

Ordinance # 2017-30

AN ORDINANCE BY THE MUNICIPALITY OF PRINCETON REGULATING STORMWATER MANAGEMENT AND AMENDING THE "CODE OF THE BOROUGH OF PRINCETON, NEW JERSEY, 1974" AND THE "CODE OF THE TOWNSHIP OF PRINCETON, NEW JERSEY, 1968"

WHEREAS, the Borough of Princeton and Township of Princeton pursuant to the provisions of the New Jersey Municipal Consolidation Act, N.J.S.A. 40:43-66.35 consolidated as Princeton on January 1, 2013; and

WHEREAS, pursuant to N.J.S.A. 40:43-66.64, the Princeton Council on January 1, 2013 adopted a Resolution continuing in effect Ordinances of the former Borough of Princeton and the former Township of Princeton as a new Code for Princeton is prepared; and

WHEREAS, the Princeton Engineering Department, in consultation with appropriate municipal staff, professionals and advisory bodies, has reviewed, consolidated and updated the provisions of the "Code of the Township of Princeton, New Jersey, 1968" and "Code of the Borough of Princeton, New Jersey, 1974" pertaining to stormwater management; and

WHEREAS, the Princeton Council wishes to adopt said Code revisions which will become a part of the new Princeton Code at a future date.

NOW, THEREFORE, BE IT ORDAINED by the Princeton Council as follows:

Section 1. The following sections of the "Code of the Township of Princeton, New Jersey, 1968" ("Township Code") and "Code of the Borough of Princeton, New Jersey, 1974" ("Borough Code") are hereby repealed:

- a. Section 10B-227 et seq. of Chapter 10B of the Township Code, which includes sections 10B-227 through 10B-227.20; and

- b. Section 17A-193.1 et seq. of Chapter 17A of the Borough Code, which includes sections 17A-193.1 through 17A-193.1J.

Section 2. A new section 10B-227 et seq. of the Township Code, as set forth on Exhibit A attached hereto and made a part hereof, is hereby adopted to regulate stormwater management, and to replace the aforementioned portions of Chapters 10B and 17A of the Township and Borough Codes, respectively.

Section 3. Section 10B-246.1 of the Township Code shall be amended by repealing the language in section 10B-246.1 and inserting the NEW language as follows:

Sec. 10B-246.1. Maximum permitted residential lot impervious coverages.

Residential lots shall be subject to the following maximum impervious coverage limits.

Lot Size (Acres)	Maximum Permitted Impervious Coverage
	Percent
4 and greater	14.0
3 to 3.99	15.0
2 to 2.99	17.0
1.5 to 1.99	19.5
1 to 1.49	22.5
0.75 to 0.99	25.5
0.5 to 0.749	29.0
0.25 to 0.49	36.0
0.1 to 0.249	49.5
Less than 0.1	61.5

Section 4. Section 10B-241 of the Township Code shall be amended by revising the definition of the term “impervious surface” as follows (additions are underlined and deletions are [bracketed]):

Sec. 10B-241. Definitions.

Words used in this article and not defined in this section or elsewhere in this article, shall have the meanings given in Webster's Unabridged Dictionary, second

edition, but for the purposes of this article, the following words and phrases shall have the meanings respectively ascribed to them by this section:

Impervious surface. A surface that has been compacted or covered with a layer of material so that it is highly resistant to infiltration by water. Impervious surfaces include roofs and asphalt, concrete, and stone drives, sidewalks, porous asphalt or concrete, decks, pools and patios. [Impervious surfaces that are semi-pervious or are disconnected from a runoff conveyance system by intervening pervious areas shall have an effective surface area equal to seventy-five percent of their actual area. Wood decks and above and below ground swimming pools are not considered impervious surfaces.]

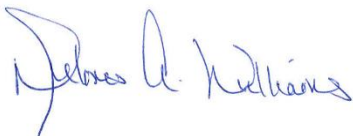
Section 5. All ordinances and resolutions or parts thereof inconsistent with this Ordinance are repealed.

Section 6. If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portion thereof.

Section 7. The provisions of this Ordinance and the attached section 10B-227 et seq. of Chapter 10B shall be applicable within Princeton upon final adoption and pursuant to applicable law, and shall become a part of the new Princeton Code once completed and adopted.

This ordinance is part of the ongoing process of merging and harmonizing the code provisions of former Princeton Borough and former Princeton Township into a new code for the consolidated municipality of Princeton. It sets forth requirements, standards and regulations for stormwater management throughout Princeton.

The foregoing ordinance was introduced at a meeting of the Mayor and Council of Princeton held on May 8, 2017 and will be further considered for final passage after a public hearing thereon at a meeting of said Mayor and Council to be held in the Main Meeting Room at the Princeton Municipal Complex, 400 Witherspoon Street on June 12, 2017 beginning at 7:00 p.m., and during the week prior and up to and including the date of such meeting, a copy of said ordinance shall be made available free of charge at the Clerk's Office to the members of the general public who shall request the same.



Delores A. Williams
Deputy Municipal Clerk

EXHIBIT A

Sec. 10B-227. Scope and purpose: Stormwater management.

(a) Stormwater management is the process of minimizing the creation of stormwater runoff at land developments and directing resulting runoff through appropriate nonstructural and structural stormwater management measures so as to control flooding, recharge ground water, and prevent pollution of water resources. Stormwater management shall occur with the understanding and acceptance of precipitation and stormwater runoff as resources.

(b) The purpose of this section is to establish minimum stormwater management requirements for proposed major developments in order to manage the quantity and quality of stormwater runoff entering surface and ground waters.

Specifically, the purpose of this section is to:

- (1) Prevent increases in flood damage to public health, safety and property;
- (2) Minimize increases in stormwater runoff rates and volumes;
- (3) Induce groundwater recharge wherever suitable infiltration, soil permeability, and favorable geological conditions exist;
- (4) Prevent increases in nonpoint source pollution;
- (5) Preserve existing natural drainage patterns wherever practicable;
- (6) Maintain the integrity and stability of stream channels and buffers for their ecological, drainage, conveyance, and other beneficial functions;
- (7) Control and minimize soil erosion and the transport and deposition of sediment;
- (8) Minimize public safety hazards at stormwater management measures; and
- (9) Protect surface and groundwater resources from degradation and diminution.

(c) Applicability.

(1) This section shall be applicable to major and minor developments independent of any requirement for preliminary or final site plan or subdivision review:

- a. Nonresidential major developments; and
- b. Aspects of residential major developments that are not preempted by the Residential Site Improvement Standards (RSIS) at N.J.A.C. 5:21. The provisions of both this section and the RSIS are to be applied and reviewed concurrently for any residential major development.

(2) This section shall also be applicable to major development projects undertaken by the municipality. For such projects, major development shall be defined as any construction activity that results in the permanent disturbance of one or more acres of land.

(d) (1) 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 shall be construed to assure consistency with the requirements of New Jersey laws

and acts amendatory thereof or supplementary thereto, applicable implementing regulations, and any existing or future municipal NJPDES Permits and any amendments or revisions thereto or reissuance thereof. This section is not intended to interfere with, abrogate, or annul any other ordinance, rule or regulation, statute, or other provision of law. Where any provision of this section imposes requirements different from those imposed by any other ordinance, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose more stringent requirements shall control.

(2) Maximum impervious coverage requirements for new and redeveloped residential lots can be found in section 10B-246.1 of the Code.

Sec. 10B-227.1. Definitions.

Unless specifically defined below, words or phrases used in this section shall be interpreted so as to give them the meaning they have in common usage and to give this section its most reasonable application. Where common definitions exist, the definitions below are the same as or based on the corresponding definitions in the Department's Stormwater Management Rules at N.J.A.C. 7:8-1.2.

Agriculture or horticulture or Agricultural or horticultural use. The use of the land for common farmsite activities including but not limited to production, harvesting, storage, grading, packaging, processing and the wholesale and retail marketing of crops, plants, animals and other related commodities and the use and application of techniques and methods of soil preparation and management, fertilization, weed, disease and pest control, disposal of farm waste, irrigation, drainage, and water management, and grazing.

Agricultural or horticultural development. Construction for the purposes of supporting common farmsite activities, including but not limited to: the production, harvesting, storage, grading, packaging, processing, and the wholesale and retail marketing of crops, plants, animals, and other related commodities and the use and application of techniques and methods of soil preparation and management, fertilization, weed, disease and pest control, disposal of farm waste, irrigation, drainage and water management, and grazing.

Category One Waters (C1). Waters of the state designated in N.J.A.C. 7:9B-1.15(c) through (h) for purposes of implementing the anti-degradation policies set forth at N.J.A.C. 7:9B-1.5(d) for protection from measurable changes in water quality characteristics because of their clarity, color, scenic setting, other characteristics of aesthetic value, exceptional ecological significance, exceptional recreational significance, exceptional water supply significance, or exceptional fisheries resources(s).

Compaction. The increase in soil bulk density caused by subjecting soil to greater-than-normal loading. Compaction can also decrease soil infiltration and permeability rates.

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. The Mercer County Planning Board, as designated by the County Board of Chosen Freeholders to review municipal stormwater management plans and implementing ordinance(s).

Department. The New Jersey Department of Environmental Protection.

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

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. The division of a parcel of land into two or more parcels, the construction, reconstruction, conversion, structural alteration, relocation or enlargement of any building or structure, any mining excavation or landfill, any clearing, grading, or excavation or other activity that results in land disturbance; 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. In the case of development of agricultural lands, development means: any activity that requires a state permit; any activity reviewed by the County Agricultural Board (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.

Disturbance. The placement of impervious surface, the movement or exposure of soil or bedrock, or the clearing, cutting, or removal of vegetation. Milling and/or repaving of existing impervious surfaces shall not be considered disturbance for the purposes of this section.

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

Environmentally critical area. An area or feature which is of significant environmental value, including but not limited to: stream corridors; natural heritage priority sites; habitat of endangered or threatened species; large areas of contiguous open space or upland forest; steep slopes; well head protection areas; and groundwater recharge areas.

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

Escape provisions. The permanent installation of ladders, steps, rungs, and/or other features that provide easily accessible means of egress from a stormwater management measure.

Green Infrastructure. Those methods and techniques that use vegetation, soils and other elements and practices to restore the natural processes of the land to manage and retain stormwater. Examples of green infrastructure are but not limited to: rain gardens, green roofs, permeable pavement; bio-infiltration, cisterns, or vegetated swales.

Groundwater. A body of water below the surface of the land in a zone of saturation where the spaces between the soil or geological materials are fully saturated with water.

Habitats of endangered or threatened species. Those habitats identified by the Department's Landscape Project as approved by the Department's Endangered and Nongame Species Program.

HUC-14. A watershed or sub-watershed as defined by the United States Geological Survey with a 14-digit identifier.

Impervious surface. A surface that has been compacted or covered with a layer of material so that it is highly resistant to infiltration by water. Impervious surfaces include roofs and asphalt, concrete, and stone roads, parking lots, drives, sidewalks, porous asphalt or concrete, pools, and patios.

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

Low Impact Development (LID). Utilizing selected stormwater management measures to replicate predevelopment hydrology in order to reduce the impacts of development. LID minimizes the creation of stormwater runoff and pollution by minimizing site disturbance and

impervious cover and by promoting on-site infiltration of precipitation and runoff.

Maintenance Plan. A document required for the maintenance of stormwater management measures at all major development projects. A Maintenance Plan shall contain a specific preventive 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 preventive and corrective maintenance including replacement.

Major development. Any development that results in either the disturbance of one half or more acres of land, an increase in impervious surface of 5,000 square feet, or an increase in the peak one hundred-year stormwater runoff rate from the development site of more than 0.5 CFS.

Maximum extent practicable. Compliance with the specific objective to the greatest extent possible taking into account equitable considerations and competing factors, including but not limited to, environmental benefits, pollutant removal effectiveness, regulatory compliance, ability to implement given site-specific environmental conditions, cost and technical or engineering feasibility.

Minor Development. Any development that results in an increase in impervious surface of four (400) hundred or more square feet but does not meet the definition of a Major Development.

Mitigation. Suitable compensation or offsetting actions when an applicant for approval under this section has demonstrated the inability or impracticality of strict on-site compliance with the stormwater management requirements set forth in this section or an approved regional stormwater management plan and, on the basis of such demonstration, has received a waiver from strict compliance from the Princeton planning board.

Municipality. The Municipality of Princeton.

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

Nonstructural stormwater management. Utilizing strategies and measures that manage stormwater runoff quantity and quality in the absence of structural stormwater measures, such as minimizing site disturbance, preserving natural vegetation and other important site features, reducing and disconnecting impervious cover, minimizing proposed ground slopes, utilizing native vegetation, minimizing turf grass lawns, increasing time of concentration, and maintaining and enhancing natural drainage features and characteristics.

Nutrient. A chemical element or compound (such as nitrogen or phosphorus) that is essential to and promotes the development of plants, algae, and other vegetation and organisms.

Nutrient concentration. The amount of a nutrient in a specified volume of water.

Nutrient load. The total amount of a nutrient entering a surface or groundwater resource during a given time period. Nutrients may enter the water resource from runoff, recharge, point source discharges, or the atmosphere in the form of wet and/or dry deposition.

Overflow grate. A device intended to protect the opening in the top of an outlet structure in a stormwater management measure.

Person. Any individual, corporation, company, partnership, firm, association, 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.

Pervious surface. A surface that is capable of transmitting or infiltrating a significant amount of precipitation into underlying material.

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 non-hazardous pollutants.

Recharge. The amount of precipitation that infiltrates into the ground and migrates to a depth below the root zone depth of any vegetation on that ground.

Review agency. The municipal entity or official that is responsible for the review of a major development project for compliance with the requirements of this section.

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

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

Soil. All unconsolidated mineral and organic material of any origin.

Solid and floatable materials. Sediment, debris, trash, and other floating, suspended, or settleable solids.

Source material. Any material or machinery located at an industrial facility that is directly or indirectly related to process, manufacturing, or other industrial activities, that could be a source of pollutants in any industrial stormwater discharge to surface or 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.

State Development and Redevelopment Plan Metropolitan Planning Area (PAI). 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.

Stormwater runoff. The portion of precipitation that is not intercepted by vegetation or infiltrates into the ground but instead ponds or flow across the surface of the ground or structures. Stormwater runoff may be collected in swales, gutters, storm sewers, channels, and other drainage facilities and transported to waterways, waterbodies, or stormwater management measures.

Stormwater management basin. An excavation or embankment and related areas designed to receive, retain, and discharge stormwater runoff. A stormwater management basin may either be normally dry or retain water in a permanent pool. A stormwater management basin may be located on or below the ground surface.

Stormwater management measure or feature. Any structural or nonstructural strategy, practice, technology, process, program, or other method, including green infrastructure, 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 non-stormwater discharges into stormwater conveyances.

Stream buffer. A strip of land located adjacent to a stream channel consisting of natural, undisturbed vegetative cover that serves as a protective area between uplands and riparian lands.

Threatened and endangered species. Those species whose prospects for survival in New

Jersey are in immediate danger because of a loss or change in habitat, over-exploitation, predation, competition, disease, disturbance or contamination. Assistance is needed to prevent future extinction in New Jersey. Threatened species are those who may become endangered if conditions surrounding them begin to or continue to deteriorate. Habitats of endangered or threatened species are those identified by the Department's Landscape Project as approved by the Department's Endangered and Nongame Species Program.

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

Transition area. An area of protected upland adjacent to a freshwater wetland that minimizes adverse impacts on the wetland or serves as an integral component of the wetlands ecosystem.

Trash rack. A device intended to intercept runoff-borne trash and debris that might otherwise block the hydraulic openings in an outlet structure in a stormwater management measure.

Urban redevelopment area. Previously developed portions of areas delineated on the State Plan Policy Map (SPPM) as the Metropolitan Planning Area (PA1); Designated Centers, Cores or Nodes.

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

Wetland. 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.

Wetlands provide significant benefits to the community including its role in protecting and preserving drinking water supplies including groundwater; protection against flood and storm damage by absorbing and storing water. Wetlands also provide essential breeding, spawning, nesting and wintering habitats for fish and wildlife.

Sec. 10B-227.2. Stormwater management requirements.

(a) General requirements.

(1) Stormwater management measures for major developments shall be designed to meet the erosion control, groundwater recharge, and stormwater runoff quantity and quality requirements in this section. As detailed in section 10B-227.2(b), these requirements shall be met to the maximum extent practicable by incorporating nonstructural stormwater management strategies into the design of these measures. If such strategies alone are not sufficient to meet these requirements, structural stormwater management measures necessary to meet these requirements shall be incorporated into the design along with the practicable nonstructural strategies.

(2) The requirements in this section do not apply to major development projects where alternative design and performance requirements are applicable under either a regional stormwater management plan or Water Quality Management Plan adopted in accordance with Department rules.

(3) Any application for a new agricultural or horticultural development that

meets the definition of major development in section 10B-227.1 shall be submitted to the Mercer County Soil Conservation District for review and approval in accordance with the requirements in this section and any applicable Soil Conservation District guidelines for stormwater runoff quantity and erosion control.

(b) *Nonstructural stormwater management requirements.*

(1) The requirements of this subsection shall only apply to major developments to the maximum extent practicable, the requirements in section 10B-227.3 through 10B-227.6 shall be met by incorporating green infrastructure and nonstructural stormwater management strategies set forth in section 10B-227.2(b)(2) into the design. The applicant shall identify the green infrastructure and nonstructural strategies incorporated into the design of the project. The applicant shall provide a completed NJDEP Low Impact Development Checklist and a Nonstructural Strategies Point System Form. If the applicant contends that it is not feasible for engineering, environmental or safety reasons to incorporate any of the green infrastructure and nonstructural stormwater management strategies identified in section 10B-227.2(b)(2) into the design of a particular project, the applicant shall identify in writing the strategy or strategies so considered and provide a basis for the contention.

(2) Nonstructural stormwater management strategies:

a. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss;

b. Minimize new impervious surfaces and disconnect the flow of runoff from impervious surfaces;

c. Maximize the protection of natural drainage features and vegetation;

d. Minimize the decrease in the time of concentration from pre- to post-construction site conditions;

e. Minimize land disturbance including clearing and grading;

f. Minimize soil compaction;

g. Provide low maintenance landscaping that encourages the retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides;

h. Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas;

i. Provide source controls that prevent or minimize the use, exposure and/or mobilization of pollutants and prevent or minimize the release and transport of those pollutants into stormwater runoff. Such source controls include, but are not limited to:

1. Site design features that help to prevent accumulation of trash and debris in drainage systems, including features that satisfy section 10B-227.2(a)(3) below;

2. Site design features that help to prevent discharge of trash and debris from drainage systems;

3. Site design features that help to prevent and/or contain spills or other harmful accumulations of pollutants at industrial or commercial developments; and

4. When establishing vegetation after land disturbance, applying fertilizer in accordance with the requirements established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq., and implementing rules.

(3) Except as exempted in section 10B-227.2(b)(3)c. below, site design

features identified under section 10B-227.2(b)(2)i.2. above shall comply with the following standard to control the passage of solid and floatable materials through storm drain inlets:

a. Whenever a ground surface grate is used to collect stormwater runoff, either of the following grate types shall be used:

1. The New Jersey Department of Transportation (NJDOT) bicycle safe grate as described in Chapter 2.4 of the NJDOT Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines (latest edition).

2. A grate with each individual opening in the grate having a maximum area of seven square inches or a maximum distance of one-half inch across the smallest opening dimension.

b. Whenever a curb opening grate is used to collect stormwater runoff, each individual opening in the grate shall have a maximum area of seven square inches or a maximum distance of two inches across the smallest opening dimension.

c. These requirements do not apply:

1. Where the review agency determines that this standard would cause inadequate hydraulic performance that could not practicably be overcome by using additional or larger storm drain inlets that meet these requirements;

2. Where flows from the water quality design storm as specified in section 10B-227.12(a)(1) are conveyed through any device that is designed, at a minimum, to prevent delivery of all solid and floatable materials that could not pass through either one of the following:

(i) A rectangular space four and five-eighths inches long and one and one-half inches wide.

(ii) A bar screen having a bar spacing of 0.5 inches.

3. Where flows are conveyed through a trash rack that has parallel bars with one inch spacing between the bars, to the elevation of the water quality design storm as specified in section 10B-227.12(a)(1);

4. Where the Department 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.

(4) Any land area used as a nonstructural stormwater management measure to meet the requirements in sections 10B-227.3 and 10B-227.4 shall be:

a. Dedicated to a government agency;

b. Subject to a conservation restriction filed with the Mercer County Clerk's office; or

c. Subject to an approved equivalent restriction that ensures that such land area approved by the reviewing agency is maintained in perpetuity.

(5) Guidance for nonstructural stormwater management strategies is available in the New Jersey Stormwater Best Management Practices Manual and the Department's Nonstructural Strategies Point System.

Sec. 10B-227.3. Erosion control requirements.

The minimum design and performance requirements to control erosion are those established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq

Sec. 10B-227.4. Groundwater recharge requirements

The minimum design and performance requirements to maintain groundwater recharge which only apply to major developments are as follows:

(a) Using the criteria for calculating stormwater runoff and groundwater recharge in section 10B-227.12, the design engineer shall comply with either of the following requirements:

(1) Demonstrate through hydrologic and hydraulic analysis that the post-developed project site maintains one hundred percent of the site's predeveloped average annual groundwater recharge volume.

(2) Demonstrate through hydrologic and hydraulic analysis that any increase in the project site's projected stormwater runoff volume produced by the two-year, twenty-four hour storm from predeveloped to post-developed conditions is infiltrated.

(b) Groundwater recharge is not required at major development projects located within an "urban redevelopment area" as defined in section 10B-277.1 or from those portions of major development projects that produce stormwater runoff described in section 10B-227.4(c) below.

(c) The following two types of stormwater runoff shall not be recharged:

(1) Stormwater runoff from areas of high pollutant loading. High pollutant loading areas are:

a. Areas in industrial and commercial developments where solvents and/or petroleum products are loaded/unloaded, stored, or applied;

b. Areas where pesticides are loaded/unloaded or stored;

c. 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; and

d. Areas where recharge would be inconsistent with a 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) Stormwater runoff from industrial areas exposed to "source material."

(d) The design engineer shall assess and certify the hydraulic impact on the groundwater table and design the project site and all site groundwater recharge measures so as to avoid adverse hydraulic impacts. Adverse hydraulic impacts include, but are not limited to, raising the groundwater table so as to cause surface ponding, flooding of basements and other subsurface facilities, and interference with the proper operation of subsurface sewage disposal systems and other subsurface structures in the vicinity or down gradient of a groundwater recharge measure.

Sec. 10B-227.5. Stormwater runoff quantity control requirements.

The minimum design and performance requirements to control stormwater runoff quantity are as follows:

(a) Using the criteria for calculating stormwater runoff and groundwater recharge in section 10B-227.12, the design engineer shall comply with either of the following requirements:

(1) Demonstrate through hydrologic and hydraulic analysis that the post-developed stormwater runoff hydrographs from the project site for the two-, ten-, and one hundred-year storms at any point in time do not exceed by a meaningful amount the site's predeveloped runoff hydrographs for the same storms;

(2) Demonstrate through hydrologic and hydraulic analysis that under post-developed site conditions: 1) there is no increase in predeveloped stormwater runoff rates from the project site for the two-, ten-, and one hundred-year storms; and 2) any increased stormwater runoff volume or change in stormwater runoff timing for these storms will not increase flood damage at or downstream of the project site. When performing this analysis for predeveloped site conditions, all off-site development levels shall reflect existing conditions. When performing this analysis for post-developed site conditions, all off-site development levels shall reflect full development in accordance with current zoning and land use ordinances.

(3) Demonstrate through hydrologic and hydraulic analysis that the peak post-developed stormwater runoff rates from the project site for the two-, ten-, and one hundred-year storms are fifty, seventy-five and eighty percent, respectively, of the site's peak predeveloped stormwater runoff rates. The percentages do not have to be applied to runoff from off-site areas or those portions of the project site that are not proposed for development at the time of application provided that such areas are:

(a) Protected from future development by conservation easement, deed restriction, or other acceptable legal measures; or

(b) Subject to review under these requirements if they are proposed for development in the future.

Sec. 10B-227.6. Stormwater runoff quality control requirements.

The minimum design and performance requirements to control stormwater runoff quality are as follows:

(a) Using the criteria for calculating stormwater runoff in section 10B-227.12, the design engineer shall demonstrate that the anticipated annual average post-construction load of total suspended solids (TSS) in stormwater runoff from the project site will be reduced by eighty percent before leaving the project site. Except as provided below:

(1) If the runoff from a project site will drain, directly or indirectly, into a water with a Total Maximum Daily Load (TMDL), then the TSS reduction shall be increased to be consistent with the reductions set forth in the TMDL;

(2) If the runoff from a project site will drain, directly or indirectly, into a water that is listed under New Jersey's Integrated Water Quality Assessment Report, then the TSS reduction shall be maximized to the maximum extent practicable.

(b) The above requirement to reduce TSS load shall only be required if an additional five thousand (5,000) square feet or more of impervious surface is being proposed on the project site.

(c) The above requirement to reduce TSS load shall not apply to any stormwater runoff in a discharge regulated under a numeric effluent limitation for TSS imposed under the New Jersey Pollution Discharge Elimination System (NJPDES) rules, N.J.A.C. 7:14A, or in a

discharge specifically exempt under a NJPDES permit from this requirement. Daily limits of TSS (TMDL) may apply to the site development based on conditions of regulatory approvals.

(d) The design of stormwater management measures to achieve the above requirement to reduce TSS load shall be based upon the Department's Water Quality Design Storm of one and one-quarter inches of rainfall in two hours as described in the Department's Stormwater Management Rules (N.J.A.C. 7:8). The calculation of stormwater runoff volume from this design storm may include the effects of nonstructural and structural stormwater management measures.

(e) For the purposes of computing TSS reductions, the values shown in Table 1 below for stormwater management measures that are designed, constructed, and maintained in accordance with the current New Jersey Stormwater Best Management Practices Manual shall be used. Alternative measures, removal rates, and calculation methods may be used upon approval by the municipal engineer following consultation with the municipal storm drainage engineer.

Table 1 TSS Removal Rates for Stormwater Management Measures

Stormwater Management Measure	TSS Removal Rate (%)
Bioretention Systems	90
Constructed Stormwater Wetland	90
Extended Detention Basin	40-60
Infiltration Structure	80
Manufactured Treatment Device	See section 10B-227.6(f)
Sand Filter	80
Vegetative Filter Strip	60-80
Wet Pond	50-90

Source: New Jersey Stormwater Best Management Practices Manual, April 2004

(f) Manufactured treatment devices used to meet the requirements of this section shall have their pollutant removal rates verified by the New Jersey Corporation for Advanced Technology and certified by the Department.

(g) If more than one stormwater management measures are used in series, the following formula shall be used to calculate the total TSS removal rate:

$$R = A + B - (A*B)/100$$

Where:

R = Total TSS Removal Rate for Both Stormwater Management Measures

A = TSS Removal Rate from Table 2 for First Stormwater Management Measure

B = TSS Removal Rate from Table 2 for Second Stormwater Management Measure

If three or more stormwater management measures are used in series, the applicant shall calculate the total TSS removal rate for the first two measures in the series using the above formula and then substitute the resulting Total TSS Removal Rate (R) for the first measure's TSS Removal Rate (A) in the formula when calculating the combined result with the next measure in series.

(h) If there is more than one on-site drainage area discharging stormwater runoff from the project site, the above requirement to reduce TSS load rate shall apply to each area.

(i) If an on-site drainage area is divided into subareas, the total TSS reduction for the drainage area can be based upon a weighted average of the TSS reductions achieved at each subarea based upon relative size of each subarea.

(j) The design engineer shall also demonstrate that the anticipated annual average post-construction load of nutrients in stormwater runoff from the project site will be reduced to the maximum extent feasible before leaving the project site. The design of stormwater management measures to achieve the above requirement to reduce nutrient loads shall be based upon the Department's Water Quality Design Storm of one and one-quarter inches of rainfall in two hours as described in the Department's Stormwater Management Rules (N.J.A.C. 7:8). The calculation of stormwater runoff volume from this design storm may include the effects of nonstructural and structural stormwater management measures.

(1) In achieving the above requirement to reduce nutrient loads, the design of the project site shall include nonstructural and structural stormwater management measures that optimize nutrient removal while still achieving the stormwater runoff quantity and quality control requirement in sections 10B-227.5 and 10B-227.6.

(2) This requirement may be superseded by a more stringent numeric effluent limitation imposed under the New Jersey Pollution Discharge Elimination System (NJPDES) rules, N.J.A.C. 7:14A, or in a discharge specifically exempt under a NJPDES permit from this requirement. Daily limits for nutrient loading (TMDL) may apply to the site development based on conditions of regulatory approvals, or as provided in subsection (a) above.

(k) Special water resource protection areas shall be established along all waters designated Category One at N.J.A.C. 7:9B, and along all perennial or intermittent streams that drain into or upstream of the Category One waters as shown on USGS Quadrangle Maps or in County Soil Surveys within the associated HUC14 drainage area. Other authoritative sources of stream delineation may be utilized such as a delineation that is part of the municipal or regional stormwater management plan or a stream delineation overlay prepared by the Department. These areas shall be designated and protected as follows:

(1) The applicant shall preserve and maintain a special water resource protection area in accordance with one of the following:

a. A three hundred foot special water resource protection area shall be provided on each side of the waterway, measured perpendicular to the waterway from the top of the bank outwards or from the centerline of the waterway where the bank is not defined, consisting of existing vegetation or vegetation allowed to follow natural succession.

b. Encroachment within the designated special water resource protection area under subsection (k)(1)a. above shall only be allowed where previous development or disturbance has occurred (for example, pre-existing active agricultural use, parking area or maintained lawn area). The encroachment shall only be allowed where the applicant demonstrates to the satisfaction of the review agency that the functional value and overall condition of the special water resource protection area will be maintained to the maximum extent practicable. In no case shall the remaining special water resource protection area be reduced to less than one hundred fifty feet as measured perpendicular to the top of bank of the waterway or centerline of the waterway where the bank is undefined. All encroachments proposed under this subparagraph shall be subject to review and approval by the Department.

(2) All stormwater shall be discharged outside of and flow through the special

water resource protection area and shall comply with the Standard for Off-Site Stability in the “Standards For Soil Erosion and Sediment Control in New Jersey,” established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq.

(3) If stormwater discharged outside of and flowing through the special water resource protection area cannot comply with the Standard For Off-Site Stability in the “Standards for Soil Erosion and Sediment Control in New Jersey,” established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq., then the stabilization measures in accordance with the requirements of the above standards may be placed within the special water resource protection area, provided that:

a. Stabilization measures shall not be placed within one hundred fifty feet of the Category One waterway;

b. Pursuant to the Flood Hazard Area Control Act Rules at N.J.A.C. 7:13-11.2(j)4, runoff from the water quality design storm that is discharged within a 300-foot riparian zone shall be treated in accordance with this section to reduce the post-construction load of total suspended solids by 95% of the anticipated load from the developed site, expressed as an annual average;

c. Thermal pollution by stormwater discharges shall be addressed to ensure no significant increase or decrease in temperature occurs in the receiving waterway outside of the mixing zone;

d. The encroachment shall only be allowed where the applicant demonstrates to the satisfaction of the review agency that the ecological value and condition of the special water resource protection area will be maintained to the maximum extent practicable;

e. A conceptual project design meeting shall be held with the appropriate Department staff and Soil Conservation District staff to identify necessary stabilization measures; and

f. All encroachments proposed under this subsection shall be reviewed and approved by the Department.

(4) If a stream corridor protection plan for a waterway subject to the requirements of section 10B-227.6(j) has been approved by the Department, the provisions of such a plan shall replace the requirements of section 10B-227.6(k)1 as the applicable special water resource protection area requirements for the waterway.

(1) In accordance with the definition of FW1 waters at N.J.A.C. 7:9B-1.4, stormwater management measures shall be designed to prevent any increase in stormwater runoff and any new stormwater discharge point to waters classified as FW1.

Sec. 10B-227.7. Stormwater runoff discharge requirements for Minor Developments.

(a) The stormwater runoff requirements applicable to minor developments are as follows:

(1) For each square foot of new impervious surface, 2 gallons of stormwater shall be retained on-site using green infrastructure practices or such other measures as may be required by the municipal engineer.

(2) All such development shall be subject to review by the municipal engineer to determine that all stormwater runoff created by the development is adequately controlled and

does not cause an adverse impact on adjoining property owners.

(3) In such cases where it is determined that, the out flow from the stormwater management system will impact an adjacent property, the out flow shall be directed to a storm sewer, gutter, swale, or other suitable stormwater runoff conveyance measure.

(4) If the municipal engineer determines that the out flow from the stormwater management system will impact an adjoining property and the out flow cannot be safely directed to a storm sewer, gutter, swale, or other suitable stormwater runoff conveyance measure, the stormwater runoff from the development shall be retained on-site at a rate of 3 gallons of storage for each square foot of new impervious surface using green infrastructure practices or such other measures as may be required by the municipal engineer.

(b) The stormwater management feature shall be protected from future development by conservation easement, deed restriction, or other acceptable legal measures.

Sec. 10B-227.8. Threatened and endangered species.

When habitat for threatened or endangered species is present on a project site, stormwater management measures shall be implemented to avoid adverse impacts to such habitats caused by pollutant discharge, the creation of concentrated stormwater runoff, or the alteration of recharge.

Sec. 10B-227.9. Exemptions.

(a) The following linear development projects are exempt from the requirements of section 10B-227.4 through section 10B-227.6:

(1) The construction of an underground utility line provided that the disturbed areas are revegetated upon completion;

(2) The construction of an aboveground utility line provided that the existing conditions are maintained to the maximum extent practicable; and

(3) The construction of a public pedestrian walkway, trail, or other access measure with a maximum width of fourteen feet provided that the measure is constructed of permeable material.

Sec. 10B-227.10. Waivers.

(a) A waiver from strict compliance with the requirements of section 10B-227.4 through section 10B-227.6 may be granted 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:

(1) The applicant demonstrates that there is a public need for the project that

cannot be accomplished by any other means;

(2) The applicant demonstrates through an alternatives analysis acceptable to the review agency that, through the use of nonstructural and structural stormwater management strategies and measures, the proposed project complies with the requirements of section 10B-227.4 through section 10B-227.6 to the maximum extent practicable;

(3) The applicant demonstrates that, in order to fully meet the requirements of section 10B-227.4 through section 10B-227.6, existing structures currently in use would need to be condemned; and

(4) The applicant demonstrates that it does not own or otherwise have rights to land within the upstream drainage area of the receiving stream that would provide additional opportunities to mitigate those requirements of section 10B-227.4 through section 10B-227.6 that were not achievable on-site. Rights to such land shall include the potential to obtain such rights through condemnation provided that no existing structures currently in use would be included in such condemnation.

(b) A waiver from strict compliance with the requirements of section 10B-227.4 through section 10B-227.6 may be granted for those projects where an applicant has demonstrated the inability or impracticality of strict compliance with the stormwater management requirements set forth in these subsections. Such a waiver can only be obtained if the applicant agrees to undertake a suitable mitigation measure as included in the municipality's stormwater management plan or as identified by the municipal engineer and approved by the municipal engineer and municipality's flood and stormwater management committee. In such cases, the applicant must submit a written waiver request that presents the reasons why strict compliance cannot be achieved by the project.

Sec. 10B-227.11. Deferrals.

A deferral of strict compliance with the requirements of section 10B-227.4 through section 10B-227.6 may be granted for those projects where an applicant has demonstrated that the impacts of noncompliance will result in negligible impacts to downstream properties, structures, stormwater management or conveyance measures, waters of the state, wetlands, and other water resources. Such a deferral can only be obtained if the applicant agrees to include the project's features and impacts in the design of subsequent site development proposals and the deferral is approved by the municipal engineer and municipal flood and stormwater management committee. In such cases, the applicant must submit a written deferral request that demonstrates compliance with the negligible impact requirements presented above.

Sec. 10B-227.12. Computation of stormwater runoff and groundwater recharge.

(a) *Stormwater runoff.*

(1) When computing stormwater runoff rates, volumes, and/or hydrographs necessary for compliance with the requirements of section 10B-227.2 the design engineer shall utilize the USDA Natural Resources Conservation Service (NRCS) runoff methodology, including the NRCS Runoff Equation, appropriate NRCS Dimensionless Unit Hydrograph, and

appropriate NRCS twenty-four hour design storm distribution as described in the current NRCS National Engineering Handbook Part 630 - Hydrology, the current Technical Release 55 - Urban Hydrology for Small Watersheds, or superseding NRCS document. Twenty-four hour design storm depths shall be based upon the values shown in Table 2.

Table 2 24-Hour Design Storm Depths for NRCS Methodology

Recurrence Interval (Years)	Depth (Inches)
1	2.8
2	3.3
5	4.2
10	5.0
25	6.2
50	7.2
100	8.3

(2) When computing stormwater runoff rates for the design of storm sewers, inlets, channels, and other stormwater runoff conveyance measures, the design engineer may utilize the Rational Method. Such computations shall be based upon runoff coefficients, rainfall intensities, and storm frequency factors as approved by the municipal engineer.

(3) When selecting or computing runoff coefficients for pre-developed site conditions to comply with the requirements of section 10B-227.5(a), the site's land cover shall be assumed to be woods. However, a different land cover may be used on all or a portion of the site if:

a. Such land cover has existed on the site or portion thereof without interruption for at least ten years immediately prior to the time of application; and

b. The design engineer can document the character and extent of such land cover through the use of photographs, affidavits, and/or other acceptable land use records.

If more than one land cover has existed on all or a portion of the site during the ten years immediately prior to the time of application, the land cover with the lowest runoff potential as measured by its NRCS Runoff Curve Number shall be used for the computations.

(4) All predeveloped land covers shall be assumed to be in good hydrologic condition and, if cultivated, shall be assumed to have appropriate conservation practices.

(5) In computing predeveloped project site stormwater runoff rates, volumes, and/or hydrographs, the design engineer shall include the effects of all hydrologically significant land features and structures, such as ponds, wetlands, depressions, hedgerows, and culverts, which can affect predeveloped site stormwater runoff rates, volumes, and/or hydrographs.

(6) In computing stormwater runoff rates, volumes, and/or hydrographs using the NRCS methodology, the design engineer shall separately calculate and then combine the runoff volumes from pervious and directly connected impervious surfaces within a drainage area.

(7) Computation of stormwater runoff rates, volumes, and/or hydrographs from unconnected impervious surfaces shall be based upon the Two-Step Method as described in the current New Jersey Stormwater Best Management Practices Manual.

(8) Stormwater runoff computation methods other than those described above may be used upon approval by the municipal engineer following consultation with the municipal

storm drainage engineer.

(9) 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 tail water in the design of structural stormwater management measures.

(b) *Groundwater recharge.*

(1) When computing groundwater recharge rates and/or volumes for compliance with the requirements of section 10B-227.2, the design engineer may utilize the New Jersey Groundwater Recharge Spreadsheet (NJGRS) computer program as described in the current New Jersey Stormwater Best Management Practices Manual.

(2) Alternative groundwater recharge computation methods may be used upon approval by the municipal engineer following consultation with the municipal storm drainage engineer.

Sec. 10B-227.13. Structural requirements for stormwater management measures.

(a) The design and construction of stormwater management measures shall include consideration for existing site conditions such as slopes, depth to seasonal high water table, soil type, permeability and texture, drainage area size, surface and subsurface drainage patterns, tail waters, and previous land filling that may cause the measure to fail to function as intended, to cause harm or damage to persons or property, or to adversely affect surface water, groundwater, environmentally critical areas, wetlands, or existing surface or subsurface drainage patterns.

(b) Stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper long-term functioning. They shall be integrated into the overall landscape plan for the development and, where practicable, shall be landscaped to serve the additional functions of recreational, scenic, or open space areas.

(c) Stormwater management measures are to be sequenced in the project site construction process so that erosion control requirements are met and the measures are not compromised or impaired by construction runoff.

(d) Stormwater runoff shall be discharged from the development at such locations, rates, and velocities as not to create new or additional existing flooding or erosion downstream.

(e) Stormwater management measures involving the use of dams as defined in the New Jersey Dam Safety Standards (N.J.A.C. 7:20) shall comply with all applicable requirements of such standards.

(f) Stormwater management measure guidelines are available in the New Jersey Stormwater Best Management Practices Manual. Other stormwater management measures may be utilized provided the design engineer demonstrated that the proposed measure and its design will accomplish the required water quality, groundwater recharge and water quality design and performance standards established by this ordinance.

(g) Manufactured treatment devices may be used to meet the requirements of this ordinance, provided the pollutant removal rates are verified by the New Jersey Corporation for Advanced Technology and certified by the Department.

(h) Structural stormwater management measures shall be designed, constructed, and installed to be strong, durable, and corrosion resistant.

(i) Trash racks shall be installed at the intakes to outlet structures as appropriate.

Such trash racks should be constructed primarily of bars aligned in the direction of flow with bar spacing of approximately one-third the diameter or width of the hydraulic opening it is protecting. Minimum and maximum spacing between such trash rack bars shall be one inch and six inches, respectively. Transverse bars aligned perpendicular to flow should be sized and spaced as necessary for rack stability and strength. Trash racks shall be designed to withstand a perpendicular live loading of three hundred pounds per square foot. Trash racks shall be designed, constructed, and installed to be rigid, durable, and corrosion resistant. Trash racks must also comply with the safety requirements of section 10B-227.14(a).

(j) Overflow grates shall be installed on the tops of outlet structures as appropriate. The overflow grate spacing shall be no more than two inches across the smallest dimension. 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 three hundred pounds per square foot. Overflow grates must also comply with the safety requirements of section 10B-227.14(b).

(k) The minimum diameter or dimension of an outlet orifice shall be two and one-half inches.

(l) Subsequent to the approval of the major development, appropriate post-construction soil testing approved by the municipal engineer shall be performed at all infiltration-based measures to demonstrate that their construction will allow them to perform in accordance with both the stormwater management measure and project site requirements of this section. Measures that fail to meet such requirements following construction shall be repaired, rehabilitated, and/or replaced as necessary to achieve such requirements.

(m) Stormwater management measures shall be designed to meet the minimum safety requirements in section 10B-227.14.

(n) A waiver or exemption from the requirements of this section may be granted only upon submission of a written request by the applicant providing the basis for the waiver or exemption and a written finding by the municipal engineer that such waiver or exemption will have a negligible effect on the operation, maintenance, and durability of the stormwater management measure and will not constitute a threat to public safety or the safety of inspection and maintenance personnel.

Sec. 227.14. Safety requirements for stormwater management measures.

(a) Trash racks shall meet the following requirements:

(1) The trash rack shall have sufficient net open area under clean conditions to convey the highest expected flow rate through the rack with a maximum velocity of two and one-half feet per second.

(2) The trash rack shall be secured to the outlet structure but removable for emergencies and maintenance.

(3) The trash rack shall not adversely affect the hydraulic performance of either the outlet structure opening it is protecting or the overall outlet structure.

(4) The trash rack must also meet the minimum structural requirements in section 10B-227.13.

(b) Overflow grates shall meet the following requirements:

(1) The overflow grate shall have sufficient net open area under clean conditions to convey the highest expected flow rate through the rack with a maximum velocity of

two and one-half feet per second.

(2) The overflow grate shall be equipped with anti-vortex devices as necessary to prevent the creation of a flow vortex above the grate.

(3) The overflow grate shall be secured to the outlet structure but removable for emergencies and maintenance.

(4) The overflow shall not adversely affect the hydraulic performance of either the outlet structure opening it is protecting or the overall outlet structure.

(5) The overflow grate must also meet the minimum structural requirements in section 10B-227.13.

(c) Escape provisions at stormwater management measures shall meet the following requirements:

(1) Escape provisions shall be provided in and/or on all stormwater management measure outlet structures as necessary to provide readily accessible means of ingress and egress from the outlet structure.

(2) The maximum interior slope for an earthen dam, embankment, or berm at a stormwater management measure shall be steeper three horizontal to one vertical.

(3) Safety ledges shall be provided on the slopes of all stormwater management measures having a permanent pool of water deeper than two and one-half feet. Such safety ledges shall be comprised of two steps. Each step shall be four to six feet in width. One step shall be located approximately two and one-half feet below the permanent water surface, and the second step shall be located one to one and one-half feet above the permanent water surface.

(d) All stormwater management measures shall be designed so as to reasonably assure safety by means of emergency spillways and other outlets in the event of storms exceeding the measures' maximum design storm.

(e) A waiver or exemption from the requirements of this section may be granted only upon submission of a written request by the applicant providing the basis for the waiver or exemption and a written finding by the municipal engineer and municipal flood and stormwater management committee that such waiver or exemption will not constitute a threat to public safety or the safety of inspection and maintenance personnel.

Sec. 10B-227.15. Maintenance and repair requirements.

(a) Preventive, regular and corrective maintenance shall be performed as necessary to maintain the safe and effective function of all stormwater management measures. Such maintenance shall include as appropriate the following actions:

(1) Repairs to or replacement of structures;

(2) Removal of sediment, debris, and trash;

(3) Restoration of eroded areas;

(4) Snow and ice removal;

(5) Fence repair or replacement;

(6) Maintenance and restoration of vegetation;

(7) Repair or replacement of nonvegetated linings; and

(8) Maintenance of manufactured treatment devices according to manufacturer's recommendation.

(b) The design engineer shall prepare and submit to the review agency a maintenance plan for the stormwater management measures utilized at a major development. This plan shall be separate from all other documents and prepared for ongoing use by the site owners or operators in performing and documenting maintenance and repair and by the municipality in ensuring implementation of the maintenance plan.

(c) The maintenance plan shall contain:

- (1) Description of required corrective and preventive maintenance tasks and schedules;
- (2) Cost estimates, including estimated cost of sediment, debris, or trash removal and disposal;
- (3) Safety needs;
- (4) Identification of methods and disposal sites for materials removed during maintenance;
- (5) Maintenance requirements for created wetlands and other ecological systems;
- (6) Required safety devices and procedures;
- (7) Warranties and operating instructions from the manufacturers of any manufactured treatment devices;
- (8) Right of access provisions for Municipal inspection and maintenance activities; and
- (9) The name, address, and telephone number of the person responsible for preventive and corrective maintenance including measure replacement.

(d) If the maintenance plan identifies a person other than the applicant as having the responsibility for maintenance, the plan shall include documentation of such person's agreement to assume this responsibility or the applicant's obligation to dedicate the stormwater management measure to such person under an applicable ordinance or regulation.

(e) Responsibility for maintenance of a stormwater management measure shall not be assigned or transferred to the owner or tenant of an individual lot in a residential development unless such owner or tenant owns or leases the entire residential development. Instead, the fee title to all of the lots within the development that will have the right to utilize a stormwater management measure shall contain a deed restriction requiring the owners of such lots to maintain the measure according to the requirements of this section.

(f) The current title page of the maintenance plan and the name, address, and telephone number of the person responsible for maintenance shall be recorded with the deed of record for each property on which the stormwater management measure is located unless such maintenance is the responsibility of a public agency.

(g) The person responsible for maintenance shall maintain a detailed log of all preventive and corrective maintenance performed at a stormwater management measure, including a record of all inspections and copies of all maintenance-related work orders.

(h) The person responsible for maintenance shall evaluate the effectiveness of the maintenance plan at least once per year and revise the plan as needed. A copy of any plan revisions shall be submitted to the review agency. The date of any plan revisions shall be indicated on the title page of the plan which, along with the name, address, and telephone number of any new person responsible for maintenance, shall be refiled with the deed of record for each property on which the stormwater management measure is located.

(i) The person responsible for maintenance shall retain and make available a copy of

the current maintenance plan upon request to any public entity with administrative, health, environmental, or safety authority over the site.

(j) In the event that a stormwater management measure becomes a danger to public safety or health or is in need of maintenance or repair and comes to the attention of the municipality, the municipality shall so notify the person responsible for maintenance in writing. Upon receipt of that notice, such person shall have thirty days to complete all required maintenance and/or repair of the facility in a manner that is approved by the municipal engineer. The municipality, at its discretion, may extend the time allowed for completing required maintenance and/or repair for good cause. If the responsible person fails or refuses to perform such maintenance and repair, the municipality may proceed to do so and shall bill the cost thereof to the person responsible for maintenance.

(k) Nothing in this section shall preclude the municipality from requiring the posting of a performance or maintenance guarantee in accordance with N.J.S.A. 40:55D-53.

(l) A waiver or exemption from the requirements of this section may be granted only upon submission of a written request by the applicant providing the basis for the waiver or exemption and a written finding by the municipal engineer and municipal flood and stormwater management committee that such waiver or exemption will have a negligible effect on the operation, maintenance, and durability of the stormwater management measure and will not constitute a threat to public safety or the safety of inspection and maintenance personnel.

Sec. 10B-227.16. Inspection and Permitting.

(a) All stormwater management facilities are to be maintained by the individual property owner, or homeowners association in accordance with the approved maintenance plan.

(b) All stormwater management facilities for major developments are required to obtain a Stormwater Maintenance Permit from the Princeton engineering department.

(1) The Annual fee for the Stormwater Maintenance Permit shall be \$50.

(2) The Stormwater Maintenance Permit shall be renewed each year on January 1st.

(3) A detailed inspection and maintenance report shall be submitted annually on January 1st to the Princeton engineering department.

(4) The inspection and maintenance report shall include and not be limited to;

a. Stormwater inlets and manholes.

b. Detention basin out flow structures.

c. Trash racks and overflow grates.

d. Vegetation.

e. Embankment erosion control.

f. Sediment removal and pond maintenance.

g. Mechanical Treatment Devices utilizing filters shall have a record of filter replacement as per the manufacturer's specifications.

Sec. 10B-227.17. Project site stormwater management submission requirements.

(a) When seeking approval of a major development subject to this section, the applicant shall include the following information regarding the proposed stormwater management strategies and measures for the project site in the application for such approval:

(1) Project site stormwater management planning and design summary. This shall contain a description of the stormwater management strategies and nonstructural and structural stormwater management measures included in the proposed development and shall demonstrate how the proposed development meets the requirements set forth in this section.

(2) Existing site conditions base map. This map of the existing project site shall include topography, waterways, roads, structures, and other existing site features pertinent to the development of predeveloped stormwater runoff rates, volumes, and/or hydrographs. The limits of the existing site conditions base map should extend a minimum of two hundred feet beyond the limits of the proposed development site at an appropriate scale and contour interval. The review agency may also require upstream and/or downstream drainage area and conveyance system information as necessary.

(3) Existing site environmental analysis. This analysis shall include both written and graphic descriptions of the natural and man-made features of the existing project site and contiguous areas that influence stormwater runoff to or from the site. These descriptions should include soil conditions, slopes, wetlands, waterways and vegetation on the site. Particular attention should be given to unique, unusual, or environmentally critical areas and to those that provide particular opportunities or constraints for development and/or stormwater management measures.

(4) Project site plans. These plans shall depict at an appropriate scale proposed site topography and the location of existing and proposed buildings, roads, parking areas, utilities, nonstructural and structural stormwater management measures and other proposed development features. The plans shall also clearly show proposed areas of disturbance and where proposed alterations will occur in the natural terrain and land cover.

(5) Stormwater management measure plans. These plans shall include the following information at appropriate scales:

a. 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, land area to remain in natural vegetation, and details of the proposed plan to infiltrate, manage, control and dispose of stormwater.

b. 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.

(6) Stormwater management design computations. These shall include comprehensive hydrologic and hydraulic design computations for pre- and post-developed site conditions and all proposed stormwater management measures necessary for compliance with the requirements of section 10B-227.2.

(7) Project site soils report. This report shall be included when the proposed development includes any proposed stormwater management measures that depend upon

stormwater runoff infiltration to meet the requirements of sections 10B-227.2, 10B-227.13, 10B-227.14, and 10B-227.15. The report shall include a description of the geologic and hydrologic properties of the site soils based on onsite soil tests. The type, number, and location of required soil tests shall be sufficient to determine the suitability of the soils present at the infiltration-based stormwater management measure and to obtain necessary measure design data. The municipality shall be notified in advance of any site soil investigations and provided the opportunity to witness such investigations. Upon approval by the municipal engineer, submission of a complete project site soils report may be deferred until later stages of the application review process provided that the applicant submits a partial report based upon site soil data contained in the Soil Survey of Mercer County and other suitable sources and agrees in writing to submit the complete report upon request by the municipal engineer.

(8) Maintenance plan. This plan shall meet the requirements of section 10B-227.15. Upon approval by the municipal engineer, submission of a complete maintenance plan may be deferred until later stages of the application review process provided that the applicant agrees in writing to address all the requirements of section 10B-227.15 and to submit the complete plan upon request by the municipal engineer.

(b) The review agency may, upon approval by the municipal engineer, modify or waive submission of any of the requirements in section 10B-227.16 when it can be demonstrated that the information requested is:

- (1) Impossible to obtain;
- (2) Would create a significant economic hardship on the applicant; or
- (3) Its absence will not materially affect the review process.

(c) If a stormwater management measure is to be privately owned, documentation shall be submitted in a form acceptable to the municipal attorney of the name and address of the owner if then known or, if not, a statement of the nature of the owning entity such as a homeowners' association.

(d) If public ownership of a stormwater management measure is contemplated, the proposed documentation of such ownership shall be submitted and shall be subject to and accompanied by the approval of such ownership and terms and conditions thereof by the governing body or other public body that is to assume ownership and by the approval of the municipal attorney as to form of the proposed documentation.

Sec. 10B-227.18. Waivers.

Unless otherwise provided herein, any waiver or reduction in the requirements of this section shall not be granted by any review agency without obtaining and considering the advice and recommendation of the municipal flood and stormwater management committee.

Sec. 10B-227.19. Penalties.

Any person who erects, constructs, alters, repairs, converts, maintains, or uses any building, structure or land in violation of this section shall be subject to the penalties described in section 10B-107 of the Land Use Code.

Sec. 10B-227.20. Effective date.

This section shall take effect immediately upon approval by the Mercer County Planning Board or sixty days from the receipt of the ordinance by the planning board if the planning board should fail to act.

Sec. 10B-227.21. Severability.

If the provisions of any section, subsection, paragraph, subdivision, or clause of this section shall be judged invalid by a court of competent jurisdiction, such order of judgment shall not affect or invalidate the remainder of any section, subsection, paragraph, subdivision, or clause of these sections.