

Lexington Code, Chapter 181, Article VI
STORMWATER MANAGEMENT REGULATIONS

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Chapter 181, Article VI
STORMWATER MANAGEMENT REGULATIONS
Adopted September 26, 2016 by the Board of Selectmen

§ 181-69. General Provisions

A. Purpose & Authority

The purpose of these Regulations is to protect, maintain and enhance the public safety, environment, health, and general welfare by establishing minimum requirements and procedures to control the adverse effects of soil erosion and Sedimentation, construction Site Runoff, increased Post-Development Stormwater Runoff, decreased Groundwater Recharge, and nonpoint source pollution associated with new development, redevelopment or other land alterations.

These Regulations are not intended to interfere with, abrogate or annul any other bylaw, rule or regulation, statute, or other provision of law, including, without limitation, Chapter 114 of the Code of the Town of Lexington (the “Stormwater Management Bylaw”). The requirements of this chapter should be considered minimum requirements, and where any provision of this chapter imposes restrictions different from those imposed by any other bylaw, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall take precedence.

B. Adoption & Amendment

The following Regulations are hereby adopted by the Board of Selectmen, acting as the Stormwater Authority, as provided in the Stormwater Management Bylaw.

The Stormwater Agency shall enforce this chapter and resulting regulations, orders, violation notices, and enforcement orders, and may pursue all civil and criminal remedies for such violations and waive strict compliance with any requirement of these Regulations.

C. Effective Date

These Regulations shall take effect on January 1, 2017. A copy of these regulations shall be filed with the office of the Town Clerk, with appropriate endorsements, including (1) the date of adoption, the (2) date filed with the Town Clerk and (3) any amendments.

§ 181-70. Definitions

The definitions contained in Appendix A of these Regulations apply to the issuance of a Stormwater Management Permit established by the Stormwater Management Bylaw and implemented through these Stormwater Management Regulations. Terms not defined in these Regulations or in the Stormwater Management Bylaw shall be construed according to their customary and usual meaning unless the context indicates a special or technical meaning.

§ 181-71. Applicability & Project Classification

A. Applicability

These Regulations apply to all activities governed by the Stormwater Management Bylaw as described below:

- (1) Any activity that results in a Land Disturbance of greater than one acre of land, or any activity that disturbs less than one acre of land if that project is part of a larger Common Plan of Development that will disturb a total of more than one acre of land; or
- (2) A new dwelling on a vacant lot, a new dwelling replacing an existing dwelling, or the reconstruction of an existing dwelling that is demolished to the extent of 50% or more of its replacement cost, as determined by the Building Commissioner or designee; or
- (3) Any development project that:
 - (a) Requires a special permit or a special permit with Site plan review; or
 - (b) Requires approval of a definitive plan under the Subdivision Control Law.

Stormwater discharges that are wholly subject to jurisdiction under the Wetlands Protection Act or Chapter 130 of the Code of the Town of Lexington, the Wetland Protection Bylaw, and demonstrate compliance with the Massachusetts Storm Water Management Standards as most recently revised and updated in accordance with revisions to the wetlands regulations, 310 CMR 10.00, and as reflected in an order of conditions or in a determination of applicability issued by the Conservation Commission are exempt from compliance with the Stormwater Management Bylaw and the remainder of these Regulations.

B. Project Classification

Activities subject to these Regulations are referred to as Projects, Projects fall into one of two classifications; Above Threshold Projects and Below Threshold Projects.

- (1) Above Threshold Project Classification: Any activity governed by the Stormwater Management Bylaw that (1) results in a Land Disturbance greater than or equal to one acre, or (2) that is part of a larger Common Plan of Development that eventually will disturb more than one acre of land is considered an Above-Threshold Project. Activities governed by the Stormwater Management Bylaw that are Above-Threshold Projects shall be consistent with these regulations in their entirety.
- (2) Below Threshold Project Classification: Any activity governed by the Stormwater Management Bylaw, but which (1) results in a Land Disturbance less than one acre, and (2) that is not part of a larger Common Plan of Development that eventually will disturb more than one acre of land is a Below-Threshold Project. Projects governed by the Stormwater Management Bylaw that are Below-Threshold Projects shall be consistent with

performance standards identified in Section 181-74. Below-Threshold Project Applicants shall only be required to submit the materials described in Section 181-72 B (2), and shall not be required to comply with the remaining Administrative Procedures and Requirements in Section 181-72.

§ 181-72. Administrative Procedures and Requirements

A. Permit Required

- (1) Projects that meet the applicability criteria of the Lexington Stormwater Management Bylaw shall require a Stormwater Management Permit in accordance with these Regulations.
- (2) No Land Disturbance activity shall occur until a permit has been issued hereunder and conditions of approval have been met.
- (3) No landowner or responsible party shall receive any building or otherland development permits required for Land Disturbance activities without first meeting the requirements of the Bylaw and these Regulations prior to commencing the proposed activity.

B. Stormwater Management Permit Application

An application for a Stormwater Management Permit shall include the materials specified in this section. Additional copies may be requested by the Stormwater Agency.

- (1) For Above-Threshold Projects, as defined in Appendix A, the Applicant shall file with the Stormwater Agency, three (3) copies of a completed application package for a Stormwater Management Permit. Each copy of the completed Stormwater Management Permit Application package shall include:
 - (a) An Application Form with original signatures of all property owners as well as the Applicant signature if the Applicant is not a property owner;
 - (b) Projections of dates of commencement and completion of construction activities;
 - (c) Payment of the application and other applicable fees;
 - (d) A list of Abutters certified by the Assessor's Office, to be used by the Applicant to provide notice;
 - (e) A list of requested waivers, if applicable. Such a request shall be accompanied by an explanation or documentation and as described in Section 181-79;
 - (f) A Stormwater Management Plan;
 - (g) An Erosion and Sediment Control Plan;

- (h) An Operation and Maintenance (O&M) Plan;
- (i) Above-Threshold Projects subject to the National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Construction Activities (“Construction General Permit”) shall also submit the following with their application unless otherwise waived under 40 CFR § 122.26(b)(15)(i):

[1] A Copy of the Notice of Intent to comply with the Construction General Permit;
and

[2] A Copy of receipt of EPA Authorization letter and tracking number.

- (j) A surety bond, if required, consistent with Section 181-76 of these Regulations.

(2) For Below-Threshold Projects, Applicants shall submit an Erosion & Sediment Control Plan, consistent with performance standards identified in Section 181-74, directly to the Town of Lexington Building Department during application for Residential or Commercial Building Permits. Successful application of and acquisition of a Town of Lexington Building Permit will constitute compliance of Below-Threshold Project Applicants with these Regulations.

C. Entry on Land

By filing an application for a Stormwater Management Permit, the property owner grants the Stormwater Agency and its agents, officers, and employees permission to enter the Site to verify the information in the application and to inspect for compliance after issuance of the Stormwater Management Permit, including the making of such examinations, surveys, or sampling as the Stormwater Agency deems necessary for such inspections, subject to the constitutions and laws of the United States and the Commonwealth.

D. Fees

For an Above-Threshold Project, an Applicant shall pay with each submission of an application an *Application Fee* to cover expenses connected with the administration of and review of the Stormwater Management Permit and a *Technical Review and Inspection Fee* sufficient to cover professional services. The Stormwater Agency is authorized to retain a Registered Professional Engineer or other professional consultant to advise the Agency on any or all aspects of these applications. Applicants must pay Application and applicable Technical Review and Inspection fees before the review process may begin. Fees shall be calculated as follows:

(1) Application Fees for Above Threshold Projects:

- (a) All projects subject to the Stormwater Management Bylaw: A non-refundable fee of \$0.01 per square foot of the project disturbed area to be permitted, up to a maximum of \$1,500.00.

(b) Permit Extensions/Modifications: A non-refundable fee of \$100.00.

(2) Technical Review and Inspection Fees for Above Threshold Projects:

(a) In addition to the above fees, the Stormwater Agency is authorized to require an Applicant to pay a fee for the reasonable costs and expenses for specific engineering and other consultant services deemed necessary by the Stormwater Agency. Payment of such fees may be required at any point in the review and inspection process prior to final Certificate of Completion. The initial amount of this technical review fee shall be five thousand dollars (\$5,000.00). The final amount shall be determined by the Town Engineer. If the actual cost incurred by the Town for review of said application is less than the amount on deposit as specified above, the Stormwater Agency shall authorize that such excess amount be refunded to the Applicant concurrently with final action on said application

(b) Such fee shall be held in a revolving fund by the Stormwater Agency, to be used to engage independent consultants should the Stormwater Agency determine necessary, based on the characteristics or complexity of the issues raised by the application and/or construction. Such fee shall be governed and administered in accordance with G.L. c.44 § 53G.

(c) If prior to Certificate of Completion issuance, the Stormwater Agency finds that the initial deposit is not sufficient to cover actual costs incurred by the Town during the review of the application, the Applicant shall be required to submit forthwith such additional amount as is deemed required by the Stormwater Agency to cover such costs. The Stormwater Agency shall notify the Applicant of such additional amount in writing. Failure to submit such additional amount as required within fourteen (14) days of receipt of said notice shall be deemed reason to deny said application.

(d) The Stormwater Agency reserves the right to waive or discount its fees at its discretion.

E. Permit Application Review Procedures

The Stormwater Agency shall review all applications for a Stormwater Management Permit for completeness. If the Stormwater Agency determines that the application is not complete, the Agency will notify the Applicant in writing, within twenty-one (21) days of receipt of the application, what additional information is required. The permit application review procedures are as follows:

(1) Pre-Application Meeting (recommended for Above-Threshold Projects only)

Prior to submittal of an application, the Applicant may request a Pre-Application meeting. The Stormwater Agency shall establish the meeting date during the Town's business hours. The meeting shall be held at the Town's Department of Public Works. The meeting will assist the Applicant in submission of a complete Stormwater Management Permit application.

(1) Abutter Notification (required for Above-Threshold Projects only)

At the time of application submittal, the Applicant shall provide notice to all Abutters of the application's filing and invite comment to the Agency on said application for a period of seven (7) days. The Agency shall make the application available for inspection by the public during business hours at the Department of Public Works.

The Stormwater Agency may, in its discretion, waive this requirement if Abutters have been notified of the same project at other stages of project approval by other Town of Lexington boards or commissions.

(2) Final Action

The Stormwater Agency shall take final action within twenty-one (21) days of the receipt of a complete application unless such time is extended by agreement between the Applicant and the Stormwater Agency, per subsection 181-72(E)(4) below. The Stormwater Agency's final action, rendered in writing, shall be filed with the Department of Public Works and 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 Town of Lexington 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 Stormwater Agency which will ensure that the project will adequately protect the water resources of the Town of Lexington 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 the application is deemed incomplete.

(3) Mutual Extension of Time

The required time limits for final action may be extended by written agreement between the Applicant and the Stormwater Agency. A copy of such an agreement shall be filed with the Department of Public Works.

(4) Constructive Approval

Failure of the Stormwater Agency to take a final action for an application within twenty-one (21) days of receipt of a complete application 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 activity may proceed as proposed in the Application.

F. Changes to Approved Plans

The Permittee must notify the Stormwater Agency in writing of any significant change or alteration in the system authorized in a Stormwater Management Permit before any such change or alteration is made. If the Stormwater Agency determines within twenty-one (21) days that the change or alteration is significant different in nature or character, it shall require the Applicant to submit an amended application and obtain approval of the change from the Stormwater Agency prior to construction.

G. Project Completion

At final completion of all Above-Threshold Projects, the Permittee shall request a Certificate of Completion pursuant to the requirements of Section 181-77 of these Regulations.

H. Expiration of Stormwater Management Permit

A Stormwater Management Permit expires two (2) years after the date of issuance. If the project associated with an approved Stormwater Management Permit granted under the Stormwater Management Bylaw has not been substantially completed within two (2) years of permit issuance, a new permit, or a permit extension may be required by the Stormwater Agency.

§ 181-73. Stormwater Management Performance Standards

A. Minimum Performance Standards

Except as expressly provided, Runoff from all Above-Threshold Projects shall meet Standards 1 through 10 of the Massachusetts Department of Environmental Protection's Stormwater Management Standards and Handbook using current Best Management Practices (BMPS) and these Regulations. Where an inconsistency exists between the Massachusetts Stormwater Handbook and these Regulations, the stricter requirement shall apply.

B. Additional Design Criteria

(1) Landscape Design Performance Standards

Site plans and landscape plans for all proposed projects shall 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. Invasive species shall not be planted in the Town of Lexington.

(2) Hydrological Basis for Design

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

- (a) Evaluation and implementation of Low Impact Development (LID) practices is required to the maximum extent practicable. Guidance on these practices is provided in Appendix B and the Massachusetts Stormwater Handbook.
- (b) The condition and capacity of any existing infrastructure that will be connected to or from the proposed development shall be evaluated.
- (c) The 24-hour rainfall amounts shall be based on the Northeast Regional Climate Center “Atlas of Precipitation Extremes for the Northeastern United States and Southeastern Canada.” (rounded to the nearest one-tenth of an inch).
- (d) The minimum time of concentration for street drainage shall be five (5) minutes.
- (e) Water velocities in pipes and gutters shall be between two (2) and ten (10) feet per second, not more than five (5) feet per second on paved surfaces, and not more than four (4) feet per second in vegetated areas.
- (f) Impervious cover is measured from the Site plan and includes any material or structure on or above the ground that prevents water from infiltrating through the underlying soil (including compacted gravel).
- (g) Off-Site areas shall be assessed based on their “pre-developed condition” for computing the water quality volume (i.e., treatment of only on-Site areas is required). However, if an off-Site area drains to a proposed Stormwater Management Facility, flow from that area must be accounted for in the sizing of a specific Facility.
- (h) Off-Site areas draining to a proposed Facility should be modeled as "present condition" for peak-flow attenuation requirements.
- (i) The length of sheet flow used in time of concentration calculations is limited to no more than one-hundred (100) feet.
- (j) Detention time shall be computed as the time between the center of mass of the inflow hydrograph and the center of mass of the outflow hydrograph.
For purposes of choosing a Runoff Curve Number, all pervious lands in the Site shall be assumed prior to development to be in “good” hydrologic condition regardless of conditions existing at the time of computation.
- (k) 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 Common Plan of Development. Hydrologic parameters shall reflect the ultimate land development and shall be used in all engineering calculations.

- (l) Retain the volume of runoff equivalent to, or greater than, 1.0 inch multiplied by the total post-construction impervious surface area on the redeveloped site, including any directly connected impervious area draining onto the redeveloped site; AND/OR
- (m) Remove 90% of the average annual load of Total Suspended Solids generated from the impervious area on the site; and
- (n) Remove 60% of the average annual load of Total Phosphorus (TP) generated from the total area on the site.

(3) Discharges to Water Quality Impaired Waters

The Applicant must determine whether stormwater discharges from the proposed Site will contribute, either directly or indirectly, to the impairment of an impaired water body with or without approved total maximum daily load. The Massachusetts Integrated List of Waters is published every two years and shall be the reference for determination of water body impairment listings. Stormwater management facilities and non-structural stormwater BMPS shall be selected that will control the discharge of the pollutant(s) identified as causing the impairment.

§ 181-74. Erosion Control Performance Standards

A. Erosion and Sediment Control Design Criteria

The following erosion and sediment control performance standards must be met. Except as expressly provided, all Stormwater Management Permit projects shall meet Standards 8 of the Massachusetts Department of Environmental Protection's Stormwater Management Standards and Handbook using current Best Management Practices (BMPS) and these Regulations. Where an inconsistency exists between the Massachusetts 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 any Land Disturbance activities commencing on the Site, the Developer 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) Erosion and Sediment Control measures used shall be chosen based on the goal of minimizing Site disturbance from installation of such measures.

- (5) Stormwater Runoff velocities shall be minimized to the greatest extent practicable. Increases in Runoff velocities due to the removal of existing vegetative cover during development and the resulting increase in impermeable surface area after development must be taken into account when providing for Erosion Control.
- (6) Protect disturbed areas from stormwater Runoff. Best Management Practices (BMPS) can be utilized to prevent water from entering and running over the disturbed area. Diversions and other control practices to intercept Runoff from higher watershed areas, store or divert it away from vulnerable areas, and direct it toward stabilized outlets may be used.
- (7) Sediment trapping and settling devices shall be employed to trap and/or retain suspended sediments and allow time for them to settle out in cases where perimeter sediment controls (e.g., silt fence and hay bales) are deemed to be ineffective in trapping suspended sediments on-Site.
- (8) 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.
- (9) Sediment shall be removed once the volume reaches $\frac{1}{4}$ to $\frac{1}{2}$ the height of a perimeter sediment control system. Sediment shall be removed from silt fence prior to reaching the load-bearing capacity of the silt fence which may be lower than $\frac{1}{4}$ to $\frac{1}{2}$ the height.
- (10) Sediment from sediment traps or Sedimentation ponds shall be removed when design capacity has been reduced by 50 percent.
- (11) On and off-Site material storage areas, including construction and waste materials, shall be properly protected and managed.
- (12) 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.
- (13) 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.
- (14) 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.
- (15) Temporary sediment trapping devices must not be removed until permanent stabilization is established in all contributory drainage areas.

- (16) The duration of the exposure of disturbed areas due to removal of vegetation and/or re-Grading shall be stated in writing in a schedule that will be prepared at the time of application for permit and maintained as part of the project records.
- (17) Dust control shall be used during Grading operations. Dust control methods may consist of Grading fine soils on calm days only or dampening the ground with water.
- (18) During construction, all disturbed areas shall be enclosed with compost filter socks in the down gradient direction or in any direction to which erosion can occur.
- (19) During construction, any Site entrance from a paved, public way shall be improved with a temporary construction entrance built in accordance with the recommendations of the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas* to prevent soil from being transported onto the street.
- (20) During construction, catchbasin or other drainage system inlet structures down gradient of the construction entrance shall be protected with silt sacks or other inlet protection device.
- (21) If the work produces or distributes soil on public or private ways, that soil shall be cleaned up by the responsible party as soon as possible but in all cases within twenty-four (24) hours.
- (22) If the work causes the discharge of soil to town drainage structures, all affected downstream pipes shall be cleaned by the responsible party within three (3) days.

§ 181-75. Stormwater Management Plan Contents

The application for a Stormwater Management Permit shall include the submittal of a Stormwater Management Plan to the Stormwater Agency for all Above-Threshold Projects. The Stormwater Management Plan shall also contain sufficient information for the Stormwater Agency to evaluate the environmental impact, effectiveness, and acceptability of the measures proposed by the Applicant for mitigating adverse impacts from stormwater Runoff. This plan shall be designed to meet the Massachusetts Stormwater Standards and additional criteria established in these Regulations, and must be submitted with the stamp and signature of a Professional Engineer (PE) licensed to conduct such work in the Commonwealth of Massachusetts.

The Stormwater Management Plan shall fully describe the project in drawings, narrative, and calculations and shall include the following:

A. Project Narrative

Required contents of the Stormwater Management Plan narrative are provided in Appendix C of these Regulations.

B. Project Drawings and Specifications

Required contents of the Stormwater Management Plan drawings and specifications are provided in Appendix C of these Regulations.

C. Erosion and Sediment Control Plan

- (1) An Erosion and Sediment Control Plan is required at the time of application for all projects. Plan approval by the Stormwater Agency is required prior to any Land Disturbances. The plan shall be designed to ensure compliance with the Stormwater Management Permit, these Regulations, the Massachusetts Stormwater Handbook, and the NPDES Construction General Permit (when applicable). In addition, the plan shall ensure that the Massachusetts Surface Water Quality Standards (314 CMR 4.00) are met in all seasons.
- (2) If a project requires a Stormwater Pollution Prevention Plan (SWPPP) per the NPDES Construction General Permit, the Applicant must also submit a complete copy of the SWPPP as part of its application for a Stormwater Management Permit. If the SWPPP meets the requirements of the Construction General Permit, it will be considered equivalent to the Erosion and Sediment Control Plan described in this Section.
- (3) The Erosion and Sediment Control Plan shall contain sufficient information to describe the nature and purpose of the proposed development, pertinent conditions of the Site and the adjacent areas, and proposed erosion and Sedimentation controls. The Applicant shall submit such material as is necessary to show that the proposed development will comply with the design requirements listed below.
- (4) For larger developments where construction phasing occurs, the Erosion and Sediment Control Plan shall be updated as needed based on changing conditions at the Site.
- (5) Required contents of the Erosion and Sediment Control Plan are provided in Appendix D of these Regulations.

D. Operation and Maintenance Plan

- (1) An Operation and Maintenance (O&M) Plan is required at the time of application for all Above-Threshold Projects. The O&M Plan shall be designed to ensure (a) compliance with the Permit, these Regulations and the Massachusetts Stormwater Handbook, and (b) that the Massachusetts Surface Water Quality Standards (314 CMR 4.00) are met in all seasons and throughout the life of all of the project's Stormwater Management Facilities. The O&M Plan shall be a stand-alone document, submitted as a digital file, preferably .PDF, in addition to paper copy and shall remain on file with the Stormwater Agency. Compliance with the O&M Plan shall be an ongoing requirement. When applicable, stormwater management easements will be required for all areas used for off-Site stormwater control, unless the Stormwater Agency grants a waiver. To ensure that all stormwater management facilities continue to function as designed, a final O&M Plan shall be submitted prior to issuance of a Certificate of Completion. This Plan shall reflect any modifications made during the permitting process and the Site specific conditions.

- (2) The O&M Plan shall include, at a minimum:
- (a) The names, addresses and contact information of the property owner(s).
 - (b) The signature(s) of the owner(s).
 - (c) The names, addresses, and contact information of the person(s) responsible for Site operation and maintenance, including how future property owners will be notified of the presence of the stormwater management facilities and the requirement for proper operation and maintenance; if responsibility is contracted to a third party, a copy of the maintenance agreement(s) with said third party must be provided.
 - (d) A plan or map drawn to scale showing the location of the systems and stormwater management facilities including existing and proposed easements, catch basins, manholes/access lids, main, and stormwater management facilities along with the discharge point.
 - (e) A description and purpose of all parcel easements shown on the above-referenced drawing. The Applicant shall record all easements with the Middlesex South Registry of Deeds prior to issuance of a Certificate of Completion.
 - (f) An Inspection and Maintenance Schedule for all stormwater management facilities, including what routine and non-routine maintenance tasks are to be performed, when they are to be conducted, who is to perform them, and to whom to report results.
 - (g) A description and delineation of public safety features.
 - (h) Any other information requested by the Stormwater Agency.
- (3) Stormwater management facilities and practices included in an O&M Plan shall undergo ongoing inspections to document maintenance and repair needs and ensure compliance with the requirements of the agreement, the Plan and Section 181-78 of these Regulations. At a minimum, inspections shall occur once every year.

§ 181-76. Construction Implementation & Monitoring

For all Above-Threshold Projects, the Applicant shall provide the following:

A. Surety

(1) Stormwater Completion Surety

As a condition of issuance of the Stormwater Management Permit, and before the start of any Land Disturbance or construction activity, the Stormwater Agency may require the Applicant to post a surety bond, irrevocable letter of credit, cash, or other acceptable security in an amount sufficient to guarantee completion of the approved Estimated Cost of Construction.

The form of the bond shall be approved by the Stormwater Agency, and be in an amount deemed sufficient by the Stormwater Agency to ensure that the work will be completed in accordance with the permit.

If the project is phased, the Stormwater Agency may release part of the bond as each phase is completed in compliance with the permit but the bond may not be released to an amount less than fifteen percent (15%) of the original amount until the Stormwater Agency has received the final inspection report as required by Section 181-77 B (1) of these Regulations and issued a Certificate of Completion.

This requirement will be considered met if a surety bond that complies with the provisions of this Subsection 181-76(A) has been required by other Town boards or commissions.

B. Inspections

Construction Site inspections shall be conducted by the Applicant in accordance with the approved Stormwater Management Plan. Noncompliance issues discovered during inspections are the responsibility of the construction Site operator to resolve in a timely manner.

(1) Construction Commencement

- (a) The Applicant shall notify the Stormwater Agency seven (7) workdays prior to the commencement of construction to arrange for an on-Site, pre-construction meeting. The Applicant's technical representative, the general contractor, or any other person with authority to make changes to the project, shall meet with the Stormwater Agency or its representative to review construction sequencing and the permitted plans and their implementation.
- (b) The Applicant shall maintain a copy of the approved and signed plans and permits for a Stormwater Management Permit, and documentation demonstrating that conditions of approval have been met, including a copy of the approved Erosion and Sediment Control Plan and, if applicable, an EPA Authorization for a NPDES General Permit for Storm Water Discharges from Construction Activities (Construction General Permit) on the construction Site at all times.

(2) Inspections by Applicant

- (a) To ensure Erosion Control practices are in accord with the filed Erosion and Sediment Control Plan, the Applicant or an authorized representative will conduct Erosion and Sediment Control Inspections at least once every fourteen (14) calendar days, and within 24 hours of the end of a storm event of 0.25 inches or greater, from the start of construction until the Site is permanently stabilized. Inspection frequency may be reduced to once a month if the Site is temporarily stabilized, Runoff is unlikely due to winter conditions (e.g., Site is covered with snow, ice, or the ground is frozen), or, if construction is occurring during seasonal dry periods. The Applicant shall obtain

approval from the Stormwater Agency for any change in inspection frequency, including termination of inspections due to Site stabilization.

- (b) Erosion and Sediment Control Inspections must include all areas of the Site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation. The individual conducting the inspection must look for evidence of, or the potential for, pollutants entering the storm water Conveyance system. Sedimentation and Erosion Control measures identified in the Erosion and Sediment Control Plan must be observed to ensure proper operation. Discharge locations must be inspected to ascertain whether Erosion Control measures are effective in preventing significant impacts to waters of the Commonwealth of Massachusetts and United States, where accessible. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the Site must be inspected for evidence of off-Site sediment tracking.
- (c) For each Erosion and Sediment Control Inspection, an inspection report must be completed within 24 hours of the inspection by the Site owner or an authorized representative. The inspection report shall be consistent with construction inspection reporting outlined in the Construction General Permit and shall include the following information, as a minimum:
- [1] Name, date, and signature of Qualified Inspector;
 - [2] Weather information and a description of any discharges occurring at the time of the inspection;
 - [3] Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
 - [4] Location(s) of discharges of sediment or other pollutants from the Site;
 - [5] Location(s) of Best Management Practices (BMPS) that need to be maintained and a description of the need for maintenance;
 - [6] Location(s) of BMPS that failed to operate as designed or proved inadequate for a particular location, and/or location(s) where additional BMPS are needed that did not exist at prior inspection; and
 - [7] Corrective action required including any changes to the Stormwater Management Plan necessary and implementation dates.

- (d) A Stormwater Management Facility inspection by the Applicant's Certifying Professional Engineer, shall be made during construction of the stormwater management system.
- (e) The Applicant shall conduct a final inspection near project completion to ensure temporary controls have been removed, stabilization is complete, and final conditions adhere to approved Site plans.
- (f) A record of each inspection and of any actions taken must be retained by the Applicant for at least three (3) years. The inspection reports must identify any incidents of non-compliance with the permit conditions. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the construction project or Site is in compliance with this permit.
- (g) If a project requires a SWPPP per the NPDES Construction General Permit, the Applicant must submit all inspection reports completed under that SWPPP to the Stormwater Agency.

(3) Town Inspections.

- (a) At their discretion, the Stormwater Agency (or their assigns) may conduct periodic inspections of the project, to ensure compliance with the conditions of the Stormwater Management Permit.
- (b) All inspection reports conducted by the Applicant shall be made available during Town inspections.
- (c) Additional inspections may be conducted as needed if chronic deficiencies are identified.

C. Inadequacy of System

- (1) The Stormwater Agency reserves the right to require corrections or improvements to a stormwater management system after issuance of any Stormwater Management Permit based on the system's performance under actual storm conditions. If the stormwater management system is found by the Stormwater Agency to be inadequate by virtue of physical evidence of operational failure, even though it was built in accordance with the Stormwater Management Plan, it shall be corrected by the Applicant before the Certificate of Completion is released. If the Applicant fails to act, the Stormwater Agency may use the surety bond required pursuant to § 181-76 to complete the work.
- (2) If the Stormwater Agency determines that there is a failure to comply with the plan, the property owner shall be notified in writing of the nature of the violation and the required corrective actions. A Stop Work Order shall be issued until any violations are corrected and all work previously completed has received approval by the Stormwater Agency.

§ 181-77. Project Completion

For all Above-Threshold Projects, the Applicant shall provide the following:

A. “As-Built” Plans

- (1) Within ninety (90) days of completion of the project, the Applicant shall submit as-built record drawings. A Registered Land Surveyor must prepare as-built plans that show the “as-built” conditions, including all final grades. All changes to project design shall be indicated in red on plans (or otherwise noted). All work deleted, corrections in elevations, and changes in materials, shall be shown on the as-built drawings and explained in writing. A Registered Professional Engineer shall certify conformance with the plan, and/or identify deviations, if any, from the Stormwater Management Permit.
- (2) As-built plans shall be submitted electronically to the Stormwater Agency. File format shall be the AutoCAD DWG format and consistent with the current Standard for Digital Plan Submission to Municipalities, published by the Commonwealth’s Office of Environmental Information (MassGIS) unless otherwise indicated by the Stormwater Agency.
- (3) As-built plans shall, at a minimum, include the following information:
 - (a) Limit of work;
 - (b) Post-construction topography;
 - (c) Finished grades of all structures;
 - (d) Invert elevations of all stormwater structures;
 - (e) All surface materials, structures, pavement, utilities; and
 - (f) Off-Site alterations.

B. Certificate of Completion

- (1) Upon completion, the Applicant is responsible for certifying that the completed project is in accordance with the approved plans and specifications by submitting the following material to the Stormwater Agency:
 - (a) Certification by a Registered Professional Engineer that the stormwater management facilities have been installed and are functioning according to the approved Stormwater Management Permit;
 - (b) As-built plan, stamped by a Registered Land Surveyor and electronic copy, submitted no later than ninety (90) days after completion of construction, in accordance with Section 181-77 of these Regulations;
 - (c) Documentation on compliance with all permit conditions;
 - (d) Final Operation & Maintenance Plan;
 - (e) Maintenance contracts in place (if required); and
 - (f) Certified copy of the Stormwater Management Permit and all necessary easements have been recorded at Registry of Deeds.

- (2) The Stormwater Agency will issue a letter to the Permittee, certifying completion upon receipt and approval of the final inspection and reports and/or upon otherwise determining that all work of the Stormwater Management Permit has been satisfactorily completed in conformance with the Stormwater Management Bylaw and these Regulations.

§ 181-78. Ongoing Inspection and Maintenance

For all Above-Threshold Projects, the owner of the property on which work has been done pursuant to these Regulations, or any other person or agent in control of such property, shall maintain in good condition and promptly repair and restore all stormwater management Facilities. Such repairs or restoration and maintenance shall be in accordance with approved O&M plan.

The Town of Lexington 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 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 Stormwater Management Facilities in accordance with the O&M Plan and all other applicable approved plans, and all applicable laws.

A. Maintenance Inspections

The property owner responsible for the operation and maintenance of stormwater management facilities shall retain a Qualified Inspector who shall submit, on an annual basis by January 1st of each year, a written certification to the Stormwater Agency documenting that work has been done to properly operate and maintain the stormwater management facilities consistent with the approved O&M plan. The property owner responsible for the operation and maintenance of a stormwater management system shall prepare records of the all maintenance and repairs, using the example inspection and maintenance form included in Appendix E of these Regulations.

(1) Maintenance inspections shall include consideration of the condition of:

- (a) Pretreatment devices;
- (b) Vegetation or filter media;
- (c) Fences or other safety devices;
- (d) Spillways, valves, or other control structures;
- (e) Embankments, slopes, and safety benches;
- (f) Reservoir or treatment areas;
- (g) Inlet and outlet channels and structures;
- (h) Underground drainage;
- (i) Sediment and debris accumulation in storage and fore bay areas (including catch basins);
- (j) Any nonstructural practices; and
- (k) Any other item that could affect the proper function of the stormwater management system.

B. Right-of-Entry for Inspection

The terms of the O&M Plan and any maintenance agreement for the implementation thereof 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 in accordance with Section 181-72(C) of these regulations.

C. Records of Inspections and Maintenance, Repair, Replacement and Disposal Activities

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

D. Failure to Maintain

After notification is provided to the signatories to the Maintenance Agreement of any deficiencies discovered from an inspection of a Stormwater Management System, the owner of the property shall have 30 days (which time may be extended by the Stormwater Agency) to correct the deficiency. The Stormwater Agency shall then conduct a subsequent inspection to ensure completion of repairs.

§ 181-79. Waivers

- A. The Stormwater Agency may, at its sole discretion, waive strict compliance with any requirement of the Stormwater Management Bylaw and these Regulations, where it makes a written finding that such action is:
- (1) allowed by federal, state and local statutes and regulations;
 - (2) in the public interest; and
 - (3) consistent with the purpose and intent of the Town of Lexington Stormwater Management Bylaw and these Regulations.
- B. Any Applicant shall submit a written request to be granted such a waiver. Such a request shall be accompanied by an explanation or documentation supporting the waiver request and demonstrating that strict application of the Bylaw does not further the purposes or objectives of the Bylaw.
- C. If in the Stormwater Agency's opinion, additional time or information is required for review of a waiver request, the Stormwater Agency may request consent of the Applicant in extending the time for collection of additional information. In the event the Applicant objects to a continuance, or fails to provide requested information, the waiver request shall be denied.
- D. Waivers described herein shall not constitute an exemption from any other applicable Federal, State, or local permitting requirements.

§ 181-80. Enforcement

The Stormwater Agency, or an authorized agent of the Agency, shall enforce the Bylaw, Regulations, orders, violation notices, and enforcement orders, and may pursue all available civil, criminal and non-criminal remedies for such violations.

A. Notices and Orders

- (1) The Stormwater Agency may issue a written notice of violation or an enforcement order to enforce the provisions of the Stormwater Management Bylaw and the Regulations, which may include requirements to:
 - (a) Suspend or revoke any Stormwater Management Permit;
 - (b) Cease and desist construction or Land Disturbances until the Stormwater Agency certifies compliance with the Bylaw and the Stormwater Management Permit;
 - (c) Repair, maintain, or replace the stormwater management system or portions thereof in accordance with the O&M Plan;
 - (d) Perform monitoring, analyses, and reporting; and/or
 - (e) Repair adverse impact resulting directly or indirectly from malfunction of the stormwater management system.
- (2) The suspension or revocation of the Permit shall not relieve the Applicant of his obligation there under except at the discretion of the Stormwater Agency.
- (3) If the Stormwater Agency determines that abatement or remediation of adverse impacts is required, the order may set forth a deadline by which such abatement or remediation shall be completed.

B. Purchase, Inheritance, or Acquisition of Property

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 Stormwater Agent deems necessary to remedy such violation.

C. Fines

Any person who violates any provision of the Town of Lexington Stormwater Management Bylaw, these Regulations, or order or permit issued there under, may be fined up to \$300 per offense. Each day that such violation occurs or continues shall constitute a separate offense. As an alternative to criminal prosecution or civil action, the Stormwater Agency may choose to use the non-criminal disposition procedure set forth in G.L. c. 40, § 21D and § 1-6 of the Code of the Town of Lexington.

D. Remedies Not Exclusive

The remedies listed in the Stormwater Management Bylaw and these regulations are not exclusive of any other remedies available under any applicable federal, state, or local law.

§ 181-81. 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 has been previously issued.

APPENDIX A: DEFINITIONS

ABOVE-THRESHOLD PROJECT – Any activity governed by the Stormwater Management Bylaw that (1) results in a Land Disturbance greater than or equal to one acre, or (2) that is part of a larger Common Plan of Development that eventually will disturb more than one acre of land.

ABUTTER — A property owner (a) directly abutting a proposed project (b) across a public or private street from a proposed project or (c) abutting an Abutter if such is within 300 feet of the proposed project Limit of Disturbance.

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

BEST MANAGEMENT PRACTICES (BMPS) – Structural, nonstructural, and managerial techniques that are recognized to be the most effective and practical means to prevent and/or reduce erosion, provide sediment control and promote stormwater quality and protection of the environment. Structural BMPS are often constructed as temporary structures to control Site Sedimentation. “Nonstructural” Best Management Practices use natural measures to reduce pollution levels, do not require extensive construction efforts, and/or promote pollutant reduction by eliminating the pollutant source. Nonstructural Best Management Practices include managerial techniques that focus on the preservation and protection of natural features.

BELOW-THRESHOLD PROJECT – Any activity governed by the Stormwater Management Bylaw, but which (1) results in a Land Disturbance less than one acre, and (2) that is not part of a larger Common Plan of Development that eventually will disturb more than one acre of land.

CERTIFICATE OF COMPLETION (COC) — A document issued by the Stormwater Agency after all construction activities have been completed which states that all conditions of an issued Stormwater Management Permit have been met.

COMMON PLAN OF DEVELOPMENT – Any announcement or piece of documentation (including without limitation a contract, public notice or hearing, advertisement, drawing, plan, or permit application) or physical demarcation (including without limitation boundary signs, lot stakes, surveyor marking) indicating imminent or future plans to disturb earth regardless of how many phases or how long it will take to complete said plan. A Site will no longer be considered part of a Common Plan of Development if the following criteria are met:

- (1) The original plan, including modifications, is substantially completed with less than one acre of the original common plan remaining (i.e., <1 acre of the common plan was not built out at the time); and
- (2) Work on said Site follows a clear, identifiable period of time of two (2) years or more where there is no construction on the property or other properties that would be part of the same Common Plan of Development, including final stabilization.

CONVEYANCE — Any structure or device, including pipes, drains, culverts, curb breaks, paved swales or man-made swales of all types designed or utilized to move or direct stormwater Runoff or existing water flow.

DEVELOPER — A person who undertakes or proposes to undertake Land Disturbance activities.
c

DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA) – The portion of impervious area with a direct hydraulic connection to the MS4 or a waterbody via continuous paved surfaces, gutters, pipes and other impervious features such as conventional pavements, sidewalks, driveways, roadways, parking lots, and rooftops.

DISCONNECTED IMPERVIOUS AREA – An isolated impervious area with an indirect hydraulic connection to the MS4 or Waters of the Commonwealth.

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

EROSION CONTROL — The prevention or reduction of the movement of soil particles or rock fragments due to stormwater Runoff.

EROSION AND SEDIMENT CONTROL PLAN — A Stormwater Pollution Prevention Plan as required by the EPA Construction General Permit, or the functional equivalent if a project is not subject to the EPA Construction General Permit.

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

INFILTRATION — The act of conveying surface water into the ground to permit Groundwater Recharge and the reduction of stormwater Runoff from a project Site.

LAND DISTURBANCE — Any action that causes a change in the position, location, or arrangement of soil, sand, rock, gravel, or similar earth material.

LOW IMPACT DEVELOPMENT (LID) – A set of strategies that seek to maintain natural hydrologic systems both during and after the development process. This approach is implemented by engineering a Site so that the Post-Development hydrologic functions remain close to predevelopment conditions by using design techniques that infiltrate, filter, store, evaporate and detain stormwater Runoff close to its source.

MASSACHUSETTS STORMWATER HANDBOOK (HANDBOOK) — The Stormwater Handbook, as amended from time to time, produced by MassDEP and the Massachusetts Office of Coastal Zone Management to be used as guidance for controlling stormwater. Implementation of Stormwater Management Standards shall be in accordance with the Stormwater Handbook.

MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS — The requirements described in the Massachusetts 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).

MS4 (MUNICIPAL SEPARATE STORM SEWER SYSTEM) – A Conveyance or system of Conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) designed or used for collecting or conveying stormwater, and which is not a combined sewer, owned or operated by a city or town having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, that discharges to waters of the United States.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) – As authorized by the Federal Clean Water Act, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

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 insure that it continues to function as designed.

PRE-DEVELOPMENT — The conditions that exist at the time that plans for the land development of a tract of land are submitted to the Stormwater Agency with a Stormwater Management Permit Application. 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 the Site’s Pre-Development conditions.

POST-DEVELOPMENT — The conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific Site or tract of land. Post-Development refers to the phase of a new development or redevelopment project after completion, and does not refer to the construction phase of a project.

QUALIFIED INSPECTOR — A person knowledgeable in the principles and practice of erosion and sediment controls 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 management facilities selected and installed to meet the requirements of this permit. The inspector must have a practical knowledge of stormwater hydrology and stormwater management techniques, including the maintenance requirements for stormwater management facilities; and the inspector must have the ability to determine if stormwater BMPS and facilities are performing as intended.

RECHARGE — The replenishment of underground water reserves.

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

RUNOFF – The water from rain, snowmelt, or irrigation that flows over the land surface that is not absorbed into the ground, instead flowing into streams or other surface waters or land depressions.

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

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

STOP WORK ORDER — An order issued by the Stormwater Agency that requires that all construction activity on a Site be stopped.

STORMWATER – Water that accumulates on land because of storms and can include Runoff from urban areas such as roads and roofs.

STORMWATER AGENCY – The entity responsible for administering, implementing, and enforcing the regulations adopted by the Stormwater Authority. Section 2 of the Stormwater Management Bylaw designates the Lexington Department of Public Works Engineering Division as the Stormwater Agency.

STORMWATER AUTHORITY – The entity responsible for adopting regulations pursuant to the Stormwater Management Bylaw. Section 5(A) of the Stormwater Management Bylaw designates the Lexington Board of Selectmen as the Stormwater Authority.

STORMWATER MANAGEMENT FACILITY –A device engineered and constructed to provide permanent storage and/or treatment of Stormwater Runoff.

STORMWATER MANAGEMENT PERMIT – A permit issued by the Stormwater Agency, after review of an application, plans, calculations, and other supporting documents, approving a system that is designed to protect the environment of the Town from the deleterious effects of uncontrolled and untreated Stormwater Runoff.

APPENDIX B: LOW-IMPACT DEVELOPMENT PRACTICES

Low Impact Development (LID) strategies use careful Site design and decentralized Stormwater management based on natural hydrologic features to reduce the environmental footprint of new growth. This approach manages Stormwater at the source to control the generation of Stormwater, improve water quality, and minimize the need for expensive pipe and complex Stormwater BMP systems. Cisterns and rain barrels can be used to harvest and store rainwater Runoff from roofs, which can help reduce flooding and erosion caused by Stormwater Runoff; an added benefit is that the rainwater contains no salts or sediment, providing "soft" chemical-free water for garden or lawn irrigation, reducing water bills, and conserving municipal water supplies. The Massachusetts Stormwater Handbook contains additional information on specific LID alternatives.

Conservation Development

Like LID, Conservation Development tries to mitigate the Stormwater effects of urbanization, but it places additional emphasis on protecting aquatic habitat and other natural resources. Conservation Development subdivisions are characterized by compact clustered lots surrounding a common open space. Conservation Development's goal is to disturb as little land area as possible while simultaneously allowing for the maximum number of residences permitted under zoning laws.

Prior to new construction, conservation Developers evaluate natural topography, natural drainage patterns, soils, and vegetation. They deploy Stormwater Best Management Practices to help prevent flooding and protect natural hydrology. By maintaining natural hydrological processes, Conservation Development creates conditions that slow, absorb, and filter Stormwater Runoff on-Site.

Because future development threatens valuable natural features, Conservation Development provides specific provisions for long-term and permanent resource protection. Conservation easements, transfer of development rights, and other "in perpetuity" mechanisms ensure that protective measures are more than just temporary.

Better Site Design

The goals of Better Site Design are to reduce impervious cover, preserve natural lands, and capture Stormwater on-Site. To meet these goals, designers employ a variety of methods. To reduce impervious cover, they narrow streets and sidewalks, minimize cul-de-sacs, tighten parking spaces, and reduce the size of driveways and housing lots.

To reduce Stormwater Runoff, designers preserve natural lands, using them as buffer zones along streams, wetlands, and steep slopes. They employ landscaping techniques that flatten slopes and preserve native vegetation and clusters of trees. They create open channels and vegetated swales - to increase Stormwater Infiltration, helping to protect streams, lakes, and wetlands. Better Site Design is an integral component of Smart Growth management strategies, which emphasize the preservation of green space.

APPENDIX C: STORMWATER MANAGEMENT PLAN CONTENTS

The Stormwater Management Plan shall be consistent with the Massachusetts Stormwater Management Handbook and shall include, at a minimum:

- (1) 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;
- (2) A brief narrative description of the project including at a minimum:
 - (a) How and where Stormwater will be controlled, where ultimately Stormwater from the Site will reach Waters of the Commonwealth and whether Runoff will discharge to the Town's MS4;
 - (b) Potential building envelopes avoiding environmental Resource Areas and appropriate buffers;
 - (c) Methods to minimize impervious surfaces, and to protect and preserve open space; and
 - (d) A description of any alternative processes or methods that were contemplated.
- (3) Location map highlighting the project Site;
- (4) Existing Conditions Statement: A description of existing Stormwater Conveyances, impoundments, wetlands, drinking water Resource Areas, swimming beaches or other critical environmental Resource Areas, on or adjacent to the Site or into which Stormwater flows;
- (5) The existing zoning, and land use at the Site and abutting properties;
- (6) The proposed land use;
- (7) Stormwater Impact Statement: A brief description of the project, how and where Stormwater will be controlled, including:
 - (a) A description of existing Stormwater Conveyances, impoundments, wetlands, drinking water Resource Areas, swimming beaches or other critical environmental Resource Areas on or adjacent to the Site or into which Stormwater flows;
 - (b) A description of any existing Stormwater Conveyances to be retained and any proposed Stormwater Conveyances, impoundments, wetlands, drinking water Resource Areas, swimming beaches and critical environmental Resource Areas on, or adjacent to, the Site into which Stormwater flows;
 - (c) All measures for the detention, retention, or Infiltration of water;
 - (d) All measures utilized for the protection of water quality;
 - (e) Hydrologic and hydraulic design calculations for the pre- and Post-Development conditions for the design storms specified in these Regulations. Such calculations shall include:
 - [1] Description of the design storm frequency, intensity and duration;

- [2] A figure graphically showing Time of Concentration (Tc) paths and Tc number based on existing and proposed grades;
 - [3] Soil Runoff Curve Number (CN) based on land use and soil hydrologic group;
 - [4] Peak Runoff rates and total Runoff volumes for each watershed area;
 - [5] Provisions for maintaining during construction the Infiltration capacity of the soil where Infiltration is proposed;
 - [6] Infiltration rates, where applicable;
 - [7] Culvert capacities, where applicable;
 - [8] Flow velocities;
 - [9] Data on the increase in rate and volume of Runoff for the specified design storms;
 - [10] A calculation of the Directly Connected Impervious Area (DCIA) in square feet and as a percentage of the parcel area;
 - [11] A calculation of the Disconnected Impervious Area in square feet and as a percentage of the parcel area.
 - [12] Documentation of sources for all computation methods and field test results.
- (f) A summary table describing the existing area (square feet) of impervious area, the proposed area of impervious area, and summary of each Stormwater Management Facility and the proposed area of impervious surface to be treated by said facility (square feet); and
- (g) Soils and soil test pit information consistent with testing protocol outlined in the Massachusetts Stormwater Management Handbook.
- (8) The Project Drawings shall be consistent with requirements in the Construction General Permit, where applicable, and shall include, at a minimum:
- (a) Project name;
 - (b) Legend, North Arrow and Scale (include both a scale bar and scale text);
 - (c) Benchmark data, including reference to the starting benchmark;
 - (d) Date of submission and, if applicable, any revision date(s);
 - (e) Names and addresses of the professional engineer and land surveyor who prepared the plans;
 - (f) Existing and Proposed Site Conditions containing:
 - [1] Parcel boundaries/property lines;
 - [2] Names of Abutters;
 - [3] Location(s) of existing and proposed surfaces and structures;
 - [4] Existing and proposed topography at 1-foot intervals;
 - [5] Existing Site hydrology and soil types;
 - [6] Delineation of any flood plains, if applicable;
 - [7] Location(s) of existing easements, existing easements to be retained, and proposed easements;
 - [8] Location(s) of existing and proposed utilities;
 - [9] Stormwater management facilities and non-structural BMPS; and
 - [10] As necessary, the details of the drainage system components, including stabilization and management techniques to be used with and/ or adjacent to any Stormwater practice.

- (g) Pre- and Post-Construction Drainage Area Drawing(s) containing:
 - [1] Pre- and post-construction drainage areas;
 - [2] A delineation of existing, existing Stormwater Conveyances to be retained and any proposed Stormwater Conveyances, impoundments, wetlands, drinking water Resource Areas, swimming beaches or other critical environmental Resource Areas on or adjacent to the Site or into which Stormwater flows;
 - [3] Vegetation and ground surfaces (include all impervious cover);
 - [4] Time of concentration (t_c);
 - [5] Stormwater flow paths, including municipal drainage system flows; and
 - [6] Location(s) of any test pit(s). Test Pits should coincide with the location(s) of any proposed Stormwater practice(s), including non-structural practices and foundation or perimeter drains.

 - (h) A description and drawings of all components of the proposed Stormwater management system including, at a minimum:
 - [1] Locations, cross sections, and profiles of all brooks, streams, drainage swales, and their method of stabilization;
 - [2] Locations and details for all components of all measures for the Conveyance, detention, retention, or Infiltration of Stormwater, and for the protection of water quality;
 - [3] Notes on drawings specifying materials to be used, construction specifications, supporting calculations; and
 - [4] Proposed improvements including location of buildings or other structures and impervious surfaces, if applicable.

 - (i) Landscaping plan describing the woody and herbaceous vegetative stabilization and management techniques to be used within and adjacent to the Stormwater practice;

 - (j) Stamp and signature of a 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 Stormwater Management and Land Disturbance Ordinance and these Regulations; and
- (9) Any other information required by the Stormwater Agency.

APPENDIX D: EROSION AND SEDIMENT CONTROL PLAN CONTENTS

If a project requires a SWPPP per the Construction General Permit, then the Applicant is required to submit a complete copy of the SWPPP (including the signed Notice of Intent and approval letter) as part of its application for a Stormwater Management Permit. If the SWPPP meets the requirements of the Construction General Permit, it will be considered equivalent to the Erosion and Sediment Control Plan described in this Section. The Erosion and Sediment Control Plan shall be consistent with requirements in the Construction General Permit, where applicable, and shall include, at a minimum:

- (1) A legible Site map, showing the entire Site, identifying at a minimum:
 - (a) Existing and proposed Grading plans;
 - (b) Locations of all bodies of waters (including wetlands);
 - (c) Direction(s) of Stormwater flow and approximate slopes anticipated after major Grading activities;
 - (d) Areas of soil disturbance and areas that will not be disturbed (limit of work line);
 - (e) Locations of Site access/egress, including applicable sediment control measures;
 - (f) Locations where stabilization practices are expected to occur;
 - (g) Locations where Stormwater discharges to a surface water (include all roads, drains and other structures that could carry Stormwater to a wetland or other water body, on or off-Site);
 - (h) Locations and details of all erosion and sediment control measures, BMPS, and Stormwater management facilities;
 - (i) Locations for storage of materials, waste, vehicles, equipment, soil, snow, and other potential pollutants;
 - (j) Locations of any Stormwater discharge associated with industrial activity; and
 - (k) Locations of any proposed dewatering facilities.
 - (l) The intended sequence and timing of activities that disturb soils at the Site and the general sequence during the construction process in which the erosion and sediment control measures will be implemented;

- (2) Upon request by the Stormwater Agency, Applicant shall submit Erosion & Sediment Control narratives, calculations or drawings, demonstrating the following:
 - (a) All pollution control measures (structural and non-structural BMPS) that will be implemented as part of the construction activity to control pollutants in storm water discharges. Appropriate control measures must be identified for each major construction activity and the operator responsible for the implementation of each control measure must also be identified;
 - (b) Structural practices to divert flows from exposed soils, retain/detain flows or otherwise limit Runoff and the discharge of pollutants from exposed areas of the Site. Placement of structural practices in floodplains must be avoided to the degree practicable;
 - (c) Interim and permanent stabilization practices for the Site, including a schedule of when the practices will be implemented. Site plans should ensure that existing vegetation is

- preserved where possible and that disturbed portions of the Site are stabilized. Use of impervious surfaces for stabilization should be avoided;
- (d) Construction and waste materials expected to be stored on-Site with updates as appropriate, including descriptions of controls, and storage practices to minimize exposure of the materials to Stormwater, and spill prevention and response practices;
 - (e) Measures to minimize, to the extent practicable, off-Site vehicle tracking of sediments onto paved surfaces and the generation of dust;
 - (f) Measures to prevent the discharge of solid materials, including building materials, to waters of the United States, except as authorized by a permit issued under Section 404 of the Clean Water Act;
 - (g) Pollutant sources from areas other than construction and a description of controls and measures that will be implemented at those Sites to minimize pollutant discharges;
 - (h) Proposed dewatering operations; and
 - (i) A description of all necessary maintenance and inspection activities associated with the proposed erosion and sediment control measures.
- (3) Any other information required by the Stormwater Agency.

**APPENDIX E: EXAMPLE INSPECTIONS AND MAINTENANCE CERTIFICATION
FORM**