



# Project: Technical Support to Incorporate MS4 Requirements into Town By-Laws and Regulations, Hingham, MA

## Technical Review Memorandum

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**Date:** September 7, 2018

This Technical Review Memo summarizes our preliminary review of permit requirements and potential changes/additions to the Town's existing regulations that will be needed to meet the new 2016 MS4 permit requirements over the first two years of the permit (through June 30, 2020). The technical memo is based on a detailed review of the MS4 permit requirements applicable to Hingham and the Town's current Planning Board Rules and Regulations (August 2014) and the Zoning By-law (April 2017). Potentially impacted regulatory sections have been identified (permit language in *italics* below). Preliminary findings and recommendations on language changes or additions to meet the permit requirements follow after each regulatory description below.

### Applicable Regulatory Requirements

1.) For Construction Site Stormwater Runoff Control (MS4 permit section 2.3.5). Updated regulations required by the end of Year 1 (June 2019)

*a. Permittees shall implement and enforce a program to reduce pollutants in any stormwater runoff discharged to the MS4 from all construction activities that result in a land disturbance of greater than or equal to one acre within the regulated area. The permittee's program shall include disturbances less than one acre if that disturbance is part of a larger common plan of development or sale that would disturb one or more acres.*

- This is substantially covered under By-Law Section IV.B. 6. which requires that site plan review shall be conducted by the Planning Board or its designee, for all projects which meet the following criteria:
  - a. all non-residential projects which are estimated to cost \$20,000 or more;
  - b. all projects which 1) create a land disturbance or an alteration of drainage patterns over an area greater than 20,000 square feet; or 2) create a land disturbance of more than 2500 square feet in areas with slopes greater than 10%
- It is suggested that the language in subpart b. be expanded as follows: “or 3) where the disturbance is part of a larger common plan of development or sale that would disturb one or more acres”

*c. The permittee shall develop and implement a construction site runoff control program that includes the elements in Paragraphs i. through v. of this part:*

*i. An ordinance or regulatory mechanism that requires the use of sediment and erosion control practices at construction sites. In addition to addressing sediment and erosion control, the ordinance must include controls for other wastes on construction sites such as demolition debris, litter and sanitary wastes. Development of an ordinance or other regulatory mechanism was a requirement of the MS4-2003 permit (See part II.B.4 and part IV.B.4). The ordinance or other regulatory mechanism required by the MS4-2003 permit shall have been effective by May 1, 2008.*

- This appears to be adequately covered under By-Law Section I-I, Site Plan Review, Subsection 6 - Review Standards and Approval
  - 6. g. “assurance of positive stormwater drainage and snow-melt run-off from buildings, driveways and from all parking and loading areas on the site, and prevention of erosion, sedimentation and stormwater pollution and management problems through site design and erosion controls in accordance with the most current versions of the Massachusetts Department of Environmental Protection’s Stormwater Management Policy and Standards, and Massachusetts Erosion and Sediment Control Guidelines.”
  - And 6.e. “adequacy of the methods of disposal of refuse and other wastes resulting from the uses permitted on the site”

*ii. Written (hardcopy or electronic) procedures for site inspections and enforcement of sediment and erosion control measures. If not already existing, these procedures shall be completed within one (1) year from the effective date of the permit. The procedures shall clearly define who is responsible for site inspections as well as who has authority to implement enforcement procedures. The program shall provide that the permittee may, to the extent authorized by law, impose sanctions to ensure compliance with the local program.*

- Site inspection requirements appear to be adequately covered under the Planning Board Rules and Regulations, Section 6. E. (1), Inspection of Required Improvements
  - “The following inspections of the required improvements will be made by the Board's engineer. These inspections are the minimum required. In addition, random site visits to observe site conditions and inspections after rain or other weather events will be performed. The Board may also request or require other inspections at their discretion.

Although the order of the inspections follows general construction practice, certain inspections may be required at:

(1) The first inspection will be made to observe site control staking, clearing limits and erosion controls. The surveyor shall provide the Board with a certification statement that all control has been installed and complies with the requirements of the Board. For multi-phase projects, there may be limits to initial staking, erosion controls etc. The control staking and certification is required for each phase as applicable.

No clearing or cutting shall commence for any phase of the project until the inspection above has been performed to the satisfaction of the Board or their representative. An inspection will be made of the work upon completion of all clearing, grubbing and excavation of unsuitable soils including top and subsoil within the roadway and other areas to be cleared for the project, with exception to individual house lots as applicable as may be required or implied by these Regulations. No fill shall have been placed at the time of this inspection.”

- Enforcement of sediment and erosion controls appears to be adequately covered under the By-Law Section I-C.c. Enforcement
  - “The provisions of this By-Law may be enforced by the Zoning Enforcement Officer by non-criminal disposition pursuant to the provisions of M.G.L. Chapter 40, Section 21D. Any person who violates the provisions of this By-Law may be subject to a penalty of \$100.00 if, after receiving written notice of the violation(s) from the Zoning Enforcement Officer, the person fails to correct the violation(s) within seven (7) days of receipt of such notice, or within such longer time as the Zoning Enforcement Officer may grant in appropriate circumstances. Each day that a violation exists shall be deemed to be a separate offense from and after delivery of such notice from the Zoning Enforcement Officer. In the alternative, any person who violates the provisions of this By-Law, or who refuses or neglects to comply with a stop work order or notice of violation by the Zoning Enforcement Officer issued under the provisions of M.G.L. Chapter 40A or the provisions of this By-Law, shall be subject to the enforcement provisions of M.G.L. Chapter 40A, including a fine of \$100. Each day that a violation exists shall be deemed to be a separate offense. Nothing in this section shall prohibit the Zoning Enforcement Officer from seeking injunctive relief as a remedy in accordance with M.G.L. Chapter 40A, Section 7.”

*iii. Requirements for construction site operators performing land disturbance activities within the MS4 jurisdiction that result in stormwater discharges to the MS4 to implement a sediment and erosion control program that includes BMPs appropriate for the conditions at the construction site. The program may include references to BMP design standards in state manuals, such as the Massachusetts Stormwater Handbook, or design standards developed by the MS4. EPA supports and encourages the use of design standards in local programs. Examples of appropriate sediment and erosion control measures for construction sites include local requirements to:*

- 1. Minimize the amount of disturbed area and protect natural resources;*
  - 2. Stabilize sites when projects are complete or operations have temporarily ceased;*
  - 3. Protect slopes on the construction site;*
  - 4. Protect all storm drain inlets and armor all newly constructed outlets;*
  - 5. Use perimeter controls at the site;*
  - 6. Stabilize construction site entrances and exits to prevent off-site tracking;*
  - 7. Inspect stormwater controls at consistent intervals*
- MA Stormwater Management Policy and Standards, and Massachusetts Erosion and Sediment Control Guidelines are cited in the By-Law Section I-I, Site Plan Review, Subsection 6, g. - Review Standards and Approval, but it is suggested that additional language be added that states “appropriate BMPs be designed and installed to meet the following stated MS4 goals:
    1. Minimize the amount of disturbed area and protect natural resources;
    2. Stabilize sites when projects are complete or operations have temporarily ceased;
    3. Protect slopes on the construction site;
    4. Protect all storm drain inlets and armor all newly constructed outlets;
    5. Use perimeter controls at the site;
    6. Stabilize construction site entrances and exits to prevent off-site tracking;
    7. Inspect stormwater controls at consistent intervals”

*i.v. Requirements for construction site operators within the MS4 jurisdiction to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes. These wastes may not be discharged to the MS4.*

- Suggest adding language to By-Law Section I-I, Site Plan Review, Subsection 6.e. that requires appropriate disposal of waste by specifically prohibiting “discharging of refuse or other wastes to the MS4, including, but not limited to, discarded building materials, concrete truck wash out, chemicals, litter and sanitary wastes.”

*v. Written procedures for site plan review and inspection and enforcement. If not already existing, the procedures for site plan review and inspection and enforcement shall be completed within one (1) year from the effective date of the permit. The site plan review procedure shall include a pre-construction review by the permittee of the site design, the planned operations at the construction site, planned BMPs during the construction phase, and the planned BMPs to be used to manage runoff created after development. The review procedure shall incorporate procedures for the consideration of potential water quality impacts, and procedures for the receipt and consideration of information submitted by the public. The site plan review procedure shall also include evaluation of opportunities for use of low impact design and green infrastructure. When the opportunity exists, the permittee shall encourage project proponents to incorporate these practices into the site design.*

- The written procedures for site plan review, inspection, and enforcement will require revisions to the Town’s current site plan review process (Zoning By-Law Section I-I, Subsections 3 and 4) for projects disturbing over once acre or activities that are part of a larger common plan of development disturbing greater than 1 acre. This will include a required pre-construction review, submittal of an operations plan for construction activities, details on planned construction and post-construction BMPs, consideration of water quality impacts, procedures to ensure information from the public is considered, and method for encouraging/considering low impact design and green solutions. Some of this will be covered by SWPPPs, when applicable, but existing language needs review to insure it is inclusive of MS4 requirements.

*2.) Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management (MS4 permit section 2.3.6). to be implemented by Year 2 of the Permit (by June 2020). For purposes of this section, new development and redevelopment are defined as “any construction activities or land alteration resulting in total earth disturbances equal to or greater than 1 acre (or activities that are part of a larger common plan of development disturbing greater than 1 acre).*

*a. Permittees shall develop, implement, and enforce a program to address post construction stormwater runoff from all new development and redevelopment sites that disturb one or more acres and discharge into the permittees MS4 at a minimum.*

*ii. The permittee shall develop or modify, as appropriate, an ordinance or other regulatory mechanism within two (2) years of the effective date of the permit to contain provisions that are as least as stringent as the following:*

*1. Low Impact Development (LID) site planning and design strategies must be used to the maximum extent feasible.*

*2. The design of treatment and infiltration practices should follow the guidance in*

*Volume 2 of the Massachusetts Stormwater Handbook, as amended, or other federally or State approved BMP design guidance.*

*3. Stormwater management systems on new development sites shall be designed to:*

- a) Not allow new stormwater conveyances to discharge untreated stormwater in accordance with Massachusetts Stormwater Handbook Standard 1;*
- b) Control peak runoff rates in accordance with Massachusetts Stormwater Handbook Standard 2;*
- c) Recharge groundwater in accordance with Massachusetts Stormwater Handbook Standard 3;*
- d) Eliminate or reduce the discharge of pollutants from land uses with higher pollutant loads as defined in the Massachusetts Stormwater Handbook in accordance with Massachusetts Stormwater Handbook Standard 5;*
- e) Protect Zone II or Interim Wellhead Protection Areas of public water supplies in accordance with Massachusetts Stormwater Handbook Standard 6;*
- f) Implement long term maintenance practices in accordance with Massachusetts Stormwater Handbook Standard 9; and*
- g) Require that all stormwater management systems be designed to:*
  - 1) Retain the volume of runoff equivalent to, or greater than, one (1.0) inch multiplied by the total post-construction impervious surface area on the site AND/OR*
  - 2) Remove 90% of the average annual load of Total Suspended Solids (TSS) generated from the total post-construction impervious area on the site AND 60% of the average annual load of Total Phosphorus (TP) generated from the total post-construction impervious surface area on the site. Pollutant removal shall be calculated consistent with EPA Region 1's BMP Performance Extrapolation Tool or other BMP performance evaluation tool provided by EPA Region 1, where available. If EPA Region 1 tools do not address the planned or installed BMP performance any federally or State approved BMP design guidance or performance standards (e.g. State stormwater handbooks and design guidance manuals) may be used to calculate BMP performance.*

- It is recommended that language addressing the specific requirements for stormwater design listed above be developed and added to the applicable Town's design standards sections of the Planning Board Rules and Regulations (Section 4) and the Zoning By-Laws (standards and set-backs for roads, driveways, parking, etc.) or be part of a stand-alone stormwater by-law for New Development

projects and that existing related language be revised or deleted to avoid confusion.

#### 4. Redevelopment Requirements

*a) Stormwater management systems on Redevelopment sites shall meet the following sections of part 2.3.6.a.ii.3 to the maximum extent feasible:*

- 1) Part 2.3.6.a.ii.3(a) (Massachusetts Stormwater Standard 1);*
- 2) Part 2.3.6.a.ii.3(b) (Massachusetts Stormwater Standard 2);*
- 3) Part 2.3.6.a.ii.3(c) (Massachusetts Stormwater Standard 3); and*
- 4) The pretreatment and structural best management practices requirements of 2.3.6.a.ii.3(d) and 2.3.6.a.ii.3(e) (Massachusetts Stormwater Standards 5 and 6).*

*b) Stormwater management systems on Redevelopment sites shall also improve existing conditions by requiring that stormwater management systems be designed to:*

- 1) Retain the volume of runoff equivalent to, or greater than, 0.80 inch multiplied by the total post-construction impervious surface area on the site AND/OR*
- 2) Remove 80% of the average annual post-construction load of Total Suspended Solids (TSS) generated from the total post-construction impervious area on the site AND 50% of the average annual load of Total Phosphorus (TP) generated from the total postconstruction impervious surface area on the site. Pollutant removal shall be calculated consistent with EPA Region 1's BMP Performance Extrapolation Tool or other BMP performance evaluation tool provided by EPA Region 1, where available. If EPA Region 1 tools do not address the planned or installed BMP Performance, any federally or State approved BMP design guidance or performance standards (e.g. State stormwater handbooks and design guidance manuals) may be used to calculate BMP performance.*

*c) Stormwater management systems on redevelopment sites may utilize offsite mitigation within the same USGS HUC10 as the redevelopment site to meet the equivalent retention or pollutant removal requirements in part 2.3.6.a.ii.4(b).*

*d) 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 part 2.3.6.a.ii.4(a), part 2.3.6.a.ii.4(b) and part 2.3.6.a.ii.4(c). Roadway widening or improvements that increase the amount of impervious area on the redevelopment site by greater than or equal to a single lane width shall meet the requirements of part 2.3.6.a.ii.4(a) – (c) fully.*

- It is recommended that the specifics listed above be directly added to the Town's design standards sections in the Planning Board Rules and Regulations (Section 4) and the Zoning By-Laws (standards and set-backs for roads, driveways,

parking, etc.) or be part of a stand-alone stormwater by-law for Redevelopment projects and that existing related language be revised or deleted to avoid confusion.

*iii. The permittee shall require, at a minimum, the submission of as-built drawings no later than two (2) years after completion of construction projects. The as-built drawings must depict all on site controls, both structural and non-structural, designed to manage the stormwater associated with the completed site (post construction stormwater management). The new development/redevelopment program shall have procedures to ensure adequate long-term operation and maintenance of stormwater management practices that are put in place after the completion of a construction project. These procedures may include the use of dedicated funds or escrow accounts for development projects or the acceptance of ownership by the permittee of all privately owned BMPs. These procedures may also include the development of maintenance contracts between the owner of the BMP and the permittee.*

- The current as-built requirement in the Planning Board Rules and Regulations, Section C. 12 Evidence of Satisfactory Performance, does not have a 2-year limit (it is just required prior to project closeout) and should be revised.
- It is unclear from review of the by-law and planning regulations how the Town currently regulates long-term operation and maintenance of private stormwater management facilities. Are all new and existing stormwater management facilities turned over to the Town for long-term O&M? If so, then that procedure, including maintaining inventory and O&M plans, just needs to be described in the SWMP and no changes to regulations required. If not, then additional requirements will need to be developed and added to the Planning Board or By-Law documents.