

STORMWATER SYSTEM POLICY

Purpose.

The purpose of the stormwater policy 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 or reduce flooding and erosion 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

Applicability.

A Stormwater Management Plan shall be submitted as part of any Environmental Impact and Site Plan Review application to the Zoning Board of Appeals or Planning Board pursuant to Section 8 of the Zoning By-Laws of the Town of Montague. The Board may provide an applicant with Special Permit approval pending final Environmental Impact and Site Plan Review approval under this policy.

For details on Stormwater design and Best Management Practices applicants should review the Massachusetts Department of Environmental Protection's Stormwater Management Handbook Volume I, II & III.

Definitions.

Unless the context specifically indicates otherwise, the following terms and phrases, as used in this policy, 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.

COMBINED SEWER – A storm sewer or sanitary sewer receiving both surface runoff and sewage. See Montague Sewer Use Regulations adopted by the Board of Selectmen dated September 12, 2005.

IMPERVIOUS AREA - Impermeable surface, such as pavement or roof tops, which prevent the infiltration of water into the soil.

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

OWNER - Shall mean the person or entity legally and lawfully possessing or controlling 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.

REDEVELOPMENT PROJECT - Development, rehabilitation, expansion on previously developed sites, provided that redevelopment results in no significant increase in impervious area and no net increase in the peak discharge for a 25-year 24-hour storm.

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STATISTICAL, 24-HOUR EVENT – Predicted precipitation over a 24-hour period from a storm that has a statistical frequency of occurring over a designated number of years. Storm events are usually modeled in 2, 10, 25 and 100-year periods.

STORM DRAIN (sometimes termed "storm sewer") - Shall mean a sewer which carries storm 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 SYSTEM - A conveyance system for the capture, treatment and discharge of stormwater.

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

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.

Submittal requirements for stormwater plans.

Twelve (12) copies of the stormwater management plan and three (3) copies of detailed drainage computations.

The applicant may request and the Board may grant waivers from any requirement judged to be unnecessary to review a particular plan. The Board may designate a staff person to review the plan and grant such waivers during the application process but shall reserve the right to overrule staff waivers upon a decision that the information or requirement is necessary to the plan.

A. Computations:

Pre- and post-development drainage calculations shall be completed for a 2-year, 10-year and a 25-year 24-hour storm event. The 100-year 24-hour storm event must be evaluated for downstream impacts (flooding). Peak discharge rates must be calculated using the point of discharge or the down gradient property boundary. Separate drainage calculation shall be submitted for each point of discharge of flow from the site.

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 any 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 100-year flood plain 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:

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- (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 details.
- (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 Operation 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.

Stormwater management standards.

Redevelopment projects shall improve existing site conditions. The applicant must demonstrate that the stormwater system meets the stormwater management standards to the greatest extent practicable.

- A. The stormwater management system shall be designed so that the post-development peak discharge rates do not exceed the pre-development discharges rates for a 25-year 24-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.
- C. Stormwater Management Systems 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 practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;
 - (2) structural stormwater Best Management Practices (BMPs) are sized to capture the required water quality volume as determined in accordance with the Massachusetts Stormwater Handbook; and
 - (3) pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.
- D. Erosion and sediment controls must be implemented to prevent negative impacts during construction.

Design Preferences.

- A. Stormwater management systems are encouraged 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 non-erosive velocity of flow along its length and at any outfall.

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- C. Public safety shall be anticipated 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. Side slopes must be stabilized and planted with vegetation to prevent erosion and provide pollution removal.
- D. The banks of detention and retention areas are encouraged to 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.

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.

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 good engineering practices, the requirements of the building and plumbing code or other applicable rules and regulations of the Department of Public Works.

Inspections and approvals.

The design engineer and the Town where required shall perform the following inspections and shall in writing either approve it or notify the applicant 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 insure 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 of stormwater management system has been completed and the applicant has submitted as-built plans. The Town will provide final approval.

Maintenance responsibility.

The owner(s) of the property on which work has been done pursuant to this policy 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.

Operation and maintenance agreement.

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- A. A stormwater management plan is required and the applicant will be required to execute an operation and maintenance (O&M) agreement with the Town binding on all subsequent owners of land served by the private stormwater management system.
- B. The operation 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.

Coordinated with any order of conditions from the Conservation Commission.

The stormwater management plan shall be coordinated with any Order of Conditions from the Montague Conservation Commission and requirements under the Wetlands Protection Act. Provisions of this policy do not replace any requirements from the Environmental Protection Agency (EPA), the Massachusetts Department of Environmental Protection (DEP) or the Montague Conservation Commission.

Performance security.

For phased projects, the Board may require a surety, cash bond, irrevocable letter of credit, or other means of security prior to approval. 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 policy 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, submission of "as-built" plans, and approval by the Town of the stormwater management system as being in compliance with the approved plan.

Invalidation clause.

Invalidity of any section, clause, sentence or provision in this policy shall not affect the validity of any other section, clause, sentence or provision of this policy, which can be given effect without such invalid part or parts.

Severability.

If any provision, paragraph, word, section, or article of this policy is invalidated by any court of competent jurisdiction, the remaining provisions, paragraphs, words, sections, and chapters shall not be affected and shall continue in full force and effect.

When effective.

This Policy shall be in full force and effect from and after its passage.

Passage.

Passed and adopted by the Montague Planning Board on the 24th day of March, 2009.

Passed and adopted by the Montague Zoning Board of Appeals on the _____ day of (Month),
(Year).