

Norwell Town Code:

Division 4 – Rules & Regulations

Chapter 303 – Conservation Commission

Article I – Wetlands Regulations

*Article II – Stormwater Management & Erosion Control Regulations*

## **ARTICLE II -STORMWATER MANAGEMENT AND EROSION CONTROL REGULATIONS**

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## **Section 1. Purpose**

The purpose of these Stormwater Management Regulations (hereinafter the "Regulations") is to protect, maintain and enhance the public health, safety, general welfare, and environment 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, as identified in Chapter 65, Stormwater Management & Erosion Control of the Norwell Town Code Part IV: Land Use & Natural Resources.

Development of land, including loss of vegetative cover to introduce impervious surfaces, regrading, and other land use changes, permanently alter the hydrologic system of local watersheds by decreasing transpiration and infiltration and increasing stormwater runoff rates and volumes, causing an increase flooding, stream channel erosion, and sediment transport and deposition. Additional runoff also contributes to increased nonpoint source pollution and degradation of receiving waters.

Stormwater management systems that are properly designed utilizing low-impact design (LID) techniques and appropriate best management practices (BMPs) can better simulate the natural (existing) hydrologic condition and reduce adverse impacts.

During the construction process, the soil is often exposed for periods of time and most vulnerable to erosion by wind and water. The eroded soil endangers water resources by reducing water quality, and causing the siltation of valuable wetland resources, including swamps, streams, rivers, lakes, and aquatic habitats for fish and other desirable species.

The impacts of construction erosion and sedimentation and post-construction stormwater runoff quantity and quality can adversely affect public safety, public and private property, surface water drinking water supplies, groundwater resources including drinking water supplies, recreation, aquatic habitats, fish and other aquatic life, property values and other uses of lands and waters.

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

## **Section 2. Definitions**

In these Regulations, the following terms shall have the following meanings unless a contrary meaning is required by the context or is specifically prescribed. Words used in the singular include the plural, and words used in the plural include the singular. Words used in the present tense include the future. Additional definitions can be found in the Stormwater Management Bylaw:

**ABUTTER:** The Owner(s) of land abutting the property on which the land-disturbing activity occurs.

**AGRICULTURE:** The normal maintenance or improvement of land in agricultural or aquacultural use, as defined by the Massachusetts Wetlands Protection Act, (MGL c.131 §40) and its implementing regulations (310 CMR 10.00).

**ALTERATION OF DRAINAGE CHARACTERISTICS:** Any activity on an area of land that changes the water quality, force, direction, timing, or location of runoff flowing from the area. Such changes include: change from distributed runoff to confined; discrete discharge; change in the volume of runoff from the area; change in the peak rate of runoff from the area; and change in the recharge to groundwater on the area.

**APPLICANT:** Any person, individual, partnership, association, firm, company, corporation, trust, authority, agency, department, or political subdivision, of the Commonwealth or the Federal government to the extent permitted by law requesting either an Administrative Land Disturbance Review or a Land Disturbance Permit for proposed land-disturbing activity.

**AUTHORIZED ENFORCEMENT AGENCY:** Town of Norwell Conservation Commission, or its authorized agent(s), employee(s), and designee(s).

**BEST MANAGEMENT PRACTICE (BMP):** An activity, procedure, restraint, or structural improvement that helps to reduce the quantity or improve the quality of stormwater runoff.

**CERTIFICATE OF COMPLETION (COC):** A document issued by the Conservation Commission after all construction activities have been completed, which states that all conditions of an issued Land Disturbance Permit have been met and that a project has been completed in compliance with the conditions set forth in the SWMP.

**CONSTRUCTION AND WASTE MATERIALS:** Excess or discarded building or site materials, including but not limited to soils, stone, vegetation, lumber, construction materials, concrete truck washout, chemicals, litter, and sanitary waste at a construction site that may adversely impact water quality.

**CLEAN WATER ACT:** The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.) as hereafter amended.

**CLEARING:** Any activity that removes and/or significantly alters the vegetative surface cover of a site.

**DEVELOPMENT:** The modification of land in any manner to accommodate a new use, replacement of use, or expansion of use, usually involving construction.

**DISCHARGE OF POLLUTANTS:** The addition from any source, point or nonpoint, of any pollutant or combination of pollutants into the municipal storm drain system or into the

waters of the United States, Commonwealth or Town from any source.

**DISTURBANCE OF LAND:** See LAND-DISTURBING ACTIVITY.

**DRAINAGE EASEMENT:** A legal right granted by a landowner to a grantee allowing the use of private land for stormwater management purposes.

**EROSION:** The wearing away of the land surface by natural or artificial forces such as, but not limited to: wind, water, ice, gravity, excavation, regrading, or vehicle traffic and the subsequent detachment and transportation of soil particles.

**EROSION AND SEDIMENTATION CONTROL PLAN:** A document containing a narrative, drawings, and details developed by a registered professional civil engineer (PE) or a Certified Professional in Erosion and Sedimentation Control (CPESC), which includes best management practices or equivalent measures designed to control surface runoff and erosion and sedimentation during pre-construction and construction-related land disturbance activities.

**EROSION CONTROL:** The prevention and/or reduction of the movement of soil particles or rock fragments due to stormwater runoff.

**ESTIMATED HABITAT OF RARE WILDLIFE AND CERTIFIED VERNAL POOLS:**  
Habitats delineated for state-protected rare wildlife and certified vernal pools for use with the Wetlands Protection Act Regulations (310 CMR 10.00) and the Forest Cutting Practices Act Regulations (304 CMR 11.00).

**FLOODING:** A local and temporary inundation or rise in the surface of a body of water, such that covers land not usually underwater.

**GRADING:** Changing the level or shape of the ground surface.

**GROUNDWATER:** Water beneath the surface of the ground, including confined or unconfined aquifers.

**GRUBBING:** The act of clearing land surface by digging up roots and stumps.

**ILLICIT CONNECTION:** A surface or subsurface drain or conveyance which allows an illicit discharge into the municipal storm drain system, including but not limited to: sewage, freshwater (that is not composed of clean naturally flowing/occurring stormwater), process wastewater, wash water, and any connections from indoor drains, sinks, or toilets, regardless of whether said the connection was previously allowed, permitted, or approved before the effective date of this Bylaw.

**ILLICIT DISCHARGE:** Direct or indirect discharge to the municipal storm drain system that is not composed entirely of clean, naturally flowing/occurring stormwater. "Illicit Discharge" does not include a discharge in compliance with an NPDES stormwater discharge permit or resulting from fire-fighting activities exempted pursuant to Article II(2)(D)(1) of this Bylaw.

**IMPERVIOUS SURFACE:** Any material or structure on, in the surface of, or above the ground that prevents water from infiltrating the underlying soil. "Impervious Surface" includes but is not limited to: roads, paved parking lots and driveways, hard-packed gravel roads, gravel driveways, and parking lots (or those containing crushed material that becomes impervious on contact with water), patios, sidewalks, structures, and rooftops and similar.

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

**INFEASIBLE:** Not technologically possible, or not economically practicable and achievable in light of best industry practices.

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

**LAND-DISTURBING ACTIVITY:** Any action or activity that causes a change in the position, location or arrangement of trees, vegetation, water, soil, sand, rock, gravel, or similar earth material.

**LANDSCAPE:** A piece of land that has been altered from its natural state and contains a variety of mixed plantings (rather than just lawn) or an area of planting in conjunction with the installation of other landscape features -- walks, walls, patios, fountains, etc.

**LAND USE OF HIGHER POTENTIAL POLLUTANT LOAD (LUHPPL):** Land uses or activities with higher potential pollutant loadings, as defined in the Massachusetts Stormwater Management Regulations, such as auto salvage yards, auto fueling facilities, fleet storage yards, commercial parking lots with high-intensity use, road salt storage areas, commercial nurseries and landscaping, outdoor storage and loading areas of hazardous substances, and marinas.

**LAWN:** A piece of land cleared of trees typically consisting of an area of *mowed and/or cultivated grass* (sod, seed, hydroseed, etc.) that is cut regularly to keep it short.

**LOW IMPACT DEVELOPMENT (LID):** The term *low impact development* (LID) refers to systems and practices 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 is an approach to land development (or Redevelopment) that works with nature to manage stormwater as close to its source as possible.

**MASSACHUSETTS ENDANGERED SPECIES ACT:** MGL c. 131A and its implementing regulations (321 CMR 10.00) which prohibit the "taking" of any rare plant or animal species listed as Endangered, Threatened, or of Special Concern.

**MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS:** The Standards 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 (MGL c. 131 §. 40 and the Massachusetts Clean Waters Act (MGL c. 21, §. 23-56). The Standards address stormwater impacts through the implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.

**MUNICIPAL STORM DRAIN SYSTEM or MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4):** The system of conveyances designed or used for collecting or conveying stormwater, including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel (whether isolated from or connected to other jurisdictional wetland resources), reservoir, and other drainage structure that together comprise any storm drainage system.

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER DISCHARGE PERMIT:** A permit issued by the United States Environmental Protection Agency or jointly with the Commonwealth of Massachusetts that regulates the discharge of pollutants to waters of the United States.

**NONPOINT SOURCE:** Precipitation, atmospheric deposition, drainage, seepage, or hydrologic modification that picks up pollutants as it moves across the ground.

**NONSTORMWATER DISCHARGE:** Discharge to the municipal storm drain system not composed entirely of naturally occurring clean stormwater.

**OFFSITE COMPLIANCE:** an approach whereby pollutant removal practices are implemented at redevelopment or retrofit sites at another location in the same HUC12 watershed as the original project, as approved by the Stormwater Authority.

**OPERATION AND MAINTENANCE PLAN (O&M Plan):** A plan setting up the functional, financial, and organizational mechanisms for the ongoing operation, maintenance, repair, and replacement of a stormwater management system to ensure that it continues to function as designed.

**OUTFALL:** The point at which stormwater flows out from a point source into municipal waters or waters of the Commonwealth.

**OUTSTANDING RESOURCE WATERS (ORWs):** Waters designated by the Massachusetts Department of Environmental Protection as ORWs. These waters have exceptional sociologic, recreational, ecological and/or aesthetic values and are subject to more stringent requirements under the Massachusetts Water Quality Standards (314 CMR 4.00) and the Massachusetts Stormwater Management Standards. ORWs include vernal pools certified by the Natural Heritage Program of the Massachusetts Department of Fisheries and Wildlife and Environmental Law Enforcement, all Class A designated public water supplies including their bordering vegetated wetlands, and other waters specifically designated.

**OWNER:** A person with a legal or equitable interest in the property.

**PERSON:** 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.

**POINT SOURCE:** Any discernible conveyance, including but not limited to any pipe, ditch, channel, tunnel, distributed sheet flow, conduit, well, discrete fissure, or container from which pollutants are or may be discharged.

**PRE-CONSTRUCTION:** All activities performed in preparation for construction.

**POLLUTANT:** Any element or property of sewage, agricultural, industrial, or commercial waste, runoff, leachate, heated effluent, or other matter, whether originating at a point or nonpoint source, that is or may be introduced into any stormwater conveyance, storm sewer, waterworks or waters of the Commonwealth, or the Town. Pollutants shall include but are not limited to:

- A. Paints, varnishes, and solvents;
- B. Oil and other automotive fluids;
- C. Nonhazardous liquid and solid wastes and yard wastes;
- D. Refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordnance, accumulations, and floatables;
- E. Pesticides, herbicides, and fertilizers;
- F. Hazardous materials and wastes; sewage, fecal coliform, and pathogens;
- G. Dissolved and particulate metals;
- H. Animal wastes;
- I. Rock; sand; salt; soils;
- J. Construction wastes and residues; and,
- K. Noxious or offensive matter of any kind.
- L. Invasive species.

**PRIORITY HABITAT OF RARE SPECIES:** Habitats delineated for rare plant and animal populations protected pursuant to the Massachusetts Endangered Species Act and its regulations.

**PROCESS WASTEWATER:** Water which, during manufacturing or processing, comes into direct contact with, or results from the production or use of, any material, intermediate product, finished product, or waste product.

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

**REDEVELOPMENT:** Development, rehabilitation, expansion, demolition, or phased projects that disturb vegetation or the ground surface on previously developed sites.

**RUNOFF:** Rainfall, snowmelt, or irrigation water flowing over the ground surface. Discharge from any point source of water, clean or polluted, into the municipal storm drain or street system or into the waters of the United States, Commonwealth, or Town from any source.

**SEDIMENT:** Mineral or organic soil material that is transported by wind or water, from its origin to another location; the product of erosion processes.

**SEDIMENTATION:** The process or act of deposition of sediment.

**SITE:** Any lot or parcel of land or area of the property where land-disturbing activities are, were, or will be performed.

**SLOPE:** The incline of a ground surface is expressed as a ratio of horizontal distance to vertical distance.

**SOIL:** Any earth, sand, rock, gravel, or similar material.

**STABILIZATION:** The use, singly or in combination, of mechanical, structural, or vegetative methods to prevent or retard erosion.

**STORMWATER AUTHORITY:** Town of Norwell Conservation Commission, or its authorized agent(s), employee(s), and designee(s).

**STORMWATER:** Runoff from precipitation or snowmelt and surface water runoff and drainage.

**STORMWATER MANAGEMENT PLAN (SWMP):** A plan is required as part of the application for a Land Disturbance Permit.

**STRIP:** Any activity which removes the vegetative ground surface cover, including tree removal, clearing, grubbing, and storage or removal of topsoil.

**TOXIC OR HAZARDOUS MATERIAL OR WASTE:** Any material which, because of its quantity, concentration, chemical, corrosive, flammable, reactive, toxic, infectious, or radioactive characteristics, either separately or in combination with any substance or substances, constitutes a present or potential threat to human health, safety, general welfare, or to the environment. "Toxic or hazardous materials" include but are not limited to: any synthetic organic chemical, petroleum product, heavy metal, radioactive or infectious waste, acid and alkali, and any substance defined as "toxic" or "hazardous" under the Massachusetts Hazardous Waste Management Act, (MGL c.21C) and the Massachusetts Oil and Hazardous Material Release Prevention and Response Act, (MGL c.21E), and the implementing regulations at 310 CMR 30.000 and 310 CMR 40.000.

**TSS:** Total Suspended Solids.

**VERNAL POOLS:** Any confined basin or depression which, at least in most years, holds water for a minimum of two continuous months during the spring and/or summer, is free of adult predatory fish populations, and provides essential breeding and rearing habitat functions for amphibian, reptile or other vernal pool community species, regardless of whether the site has been certified by the Massachusetts Division of Fisheries and Wildlife.

**WASTEWATER:** Any sanitary waste, sludge, or septic tank or cesspool overflow, and water that during manufacturing, cleaning or processing comes into direct contact with, or results from the production or use of, any raw material, intermediate product, finished product, by-product, or waste product.

**WATERCOURSE:** A natural or man-made channel through which, or defined surface flow- across which, water flows or a stream of water, including a river, brook or underground stream.

**WATERS OF THE COMMONWEALTH:** All waters within the jurisdiction of the Commonwealth, including, but not limited to: rivers, streams, lakes, ponds, vernal pools, springs, impoundments, estuaries, wetlands, coastal waters, and groundwater.

**WETLAND RESOURCE AREA:** Areas specified in the Massachusetts Wetlands Protection Act, (MGL. c.131 §40) or Norwell Town Code Chapter 61 – Wetlands Protection. Examples include, but are not limited to: wetlands, banks, and land subject to flooding.

**WETLANDS:** As defined in the Massachusetts Wetlands Protection Act, (MGL. c.131 §40) or Norwell Town Code Chapter 61 – Wetlands Protection. Typically tidal and non-tidal areas characterized by at least two of the three following: hydric soils, seasonally high groundwater during the growing season, and capable of supporting wetland vegetation. Examples include, but are not limited to: freshwater marshes, ponds, water bodies, land under water bodies and waterways, channels, rivers, streams, brackish and saltwater marshes, and vernal pools.



### **Section 3. Authority**

- A. These Regulations have been adopted by the Stormwater Authority in accordance with the Town of Norwell Stormwater Management Bylaw.
- B. Nothing in these Regulations is intended to replace or be in derogation of the requirements of the Town of Norwell Zoning Bylaw, General Bylaws, Wetlands Protection Bylaw, Subdivision, and Land Development Rules & Regulations or any other Bylaws and/or Regulations adopted thereunder.

### **Section 4. Administration**

- A. The Town of Norwell Conservation Commission is designated as the Stormwater Authority under the Stormwater Management Bylaw and shall administer, implement and enforce these regulations. Any powers granted to or duties imposed upon the Stormwater Authority may be delegated in writing by Stormwater Authority to its employees or agent(s).
- B. Waiver. Stormwater Authority may waive strict compliance with any requirement of these regulations promulgated hereunder, where:
  - (1) such action is allowed by federal, state, and local statutes and/or regulations,
  - (2) is in the public interest, and
  - (3) is not inconsistent with the purpose and intent of these regulations.
- C. The Stormwater Authority may amend regulations after holding a public hearing. Notice of the time, place, and subject matter shall be published in a newspaper of general circulation in Norwell once, not less than seven days before the day of such a hearing.

### **Section 5. Applicability**

- A. The Bylaw and these regulations shall apply to activities as follows and through two levels of reviews based on the amount of land to be disturbed or amount of increase or change in impervious area due to a proposed project:
  - (1) Administrative Land Disturbance Review is required for:
    - a. Any land-disturbing activity between 1,500 and 25,000 square feet where the surface slope/direction of flow is tributary to the Town right-of-way, roadways, or any component of a stormwater system; or,
    - b. Any increase or change in the impervious surface between 1,500 and 6,500 square feet.
  - (2) A Land Disturbance Permit is required for:
    - a. Any land-disturbing activity that will result in a cumulative disturbance of 25,001 square feet or more of land.
      - i. The development shall not be segmented to avoid compliance with this Bylaw. Segmentation is defined as one (1) or more divisions of land

(i.e. Approval not Required [ANR] Plans) that create buildable lots on any parcel or contiguous parcels of land held in common ownership or under common control on or after the effective date of this Bylaw, that cumulatively result in a disturbance of land of 25,000 square feet, even if the disturbance is conducted over separate phases, and/or by separate Owners. This section applies to proposals and divisions of land moving forward and shall not be retroactive.

ii. A stormwater permit may be required for cumulative lots created under an ANR Plan prior to land disturbance. The applicant/Owner will be notified that the property may be subject to stormwater review and requirements. This notification shall be incorporated into the Plans by way of notation so that it gets on the Deed.

- b. Any increase or change in impervious surface greater than 5,000 square feet of impervious surface on the lot.
- c. Any proposed use that is listed as a land-use of higher potential pollutant loads, (LUHPPL) as defined in the Massachusetts Stormwater Management Regulations.
- d. Any new or Redevelopment of any size retail, commercial, or industrial facility.

B. Exemptions:

- (1) Maintenance of existing structures (including but not limited to) impervious, driveways, pools, patios, decks, landscaping, gardens, or lawn areas associated with a single-family dwelling unit conducted in such a way so as not to cause a nuisance, i.e., with appropriate erosion and sedimentation control measures, or release treated or untreated surface flow from the site;
- (2) Conversion of lawns to vegetated landscape areas conducted in such a way so as not to cause a nuisance, i.e., with appropriate erosion and sedimentation control measures, or release treated or untreated surface flow from the site;
- (3) Regulatory site tests (i.e., percolation and drainage) conducted in such a way so as not to cause a nuisance, permanently alter, or release treated or untreated surface flow from the site. Site test locations shall be restored to their previous condition;
- (4) Construction of fencing that will not substantially alter existing terrain or drainage patterns;
- (5) Construction of utilities other than drainage (gas, water, sewer, electric, telephone, etc.) which will not alter terrain or drainage patterns or result in the discharge of sediment to the municipal storm drain system;
- (6) Normal maintenance and improvement of land in existing agricultural or aquacultural use; and,
- (7) Disturbance or Redevelopment of land that is subject to the jurisdiction, or require other permits or approvals and demonstrate compliance with the Massachusetts

Stormwater Management Regulations and the Norwell Stormwater Management Bylaw and Regulations in accordance with thresholds for review provided those regulations are not less strict:

- (a) under the Wetlands Protection Act and/or Wetland Protection Bylaw as reflected in a valid Order of Conditions (OOC) issued by the Conservation Commission;
- (b) under the Subdivision and Land Development Rules & Regulations as reflected in a valid Certificate of Action, issued by the Planning Board; and/or,
- (c) under Site Plan Review as reflected in a valid decision issued by the Board of Appeals.

## **Section 6. Administrative Land Disturbance Review Procedure**

A. Application. A completed application for an Administrative Land Disturbance Review shall be filed with Stormwater Authority. Approval must be obtained prior to the commencement of land-disturbing activity within limits for an Administrative Review defined above. The Administrative Land Disturbance Review Application package shall include:

- (1) A completed Application Form with original signatures and contact information for all owners and applicants;
- (2) One hard copy sketch plan (min. 8.5" x 11" or as appropriate) that includes but is not necessarily limited to:
  - a. Existing site features, including structures, pavements, plantings, and stormwater management systems, etc. include the square footage of impervious areas and approximate grading with overland flow direction;
  - b. Proposed work including proposed stormwater management systems proposed grading with overland flow direction, square footage of impervious areas, and limits of disturbance;
  - c. Basic erosion and sedimentation controls (i.e., erosion control barrier and inlet protection devices where appropriate);
  - d. Proposed driveways and impervious areas graded to not drain to street; and
  - e. Infiltration of new roof runoff (i.e. 1,500 sf of roof area requires 125 cf infiltration volume);
- (3) Payment of the application and review fees.

B. Entry. Filing an application for a permit grants Stormwater Authority or its agent permission to enter the site to verify the information in the application and to inspect for compliance with permit conditions.

- C. Information requests. The applicant shall submit all additional information requested by the Stormwater Authority to issue a decision on the application. Resources for additional information that may be used or requested through the review may include the following:

NRCS soils information for the site including hydrologic group rating of soils

<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

Verification that site is not within an area of Activity and Use Limitation

<http://public.dep.state.ma.us/SearchableSites2/Search.aspx>

- D. Action by Stormwater Authority.

Within 21 days of receipt of a complete application, the Stormwater Authority shall either:

- (1) Approve the Administrative Land Disturbance Review Application if it finds that the proposed Plan will protect the MS4 system, water resources and meets the objectives and requirements of these regulations;
  - (2) Approve the Administrative Land Disturbance Review Application with conditions, modifications or restrictions that the Stormwater Authority determines are required to ensure that the project will protect water resources and meets the objectives and requirements of these regulations;
  - (3) Require submission of a Land Disturbance Permit Application if the project will disturb land beyond Administrative Review thresholds or in the opinion of the Stormwater Authority requires more extensive review.
  - (4) Disapprove the Land Disturbance Permit Review and deny the permit if it finds that the proposed Plan will not protect water resources or fails to meet the objectives and requirements of these regulations.
  - (5) Disapprove the Land Disturbance Permit Review "without prejudice" where an applicant fails to provide requested additional information or review fees that in the Stormwater Authority's opinion is needed to adequately describe or review the proposed project.
- E. Fee Structure. Each application must be accompanied by the appropriate application fee as established by the Stormwater Authority. Applicants shall pay review fees as determined by the Stormwater Authority sufficient to cover any expenses connected with the review of the Administrative Land Disturbance Permit Application before the review process commences. The Stormwater Authority is authorized to retain a Registered Professional Engineer or another professional consultant, at the applicant's expense, to advise the Stormwater Authority on any or all aspects of the Application.
- F. Project Changes. The permittee, or their agent, must notify the Stormwater Authority in writing of any change or alteration of a land-disturbing activity authorized in an Administrative Land Disturbance Review approval before any change or alteration occurs. If the Stormwater Authority determines that the change or alteration is significant, based on the design requirements listed in Section 7.B. and accepted

construction practices, the Stormwater Authority may require that a Land Disturbance Permit application be filed. If any change or alteration from the Administrative Land Disturbance Review approval occurs during any land-disturbing activities, the Stormwater Authority may require the installation of interim erosion and sedimentation control measures before considering the change or alteration.

## **Section 7. Land Disturbance Permit and Procedure**

- A. Application. A completed application for a Land Disturbance Permit Application shall be filed with Stormwater Authority. Approval must be obtained prior to the commencement of land-disturbing activity within limits for a Land Disturbance Permit defined above. The Land Disturbance Permit Application package shall be submitted via hand delivery or certified mail to the Stormwater Authority and shall include:
- (1) A completed Application Form with original signatures and contact information for all owners and applicants;
  - (2) One electronic (PDF), Three (3) full size copies and Two 11x17 copies of the:
    - a. Stormwater Management Plan (See §8.C)
    - b. Erosion and Sediment Control Plan (See §9.E)
    - c. Operation and Maintenance Plan (See §10.B)
    - d. Illicit discharge compliance statement signed by the Owner and Registered Professional Engineer certifying that there are no existing or new illicit discharges from this property
  - (3) Payment of the application, review and advertising fees; and,
- B. Abutter Notification: Any person filing a Land Disturbance Permit with the Stormwater Authority shall at the same time give written notice thereof, by certified mail (return receipt requested), certificates of mailing or hand delivery, to all abutters within 100 feet of the property on which the disturbance will occur, certified by the Assessor's Office. The applicant shall provide notification at the mailing addresses shown on the most recent applicable tax list from the municipal assessor. The notice shall state a brief description of the project and the date of any public hearing if known. Mailing at least 7 days prior to the public hearing shall constitute timely notice. An affidavit of the person providing such notice, with a copy of the notice mailed or delivered, shall be filed with the Stormwater Authority.
- C. Information requests. The applicant shall submit all additional information requested by the Stormwater Authority to issue a decision on the application.
- D. Determination of Completeness: The Stormwater Authority shall make a determination as to the completeness of the application and adequacy of the materials submitted. No review shall take place until the application has been found to be complete. A public hearing shall be held by the Stormwater Authority within 21 days of receipt of a complete application.
- E. Fee Structure. Each application must be accompanied by the appropriate application fee as established by the Stormwater Authority. Applicants shall pay review fees as

determined by the Stormwater Authority sufficient to cover any expenses connected with the review of the Land Disturbance Permit Application before the review process commences. The Stormwater Authority is authorized to retain a Registered Professional Engineer or other professional consultant, at the applicants expense, to advise the Stormwater Authority on any or all aspects of the Application.

- F. Entry. Filing an application for a permit grants the Stormwater Authority or its agent, permission to enter the site to verify the information in the application and to inspect for compliance with permit conditions.
- G. The Applicant shall provide one copy of the application package to the Department of Public Works, Planning Board (or Conservation if Planning remains the permitting authority), Board of Health, Water Department, or other Board/Commissions as appropriate. Proof of submittal, dated, must be submitted with the application to the Stormwater Authority.
- H. A copy of the application is available for review in the Conservation/Planning Office during normal Town Hall hours.
- I. Action by the Stormwater Authority.

Within 21 days of the close of the public hearing, the Stormwater Authority shall either:

- (1) Approve the Land Disturbance Permit Application and issue a permit if it finds that the proposed Plan will protect water resources and meets the objectives and requirements of this by-law;
  - (2) Approve the Land Disturbance Permit Application and issue a permit with conditions, modifications or restrictions that the Stormwater Authority determines are required to ensure that the project will protect water resources and meets the objectives and requirements of these regulations;
  - (3) Disapprove the Land Disturbance Permit Application and deny the permit if it finds that the proposed Plan will not protect water resources or fails to meet the objectives and requirements of these regulations.
  - (4) Disapprove the Land Disturbance Permit Application "without prejudice" where an applicant fails to provide requested additional information or review fees that in the Stormwater Authority's opinion, is needed to adequately describe or review the proposed project.
- J. Final Approval. Final approval, if granted, shall be endorsed on the Stormwater Management Permit by the Stormwater Authority (or by the signature of the person officially authorized by the Stormwater Authority).
  - K. Project Changes. The permittee, or their agent, must notify the Stormwater Authority in writing of any change or alteration of a land-disturbing activity authorized in a Land Disturbance Permit before any change or alteration occurs. If the Stormwater Authority determines that the change or alteration is significant, based on the design requirements listed in Section 7.B. and accepted construction practices, the Stormwater Authority may require that an amended Land Disturbance Permit application be filed. If any change or alteration from the Land Disturbance Permit occurs during any land disturbing activities,

the Stormwater Authority may require the installation of interim erosion and sedimentation control measures before approving the change or alteration.

## **Section 8. Stormwater Management Plan**

- A. The application for a Land Disturbance Permit shall include the submittal of a Stormwater Management Plan to the Stormwater Authority. This Stormwater Management Plan shall contain sufficient information for the Stormwater Authority to evaluate the environmental impact, effectiveness, and acceptability of the site planning process and the measures proposed by the applicant to reduce adverse impacts from stormwater runoff during construction, and on a long-term basis.
- B. The Plan shall be designed to meet the Massachusetts Stormwater Management Standards as further defined in the Massachusetts Stormwater Handbook and any additional standards required by these regulations or regulations adopted hereunder. To the extent that any project within the jurisdiction of these regulations is located in an area subject to one or more pollutant-specific Total Maximum Daily Loads (TMDLs), such project is required to implement structural and nonstructural stormwater best management practices (BMPs) that are consistent with each such TMDL and its associated Waste Load Allocation (for point sources) and Load Allocation (for nonpoint sources). The U.S. EPA/MassDEP or Stormwater Authority may develop, publish and periodically revise one or more pollutant-specific guidance documents describing the geographic applicability of each TMDL and identifying BMPs that individually or in combination are considered to be consistent with the TMDL(s).
- C. The Stormwater Management Plan shall fully describe the project in narrative, drawings, and calculations. It shall at a minimum include:
  - (1) Contact Information. The name, address, and telephone number of all persons having a legal interest in the property and the tax reference number and parcel number of the property or properties affected;
  - (2) Narrative describing:
    - (a) Purpose
    - (b) Methodologies and assumptions
    - (c) Existing and proposed uses and conditions
    - (d) Project impacts and mitigation techniques including:
      - i. Summary (in square feet) of proposed land area to be cleared, proposed impervious area, work within of regulated wetland resources areas, aquifer protection zones, earthwork within 4 feet of seasonal high groundwater elevations, and other sensitive environmental areas.
      - ii. Low impact development (LID) techniques considered for this project, and an explanation as to why they were included or excluded from the project.
      - iii. Best management practices proposed for this project.
      - iv. Identifying the immediate down gradient waterbody(s) that stormwater runoff from the project site discharges to, EPA's waterbody assessment

- and TMDL status of the waterbody(s),  
<http://www.epa.gov/region1/npdes/stormwater/ma.html> and the LIDs  
and BMPs included in the project to address the pollutant(s) of concern
- (e) Summary of pre and post development peak rates and volumes of stormwater runoff to show no adverse impacts to down-gradient properties, stormwater management systems, and wetland resources.
  - (f) Conclusions
- (3) Plans. Refer to the Commission's site plan requirements for basic requirements for all site plans. The below noted features are in addition to the basic requirements.  
[https://www.townofnorwell.net/sites/g/files/vyhlif1011/f/uploads/final\\_site\\_plan\\_checklist\\_minimum\\_requirements\\_adopted\\_february\\_2\\_2021.pdf](https://www.townofnorwell.net/sites/g/files/vyhlif1011/f/uploads/final_site_plan_checklist_minimum_requirements_adopted_february_2_2021.pdf)
- (a) The portion of the USGS Map indicating the site locus and properties within a minimum of 500 feet of the project property line
  - (b) Existing conditions and proposed design plans showing:
    - i. Buildings and/or structures including materials, approximate height and
    - ii. Utilities including size, material, and invert data
    - iii. Regulated wetland resource areas within proximity of the site
    - iv. Location of municipal separate storm sewer system with relation to the site
  - (c) Stormwater management design plan(s) and details showing:
    - i. Location, size, material, invert data, and details for all existing and proposed stormwater management system components, including structures, pipes, swales, detention, retention, and infiltration systems, rain gardens, and any other LID techniques or BMPs.
    - ii. Profiles of drainage trunk lines
    - iii. Drainage easements
  - (d) Separate pre and postcondition watershed plans indicating:
    - i. Structures, pavements, surface vegetation, and other ground cover materials
    - ii. Topography sufficient to delineate watershed areas and cut and fill areas
    - iii. Point(s) of analysis
    - iv. Watershed areas, including upgradient and /or offsite areas that contribute stormwater flow onto the project site, are labeled to be easily identified in calculations. Total pre and post-watershed areas must be equivalent.
    - v. Breakdown summary of various surface conditions by soil hydrologic group rating and cover type
    - vi. Flow path for the time of concentration (Tc) calculation
- (4) Calculations



- (a) Hydrologic calculation to determine pre and post-peak rates and volumes of stormwater runoff for 2, 10, 25 and 100 year, 24 hour storm events
- (b) Groundwater recharge calculations and BMP drawdown (time to empty)
- (c) Water quality calculations including (if applicable):
  - i. TSS removal calculation for each watershed
  - ii. Specific BMPs utilized in critical areas
  - iii. Specific BMPs utilized for land uses of higher potential pollutant loads
  - iv. Specific treatment for pollutants causing impairment of down-gradient waterbody(s), identified by EPA and MassDEP
- (d) Hydraulic calculations to size drainage pipes, swales, and culverts
- (e) Supplemental calculations for sizing LID and BMPs and addressing impairments to waterbodies
- (5) Soil mapping and test data
- (6) MassDEP Checklist for Stormwater Report completed, stamped, and signed by a Professional Engineer (PE) licensed in the Commonwealth of Massachusetts to certify that the Stormwater Management Plan is in accordance with the criteria established in the MassDEP Stormwater Management Standards, Norwell Stormwater Management By-law, and these Regulations.
- (7) Any other information requested by the Stormwater Authority.

## **Section 9. Erosion and Sedimentation Control Plan**

- A. The Erosion and Sediment Control Plan shall be designed to ensure compliance with these Regulations, and if applicable, the NPDES General Permit for Storm Water Discharges From Construction Activities. In addition, the Plan shall ensure that the Massachusetts Surface Water Quality Standards (314 CMR 4.00) are met in all seasons. Refer to the latest version of the *Massachusetts Erosion and Sediment Control Guidelines for Urban & Suburban Areas* for detailed guidance.
- B. If a project requires a Stormwater Pollution Prevention Plan (SWPPP) per the NPDES General Permit for Storm Water Discharges From Construction Activities (and as amended), then the permittee is required to submit a complete electronic copy of the draft SWPPP (including the signed Notice of Intent and approval letter) for approval by the Town.
- C. The Owner and / or Contractor shall maintain a copy on site of the Erosion and Sediment Control Plan and / or SWPPP and all other permit documents submitted by the authority. Upon request by the Town, copies of maintenance documents and or inspection reports shall be provided to the Town to show compliance with the Erosion and Sediment Control Plan and / or SWPPP.
- D. The Erosion and Sediment Control Plan shall contain sufficient information to describe the nature and purpose of the proposed development, pertinent conditions of the site and the adjacent areas, and proposed erosion and sedimentation controls. The Plan shall also

describe measures to control construction wastes, including but not limited to construction materials, concrete truck washout and chemicals. The applicant shall submit such material as is necessary to show that the proposed development will comply with the design requirements listed in Section 7.B. below.

E. Erosion and Sedimentation Control Plan Content. The Plan shall contain (but not be limited to) the following information. Refer to the Commission's minimum site plan requirements checklist:

- (1) Names, addresses, and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the Plan;
- (2) Title, date, north arrow, names of abutters, scale, legend, and locus map;
- (3) Location and description of natural features including:
  - (a) Watercourses and water bodies, wetland resource areas, and all floodplain information, including the 100-year flood elevation based upon the most recent Flood Insurance Rate Map, or as calculated by a professional engineer for areas not assessed on these maps;
  - (b) Existing vegetation including tree lines, canopy layer, shrub layer, and ground cover, and trees with a caliper/diameter of ten (10) inches or larger at five (5) ft height, noting specimen trees and forest communities; and any rare or endangered species regardless of size, including information such as numbers, density, and general health regardless of whether or not they have been mapped by NHESP.
  - (c) 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 within five hundred (500) feet of any construction activity.
- (4) Lines of existing abutting streets showing any and all drainage related structures or features and driveway locations and curb cuts;
- (5) Existing soils, volume, and nature of imported soil materials;
- (6) Topographical features including existing and proposed contours at intervals no greater than two (2) feet with spot elevations provided where needed;
- (7) Surveyed property lines showing distances and monument locations, all existing and proposed easements, rights-of-way, and other encumbrances, the size of the entire parcel, and the delineation and number of square feet of the land area to be disturbed;
- (8) Drainage patterns and existing and approximate slopes anticipated after major grading activities (Construction Phase Grading Plans);
- (9) Location and details of erosion and sediment control measures with a narrative of the construction sequence/phasing of the project, including both operation and maintenance for structural and nonstructural measures, interim grading, and

- material stockpiling areas, final grading and stabilization;
- (10) Path and mechanism to divert uncontaminated water around disturbed areas, to the maximum extent practicable;
  - (11) Location and description of industrial discharges to be covered by this permit;
  - (12) Stormwater runoff calculations in accordance with the Department of Environmental Protection's Stormwater Management Policy;
  - (13) Location and description of and implementation schedule for temporary and permanent seeding, vegetative controls, and other stabilization measures;
  - (14) A description of construction and waste materials expected to be stored on-site. The Plan shall include a description of controls to reduce pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater and spill prevention and response;
  - (15) A description of provisions for phasing the project where one acre of area or greater is to be altered or disturbed;
  - (16) Plans must be stamped and certified by a qualified Professional Engineer registered in Massachusetts or a Certified Professional in Erosion and Sediment Control; and
  - (17) Such other information as required by the Stormwater Authority.

## **Section 10. Operation and Maintenance Plan**

- A. A standalone Operation and Maintenance Plan (O&M Plan) is required at the time of application for all projects with constructed stormwater BMPs and stormwater management practices. The O&M Plan shall be designed to ensure compliance with the Permit and these Regulations and ensure that the Massachusetts Surface Water Quality Standards (314 CMR 4.00) are met in all seasons and throughout the life of the system.

The Stormwater Authority shall require the use of dedicated funds or escrow accounts for development projects or the acceptance of ownership by the Town of all privately owned BMPs. This may include the development of maintenance contracts between the owner of the BMP and the Town. Alternatively, the Stormwater Authority may require the submission of an annual certification documenting the work that has been done over the last 12 months to properly operate and maintain the stormwater control measures.

The Owner and / or Contractor shall maintain a copy on site of the Operation and Maintenance Plan and all other permit documents submitted by the Authority. Upon request by the Town copies of maintenance documents and or inspection reports shall be provided to the Town to show compliance with the Operation and Maintenance Plan. The Applicant shall provide copies of the Operation and Maintenance Plan to all persons responsible for maintenance and repairs and the Town upon request.

- B. The O&M Plan shall include:
- (1) The name(s) of the owner(s) for all components of the system;

- (2) A map showing the location of the systems and facilities, including all structural and nonstructural stormwater best management practices (BMPs), catch basins, manholes/access lids, pipes, and other stormwater devices. The Plan showing such systems and facilities to be privately maintained, including associated easements, shall be recorded with the Plymouth County Registry of Deeds prior to issuance of a Certificate of Compliance by the Stormwater Authority.
- (3) Maintenance Agreement with the Stormwater Authority that specifies:
  - (a) The names and addresses of the person(s) responsible for operation and maintenance;
  - (b) The person(s) financially responsible for maintenance and emergency repairs;
  - (c) An Inspection and Maintenance Schedule for all stormwater management facilities, including routine and non-routine maintenance tasks to be performed. Where applicable, this schedule shall refer to the Maintenance Criteria provided in the Stormwater Handbook or the E.P.A. National Menu of Stormwater Best Management Practices or equivalent;
  - (d) Instructions for routine and long-term operation and maintenance shall have sufficient detail for responsible parties to perform necessary maintenance activities and prevent actions that may adversely affect the performance of each structural and/or nonstructural stormwater BMP.
  - (e) A list of easements with the purpose and location of each; and
  - (f) The signature(s) of the owner(s) and all persons responsible for operation and maintenance, financing, and emergency repairs, as defined in the Maintenance Agreement, if maintenance is to be performed by an entity other than the owner.
- (4) Stormwater Management Easement(s)
  - (a) Stormwater Management easements shall be provided by the property owner(s) to Town and Home Owner Association as necessary for:
    - i. Access for facility inspections and maintenance;
    - ii. Preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including floodways for the 100-year storm event; and
    - iii. Direct maintenance access by heavy equipment to structures requiring maintenance a minimum of 20 feet wide or as directed by the Town.
  - (b) The purpose of each easement shall be specified in the Maintenance Agreement signed by the property owner and approved by Stormwater Authority or Town Counsel.

- (c) Stormwater Management easements are required for all areas used for permanent stormwater control unless a waiver is granted by the Stormwater Authority.
  - (d) Easements shall be recorded with the Bristol Registry of Deeds prior to issuance of a Certificate of Compliance by the Stormwater Authority.
- (5) Changes to Operation and Maintenance Plans
  - (a) The owner(s) of record of the Stormwater Management system must notify the Stormwater Authority of changes in ownership, assignment of Operation and Maintenance responsibilities, or assignment of financial responsibility within 30 days of the change in ownership. The owner of record shall be responsible for Operation and Maintenance activities until a copy of the updated Operation and Maintenance Plan has been furnished to the Stormwater Authority signed by the new owner or any new responsible person.
  - (b) The maintenance schedule in the Maintenance Agreement may be amended to achieve the purposes of the Stormwater Management By-law by mutual agreement of the Stormwater Authority and the Responsible Parties. Amendments must be in writing and signed by all Responsible Parties. Responsible Parties shall include owner(s), persons with financial responsibility, and persons with operational and/or maintenance responsibility.
  - (c) Changes to Operation and Maintenance Plans

## **Section 11. Performance and Design Standards**

- A. Design of stormwater management system(s) and components
  - (1) Developments are to be designed to provide for adequate collection and disposal of stormwater runoff from the project site in accordance with MassDEP Stormwater Management Standards and Details, Norwell Best Management Practices and regulations, and standards established by the Town of Norwell, recognized engineering methodologies and these Regulations with an emphasis to include Low Impact Development (LID) techniques in the design.
    - (a) LID site planning and design strategies must be implemented unless infeasible in order to reduce the discharge of stormwater from development sites. Infeasible means not technologically possible or not economically practicable and achievable in light of best industry practices.
  - (2) Stormwater management systems for New Development projects are also to meet minimum requirements of the *General Permit for Stormwater Discharges From Small Municipal Separate Storm Sewer Systems in Massachusetts* (MS4 Permit) including removal of 90% of the average annual (not per storm) load of Total

Suspended Solids (TSS) generated from the total post-construction impervious area on the site AND 60% of the average annual (not per storm) load of Total Phosphorus (TP) generated from the total post-construction impervious surface area on the site.

- (a) Average annual pollutant removal requirements are achieved through one of the following methods:
  - i. 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 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; or
  - ii. 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; or
  - iii. Meeting a combination of retention and treatment that achieves the above standards; or
  - iv. Utilizing offsite mitigation that meets the above standards within the same USGS HUC12 as the new development site.
- (3) Stormwater management systems for Redevelopment projects are to meet the minimum requirement of the *General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts* (MS4 Permit), including removal of 80% of the average annual (not per storm) 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 (not per storm) load of Total Phosphorus (TP) generated from the total post-construction impervious surface area on the site.
  - (a) Average annual pollutant removal requirements are achieved through one of the following methods:
    - i. 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 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; or
- ii. Retaining the volume of runoff equivalent to, or greater than, 0.80 inch multiplied by the total post-construction impervious surface area on the site; or
  - iii. Meeting a combination of retention and treatment that achieves the above standards; or
  - iv. Utilizing offsite mitigation that meets the above standards within the same USGS HUC12 as the new development site.
- (b) 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 unless infeasible and are exempt from Section 3.A.3. 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 Section 3.A.3
- (4) Offsite mitigation. For projects where it is not technically feasible to retain or treat the required depth of runoff on-site due to physical site restraints, the Applicant will describe in writing why it is not technically feasible to do so, including which on-site treatment BMPs were considered and why they were deemed not feasible. In lieu of requiring the applicant to meet the standards identified in Section 3.A (2&3), the Stormwater Authority may approve a Stormwater Management Plan that includes offsite mitigation through BMPs that provide *the equivalent retention or pollutant removal requirements in part 2.3.6.a.ii.4 of the MA MS4 General Permit* meeting the following criteria:
- (a) Applicant has demonstrated to the satisfaction of the Stormwater Authority that on-site compliance has been met to the maximum extent practicable.
  - (b) Offsite mitigation shall be located within the Town and the same tributary area to the maximum extent feasible. Under no circumstances will offsite mitigation be located outside the same USGS HUC12.

- (c) The Offsite mitigation project shall be designed and constructed in a manner consistent with the requirements of the Town Stormwater Management Bylaw and related regulations.
  - (d) The Offsite mitigation project shall remediate the impacts of proposed and existing impervious surface that is not expected to be the subject of Redevelopment in the next five or more years.
  - (e) The Stormwater Authority shall, at its discretion, identify priority areas within the watershed in which Offsite mitigation may be completed.
  - (f) Offsite mitigation provided at a site not owned by the Town requires a separate Land Disturbance Review and/or Permit as applicable covering the Offsite mitigation project, the terms, and conditions of which, including ongoing operations and maintenance requirements, shall run with the land where the Offsite Compliance is located.
  - (g) Construction of the Offsite mitigation project shall commence within 12 months of Land Disturbance Permit issuance and be completed within 12 months of commencement.
- (5) Structural BMPs and LID techniques suitable to address TMDLs and/or impairments as listed on MassDEP's most recent *Integrated List of Waters Map* shall be utilized to the maximum extent feasible. Provide evaluation process narrative with supporting calculations in the stormwater report. Calculations shall include total impervious area and volume of stormwater to be infiltrated and phosphorus loading calculations including reduction through use of LIDs and BMPs. Innovative or alternative technologies may be considered on a case by case / site by site basis.
- (6) Provisions are to be made for the adequate disposal of surface runoff so that no flow is conducted over Town ways, or over land not owned by or controlled by the Applicant unless an easement in proper form is obtained permitting such discharge.
- (7) LID techniques are to be used where adequate soil, groundwater and topographic conditions allow. These may include but not be limited to reduction in impervious surfaces, disconnection of impervious surfaces, bioretention (rain gardens) and infiltration systems.



- (8) Hydrologic calculations, to document that there is no increase in the peak rate and volume of runoff from pre development to post development condition, are to be completed utilizing TR-55 and TR-20 methodologies.
- (9) Watershed area for hydrologic analysis and BMP sizing calculations are to include at a minimum the site area and all upgradient areas from which stormwater runoff flows onto the site.
- (10) For purposes of computing runoff, all pervious lands on the site are assumed prior to development to be in "good hydrologic condition" regardless of the conditions existing at the time of the computation.
- (11) The length of sheet flow used for times of concentration is to be no more than 50 feet.
- (12) Utilize the 24-hour rainfall data taken from the NRCS Extreme Precipitation in New York and New England website <http://precip.eas.cornell.edu/> or NOAA Atlas 14 [https://hdsc.nws.noaa.gov/hdsc/pfds/pfds\\_map\\_cont.html](https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html) and type III storm.
- (13) Soils tests in accordance with MassDEP Stormwater Handbook to be conducted by a Registered Professional Engineer or Massachusetts Soil Evaluator, performed at the location of all proposed infiltration BMPs and LID techniques, to identify soil descriptions, depth to estimated seasonal high groundwater, depth to bedrock, and soil texture. Soil tests must be witnessed by a representative of the Town with notification at least two days in advance of tests to be performed. Evaluate sites for any know contamination issues identified in MassDEP database <http://public.dep.state.ma.us/SearchableSites2/Search.aspx>
- (14) The design infiltration rate shall be determined from the on-site soil texture and published Rawls rates or saturated hydraulic conductivity tests.
- (15) Provide in-situ saturated hydraulic conductivity tests for infiltration systems to receive stormwater runoff from 2,000 sq. ft. or more of impervious area and within Natural Resources Conservation Service (NRCS) mapped soils with a hydrologic group rating (HGR) of B or C. Conduct testing in accordance with Massachusetts Stormwater Handbook and use an exfiltration rate of 50% of the lowest test result. Infiltration systems shall not be used for stormwater runoff peak flow or volume mitigation in NRCS soils with an HGR of D.
- (16) Size drainage pipes to accommodate the 25-year storm event and maintain velocities between 3 and 10 feet per second using the Rational Method.
- (17) Size drainage swales to accommodate the 25-year storm event and velocities below 4 feet per second

- (18) Size culverts (passing natural streams or brooks across roadways) to accommodate the 50-year storm event and design adequate erosion protection. Design stream crossing culverts in accordance with the Massachusetts Stream Crossing Standards as promulgated by the Wetlands Protection Act Regulations.
- (19) Size stormwater basins to accommodate the 100 storm event with a minimum of one foot of freeboard
- (20) All drainage structures are to be able to accommodate HS-20 loading.
- (21) Catch basins structures are to be as detailed in Massachusetts Department of Transportation (MassDOT) Construction Standard Details and spaced a maximum of 250 feet apart in roadways.
- (22) Catch basins adjacent to curbing are to be built with a granite curb inlet.
- (23) Catch basins at low points of road and on roads with profile grades greater than 5% are to be fitted with double grates (parallel with a curb). Additional catchbasins may be needed based on flow rates.
- (24) All drain pipes within the right of way are to be reinforced concrete pipe (RCP) and have a minimum diameter of 12 inches. HDPE pipe on private property should be set a no less than 1% slope and special care should be used in handling, bedding and backfill of pipe to prevent UV breakdown and deformation
- (25) Proposed drainage pipes under buildings are prohibited. Existing pipes under buildings are to be relocated.
- (26) Proposed pipe to be reused is to be inspected for passable condition/material and replaced or lined if necessary. Provide CCTV/testing report for reuse of existing pipe.
- (27) Drainage pipes are to be installed with a minimum of 2.5 feet of cover and O-rings.
- (28) Drainage manhole structures are to be as detailed in MassDOT Construction Standard Details and spaced at a maximum of every 300 feet.
- (29) Outfalls are to be designed to prevent erosion of soils, and pipes 15 inches or larger are to be fitted with grates or bars to prevent ingress.
- (30) Drainage easements are to provide sufficient access for maintenance and repairs of system components and be at least 20 feet wide.
- (31) Recommend minimizing permanently dewatering soils by:
  - (a) Limiting grading within 4 feet of seasonal high groundwater elevation (SHGWE);

- (b) Raising roadways to keep the bottom of roadway section above SHGWE;  
and
- (c) Setting bottom floor elevation of building(s) a minimum of 2 feet above  
SHGWE.

B. Design of erosion controls(s) to include the following:

- (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 MassDEP Stormwater Standards;
- (4) Minimize soil erosion and control sedimentation during construction;
- (5) Divert uncontaminated water around disturbed areas;
- (6) Maximize groundwater recharge;
- (7) Design, install and maintain all Erosion and Sediment Control measures in accordance with the latest edition of the *Massachusetts Erosion and Sedimentation Control Guidelines for Urban and Suburban Areas*, manufacturer's specifications, and good engineering practices;
- (8) Prevent off-site transport and vehicle tracking of sediment;
- (9) Protect and manage on and offsite 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) Avoid or minimize alteration of habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or Of Special Concern, Estimated Habitats of Rare Wildlife and Vernal Pools, and Priority Habitats of Rare Species from the proposed activities;
- (12) Institute interim and permanent stabilization measures, which shall be instituted on a disturbed area as soon as practicable but no more than fourteen (14) days after construction activity has temporarily or permanently ceased on that portion of the site;
- (13) Properly manage on-site construction and waste materials, including truck washing and cement concrete washout facilities; and

- (14) Inspect stormwater controls at consistent intervals in accordance with Section 12 and MassDEP Stormwater Handbook.
- (15) Erosion and sediment controls shall be maintained until site is fully stabilized and authorization for removal is granted by Stormwater Authority.

## **Section 12. Inspection and Site Supervision**

- A. Pre-construction Meeting. Prior to starting the clearing, excavation, construction, Redevelopment or land disturbing activity, the applicant, the applicant's technical representative, the general contractor or any other person with authority to make changes to the project, may be required to meet with the Stormwater Authority, to review the approved plans and their implementation. The need for a pre-construction meeting shall be determined by the Stormwater Authority based on the project scope.
- B. Stormwater Authority Inspection. The Stormwater Authority or its designated agent, which may include the Town's outside consulting engineer shall make inspections as hereinafter required. The inspector shall either approve that portion of the work completed or shall notify the applicant wherein the work fails to comply with the Erosion and Sedimentation Control Plan or the Stormwater Management Plan as approved. The approved Erosion and Sedimentation Control Plan and associated plans for grading, stripping, excavating, and filling work, bearing the signature of approval of the Stormwater Authority, shall be maintained at the site during the progress of the work. In order to obtain inspections, the applicant shall notify the Stormwater Authority at least two (2) working days before each of the following events:
  - (1) Erosion and sedimentation control measures are in place and stabilized;
  - (2) Site clearing has been substantially completed;
  - (3) Rough grading has been substantially completed;
  - (4) Final grading has been substantially completed;
  - (5) Subgrade prior to construction of BMP
  - (6) During construction of BMPs
  - (7) After construction of BMPs
  - (8) Close of the construction season; and,
  - (9) Final landscaping (permanent stabilization) and project final completion.
- C. Applicant Inspections. The applicant or his/her agent shall conduct and document inspections of all control measures no less than weekly or as specified in the permit and prior to and following anticipated storm events. The purpose of such inspections will be to determine the overall effectiveness of the Erosion and Sedimentation Control Plan, and the need for maintenance or additional control measures as well as verifying compliance with the Stormwater Management Plan. The applicant or his/her agent shall submit weekly reports to the Stormwater Authority or designated agent in a format approved by the Stormwater Authority.

- D. All expenses associated with inspections shall be paid by the Applicant in accordance with the Stormwater Authority policy and procedures.

### **Section 13. Surety**

The Stormwater Authority may require the permittee to post before the start of land disturbance activity, a surety bond, irrevocable letter of credit, cash, or other acceptable security. The form of the bond shall be approved by Stormwater Authority, and be in an amount deemed sufficient by Stormwater Authority to ensure that the work will be completed in accordance with the permit. If the project is phased, the Stormwater Authority may release part of the bond as each phase is completed in compliance with the permit but the bond may not be fully released until the Stormwater Authority has received the final report as required by Section 10 and issued a certificate of completion.

### **Section 14. Final Reports**

No later than two (2) years upon completion of the work described in the Land Disturbance Permit, the permittee shall submit a Final Report, including a letter and topographic certified as-built Plan (PDF and DWG) stamped by a MA Professional Land Surveyor (PLS) and/or MA Registered Professional Engineer (P.E.) as applicable, certifying that the site has been developed in substantial compliance with the approved Plan including all permanent erosion control devices, stormwater management facilities and, any approved changes and modifications. Any discrepancies from the approved Plan shall be fully described in the cover letter. The as-built drawings must depict all on site controls, both structural and nonstructural, designed to manage the stormwater associated with the completed site (post construction stormwater management). The final report shall also include documentation to verify the Stormwater Management System has been properly operated and maintained in accordance with the approved O&M Plan.

### **Section 15. Certificate of Completion**

The Long-Term Operation and Maintenance Plan including the map showing stormwater system components and facilities to be privately maintained, including associated easements shall be recorded with the Plymouth County Registry of Deeds prior to issuance of a Certificate of Completion by the Stormwater Authority.

The issuing authority will issue a letter certifying completion upon receipt and approval of the final reports and upon determining that all work of the permit has been satisfactorily completed in conformance with these regulations. Owner to maintain copies in its files/records.

## Administrative Land Disturbance Review Application

To Stormwater Authority:

The undersigned wishes to submit an Administrative Land Disturbance Review Application as defined in the Stormwater Management & Erosion Control By-Laws of the Town of Norwell Code Part IV, Chapter 65 and requests a review and determination by the Stormwater Authority of said Land Disturbance Plan.

A Land Disturbance Plan is included with this application for the property located at:

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
Property Owner

\_\_\_\_\_  
Assessors Map/Plat Number

\_\_\_\_\_  
Parcel/Lot Number

The property (building) is described as being located at \_\_\_\_\_;  
it is currently used as \_\_\_\_\_.

Proposed Work Description (ie. Exist and Prop surface condition, means to control erosion, sedimentation and stormwater runoff during construction and manage stormwater post-construction):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Illicit Discharge Compliance Statement:

The owner is responsible for compliance with Town of Norwell Stormwater Management Bylaw and responsible for identifying, preventing, and eliminating illicit discharges and connections as in accordance with Article II. The signing of this application is certifying existing and ongoing compliance of the property with Article II – Discharges to the Municipal Separate Storm Sewer System.

Applicant's Signature \_\_\_\_\_

Owner's Signature(s) \_\_\_\_\_

Name (print) \_\_\_\_\_

Names(s) (print) \_\_\_\_\_

Address \_\_\_\_\_

Address \_\_\_\_\_

Phone # \_\_\_\_\_

Phone # \_\_\_\_\_

Date Received by Town: \_\_\_\_\_ Recv'd by Signature \_\_\_\_\_

Please note: An application must include a complete application package (see Administrative Land Disturbance Review Application Checklist).

### **Administrative Land Disturbance Review Application Checklist**

- A. Application. A completed application for an Administrative Land Disturbance Review shall be filed with Stormwater Authority. Approval must be obtained prior to the commencement of land disturbing activity within limits for an Administrative Review defined above. The Administrative Land Disturbance Review Application package shall include:
- (1) ☐ A completed Application Form with original signatures of all owners and contact information for all owners and applicants;
  - (2) ☐ One hard copy sketch plan (min. 8.5" x 11" or as appropriate) that includes but is not necessarily limited to:
    - a. ☐ Existing site features including structures, pavements, plantings, and stormwater management systems etc., include square footage of impervious areas and approximate grading with overland flow direction.
    - b. ☐ Proposed work including proposed stormwater management systems, proposed grading with overland flow direction, square footage of impervious areas and limits of disturbance.
    - c. ☐ Basic erosion and sedimentation controls\* (i.e. erosion control barrier and inlet protection devices where appropriate).
    - d. ☐ Proposed driveways and impervious areas graded to not drain to street
    - e. ☐ Infiltration of new roof runoff for 1-inch of rainfall over surface area\* (i.e. 1,500 sf of roof area requires 125 cf infiltration volume)
  - (3) ☐ Payment of the application and review fees.

\*See Town of Norwell Stormwater Management Design Guidelines available at the Conservation Commission Office and website for methods

## Land Disturbance Permit Application

To Stormwater Authority:

The undersigned wishes to submit a Land Disturbance Permit Application as defined in the Stormwater Management & Erosion Control By-Laws of the Town of Norwell Code Part IV, Chapter 65 and requests a review and determination by the Stormwater Authority of said Land Disturbance Plan.

The Land Disturbance Plan involves property where owner's title to the land is derived under deed from \_\_\_\_\_, dated \_\_\_\_\_, and recorded in the Norfolk County Registry of Deeds, Book \_\_\_\_\_, Page \_\_\_\_\_, or Land Court Certificate of Title No. \_\_\_\_\_, Registered in \_\_\_\_\_ District, Book \_\_\_\_\_, Page \_\_\_\_\_

Project Description:

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The property (building) is described as being located at \_\_\_\_\_; it is currently used as \_\_\_\_\_ and the changes proposed to be made are \_\_\_\_\_.

The project is located on the parcel shown on Assessors Map \_\_\_\_\_, Parcel \_\_\_\_\_.

Applicant's Signature \_\_\_\_\_ Owner's Signature(s) \_\_\_\_\_

Applicant's Name (print) \_\_\_\_\_ Owner's Names(s) \_\_\_\_\_

Applicant's Address \_\_\_\_\_ Owner's Address \_\_\_\_\_

Date Received by Town Clerk: \_\_\_\_\_

Signature \_\_\_\_\_

Please note: 1) An applicant for a Land Disturbance Plan Review must file with the Stormwater Authority a completed Land Disturbance Permit Package (see Land Disturbance Permit Application Checklist.) Use additional paper as necessary.



### Land Disturbance Permit Application Checklist

The Stormwater Authority shall make a determination as to the completeness of the application and adequacy of the materials submitted. No review shall take place until the application has been found to be complete. The Land Disturbance Permit Application package shall include:

- (1) ☐ A completed Application Form with original signatures of all owners;
- (2) ☐ A certified list of abutters within 100 feet of the property;
- (3) ☐ Payment of the application and review fees;

One electronic (PDF), Three (3) full size copies and Two 11x17 copies of the following:

☐ Stormwater Management Plan, shall at a minimum include:

- (1) ☐ Name, address, email, telephone, and cell number of all persons having a legal interest in the property and the tax reference number and parcel number of the property or properties affected;
- (2) ☐ Narrative describing project
- (3) ☐ Plan(s), please refer to the Commission's site plan requirements checklist
- (4) ☐ Calculations to show compliance with regulations
- (5) ☐ Soil mapping and test data
- (6) ☐ Completed MassDEP Checklist for Stormwater Report

☐ Erosion and Sedimentation Control Plan, shall at a minimum include:

- (1) ☐ Names, addresses, and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the Plan;
- (2) ☐ Narrative describing existing and proposed conditions, construction sequencing and phasing, and methods to control erosion and sedimentation during construction.
- (3) ☐ Plan(s)
- (4) ☐ Calculations to show compliance with regulations

☐ Operation and Maintenance Plan, shall at a minimum include:

- (1) ☐ The name(s) of the owner(s) for all components of the system;
- (2) ☐ A map showing the location of the stormwater systems and facilities;
- (3) ☐ Maintenance Agreement with the Stormwater Authority; and
- (4) ☐ Stormwater Management Easement(s)

☐ Illicit Discharge Compliance Statement

**Application and Review Fee Schedule**

The following fee schedules are minimum fees. The Stormwater Authority may require higher fees if deemed necessary for proper review of an application or to ensure compliance.

<u>Proposed Disturbance Requires</u>	<u>Application Fee</u>	<u>Review Fee</u>
Administrative Land Disturbance Review	\$ 500	
Land Disturbance Permit	\$1,000	TBD per project*

\*Review fees include engineering review, legal review, and clerical fees associated with the permit processing. A fee estimate may be provided by the Stormwater Authority, its agent, or consulting engineer. An initial fee of \$5,000 retainer is typical.

**GENERAL**

1. Any application not accompanied by the appropriate fee shall be deemed incomplete. Payment must be made to the Stormwater Authority in cash, money order, bank or certified check payable to the Town of Norwell.
2. An Applicant's failure to pay any additional review or inspection fee within five (5) business days of receipt of the notice that further fees are required shall be grounds for disapproval.
3. Stormwater Authority will publish the public notice and send abutter notifications. Abutter notification shall be by certified mail, return receipt requested. The applicant shall pay all costs associated with the publication and notification requirements. These costs shall not be imposed on the applicant if the applicant completes the public notice and abutter notification requirements and provides Stormwater Authority with copies of the public notices and the return receipt cards.