

Chapter 381
STORMWATER MANAGEMENT

GENERAL REFERENCES

Drainage — See Ch. 248.

Sewer use — See Ch. 355.

Wetlands protection — See Ch. 423.

Conservation Commission regulations — See Ch. 515.

Site plans — See Ch. 550, Art. I.

Subdivision regulations — See Ch. 550, Art. V.

ARTICLE I
Purpose and Policy

§ 381-1. Compliance required.

Under authority of the General Laws, Acts of the State Legislature of the Commonwealth of Massachusetts, the following rules and regulations shall be part of the contract with every person using the stormwater system of the Town of Greenfield, and every person applying for a stormwater connection permit.

§ 381-2. Purpose.

The purpose of the Town's stormwater regulations is to ensure high water quality standards and address any potential water quantity problems associated with development and to:

- A. Preserve hydrologic conditions that closely resemble pre-development conditions.
- B. Prevent flooding by managing the peak discharge and volume of runoff.
- C. Reduce the amount of suspended solids and other pollutants in order to maintain water quality.

§ 381-3. Interpretation.

The Director, or his/her duly appointed designee, shall make the final interpretation of these regulations whenever unforeseen situations arise which are not clearly covered, or when further interpretation of the intent of the regulations is required.

ARTICLE II
Terminology

§ 381-4. Definitions.

Unless the context specifically indicates otherwise, the following terms and phrases, as used in this regulation, shall have the meanings hereinafter designated:

BEST MANAGEMENT PRACTICES (BMP) — For the purposes of stormwater management, structural, nonstructural, and managerial techniques that are recognized to be the most effective and practical means to prevent or reduce non-point source pollutants from entering receiving waters.

CONSERVATION COMMISSION — The Greenfield Conservation Commission appointed by the Mayor of the Town of Greenfield and charged with the administration of the Wetlands Protection Act.

DPW (DENOTING THE DEPARTMENT OF PUBLIC WORKS) — That department established by vote of the Town on March 4, 1963, which has jurisdiction over the municipal stormwater system.

IMPERVIOUS AREA — Impermeable surfaces, such as pavement or rooftop, which prevent the infiltration of water into the soil.

INFILTRATION — The entry of water (from precipitation, irrigation, or runoff) into the soil.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT — A permit issued pursuant to Section 402 of the Act (33 U.S.C. § 1342).

OWNER — The person legally and lawfully possessing the land across which a particular stormwater management system will lay.

PEAK DISCHARGE — The maximum instantaneous rate of flow during a storm, usually in reference to a specific design storm event.

PERSON — Any individual, partnership, copartnership, firm, company, corporation, association, joint-stock company, trust, estate, governmental entity, or any other legal entity, or their legal representatives, agents or assigns. The masculine gender shall include the feminine; the singular shall include the plural where indicated by the context.

PLANNING BOARD — The Greenfield Planning Board, fully appointed by the Mayor of the Town of Greenfield and with the administration of Chapter 550, Article V, of the Town Code, Subdivision Regulations.

RECHARGE — Water that infiltrates to an aquifer, usually from above.

REDEVELOPMENT PROJECT — Development, rehabilitation, expansion on previously developed sites, provided that redevelopment results in no net increase in impervious area and no net increase in the peak discharge for a ten-year twenty-four-hour storm.

SITE PLAN APPROVAL — Required under the Greenfield Zoning Ordinance for the creation, expansion, substantial alteration, or change of use of the following uses: all uses requiring a special permit; any business commercial, industrial, or institutional use (except home occupations not requiring a special permit); any residential use of two or more units, including subdivision; any site containing more than one principal use.¹

STORM DRAIN (SOMETIMES TERMED "STORM SEWER") — A sewer which carries stormwater and surface waters and drainage, but excludes sewage and industrial wastes other than unpolluted cooling water.

STORMWATER — Any flow occurring during or following any form of natural precipitation and resulting therefrom.

STORMWATER MANAGEMENT STANDARDS — Management standards to protect water bodies from the adverse impacts of stormwater runoff.

STORMWATER MANAGEMENT SYSTEM — A conveyance system for the capture, treatment and discharge of stormwater.

SUPERINTENDENT — The Director of Public Works of the Town of Greenfield or authorized deputy, agent or representative.

TEN-YEAR TWENTY-FOUR-HOUR EVENT — Precipitation from a storm that has a predicted statistical frequency of occurring once every 10 years over a twenty-four-hour period. This storm has a ten-percent chance of happening in any one given year.

TOTAL SUSPENDED SOLIDS (TSS) — Matter suspended in water or stormwater; when water is filtered for laboratory analysis, TSS are retained by the filter, dissolved solids pass through.

TOWN — The town known as the "Town of Greenfield"; that corporate entity in the County of Franklin, Commonwealth of Massachusetts, acting by and through its Mayor and Town Council, who are also the Board of Public Works.

TWO-YEAR TWENTY-FOUR-HOUR EVENT — Precipitation from a storm that has a predicted statistical frequency of occurring once every two years over a twenty-four-hour period. This storm has a fifty-percent chance of happening in any one given year.

WATERCOURSE — A channel in which a flow of water occurs, either continuously or intermittently.

WETLANDS — Tidal and nontidal areas characterized by saturated or nearly saturated soils most of the year that are located between terrestrial and aquatic environments; includes freshwater marshes around ponds, rivers and streams, brackish and salt marshes; common names include "marshes," "swamps" and "bogs."

WETLANDS PROTECTION ACT — The Massachusetts Wetlands Protection Act, MGL c. 131, § 40. Under the provisions of the Act, no person may remove, fill, dredge, or alter certain resource areas without first filing a

1. **Editor's Note: See also Ch. 550, Art. I, Site Plans.**

notice of intent and obtaining an order of conditions. The Act requires that the order contain conditions to preserve and promote the protection of public and private water supply and groundwater supply, flood control, storm damage protection, the prevention of pollution and the protection of fisheries, land containing shellfish, and wildlife habitat.

ARTICLE III
Connections

§ 381-5. Permit required.

- A. No unauthorized person shall uncover, make any connections with or open into, use, alter, disturb, introduce a new discharge or increase the volume currently discharged to any public way, stormwater sewer, or appurtenance thereof without first obtaining a written stormwater connection permit from the DPW.
- B. Any connections to the stormwater system owned or maintained by the Massachusetts Department of Transportation (MDOT) will require its approval.

§ 381-6. Application for permit.

Each applicant for a stormwater connection permit must be made at the office of the Department of Public Works on forms provided for that purpose.

§ 381-7. Classes of permit applications; fees; additional approvals required.

- A. There shall be two classes of stormwater connection permit applications:
 - (1) Residential. This includes all single- and two-family individual dwelling units, not including subdivisions. The permit and application fee shall be \$25, payable to the Town of Greenfield.
 - (2) Nonresidential. This includes all multifamily dwellings, subdivisions, commercial, industrial and institutional uses. The permit and application fee shall be \$100, payable to the Town of Greenfield.
- B. The application form shall be signed by the owner of the property or by his authorized representative. Fees are nonrefundable. Applications may be transferred to a new owner with permission of the DPW.
- C. In addition to the stormwater connection permit, the owner must obtain an excavation permit (street opening permit) from the DPW where subsurface work is to be done on public property or within the public way.
- D. Contact DIG SAFE 1-888-344-7233 for utility notification.

§ 381-8. Time frame for application submittal.

- A. Applications for residential stormwater connection permits must be submitted to the Department of Public Works at least 10 working days prior to the proposed connection date.

- B. Applications for nonresidential stormwater connection permits require the submittal of a stormwater management plan. Applications shall be submitted to the Department of Public Works at the same time as the submittal of the site plan application, if site plan approval is required, or 30 working days prior to the proposed connection date if site plan approval is not required.

§ 381-9. Stormwater management plans.

Two copies of a stormwater management plan shall be submitted to the Department of Public Works for all nonresidential stormwater connection permits. The applicant may request and the Superintendent may grant a waiver from any information requirements the Superintendent judges to be unnecessary to review of a particular plan.

- A. Computations. Pre- and post-development drainage calculations shall be completed for a two-year and a ten-year twenty-four-hour storm event. The one-hundred-year twenty-four-hour storm event must be evaluated for downstream impacts (flooding). Peak discharge rates must be calculated using the point of discharge or the downgradient property boundary. Separate drainage calculations shall be submitted for each point of discharge of flow from the site. Based on the particulars of each site, the DPW Engineering Superintendent will determine the appropriate methodology for developing drainage calculations.
- B. Existing site characteristics:
- (1) Location of all property boundaries.
 - (2) Topographic survey showing the existing contours, including the area necessary to determine downstream analysis for the proposed stormwater management system.
 - (3) Soils investigation, including borings and test pits, for areas where construction of small ponds and infiltration practices will occur.
 - (4) Description of all watercourses, impoundments, and wetlands on or adjacent to the site or locations into which stormwater flows.
 - (5) Delineation of the one-hundred-year floodplain and all wetlands, if applicable.
 - (6) Groundwater levels at the time of probable high groundwater elevation (November to April) in areas to be used for stormwater retention, detention and infiltration structures.
- C. Proposed site alterations:
- (1) Location of all existing and proposed buildings, other structures and impervious surfaces.
 - (2) Any proposed changes to the existing contours.

- (3) Location of all existing and proposed roads and utilities.
- (4) Location of all existing and proposed stormwater management systems.
- (5) Structural details of all components of the proposed stormwater management system. Notes on the plan specifying materials to be used, construction specifications, and typicals.
- (6) Location of erosion and sediment controls and details of types used.
- (7) Timing schedule and sequence of development, including: land clearing, grubbing, and stripping, rough grading, construction, final grading and vegetative stabilization.
- (8) Written inspection and maintenance plan of the stormwater management system to ensure that it functions as designed. A maintenance schedule shall be developed for the life of all stormwater management systems and shall state the maintenance to be completed, the time period for completion, and who shall perform the maintenance.
- (9) Breakdown of the estimated construction costs of the stormwater management system.

§ 381-10. Coordination with wetlands protection requirements.²

The stormwater management plan shall be coordinated with any order of conditions from the Conservation Commission and requirements under the Wetlands Protection Act. The provisions of this regulation do not supersede any requirements from the Environmental Protection Agency (EPA), the Massachusetts Department of Environmental Protection (DEP) or the Conservation Commission.

§ 381-11. Stormwater management standards.

When one or more of these management standards cannot be met, the applicant must demonstrate that an equivalent level of stormwater protection will be provided.

- A. The stormwater management system shall be designed so that the post-development peak discharge rates do not exceed the pre-development discharge rates for a ten-year twenty-four-hour storm.
- B. 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 from the pre-development or existing site conditions based on soil types.

2. **Editor's Note: See also Ch. 423, Wetlands Protection; and Ch. 515, Art. I, Conservation Commission Rules and Regulations.**

- C. New development shall be designed to remove 80% of the average annual load (post-development conditions) of total suspended solids (TSS). It is presumed that this is met when:
- (1) Suitable nonstructural practices for source control and pollution prevention are implemented.
 - (2) Stormwater management best management practices (BMPs) are used to capture the prescribed runoff volume. For details on BMPs, see the Massachusetts DEP's Stormwater Management, Vol. 1 & 2, March 1997.
 - (3) Stormwater management BMPs are maintained as designed.
- D. Redevelopment projects must meet these management standards to the maximum extent practicable. If it is not practicable to meet all the minimum standards, the stormwater management systems shall be designed to improve existing conditions.
- E. Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.

§ 381-12. Design criteria.

- A. Stormwater management systems are encouraged to be designed to incorporate the use of natural topography and land cover. The use of such features as natural swales and depressions as they exist prior to development, to the degree that they can accommodate the additional flow of water, are recommended.
- B. All stormwater management systems shall be designed to provide an emergency overflow system, and incorporate measures to provide a nonerosive velocity of flow along its length and at any outfall.
- C. The applicant shall consider public safety in the design of a stormwater management system. The banks of detention, retention, and infiltration basins shall be sloped at a gentle grade into the water as a safeguard to personal safety, to encourage the growth of vegetation and to allow the alternative flooding and exposure of areas along the shore. Basins shall be fenced or shall have a slope of 4:1 to a depth two feet below the control elevation. Side slopes must be stabilized and planted with vegetation to prevent erosion and provide pollution 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 and offering more space for the growth of vegetation.

§ 381-13. Expenses to be borne by owner; indemnification of Town.

All costs and expense incident to the installation, connection, use, and maintenance of the stormwater system shall be borne by the owner. The owner shall indemnify the Town from any loss or damage that may directly or indirectly be occasioned by the installation, connection, use, and

maintenance of the stormwater system. The owner shall further indemnify the Town from any loss or damage from stormwater backups, overflows, or blockages.

§ 381-14. Installation requirements.

The size, slope, alignment, materials of construction of a stormwater management system, and the methods to be used in excavating, placing of the pipe, jointing, testing, and backfilling the trench, shall conform to the requirements of the building and plumbing code or other applicable rules and regulations of the Department of Public Works.

§ 381-15. Site inspections and approval.

The DPW shall perform the following inspections and shall, in writing, either approve it or notify the applicant in what respects there has been a failure to comply with the requirements of the approved stormwater management plan. The applicant shall promptly correct any portion of the work that does not comply with the approved plan.

- A. Initial site inspection: prior to approval of any stormwater management plan.
- B. Erosion control inspection: after commencement of construction; to ensure erosion control practices are in compliance with the approved plan.
- C. Construction inspection: prior to backfilling any underground drainage or stormwater conveyance structures.
- D. Final inspection: when all work, including construction of the stormwater management system, has been completed and the applicant has submitted as-built plans. The Superintendent will provide certification of completion.

§ 381-16. Maintenance agreements; recording of agreement and plan.

- A. Prior to issuance of any stormwater permit for which a stormwater management plan is required, the applicant will be required to execute an inspection and maintenance agreement with the Town binding on all subsequent owners of land served by the private stormwater management system. Such agreement shall provide for access to the stormwater management system at reasonable times for regular inspections by the Superintendent to ensure that the system is maintained and is in proper working condition to meet the performance standards and any provision established.
- B. The inspection and maintenance agreement and the stormwater management plan shall be recorded by the applicant and/or owner in the land records of the Franklin County Registry of Deeds prior to the issuance of a stormwater permit.

§ 381-17. Maintenance responsibility.

The owner(s) of the property on which work has been done pursuant to this regulation for a private stormwater management system, or any other person or agent in control of such property, shall maintain in good condition and promptly repair and restore all grade surfaces, walls, drains, dams, structures, vegetation, erosion and sediment control measures, and other protective devices. Repairs or restoration and maintenance shall be done in accordance with an approved stormwater management plan.

§ 381-18. Performance bonds.

The Director may require from the developer a surety or cash bond, irrevocable letter of credit, or other means of security acceptable to the Town as reviewed by its attorney, prior to the issuance of a stormwater permit. The amount of the security shall not be less than the total estimated construction cost of the stormwater management system. The bond so required in this section shall include provisions relative to forfeiture for failure to complete work specified in the approved stormwater management plan, compliance with all the provisions of this chapter and other applicable laws and regulations, and any time limitations. The bond shall not be fully released without a final inspection of the completed work by the DPW representative, submission of "as-built" plans, and certification of completion by the DPW of the stormwater management system as being in compliance with the approved plan.

ARTICLE IV
Protection from Damage

§ 381-19. Prohibited acts.

No unauthorized person shall maliciously, willfully, or negligently break, damage, destroy, uncover, tamper, deface, or connect with any structure, appurtenance, or equipment which is a part of the stormwater system. Any person violating this provision shall be subject to appropriate legal action.

ARTICLE V

Power and Authority of Inspectors**§ 381-20. Right of entry.**

The Superintendent and other duly authorized employees of the Town bearing proper credentials and identification shall be permitted to enter all properties for the purposes of, but not limited to, inspection, observation, measurement, sampling, and testing in accordance with the provisions of this regulation. The Superintendent or its representatives shall have authority to inquire into any processes having a bearing on the kind and source of discharge to the stormwater management system.

§ 381-21. Liability of Town.

While performing the necessary work on private properties referred to in § 381-20 above, the Superintendent or duly authorized employees of the Town shall observe all safety rules applicable to the premises established by the owner, and the owner shall be held harmless for injury or death to the Town employees, and the Town shall indemnify the owner against loss or damage to its property by Town employees and against liability claims and demands for personal injury or property damage asserted against the owner and growing out of the gauging and sampling operation, except as such may be caused by negligence or failure of the owner to maintain safe conditions.

ARTICLE VI
Enforcement and Remedies

§ 381-22. Notice of violation.

Any person found to be violating any provision of this regulation shall be served by the Town with written notice stating the nature of the violation. The offender shall permanently cease all violations.

§ 381-23. Civil penalty.

Any person who violates any provision of this regulation, including lack of compliance with a maintenance plan on file at the Registry of Deeds, shall be liable to the Town for a maximum civil penalty of \$5,000 for each violation. Each day in which any such violation shall continue shall be deemed a separate offense.

§ 381-24. Liability for costs and expenses.

Any person violating any of the provisions of this regulation shall become liable to the Town for any expenses incurred by the Town, including costs to make repairs to the privately owned stormwater system, administrative costs, and any loss or damage occasioned the Town by reason of such violation.