

ORDINANCE #2043-2021

AN ORDINANCE OF THE TOWNSHIP OF GALLOWAY AMENDING SECTION 233-55 OF THE TOWNSHIP CODE IN ITS ENTIRETY TO CONTROL STORMWATER

WHEREAS, due to amendments to the State Stormwater Management rules at N.J.A.C. 7:8, adopted March 2, 2020, it is necessary for the Township of Galloway to amend its existing ordinance language regarding stormwater management; and

WHEREAS, the Township finds it to be in the best interest of the safety of the residents of Galloway Township to readdress certain standards for stormwater management as described below; and

NOW THEREFORE, BE IT ORDAINED by the Township Council of the Township of Galloway, County of Atlantic County, State of New Jersey as follows:

SECTION 1. Section 233-55 of the Township Code of Galloway shall be replaced in its entirety and shall now read as follows:

A. Scope and purpose

(1) Policy statement. Flood control, groundwater recharge, and pollutant reduction shall be achieved through the use of stormwater management measures, including Green Infrastructure Best Management Practices (GI BMPs) and nonstructural stormwater management strategies. GI BMPs and low impact development (LID) should be utilized to meet the goal of maintaining natural hydrology to reduce stormwater runoff volume, reduce erosion, encourage infiltration and groundwater recharge, and reduce pollution. GI BMPs and LID should be developed based upon physical site conditions and the origin, nature and the anticipated quantity, or amount, of potential pollutants. Multiple stormwater management BMPs may be necessary to achieve the established performance standards for water quality, quantity, and groundwater recharge.

(2) Purpose

(a) It is hereby determined that the lakes and waterways within the Township of Galloway of Atlantic County may be subject to flooding; that development tends to accentuate the possibility of such flooding by increasing stormwater runoff, due to alterations of the hydrologic response of the watershed in changing from the undeveloped to the developed condition; that such increased stormwater runoff produced by development of real property contributes to the possibility of increased quantities of waterborne pollutants and tends to increase channel erosion; that such increased stormwater runoff, increased erosion potential and increased pollution potential constitutes the possibility

of the deterioration of water resources of the Township of Galloway, the County of Atlantic and the State of New Jersey; and that such impacts can be controlled to some extent by the regulation of stormwater runoff from such development. It is determined that it is in the public interest to regulate the development of real property and to establish standards to regulate the additional discharge of stormwater runoff from such developments as provided in this section.

- (b) Certain areas of Galloway Township lie within the Pinelands Region of the Township, and therefore development in the portion of Galloway Township is subject to the requirements of the Pinelands Protection Act (N.J.S.A. 13:18A-1 et seq.) and implementing regulations and minimum standards contained in the Pinelands Comprehensive Management Plan (CMP) (N.J.A.C. 7:50-1.1 et seq.). The purchase and intent of these regulations and standards is to promote the orderly development of the Pinelands Protection Area so as to preserve and protect the significant and unique natural, ecological, agricultural, archaeological, historical, scenic, cultural and recreational resources of the Pinelands.
- (c) It is the purpose of this section to establish minimum stormwater management requirements and control for major development, as defined in Subsection **B**, while all development not defined as a major development in Subsection **B** is required to meet or exceed those general requirements for stormwater management as stated in Subsection **C**. All developments are required to meet those standards for structural and nonstructural stormwater management measures as employed.

(3) Goals and techniques

- (a) Through this section, the Township of Galloway has established the following goals for stormwater control:
 - [1] To reduce flood damage, including damage to life and property;
 - [2] To minimize any increase in stormwater runoff from new development;
 - [3] To reduce soil erosion from any development or construction project;
 - [4] To assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures;
 - [5] To maintain groundwater recharge;
 - [6] To minimize any increase in nonpoint pollution;

- [7] To maintain the integrity of stream channels for their biological functions, as well as for drainage;
 - [8] To restore, protect, maintain and enhance the quality of the streams and water resources of the Township of Galloway and the ecological character and quality of the Pinelands Areas;
 - [9] To minimize pollutants in stormwater runoff from new and existing development in order to restore, protect, enhance and maintain the chemical, physical and biological integrity of the surface and groundwater's of the Township of Galloway, to protect public health and to enhance the domestic, municipal, recreational, industrial and other uses of water; and
 - [10] To protect safety through the proper design and operation of stormwater management basins.
- (b) In order to achieve the goals for stormwater control set forth in this section, the Township of Galloway has identified the following stormwater management techniques:
- [1] Implementation of multiple stormwater management best management practices (BMPs) may be necessary to achieve the performance standards for stormwater runoff quantity and rate, groundwater recharge, erosion control, and stormwater runoff quality established through this section.
 - [2] Compliance with the stormwater runoff quantity and rate, groundwater recharge, erosion control, and stormwater runoff quality standards established through N.J.A.C. 7:8-1.1 et seq., and this section, shall be accomplished to the maximum extent practicable through the use of Green Infrastructure Best Management Practices (GI BMP's) and nonstructural BMPs before relying on structural BMPs. Nonstructural BMPs are also known as "low-impact development (LID) techniques."
 - [3] Green Infrastructure Best Management Practices (GI BMP's) and nonstructural BMPs shall include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater.
 - [4] Source control plans shall be developed based upon physical site conditions and the origin, nature and the anticipated quantity or amount of potential pollutants.
 - [5] Structural BMPs, where necessary, shall be integrated with nonstructural stormwater management strategies and proper maintenance plans.

[6] When using structural BMPs, multiple stormwater management measures, smaller in size and distributed spatially throughout the land development site, shall be used wherever possible to achieve the performance standards for water quality, quantity and groundwater recharge established through this section before relying on a single, larger stormwater management measure to achieve these performance standards.

(4) Applicability

- (a) All development as defined in Section **B** of this section is subject to the standards and criteria established within this section. This includes all site and subdivision plans that require approval by the Township Planning and/or Zoning Board.
- (b) This section shall be applicable to all site plans and subdivisions for the following major developments that require preliminary or final site plan or subdivision review:
 - [1] Nonresidential major developments; and
 - [2] Aspects of residential major developments that are not preempted by the Residential Site Improvement Standards at N.J.A.C. 5:21.
- (c) This section shall also be applicable to all major developments undertaken by the Township of Galloway.
- (d) This section shall be applicable to all private properties, other than residential lots with one single-family house, with respect to storm drain inlet retrofitting, as set forth below.
- (e) The reviewing board or, in the case of individual dwellings or minor construction not subject to review by a board, the Construction Official may waive or adjust individual standards as may be reasonable and within the purpose of this section stated in Section **A**.
- (f) The applicant may request a waiver from the strict compliance with the standards if it can be demonstrated and documented that the enforcement of one or more of these standards will cause an undue hardship.

(5) Procedure

- (a) Burden of proof. Whenever an applicant seeks a Township approval of a development to which this section is applicable from any board or official of the Township, that applicant shall be required to demonstrate that the project meets the standards set forth in this section.

- (b) Submission materials due. The applicant shall submit materials, as required by Section **J** hereof, to the Township Board or official from which the applicant seeks Township approval prior to or at the same time of submission of an application for Township approval.
 - (c) Review. The applicant's project shall be reviewed by the Township Board or official from which the applicant seeks Township approval. That Township Board or official shall consult with the Township Engineer to determine if the project meets the standards set forth in this section.
 - (d) Time for decision. The Township Board or official shall promptly determine if the project meets the standards set forth in this section. The time for that determination should be the time permitted to review and act on the applicant's application for a Township approval.
 - (e) Failure to comply, Failure of the applicant to demonstrate that the project meets the standards set forth in this section is reason to deny the applicant's underlying application for a Township approval.
 - (f) Waivers. For good reason, the Township may grant a waiver of the standards given in Section **C, D, E** and **F**.
- (6) Compatibility with other permit and ordinance requirements
- (a) Development approvals issued for subdivisions and site plans pursuant to this section are to be considered an integral part of development approvals under the subdivision and site plan review process and do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other applicable code, rule, act, or ordinance. In their interpretation and application, the provisions of this section shall be held to be the minimum requirements for the promotion of the public health, safety, and general welfare. This section is not intended to interfere with, abrogate, or annul any other ordinances, rule or regulation, statute, or other provision of law except that, where any provision of this section imposes restrictions different from those imposed by any other ordinance, rule or regulation, or other provision of law, the more restrictive provisions or higher standards shall control.
 - (b) In the event that a regional stormwater management plan(s) is prepared and formally adopted pursuant to N.J.A.C. 7:8-1.1 et seq. for any drainage area(s) or watershed(s) of which the Township of Galloway is a part, the stormwater provisions of such a plan(s) shall be adopted within one year of the adoption of a regional stormwater management plan (RSWMP) as an amendment to an area wide water quality management plan. Local ordinances proposed to implement the RSWMP shall be submitted to the

Pinelands Commission for certification within six months of the adoption of the RSWMP per N.J.A.C. 7:8 and the Pinelands CMP (N.J.A.C. 7:50).

- B. Definitions** - For the purpose of this ordinance, the following terms, phrases, words and their derivations shall have the meanings stated herein unless their use in the text of this Chapter clearly demonstrates a different meaning. When not inconsistent with the context, words used in the present tense include the future, words used in the plural number include the singular number, and words used in the singular number include the plural number. The word "shall" is always mandatory and not merely directory. The definitions below are the same as or based on the corresponding definitions in the Stormwater Management Rules at N.J.A.C. 7:8-1.2.

AQUACULTURE

The propagation, rearing and subsequent harvesting of aquatic organisms in controlled or selected environments, and their subsequent processing, packaging and marketing, including but not limited to activities to intervene in the rearing process to increase production such as stocking, feeding, transplanting and providing for protection from predators.

BMP

Best management practice as defined in the New Jersey Stormwater Best Management Practices Manual.

CAFRA CENTERS, CORES OR NODES

Those areas with boundaries incorporated by reference or revised by the Department in accordance with N.J.A.C. 7:7-13.16.

CAFRA PLANNING MAP

The geographic depiction of the boundaries for Coastal Planning Areas, CAFRA Centers, CAFRA Cores and CAFRA Nodes pursuant to N.J.A.C. 7:7E-5B.3.

CERTIFICATION

Either a written statement signed and sealed by a licensed New Jersey professional engineer attesting that a BMP design or stormwater management system conforms to or meets a particular set of standards or to action taken by the Commission pursuant to N.J.A.C. 7:50-3, Part II or Part IV. Depending upon the context in which the term is used, the terms "certify" and "certified" shall be construed accordingly.

COMMUNITY BASIN

An infiltration system, sand filter designed to infiltrate, standard constructed wetland, or wet pond, established in accordance with N.J.A.C. 7:8-4.2(c)14, that is designed and constructed in accordance with the New Jersey Stormwater Best Management Practices Manual, or an alternate design, approved in accordance with N.J.A.C. 7:8-5.2(g), for an

infiltration system, sand filter designed to infiltrate, standard constructed wetland, or wet pond and that complies with the requirements of this chapter.

COMPACTION

The increase in soil bulk density caused by subjecting soil to greater-than-normal loading.

CONSTRUCTION

The construction, erection, reconstruction, alteration, conversion, demolition, removal or equipping of buildings, structures or components of a stormwater management system, including but not limited to collection inlets, stormwater piping, swales and all other conveyance systems, and stormwater BMP's.

CONTRIBUTARY DRAINAGE AREA

The area from which stormwater runoff drains to a stormwater management measure, not including the area of the stormwater management measure itself.

CORE

A pedestrian-oriented area of commercial and civic uses serving the surrounding municipality, generally including housing and access to public transportation.

COUNTY REVIEW AGENCY

An agency designated by the County Board of Chosen Freeholders to review municipal stormwater management plans and implementing ordinances. The county review agency may wither be:

- (1) A county planning agency; or
- (2) A county water resource association created under N.J.S.A. 58:16A-55.5, if the ordinance or resolution delegates authority to approve, conditionally approve, or disapprove municipal stormwater management plans and implementing ordinances.

DEPARTMENT

The New Jersey Department of Environmental Protection.

DESIGNATED CENTER

A State Development and Redevelopment Plan Center as designated by the State Planning Commission such as urban, regional, town, village, or hamlet.

DESIGN ENGINEER

A person professionally qualified and duly licensed in New Jersey to perform engineering services that may include, but not necessarily be limited to, development of project requirements, creation and development of project design and preparation of drawings and specifications.

DEVELOPMENT

- (1) The change of or enlargement of any use or disturbance of any land, the performance of any building or mining operation, the division of land into two or more parcels and the creation or termination of rights of access or riparian rights including, but not limited to:
 - (a) A change in type of use of a structure or land;
 - (b) A reconstruction, alteration of the size, or material change in the external appearance of a structure of land;
 - (c) A material increase in the intensity of use of land, such as an increase in the number of businesses, manufacturing establishments, offices or dwelling units in a structure or on land;
 - (d) Commencement of resource extraction or drilling or excavation on a parcel of land;
 - (e) Demolition of a structure or removal of trees;
 - (f) Commencement of forestry activities;
 - (g) Deposit of refuse, solid or liquid waste or fill on a parcel of land;
 - (h) In connection with the use of land, the making of any material change in noise levels, thermal conditions, or emissions of waste material; and
 - (i) Alteration, either physically or chemically, of a shore, bank, or floodplain, seacoast, river, stream, lake, pond, wetlands or artificial body of water.
- (2) In addition, the construction, reconstruction, conversion, structural alteration, relocation or enlargement of any building or structure, any mining excavation or landfill, and any use or change in the use of any building or other structure, or land or extension of use of land, by any person, for which permission is required under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq.
- (3) In the case of development of agricultural land, i.e., lands used for an agricultural use or purpose as defined at N.J.A.C. 7:50-2.11, “development” means any activity that requires a state permit; any activity reviewed by the County Agricultural Boards (CAB) and the State Agricultural Development Committee (SADC), and municipal review of any activity not exempted by the Right to Farm Act, N.J.S.A. 4:1C-1 et seq.

(4) "Development" also means any reconstruction or altering of any service located on private property, except for residential lots with one single-family home, that is in direct contact with an existing storm drain inlet on that property only with respect to the storm drain retrofitting provisions of this section.

DISTURBANCE

The placement or reconstruction of impervious surface or motor vehicle surface, or exposure and/or movement of soil or bedrock or clearing, cutting, or removing of vegetation. Milling and repaving is not considered disturbance for the purposes of this definition.

DRAINAGE AREA

A geographic area within which stormwater, sediments, or dissolved materials drain to a particular receiving water body or to a particular point along a receiving water body.

ENVIRONMENTALLY CONSTRAINED AREA

The following areas where the physical alteration of the land is in some way restricted, either through regulation, easement, deed restriction or ownership such as: wetlands, floodplains, threatened and endangered species sites or designated habitats, and parks and preserves. Habitats of endangered or threatened species are identified using the Department's Landscape Project as approved by the Department's Endangered and Nongame Species Program.

ENVIRONMENTALLY CRITICAL AREA

An area or feature which is of significant environmental value, including but not limited to stream corridors; natural heritage priority sites; habitats of endangered or threatened species; large areas of contiguous open space or upland forest; steep slopes; and wellhead protection and groundwater recharge areas. Habitats of endangered or threatened species are identified using the Department's Landscape Project as approved by the Department's Endangered and Nongame Species Program.

EMPOWERMENT NEIGHBORHOOD

A neighborhood designated by the Urban Coordinating Council "in consultation and conjunction with" the New Jersey Redevelopment Authority pursuant to N.J.S.A. 55:19-69.

EROSION

The detachment and movement of soil or rock fragments by water, wind, ice or gravity.

EXCEPTION

The approval by the approving authority of a variance or other material departure from strict compliance with any section, part, phrase or provision of this section. An Exception may be granted only under certain specific, narrowly defined conditions described herein

and does not constitute a waiver of strict compliance with any section, part, phrase or provision of the Pinelands Comprehensive Management Plan (N.J.A.C. 7:50-1.1 et seq.).

EXTENDED DETENTION BASIN

A facility constructed through filling and/or excavation that provides temporary storage of stormwater runoff. It has an outlet structure that detains and attenuates runoff inflows and promotes the settlement of pollutants. An extended detention basin is normally designed as a multistage facility that provides runoff storage and attenuation for both stormwater quality and quantity management. The term “stormwater detention basin” shall have the same meaning as “extended detention basin.”

FINISHED GRADE

The elevation of the surface of the ground after completion of final grading, either via cutting, filling or a combination thereof.

GRADING

Modification of a land slope by cutting and filling with the native soil or redistribution of the native soil which is present at the site.

GREEN INFRASTRUCTURE

A stormwater management measure that manages stormwater close to its source by:

- (1) Treating stormwater runoff through infiltration into subsoil;
- (2) Treating stormwater runoff through filtration by vegetation or soil; or
- (3) Storing stormwater runoff for reuse.

GROUNDWATER

Water below the land surface in a zone of saturation.

GROUNDWATER MOUNDING ANALYSIS

A test performed to demonstrate that the groundwater below a stormwater infiltration basin will not “mound up,” encroach on the unsaturated zone, break the surface of the ground at the infiltration area or downslope, and create an overland flow situation.

HEAVY EQUIPMENT

Equipment, machinery, or vehicles that exert ground pressure in excess of eight pounds per square inch.

HIGH POLLUTANT LOADING AREA

An area in an industrial or commercial development site where solvents and/or petroleum products are loaded/unloaded, stored, or applied; where pesticides are loaded/unloaded or stored; where hazardous materials are expected to be present in greater than “reportable quantities” as defined by the United States Environmental Protection Agency (EPA) at 40

CFR 302.4; where recharged would be inconsistent with NJDEP-approved remedial action work plan or landfill closure plan; and/or where a high risk exists for spills of toxic materials, such as gas stations and vehicle maintenance facilities. The term “HPLA” shall have the same meaning as “high pollutant loading area.”

HYDROLOGIC UNIT CODE 14 (HUC 14)

An area within which water drains to a particular receiving surface water body, also known as a subwatershed, which is identified by a 14-digit hydrologic unit boundary designation, delineated within New Jersey by the United States Geological Survey.

IMPERVIOUS SURFACE

Pursuant to N.J.A.C. 7:8-1.2, “impervious surface” means a surface that has been covered with a layer of material so that it is highly resistant to infiltration by water.

INFILTRATION

The process by which water seeps into the soil from precipitation.

IN-LIEU CONTRIBUTION

A monetary fee collected by the Township of Galloway in lieu of requiring strict on-site compliance with the groundwater recharge, stormwater runoff quantity and/or stormwater runoff quantity standards established in this section.

INSTALL

To assemble, construct, put in place or connect components of a stormwater management system.

MAJOR DEVELOPMENT, NON-PINELANDS AREAS

For the purpose of this section only, an individual “development,” as well as multiple developments that individually or collectively result in:

- (a) The disturbance of 1/4 or more acres of land since February 2, 2004;
- (b) The creation of one-quarter acre or more of “regulated impervious surface” since February 2, 2004;
- (c) The creation of one-quarter acre or more of “regulated motor vehicle surface” since March 2, 2021; or
- (d) A combination of (b) and (c) above that totals an area of one-quarter acre or more. The same surface shall not be counted twice when determining if the combination area equals one-quarter acre or more.

Major development includes all developments that are part of a common plan of development or sale (for example, phased residential development) that collectively

or individually meet any one or more of paragraphs (a), (b), (c), or (d) above. Projects undertaken by any government agency that otherwise meet the definition of “major development” but which do not require approval under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., are also considered “major development.”

MAJOR DEVELOPMENT, PINELANDS AREAS

Any division of land into five or more lots; any construction or expansion of any housing development of five or more dwelling units; any construction or expansion of any commercial or industrial use or structure on a site of more than three acres; or any development, grading, clearing or disturbance of an area in excess of 5,000 square feet.

MINOR DEVELOPMENT

All development other than major development.

MITIGATION

Acts necessary to prevent, limit, remedy or compensate for conditions that may result from those cases where an applicant has demonstrated the inability or impracticality of strict compliance with the stormwater management requirements set forth in N.J.A.C. 7:8, in an adopted regional stormwater management plan, or in a local ordinance which is as protective as N.J.A.C. 7:8, and an exception from strict compliance is granted by the Township of Galloway and the Pinelands Commission.

MOTOR VEHICLE

A land vehicle propelled other than by muscular power, such as automobiles, motorcycles, autocycles, and low speed vehicles. For the purposes of this definition, motor vehicle does not include farm equipment, snowmobiles, all-terrain vehicles, motorized wheelchairs, go-carts, gas buggies, golf carts, ski-slope grooming machines, or vehicles that run only on rails or tracks.

MOTOR VEHICLE SURFACE

Any pervious or impervious surface that is intended to be used by “motor vehicles” and/or aircraft, and is directly exposed to precipitation including, but not limited to, driveways, parking areas, parking garages, roads, racetracks, and runways.

MUNICIPALITY

Any city, borough, town, township, or village.

NEW JERSEY STORMWATER BEST MANAGEMENT PRACTICES MANUAL

The manual maintained by the Department providing, in part, design specifications, removal rates, calculation methods, and soil testing procedures approved by the Department as being capable of contributing to the achievement of the stormwater management standards specified in this chapter. The BMP Manual is periodically amended by the Department as necessary to provide design specifications on additional best

management practices and new information on already included practices reflecting the best available current information regarding the particular practice and the Department's determination as to the ability of that best management practice to contribute to compliance with the standards contained in this chapter. Alternative stormwater management measures, removal rates, or calculation methods may be utilized, subject to any limitations specified in this chapter, provided the design engineer demonstrates to the municipality, in accordance with Subsection **D.6** of this ordinance and N.J.A.C. 7:8-5.2(g), that the proposed measure and its design will contribute to achievement of the design and performance standards established by this chapter.

NJDPE

The New Jersey Department of Environmental Protection.

NJPDES

The New Jersey Pollutant Discharge Elimination System as set forth in N.J.S.A. 58:10A-1 et seq. and in N.J.A.C. 7:14A.

NJPDES PERMIT

A permit issued by the NJDEP pursuant to the authority of the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and N.J.A.C. 7:14A for a discharge of pollutants.

NODE

An area designated by the State Planning Commission concentrating facilities and activities which are not organized in a compact form.

NONPOINT SOURCE

- (1) Any human-made or human-induced activity, factor, or condition, other than a point source, from which pollutants are or may be discharged;
- (2) Any human-made or human-induced activity, factor, or condition, other than a point source, that may temporarily or permanently change any chemical, physical, biological, or radiological characteristic of waters of the state from what was or is the natural, pristine condition of such waters, or that may increase the degree of such change; or
- (3) Any activity, factor, or condition, other than a point source, that contributes or may contribute to water pollution.
- (4) The term "NPS" shall have the same meaning as "nonpoint source."

NONSTRUCTURAL BMP

A stormwater management measure, strategy or combination of strategies that reduces adverse stormwater runoff impacts through sound site planning and design. Nonstructural BMP's include such practices as minimizing site disturbance, preserving important site features, reducing and disconnecting impervious cover, flattening slopes, utilizing native vegetation, minimizing turf grass lawns, maintaining natural drainage features and characteristics and controlling stormwater runoff and pollutants closer to the source. The term "low-impact development technique" shall have the same meaning as "nonstructural BMP."

NUTRIENT

A chemical element or compound, such as nitrogen or phosphorus, which is essential to and promotes the development of organisms.

PERMEABILITY

The rate at which water moves through a saturated unit area of soil or rock material at hydraulic gradient of one, determined as prescribed in N.J.A.C. 7:9A-6.2 (tube permeameter test), N.J.A.C. 6.5 (pit bailing test) or N.J.A.C. 6.6 (piezometer test). Alternative permeability test procedures may be accepted by the approving authority, provided the test procedure attains saturation of surrounding soils, accounts for hydraulic head effects on infiltration rates, provides a permeability rate with units expressed in inches per hour and is accompanied by a published source reference. Examples of suitable sources include hydrogeology, geotechnical, or engineering text and design manuals, proceedings of American Society for Testing and Materials (ASTM) symposia, or peer-review journals. Neither a soil permeability class rating test, as described in N.J.A.C. 7:9A-6.3, nor a percolation test, as described in N.J.A.C. 7:9A-6.4, are acceptable tests for establishing permeability values for the purpose of complying with this section.

PERMEABLE

Having a permeability of one inch per hour or faster. The terms "permeable soil," "permeable rock" and "permeable fill" shall be construed accordingly.

PERSON

Any individual, corporation, company, partnership, firm, association, municipality or political subdivision of this state subject to municipal jurisdiction pursuant to the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq.

PINELANDS CMP

The New Jersey Pinelands Comprehensive Management Plan (N.J.A.C. 7:50 1.1 et seq).

PINELANDS COMMISSION or COMMISSION

The Commission created pursuant Section 5 of the Pinelands Protection Act, N.J.S.A. 13:18A-5.

POINT SOURCE

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

POLLUTANT

Any dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, refuse, oil, grease, sewage, sludge, munitions, chemical wastes, biological materials, medical wastes, radioactive substance [except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)], thermal waste, wrecked or discarded equipment, rock, sand, cellar dirt, industrial, municipal, agricultural, and construction waste or runoff, or other residue discharged directly or indirectly to the land, groundwaters or surface waters of the state, or to a domestic treatment works. "Pollutant" includes both hazardous and nonhazardous pollutants.

PROFESSIONAL ENGINEER

A person licensed to practice professional engineering in the State of New Jersey pursuant to N.J.S.A. 45:8-27 et seq.

RAIN GARDEN

A man-made landscaped depression, or bioretention area, for the use of collecting, filtering and infiltrating stormwater from small storm events.

RECHARGE

The amount of water from precipitation that infiltrates into the ground and is not evapotranspired.

REGULATED IMPERVIOUS SURFACE

Any of the following, alone or in combination:

- (a) A net increase of impervious surface;
- (b) The total area of impervious surface collected by a new stormwater conveyance system (for the purpose of this definition, a "new stormwater conveyance system" is a stormwater conveyance system that is constructed where one did not exist immediately prior to its construction or an existing system for which a new discharge location is created);
- (c) The total area of impervious surface proposed to be newly collected by an existing stormwater conveyance system; and/or
- (d) The total area of impervious surface collected by an existing stormwater conveyance system where the capacity of that conveyance system is increased.

REGULATED MOTOR VEHICLE SURFACE

Any of the following, alone or in combination:

- (a) The total area of motor vehicle surface that is currently receiving water;
- (b) A net increase in motor vehicle surface; and/or quality treatment either by vegetation or soil, by an existing stormwater management measure, or by treatment at a wastewater treatment plant, where the water quality treatment will be modified or removed.

REPLICATE

One of two or more soil samples or tests taken at the same location (within five feet of each other) and depth, within the same soil horizon or substratum. In the case of fill material, replicate tests are tests performed on subsamples of the same bulk sample packed to the same bulk density.

SAND

A particle size category consisting of mineral particles which are between 0.05 millimeters and 2.0 millimeters in equivalent spherical diameter. Also, a soil textural class having 85% or more of sand and a content of silt and clay such that the percentage of silt plus 1/5 times the percentage of clay does not exceed 15, as shown on the USDA Soil Textural Triangle.

SEASONALLY HIGH WATER TABLE

The upper limit of the shallowest zone of saturation which occurs in the soil, identified as prescribed in N.J.A.C. 7:9A-5.8.

SEDIMENT

Solid material, mineral or organic, that is in suspension, is being transported, or has been moved from its site or origin by air, water or gravity as a product of erosion.

SITE

The lot or lots upon which a major development is to occur or has occurred.

SOIL

All unconsolidated mineral and organic material or any origin.

SOURCE MATERIAL

Any material(s) or machinery, located at an industrial facility that is directly or indirectly related to process, manufacturing or other industrial activities, which could be a source of pollutants in any industrial stormwater discharge to groundwater. Source materials include, but are not limited to, raw materials; intermediate products; final products; waste materials; by-products; industrial machinery and fuels, and lubricants, solvents, and detergents that are related to process, manufacturing, or other industrial activities that are exposed to stormwater.

SPECIAL WATER RESOURCE PROTECTION AREAS

Pursuant to N.J.A.C. 7:8-5.5(h), special water resource protection areas shall be established along all waters designated Category One at N.J.A.C. 7:9B and perennial or intermittent streams that drain into or upstream of the Category One waters as shown on the USGS Quadrangle. Areas shall be established for the protection of water quality, aesthetic value, exceptional ecological significance, exceptional recreational significance, and exceptional fisheries significance of those established Category One waters.

STATE DEVELOPMENT AND REDEVELOPMENT PLAN METROPOLITAN PLANNING AREA (PA1)

An area delineated on the State Plan Policy Map and adopted by the State Planning Commission that is intended to be the focus for much of the state's future redevelopment and revitalization efforts.

STATE PLAN POLICY MAP

The geographic application of the State Development and Redevelopment Plan's goals and statewide policies, and the official map of these goals and policies.

STORM DRAIN INLET

An opening in a storm drain used to collect stormwater runoff and includes, but is not limited to, a grate inlet, curb-opening inlet, slotted inlet, and combination inlet.

STORMWATER

Water resulting from precipitation (including rain and snow) that runs off the land's surface, is transmitted to the subsurface, or is captured by separate storm sewers or other sewage or drainage facilities, or conveyed by snow removal equipment.

STORMWATER INFILTRATION BMP

A basin or other facility constructed within permeable soils that provides temporary storage of stormwater runoff. An infiltration BMP does not normally have a structural outlet to discharge runoff from the stormwater quality design storm. Instead, outflow from an infiltration BMP is through the surrounding soil. The terms "infiltration measure" and "infiltration practice" shall have the same meaning as "stormwater infiltration basin."

STORMWATER MANAGEMENT BASIN

An excavation or embankment and related areas designed to retain stormwater runoff. A stormwater management basin may either be normally dry (that is, a detention basin or infiltration basin), retain water in a permanent pool (a retention basin), or be planted mainly with wetland vegetation (most constructed stormwater wetlands).

STORMWATER MANAGEMENT MEASURE

Any structural or nonstructural strategy, practice, technology, process, program, or other method intended to control or reduce stormwater runoff and associated pollutants, or to

induce or control the infiltration or groundwater recharge of stormwater or to eliminate illicit or illegal nonstormwater discharges into stormwater conveyances.

STORMWATER MANAGEMENT PLANNING AGENCY

A public body authorized by legislation to prepare stormwater management plans.

STORMWATER MANAGEMENT PLANNING AREA

The geographic area for which a stormwater management planning agency is authorized to prepare stormwater management plans, or a specific portion of that area identified in a stormwater management plan prepared by that agency.

STORMWATER RUNOFF

Water flow on the surface of the ground or in storm sewer resulting from precipitation.

STREAM CORRIDOR

That land lying within 50 feet of the edge of any stream, pond or lake or within 25 feet of the center of any intermittent stream.

SUITABLE SOIL

Unsaturated soil, above the seasonally high water table, which contains less than 50% by volume of coarse fragments and which has a tested permeability rate of between one and 20 inches per hours.

SURFACE WATER

Any waters of the state which are not groundwater.

TIDAL FLOOD HAZARD AREA

A flood hazard area in which the flood elevation resulting from the two-, 10-, or 100-year storm, as applicable, is governed by tidal flooding from the Atlantic Ocean. Flooding in a tidal flood hazard area may be contributed to, or influenced by, stormwater runoff from inland areas, but the depth of flooding generated by the tidal rise and fall of the Atlantic Ocean is greater than flooding from any fluvial sources. In some situations, depending upon the extent of the storm surge from a particular storm event, a flood hazard area may be tidal in the 100-year storm, but fluvial in more frequent storm events.

TIME OF CONCENTRATION

The time it takes for runoff to travel from the hydraulically most distant point of the drainage area to the point of interest within a watershed.

TOTAL SUSPENDED SOILIDS

The insoluble solid matter suspended in water and stormwater that is separable by laboratory filtration in accordance with the procedure contained in the Standard Methods for the Examination of Water and Wastewater prepared and published jointly by the

American Public Health Association, American Water Works Association and the Water Pollution Control Federation. The term “TSS” shall have the same meaning as “total suspended solids.”

URBAN COORDINATION COUNCIL EMPOWERMENT NEIGHBORHOOD

A neighborhood given priority access to state resources through the New Jersey Redevelopment Authority.

URBAN ENTERPRISE ZONE

A zone designated by the New Jersey Enterprise Zone Authority pursuant to the New Jersey Urban Enterprise Zones Act, N.J.S.A. 52:27H-60 et seq.

URBAN REDEVELOPMENT AREA

Previously developed portions of areas:

- (1) Delineated on the State Plan Policy Map (SPPM) as the Metropolitan Planning Area (PA1), Designated Centers, Cores or Nodes;
- (2) Designated as CAFRA Centers, Cores or Nodes;
- (3) Designated as Urban Enterprise Zones; and
- (4) Designated as Urban Coordinating Council Empowerment Neighborhoods.

VOID RATIO

The interstitial space between soil particles as calculated by the ratio of the volume of voids to the volume of solids.

WATER CONTROL STRUCTURE

A structure within, or adjacent to, a water, which intentionally or coincidentally alters the hydraulic capacity, the flood elevation resulting from the two-, 10-, or 100-year storm, flood hazard area limit, and/or floodway limit of the water. Examples of a water control structure may include a bridge, culvert, dam, embankment, ford (if above grade), retaining wall, and weir.

WATERS OF THE STATE

The ocean and its estuaries, all springs, streams, wetlands, and bodies of surface or ground water, whether natural or artificial, within the boundaries of the State of New Jersey or subject to its jurisdiction.

WATER TABLE

The upper surface of a zone of saturation.

WELL

A bored, drilled or driven shaft, or a dug hole, which extends below the seasonally high water table and which has a depth which is greater than its largest surface dimension.

WETLANDS

Pursuant to N.J.A.C. 7:8-1.2, “wetlands” or “wetland” means an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as “hydrophytic vegetation.”

WET POND

A stormwater facility constructed through filling and/or excavation that provides both permanent and temporary storage of stormwater runoff. It has an outlet structure that creates a permanent pool and detains and attenuates runoff inflows and promotes the settling of pollutants. A stormwater retention basin can also be designed as a multistage facility that also provides extended detention for enhanced stormwater quality design storm treatment and runoff storage and attenuation for stormwater quantity management. The term “stormwater retention basin” shall have the same meaning as “wet pond.”

C. General Standards - Design and performance standards for stormwater management measures.

(1) Stormwater management measures for major development shall be developed to meet the erosion control, groundwater recharge, stormwater runoff quantity treatment as follows:

[a] The minimum standards for erosion control are those established under the Soil and Sediment Control Act, N.J.S.A. 4:24-39 et seq., and implementing rules at N.J.A.C. 2:90.

[b] The minimum standards for groundwater recharge, stormwater quality, and stormwater runoff quantity shall be met by incorporating green infrastructure.

(2) The standards in this chapter apply to new major development and are intended to minimize the impact of stormwater runoff on water quality and water quantity in receiving water bodies and to maintain predevelopment groundwater recharge levels. The standards do not apply to new major development to the extent that alternative design and performance standards are applicable under a regional stormwater management plan or water quality management plan adopted in accordance with Department rules.

(3) In the Pinelands Area of the Township of Galloway, the following criteria shall also apply:

(a) There shall be no direct discharge of stormwater runoff from any point or nonpoint source to any wetlands, wetlands transition area or surface water body. In addition,

stormwater runoff shall not be directed in such a way as to increase the volume and rate of discharge into any surface water body from that which existed prior to development of the parcel.

- (b) To the maximum extent practical, there shall be no direct discharge of stormwater runoff onto farm fields so as to protect farm crops from damage due to flooding, erosion and long-term saturation of cultivated crops and cropland.
- (c) Excessively and somewhat excessively drained soils as defined by the Soil Conservation Service should be avoided for the recharge of runoff wherever possible.
- (d) When and where possible, a positive gravity flow discharge structure/pipe shall be constructed in such a manner so as to allow the complete drainage of the retention/detention basin to a stream, storm sewer or other point of positive drainage. This structure/pipe shall be designed in such a manner that it may be locked closed and cause the same effect as a dam to a lake. The locked condition shall keep the stormwater from draining from the basin.

[1] If the drainage structure/pipe is under Township ownership, control and maintenance, it shall be the responsibility of the Director of Public Works to determine when and if the structure/pipe must be unlocked to drain the basin, to seek the approval of the Township Committee to do so and to give public notice to the Pinelands Commission if within the Pinelands Protection Area. The Director of Public Works shall be responsible to keep the keys for these locks, to routinely check to assure that they are normally locked and in good working order and to relock them upon completion of the maintenance of the basin.

[2] If the drainage/pipe structure is under private ownership, control and maintenance, it shall be the responsibility of the property owner to request permission from the Township Committee to unlock this structure/pipe and to give notice to the Pinelands Protection Area.

[a] In order to obtain such permission to open the locked structure/pipe, a statement, signed by the owner, must be presented stating that it is in the public's best interest that this structure/pipe be opened in order to drain the basin which has continued to retain water beyond its normal period, and that it must be drained in this manner to facilitate the maintenance of the basin. This statement must also indicate the date on which the structure/pipe will be closed and locked.

[b] Upon receipt of such permission, the property owner shall contact the Director of Public Works who shall exclusively maintain the keys for the lock for this

structure/pipe and shall unlock it to drain and relock it upon completion of the maintenance of the basin.

(4) Both retention and detention basins shall have the following improvements as further specified in the NJ BMP Manual and in the New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, as amended, and New Jersey Department of Transportation Standard Construction Details, as amended:

(a) Headwalls and riprap.

(b) A chain link fence, four feet high, around the entire perimeter may be required by the Board. In cases where a fence is required, a twelve-foot opening shall be provided for vehicular access to streets by means of a fifteen-foot-wide access right-of-way. The fence shall not extend into the building front yard setback area.

(c) An eighteen-inch berm around the inside of the basin

(d) Landscaping is required around the entire perimeter, except where it faces planned open spaces or wooded areas or other natural or man-made visual separation existing between the facility and adjoining lands.

(5) Wetlands

(a) No land development shall be carried out within 50 feet of a wetland or in an area adjacent to a wetland area where the seasonal high water table is three feet or less, unless the applicant can demonstrate that the proposed development will not result in significant adverse impact on any drainage structure.

(b) A significant adverse impact shall be deemed to exist if:

[1] A drainage structure is affected through the increased runoff discharged to the wetlands;

[2] There is no change in the seasonal flow patterns;

[3] There is an alteration of the water table; or

[4] There is an increase in erosion and increased sedimentation of wetlands.

(6) Methods of management.

(e) The following is a list of various control methods which may be utilized in stormwater management systems, if appropriate. The choice of control techniques is not limited to the ones appearing on this list. However, it will be the policy of the Township to encourage the use of retention basins wherever possible. All plans submitted to the Township outside of the Pinelands Area must, if detention systems are not the chosen method, explain why an alternate method is proposed.

[1] Detention/retention basins.

[2] Rooftop storage.

[3] Parking lot ponding.

[4] Porous pavement and concrete lattice block surface.

[5] Grassed channels and vegetated strips.

[6] Routed flow over grass.

[7] Decreased impervious area coverage.

[8] French drains, porous pipes and dry wells.

(f) The use of other control methods which meet the criteria in this subsection will be permitted when approved by the Township Engineer. Various combinations of methods should be tailored to suit the particular requirements of the type of development and the topographic features of the project area.

(g) Regardless of the method used, the applicant will be required to provide a maintenance plan in accordance with Section **K**.

(h) In addition to all other requirements of this subsection, each applicant shall demonstrate that, at a minimum, existing trees and vegetation on the development site will be preserved, protected and maintained according to the minimum standards established by provisions of the Township of Galloway Land Use Ordinance, Zoning Ordinance, or by conditions of zoning or variance approval. Existing trees and vegetation shall be protected during construction activities in accordance with the Standard for Tree Protection during Construction provided in the NJ State Soil Conservation Committee Standards for Soil Erosion and Sediment Control in New Jersey, which is incorporated herein by reference as amended and supplemented.

(i) All submitted landscaping plans shall contain a revegetation plan in accordance with the Pinelands CMP standards at N.J.A.C. 7:50-6.25(c).

(7) Drainage Easements

(a) All stormwater management plans shall illustrate the pathway of positive outflow to the nearest stormwater easement, stream, lake, pond or other natural watercourse. Prior to receiving final approval, the applicant shall obtain the necessary easements corresponding with the flow patterns illustrated on the plans should those patterns affect the present or future use of adjoining parcels by increasing the quantity of runoff over the adjoining parcel.

- (b) Where a subdivision is traversed by a watercourse, surface or underground drainage way or drainage system, channel or stream, there shall be provided and dedicated a drainage right-of-way easement to the Township conforming substantially to the lines of such watercourses, and such further width or construction, or both, as will be adequate to accommodate expected stormwater runoff meeting any minimum widths and locations shown on any adopted Official Map and/or Master Plan and, as a minimum, that fixed in Subsection B defined as “stream corridor”. Such easement dedication shall be expressed on the plan as follows” Drainage and utility right-of-way easement granted to the Management Ordinance of the Township of Galloway.
 - (c) Drainage structures in county or state right-of-way. Drainage structures which are located within state or Atlantic County highway rights-of-way shall be approved by the state or county agency, and a letter from that office indicating such approval shall be directed to the Administrator of the Board and shall be received prior to the final plat approval. Drainage structures abutting a brook or stream whose drainage area, up to and including the subdivision or development, is greater than 50 acres or within a one-hundred-year floodplain shall be required to secure a stream encroachment permit from the New Jersey Department of Environmental Protection, in accordance with the latest criteria, prior to authorization of final approval. A copy of said permit shall be forwarded to the Administrator of the Board and attached to the final engineering plans.
 - (d) Minor Subdivisions resulting in the construction of single-family dwellings shall provide low maintenance measures to infiltrate the volume of runoff generated by the additional impervious coverage for the twenty-four-hour, ten-year storm event. The use of rain gardens for the treatment of roof and driveway runoff is an acceptable alternative to the installation of dry wells or other underground infiltration facilities.
 - (e) For minor subdivisions, at least one soil boring shall be completed for each lot proposing to incorporate infiltration BMP’s. The soil boring should be completed in accordance with subsection F.
 - (f) Subdivisions proposing on-lot stormwater management facilities shall provide a deed notice to future homeowners as to the location and type of facility and a list of any potential inspection and maintenance requirements.
- (8) Lot grading standards and as-built surveys
- (a) Design and construction standards for lot grading

[1] All lots proposed for development, graded open spaces and planting areas shall be graded to secure proper drainage and to prevent the collection of stormwater. Grading shall be performed in such a manner which will minimize the damage to or destruction of trees growing on the land. Topsoil shall be provided and/or redistributed on the surface as cover and shall be stabilized by seeding or planting. Grading plans shall have been submitted with the preliminary and final plats, and any departure from these plans must be approved in accordance with the requirements of this section for the modification of improvements.

[2] Wherever possible, the land shall be graded so that the stormwater from each lot shall drain directly to the street via sheet flow through disconnected pervious surfaces. If impossible to drain directly to the street, it shall be directed to a system of interior yard drainage designed in accordance with this section.

[3] Unless otherwise required by this section, all tree stumps, masonry and other obstructions shall be removed to a depth of two feet below existing or finished grade, whichever is lower.

[4] The minimum slope for lawns and disturbed areas shall be 1 ½% and, for smooth, hard finished surfaces other than roadways and parking lots, ½ of 1%.

[5] The maximum grade for lawns and disturbed areas within five feet of a building shall be 10% and, for lawns more than five feet from a building, 25%; except that, for the driveway, the maximum grade shall be 15%.

[6] Lots shall be graded to provide positive drainage from the rear, side and front yard areas towards a downstream stormwater management system. In no case shall lots discharge directly towards building units of adjoining residential properties. In areas where conveyance swales are required, the design shall be in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey and the stormwater management provisions of this section.

[7] Retaining walls installed in slope-controlled areas shall be constructed of heavy timber or logs properly treated in accordance with environmental regulations, reinforced concrete, reinforced masonry or of other construction acceptable to the Board

Engineer and shall be adequately designed and detailed on the final plat to carry all earth pressures, including any surcharges. The heights of retaining walls shall not exceed 1/3 of the horizontal distance from the foundation wall of any building to the face of the retaining wall.

As-Built survey requirements

[1] As-built lot grading may be required for high-density developments at the discretion of the approving authority. As-built surveys shall be completed upon reaching final grade. Each survey shall be reviewed by the Township Engineer to ensure compliance with the approved plans. Any discrepancies from the approved plans must be addressed to the satisfaction of the Township Engineer before the issuance of a certificate of occupancy.

[2] In the event the postdevelopment condition of a project experiences stormwater problems that in the opinion of the Township Engineer may cause an impact to public health, safety or welfare, the Township may request the developer to complete an as-built survey of the impacted lot(s). Each as-built survey shall be reviewed by the Township Engineer to ensure compliance with the approved plans. Any discrepancies from the approved plans must be addressed to the satisfaction of

the Township Engineer and the impacted individual lot owner. No additional certificates of occupancy will be provided until the impacts have been addressed to the satisfaction of the Township.

D. Stormwater Management Requirements for Major Development

- (1) Stormwater management maintenance requirements. The development shall incorporate a maintenance plan for the stormwater management measures incorporated into the design of a major development in accordance with Section **K**.
- (2) Stormwater management measures shall avoid adverse impacts of concentrated flow on habitat for threatened and endangered species as documented in the Department's Landscape Project or Natural Heritage Database established under N.J.S.A. 13:1B-15.147 through 13:1B-15.150, particularly *Helonias bullata* (swamp pink) and/or *Clemmys muhlenbergi* (bog turtle).
- (3) The following linear development projects are exempt from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements of Subsection **D(16), (17), and (18)**:
 - (a) The construction of an underground utility line, provided that the disturbed areas are revegetated upon completion;
 - (b) The construction of an aboveground utility line, provided that the existing conditions are maintained to the maximum extent practicable; and
 - (c) The construction of a public pedestrian access, such as a sidewalk or trail with a maximum width of 14 feet, provided that the access is made of permeable material.
- (4) A waiver from strict compliance from the groundwater recharge, stormwater runoff quantity green infrastructures, and stormwater runoff quality requirements of Subsection **D(7)** may be obtained for the enlargement of an existing public roadway or railroad; or the construction or enlargement of a public pedestrian access, provided that the following conditions are met:
 - (a) The applicant demonstrates that there is a public need for the project that cannot be accomplished by any other means;

- (b) The applicant demonstrates through an alternative analysis that through the use of nonstructural and structural stormwater management strategies and measures, the alternative selected complies with the requirements of Subsections **D(15)**, **(16)**, **(17)**, and **(18)** to the maximum extent practicable;
 - (c) The applicant demonstrates that, in order to meet the requirements of Subsection **D(15)**, existing structures currently in use, such as homes and buildings, would need to be condemned; and
 - (d) The applicant demonstrates that it does not own or have other rights to areas, including the potential to obtain through condemnation lands not falling under Subsection **D(4)(c)** above within the upstream drainage area of the receiving stream, that would provide additional opportunities to mitigate the requirements of Subsection **D(7)** that were not achievable on site.
- (5) Tables 1 through 3 below summarize the ability of stormwater best management practices identified and described in the New Jersey Stormwater Best Management Practices Manual to satisfy the green infrastructure, groundwater recharge, stormwater runoff quality and stormwater runoff quantity standards specified in Subections **D(15)**, **(16)**, **(17)** and **(18)**. When designed in accordance with the most current version of the New Jersey Stormwater Best Management Practices Manual, the stormwater management measures found at N.J.A.C. 7:8-5.2 (f) Tables 5-1, 5-2 and 5-3 and listed below in Tables 1, 2 and 3 are presumed to be capable of providing stormwater controls for the design and performance standards as outlined in the tables below. Upon amendments of the New Jersey Stormwater Best Management Practices to reflect additions or deletions of BMPs meeting these standards, or changes in the presumed performance of BMPs designed in accordance with the New Jersey Stormwater BMP Manual, the Department shall publish in the New Jersey Registers a notice of administrative change revising the applicable table. The most current version of the BMP Manual can be found on the Department's website at:
- https://njstormwater.org/bmp_manual2.htm.
- (6) Where the BMP tables in the NJ Stormwater Management Rule are different due to updates or amendments with the tables in this ordinance the BMP Tables in the Stormwater Management rule at N.J.A.C. 7:8-5.2(f) shall take precedence.
- [Added 3-2-2021 by Ord. No. 2021-XX

Table 1
Green Infrastructure BMPs for Groundwater Recharge,
Stormwater Runoff Quality, and/or Stormwater Runoff Quantity

Best Management Practice	Stormwater Runoff Quality TSS Removal Rate (percent)	Stormwater Runoff Quantity	Groundwater Recharge	Minimum Separation from Seasonal High Water Table (feet)
Cistern	0	Yes	No	--
Dry Well ^(a)	0	No	Yes	2
Grass Swale	50 or less	No	No	2 ^(e) 1 ^(f)
Green Roof	0	Yes	No	--
Manufactured Treatment Device ^{(a)(g)}	50 or 80	No	No	Dependent upon the device
Pervious Paving System ^(a)	80	Yes	Yes ^(b) No ^(c)	2 ^(b) 1 ^(c)
Small-Scale Bioretention Basin ^(a)	80 or 90	Yes	Yes ^(b) No ^(c)	2 ^(b) 1 ^(c)
Small-Scale Infiltration Basin ^(a)	80	Yes	Yes	2
Small-Scale Sand Filter	80	Yes	Yes	2

Vegetative Filter Strip	60-80	No	No	--
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**Table 2
Green Infrastructure BMPs for Stormwater Runoff Quantity
(or for Groundwater Recharge and/or Stormwater Runoff Quality
with a Waiver or Variance from N.J.A.C. 7:8-5.3)**

Best Management Practice	Stormwater Runoff Quality TSS Removal Rate (percent)	Stormwater Runoff Quantity	Groundwater Recharge	Minimum Separation from Seasonal High Water Table (feet)
Bioretention System	80 or 90	Yes	Yes ^(b) No ^(c)	2 ^(b) 1 ^(c)
Infiltration Basin	80	Yes	Yes	2
Sand Filter ^(b)	80	Yes	Yes	2
Standard Constructed Wetland	90	Yes	No	N/A
Wet Pond ^(d)	50-90	Yes	No	N/A

Table 3 BMPs for Groundwater Recharge, Stormwater Runoff Quality, and/or Stormwater Runoff Quantity only with a Waiver or Variance from N.J.A.C. 7:8-5.3				
Best Management Practice	Stormwater Runoff Quality TSS Removal Rate (percent)	Stormwater Runoff Quantity	Groundwater Recharge	Minimum Separation from Seasonal High Water Table (feet)
Blue Roof	0	Yes	No	N/A
Extended Detention Basin	40-60	Yes	No	1
Manufactured Treatment Device ^(h)	50 or 80	No	No	Dependent upon the device
Sand Filter ^(c)	80	Yes	No	1
Subsurface Gravel Wetland	90	No	No	1
Wet Pond	50-90	Yes	No	N/A

Notes to Tables 1, 2, and 3:

- a. Subject to the applicable contributory drainage area limitation specified at Subsection **D(15)(b)**;
- b. designed to infiltrate into the subsoil;
- c. designed with underdrains;
- d. designed to maintain at least a 10-foot wide area of native vegetation along at least 50 percent of the shoreline and to include a stormwater runoff retention component designed to capture stormwater runoff for beneficial reuse, such as irrigation;
- e. designed with a slope of less than two percent;
- f. designed with a slope of equal to or greater than two percent;

- g. manufactured treatment devices that meet the definition of green infrastructure at Section **B**;
 - h. manufactured treatment devices that do not meet the definition of green infrastructure at Section **B**.

- (7) An alternative stormwater management measure, alternative removal rate, and/or alternative method to calculate the removal rate may be used if the design engineer demonstrates the capability of the proposed alternative stormwater management measure and/or the validity of the alternative rate or method to the municipality. A copy of any approved alternative stormwater management measure, alternative removal rate, and/or alternative method to calculate the removal rate shall be provided to the Department in accordance with Subsection **G(2)**. Alternative stormwater management measures may be used to satisfy the requirements at Subsection **D(15)** only if the measures meet the definition of green infrastructure at Section **B**. Alternative stormwater management measures that function in a similar manner to a BMP listed at Subsection **(15)(b)** are subject to the contributory drainage area limitation specified at Subsection **(15)(b)** for that similarly functioning BMP. Alternative stormwater management measures approved in accordance with this subsection that do not function in a similar manner to any BMP listed at Subsection **(15)(b)** shall have a contributory drainage area less than or equal to 2.5 acres, except for alternative stormwater management measures that function similarly to cisterns, grass swales, green roofs, standard constructed wetlands, vegetative filter strips, and wet ponds, which are not subject to a contributory drainage area limitation. Alternative measures that function similarly to standard constructed wetlands or wet ponds shall not be used for compliance with the stormwater runoff quality standard unless a variance in accordance with N.J.A.C. 7:8-4.6 or a waiver from strict compliance in accordance with Subsection **D(4)** is granted from Subsection **D(15)**.

- (8) Whenever the stormwater management design includes one or more BMPs that will infiltrate stormwater into subsoil, the design engineer shall assess the hydraulic impact on the groundwater table and design the site, so as to avoid adverse hydraulic impacts. Potential adverse hydraulic impacts include, but are not limited to, exacerbating a naturally or seasonally high water table, so as to cause surficial ponding, flooding of basements, or interference with the proper operation of subsurface sewage disposal systems or other subsurface structures within the zone of influence of the groundwater mound, or interference with the proper functioning of the stormwater management measure itself.

- (9) Design standards for stormwater management measures are as follows:
 - (a) Stormwater management measures shall be designed to take into account the existing site conditions, including, but not limited to, environmentally critical areas; wetlands; flood-prone areas; slopes; depth to seasonal high water table; soil type, permeability, and texture; drainage area and drainage patterns; and the presence of solution-prone carbonate rocks (limestone);

 - (b) Stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure, as appropriate, and shall have parallel bars

with one-inch spacing between the bars to the elevation of the water quality design storm. For elevations higher than the water quality design storm, the parallel bars at the outlet structure shall be spaced no greater than one-third the width of the diameter of the orifice or one-third the width of the weir, with a minimum spacing between bars of one inch and a maximum spacing between bars of six inches. In addition, the design of trash racks must comply with the requirements of Subsection **I(3)**;

- (c) Stormwater management measures shall be designed, constructed, and installed to be strong, durable, and corrosion resistant. Measures that are consistent with the relevant portions of the Residential Site Improvement Standards at N.J.A.C. 5:21-7.3, 7.4, and 7.5 shall be deemed to meet this requirement;
 - (d) Stormwater management BMPs shall be designed to meet the minimum safety standards for stormwater management BMPs at Section **I**; and
 - (e) The size of the orifice at the intake to the outlet from the stormwater management BMP shall be a minimum of two and one-half inches in diameter.
 - (f) *All detention and infiltration BMPs shall provide one foot of freeboard between the design high water level one-hundred-year water surface elevation and the top of the basin.*
 - (g) *Stabilized access 15 feet wide is to be provided to the stormwater management BMPs to provide access capable of supporting maintenance vehicles. The access way must be designed with a slope not to exceed five horizontal to one vertical, 5H: 1V.*
- (10) Manufactured treatment devices may be used to meet the requirements of this subchapter, provided the pollutant removal rates are verified by the New Jersey Corporation for Advanced Technology and certified by the Department. Manufactured treatment devices that do not meet the definition of green infrastructure at Section **B** may be used only under the circumstances described at Subsection **D(15)(d)**.
- (11) Any application for a new agricultural development that meets the definition of major development at Section **B** shall be submitted to the Soil Conservation District for review and approval in accordance with the requirements at Subsections **D(15)**, **(16)**, **(17)** and **(18)** and any applicable Soil Conservation District guidelines for stormwater runoff quantity and erosion control. For purposes of this subsection, "agricultural development" means land uses normally associated with the production of food, fiber, and livestock for sale. Such uses do not include the development of land for the processing or sale of food and the manufacture of agriculturally related products.
- (12) If there is more than one drainage area, the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at Subsection **D(16)**, **(17)** and **(18)** shall be met in each drainage area, unless the runoff from the drainage areas converge onsite and no adverse environmental impact would occur as a result of compliance with any one or more of the

individual standards being determined utilizing a weighted average of the results achieved for that individual standard across the affected drainage areas.

- (13) Any stormwater management measure authorized under the municipal stormwater management plan or ordinance shall be reflected in a deed notice recorded in the Office of the Atlantic County Clerk. A form of deed notice shall be submitted to the municipality for approval prior to filing. The deed notice shall contain a description of the stormwater management measure(s) used to meet the green infrastructure, groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at Subsection **D(15)**, **(16)**, **(17)** and **(18)** and shall identify the location of the stormwater management measure(s) in NAD 1983 State Plane New Jersey FIPS 2900 US Feet or Latitude and Longitude in decimal degrees. The deed notice shall also reference the maintenance plan required to be recorded upon the deed pursuant to Subsection **K(2)e**. Prior to the commencement of construction, proof that the above required deed notice has been filed shall be submitted to the municipality. Proof that the required information has been recorded on the deed shall be in the form of either a copy of the complete recorded document or a receipt from the clerk or other proof of recordation provided by the recording office. However, if the initial proof provided to the municipality is not a copy of the complete recorded document, a copy of the complete recorded document shall be provided to the municipality within 180 calendar days of the authorization granted by the municipality.
- (14) A stormwater management measure approved under the municipal stormwater management plan or ordinance may be altered or replaced with the approval of the municipality, if the municipality determines that the proposed alteration or replacement meets the design and performance standards pursuant to Section **D** of this ordinance and provides the same level of stormwater management as the previously approved stormwater management measure that is being altered or replaced. If an alteration or replacement is approved, a revised deed notice shall be submitted to the municipality for approval and subsequently recorded with the Office of the Atlantic County Clerk and shall contain a description and location of the stormwater management measure, as well as reference to the maintenance plan, in accordance with (14) above. Prior to the commencement of construction, proof that the above required deed notice has been filed shall be submitted to the municipality in accordance with (14) above.
- (15) Green Infrastructure Standards
 - (a) This subsection specifies the types of green infrastructure BMPs that may be used to satisfy the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards.
 - (b) To satisfy the groundwater recharge and stormwater runoff quality standards at Subsection **D(16)** and **(17)**, the design engineer shall utilize green infrastructure BMPs identified in Table 1 at Section **D(6)**. and/or an alternative stormwater management

measure approved in accordance with Section **D(7)**. The following green infrastructure BMPs are subject to the following maximum contributory drainage area limitations:

Best Management Practice	Maximum Contributory Drainage Area
Dry Well	1 acre
Manufactured Treatment Device	2.5 acres
Pervious Pavement Systems	Area of additional inflow cannot exceed three times the area occupied by the BMP
Small-scale Bioretention Systems	2.5 acres
Small-scale Infiltration Basin	2.5 acres
Small-scale Sand Filter	2.5 acres

- (c) To satisfy the stormwater runoff quantity standards at Subsection **D(18)**, the design engineer shall utilize BMPs from Table 1 or from Table 2 and/or an alternative stormwater management measure approved in accordance with Subsection **D(7)**.
- (d) If a variance in accordance with N.J.A.C. 7:8-4.6 or a waiver from strict compliance in accordance with Subsection **D(4)** is granted from the requirements of this subsection, then BMPs from Table 1, 2, or 3, and/or an alternative stormwater management measure approved in accordance with Subsection **D(7)** may be used to meet the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at Subsection **D(16), (17), and (18)**.
- (e) For separate or combined storm sewer improvement projects, such as sewer separation, undertaken by a government agency or public utility (for example, a sewerage company), the requirements of this subsection shall only apply to areas owned in fee simple by the government agency or utility, and areas within a right-of-way or easement held or controlled by the government agency or utility; the entity shall not be required to obtain additional property or property rights to fully satisfy the requirements of this subsection. Regardless of the amount of area of a separate or combined storm sewer improvement project subject to the green infrastructure requirements of this subsection, each project shall fully comply with the applicable groundwater recharge, stormwater runoff quality control, and stormwater runoff quantity standards at Subsection **D(16), (17) and (18)**, unless the project is granted a waiver from strict compliance in accordance with Subsection **D(4)**.

(16) Groundwater Recharge Standards

- (a) This subsection contains the minimum design and performance standards for groundwater recharge as follows:

(b) The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at Section **E**, either:

[1] Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100 percent of the average annual pre-construction groundwater recharge volume for the site; or

[2] Demonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the 2-year storm is infiltrated.

(c) This groundwater recharge requirement does not apply to projects within the “urban redevelopment area,” or to projects subject to d below.

(d) The following types of stormwater shall not be recharged:

[1] Stormwater from areas of high pollutant loading. High pollutant loading areas are areas in industrial and commercial developments where solvents and/or petroleum products are loaded/unloaded, stored, or applied, areas where pesticides are loaded/unloaded or stored; areas where hazardous materials are expected to be present in greater than “reportable quantities” as defined by the United States Environmental Protection Agency (EPA) at 40 CFR 302.4; areas where recharge would be inconsistent with Department approved remedial action work plan or landfill closure plan and areas with high risks for spills of toxic materials, such as gas stations and vehicle maintenance facilities; and

[2] Industrial stormwater exposed to “source material.” “Source material” means any material(s) or machinery, located at an industrial facility, that is directly or indirectly related to process, manufacturing or other industrial activities, which could be a source of pollutants in any industrial stormwater discharge to groundwater. Source materials include, but are not limited to, raw materials; intermediate products; final products; waste materials; by-products; industrial machinery and fuels, and lubricants, solvents, and detergents that are related to process, manufacturing, or other industrial activities that are exposed to stormwater.

(e) For all major developments in the Pinelands Protection Area of the Township, in addition to Subsection **D(16)(b)[1]** and **[2]** above, the total runoff volume generated from the net increase in impervious surfaces by a ten-year, twenty-four-hour storm shall be retained and infiltrated on site.

(17) Stormwater Runoff Quality Standards

(a) This subsection contains the minimum design and performance standards to control stormwater runoff quality impacts of major development. Stormwater runoff quality

standards are applicable when the major development results in an increase of one-quarter acre or more of regulated motor vehicle surface.

- (b) Stormwater management measures shall be designed to reduce the post-construction load of total suspended solids (TSS) in stormwater runoff generated from the water quality design storm as follows:

- [1] Eighty percent TSS removal of the anticipated load, expressed as an annual average shall be achieved for the stormwater runoff from the net increase of motor vehicle surface.

- [2] If the surface is considered regulated motor vehicle surface because the water quality treatment for an area of motor vehicle surface that is currently receiving water quality treatment either by vegetation or soil, by an existing stormwater management measure, or by treatment at a wastewater treatment plant is to be modified or removed, the project shall maintain or increase the existing TSS removal of the anticipated load expressed as an annual average.

- (c) The requirement to reduce TSS does not apply to any stormwater runoff in a discharge regulated under a numeric effluent limitation for TSS imposed under the New Jersey Pollutant Discharge Elimination System (NJPDES) rules, N.J.A.C. 7:14A, or in a discharge specifically exempt under a NJPDES permit from this requirement. Every major development, including any that discharge into a combined sewer system, shall comply with b above, unless the major development is itself subject to a NJPDES permit with a numeric effluent limitation for TSS or the NJPDES permit to which the major development is subject exempts the development from a numeric effluent limitation for TSS.

- (d) The water quality design storm is 1.25 inches of rainfall in two hours. Water quality calculations shall take into account the distribution of rain from the water quality design storm, as reflected in Table 4, below. The calculation of the volume of runoff may take into account the implementation of stormwater management measures.

Table 4 – Water Quality Design Storm Distribution

Time (Minutes)	Cumulative Rainfall (Inches)	Time (Minutes)	Cumulative Rainfall (Inches)	Time (Minutes)	Cumulative Rainfall (Inches)
1	0.00166	41	0.1728	81	1.0906
2	0.00332	42	0.1796	82	1.0972
3	0.00498	43	0.1864	83	1.1038
4	0.00664	44	0.1932	84	1.1104
5	0.00830	45	0.2000	85	1.1170
6	0.00996	46	0.2117	86	1.1236
7	0.01162	47	0.2233	87	1.1302
8	0.01328	48	0.2350	88	1.1368
9	0.01494	49	0.2466	89	1.1434
10	0.01660	50	0.2583	90	1.1500
11	0.01828	51	0.2783	91	1.1550
12	0.01996	52	0.2983	92	1.1600
13	0.02164	53	0.3183	93	1.1650
14	0.02332	54	0.3383	94	1.1700
15	0.02500	55	0.3583	95	1.1750
16	0.03000	56	0.4116	96	1.1800
17	0.03500	57	0.4650	97	1.1850
18	0.04000	58	0.5183	98	1.1900
19	0.04500	59	0.5717	99	1.1950
20	0.05000	60	0.6250	100	1.2000
21	0.05500	61	0.6783	101	1.2050
22	0.06000	62	0.7317	102	1.2100
23	0.06500	63	0.7850	103	1.2150
24	0.07000	64	0.8384	104	1.2200
25	0.07500	65	0.8917	105	1.2250
26	0.08000	66	0.9117	106	1.2267
27	0.08500	67	0.9317	107	1.2284
28	0.09000	68	0.9517	108	1.2300
29	0.09500	69	0.9717	109	1.2317
30	0.10000	70	0.9917	110	1.2334
31	0.10660	71	1.0034	111	1.2351
32	0.11320	72	1.0150	112	1.2367
33	0.11980	73	1.0267	113	1.2384
34	0.12640	74	1.0383	114	1.2400
35	0.13300	75	1.0500	115	1.2417
36	0.13960	76	1.0568	116	1.2434
37	0.14620	77	1.0636	117	1.2450
38	0.15280	78	1.0704	118	1.2467
39	0.15940	79	1.0772	119	1.2483
40	0.16600	80	1.0840	120	1.2500

- (e) If more than one BMP in series is necessary to achieve the required 80 percent TSS reduction for a site, the applicant shall utilize the following formula to calculate TSS reduction:

$$R = A + B - (A \times B) / 100,$$

Where

R = total TSS Percent Load Removal from application of both BMPs, and

A = the TSS Percent Removal Rate applicable to the first BMP

B = the TSS Percent Removal Rate applicable to the second BMP.

- (f) Stormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated from the water quality design storm. In achieving reduction of nutrients to the maximum extent feasible, the design of the site shall include green infrastructure BMPs that optimize nutrient removal while still achieving the performance standards in Subsection **D(16)**, **(17)**, and **(18)**.
- (g) In accordance with the definition of FW1 at N.J.A.C. 7:9B-1.4, stormwater management measures shall be designed to prevent any increase in stormwater runoff to waters classified as FW1.
- (h) The Flood Hazard Area Control Act Rules at N.J.A.C. 7:13-4.1(c)1 establish 300-foot riparian zones along Category One waters, as designated in the Surface Water Quality Standards at N.J.A.C. 7:9B, and certain upstream tributaries to Category One waters. A person shall not undertake a major development that is located within or discharges into a 300-foot riparian zone without prior authorization from the Department under N.J.A.C. 7:13.
- (i) Pursuant to the Flood Hazard Area Control Act Rules at N.J.A.C. 7:13-11.2(j)3.i, runoff from the water quality design storm that is discharged within a 300-foot riparian zone shall be treated in accordance with this subsection to reduce the post-construction load of total suspended solids by 95 percent of the anticipated load from the developed site, expressed as an annual average.
- (j) This stormwater runoff quality standards do not apply to the construction of one individual single-family dwelling, provided that it is not part of a larger development or subdivision that has received preliminary or final site plan approval prior to December 3, 2018, and that the motor vehicle surfaces are made of permeable material(s) such as gravel, dirt, and/or shells.

(18) Stormwater Runoff Quantity Standards

- (a) This subsection contains the minimum design and performance standards to control stormwater runoff quantity impacts of major development.

(b) In order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at Section E, complete one of the following:

[1] Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the 2-, 10-, and 100-year storm events do not exceed, at any point in time, the pre-construction runoff hydrographs for the same storm events;

[2] Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the 2-, 10- and 100-year storm events and that the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site. This analysis shall include the analysis of impacts of existing land uses and projected land uses assuming full development under existing zoning and land use ordinances in the drainage area;

[3] Design stormwater management measures so that the post-construction peak runoff rates for the 2-, 10- and 100-year storm events are 50, 75 and 80 percent, respectively, of the pre-construction peak runoff rates. The percentages apply only to the post-construction stormwater runoff that is attributable to the portion of the site on which the proposed development or project is to be constructed; or

[4] In tidal flood hazard areas, stormwater runoff quantity analysis in accordance with b.i, ii and iii above is required unless the design engineer demonstrates through hydrologic and hydraulic analysis that the increased volume, change in timing, or increased rate of the stormwater runoff, or any combination of the three will not result in additional flood damage below the point of discharge of the major development. No analysis is required if the stormwater is discharged directly into any ocean, bay, inlet, or the reach of any watercourse between its confluence with an ocean, bay, or inlet and downstream of the first water control structure.

(c) The stormwater runoff quantity standards shall be applied at the site's boundary to each abutting lot, roadway, watercourse, or receiving storm sewer system.

(19) In addition to all other requirements of this subsection, each application for major development within the Pinelands Area, and any other application where the Township otherwise requires a landscaping plan within the Pinelands Area, shall contain a landscaping or revegetation plan in accordance with the Pinelands CMP standards at N.J.A.C. 7:50-6.24(c).

(20) Threatened and endangered species requirements. Stormwater management measures shall avoid adverse impacts of the development on habits for threatened and endangered species as documented in the Department's Landscape Project or Natural Heritage Database established under N.J.S.A. 13:1B-15.147 through 13:1B-15.150, particular *Helonias bullata* (swamp pink) and/or *Clemmys muhlenbergi* (bog turtle) and in accordance with

those standards stated in N.J.A.C. 7:8-5.2(c), N.J.A.C. &:50-6.27, and 7:50-6.33 and 7:50-6.34.

(21) Exception and mitigation requirements. Exceptions from strict compliance from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements established by this section may be granted, at the discretion of the Township of Galloway, and subject to approval by the Pinelands Commission for those projects within the Pinelands Area, provided that all of the following conditions are met:

(a) The exception is consistent with that allowed by the Township of Galloway.

(b) The Township of Galloway has an adopted and effective municipal stormwater management plan in accordance with N.J.A.C. 7:8-4/4, which includes a mitigation plan in accordance with N.J.A.C. 7:8-4.2(c)11, and is also certified by the Pinelands Commission. The mitigation plan shall identify what measures are necessary to offset the deficit created by granting the exception and Galloway Township shall submit a written report to the county review agency and the NJDEP describing the exception and the required mitigation. Guidance for developing municipal stormwater management plans, including mitigation plans, is available from the NJDEP, Division of Watershed Management, and the New Jersey BMP Manual.

(c) The applicant demonstrates that mitigation, in addition to the requirements of the mitigation plan discussed in Subsection **D(21)(b)** above, will be provided consistent with one of the following options:

[1] Mitigation may be provided off site, but within the same drainage areas as the development site, and shall meet or exceed the equivalent recharge, quality or quantity performance standard which is lacking on the development site due to the exception; or

[2] In lieu of the required mitigation, a monetary “in-lieu contribution” may be provided by the applicant to the Township of Galloway in accordance with the following:

[a] The amount of the in-lieu contribution shall be determined by the Township of Galloway, but the maximum in-lieu contribution required shall be equivalent to the cost of implementing and maintaining the stormwater management measure(s) for which the exception is granted;

[b] The in-lieu contribution shall be used to fund an off-site stormwater control mitigation project(s) located within the Pinelands Area, within the same drainage area as the development site, and shall meet or exceed the equivalent recharge, quality or quantity performance standards which are lacking on the

development site. Such mitigation project shall be identified by the Township of Galloway in the Township of Galloway's adopted municipal stormwater management plan. The stormwater control project to which the monetary contribution will be applied shall be identified by the Township of Galloway at the time the exception is granted. The applicant shall amend the project description and site plan required in Subsection **K** to incorporate a description of both the standards for which an on-site exemption is being granted and of the selected off-site mitigation project

[c] The Township of Galloway shall expend the in-lieu contribution to implement the selected off-site mitigation project within five years from the date that payment is received. Should the Township of Galloway fail to expend the in-lieu contribution within the required time frame, the mitigation option provided in Subsection **D(21)(c)[2]** of this section shall be void and the Township of Galloway shall be prohibited from collecting in-lieu contributions.

[d] For projects in the Pinelands Area an exception from strict compliance granted in accordance with Subsection **D(21)** above shall not constitute a waiver of strict compliance from the requirements of the Pinelands Comprehensive Management Plan at N.J.A.C. 7:50. An applicant should contact the Pinelands Commission to determine whether a waiver of strict compliance is also required in accordance with N.J.A.C. 7:50, Subchapter 4, Part V.

(22) The use of stormwater management strategies to meet the performance standards in Section **D** of this section is not required for major developmental creating less than one acre of disturbance. However, the following requirements shall be met:

- (a) Within the Pinelands Area, each application for major development and any other applications where the Township of Galloway otherwise requires a landscaping plan shall contain a landscaping or revegetation plan prepared in accordance with the Pinelands CMP standards [N.J.A.C. 7:50-6.24(c)];
- (b) Each applicant shall demonstrate that, at a minimum, existing trees and vegetation on the development site will be preserved and protected according to the minimum standards established by provisions of the Township of Galloway Land Use Ordinance, Zoning Ordinance, or by conditions of zoning or variance approval; and
- (c) Existing trees and vegetation shall be protected during construction activities in accordance with the Standard for Tree Protection during Construction provided in the NJ State Soil Conservation Committee Standards for Soil Erosion and Sediment Control in New Jersey, which is incorporated herein by reference as amended and supplemented.

E. Calculation of Stormwater Runoff and Groundwater Recharge

(1) Stormwater runoff shall be calculated in accordance with the following:

(a) The design engineer shall calculate runoff using one of the following methods:

[1] The USDA Natural Resources Conservation Service (NRCS) methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph, as described in Chapters 7, 9, 10, 15 and 16 Part 630, Hydrology National Engineering Handbook, incorporated herein by reference as amended and supplemented. This methodology is additionally described in *Technical Release 55 - Urban Hydrology for Small Watersheds (TR-55)*, dated June 1986, incorporated herein by reference as amended and supplemented. Information regarding the methodology is available from the Natural Resources Conservation Service website at:

https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf

or at United States Department of Agriculture Natural Resources Conservation Service, 220 Davison Avenue, Somerset, New Jersey 08873; or

[2] The Rational Method for peak flow and the Modified Rational Method for hydrograph computations. The rational and modified rational methods are described in "Appendix A-9 Modified Rational Method" in the Standards for Soil Erosion and Sediment Control in New Jersey, January 2014. This document is available from the State Soil Conservation Committee or any of the Soil Conservation Districts listed at N.J.A.C. 2:90-1.3(a)3. The location, address, and telephone number for each Soil Conservation District is available from the State Soil Conservation Committee, PO Box 330, Trenton, New Jersey 08625. The document is also available at:

<http://www.nj.gov/agriculture/divisions/anr/pdf/2014NJSoilErosionControlStandardsComplete.pdf>.

(b) For the purpose of calculating runoff coefficients and groundwater recharge, there is a presumption that the pre-construction condition of a site or portion thereof is a wooded land use with good hydrologic condition. The term "runoff coefficient" applies to both the NRCS methodology above at Subsection **E(1)(a)[1]** and the Rational and Modified Rational Methods at Subsection **E(1)(a)[2]**. A runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or portion of the site for at least five years without interruption prior to the time of application. If more than one land cover have existed on the site during the five years immediately prior to the time of application, the land cover with the lowest runoff potential shall be used for the computations. In addition, there is the presumption that the site is in good hydrologic condition (if the land use type is pasture, lawn, or park),

with good cover (if the land use type is woods), or with good hydrologic condition and conservation treatment (if the land use type is cultivation).

- (c) In computing pre-construction stormwater runoff, the design engineer shall account for all significant land features and structures, such as ponds, wetlands, depressions, hedgerows, or culverts, that may reduce pre-construction stormwater runoff rates and volumes.
- (d) In computing stormwater runoff from all design storms, the design engineer shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site. To calculate runoff from unconnected impervious cover, urban impervious area modifications as described in the NRCS *Technical Release 55 – Urban Hydrology for Small Watersheds* or other methods may be employed.
- (e) If the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design of structural stormwater management measures.

(2) Groundwater recharge may be calculated in accordance with the following:

The New Jersey Geological Survey Report GSR-32, A Method for Evaluating Groundwater-Recharge Areas in New Jersey, incorporated herein by reference as amended and supplemented. Information regarding the methodology is available from the New Jersey Stormwater Best Management Practices Manual; at the New Jersey Geological Survey website at:

<https://www.nj.gov/dep/njgs/pricelst/gsreport/gsr32.pdf>

or at New Jersey Geological and Water Survey, 29 Arctic Parkway, PO Box 420 Mail Code 29-01, Trenton, New Jersey 08625-0420.

F. Soils investigation requirements

- (1) Methods for assessing soil suitability for infiltration stormwater management BMPs. The results of a subsurface investigation shall serve as the basis for the site selection and design of stormwater infiltration BMPs. The subsurface investigation shall include, but not be limited to, a series of soil test pits and soil permeability tests conducted in accordance with the following:
 - (a) All soil test pits and soil permeability results shall be performed under the direct supervision of a professional engineer. All soil logs and permeability test data shall be accompanied by a certification by a professional engineer. The results and location

(horizontal and vertical) of all soil test pits and soil permeability tests, both passing and failing, shall be reported to the Township of Galloway.

- (b) A note indicating the following should be included on any plans where unsuitable soils have been encountered during the completion of test pits as required in Subsection F. Test pits shall be completed and witnessed by the Township Engineer, at the bottom of all proposed stormwater management facilities, at the time of construction.***
- (c) During all subsurface investigations and soil test procedures, adequate safety measures shall be taken to prohibit unauthorized access to the excavations at all times. It is the responsibility of persons performing or witnessing subsurface investigations and soil permeability tests to comply with all applicable federal, state, and local laws and regulations governing occupational safety.
- (d) A minimum of two soil test pits shall be excavated within the footprint of any proposed infiltration BMP to determine the suitability and distribution of soil types present at the site. Placement of the test pits shall be within 20 feet of the basin perimeter, located along the longest axis bisecting the BMP. For BMPs larger than 10,000 square feet in area, a minimum of one additional soil test pit shall be conducted within each additional area of 10,000 square feet. The additional test pit(s) shall be placed approximately equidistant to other test pit(s), so as to provide adequate characterization of the subsurface material. In all cases, where soil and/or groundwater properties vary significantly, additional test pits shall be excavated in order to accurately characterize the subsurface conditions below the proposed infiltration BMP. Soil test pits shall extend to a minimum depth of eight feet below the lowest elevation of the basin bottom or to a depth that is at least two times the maximum potential water depth in the proposed infiltration BMP, whichever is greater.
- (e) A soil test pit log shall be prepared for each soil test pit. The test pit log shall, at a minimum, provide the elevation of the existing ground surface, the depth and thickness (in inches) of each soil horizon or substratum, the dominant matrix or background and mottle colors using the Munsell System of classification for hue, value and chroma, the appropriate textural class as shown on the USDA textural triangle, the volume percentage of coarse fragments (larger than two millimeters in diameter), the abundance, size, and contrast of mottles, the soil structure, soil consistency, and soil moisture condition, using standard USDA classification terminology for each of these soil properties. Soil test pit logs shall identify the presence of any soils horizon, substratum or other feature that exhibits an in-place permeability rate less than one inch per hour.
- (f) Each soil test pit log shall report the depth to seasonally high water level, either perched or regional, and the static water level based upon the presence of soil mottles or other

redoximorphic features including soil mottles resulting from soil saturation are present, they shall be interpreted to represent the depth to the seasonal high water table unless soil saturation or seepage is observed at a higher level. When the determination of the seasonally high water table shall be made in ground previously disturbed by excavation, direct observation of the static water table during the months of January through April shall be the only method of permitted.

- (g) Any soil horizon or substratum which exists immediately below a perched zone of saturation shall be deemed by rule to exhibit unacceptable permeability (less than one inch per hour). The perched zone of saturation may be observed directly, inferred based upon soil morphology, or confirmed by performance of a hydraulic head test as defined at N.J.A.C. 7:9A-5.9.
- (h) Stormwater infiltration BMPs shall not be installed in soils that exhibit artesian groundwater conditions. A permeability test shall be conducted in all soils that immediately underlie a perched zone of saturation. Any zone of saturation which is present below a soil horizon which exhibits an in-place permeability of less than 0.2 inch per hour shall be considered an artesian zone of saturation unless a minimum one-foot-thick zone of unsaturated soil, free of mottling or other redoximorphic features and possessing a chroma of four or higher, exists immediately below the unsuitable soil.
- (i) After all construction activities have been completed on the development site and the finished grade has been established in the infiltration BMP, a minimum of one permeability test shall be conducted within the most hydraulically restrictive soil horizon or substratum below the as-built BMP to ensure the performance of the infiltration BMP is as designed. Hand tools and manual permeability test procedures shall be used for the purpose of confirming BMP performance. In addition, the infiltration BMP shall be flooded with water sufficient to demonstrate the performance of the BMP. Test results shall be certified to the Township Engineer.

(2) Percolation/permeability testing requirements.

- (a) A minimum of one permeability test shall be performed at each soil test pit location. The soil permeability rate shall be determined using test methodology as prescribed in N.J.A.C. 7:9A-6.2 (tube permeameter test), 7:9A-6.5 (pit bailing test), or 7:9A-6.6 (Piezometer test). When the tube permeameter test is used, a minimum of two replicate samples shall be taken and tested. Alternative permeability test procedures may be accepted by the approving authority, provided the test procedure attains saturation of surrounding solid, accounts for hydraulic head effects on infiltration rates, provides a permeability rate with units expressed in inches per hour and is accompanied by a published source reference. Examples of suitable sources include hydrogeology, geotechnical or engineering text and design manuals, proceedings of

American Society for Testing and Materials (ASTM) symposia, or peer-review journals. Neither a soil permeability class rating test, as described in N.J.A.C. 7:9A-6.3, nor a percolation test, as described in N.J.A.C. 7:9A-6.4, are acceptable tests for establishing permeability values for the purpose of complying with this section.

- (b) Soil permeability tests shall be conducted on the most hydraulically restrictive horizon or substratum to be left in place below the basin as follows. Where no soil replacement is proposed, the permeability tests shall be conducted on the most hydraulically restrictive horizon or substratum within four feet of the lowest elevation of the basin bottom or to a depth equal to two times the maximum potential water depth within the basin, whichever is greater. Where soil replacement is proposed, the permeability tests shall be conducted within the soil immediately below the depth of proposed soil replacement or within the most hydraulically restrictive horizon or substratum to a depth equal to two times the maximum potential water depth within the basin, whichever is greater. Permeability tests may be performed on the most hydraulically restrictive soil horizons or substrata at depths greater than those identified above based upon the discretion of the design or testing engineer. The tested infiltration rate should then be divided by two to establish the soil's design permeability rate. Such division will provide a one-hundred-percent safety factor to the tested rate.
 - (c) The minimum acceptable tested permeability rate of any existing soil horizon or substratum shall be one inch per hour. Soil materials that exhibit tested permeability rates slower than one inch per hour shall be considered unsuitable for stormwater infiltration. The maximum reportable tested permeability rate of any soil horizon or substratum shall be no greater than 20 inches per hour regardless of the rate attained in the test procedure.
- (3) Soil replacement material requirements. Material to replace unsuitable soil located beneath stormwater facilities shall have a percolation/permeability rate equal to or greater than six inches per hour, and a maximum of 20 inches per hour for projects located in the Pinelands section of the Township. All material shall meet or exceed the quality of the existing soil and shall be free of clay, muck, organic material, debris, recycled pavement, recycled concrete or other material determined to be unsuitable by the Township Engineer.

G. Sources for Technical Guidance

- (1) Technical guidance for stormwater management measures can be found in the documents listed below, which are available to download from the Department's website at: http://www.nj.gov/dep/stormwater/bmp_manual2.htm.
- (a) Guidelines for stormwater management measures are contained in the New Jersey Stormwater Best Management Practices Manual, as amended and supplemented.

Information is provided on stormwater management measures such as, but not limited to, those listed in Tables 1, 2, and 3.

(b) Additional maintenance guidance is available on the Department's website at: https://www.njstormwater.org/maintenance_guidance.htm.

(2) Submissions required for review by the Department should be mailed to:

The Division of Water Quality, New Jersey Department of Environmental Protection,
Mail Code 401-02B, PO Box 420, Trenton, New Jersey 08625-0420.

(3) Additional technical guidance:

(a) The Standards for Soil Erosion and Sediment Control in New Jersey, promulgated by the State Soil Conservation Committee and incorporated into N.J.A.C. 2:90. Copies of these standards may be obtained by contacting the State Soil Conservation Committee or any of the Soil Conservation Districts listed in N.J.A.C. 2:90- 1.3(a)4. The location, address, and telephone number of each Soil Conservation District may be obtained from the State Soil Conservation Committee, P.O. Box 330, Trenton, New Jersey 08625; (609)292-5540.

(b) The Rutgers Cooperative Extension Service; 732-932-9306.

(c) The Soil Conservation Districts listed in N.J.A.C. 2:90-1.3(a)4. The location, address, and telephone number of each Soil Conservation District may be obtained from the State Soil Conservation Committee, P.O. Box 330, Trenton, New Jersey 08625; (609)292-5540.

(d) The Native Plant Society of New Jersey Provides a manual for the design of rain gardens, titled "Rain Garden Manual for New Jersey." Other design guidelines may be accepted at the discretion of the Township Engineer.

(e) The Hantush Method for estimating groundwater mounding as described in Hantush, M.S., 1967. Growth and decay of groundwater mounds in response to uniform percolation, Water Resources Research, Vol.3, No. 1, pp. 227-234, and approximations of this method shall be acceptable, provided sufficient supportive information is provided.

H. Solids and Floatable Materials Control Standards

(1) Site design features identified under Subsection **D(6)** above, or alternative designs in accordance with Subsection **D(7)** above, to prevent discharge of trash and debris from drainage systems shall comply with the following standard to control passage of solid and floatable materials through storm drain inlets. For purposes of this paragraph, "solid and

floatable materials” means sediment, debris, trash, and other floating, suspended, or settleable solids. For exemptions to this standard see Subsection **H(1)(b)** below.

(a) Design engineers shall use one of the following grates whenever they use a grate in pavement or another ground surface to collect stormwater from that surface into a storm drain or surface water body under that grate:

[1] The New Jersey Department of Transportation (NJDOT) bicycle safe grate, which is described in Chapter 2.4 of the NJDOT Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines; or

[2] A different grate, if each individual clear space in that grate has an area of no more than seven (7.0) square inches, or is no greater than 0.5 inches across the smallest dimension.

Examples of grates subject to this standard include grates in grate inlets, the grate portion (non-curb-opening portion) of combination inlets, grates on storm sewer manholes, ditch grates, trench grates, and grates of spacer bars in slotted drains. Examples of ground surfaces include surfaces of roads (including bridges), driveways, parking areas, bikeways, plazas, sidewalks, lawns, fields, open channels, and stormwater system floors used to collect stormwater from the surface into a storm drain or surface water body.

[3] For curb-opening inlets, including curb-opening inlets in combination inlets, the clear space in that curb opening, or each individual clear space if the curb opening has two or more clear spaces, shall have an area of no more than seven (7.0) square inches, or be no greater than two (2.0) inches across the smallest dimension.

(b) The standard in (1)a above does not apply:

[1] Where each individual clear space in the curb opening in existing curb-opening inlet does not have an area of more than nine (9.0) square inches;

[2] Where the municipality agrees that the standards would cause inadequate hydraulic performance that could not practicably be overcome by using additional or larger storm drain inlets;

[3] Where flows from the water quality design storm as specified in N.J.A.C. 7:8 are conveyed through any device (e.g., end of pipe netting facility, manufactured treatment device, or a catch basin hood) that is designed, at a minimum, to prevent delivery of all solid and floatable materials that could not pass through one of the following:

[a] A rectangular space four and five-eighths (4.625) inches long and one and one-half (1.5) inches wide (this option does not apply for outfall netting facilities);
or

[b] A bar screen having a bar spacing of 0.5 inches.

Note that these exemptions do not authorize any infringement of requirements in the Residential Site Improvement Standards for bicycle safe grates in new residential development (N.J.A.C. 5:21-4.18(b)2 and 7.4(b)1).

[4] Where flows are conveyed through a trash rack that has parallel bars with one-inch (1 inch) spacing between the bars, to the elevation of the Water Quality Design Storm as specified in N.J.A.C. 7:8; or

[5] Where the New Jersey Department of Environmental Protection determines, pursuant to the New Jersey Register of Historic Places Rules at N.J.A.C. 7:4-7.2(c), that action to meet this standard is an undertaking that constitutes an encroachment or will damage or destroy the New Jersey Register listed historic property.

I. Safety Standards for stormwater management basins.

(1) Applicability. This subsection sets forth requirements to protect public safety through the proper design and operation of stormwater management basins. This subsection applies to any new stormwater management basin.

(2) The provisions of this section are not intended to preempt more stringent municipal or county safety requirements for new or existing stormwater management BMPs. Municipal and county stormwater management plans and ordinances may, pursuant to their authority, require existing stormwater management BMPs to be retrofitted to meet one or more of the safety standards in Subsection **I(3)(a)**, **I(3)(b)**, and **I(3)(c)** for trash racks, overflow grates, and escape provisions at outlet structures.

(3) Requirements for trash racks, overflow grates and escape provisions.

(a) A trash rack is a device designed to catch trash and debris and prevent the clogging of outlet structures. Trash racks shall be installed at the intake to the outlet from the stormwater management basin to ensure proper functioning of the basin outlets in accordance with the following:

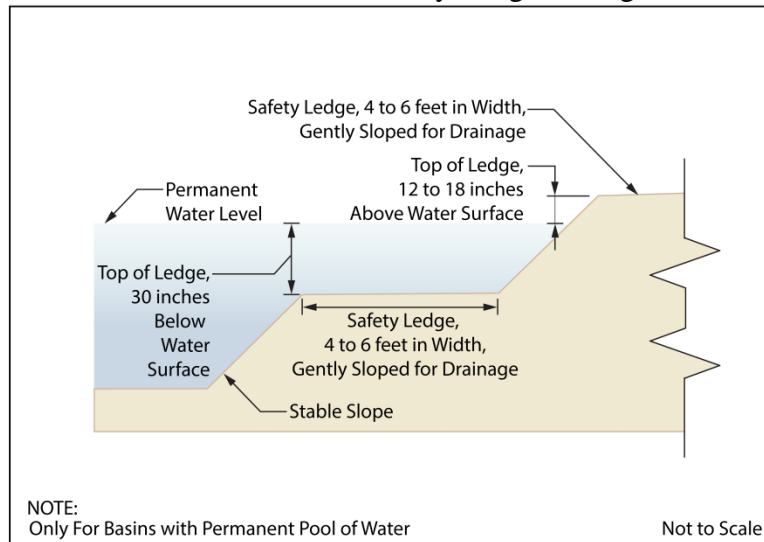
[1] The trash rack shall have parallel bars, with no greater than six-inch spacing between bars.

[2] The trash rack shall be designed so as not to adversely affect the hydraulic performance of the outlet pipe or structure.

[3] The average velocity of flow through a clean trash rack is not to exceed 2.5 feet per second under the full range of stage and discharge. Velocity is to be computed on the basis of the net area of opening through the rack.

- [4] The trash rack shall be constructed and installed to be rigid, durable, and corrosion-resistant, and shall be designed to withstand a perpendicular live loading of 300 pounds per square foot.
- (b) An overflow grate is designed to prevent obstruction of the overflow structure. If an outlet structure has an overflow grate, such grate shall meet the following requirements:
- [1] The overflow grate shall be secured to the outlet structure but removable for emergencies and maintenance.
- [2] The overflow grate spacing shall be no less than two inches across the smallest dimension.
- [3] The overflow grate shall be constructed and installed to be rigid, durable, and corrosion-resistant, and shall be designed to withstand a perpendicular live loading of 300 pounds per square foot.
- (c) For purposes of this Subsection, “escape provisions” means the permanent installation of ladders, steps, rungs, or other features that provide easily accessible means of egress from stormwater management basins. Stormwater management basins shall include escape provisions as follows:
- [1] If a stormwater management basin has an outlet structure, escape provisions shall be incorporated in or on the structure. With the prior approval of the reviewing agency identified in Subsection **I(4)**, freestanding outlet structure may be exempted from this requirement.
- [2] Safety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than 2 ½ feet below the permanent water surface, and the second step shall be located one foot to 1 ½ feet above the permanent water surface. See Subsection **I(5)** for an illustration of safety ledges in a stormwater management basin.
- [3] In new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one-vertical.
- (4) Variance or exemption from safety standards. A variance or exemption from the safety standards for stormwater management basins may be granted only upon a written finding by the appropriate reviewing agency that the variance or exemption will not constitute a threat to public safety. Illustration of safety ledges in a new stormwater management basin.

Elevation View – Basin Safety Ledge Configuration



J. Requirements for a site development stormwater management plan

(1) Submission of site development stormwater management plan

(a) Whenever an applicant seeks municipal approval of a major development subject to this section, the applicant shall submit all of the required components of the checklist for the site development stormwater management plan at Subsection **J(3)** below as part of the submission of the applicant's application for subdivision or site plan approval. These required components are in addition to any other information required under any provisions of the Township of Galloway's Land Use Ordinance or by the Pinelands Commission pursuant to N.J.A.C. 7:50-1.1 et seq.

(b) The applicant shall demonstrate that the project meets the standards set forth in this section.

(c) The applicant shall submit four copies of the materials listed in the checklist for site development stormwater plans in accordance with Subsection J(3) of this section.

(2) Site development stormwater management plan approval. The applicant's site development project shall be reviewed as a part of the subdivision or site plan review process by the municipal board or official from whom municipal approval is sought. That municipal board or official shall consult the engineer retained by the Planning and/or Zoning Board (as appropriate) to determine if all of the checklist requirements have been satisfied and to determine if the project meets the standards set forth in this section.

(3) Checklist requirements. Any application for approval of a major development shall include at least the following information. All required engineering plans shall be submitted in

CAD Format 15 or higher, registered and rectified to NJ State Plane Feet NAD 83. The following information shall be required:

(a) Topographic base map. The reviewing engineer may require upstream tributary drainage system information as necessary. It is recommended that the topographic base map of the site be submitted which extends a minimum of 300 feet beyond the limits of the proposed development, at a scale of one inch equals 200 feet or greater, showing one-foot contour intervals. The map as appropriate shall indicate the following: existing surface water drainage, shorelines, steep slopes, soils, erodible soils, perennial or intermittent streams that drain into or upstream of the Category One waters, wetlands and floodplains along with their appropriate buffer strips, marshlands and other wetlands, pervious or vegetative surfaces, existing man-made structures, roads, bearing and distances of property lines, and significant natural and man-made features not otherwise shown.

(b) Environmental site analysis: a written and graphic description of the natural and man-made features of the site and its environment. This description should include:

[1] A discussion of soil conditions, slopes, wetlands, waterways and vegetation on the site. Particular attention should be given to unique, unusual, or environmentally sensitive features and to those that provide particular opportunities or constraints for development.

(c) Project description and site plan(s): a map (or maps) at the scale of the topographical base map indicating the locations of existing and proposed building, roads, parking areas, utilities, structural facilities for stormwater management and sediment control, and other permanent structures. The map(s) shall also clearly show areas where alternations occur in the natural terrain and cover, including lawns and other landscaping, and seasonal high groundwater elevations. A written description of the site plan and justification of proposed changes in natural conditions may also be provided.

(d) Land Use Planning and Source Control Plan

[1] This plan shall provide a demonstration of how the goals and standards of Sections **C** through **E** are being met. The focus of this plan shall be to describe how the site is being developed to meet the objective of controlling groundwater recharge, stormwater quality and stormwater quantity problems at the source by land management and source controls whenever possible.

[2] The use of nonstructural strategies to meet the performance standards in Subsection **D** of this section is not required for development sites creating less than one acre of disturbance. Within the Pinelands Area, each application for major development and any other application where the Township of Galloway otherwise requires a

landscaping plan shall contain a landscaping or revegetation plan in accordance with the CMP standards at N.J.A.C. 7:50-6.24(c). In addition, the applicant shall demonstrate that, at a minimum, existing trees and vegetation on the development site will be preserved and protected according to the minimum standards established by provisions of the Township of Galloway Land Use Ordinance, Zoning Ordinance or by conditions of zoning or variance approval.

(e) Predevelopment and post development drainage area plans. The following information, illustrated on plans of the same scale as the topographic base map, shall be included:

- [1] Total area to be paved or built upon, proposed surface contours, land area to be occupied by the stormwater management facilities and the type of vegetation thereon, and details of the proposed plan to control and dispose of stormwater.
- [2] Details of all stormwater management facility designs, during and after construction, including discharge provisions, discharge capacity for each outlet at different levels of detention and emergency spillway provisions with maximum discharge capacity of each spillway;
- [3] Drainage area boundaries including upstream areas impacting the project site;
- [4] Predevelopment and postdevelopment flow path and times of concentration;
- [5] Runoff coefficient calculations with areas of coverage indicated;
- [6] Predevelopment and postdevelopment design storm volumes;
- [7] Postdevelopment routing summaries;
- [8] Predevelopment and postdevelopment pathway of positive outflow;
- [9] Soil boring locations;
- [10] A table demonstrating compliance with water quantity, water quality and recharge requirements;
- [11] A separate plan showing the drainage subareas contributing to inlets of any storm sewer system including values for runoff coefficient (c), area (A), travel time (t_c), rainfall intensity (I) and contributing subarea (Q).

(f) Calculations.

- [1] Comprehensive hydrologic and hydraulic design calculations for the predevelopment and postdevelopment conditions for the design storms specified in Subsection **D** of this section and a spreadsheet of hydraulic pipe calculations.
- [2] Hydraulic pipe calculations shall demonstrate free flow pipe capacity without head conditions and shall include a table showing calculations of successive downstream pipe sections. The pipe calculations shall provide the following:
 - [a] Upstream and downstream inlet number;
 - [b] Incremental drainage area to the upstream inlet;
 - [c] Total drainage area flowing through the pipe;
 - [d] Incremental and weighted runoff coefficients, C;
 - [e] Travel time to inlet, time in channel and total time of concentration;
 - [f] Rainfall intensity, I;
 - [g] Design flow, Q;
 - [h] Pipe diameter and wall thickness;
 - [i] Pipe slope;
 - [j] Manning's Roughness Coefficient, n;
 - [k] Pipe capacity, calculated in accordance with the Manning Equation;
 - [l] Pipe velocity;
 - [m] Length of pipe;
 - [n] Pipe fall;
 - [o] Upper and lower invert and grate elevations;
 - [p] Minimum pipe cover; and
 - [q] Pipe material and class.

- [3] When the proposed stormwater management control measures (e.g., infiltration basins) depend on the hydraulic properties of soils, then a soils report shall be submitted. The soils report shall be based on on-site boring logs or soil pit profiles. The number and location of required soil borings or soil pits shall be determined based on what is needed to determine the suitability and distribution of soils present at the location of the control measure.
- (g) Inspection, maintenance and repair plan. The applicant shall submit a detailed plan describing how the proposed stormwater management measure(s) shall meet the maintenance and repair requirements of Section **K** of this section. Said plan shall include, at a minimum, the following elements;
- [1] The frequency with which inspections will be made;
- [2] The specific maintenance tasks and requirements for each proposed structural and nonstructural BMP;
- [3] The name, address, and telephone number for the entity responsible for implementation of the maintenance plan;
- [4] The reporting requirements; and
- [5] Copies of the inspection and maintenance reporting sheets.
- (h) Soil investigation report. The soils report must contain the results from subsurface investigations including test pits and borings along with the results for percolation and permeability. The locations of the test should be clearly labeled on plans.
- (i) Waiver from submission requirements. An exception may be granted from submission of any of these required components (except Subsection **J(3)(g)** above, inspection, maintenance, and repair plan) if its absence will not materially affect the review process. However, items required pursuant to the application requirements in the Pinelands CMP [N.J.A.C. 7:50-4.2(b)] shall be submitted to the NJ Pinelands Commission unless the Executive Director waives or modifies the application requirements.

K. Inspection, Maintenance and repair requirements.

- (1) Applicability. Projects subject to review as defined in Section **A** of this section shall comply with the requirements of Subsection **K (2)**.
- (2) General inspection, maintenance, and repair plan.

- (a) The design engineer shall prepare an *inspection, maintenance and repair plan* for the stormwater management measures incorporated into the design of a major development.
- (b) The *inspection, maintenance and repair plan* shall contain specific preventative maintenance tasks and schedules; cost estimates, including estimated cost of sediment, debris, or trash removal; and the name, address, and telephone number of the person or persons responsible for preventative and corrective maintenance (including replacement). The plan shall contain information on BMP location, design, ownership, maintenance tasks and frequencies, and other details as specified in Chapter 8 of the NJ BMP Manual, as well as the tasks specific to the type of BMP, as described in the applicable chapter containing design specifics.
- (c) If the *inspection, maintenance and repair plan* identifies a person other than the developer (for example, a public agency or homeowners' association) as having the responsibility for maintenance, the plan shall include documentation of such person's agreement to assume this responsibility, or of the developer's obligation to dedicate a stormwater management facility to such person under an applicable ordinance or regulation.
- (d) Responsibility for *inspection, maintenance and repair plan* shall not be assigned or transferred to the owner or tenant of an individual property in a residential development or project, unless such owner or tenant owns or leases the entire residential development or project. The individual property owner may be assigned incidental tasks, such as weeding of a green infrastructure BMP, provided the individual agrees to assume these tasks; however, the individual cannot be legally responsible for all of the maintenance required.
- (e) If the person responsible for maintenance identified under Subsection **K(2)** of this section is not a public agency, the *inspection, maintenance and repair plan* and any future revisions based on Subsection **K(2)(g)** of this section shall be recorded upon the deed of record for each property on which the *inspection, maintenance and repair plan* described in the maintenance plan must be undertaken.
- (f) Preventative and corrective maintenance shall be performed to maintain the function of the stormwater management measure, including repairs or replacement to the structure; removal of sediment, debris, or trash; restoration of eroded areas; snow and ice removal; fence repair or replacement; restoration of vegetation; and repair or replacement of nonvegetated linings.
- (g) The party responsible for maintenance identified under Section **K(2)c** above shall perform all of the following requirements:

[1] Maintain a detailed log of all preventative and corrective maintenance for the structural stormwater management measures incorporated into the design of the development, including a record of all inspections and copies of all maintenance-

related work orders. ***“Records and inspection reports shall be retained for a minimum of five years”.***

- [2] evaluate the effectiveness of the ***inspection, maintenance and repair plan*** at least once per year and adjust the plan and the deed as needed; and
 - [3] retain and make available, upon request by any public entity with administrative, health, environmental, or safety authority over the site, the ***inspection, maintenance and repair plan*** and the documentation required by Subsection **K(2)f** and **K(2)g** above.
 - [4] ***The person responsible for inspection, maintenance and repair identified under Subsection K(2) above shall submit the updated inspection, maintenance and repair plan and the documentation required by Subsection K (2)(a) and (b) above to Galloway Township once per year. In the event the person responsible fails to submit the inspection, maintenance and repair information to the Township of Galloway, notice shall be provided of the deficiency and the person responsible shall have 14 days to submit the required information. Galloway of Township, at its discretions, may extend the time allowed for submitting the required information. If the person responsible fails or refuses to complete the submission, Galloway Township may immediately proceed with the inspection of the stormwater management facilities. The costs and expenses of the inspection shall be billed against the stormwater management fund to be established for the inspection and review of the stormwater management facilities as established in Subsection K(2)(o) [1], Table A, provided at the end of this chapter.***
 - [5] ***The person responsible for inspection, maintenance and repair identified under Subsection K(2)(a) above shall make the site available for inspection by a representative of the Township of Galloway every two years. The costs and expenses of the inspection shall be billed against the stormwater management fund to be established for the inspection and review of the stormwater management facilities as established in Subsection K(2)(o) [2], Table A or Table B, as applicable.***
- (h) The requirements of Subsection **K(2)c** and **K(2)d** do not apply to stormwater management facilities that are dedicated to and accepted by the municipality or another governmental agency, subject to all applicable municipal stormwater general permit conditions, as issued by the Department.
 - (i) In the event that the stormwater management facility becomes a danger to public safety or public health, or if it is in need of maintenance or repair, the municipality shall so notify the responsible person in writing. Upon receipt of that notice, the responsible person shall have fourteen (14) days to effect the ***inspection, maintenance and repair plan*** of the facility in a manner that is approved by the municipal engineer or his designee. The municipality, in its discretion, may extend the time allowed for effecting

the *inspection, maintenance and repair plan* for good cause. If the responsible person fails or refuses to perform such the *inspection, maintenance and repair plan*, the municipality or County may immediately proceed to do so and shall bill the cost thereof to the responsible person. Nonpayment of such bill may result in a lien on the property.

- (j) Prior to the granting of any site development approval, the applicant shall enter into an agreement (declaration of covenants and restrictions for drainage structures) with Galloway Township to ensure the continued operation and maintenance of the stormwater facility, unless Galloway Township has consented to accept the facility as municipal. This agreement shall be in a form satisfactory to the Township Attorney and may include, but may not necessarily be limited to, personal guarantees, deed restrictions, covenants and bonds. In cases where the property is subdivided and sold separately, a homeowners' association or similar permanent entity shall be established as the responsible entity, absent an agreement by a governmental agency to assume responsibility. The agreement shall also provide for regular inspection at the expense of the applicant, or the applicant's successors in interest, and for the undertaking by the applicant and successors of such corrective measures as are shown by such inspection to be required for the proper functioning of the facilities. The agreement shall require the applicant to provide a twenty-year maintenance guarantee and a maintenance and inspection program for the entire stormwater management system. The maintenance guarantee and maintenance and inspection program shall commence at the conclusion of the period required for the site's performance guarantee as required by the Board. The inspection and maintenance program shall identify the entity charged with responsibility for the annual inspections and the completion of any necessary maintenance, and the method to finance the program.
- (k) The applicant must obtain approval from the Township Engineer for all arrangements and values described in Subsection K (2) (j).
- (l) The applicant must deliver an easement for a clear and stabilized accessway of 15 feet to all stormwater facilities for the purpose of assuring vehicular access for maintenance activities.
- (m) The applicant must submit escrows and guarantees as required in Article IX, 233-65A (2), of the Galloway Land Management Code.
- (n) Requirements for inspection, maintenance and repair of stormwater BMP's that rely on infiltration. If a stormwater infiltration BMP is incorporated into the design of a major development, the applicant shall include the following requirements in its inspection, maintenance and repair plan:

[1] Once per month (*if needed or if directed by Township Stormwater Coordinator*): mow side slopes, remove litter and debris, stabilize eroded banks, and repair erosion at inflow structures;

[2] After every storm exceeding one inch of rainfall: ensure that infiltration BMP's drain completely within 72 hours after the storm event. If stored water fails to infiltrate 72 hours after the end of the storm, corrective measures shall be taken. Raking or tilling by light equipment can assist in maintaining infiltration capacity and break up clogged surfaces;

[3] Four times per year (quarterly): inspect stormwater infiltration BMP's for clogging and excessive debris and sediment accumulation within the BMP, remove sediment (if needed) when completely dry;

[4] Two times per year: inspect for signs of damage to structures, repair eroded areas, check for signs of petroleum contamination and remediate;

[5] Once per year: inspect BMPs for unwanted tree growth and remove if necessary, disc or otherwise aerate bottom of infiltrations basin to a minimum depth of six inches; and;

[6] After every storm exceeding one inch of rainfall: inspect and, if necessary, remove and replace K5 sand layer and accumulated sediment, to restore the infiltration rate.

[7] Additional guidance for the inspection, maintenance and repair of stormwater infiltration BMPs can be found in the NJ BMP manual.

(o) Financing of inspection, maintenance and repair of stormwater BMP's

An adequate means of ensuring permanent financing of the inspection, maintenance and repair of stormwater BMP's shall be implemented and detailed in the inspection, maintenance and repair plan. Permanent financing of the inspection, maintenance and repair of stormwater BKP's shall be accomplished by:

[1] For nonmunicipal owned stormwater management facilities, the assumption of the inspection and maintenance program by an entity other than Galloway Township (ie county, public utility, homeowners' association or individual) shall require the payment of fees to the municipal stormwater management fund as calculated by Table A, provided at the end of this chapter.

[2] For stormwater management facilities owned by the Township of Galloway, the assumption of the inspection and maintenance program by Galloway Township shall require the payment of fees to a municipal stormwater fund in an amount equivalent to the cost of both ongoing maintenance activities and necessary structural replacements as calculated by Table B, provided at the end of this chapter

(3) Nothing in this section shall preclude the municipality in which the major development is located from requiring the posting or a performance or maintenance guarantee in accordance with N.J.S.A. 40:55D-53.

- L. As-built certification. When excavated and completed, the design engineer shall certify in writing to the Township that the stormwater facility will operate as intended in the design phase taking into consideration all soil and water conditions encountered during construction. As-built percolation test results shall also be provided if the basin has been used as a place for sediment accumulation during the construction process.
- M. After all construction activities and required field testing have been completed on the development site, as-built plans depicting design and as-built elevations of all stormwater management measures shall be prepared by a licensed land surveyor and submitted to the Township Engineer. Based upon the Township Engineer's review of the as-built plans, all corrections or remedial actions deemed by the Township Engineer to be necessary due to the failure to comply with the standards established by this section and/or any reasons of public health or safety shall be completed by the applicant. In lieu of review by the Township Engineer, the Township of Galloway reserves the right to engage a professional engineer to review the as-built plans. The applicant shall pay all costs associated with such review.*
- N. Penalties. Any person who erects, constructs, alters, repair, converts, maintains, or uses any building, structure or land in violation of this section shall be subject to the penalties as stated in § 233-64.
- (1) Each instance of engaging in a separate regulated activity in violation of this section shall be deemed a separate offense.
 - (2) In addition, the Borough may institute civil action for injunctive or other relief to enforce the provisions of this section.
 - (3) This section shall be enforced by the Construction Official, or his designees, the Department of Public Utilities and/or the Code Enforcement Department.

SECTION 2. Repealer. All ordinances or parts of ordinances inconsistent or in conflict with this Ordinance are hereby repealed as to said inconsistencies and conflict.

SECTION 3. Severability. If any section, part of any section, or clause or phrase of this ordinance is for any reason held to be invalid or unconstitutional, such decision shall not effect the remaining provisions of this ordinance. The governing body of the Township of Galloway declares that it would have passed the ordinance and each section and subsection thereof, irrespective of the fact that any one or more of the subsections, sentences, clauses or phrases may be declared unconstitutional or invalid.

SECTION 4. Effective Date. The ordinance shall take effect immediately upon passage and publication according to law.

NOTICE IS HEREBY GIVEN that the foregoing Ordinance was introduced in and passed the first reading at a meeting of the Township Council of the Township of Galloway, County of Atlantic and State of New Jersey, held on March 9th, 2021 and said Ordinance will be further considered for final passage and adoption at a public hearing to be held at the Municipal Complex located at 300 East Jimmie Leeds Road, Galloway, New Jersey 08205, on April 13th, 2021 at 6:30 PM or as soon thereafter as the matter may be reached.

BY ORDER OF THE MUNICIPAL COUNCIL OF THE TOWNSHIP OF GALLOWAY

TOWNSHIP OF GALLOWAY

Kelli Danieli, RMC /s/

Kelli Danieli, RMC
Township Clerk

Recorded Vote	MOTIONS	AYE	NAY	ABSTAIN	ABSENT
Clute		X			
Coppola		X			
Crawford	2	X			
DiPietro		X			
Maldonado	1	X			
Santo		X			
Gorman		X			