

Town of Southwick, MA
Southwick Stormwater Regulations
Adopted September 7, 2021

Section 1. Purpose

The purpose of the Southwick Stormwater Regulations (Regulations) is to protect, maintain and enhance public health, safety, environment, and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased runoff, decreased ground water recharge, erosion and sedimentation, and nonpoint source pollution associated with new development and redevelopment of land, pursuant to the **Town of Southwick Bylaw Chapter 183 (Stormwater Management and Erosion and Sediment Control)**.

These Regulations have been developed to provide reasonable guidance for the design, permitting, construction, and operation of stormwater systems for the purpose of protecting local water resources from degradation. It is in the public interest to regulate construction and post-development stormwater runoff discharges in order to control and minimize increases in stormwater runoff rates and volumes, soil erosion and sedimentation, stream channel erosion, and nonpoint source pollution associated with construction site and post-development stormwater runoff.

Section 2. Definitions

BEST MANAGEMENT PRACTICE (BMP): schedules of activities, practices (and prohibitions of practices), structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to Waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

BIORETENTION: A Low Impact Development (LID) best management practice (BMP) that reduces stormwater runoff by intercepting rainfall on vegetative canopy and through evapotranspiration and infiltration.

DRYWELL: An in-ground device designed to capture and leach stormwater from an inflow pipe and used for drainage areas. Drywells do not redirect flow to other structures other than through a designed overflow device properly directed to other on-site structures.

GREEN ROOF: A Low Impact Development (LID) best management practice (BMP) that infiltrates and/or filters stormwater. A green roof is a roof of a building that is partially or completely covered with vegetation and growing medium, planted over a waterproofing membrane.

FILTRATION: The downward movement of water from the surface to the soil.

IMPERVIOUS SURFACE: Any surface that prevents or significantly impedes the infiltration of

water into the underlying soil. This can include but is not limited to: roads, driveways, parking areas and other areas created using nonporous material; buildings, rooftops, structures, artificial turf and compacted gravel or soil.

IMPOUNDMENT: A stormwater pond created by either constructing an embankment or excavating a pit which retains a permanent pool of water.

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

LOW IMPACT DEVELOPMENT (LID): site planning and design strategies that use or mimic natural processes that result in the infiltration, evapotranspiration, or use of stormwater in order to protect water quality and associated aquatic habitat. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product. LID practices include but are not limited to bioretention facilities, grassed swales, rain gardens, vegetated rooftops, rain barrels and permeable pavements.

MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS: The performance standards as further defined by the Massachusetts Stormwater Handbook, issued by the Department of Environmental Protection, and as amended, that coordinate the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act G.L. c. 131 §. 40 and Massachusetts Clean Waters Act G.L. c. 21, §. 23-56 to prevent or reduce pollutants from reaching water bodies and control the quantity of runoff from a site.

NEW DEVELOPMENT: 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) on an area that has not previously been developed to include impervious cover.

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

OPERATION AND MAINTENANCE PLAN: A plan setting up 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.

OUTFALL: The point at which stormwater flows out from a point source discernible, confined and discrete conveyance into Waters of the Commonwealth.

POINT SOURCE: Any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged.

POLLUTANT: dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, construction wastes and residues including discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes and industrial, municipal and agricultural waste discharged into water.

RAIN GARDEN: A planted depression or a hold that infiltrates stormwater runoff.

RECHARGE: The process by which groundwater is replenished by precipitation through the percolation of runoff and surface water through the soil.

REDEVELOPMENT: Any construction, land alteration, or improvement of impervious surfaces 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) that does not meet the definition of new development.

RUNOFF: Rainfall, snowmelt, or irrigation water flowing over the ground surface.

SITE: The area extent of construction activities, including but not limited to the creation of new impervious cover and improvement of existing impervious cover.

STORMWATER: Stormwater runoff, snow melt runoff, and surface runoff and drainage.

TOTAL SUSPENDED SOLIDS or TSS: Undissolved organic or inorganic particles in water.

Section 3. Authority and Administration

- (1) The Southwick Planning Board administers and implements these Regulations under the Town of Southwick Bylaw Chapter 183 (Stormwater Management and Erosion and Sediment Control). The Director of the Public Works Department shall provide enforcement. Any powers granted to or duties imposed upon the Planning Board may be delegated in writing by the Planning Board to its employees or agents, or to the Director of the Department of Public Works or the Conservation Commission after review by the Select Board.
- (2) The Southwick Planning Board may periodically amend these regulations pursuant to Chapter 183, Section F.2 of the Stormwater Bylaw.
- (3) Nothing in these Regulations is intended to replace or be in derogation of the requirements of any other Southwick bylaw.

Section 4. Stormwater Performance Standards

- (1) Minimum Control Requirements -- Projects must meet the Massachusetts Stormwater Management Standards and Town of Southwick Stormwater Regulations, as updated or

amended. These Standards are:

(a) Stormwater management systems design shall be consistent with, or more stringent than, the requirements of the *2008 Massachusetts Stormwater Handbook*, or latest revision.

(b) Rainfall Data

[1] In preparing calculations for peak stormwater runoff rates, applicants shall utilize either the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 PLUS *Precipitation-Frequency Atlas of the United States* (latest edition) or the *Massachusetts Stormwater Handbook and Stormwater Standards* (latest edition), whichever indicates a higher precipitation value for the selected storm event for the subject property at the time submitting for a Stormwater Management Permit.

[2] NOAA Atlas 14 PLUS precipitation data can be obtained via the NOAA14 website (<https://www.weather.gov/owp/hdsc>). Navigate to the property of interest to view the tabular results for various storm events. Multiply 0.9 by the NOAA Upper Confidence to determine the NOAA14 PLUS value.

[3] The selected design storm events include the 2 year-24 hour rain event; 10 year-24 hour rain event; and 100 year-24 hour rain event.

(c) Low impact development (LID) site planning and design strategies must be implemented to the maximum extent practicable in order to reduce discharge of stormwater from development and redevelopment sites. These strategies may include but not be limited to reduction in impervious surfaces, disconnection of impervious surfaces, bioretention system, and infiltration systems.

(d) No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or water of the Commonwealth.

(e) Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

(f) Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable. The annual recharge from the post-development site should approximate the annual recharge rate from the pre-development or existing site conditions, based on soil types.

(g) For new development, stormwater management systems must be designed to remove 90% of the average annual load of Total Suspended Solids (TSS) related to the total post-construction impervious area on the site AND 60% of the average annual load of Total Phosphorus (TP) related to the total post-construction impervious surface area on the site. Systems shall also be optimized for nitrogen removal (Nitrogen removal guidance is provided in Attachment 1 to Appendix H of the *2018 General Permits for Stormwater*

Discharges from Small Municipal Separate Stormwater Systems in Massachusetts, as modified) or as otherwise updated by EPA Region 1). Average annual pollutant removal requirements are achieved through one of the following methods:

[1] installing BMPs that meet the pollutant removal percentages based on calculations developed consistent with EPA Region 1's BMP Accounting and Tracking Tool (2016) or other BMP performance evaluation tool provided by EPA Region 1, where available. If EPA Region 1 tools do not address the planned or installed BMP performance, then any federally or State-approved BMP design guidance or performance standards (e.g., Massachusetts Stormwater Handbook and design guidance manuals) may be used to calculate BMP performance; or

[2] retaining the volume of runoff equivalent to, or greater than, one (1.0) inch multiplied by the total post-construction impervious surface area on the new development site; or

[3] meeting a combination of retention and treatment that achieves the above standards.

(h) For redevelopment projects, stormwater management systems must be designed to remove 80% of the average annual load of Total Suspended Solids (TSS) related to the total post-construction impervious area on the site AND 50% of the average annual load of Total Phosphorus (TP) related to the total post-construction impervious surface area on the site. Systems shall also be optimized for nitrogen removal (Nitrogen removal guidance is provided in Attachment 1 to Appendix H of the *2018 General Permits for Stormwater Discharges from Small Municipal Separate Stormwater Systems in Massachusetts*, as modified) or as otherwise updated by EPA Region 1). Average annual pollutant removal requirements are achieved through one of the following methods:

[1] installing BMPs that meet the pollutant removal percentages based on calculations developed consistent with EPA Region 1's BMP Accounting and Tracking Tool (2016) or other BMP performance evaluation tool provided by EPA Region 1, where available. If EPA Region 1 tools do not address the planned or installed BMP performance, then any federally or State-approved BMP design guidance or performance standards (e.g., Massachusetts Stormwater Handbook and design guidance manuals) may be used to calculate BMP performance; or

[2] retaining the volume of runoff equivalent to, or greater than, 0.8 inches multiplied by the total post-construction impervious surface area on the redevelopment site; or

[3] meeting a combination of retention and treatment that achieves the above standards.

(i) Stormwater discharges from areas with higher potential pollutant loads require the use of specific stormwater management BMPs. The use of infiltration practices without pretreatment is prohibited.

(j) Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas. Critical areas are Outstanding Resource Waters (ORWs), shellfish beds, swimming beaches, cold water fisheries and recharge areas for public water supplies.

(k) Erosion and sediment controls must be implemented to prevent impacts during disturbance and construction activities. Erosion and sediment controls shall follow applicable guidelines in the *2008 Massachusetts Stormwater Handbook* and/or *2003 Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas*, or latest revisions.

(l) All stormwater management systems must have an operation and maintenance plan to ensure that systems function as designed.

(2) When the proposed discharge may have an impact upon a sensitive receptor, including streams, storm sewers, and/or combined sewers, the DPW may require an increase in these minimum requirements, based on existing stormwater system capacity.

(3) Stormwater Management Measures.

(a) Infiltration practices shall be utilized to reduce runoff volume increases. A combination of successive practices may be used to achieve the applicable minimum control requirements. Justification shall be provided by the applicant for rejecting each practice based on site conditions.

(b) Best Management Practices shall be employed to minimize pollutants in stormwater runoff prior to discharge into a separate storm drainage system or water body.

(c) All stormwater management facilities shall be designed to provide an emergency overflow system, and incorporate measures to provide a non-erosive velocity of flow along its length and at any outfall.

(d) The designed release rate of any stormwater structure shall be modified if any increase in flooding or stream channel erosion would result at a downstream dam, highway, structure, or normal point of restricted stream flow.

(4) Additional Design Criteria. Additional policy, criteria, and information including specifications and design standards may be found in the *Massachusetts Stormwater Handbook*.

(a) The applicant shall give consideration in any plan to incorporating the use of natural topography and land cover such as natural swales, and depressions as they exist prior to development to the degree that they can accommodate the additional flow of water.

(b) The Planning Board shall give preference to the use of swales in place of the

traditional use of curbs and gutters based on a case by case review of stormwater management plans by the an agent of the Planning Board.

(c) The applicant shall consider public safety in the design of any stormwater facilities. The banks of detention, retention, and infiltration basins shall be sloped at a gentle grade into the water as a safeguard against personal injury, to encourage the growth of vegetation and to allow the alternate flooding and exposure of areas along the shore. Basins shall have a 4:1 slope to a depth two feet below the control elevation. Side slopes must be stabilized and planted with vegetation to prevent erosion and provide pollutant removal. The banks of detention and retention areas shall be designed with sinuous rather than straight shorelines so that the length of the shoreline is maximized, thus offering more space for the growth of vegetation.

(d) Where a stormwater management plan involves direction of some or all runoff off of the site, it shall be the responsibility of the applicant to obtain from adjacent property owners any easements or other necessary property interests concerning flowage of water. Approval of a stormwater management plan does not create or affect any such rights.

(e) All applicants for projects which involve the storage or use of hazardous chemicals shall incorporate handling and storage Best Management Practices that prevent such chemicals from contaminating runoff discharged from a site into infiltration systems, receiving water bodies or storm drains, and shall include a list and quantity of such chemicals in the application.

(f) Runoff from parking lots shall be treated by oil and water separators or other Town-approved controls to remove oil and sediment.

(g) The basic design criteria methodologies, and construction specifications, subject to the approval of the Planning Board and Director of the Department of Public Works, shall be those generally found in the most current edition of the Massachusetts Stormwater Handbook.