

DENNIS STORMWATER MANAGEMENT RULES AND REGULATIONS

SECTION 1: PURPOSE AND AUTHORITY

A. Purpose

The purpose of this document is to provide the Stormwater Management Rules and Regulations for the Town of Dennis Stormwater Management Bylaw.

B. Authority

The Dennis Board of Selectman, under the authority of Chapter 156 of the Code of the Town of Dennis, and Article 7 of the 2009 October 27th Special Town Meeting, and after holding a duly called Public Hearing on March 30, 2010, adopts these Stormwater Management Rules and Regulations.

SECTION 2: DEFINITIONS

The following definitions describe the meaning of the terms used in these Rules and Regulations:

“Authorized Enforcement Agency”: The Dennis Board of Selectmen through the Building Commissioner, shall administer, implement and enforce these Stormwater Management Rules and Regulations.

"Adverse impact" means any deleterious effect on waters or wetlands, including their quality, quantity, surface area, species composition, aesthetics or usefulness for human or natural uses which are or may potentially be harmful or injurious to human health, welfare, safety or property, to biological productivity, diversity, or stability or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation.

"Alteration" means any activity, which will change the ability of a ground surface area to absorb water or will change existing surface drainage patterns. Examples include, but are not limited to, earthmoving, paving and modification of existing vegetation.

"Best management practices (BMP)" are structural or biological devices that temporarily store or treat urban stormwater runoff to reduce flooding, remove pollutants, encourage infiltration and provide other amenities. They can also be non-structural practices that reduce pollutants at their source. BMPs are described in a stormwater design manual, Stormwater Management, Volume Two: Stormwater Technical Handbook (March, 1997, Mass. Department of Environmental Protection, as updated or amended).

“Building Commissioner” means the Town of Dennis Building Commissioner or his/her designee.

“Construction activity” is disturbance of the ground by removal of vegetative surface cover or topsoil, grading, excavation, clearing or filling.

“Construction Site” is any site where activity is proposed or occurs that involves the alteration of more than five hundred (500) contiguous square feet of land.

"Design storm" is a ten (10) year rainfall event of specified size and return frequency that is used to calculate the runoff volume and peak discharge rate to a BMP.

"Detention" is the temporary storage of storm runoff in a BMP, which is used to control the peak discharge rates, and which provides gravity settling of pollutants.

“Disturbance” is any land clearing, grading, bulldozing, digging or similar activities.

"Drainage area" means that area contributing runoff to a single point measured in a horizontal plane, which is enclosed by a ridgeline.

"Easement" means a grant or reservation by the owner of land for the use of such land by others for a specific purpose or purposes, and which must be included in the conveyance of land affected by such easement.

"Erosion and Sedimentation" is the movement and deposition of soil which creates an unstable soils condition.

"Flow attenuation" means prolonging the flow time of runoff to reduce the peak discharge.

"Hotspot area" is an area where land uses or activities, without regard to square footage, that have the potential for high stormwater runoff pollutant loadings, including, but not limited to, auto fueling facilities, fleet storage yards, road salt storage areas and designated snow disposal areas, long-term staging areas for construction or landscaping operations, and commercial/industrial outdoor maintenance, storage or loading areas.

"Hydrology model” may include one of the following:

- TR-20, a watershed hydrology model developed by the Natural Resources Conservation Service act that is used to route a design storm hydrograph through a pond;
- TR 55, or Technical Release 55, "Urban Hydrology for Small Watersheds" is a publication developed by the Natural Resources Conservation Service to calculate stormwater runoff and an aid in designing detention basins;
- Hydrocad software.

"Impervious surfaces" are areas which prevent the infiltration of water into the soil, including but not limited to asphalt pavement, compacted crushed stone or rooftops.

"Infiltration" is the downward movement of water from the surface to the subsoil.

"Infiltration trench" is a stormwater management excavation filled with aggregate which removes both soluble and particulate pollutants. Trenches are not intended to trap coarse sediments.

"Massachusetts Stormwater Management Policy" is a Policy issued by the Department of Environmental Protection, and as amended, that coordinates the requirements prescribed by State regulations promulgated under the authority of the Massachusetts Wetlands Protection Act G.L. c 131 & s 40 and Massachusetts Clean Waters Act G.L. c 21 s 23-56.

"Outfall" is the terminus of a storm drain or other stormwater structure where the contents are released.

"Peak discharge" is the maximum instantaneous rate of flow during a storm, usually in reference to a specific design storm event.

"Permeable soils" are soil materials with a sufficiently rapid infiltration rate so as to greatly reduce or eliminate surface and stormwater runoff. These soils are generally classified as NRCS hydrologic soil types A and B.

"Person" is an individual, partnership, association, firm, company, trust, corporation, agency, authority, department or political subdivision of the Commonwealth or the federal government, to the extent permitted by law, and any officer, employee or agent of such person.

"Public Way" is a Town owned or privately owned road which is open to the public.

"Retention" is the holding of runoff in a basin without release except by means of evaporation, infiltration, or emergency bypass.

"Start of construction" is the first land-disturbing activity associated with a development, including land preparation such as: clearing, grading and filling; installation of streets and walkways; excavation for basements; footings, piers or foundations; erection of temporary forms; and installation of accessory buildings such as garages.

"Stormwater Facility" is any structural or non-structural device utilized to control stormwater runoff.

"Swale" is a natural manmade depression used to temporarily store, route or filter runoff.

SECTION 3: APPLICABILITY

- A. All persons that create a Construction Site or Hotspot Area are required to satisfy the purpose and intent of the Stormwater Management Bylaw and in accordance with these Dennis Stormwater Management Rules and Regulations, as revised.

- B. In addition, all construction sites altering more than 20,000 square feet of total area, and all Hotspot areas are required to secure a Stormwater Management Permit prior to starting any land disturbance within the person's property.
- C. The following are exempt from the requirements of this document:
1. Any land disturbance 500 square feet or less.
 2. Normal maintenance and improvement of land in agricultural use as defined by the Wetlands Protection Act regulation 310 CMR 10.04;
 3. Emergency activities necessary to protect public health or safety, so long as all necessary emergency permits or emergency certifications have been or will be obtained;
 4. Normal maintenance and improvements of Town of Dennis Publicly Owned Roads.
 5. Any work or projects for which all necessary approvals and permits have been issued before the effective date of this Bylaw.

SECTION 4: STORMWATER MANAGEMENT PERMIT PROCEDURES AND REQUIREMENTS

A. Permit Required

Prior to the issuance of any site plan approval or development permit for any proposed construction site or hotspot area as indicated in Section 3B, a stormwater management permit must be approved by the Building Commissioner. No person shall, on or after the effective date of the Stormwater Management Bylaw, initiate any land clearing, land grading, earth moving or development activities without first complying with these Stormwater Management Rules and Regulations.

B. Application Requirements

Application for approval of a Stormwater Management Permit shall include the following:

1. A Stormwater Management Plan in accordance with Section 5 shall be submitted to the Building Commissioner for review and approval for any proposed development specified in Section 3A. The Building Commissioner may require the Stormwater Management Plan be signed and sealed by a Licensed Professional Engineer and/or Surveyor, and submitted along with the other required documents for site plan review. The Plan shall contain supporting computations, drawings, and sufficient information describing the manner, location, and type of measures in which stormwater runoff will be managed from the entire property. The Plan shall serve as the basis for all subsequent construction.

2. An Erosion and Sediment Control Plan.
3. Maintenance Plan.
4. Non-refundable permit review fee.

C. Procedures for Review and Approval of Stormwater Permits

1. The procedures for review and approval of stormwater management permits shall be consistent with the review procedures of the Building Commissioner as appropriate to the use.
2. The Building Commissioner shall refer copies of the stormwater management permits to the Town Engineer for review, and shall consider any comments submitted by the Town Engineer during the review period.

D. Criteria for Review of Stormwater Permits

In addition to other criteria used by the Building Commissioner in making permit decisions, for the uses specified in these Rules and Regulations, the Building Commissioner must also find that the Stormwater Management Plan submitted with the permit application meets the following criteria:

1. The Stormwater Management Plan and the Erosion and Sediment Control Plan shall be consistent with the Purpose of these Rules and Regulations as defined in Section 1A;
2. The Stormwater Management Plan shall satisfy the Performance Standards described in Section 5;
3. The Erosion and Sediment Control Plan shall satisfy the Design Guidelines in Section 6.

E. Building Commissioner's Action

1. The Building Commissioner's action, rendered in writing, shall consist of either:
 - a. Approval of the Stormwater Management Permit Application subject to any conditions, modifications or restrictions required by the Building Commissioner which will ensure that the proposed project plans satisfies the purposes in Section 1A and the standards in Section 6 and adequately protect the water resources of the community and is in compliance with the requirements set forth in these Rules and Regulations.
 - b. Disapproval of the Stormwater Management Permit Application based upon a

determination that the proposed project plan, as submitted, does not satisfy the purposes in Section 1A and the standards in Section 6 or adequately protects the water resources, as set forth in these Rules and Regulations.

2. The Building Commissioner may waive certain requirements of Section 5 based upon site specific conditions.
3. The applicant may appeal the decision of the Building Commissioner, within thirty (30) consecutive calendar days, to the Dennis Board of Selectmen.
4. Failure of the Building Commissioner to take final action upon an Application within One Hundred and Twenty (120) consecutive calendar days shall be deemed to be approval of said Application.

F. Inspections

1. No work shall commence prior to approval of the Stormwater Management Permit. The applicant shall coordinate with the Building Commissioner for scheduling of inspections as determined in said Plan.
2. The Building Commissioner shall inspect the work and either approve it or notify the applicant in writing in what respects there has been a failure to comply with the requirements of the approved Plan. Any portion of the work which does not comply shall be promptly corrected by the applicant or the applicant will be subject to the bonding provisions of Section 9 or the penalty provisions of Section 10. The Town may conduct random inspections to ensure effective control of erosion and sedimentation during all phases of construction.

G. Permit Application Review Fees

The Stormwater Management Permit Fee for review of any land development application shall be a lump sum of \$300.00. This fee structure shall be revised, when necessary, by the Dennis Board of Selectmen.

SECTION 5: THE STORMWATER MANAGEMENT AND EROSION CONTROL PLAN

The application for a Stormwater Management Permit shall include the submittal of three (3) copies of the Stormwater Management Plan and Erosion Control Plan, which meets the design requirements provided by these Rules and Regulations. The Plan shall include sufficient information to evaluate the environmental characteristics of the affected areas, the potential impacts of the proposed development on water resources; and the effectiveness and acceptability of measures proposed for managing stormwater runoff. The Plan must be designed to meet the Massachusetts Stormwater Management Standards as set forth in Section 5 of these Rules and Regulations and the DEP Stormwater Management Handbook

Volumes I and II, as amended. The applicant shall certify on the drawings that all clearing, grading, drainage, construction, and development shall be conducted in strict accordance with the plan. The minimum information submitted for support of a stormwater management plan shall be as follows:

1. A locus map and north arrow,
2. The existing zoning, and land use at the site,
3. The proposed land use,
4. The location(s) of existing and proposed easements,
5. The location of existing and proposed utilities,
6. The site's existing & proposed topography with contours at 2 foot intervals with spot elevations where necessary,
7. A description & delineation of existing stormwater conveyances, impoundments, and wetlands on or adjacent to the site or into which storm water flows,
8. A delineation of 100-year flood plains, if applicable,
9. Estimated seasonal high groundwater elevation (November to April) in areas to be used for storm water retention, detention or infiltration,
10. The existing and proposed vegetation and ground surfaces with runoff coefficient for each,
11. A drainage area map showing pre and post construction watershed boundaries, drainage area and storm water flow paths,
12. A description and drawings of all components of the proposed drainage system including:
 - a. Locations, cross sections, and profiles of all brooks, streams, drainage swales and their method of stabilization.
 - b. All measures for the detention, retention or infiltration of water.
 - c. All measures for the protection of water quality.
 - d. The structural details for all components of the proposed drainage systems and storm water management facilities.
 - e. Notes on drawings specifying materials to be used, construction specifications, and typical details.
 - f. Proposed improvements including location of buildings or other structures, impervious surfaces, and drainage facilities.
 - g. A description of construction and waste materials expected to be stored on-site, and a description of controls to reduce pollutants from these materials including storage practices to minimize exposure of the materials to storm water, and spill prevention and response.
 - h. Sequence of development including clearing, stripping, rough grading, construction, final grading, and vegetative stabilization.
 - i. A maintenance schedule for the period of construction.

SECTION 6: STORMWATER MANAGEMENT PERFORMANCE STANDARDS

A. Minimum Control Requirements

1. Projects must meet the following standards:

- a. No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or water of the Commonwealth.
- b. Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.
- c. 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.
- d. For new development, stormwater management systems must be designed to remove 80% of the average annual load (post development conditions) of Total Suspended Solids (TSS). It is presumed that this standard is met when:
 - (1) Suitable nonstructural practices for source control and pollution prevention and implemented;
 - (2) Stormwater management best management practices (BMPs) are sized to capture the prescribed runoff volume; and
 - (3) Stormwater management BMPs are maintained as designed.
- e. Stormwater discharges from areas with higher potential pollutant loads require the use of specific stormwater management BMPs (see Stormwater Management Volume I: Stormwater Policy Handbook). The use of infiltration practices without pretreatment is prohibited.
- f. Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas (see Stormwater Management Volume I: Stormwater Policy Handbook). Critical areas are Outstanding Resource Waters (ORWs), shellfish beds, swimming beaches, cold water fisheries and recharge areas for public water supplies.
- g. Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. However, if it is not practicable to meet all the Standards, new (retrofitted or expanded) stormwater management systems must be designed to improve existing conditions.
- h. Erosion and sediment controls must be implemented to prevent impacts during disturbance and construction activities.

- i. All stormwater management systems must have an operation and maintenance plan to ensure that systems function as designed.
2. In some cases, the Building Commissioner may require an increase in these minimum requirements.

B. Stormwater Management Measures

- 1 Stormwater management measures shall be required to satisfy the minimum control requirements:
 - a. Infiltration, flow attenuation, and pollutant removal of runoff on-site to existing areas with grass, trees, and similar vegetation and through the use of open vegetated swales and natural depressions.
 - b. Use of stormwater on-site to replace Town water for irrigation.
 - c. Stormwater detention structures for the temporary storage of runoff which is designed so as not to create a permanent pool of water.
2. Best Management Practices shall be employed to minimize pollutants in stormwater runoff prior to discharge into a separate storm drainage system or water body.
3. 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.

C. Design Criteria

Stormwater Design Manual

A stormwater design manual, Stormwater Management, Volume Two: Stormwater Technical Handbook (March, 1997, Mass. Department of Environmental Protection, as updated or amended) is hereby incorporated by reference as part of these Rules and Regulations, and shall furnish additional policy, criteria and information including specifications and standards, for the proper implementation of the requirements of these Rules and Regulations. This manual includes a list of acceptable stormwater treatment practices, including the specific design criteria for each stormwater practice.

1. Infiltration systems
 - a. Infiltration systems shall be equipped with clean stone and or filter fabric adjacent to the soil or other sediment removal mechanisms.

- b. Infiltration systems greater than 3 feet deep shall be located at least 10 feet from basement walls.
 - c. Due to the potential for groundwater contamination from dry wells, they shall not be an acceptable method for management runoff containing pollutants.
 - d. Infiltration systems shall:
 - (1) be designed to handle runoff from commercial or industrial impervious parking areas shall be a minimum of 100 feet from any drinking water supply well.
 - (2) be used as sediment control basins during construction unless specific plans are included to restore or improve the basin surface.
 - (3) be constructed with a three foot minimum separation between the bottom of the structure and the seasonal high groundwater elevation, as determined by a certified soil evaluator.
 - e. Provisions shall be made for safe overflow passage, in the event of a storm which exceeds the capacity of an infiltration system.
2. Retention and detention ponds shall be designed and constructed in accordance with the criteria of the Stormwater Management, Volume Two: Stormwater Technical Handbook (March, 1997, Mass. Department of Environmental Protection, as updated or amended).
 3. 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.
 4. The Town Engineer may 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.
 5. 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 affected 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.
 6. All applicants for commercial or industrial 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 of such chemicals, and include the approximate volume/weight of each chemical, in the application.
 7. Runoff from parking lots shall be treated by oil and water separators or other Town approved controls to remove oil and sediment.
 8. Institute interim and permanent stabilization measures. The measures shall be instituted on a disturbed area as soon as practicable but no more than 14 days after construction activity has temporarily or permanently ceased on that portion of the site.

SECTION 7: DESIGN GUIDELINES FOR EROSION AND SEDIMENT CONTROL PLAN

The design requirements of the Erosion and Sediment Control Plan are:

1. Minimize total area of disturbance.
2. Sequence activities to minimize simultaneous areas of disturbance.
3. Minimize peak rate of runoff in accordance with the MA. D.E.P. Stormwater Policy.
4. Minimize soil erosion and control sedimentation during construction. Prevention of erosion is preferred over sedimentation control.
5. Divert uncontaminated water around disturbed areas.
6. Maximize groundwater recharge.
7. Install, and maintain all Erosion and Sediment Control measures in accordance with the manufacturer's specifications and good engineering practices.
8. Prevent off-site transport of sediment, including vehicle tracking.
9. Protect and manage on-site and other designated material storage areas (overburden and stockpiles of dirt, borrow areas, or other areas used solely by the permitted project are considered a part of the project).
10. 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 control.
11. Prevent adverse impact from the proposed activities to habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or of Special concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species.

SECTION 8: MAINTENANCE

A. Operation, Maintenance and Inspection Agreement

1. Prior to issuance of any building permit for which stormwater management is required, the Building Commissioner shall require the applicant or owner to execute an operation, maintenance and inspection agreement binding on all subsequent owners of land served by

the private stormwater management facility. The agreement shall be designed to ensure that water quality standards are met in all seasons and throughout the life of the system. Such agreement shall provide for access to the facility at reasonable times for inspections by the Town to ensure that the facility is maintained and operating in proper working condition to meet design standards and any provision established. The agreement shall include:

- a. The name(s) of the owner(s) for all components of the system.
 - b. Maintenance agreements that specify:
 - (1) The name and address of the person responsible for operation and maintenance.
 - (2) The person(s) responsible for financing maintenance and emergency repairs.
 - (3) A Maintenance Schedule for all drainage structures, including swales and ponds.
 - (4) A list of easements with the purpose and location of each.
 - (5) The signature(s) of the owner(s).
 - c. Stormwater management easements as necessary for:
 - (1) Access for facility inspections and maintenance.
 - (2) Preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event.
 - (3) Direct maintenance access by heavy equipment to structures requiring regular cleanout.
 - d. Stormwater management easement requirements:
 - (1) The purpose of each easement shall be specified in the maintenance agreement signed by the property owner.
 - (2) Stormwater management easements are required for all areas used for off-site stormwater control.
 - (3) Easements shall be recorded with the Registry of Deeds prior to issuance of a Certificate of Completion.
 - e. Changes to Operation and Maintenance Plans
 - (1) The owner(s) of the stormwater management system must notify the Building Commissioner of changes in ownership or assignment of financial responsibility.
 - (2) The maintenance schedule in the Maintenance Agreement may be amended to achieve the purposes of this by-law by mutual agreement of the Building Commissioner and the Responsible Parties. Amendments must be in writing and signed by all Responsible Parties. Responsible Parties must include owner(s), persons with financial responsibility, and persons with operational responsibility.
2. The agreement shall be recorded by the applicant and/or owner in the land records of the Registry of Deeds.
 3. The agreement shall also provide that, if after notice by the Town to correct a violation requiring maintenance work, satisfactory corrections are not made by the owner(s) within ten working days, the Building Commissioner may perform all necessary work to place the facility in proper working condition particularly if the deficiency affects public property. The owner(s) of the facility shall be responsible for the cost of the work and any penalties or fines imposed.

B. Maintenance Responsibility

1. The owner of the property on which work has been done pursuant to these Rules and 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 grade surfaces, walls, drains, dams and structures, vegetation, erosion and sediment control measures and other protective devices. Such repairs or restoration and maintenance shall be in accordance with approved plans.
2. A maintenance schedule shall be developed for any stormwater management facility and shall state the maintenance to be completed, the time period for completion, and who shall be legally responsible to perform the maintenance. This maintenance schedule shall be part of the stormwater management plan.
3. The owner(s) shall maintain records of installation, repairs and maintenance performed on the stormwater management facility.

SECTION 9: PERFORMANCE BOND

The Town shall require a surety or cash bond or other form of security for the satisfactory completion of the stormwater management facility. No building permit for the construction of a development requiring a stormwater management facility shall be issued prior to the receipt of said bond. The amount of the security shall not be less than the total estimated construction cost of the stormwater management facility. 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 of the provisions of this By-law 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 Town Engineer, submission of "As-built" plans, and certification of completion by the Building Commissioner of the stormwater management facilities being in compliance with the approved plan and the provisions of these Rules and Regulations.

SECTION 10: ENFORCEMENT AND PENALTIES

A. Violations:

Any construction site or hotspot area activity that has commenced or is conducted contrary to the Stormwater Management Bylaw may be restrained by injunction or otherwise abated in a manner provided by law.

B. Notice of Violation:

When the Building Commissioner determines that an activity is not being carried out in accordance with the requirements of these Rules and Regulations, the owner(s) of the property shall be issued a written Notice of Violation. The owner(s) shall have ten (10) consecutive calendar days to satisfactorily address the violation without incurring penalties or fees.

C. Stop Work Orders:

Persons receiving a Notice of Violation will be required to immediately stop all construction activities. This "Stop Work Order" will be in effect until the Building Commissioner confirms that the construction site or hotspot area activity is in compliance and the violation has been satisfactorily addressed. Failure to address a Notice of Violation in a timely manner can result in civil, criminal or monetary penalties in accordance with the enforcement measures authorized in these Rules and Regulations.

D. Violations and Penalties.

- 1) Any person, corporation or entity found in violation of any provisions of the Stormwater Management Bylaw shall be punished by a fine in accordance with the following schedule of fines, and each day that the violation continues shall constitute a separate offense:

Number of Offense	Penalty
First Offense *****	Written Notice Of Violation.
Second Offense *****	\$100.00
Third Offense and	
Subsequent Offenses *****	\$300.00

- 2) Notice of violation and procedure shall be in accordance with M.G.L.A. C.40, para.21D (Non-criminal disposition).