 2016, effective July 1, 2018, as amended.

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

TOTAL MAXIMUM DAILY LOAD (TMDL): A total maximum daily load (TMDL) is the greatest amount of a pollutant that a water body can accept and still meet water quality standards for protecting public health and maintaining the designated beneficial uses of those waters for drinking, swimming, recreation, and fishing. A TMDL specifies how much of a particular 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_v): The volume of runoff that must achieve a specified level of treatment (e.g., 80% removal of total suspended solids – TSS) through the use of a Stormwater Best Management Practice (or series of practices).

4.0 AUTHORITY

A) The Stormwater Management Regulations contained herein have been adopted by the Bedford Select Board in accordance with the Town of Bedford Stormwater Management Bylaw. Bedford General Bylaws Article 55.

B) Nothing in these Stormwater Management Regulations is intended to interfere with, abrogate, or annul any other statute, bylaw, rule or regulation, statute, or other provision of law, including without limitation the requirements of the Town of Bedford Zoning Bylaws, Rules and Regulations Governing the Subdivision of Land, Wetlands Protection Bylaw, and Board of Health regulations .

C) These Stormwater Management Regulations, including fees, may be periodically amended by the Bedford Select Board in accordance with the procedures outlined in Section 55.7 of the Town of Bedford Stormwater Management Bylaw.

E) A copy of the written decision of revised Regulations shall be filed with the Town Clerk within ten (10) business days after final action by the Stormwater Authority is taken.

5.0 ADMINISTRATION

A) **Stormwater Authority**. The Bedford Select Board are designated as the Stormwater Authority under the Stormwater Management Bylaw.

B) **Stormwater Agency**. The Bedford Department of Public Works, its employees, or designated agents are designated as the Stormwater Agency.

6.0 APPLICABILITY

A) These Stormwater Management Regulations apply to all activities in accordance with the Scope and Applicability of Section 55.6 of the Stormwater Management Bylaw as described in this section.

B) If a portion of a project or activity meets the Scope and Applicability of Section 55.6.A of the Stormwater Management Bylaw and is within the specific jurisdiction of the Planning Board or the Zoning Board of Appeals, then the Stormwater Agency will remain responsible for facilitating review and approval of the Stormwater Permit. The specific application submission requirements, public notices, and fee requirements of these Boards shall remain in effect in addition to the requirements of the Stormwater Management Bylaw. The Stormwater Agency will review the Stormwater Permit Application concurrently with the review of other local permit applications by the Planning Board or the Zoning Board of Appeals. No site altering activity may commence without a Stormwater Permit from the Stormwater Agency.

7.0 PERMIT PROCEDURES AND REQUIREMENTS

A) Projects requiring a Stormwater Permit shall be required to submit the materials as specified in this Section and are required to meet the Performance Standards as specified in Section 8.0 of these Regulations.

B) Filing Application

1. The applicant shall file with the Stormwater Agency, two full-size hard copies and one electronic copy of a completed application package for a Stormwater Permit. . The Stormwater Permit application package shall include:

   a) A completed Application Form with original signatures of all applicants and site owners (if different);

   b) A completed Stormwater Management Plan, including a Stormwater Report and Site Plans, prepared in accordance with the Massachusetts Stormwater Handbook and these Regulations;

   c) Payment of the application fee. In addition, an applicant may be required to pay outside consultant review fees in accordance with M.G.L. c. 44 § 53G;

   d) Stormwater Pollution Prevention Plan (SWPPP), if required by EPA;

   e) List of requested waivers, if applicable. Waiver requests shall be accompanied by an explanation or documentation and as described in these Regulations; and

   f) Erosion and Sedimentation Control Plan.

C) Fees

1. Initial Application Fee. A non-refundable Application Fee of one thousand dollars ($1,000) shall be due and payable to the Town of Bedford at the time an application is filed. These fees are in addition to any other local or state fees that may be charged under any other law, regulation, or local Bylaw. Municipal projects shall be exempt from Application Fees associated with a Stormwater Permit.

2. Consultant Fees

   a) Purpose. As provided by M.G.L. c. 44 § 53G**,** the Stormwater Agency may require an applicant to pay reasonable fees for the employment of outside consultants, engaged by the Stormwater Agency for specific expert services to assist in its review of applications for Stormwater Permits and oversight of permit compliance.

b) Special Account. Funds received pursuant to these rules shall be deposited with the municipal treasurer who shall establish a special account for this purpose. Expenditures from this special account may be made at the direction of the Stormwater Authority without further appropriation. Expenditures from this account shall be made only in connection with a specific project or projects for which a consultant fee has been collected from the applicant. Expenditures of accrued interest may also be made for these purposes.

c) Consultant Services. Specific consultant services may include but are not limited to technical or legal review of the permit application and associated information, on-site monitoring during construction, or other services related to the project deemed necessary by the Stormwater Agency. The consultant shall be chosen by, and report only to, the Stormwater Agency or its staff.

d) Notice. The Stormwater Agency shall give written notice to the applicant of the selection of an outside consultant. Such notice shall state the identity of the consultant, the amount of the fee to be charged to the applicant, and a request for payment of said fee in its entirety to the Town of Bedford. Such notice shall be deemed to have been given on the date it is mailed or delivered. No such costs or expenses shall be incurred by the applicant if the application or request is withdrawn within five days of the date notice is given.

e) Payment of Fees. An initial fee deposit must be received prior to the initiation of consulting services. The Stormwater Agency may request additional consultant fees if necessary review requires a larger expenditure than originally anticipated or new information requires additional consultant services. Failure by the applicant to pay the consultant fee specified by the Stormwater Agency within ten (10) business days of the request for payment, or refusal of payment, shall be cause for the Stormwater Agency to deny the application based on lack of sufficient information to evaluate whether the project meets applicable performance standards.

f) Appeals. The applicant may appeal the selection of the outside consultant to the Select Board, who may only disqualify the outside consultant selected on the grounds that the consultant has a conflict of interest or does not possess the minimum required qualifications. The minimum qualifications shall consist of either an educational degree or three or more years of practice in the field at issue or a related field. Such an appeal must be in writing and received by the Select Board and a copy received by the Stormwater Agency within ten (10) days of the date consultant fees were requested by the Stormwater Agency. The required time limits for action upon the application shall be extended by the duration of such appeal.

g) Return of Unspent Fees. When the Stormwater Agency's review of a permit application and oversight of the permitted project is complete, the treasurer shall return any balance in the special account attributable to that project to

the applicant or its designee within thirty (30) days. A final report of said account shall be made available to the applicant or its designee.

3. The Stormwater Agency reserves the right to waive or discount fees at its discretion.

D) Public Notice

Abutter notification and a public hearing may be required for other local permitting through the Conservation Commission, Planning Board, or Zoning Board of Appeals. At the discretion of the Stormwater Agency, the Town may require the applicant to notify affected property owners as directed by the Agency.

At the discretion of the Stormwater Agency, the Town may hold a public meeting for projects or activities associated with the Stormwater Permit.

E) Actions

The Stormwater Agency's action, rendered in writing, shall consist of either:

1. Approval of the Stormwater 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 Town of Bedford Stormwater Management Bylaw and these Regulations;

2. Approval of the Stormwater Permit Application subject to any conditions, modifications or restrictions required by the Stormwater Agency 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 Town of Bedford Stormwater Management Bylaw and these Regulations; or

3. Disapproval of the Stormwater Permit Application based upon a determination that the proposed plan, as submitted, does not adequately protect water resources of the community and/or is not in compliance with the requirements as set forth in the Town of Bedford Stormwater Management Bylaw or these Regulations, or the application is deemed incomplete. Such a disapproval may be without prejudice.

Failure of the Stormwater Agency to take final action upon a completed Application within twenty (20) business days of receipt shall be deemed to be approval of said Application. Upon certification by the Town Clerk that the allowed time has passed without Stormwater Agency action, the Stormwater Agency must issue a Stormwater Permit. The time limit to act may be extended by mutual agreement between the Stormwater Agency and the applicant, to be filed with the Town Clerk.

All approved Stormwater Permits will be recorded at the Middlesex South Registry of Deeds by the applicant, with proof of recording provided to the Stormwater Agency.

F) Appeals of Actions of the Stormwater Agency

Any appeals of a decision by the Stormwater Agency made under these Regulations shall be in accordance with M.G.L. c. 249, § 4.

G) Plan Changes

The permittee must notify the Stormwater Agency in writing five (5) days prior to any drainage change or alteration in the system authorized in a Stormwater Permit before any change or alteration is made. If the Stormwater Agency or its designee determines that the change or alteration is significant based on the Massachusetts Stormwater Management Standards or Performance Standards of these Regulations, the Stormwater Agency will notify the applicant in writing that an amended application must be filed. The Stormwater Agency will have ten (10) business days from the receipt of the amended application to complete its review. An amended application shall be subject to the same requirements as an original application.

H) Project Completion

No later than ninety (90) days after completion of the project, the permittee shall submit the following to the Stormwater Agency for approval:

1. a Certificate of Completion Application with the required signatures;

2. a hard copy and an electronic copy of as-built record drawings; and

3. an updated Operation & Maintenance Plan noting any changes and new responsible parties.

As-built record drawings shall include all structural stormwater BMPs, drainage structures, conveyances, outfalls, catch basins, post-construction topography, drainage catchments, curbing and headwalls and shall be stamped by a Registered Land Surveyor. As-built record drawings shall also include a calculation of Impervious Area (IA) in square feet (ft^2) for pre- and post-development conditions. The as-built record drawings shall be electronically submitted in digital CADD Format, DXF (drawing exchange format), and a copy of the file in Portable Document Format (PDF). A Registered Professional Engineer shall certify in writing conformance with the plan and/or note any deviations from approved Permit.

I) Permit Expiration/Extension

An approved Stormwater Permit is valid for three (3) years from the date of issuance. If work has not been completed within three (3) years, the applicant may request in writing to the Stormwater Agency, a one-time extension of up to one (1) year. This request shall be submitted twenty (20) business days prior to expiration of the approved Stormwater Permit. The Stormwater Agency may re-evaluate the originally approved Stormwater Permit application to determine whether the plan still satisfies applicable

state and local requirements and to verify that all design factors are still valid. If the Stormwater Agency finds the previously filed plan to be insufficient, a modified plan shall be submitted and approved prior to issuance of the extension.

J) Stormwater Management Plan Contents

1. The application for a Stormwater Permit shall include the submittal of a Stormwater Management Plan to the Stormwater Agency prepared in accordance with the criteria established in these Regulations, and the Massachusetts Stormwater Handbook, where applicable. The Stormwater Management Plan shall include the *Massachusetts Department of Environmental Protection Checklist for Stormwater Report* including the required Registered Professional Engineer's Certification and document compliance with each of the Stormwater Management Standards as provided in the Handbook. For any calculations using impervious area cover, in addition to the Bylaw definition, the impervious area shall also include pools and densely compacted gravel or stone dust surfaces. The Stormwater Management Plan shall remain on file with the Stormwater Agency for a period of five (5) years following completion.

2. The Stormwater Management Plan shall fully describe the project in narrative, site plans/maps, and calculations and shall include the following at a minimum:

   a) **Contact Information**. The name, address, e-mail 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) **Stormwater Report**. The Stormwater Report shall include items listed below under Project Narrative, as well as the 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, the Stormwater Management Bylaw of the Town of Bedford, and these Regulations.

   c) **Project Narrative**, describing the following:

      i. A brief description of the project including existing and proposed land uses and conditions at the site and abutting properties, zoning, and a list of other required local, State, and Federal permits.

      ii. 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 and their associated buffers, aquifer protection zones (as shown on the Town's map entitled "Hydrogeologic Zones for Bedford Water Supply

Wells"), Priority Habitat of Rare or Endangered Species (as shown on the latest map by Natural Heritage), earthwork within four (4) feet of seasonal high groundwater elevations, and other sensitive environmental areas;

(2) 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;

(3) Proposed Stormwater Best Management Practices;

(4) Methods to address impaired waters. Applicants shall describe how the proposed LID site planning and design strategies, stormwater best management practices, and operation and maintenance practices will mitigate pollutants of concern affecting downstream receiving waters as required by these Regulations. The project narrative must identify the watershed basin that the project is located within and the immediate down gradient waterbody(s) that stormwater runoff from the project site discharges to, and State and Federal watershed and waterbody assessments and TMDL and/or impairment status of the watershed and waterbody(s) included on the most recent Massachusetts Integrated List of Waters.

iii. 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. Explain methodologies and assumptions; and

iv. Summary of how project meets stormwater management criteria.

d) **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 and buffer zones in accordance with the Town of Bedford Wetlands Protection Regulations.

iii. Stormwater management design plan(s) and details showing:

(1) Location, size, material, invert data and details for all existing and

proposed stormwater management system components including structures, pipes, swales, detention, retention, infiltration systems and any other LID techniques or BMPs, and location and details for erosion and sediment control measures;

(2) Profiles of drainage trunk lines; and

(3) Location(s) of existing easements, existing easements to be retained, 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 at a maximum of 2-foot intervals;

(3) Design 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;

(6) Location of any test pits. Test pits should coincide with the locations of any proposed stormwater practices, including non-structural practices and foundation or perimeter drains;

(7) Stormwater flow paths, including municipal storm drain system flows; and

(8) Flow path for time of concentration (Tc) calculation based on existing and proposed grades.

v. Landscape plan showing proposed plantings, including type and quantity, conforming to the current Bedford Planning Board Rules & Regulations Governing the Subdivision of Land.

e) **Calculations**. Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms shall be as specified in Performance Standards or in the Massachusetts Stormwater Handbook; the stricter requirement shall apply. Stormwater calculations performed using HydroCAD is preferred (calculations performed using other modeling programs may require third party review as determined by the Stormwater Agency). Such calculations shall include:

i. Hydrologic and hydraulic design calculations to determine pre- and post-development conditions for the design storms specified in these Regulations and the MA Stormwater Handbook;

ii. Groundwater recharge calculations and BMP drawdown (time to empty);

iii. Water quality calculations including (if applicable):

(1) Total Suspended Solids (TSS) and Total Phosphorus removal rates for each treatment train calculated consistent with federally or State approved BMP design guidance or performance standards;

(2) NRCS soil types and hydrologic group;

(3) Test pit data at the proposed BMP locations (not more than 3 years old) noting an estimated seasonal high groundwater elevation by a Massachusetts Soil Evaluator;

(4) Required recharge volume (refer to Performance Standards) for additional requirements;

(5) Required water quality volume (refer to Performance Standards) for additional requirements;

(6) Specific BMPs utilized in critical areas;

(7) Specific BMPs utilized for land uses of higher potential pollutant loads (see Massachusetts Stormwater Management Standards); and

(8) Supplemental calculations for sizing LID and BMPs and addressing impairments to water bodies according to these Regulations.

iv. Hydraulic calculations to size drainage pipes, swales and culverts.

f) Any other information required by the Stormwater Agency.

K) Operation & Maintenance Plan

1. A stand-alone Operation and Maintenance Plan is required at the time of application for all projects. The Operation and Maintenance Plan shall be designed to ensure compliance with the Massachusetts Stormwater Management Handbook, the Stormwater Permit, and these regulations for the life of the system. The Operation and Maintenance Plan shall be submitted in digital format. The Plan shall remain on file with the Stormwater Agency 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 Operation & Maintenance Plan shall include:

   a) Signature(s) of the owner(s) and the party or parties responsible for operation and maintenance of the stormwater management system as specified in the Stormwater Management Plan and party or parties responsible for annual inspections as specified under these Regulations.

   b) As-built record drawings showing 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.

   c) The Operation & Maintenance Plan, as-built record drawings showing such systems and facilities to be privately maintained including associated easements, and the Certificate of Completion shall be recorded, by the Owner, with the Middlesex South Registry of Deeds. Evidence of recording shall be presented to the Stormwater Agency prior to project completion.

3. Changes to Operation and Maintenance Plans

   a) The owner(s) of record of the stormwater management system must notify the Stormwater Agency of any changes in ownership, assignment of Operation and Maintenance responsibilities, or assignment of financial responsibility within thirty (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 Stormwater Agency signed by the new owner or any new responsible person.

   b) The maintenance schedule in the Operation and Maintenance Plan and associated maintenance agreement may be amended to achieve the purposes of the Permit by mutual agreement of the Stormwater Agency 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.

8.0 PERFORMANCE STANDARDS

A) To comply with the Performance Standards of the Bedford Stormwater Management Bylaw, the applicant must meet all applicable requirements of these Regulations and the current Massachusetts standards as described in the Stormwater Handbook, using appropriate Stormwater Best Management Practices. If the requirements of the Bedford Stormwater Management Bylaw and the Stormwater Handbook conflict, the more stringent provision shall control. Additional requirements for complying with Stormwater Management Standards are noted below.

B) Additional Design Criteria

1. Low Impact Development (LID)

   LID site planning and design strategies must be utilized to the maximum extent feasible. Projects must use Environmentally Sensitive Site Design and LID Techniques where adequate soil, groundwater, and topographic conditions allow. These may include but are not limited to reduction in impervious surfaces, disconnection of impervious surfaces, bioretention, and infiltration systems.

2. 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.

3. Performance Standards for All Land Disturbance Activities

   a) Stormwater management systems 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 post-construction impervious surface area on the site. Average annual pollutant removal requirements shall be achieved through retaining the volume of runoff equivalent to, or greater than, one (1.0) inch multiplied by the total post-construction impervious surface area.

   b) 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 8.B.3.a and may be exempt from certain Massachusetts Stormwater Standards.

4. Hydrologic Basis for Design

   For stormwater management system 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 Registered Professional Engineer licensed to practice in this field. Standard hydrological calculation procedures follow Technical Release Number 55 (TR55) and/or TR20 (as amended), with pipe design flows calculated using the Rational Method for a minimum twenty-five (25) year design storm.

b) The required recharge volume for all new roof area shall be equal to one (1.0) inch of runoff times the roof area for the project regardless of the size of the individual lot alteration. The required recharge volume for the remaining impervious area shall be designed to retain a minimum volume of runoff equivalent to one (1.0) inch multiplied by the total post-construction impervious area, unless the Stormwater Handbook requires greater than one (1.0) inch of volume based on the underlying hydrologic soil group, then the greater volume requirement shall be used in the calculations.

c) Infiltration systems shall be designed using the Stormwater Handbook and test pit data to confirm a minimum of two (2) feet of separation to estimated seasonal high groundwater. Filter fabric is required on the top and sides of underground infiltration systems to provide a barrier around the clean stone.

d) The rainfall amounts for modeling storm events 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 Stormwater Handbook, whichever is more stringent.

e) The required water quality volume shall, at a minimum, be equal to one (1.0) inch of runoff times the total impervious area for the project, unless the Stormwater Handbook requires greater than one (1.0) inch of volume based on the underlying hydrologic soil group, then the greater volume requirement shall be used in the calculations. However, impervious area from residential rooftop runoff shall not be included in the calculation.

f) 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) 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.

h) The minimum time of concentration (Tc) to be used is five (5) minutes.

i) The length of sheet flow used in time of concentration calculations is limited to no more than one hundred (100) linear feet.

j) Runoff curve number calculations for all pervious land cover in pre-development conditions shall be considered in good condition.

k) Water velocities in pipes shall be between two (2) and ten (10) feet per second. Water velocities on paved surfaces shall be equal to or less than five (5) feet per

second; and in vegetated areas, shall be equal to or less than four (4) feet per second.

5. 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 Best Management Practices at the discretion of the Stormwater Agency.

The Stormwater Agency has also designated the following Sensitive Areas with specific design criteria:

a) 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 with or without a final Total Maximum Daily Load (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 in-stream exceedance of applicable water quality standards. Pollutants of concern refer to the pollutant identified as causing the impairment. The Massachusetts Department of Environmental Protection maintains an Integrated List of Waters and related reports on their website.

b) Stormwater management systems designed on commercial and industrial land use area draining to waterbodies impaired by solids, turbidity, or sedimentation/siltation shall incorporate designs that allow for shutdown and containment where appropriate to isolate the system in the event of an emergency spill or other unexpected event.

c) New development and redevelopment stormwater management BMPs that discharge directly to or within watershed areas for waterbodies impaired by total phosphorus shall be optimized for phosphorus removal. The applicant shall document the BMP type, total area treated by the BMP, the design storage volume of the BMP, and the estimated phosphorus removed in mass per year consistent with Attachment 3 to Appendix F of the Small MS4 General Permit.

9.0 EROSION & SEDIMENT CONTROL PERFORMANCE STANDARDS

A) Erosion and Sediment Control Design Criteria

The following erosion and sediment control performance standards must be met using current Stormwater Best Management Practices (BMPs), as defined in the Stormwater Handbook and these Regulations. In the event of conflict between the Stormwater Handbook and these Regulations, the stricter requirement shall apply.

1. Minimize total area of disturbance and minimize unnecessary clearing and grading from all construction sites. Clearing and grading shall only be performed within areas needed to build the project, including structures, utilities, roads, recreational amenities, post-construction stormwater management facilities, and related infrastructure.

2. Prior to commencing any land disturbance activities, the permittee shall physically mark limits of the allowable disturbance on the site with tape, signs, or orange construction fence, so that workers can see the areas to be protected. The physical markers shall be inspected daily by the permittee.

3. Erosion and Sediment Control measures shall be installed and maintained in accordance with the manufacturer's specifications and good engineering practices to ensure they perform as intended.

4. Stormwater Runoff velocities shall be minimized to the greatest extent practicable.

5. In addition to perimeter sediment controls, when deemed necessary by the Stormwater Agency, sediment trapping and settling devices shall be employed to trap and/or retain suspended sediments and allow time for them to settle out, prior to reaching the perimeter.

6. Stormwater management facilities to be used after construction shall not be used as BMPs during construction unless otherwise approved by the Stormwater Agency. Many technologies are not designed to handle the high concentrations of sediments typically found in construction runoff, and thus must be protected from construction related sediment loadings.

7. All sediment shall be removed once the volume reaches ¼ to ½ the capacity of the control, in accordance with manufacturer's specifications and good engineering practice.

8. On and off-site material storage areas, including construction and waste materials, shall be properly protected and managed.

9. Soil stockpiles must be stabilized or covered at the end of each workday. Stockpile side slopes shall not be greater than 2:1. All stockpiles shall be surrounded by sediment controls.

10. Projects must 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 and debris control.

11. Interim and permanent stabilization measures shall be instituted on a disturbed area immediately after construction activity has temporarily or permanently ceased on that portion of the site. Two methods are available for stabilizing disturbed areas: mechanical (or structural) methods and vegetative methods. In some cases, both are combined in order to control erosion.

12. All erosion controls must remain in place until permanent stabilization is established.

13. Dust control shall be used when necessary and follow good engineering practices.

14. During construction, all disturbed areas shall be enclosed with compost filter socks with a diameter of twelve (12) inches or greater, in the down gradient direction or in any direction to which erosion can occur.

15. During construction, any site entrance from a paved, public way shall install a temporary construction entrance, a minimum of fifty (50) feet in length (or thirty (30) feet for single family residential lot) and twenty (20) feet wide with a six inch depth of 3-inch minus clean stone, unless otherwise approved by the Stormwater Agency.

16. During construction, catch basins or other drainage system inlet structures down gradient of the construction entrance shall be protected with silt sacks or other inlet protection device.

17. If the work causes any soil to track onto public or private ways, that soil shall be cleaned up by the permittee or other responsible party within twenty-four (24) hours or before any predicted rain event, whichever is sooner.

18. If the work causes the discharge of soil to Town drainage structures, all affected downstream structures and pipes shall be cleaned by the permittee or other responsible party within three (3) days.

19. Following completion of construction and site stabilization all erosion control measures shall be removed and the stormwater management system cleaned of any sediment.

B) If a project requires a SWPPP per the NPDES General Permit for Stormwater Discharges From Construction Activities (as amended), then the applicant is required to submit a complete copy of the SWPPP and the signed Notice of Intent in addition to the Erosion and Sediment Control Plan described in this section. See also Section 13.C.

10.0 WAIVERS

A) The Stormwater Agency may in its discretion and after due consideration, decide to waive and exempt strict compliance with any requirement of the Stormwater Management Bylaw and these Regulations in accordance with Section 55.8 of the Stormwater Management Bylaw.

B) Any applicant shall submit a written request to be granted such a waiver. Such a request shall be accompanied by an explanation or documentation supporting the waiver request and demonstrating that such waiver from the Town of Bedford Stormwater Management Bylaw and Regulations remains consistent with the Purpose and requirements of said Bylaw and Regulations.

C) The Stormwater Agency shall act on all waiver requests within twenty (20) business days following receipt, and the Stormwater Agency shall provide written findings to the owner/applicant.

D) Waivers described herein shall not constitute an exemption from any applicable Federal, State, or other Town of Bedford permitting requirements.

11.0 ENFORCEMENT

A) Enforcement powers of the Stormwater Agency or its authorized agent are granted in the Stormwater Management Bylaw.

B) Notice of Violation

1. Whenever the Stormwater Agency finds that a person has failed to meet a requirement of the Stormwater Management Bylaw or these Regulations, the Stormwater Agency or its designee may order compliance by issuing a written Notice of Violation to the responsible person. Such notice may set forth a deadline by which action must be taken and may include the following requirements without limitation:

    a) Suspend or revoke approval of any Stormwater Permit;

    b) Cease and desist from all or a portion of construction or land disturbing activity until there is compliance with said Bylaw and Regulations and the Stormwater Permit;

    c) Repair, maintain, or replace the stormwater management system or portions thereof in accordance with the Operation and Maintenance Plan;

    d) Eliminate an illicit connection or discharge;

    e) Perform monitoring, analyses, and reporting as directed by the Stormwater Agency; and

    f) Fix adverse impacts resulting directly or indirectly from malfunction of the stormwater management system.

    The suspension or revocation of the Stormwater Permit shall not relieve the applicant of his/her obligation thereunder except at the discretion of the Stormwater Agency.

2. If at any time, the Stormwater Agency finds the system to be inadequate by virtue of physical evidence of operational failure, even though it was built in accordance with the Stormwater Permit, it shall be corrected by the applicant before the

Certificate of Completion is issued. If the applicant fails to correct the problem the Stormwater Agency may use the surety to complete the work.

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/or these Regulations shall forthwith comply with any such Notice of Violation, and restore such real estate to its condition prior to such violation, as the Stormwater Agency deems necessary to remedy such violation.

D) Fines for violation are as described in the Stormwater Management Bylaw.

12.0 SURETY

Unless already required by another Town agency, the Stormwater Agency may require a proper surety to ensure compliance with the conditions of a Stormwater Permit. Prior to issuance of a Stormwater Permit, the applicant shall furnish said surety as a Performance Bond or other form acceptable to the Town. The surety shall be sufficient to cover the cost of the performance of all labor, materials and equipment in connection with implementation of the stormwater system, including the control of erosion and sedimentation and post-construction stormwater management and the preparation of as-built drawings. The Stormwater Agency may increase the surety to reflect the Stormwater Agency's cost to complete the permitted activities, the administrative cost of securing the funds, and completion and inspection of the work in the event of default, plus a contingency fee not to exceed twenty (20%) percent. The Stormwater Agency may use the security for its stated purpose in the event that the Permittee does not complete any permitted activity in a manner satisfactory to the Stormwater Agency within the time prescribed by the Stormwater Permit, or sooner, should the conditions of the Stormwater Permit be violated.

If the project is phased, the Stormwater Agency may release part of the bond as each phase is completed in compliance with the Plan, but a minimum of fifteen percent (15%) of the original amount will be held until the Stormwater Agency has issued a Certificate of Completion and received proof of recording at the Middlesex South Registry of Deeds. Upon receipt of proof of recording of a Certificate of Completion, the Stormwater Agency shall release the surety.

13.0 CONSTRUCTION INSPECTIONS

A) Notice of Construction Commencement. The applicant must notify the Stormwater Agency five (5) business days prior to the commencement of construction. In addition, the applicant must notify the Stormwater Agency two (2) business days in advance of construction of any components of the stormwater management system.

B) At the discretion of the Stormwater Agency, the Agency or its designee may inspect the project site at the following stages:

1. Initial Site Inspection: prior to approval of any Permit;

2. Erosion Control Inspection: prior to earth-disturbing activities but after installation of all approved erosion and sedimentation controls.

3. Stormwater Management System Inspection: prior to backfilling of any portion of a stormwater management system, including underground drainage or stormwater conveyance structures.

4. Periodic Inspections: throughout land-disturbing activities, until as-built drawings are received.

5. Final Inspection: to confirm effectiveness in an actual storm event that creates runoff. If the inspector finds the system is not functioning properly, the applicant shall repair or modify the system to be in conformance with these Regulations.

C) EPA Construction General Permit

1. For projects covered by the EPA NPDES General Permit for Stormwater Discharges from Construction Activities (Construction General Permit), the permittee is required to submit a copy of the EPA NPDES General Permit for Stormwater Discharges from Construction Activities, along with copies of any and all other permits for the activities related to the project and to conduct inspections in accordance with requirements of the Construction General Permit.

2. The Stormwater Agency may request submission of any inspection reports required under the SWPPP.

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

D) Additional Inspections by Applicant

1. The applicant's Professional Engineer shall inspect the installation of each stormwater control for conformance with approved design specifications.

2. The applicant's Professional Engineer shall conduct a final inspection to ensure all erosion controls have been removed, stabilization is complete, and final conditions adhere to approved plans.

14.0 CERTIFICATE OF COMPLETION

A) The applicant is responsible for certifying that the completed project accords with the approved plans and specifications as described in these Regulations.

B) Upon review and approval of the Certificate of Completion Application, the as-built record drawings, and the updated Operation & Maintenance Plan, the Stormwater Agency will issue a Certificate of Completion to the applicant.

15.0 ANNUAL INSPECTION AND MAINTENANCE

A) Maintenance Responsibility

1. The property owner or its designee shall maintain in good condition and promptly repair and restore all components of the stormwater management system in accordance with approved plans.

B) Annual Maintenance Inspections

1. Stormwater management systems must undergo annual inspections as outlined below to document maintenance, repair, replacement and disposal needs and ensure compliance with the requirements of the Operation & Maintenance Plan, these Regulations, and the Massachusetts Stormwater Handbook.

2. At a minimum, post-construction inspections shall occur once during the first year of operation and annually thereafter. Reports shall be submitted electronically no later than January 31 for the previous calendar year. Some BMPs may require more frequent inspection, as specified in the Operation & Maintenance Plan.

    a) Proof of stormwater system maintenance shall be electronically submitted annually to the Stormwater Agency and shall note any repairs completed within the last year and any future repairs that need to be addressed, including a schedule for completion.

C) Right-of-Entry for Inspection

The terms of the Operation & Maintenance Plan as specified in these Regulations shall provide for the Stormwater Agency or its designee to enter the property at reasonable times and in a reasonable manner for the purpose of inspection.

D) Failure to Maintain

1. If any deficiencies are discovered from an inspection of a stormwater management system, the person responsible for carrying out the maintenance plan shall be notified by the Agency and will have thirty (30) days to correct the deficiencies at the owner's expense. The Stormwater Agency shall then conduct a subsequent inspection to ensure completion of repairs.

2. If an owner fails or refuses to meet the requirements of the Operation & Maintenance Plan, the Stormwater Agency, after thirty (30) days written notice (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24 hour notice shall be sufficient), may address a violation of the maintenance requirements by performing the necessary work. The Stormwater Agency may assess the owner(s) of the site for the cost of repair work and further may impose a lien on the property to secure such assessment. The assessment of costs under this provision shall be in addition to the enforcement

powers of the Stormwater Agency under said Bylaw and these Regulations.

16.0 SEVERABILITY

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