

ENVIRONMENTAL PROTECTION

PINELANDS COMMISSION

Pinelands Comprehensive Management Plan

Definitions; Standards for Certification of Municipal Master Plans and Land Use

Ordinances; Minimum Standards for Point and Non-Point Source Discharges

Proposed Amendments: N.J.A.C. 7:50-2.11, 3.39 and 6.84

Authorized By: New Jersey Pinelands Commission, Susan R. Grogan, Acting Executive
Director.

Authority: N.J.S.A. 13:18A-6j.

Calendar Reference: See Summary below for explanation of exception to calendar requirement.

Proposal Number:

A **public hearing** concerning this notice of proposal will be held on:

Wednesday, September 1, 2021, at 9:30 A.M.

Richard J. Sullivan Center

15C Springfield Road

New Lisbon, New Jersey

Submit written comments by regular mail, facsimile, or email by September 17, 2021, to:

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Acting Executive Director

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New Lisbon, NJ 08064

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Email: planning@pinelands.nj.gov or through the Commission's website at

<http://nj.gov/pinelands/home/contact/planning.shtml>

The name and mailing address of the commenter must be submitted with all public comments. Commenters who do not wish their names and affiliations to be published in any notice of adoption subsequently prepared by the Commission should so indicate when they submit their comments.

The agency proposal follows:

Summary

The New Jersey Pinelands Commission (Commission) proposes to amend Subchapter 2, Interpretations and Definitions, Subchapter 3, Certification of County, Municipal, and Federal Installation Plans, and Subchapter 6, Management Programs and Minimum Standards of the Pinelands Comprehensive Management Plan (CMP). The CMP has been guiding land use and development activities in the Pinelands since it took effect on January 14, 1981. The CMP has been amended many times, most recently in December 2020 through a set of amendments related to the Pilot Program for Alternate Design Wastewater Treatment Systems (See 52 N.J.R. 2177(a)).

This proposal is in response to amendments adopted by the New Jersey Department of Environmental Protection (DEP) on October 25, 2019, effective March 2, 2020, to its stormwater management rules at N.J.A.C. 7:8 (referred to as “DEP stormwater rule” or “DEP rule”). In those amendments (see 50 N.J.R. 2375(a)), the DEP replaced the requirement for use of nonstructural stormwater management strategies to the "maximum extent practicable" with a requirement for use of green infrastructure to meet its groundwater recharge, stormwater runoff quantity, and stormwater runoff quality standards. DEP relocated the nonstructural strategies to a different section of its rules (to N.J.A.C 7:8-2.4(g)), so that will now be something municipalities may address in the preparation of their stormwater management plans. Green infrastructure measures or best management practices are intended to mimic natural hydrologic conditions and, thus, typically incorporate infiltration and/or vegetation to a greater extent than traditional stormwater management methods. The DEP also clarified and modified its definition of major development, which defines the scope of projects to which the amended rules apply. Lastly, it amended the stormwater management rule to require total suspended solids (TSS) to be removed from runoff from motor vehicle surfaces and eliminated the TSS removal requirement for runoff from other impervious surfaces not traveled by automobiles, such as rooftops and sidewalks.

The Commission proposes to amend the stormwater management provisions of the CMP at N.J.A.C. 7:50-6.84(a)6 to harmonize them with the amended DEP rule in a manner consistent with the goals of the CMP and recognizing the special resources of the Pinelands that the Commission is charged with protecting. Related, minor changes are also being proposed to the definitions section of the CMP at N.J.A.C. 7:50-2.11 and to the certification requirements for municipal stormwater management plans at N.J.A.C. 7:50-3.39.

The last time the Commission made significant changes to the CMP stormwater management provisions was in 2006, in response to the DEP's 2004 adoption of its stormwater management rule. The Commission conducted an extensive review of the 2004 DEP rule to determine how to mesh the new rule with the CMP in a manner that was most appropriate for the Pinelands. It ultimately decided to adopt Subchapters 5 and 6 of the DEP stormwater rule by incorporating them into the CMP by reference, with modifications to provide additional protections to the resources of the Pinelands. Subchapter 5 of the DEP rule contains design and performance standards for stormwater management measures and Subchapter 6 contains safety standards for stormwater management basins. The modifications adopted by the Commission in 2006 included: a stricter stormwater recharge requirement; a prohibition against discharging stormwater into wetlands and streams; special treatment of stormwater runoff from high pollutant load areas; and an emphasis on soil testing and as-built certifications (See 38 N.J.R. 1829(b)). At the same time, the Commission developed a joint Pinelands-DEP model stormwater control ordinance for adoption by all municipalities located, in whole or in part, in the Pinelands Area.

The Commission has extensively reviewed the DEP's 2020 amendments to its stormwater management rule and has similarly determined that the CMP should continue to incorporate Subchapters 5 and 6 of the DEP rule, as amended. The Commission has also decided to incorporate by reference an additional provision of the DEP rule (N.J.A.C. 7:8-4.6) that addresses municipal variances from the design and performance standards for stormwater management measures.

To protect the resources of the Pinelands beyond what is provided for in the DEP stormwater rule and to further address the impacts of climate change on stormwater runoff, the

Commission is again proposing to adopt additional, more stringent, stormwater management requirements, as discussed in detail below. These changes will strengthen and enhance stormwater management in the Pinelands Area while establishing reasonable requirements for home builders and developers.

The proposed amendments also update, correct, and clarify various provisions of the existing rules.

The proposed amendments were discussed and reviewed at multiple public meetings of the Commission and the Commission's CMP Policy & Implementation Committee in 2020 and 2021. If requested, Commission staff will also provide a presentation on the proposed amendments at a public meeting of the Pinelands Municipal Council (PMC). The PMC, created by the Pinelands Protection Act (N.J.S.A. 13:18A-1 et seq.), is made up of the mayors of the 53 municipalities in the Pinelands Area, or their designees. The Council is empowered to review and comment upon changes to the CMP proposed by the Commission and advises the Commission on matters of interest regarding the Pinelands.

A more detailed description of the proposed amendments follows.

Subchapter 2

The Commission is proposing to add definitions of "HUC-11" or "hydrologic unit code 11" and "HUC-14" or "hydrologic unit code 14" to Subchapter 2, Interpretations and Definitions. The proposed amendments to Subchapter 6 introduce these terms, which are not currently defined in the CMP. HUC-11 and HUC-14 are subwatersheds delineated by the United States Geological Survey.

Subchapter 3

The CMP contains a series of standards that municipal master plans and land use ordinances must meet in order to be certified (approved) by the Commission. N.J.A.C. 7:50-3.39(a). One such standard (N.J.A.C. 7:50-3.39(a)viii) currently requires that Pinelands municipalities establish and implement mitigation plans as part of any municipal stormwater management plan and ordinance adopted for purposes of compliance with DEP's requirements. In these mitigation plans, municipalities can identify potential stormwater mitigation projects for applicants that cannot meet CMP stormwater management requirements on the proposed development site. When a municipality grants a variance from the stormwater management requirements, it requires that the off-site mitigation project be selected from the list in the municipality's stormwater management plan, if such a list is included therein. These off-site mitigation projects could remediate existing stormwater problems or areas with existing impervious surfaces.

The Commission is proposing some minor changes to this certification standard so that it will be consistent with changes being proposed to the stormwater management provisions of the CMP at subchapter 6. The term "exception" is being changed to "variance" throughout N.J.A.C. 7:50-3.39(a)2viii to be consistent with the proposed changes to terms in N.J.A.C. 7:50-6.84(a)6vii (existing N.J.A.C. 7:50-6.84(a)6vi).

The Commission is also proposing to remove language from N.J.A.C. 7:50-3.39(a)2viii(2) that allows a municipality to grant a variance from CMP stormwater management requirements if the municipality determines that stormwater management would more effectively be achieved through alternative measures. This language is vague and not consistent with the

variance requirements in the DEP stormwater management rule at N.J.A.C. 7:8-4.6, which the Commission is proposing to adopt through incorporation.

The Commission is also proposing to remove N.J.A.C. 7:50-3.39(a)2viii(4), which allows a municipality to collect a monetary contribution from a development applicant in lieu of requiring off-site stormwater mitigation measures. N.J.A.C. 7:50-3.39(a)2viii(5), which requires municipal expenditure of any such contributions within five years of their receipt, is also proposed for deletion. The Commission believes these provisions are not necessary as they have never been invoked by a municipality likely because of the administrative and financial burden resulting from this provision.

Subchapter 6

The stormwater management provisions of the CMP at N.J.A.C. 7:50-6.84(a)6 currently incorporate Subchapters 5 and 6 of the DEP stormwater rule, N.J.A.C. 7:8. The Commission is proposing to incorporate an additional provision from the DEP rule, N.J.A.C. 7:8-4.6, “Variance from the design and performance standards for stormwater management measures,” into the CMP, with modifications discussed below. (See discussion on proposed change to the “Exceptions” section at proposed N.J.A.C. 7:50-6.84(a)6vii).

Definitions (new N.J.A.C. 7:50-6.84(a)6i)

Many terms in the DEP stormwater rule are either not defined in the CMP or are defined differently. To avoid confusion over which definitions will apply in the Pinelands Area for stormwater management purposes, the Commission is proposing to add a new provision at N.J.A.C. 7:50-6.84(a)6i. This language clarifies that the DEP definitions at N.J.A.C. 7:8-1.2 are

incorporated into the CMP's stormwater management provisions unless a term is defined differently in the CMP, in which case the CMP definition will apply.

The term "major development" is the most significant example of a term that is defined differently in the CMP and the DEP stormwater rule. Both rules rely upon this term to establish the scope of development projects that are subject to the CMP stormwater management requirements, but each defines it differently.

The CMP defines major development as "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 grading, clearing or disturbance of an area in excess of 5,000 square feet."

N.J.A.C. 7:50-2.11. The DEP stormwater rule defines major development as an "individual development, as well as multiple developments, that individually or collectively result in:

1. The disturbance of one or more acres of land since February 2, 2004;
2. The creation of one-quarter acre or more of "regulated impervious surface" since February 2, 2004;
3. The creation of one-quarter acre or more of "regulated motor vehicle surface" since March 2, 2021; or
4. A combination of 2 and 3 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..." N.J.A.C. 7:8-1.2.

As explained in greater detail below (in the discussion of proposed changes to the "Recharge" section of the CMP), the Commission decided in 2006 to rely upon the CMP definition of major development instead of adopting the DEP definition. The Commission is not

proposing to change this practice, but new N.J.A.C. 7:50-6.84(a)6i will clarify that the CMP definition of terms such as “major development” will be used when the CMP has a different definition than the DEP rule.

All subsequent sections of the CMP stormwater management provisions will be recodified accordingly.

**Runoff rate and volume, runoff quality and groundwater recharge methodologies
(proposed N.J.A.C. 7:50-6.84(a)6ii, existing N.J.A.C. 7:50-6.84(a)6i)**

When the Commission adopted subsections of the DEP stormwater rule into the CMP in 2006, it also added language directly from the DEP rule into some CMP provisions in addition to incorporating those provisions by reference. The Commission is proposing to remove some of this redundant language from the CMP, which is contained in the DEP rule at N.J.A.C. 7:8-5 and 6, as those subsections are already incorporated into the CMP.

Both the DEP rule and the current CMP incorporate by reference publications of the Natural Resource Conservation Service (NRCS) that describe methodologies for the calculation of stormwater runoff. In proposed N.J.A.C. 7:50-6.84(a)6ii(1), (2) and (3), the Commission proposes to delete the details of those methodologies in existing N.J.A.C. 7:50-6.84(a)6i(1),(2), and (3), and simply refer to N.J.A.C. 7:8-5.7, the DEP provision that contains the details. The Commission, however, is proposing one modification to this DEP provision related to calculation methodologies. Specifically, the Commission is codifying its current practice of allowing only the NRCS methodology. Although DEP allows the use of the Rational Method for peak flow or the Modified Rational Method for hydrograph computation described at N.J.A.C. 7:8-5.7(a)1(ii)

and 2, the Commission requires the NRCS methodology, because it is a more conservative methodology and, therefore, more protective of the resources of the Pinelands.

Both the CMP and the DEP rule require applicants to use existing rainfall data published by the National Oceanic and Atmospheric Administration (NOAA) to calculate the volume of stormwater runoff that must be managed. The website addresses that contain this rainfall data have been changed; therefore, updated references are being included at proposed N.J.A.C. 7:50-6.84(a)6ii2.

Runoff requirements (proposed N.J.A.C. 7:50-6.84(a)6iii, existing N.J.A.C. 7:50-6.84(a)6ii)

The Commission is proposing to remove language related to stormwater runoff requirements at proposed N.J.A.C. 7:50-6.84(a)6iii, which is existing N.J.A.C. 7:50-6.84(a)6ii, as these requirements are already contained in the DEP rule at N.J.A.C. 7:8-5.6. The Commission is also proposing to amend the current restrictions in the CMP that prohibits the direct discharge of stormwater runoff to any wetland, wetlands transition area or stream, at existing N.J.A.C. 7:50-6.84(a)6ii(4), which would be recodified as N.J.A.C. 7:50-6.84(a)6iii(1). That same provision also prohibits stormwater runoff from being directed in such a way as to increase the volume and rate of discharge into any surface water body that existed prior to development of the parcel. The Commission has always interpreted this latter restriction to also prohibit such runoff from increasing the volume and rate of discharge into any wetland or wetlands transition area. The Commission is proposing to amend existing N.J.A.C. 7:50-6.84(a)6ii(4), proposed N.J.A.C. 7:50-6.84(a)6iii(1), to clarify that the prohibition extends to wetlands and wetlands transition areas.

The Commission is also proposing to remove language at existing N.J.A.C. 7:50-6.84(a)6ii, recodified as N.J.A.C. 7:50-6.84(a)6iii, that sets forth conditions an applicant must meet to be able to deduct the acreage of any undeveloped portion of a parcel from certain stormwater runoff calculations. The CMP currently allows an undeveloped area of the property to be deducted from the stormwater calculations only if the area has been permanently protected from future development or if the applicant files a deed notice stating that the area will be subject to stormwater management when it is proposed for development. Through practice, the Commission has realized that these conditions are unnecessary, as the stormwater rules would require any land that is not permanently protected to comply with stormwater management requirements once it is proposed for development. As a result, recodified N.J.A.C. 7:50-6.84(a)6iii, will continue to permit an applicant to deduct undeveloped acreage from stormwater runoff calculations. However, the filing of a deed notice on the undeveloped acreage will no longer be required.

Recharge standards (proposed N.J.A.C. 7:50-6.84(a)6iv, existing N.J.A.C. 7:50-6.84(a)6iii)

As explained in greater detail below, the Commission is proposing to expand the scope of development projects that will be required to implement stormwater management measures. These new measures will strengthen protection of Pinelands resources through a reduction in localized flooding and help to maintain water levels within the Kirkwood-Cohansey Aquifer. Like the current CMP, the scope of projects will be based on the CMP definitions of major and minor development.

When the Commission adopted portions of the DEP stormwater rule in 2006, it chose not to adopt the DEP definition of major development at N.J.A.C. 7:8-1.2. This definition establishes

the scope of projects subject to the DEP's stormwater management requirements. The CMP definitions of major and minor development are the foundation for requirements throughout the CMP and the Commission concluded that adopting a set of definitions applicable only to stormwater management could cause confusion and create inconsistencies for the regulated community in the Pinelands.

For the same reasons, the Commission has again decided to use the CMP definitions of major and minor development for purposes of stormwater management. Although the CMP will continue to incorporate many of the DEP's stormwater management standards, the scope of projects subject to those standards (as well as additional Pinelands-specific standards in the CMP) will continue to be based on the CMP definitions of minor and major development, and not the DEP definition of major development.

While the DEP stormwater rule does not define or use the term minor development, the CMP uses both its definitions of minor and major development to help establish the scope of projects required to comply with stormwater management. The CMP defines major development as "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 grading, clearing or disturbance of an area in excess of 5,000 square feet." The construction of four or fewer dwelling units is deemed minor residential development under the CMP. The construction or expansion of any commercial or industrial use or structure on a site less than three acres or any grading, clearing or disturbance of an area less than 5,000 square feet is deemed minor nonresidential development. N.J.A.C. 7:50-2.11.

Minor residential development (N.J.A.C. 7:50-6.84(a)6iv(2))

To reduce the impact of stormwater runoff from minor residential development in the Pinelands Area, the Commission is proposing to require all minor residential development to comply with a limited stormwater management requirement. Currently, minor residential development in the Pinelands is not required to implement any stormwater management measures unless the development involves the construction of new roads. N.J.A.C. 7:50-2.11; 6.84(a)6vi(1).

The Commission analyzed recent residential development trends in the Pinelands Area to determine how much development was subject to the CMP's stormwater management requirements. It found that the overwhelming number of residential development applications completed with the Commission over the last 11 years were for minor development. Of 817 applications completed, 767 were for minor residential development (one to four units) and 50 were for major development (more than 5 units). Because most minor residential development does not include the construction of roads, most of the 767 developments were not required to implement any stormwater management measures under the existing CMP stormwater rule.

Based on this analysis, the Commission is proposing that all minor residential development be required to retain and infiltrate stormwater runoff solely from the roof(s) of the new dwelling(s). Expanding stormwater management to minor residential development in this manner will further reduce the volume of stormwater runoff and thereby reduce the potential for localized flooding. Redirecting rooftop runoff to green infrastructure measures that provide infiltration and groundwater recharge will help maintain water levels in the Kirkwood-Cohansey Aquifer. The minor residential development requirements are being added to the "recharge" section of the rule at proposed N.J.A.C. 7:50-6.84(a)6iv(2) and the exemption for minor

residential development is being removed from existing N.J.A.C. 7:50-6.84(a)6vi(1), proposed N.J.A.C. 7:50-6.84(a)6vii.

Minor residential development would be required to retain and infiltrate the stormwater volume generated on the roof(s) of the dwelling(s) through one or more green infrastructure best management practices including, but not limited to: dry wells, pervious pavement systems, or small scale bioretention systems, such as a rain garden. See proposed N.J.A.C. 7:50-6.84(a)6iv(2)A.

The calculation of stormwater runoff volume will be based on the area of the roof and the 10-year storm. N.J.A.C. 7:50-6.84(a)6iv(2). A key difference between the stormwater management requirements for minor and major residential development is that major development will have to retain and infiltrate stormwater runoff generated from the net increase in all impervious surfaces, whereas minor residential development will only have to retain and infiltrate stormwater runoff generated from the roof(s) of the dwelling(s).

There may be limited situations where a project could be deemed minor residential development under the CMP and major development under the DEP stormwater rule. In those situations, the CMP will prevail and the stormwater standards for minor residential development will apply. For example, a two-lot subdivision in a Pinelands Rural Development Area, with one house proposed for development on each lot, would be deemed minor development under the CMP but could be deemed major development under the DEP stormwater rule, if it resulted in disturbance of more than one acre of land. Similarly, a single-family dwelling in a Pinelands Forest Area would also qualify as minor residential development under the CMP but could be defined as major development under the DEP rule, if the CMP's 200 foot scenic setback requirement necessitated the clearing of an acre of land to accommodate a driveway or other

improvements. In both of these examples, the development would be defined as minor residential under the CMP and be subject to the stormwater recharge standards at proposed N.J.A.C. 7:50-6.84(a)6iv(2). In most cases, the proposed changes to the CMP will result in a much larger amount of stormwater being retained and infiltrated than the DEP stormwater rule requires.

Minor non-residential development (N.J.A.C. 7:50-6.84(a)6iv(3)(A))

The Commission is also proposing to expand the stormwater management requirements for minor non-residential development. The CMP defines minor non-residential development as the construction or expansion of any commercial or industrial use or structure on a site less than three acres or any grading, clearing or disturbance of an area less than 5,000 square feet (See N.J.A.C. 7:50-2.11). Such development is not required to comply with the current CMP's stormwater management requirements unless the cumulative development over a five-year period results in the grading, clearing or disturbance of an area greater than 5,000 square feet. N.J.A.C. 7:50-6.84(a)6vi(1).

In deciding whether to extend stormwater management to minor non-residential development, the Commission concluded that the chemicals originating from motor vehicles, even in small areas such as individual parking spaces, justify a requirement to capture and remove those pollutants before they enter the groundwater table. Proposed N.J.A.C. 7:50-6.84(a)6iv(3)(A) will require onsite infiltration of stormwater runoff from new motor vehicle surfaces in compliance with the DEP stormwater runoff quality standards contained in N.J.A.C. 7:8-5.5, for any minor non-residential development that results in an increase of 1,000 square feet or more of regulated motor vehicle surface, as defined at N.J.A.C. 7:8-1.2. Only the stormwater generated on these surfaces will be required to be recharged onsite.

The Commission is requiring infiltration of a smaller volume of water from these motor vehicle surfaces than is currently required for major development in the Pinelands Area and smaller than is being proposed for minor residential development. Instead of requiring the stormwater runoff volume to be based on the 10-year storm, the volume of stormwater runoff generated from regulated motor vehicle surfaces of minor non-residential development will be based on the smaller “water quality design storm,” which is 1.25 inches of rain over a 24-hour period. This smaller volume requirement is sufficient because most pollutants from motor vehicles get carried away in the first inch of rainfall, often referred to as the “first flush”. By infiltrating the volume of stormwater runoff from that first inch of rainfall, many of the pollutants will be filtered out before mixing with groundwater.

In order to understand how many applications would likely be affected by the proposed extension of stormwater management requirements to certain minor nonresidential development, a review of past application activity was conducted. The Commission found that only 455 or 36 percent of the nonresidential development applications completed with the Commission over the last 11 years were required to manage stormwater in accordance with the CMP’s stormwater management standards. The remainder (800 completed applications) did not qualify as major development and therefore were not required to manage stormwater. These 800 minor nonresidential applications were for a broad range of development types, many of which (small building additions, building demolitions, irrigation wells and hiking trails) would likely not be impacted by the proposed requirement to infiltrate stormwater runoff from new regulated motor vehicle surfaces. Depending on their size and extent, minor nonresidential applications for road widening or the expansion of parking lots could be affected by the new standard; however, it was

not possible to identify the exact number of prior applications that fit into this category without a more detailed review of site plans and other application materials.

The requirements for minor non-residential development will be added to the Recharge section at proposed N.J.A.C. 7:50-6.84(a)6iv(3) and the exemption for minor non-residential development will be removed from existing N.J.A.C. 7:50-6.84(a)6vi(1).

The CMP will continue to require that minor nonresidential development involving the grading, clearing or disturbance of an area in excess of 5,000 square feet within any five-year period be required to comply with the CMP stormwater management standards for major development. The Commission is proposing to recodify that requirement from N.J.A.C. 7:50-6.84(a)6vi(1) to N.J.A.C. 7:50-6.84(a)6iv(3)(B).

Application requirements for minor development (N.J.A.C. 7:50-6.84(a)6iv(4))

The application requirements for all minor development will be included in a new provision at N.J.A.C. 7:50-6.84(a)6iv(4). An applicant will be required to submit a plan, certified by a design engineer, showing detailed information and drawings of each green infrastructure stormwater management measure, in addition to soil profiles, soil permeability test elevation, soil permeability rate, and the elevation of and vertical separation to the seasonal high water table. An applicant will also have to submit the design engineer's certification that the infiltrated stormwater will not adversely impact basements or septic systems of the proposed development.

Stormwater runoff from high pollutant loading areas (HPLA) (proposed N.J.A.C. 7:50-6.84(a)6iv(5), existing N.J.A.C. 7:50-6.84(a)6iii(2))

The Commission is proposing to clarify the CMP provision regarding treatment of stormwater runoff from high pollutant loading areas (HPLA) at proposed N.J.A.C. 7:50-6.84(a)6iv(5), existing N.J.A.C. 7:50-6.84(a)6iii(2). The HPLA requirements were added to the CMP in 2006 to address DEP's prohibition against the direct discharge of stormwater runoff from HPLAs to groundwater recharge systems. The only permissible option for stormwater runoff under the DEP rule would be discharge from HPLAs into surface waterbodies, such as wetlands and streams, which has long been prohibited in the CMP, for stormwater from all areas, not just HPLAs. To resolve this issue, the Commission began requiring applicants to remove 90 percent of the major pollutant load, also referred to as total suspended solids (TSS), from stormwater runoff from HPLAs before the runoff enters an infiltration basin (groundwater recharge system). This was agreed to by DEP and codified in existing N.J.A.C. 7:50-6.84(a)6iii(2)(C) in 2006.

This provision, however, inadvertently implies that the 90 percent TSS removal be attained before the stormwater runoff enters an infiltration basin. Despite how the provision was drafted, the Commission had always intended to allow the infiltration basin to serve as one of the devices used to achieve the 90 percent removal standard, as an infiltration basin itself can remove up to 80 percent of TSS. To correct this, the Commission is proposing to amend the TSS removal language at proposed N.J.A.C. 7:50-6.84(a)6iv(5), existing N.J.A.C. 7:50-6.84(a)6iii(2), to clarify that 90 percent TSS removal can be achieved by routing stormwater runoff through one or more stormwater management measures, in series, which could include the infiltration basin itself. A key element of this proposed revision is removing references to "pretreatment" of the stormwater runoff, as pretreatment implies that 90 percent TSS removal has to occur prior to the runoff entering an infiltration basin.

This provision also currently mandates that applicants use specific types of devices to achieve 90 percent TSS removal. The Commission believes applicants should have more flexibility in how to achieve that removal standard. It is proposing to remove references to specific stormwater management devices and require only that applicants use stormwater management measures that are: (1) designed to remove TSS in accordance with the New Jersey Stormwater Best Practices Manual or (2) certified by DEP. Proposed N.J.A.C. 7:50-6.84(a)6iv(5)(C)(I) and (II), existing N.J.A.C. 7:50-6.84(a)6iii(2)(C)(I)-(V).

Nitrogen removal (proposed N.J.A.C. 7:50-6.84(a)6iv(6))

The Commission is also proposing to add a quantitative nitrogen removal standard for major development at N.J.A.C. 7:50-6.84(a)6iv(6). This provision will require all major development to implement stormwater management measures designed to achieve a minimum of 65 percent reduction of the post-construction nitrogen load from the developed site from stormwater runoff generated from the water quality design storm. A “developed site” includes permanent lawn or turf areas that are specifically intended for active human use, as nitrogen fertilizer applied to managed turf has long been identified as a significant source of nitrogen in stormwater in New Jersey, and in the Pinelands specifically. Original New Jersey Pinelands Comprehensive Management Plan (November 1981); New Jersey Stormwater Best Management Practices Manual, Chapter 4 (Feb. 2004).

The original New Jersey Pinelands Comprehensive Management Plan, effective January 14, 1981, recognized that the ecosystem of the Pinelands cannot accept elevated concentrations of nitrogen without risk of irreparable harm. Elevated nitrogen levels in the sandy soils, surface waters and shallow groundwater of the Pinelands can provide the opportunity for invasive plant

and animal species to out-compete and displace native biota that is adapted to naturally low levels of these nutrients. Moreover, elevated nitrogen levels can reduce berry production in blueberry crops. Original New Jersey Pinelands Comprehensive Management Plan (November 1981).

Since its inception, the Commission has sought to control the release of nitrogen in the Pinelands. This fundamental concern is reflected throughout the CMP, which itself states that the CMP's water quality requirements include "provisions that are aimed at controlling the amount of nitrogen that enters the environment both because nitrogen in itself is a significant pollutant, but also because it often serves as an indicator of changes in overall water quality." N.J.A.C. 7:50-10.21(b). An example is the CMP's onsite wastewater treatment system requirements, which are intended to reduce nitrogen loading where development densities preclude sufficient nitrogen dilution in groundwater. N.J.A.C. 7:50-6, Appendix A and 10.21

The Commission has chosen to impose a stricter nitrogen removal requirement than DEP, because it believes that DEP's nitrogen removal standard (removal to the "maximum extent feasible") will not sufficiently protect Pinelands resources. See N.J.A.C. 7:8-5.5(f). The Commission's decision to require 65 percent nitrogen removal from stormwater runoff in the CMP is consistent with its long history of controlling nitrogen to protect the ecosystem.

The proposed standard is attainable by combining two different best management practices in series. The New Jersey Stormwater Best Management Practices Manual (BMP Manual) provides a method to calculate total nitrogen removal rates achieved when BMPs are used in series. For example, based on the calculation method in the BMP Manual, stormwater routed through a vegetated swale and then discharged to an infiltration basin could achieve 65 percent removal of nitrogen.

Stormwater management measure design, siting and construction standards (proposed N.J.A.C. 7:50-6.84(a)6v, existing N.J.A.C. 7:50-6.84(a)6iv)

The Commission is proposing to update terminology at proposed N.J.A.C. 7:50-6.84(a)6v and vi, existing N.J.A.C. 7:50-6.84(a)6iv and v, by substituting the term “stormwater management measure” for “infiltration basin,” as an infiltration basin is now considered only one of several types of available stormwater management measures. The proposed amendments also clarify that the groundwater mounding analysis required in proposed N.J.A.C. 7:50-6.84(a)6v(3), existing N.J.A.C. 7:50-6.84(a)6iv(3), would apply only to major development. Minor changes are also being proposed at N.J.A.C. 7:50-6.84(a)6v(6), existing N.J.A.C. 7:50-6.84(a)6iv(5), to maintain consistent use of terminology.

The standards contained in proposed N.J.A.C. 7:50-6.84(a)6v(4), existing N.J.A.C. 7:50-6.84(a)6iv(4), will be clarified and reorganized by removing the following requirements: 1) limit site disturbance, as that is already addressed in the CMP at N.J.A.C. 7:50-6.23; 2) maximize stormwater management efficiencies, as the standard is vague and the CMP already requires stormwater management measures to be designed and maintained in accordance with the BMP Manual; and 3) maintain aesthetic conditions, as the standard is too subjective and the CMP already contains landscaping standards at N.J.A.C. 7:50-6.24 and 6.26

Consistent with DEP’s new stormwater rule, the Commission is proposing to require stormwater management measures that are smaller in size and distributed spatially throughout a parcel, rather than a single, larger measure. The CMP currently requires applicants to achieve this goal “to the maximum extent practical” at N.J.A.C. 7:50-6.84(a)6iv(4). This requirement will become mandatory by removing the language “to the maximum extent practical” at N.J.A.C.

7:50-6.84(a)6v(4). Further, by limiting the contributory drainage area to defined maximum acreages, the new rules eliminate the subjective nature of the prior maximum extent practical standard.

The stormwater pretreatment requirement, which is grouped together with other requirements at N.J.A.C. 7:50-6.84(a)6iv(4), will become a separate requirement at N.J.A.C. 7:50-6.84(a)6v(5). To address some confusion about whether this standard requires treatment of stormwater runoff prior to the runoff entering an infiltration basin, the Commission is proposing to reword it to more succinctly to require that methods of treating stormwater prior to entering any stormwater management measure are to be incorporated into the design of the measure to the maximum extent practical.

The Commission is also proposing to add a requirement that dry wells be designed to prevent access by amphibians and reptiles, as they become trapped in the dry wells.

As-built requirements (proposed N.J.A.C. 7:50-6.84(a)6vi, existing N.J.A.C. 7:50-6.84(a)6v)

The CMP at N.J.A.C. 7:50-6.84(a)6v requires testing of stormwater management measures after all construction has been completed to ensure that the measures are performing as designed. Amendments to the post-construction requirements at proposed N.J.A.C. 7:50-6.84(a)6vi would clarify that the requirements apply only to major development. The Commission is also proposing minor changes at N.J.A.C. 7:50-6.84(a)6vi, existing N.J.A.C. 7:50-6.84(a)6v, to clarify that the test results required under this provision are to be reviewed either by a municipal engineer or other appropriate reviewing engineer in recognition of the fact that some development is proposed by county or State entities and therefore is not subject to municipal review and approval. The term “field permeability testing” is being shortened to

“permeability testing” to acknowledge that some permeability testing is done in a lab and not in the field. Other non-substantive language changes are being proposed at N.J.A.C. 7:50-6.84(a)6vi, existing N.J.A.C. 7:50-6.84(a)6v.

Exceptions (proposed N.J.A.C. 7:50-6.84(a)6vii, existing N.J.A.C. 7:50-6.84(a)6vi)

The CMP currently allows for waivers and exceptions to be granted if an applicant for a private or public development project demonstrates that it cannot meet the CMP stormwater management standards on the site of the proposed development. (See N.J.A.C. 7:50-6.84(a)6vi(3) and (4)). The Commission is proposing to add more detail and clarity to this section, as described below, in order to strengthen off-site mitigation requirements.

Municipal variances from stormwater management requirements for private development

The Commission is proposing to clarify the circumstances under which Pinelands municipalities can grant variances from the CMP’s stormwater management requirements.

Currently, a Pinelands municipality can grant a variance (currently called a “waiver”) for a private, major development application in the Pinelands Area that cannot meet CMP stormwater management requirements on the parcel proposed for development. (See N.J.A.C. 7:50-6.84(a)6vi(3)). Municipalities will continue to have the discretion to grant such variances, but the proposed amendments at N.J.A.C. 7:50-6.84(a)6vii(1) will now incorporate the municipal variance provision of the DEP stormwater rule at N.J.A.C. 7:8-4.6, with modifications specific to the Pinelands Area.

The municipal variance provisions of the DEP rule were not incorporated in the CMP by the Commission in 2006. However, the DEP rule, as amended in 2020, now includes more

detailed off-site mitigation requirements that, with some modifications, the Commission believes will adequately protect environmental resources in the Pinelands.

Incorporation of N.J.A.C. 7:8-4.6 into the CMP at proposed N.J.A.C. 7:50-6.84(a)6vii(1), would provide municipalities the authority to grant variances from the following stormwater management standards: 1) on-site design and performance standards for green infrastructure; 2) groundwater recharge; and 3) stormwater runoff quality standards. Municipalities will also be able to grant variances from the CMP's on-site recharge standards at proposed N.J.A.C. 7:50-6.84(a)6iv.

To further protect the resources of the Pinelands, the Commission is proposing to modify DEP's variance standards. Proposed N.J.A.C. 7:50-6.84(a)6vii(1)(A) will require that all mitigation projects approved by variance be located in the Pinelands Area and within either the same HUC-14 or HUC-11 watershed as the parcel proposed for development. The DEP variance provisions at N.J.A.C. 7:8-4.6 require mitigation projects to be located in the same HUC-14 watershed. However, it may not always be feasible to find a mitigation site that is in both the Pinelands Area and the same HUC-14. Some HUC-14 watersheds extend beyond the boundary of the Pinelands Area and contain very little land in the Pinelands Area. If an applicant can demonstrate that there are no available locations for off-site mitigation within that portion of the HUC-14 in the Pinelands Area, the Commission is proposing to allow a mitigation project to be identified in the next largest watershed, the HUC-11. If a mitigation project is proposed for the HUC-11, rather than the HUC-14, it must still be located within the Pinelands Area.

The CMP currently requires that any proposed mitigation project be consistent with the municipal stormwater management plan certified by the Commission pursuant to N.J.A.C. 7:50-

3, unless that plan does not identify appropriate parcels or projects where mitigation may occur. This provision will remain unchanged but will be recodified as N.J.A.C. 7:50-6.84(a)6vii(1)(B).

The Commission is also proposing at N.J.A.C. 7:50-6.84(a)6vii(5)(C), to require that the total volume of stormwater infiltrated off-site as part of a mitigation project approved by a municipality equal or exceed the on-site volume required by the CMP at proposed N.J.A.C. 7:50-6.84(a)6iv.

Exceptions from stormwater requirements for public development projects

The Commission is proposing to clarify and strengthen the off-site mitigation requirements for public development projects at proposed N.J.A.C. 7:50-6.84(a)6vii(2). It has decided not to adopt the DEP provisions for waivers and exemptions for public development projects at N.J.A.C. 7:50-5, as the DEP rule imposes less stringent requirements on public linear projects, such as roads, for off-site mitigation and provides a blanket exemption from implementing stormwater management measures for utility lines, including pipelines, with no requirement for off-site mitigation.

In addition to the DEP provisions being less stringent than the current CMP off-site mitigation requirements for stormwater management, they are also fundamentally inconsistent with the way the Commission has traditionally addressed public development in the Pinelands Area that cannot meet other standards in the CMP. Such development must either seek a Waiver of Strict Compliance to relieve an extraordinary hardship or satisfy a compelling public need or seek a Memorandum of Agreement (MOA) with the Commission that provides for a deviation from CMP standards. N.J.A.C. 7:50-4:61-4.70 and 4.52(c)2. In either case, waiver or MOA, offsetting measures are required to ensure the protection of Pinelands resources. These offsetting

measures often take the form of land preservation or redemption of Pinelands Development Credits.

To maintain consistency in the treatment of public development projects throughout the CMP, the Commission is proposing that off-site mitigation continue to be required whenever the Commission grants relief from CMP stormwater standards for a public development application. To provide stronger protection of Pinelands environmental resources, the Commission is proposing, at N.J.A.C. 7:50-6.84(a)6vii(2), to strengthen the off-site mitigation requirements by requiring that public development projects meet the same conditions and requirements that private development projects are required to meet to receive a municipal variance from stormwater management standards. This provision would apply to both linear projects, such as a roadway and utility lines, and nonlinear projects, such as a parking lot for a public school.

It should be noted that only a handful of applicants have applied for exceptions, which going forward will be called variances, since the CMP was amended in 2006 to allow for them. Most of these exception applications were for road and sidewalk widening projects that could not meet stormwater management requirements because the projects traversed freshwater wetlands. The Commission required offsetting measures to mitigate the effects of the projects. For example, the applicant for one road widening project was required to offset the proposed increase in impervious surfaces and changes in rates of runoff by removing an area of existing pavement that was located in the same drainage area as the proposed improvements.

Another public development project involved the construction of a commuter parking lot across from a train station on the site of a previous soil remediation project. Stormwater management measures could not meet the depth to seasonal high or permeability rate standards of the CMP. The Commission required the applicant to offset the increase in impervious surfaces

by removing sections of existing pavement from two nearby roads that were located within the same drainage area as the commuter parking lot. The applicant also was required to install a manufactured treatment device (MTD) to treat stormwater from the parking lot prior to the stormwater entering the existing stormwater conveyance infrastructure.

The Commission's standards for exceptions and mitigation will continue to be more stringent than those applicable in the rest of the State in order to provide additional protection for the resources of the Pinelands and remain consistent with long-standing Commission policy.

Other changes to "Exceptions" provision

The provision that prohibits the application of any provision in DEP's stormwater rule that allows for exemptions and waivers from the stormwater standards, unless explicitly allowed in the CMP, will be recodified as N.J.A.C. 7:50-6.84(a)6vii(3).

The Commission is also proposing to add a provision at N.J.A.C. 7:50-6.84(a)6vii(4) to explicitly ban the granting of variances or exceptions from the CMP's prohibition against discharging stormwater runoff into wetlands and streams.

Maintenance Standards (proposed N.J.A.C. 7:50-6.84(a)6viii, existing N.J.A.C. 7:50-6.84(a)6vii)

The Commission is proposing to clarify that the CMP's existing stormwater maintenance standards, now at N.J.A.C. 7:50-6.84(a)6viii, apply only to major development. Minor, non-substantive language changes are also proposed at N.J.A.C. 7:50-6.84(a)6viii(1)(A), existing N.J.A.C. 7:50-6.84(a)6vii(1), to clarify that maintenance plans for major development are required pursuant to the DEP rule and must be supplement in accordance with the CMP.

The Commission is also proposing to add maintenance standards for minor development at N.J.A.C. 7:50-6.84(a)6viii(2), which are less stringent than for major development. Specifically, for minor development, a maintenance plan will be required in accordance with N.J.A.C. 7:50-6.84(a)6viii(2)(A). Such a maintenance plan must include a copy of the stormwater plan required pursuant to N.J.A.C. 7:50-6.84(a)6iv(4) and a description of all required maintenance activities and the frequency of such maintenance activities. Proposed N.J.A.C. 7:50-6.84(a)6viii(2)(B) is being added to permit the assignment or transfer of stormwater maintenance responsibilities to the owner or tenant of the parcel that is the subject of the minor development application.

New Jersey Stormwater Best Practices Manual (proposed N.J.A.C. 7:50-6.84(a)6ix, existing N.J.A.C. 7:50-6.84(a)6viii)

Minor, non-substantive changes are being proposed at N.J.A.C. 7:50-6.84(a)6ix (existing N.J.A.C. 7:50-6.84(a)6viii)).

As the Commission has provided a 60-day comment period on this notice of proposal, this notice is excepted from the rulemaking requirement at N.J.A.C. 1:30-3.3(a)5.

Social Impact

By continuing to incorporate key provisions of the DEP's recently amended stormwater management rule, while retaining and adding more stringent measures to further protect the resources of the Pinelands, the Commission anticipates this rulemaking will have a positive

social impact in the Pinelands Area. Protection of resources in the Pinelands benefits society within the Pinelands and in the surrounding areas.

The social benefits from the DEP's amended stormwater management rule are described in detail in its 2019 rule proposal at 50 N.J.R. 2375(a) and include reducing flooding potential, improving water quality, increasing groundwater recharge, protecting stream channel integrity, reducing erosion, maintaining the adequacy of bridges and culverts, improving air quality, reducing heat island effect, and decreasing energy use. Through incorporation of key provisions of DEP's rule, these benefits will extend to the Pinelands Area.

In addition to the benefits listed above, the Commission's modifications to the DEP's stormwater requirements will have an even greater positive social impact in the Pinelands Area, as the modifications will provide enhanced protection of Pinelands resources. Requiring stormwater management for minor residential and nonresidential development will result in the infiltration of more stormwater, removal of more pollutants from stormwater runoff prior to its entering groundwater, maintenance of the water levels of the vital Kirkwood-Cohansey Aquifer, and the further reduction of localized flooding in the Pinelands.

The Commission's more stringent nitrogen removal requirement will also have a positive social impact, as the unique ecology of the Pinelands Area is especially sensitive to nitrogen. Fertilizer on lawn and turf has been identified as the largest source of nitrogen pollution in the State and the Commission's quantitative nitrogen removal requirement will extend to newly developed permanent lawn and turf areas. This is expected to result in greater nitrogen removal from the stormwater flowing from these areas.

The stricter conditions for off-site mitigation will also provide additional protections of Pinelands resources by ensuring that all mitigation for private or public development be required

to offset the effects of stormwater runoff from the proposed development within the same watershed and that the offsets occur within the Pinelands Area.

To be granted an exception from meeting stormwater requirements on-site, a public project will have to meet the same conditions and be subject to the same standards as a private development that cannot meet the stormwater requirements onsite. This standard for granting an exception is more stringent than DEP's waiver and exemption standards for public linear projects. This provides greater protection for the resources of the Pinelands. It is also consistent with how the Commission handles public development projects in other CMP provisions.

Each of the stricter stormwater management measures being proposed by the Commission will result in societal benefits by affording enhanced protection of the resources in the Pinelands.

Economic Impact

The Commission's proposal is expected to have little to no economic impact and in some areas, a positive impact. The DEP summarized the economic impact of its amended stormwater rule at 50 N.J.R. 2375(a). This statement addresses only those economic impacts of the modifications to the DEP rule that the Commission is proposing in the CMP, as well as some additional proposed changes to the CMP's stormwater provisions.

The following parties may be economically affected by the proposed amendments to the CMP: land developers, suppliers of green infrastructure components (such as plants, pervious pavement, bioretention soil mixes), property owners, applicants, and review agencies.

Land developers

The Commission does not expect that its proposed green infrastructure requirement for minor residential development will significantly affect the cost of a development project. Developers will be required only to retain and infiltrate stormwater runoff generated from the roof(s) of the dwellings, which in most cases will be a much smaller total volume than that which is required for major development. Developers will likely have to install only one or possibly two green infrastructure best management practices (BMPs), such as a rain garden and/or dry well(s) to infiltrate stormwater runoff from the roof(s) of the dwelling(s). Green infrastructure BMPs should not add any significant cost to the development project. For example, rain gardens can be installed in lieu of more conventional landscape plantings, providing similar esthetic benefits and additional environmental benefits. In addition to replenishing groundwater, properly located drywells can also direct roof runoff away from residences, preventing costly damage from moisture and seepage into basements.

The proposed requirements for stormwater management by minor nonresidential projects are also not expected to result in a significant cost increase. If a minor nonresidential development involves more than 1,000 square feet of impervious surface used by motor vehicles, the developer will be required to infiltrate the stormwater runoff from only those new impervious surfaces, with measures designed to reduce the post-construction load of total suspended solids (TSS) in the runoff generated from the water quality design storm. A green infrastructure BMP required to infiltrate the water quality design storm is relatively small, about one-fourth the size of an infiltration BMP designed to infiltrate the runoff volume from the larger 10-year, 24 hour storm.

Applicants for both minor residential and non-residential development will be required to conduct soil tests and submit plans certified by a design engineer as part of the application

process, and a maintenance plan, which will result in additional new costs. These additional costs may be partially offset by having the engineer perform the tests in conjunction with soil testing performed for an onsite septic system and/or testing performed to identify the distance between the seasonal high-water table and the basement floor. Because proper design and operation of an infiltration BMP such as a rain garden, a dry well or an infiltration basin is highly dependent on a thorough evaluation of site specific soil and groundwater conditions, the evaluation of the site by a licensed professional engineer is considered essential.

In its 2019 rule proposal at 50 N.J.R. 2375(a), the DEP cited United States Environmental Protection Agency (USEPA) research showing that, for the majority of 17 case studies, low impact development, which includes the use of green infrastructure BMPs, such as bioretention systems, grass swales, and pervious paving systems, resulted in reduced overall costs (15 to 80 percent) when compared to conventional designs, which include underground vaults, manufactured treatment devices, curbs, and gutters (USEPA, 2007). In only a few cases were the initial low impact development costs higher than those for conventional designs. The research also showed that in all cases, the use of low impact development resulted in reduced volumes and pollutant loadings, as well as non-monetized benefits such as improved aesthetics, expanded recreational opportunities, and increased property values (USEPA, 2007). Additional information on costs associated with green infrastructure can be found at DEP's rule proposal at 50 N.J.R. 2375(a).

The proposed amendments to the requirement that developers remove 90 percent of TSS from stormwater runoff in high pollutant load areas (HPLA) are intended to clarify the intent of the existing CMP rule language at N.J.A.C 7:50-6.84(a)6iii(2)(C). The CMP currently implies that stormwater runoff from HPLA must be pretreated to achieve the 90 percent TSS removal

prior to infiltration. The amendment will clarify that the requirement can be met by routing stormwater runoff through one or more stormwater management measures, which could include a bioretention system alone or an infiltration basin as the last BMP in the treatment train. Importantly, the 90 percent TSS removal would not need to be attained prior to infiltration but can instead be met through infiltration. This will significantly reduce costs associated with installation of stormwater management measures. For example, a gas station could use an infiltration basin to help meet the 90 percent TSS removal requirement and might not need to use multiple TSS removal BMPs before the stormwater enters an infiltration basin, as the CMP currently implies.

Providing more flexibility to developers in how they meet the 90 percent TSS removal requirement can also reduce costs. Whereas the CMP currently identifies specific types of green infrastructure BMPs that must be used to meet the 90 percent TSS reduction requirement, the proposed changes will give a developer greater latitude on which BMPs it can use, potentially reducing costs.

Likewise, the proposed clarification that developers are required only to treat stormwater runoff prior to entering infiltration basins to the maximum extent practical could reduce costs to developers.

There are no anticipated increased costs to developers who seek municipal variances or exceptions from the onsite stormwater management requirements under the proposed changes to the CMP.

Suppliers of Green Infrastructure Inputs

With the extension of stormwater management requirements to minor development in the Pinelands Area, the Commission expects a positive economic impact to the local providers of select fill soils, native plants, and other materials related to the construction of green infrastructure -- beyond the positive economic impact already anticipated based on the expanded requirements for green infrastructure for major development.

Property Owners

Property owners who are also the land developers of minor development projects will incur the same costs associated with installation of green infrastructure as would land developers.

Property owners who acquire parcels of land that were created as part of a minor development project will incur modest, additional costs associated with maintaining the required stormwater management measures. As the DEP explained in its 2019 rule proposal at 50 N.J.R. 2375(a), green infrastructure maintenance is equal to or lower than the maintenance cost of conventional stormwater management measures. The Commission is proposing modified stormwater management for minor development that will necessitate a few small structures. For example, it is unlikely that a minor residential development will require a large retention basin, which would be more costly to construct and maintain. Likewise, green infrastructure BMPs can be used to meet the stormwater management requirements for minor nonresidential development and for reduction in total suspended solids from high pollutant loading areas.

As DEP reported in its rule proposal at 50 N.J.R. 2375(a), green infrastructure has direct and indirect economic and social benefits that may increase the value of properties containing, or in the vicinity of, green infrastructure over those containing or near conventional stormwater management BMPs.

Applicants and Review Agencies

The proposed stormwater management requirements for minor development may result in increased costs for municipalities and local review agencies who will be required to review the stormwater plans associated with such development applications. However, the specific and objective green infrastructure requirements and design details in the DEP's Stormwater BMP Manual will provide clear direction to both designers and reviewers of stormwater management design plans.

The Commission does not expect municipalities to incur any additional costs associated with the proposed standards for granting variances from the onsite stormwater management requirements. The CMP currently authorizes municipalities to grant such variances and the proposed changes provide additional guidance and specificity to municipalities in reviewing variance applications.

As DEP explained in its rule proposal at 50 N.J.R. 2375(a), most review agencies are municipalities who own and operate a municipal separate storm sewer system. Because green infrastructure reduces the volume of stormwater through infiltration, evapotranspiration, or reuse, downstream storm sewer systems will receive less stormwater volume from sites managed with green infrastructure than sites managed with conventional stormwater facilities. As a result, review agencies may see less additional expenditures related to stormwater management due to a reduction in stormwater volume leaving private development sites and entering the municipal storm sewer system.

Finally, Pinelands municipalities will also incur costs because of the need to revise their stormwater management plans and stormwater control ordinances to conform with the proposed amendments, once adopted. The Commission will continue with its normal practice of drafting

and providing model ordinances for municipalities to consider, thereby offsetting some of these costs. While the adoption of master plan and ordinance amendments represents a cost to municipalities, it is expected to be nominal.

Environmental Impact

The Commission anticipates that the proposed stormwater management amendments will have significant environmental benefits. The amendments are expected to minimize impacts of increased stormwater runoff due to climate change and result in enhanced protection of the Pinelands Area. Specifically, they will result in the infiltration of more stormwater, removal of more pollutants from stormwater runoff prior to entering groundwater, maintenance of water levels of the Kirkwood-Cohansey Aquifer, and the further reduction of localized flooding in the Pinelands.

By incorporating key provisions of the DEP rule into the CMP and by modifying many of those provisions to impose additional and more stringent requirements, the environmental benefits described by DEP at 50 N.J.R. 2375(a) will be even greater in the Pinelands Area.

Requiring stormwater management for the runoff from the roofs of minor residential development will result in the infiltration of a much greater amount of stormwater. As discussed in the summary above, the vast majority of completed applications for residential development in the Pinelands Area over the past 11 years were for minor development. Those developments were required to manage stormwater runoff only if the proposed development involved the construction of roads. The proposed rule will capture much more stormwater runoff for infiltration and is expected to help reduce localized flooding and maintain Kirkwood-Cohansey Aquifer water levels.

Similarly, by expanding stormwater management to minor non-residential development, the rulemaking is expected to have a positive environmental impact through the greater removal of pollutants from stormwater runoff. The onsite infiltration of stormwater runoff from motor vehicle surfaces for any minor non-residential development that results in an increase of 1,000 square feet or more of regulated motor vehicle surface, as defined at N.J.A.C. 7:8-1.2, will ensure that most of the pollutants leaked from motor vehicles and deposited by tire wear on these sites will get captured before infiltrating through the soils and into groundwater.

Setting a specific nitrogen removal standard of 65 percent will help maintain the ecological balance within the Pinelands Area, as an overabundance of nitrogen in water can upset that balance and adversely affect the environment. This is especially so in the Pinelands Area, which is particularly sensitive to nitrogen. The original New Jersey Pinelands Comprehensive Management Plan from 1981 recognized that the ecosystem of the Pinelands cannot accept elevated concentrations of nitrate without risk of irreparable harm. Elevated nitrogen levels in the sandy soils of the Pinelands can upset the nutrient balance that the plants rely upon, with negative impacts that range from harming local populations of threatened and endangered plant species to reducing berry production in blueberry crops. Original New Jersey Pinelands Comprehensive Management Plan (November 1981). The nitrogen removal requirement will also extend to newly developed permanent lawn and turf areas, as fertilizer on lawn and turf has been identified as the largest source of nitrogen pollution in the State.

The proposed conditions for off-site recharge of stormwater will provide stronger environmental protection of the Pinelands Area. The CMP will require off-site mitigation for both private and public projects that cannot meet the stormwater management requirements on the parcel of land to be developed. By requiring off-site mitigation for all public development

projects, the CMP will continue to be more restrictive than the DEP rule and in turn, more protective of the Pinelands environmental resources. The current prohibition against discharging stormwater runoff into wetlands will also continue to apply to offsite mitigation, offering more ecological protection of the Pinelands Area.

The CMP will also continue to require that all underground and above-ground utility line projects meet the stormwater runoff requirements. This is more stringent than the DEP rule, which exempts utility lines from meeting the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements. Under the proposed amendments to the CMP, utility line projects will be eligible for off-site mitigation if they cannot meet the requirements onsite.

Requiring green infrastructure to manage stormwater runoff will also have positive impacts on the environment by helping reduce carbon dioxide, a greenhouse gas that is a significant contributor to climate change. The vegetation that green infrastructure often relies upon to filter pollutants from stormwater can sequester carbon from the atmosphere and enhance carbon sequestration in soils. In addition, transitioning from concrete-based stormwater management infrastructure to green infrastructure will reduce greenhouse gas emissions associated with the manufacturing of concrete infrastructure.

The Commission's stormwater management standards, including those for exceptions and mitigation, will continue to be more stringent than those applicable in the rest of the State under the DEP stormwater rule, but will provide better protection of the Pinelands and remain consistent with long-standing Commission policy.

Federal Standards Statement

Section 502 of the National Parks and Recreation Act of 1978 (16 U.S.C. § 471i) called upon the State of New Jersey to develop a comprehensive management plan for the Pinelands

National Reserve. The original plan adopted in 1980 was subject to the approval of the United States Secretary of the Interior, as are all amendments to the plan.

The Federal Pinelands legislation sets forth rigorous goals that the plan must meet, including the protection, preservation, and enhancement of the land and water resources of the Pinelands. The proposed amendments are designed to meet those goals by imposing stringent stormwater management requirements on development in the Pinelands Area, which will provide greater protection of the Pinelands resources.

The Federal Clean Water Act (33 U.S.C. §§ 251 et seq.) regulates stormwater runoff and nonpoint source pollution control. The Federal Clean Water Act requires permits under Section 402 of that Act (33 U.S.C. § 1342) for certain stormwater discharges. Section 319 of the Clean Water Act (33 U.S.C. § 1329) authorizes a Federal grant-in-aid program to encourage states to control nonpoint sources. The Commission's existing and proposed regulations are designed to control stormwater and minimize nonpoint source pollution and are fully consistent with the Federal requirements.

There are no other Federal requirements that apply to the subject matter of these amendments.

Jobs Impact

The Commission anticipates that this rulemaking will not have any significant impact on job creation and retention in New Jersey beyond the minimal impacts sited by the DEP at 50 N.J.R. 2375(a). Engineering and other professional work will be needed to comply with the stormwater management construction and maintenance requirements for minor residential and

non-residential development in the Pinelands Area but overall, the Pinelands Commission does not believe that the rulemaking will result in a significant impact on jobs.

Agriculture Industry Impact

The rulemaking will not impact agricultural uses in the Pinelands Area, as agricultural activities are not included in the CMP definitions of major and minor development and thus not subject to the stormwater management requirements. The positive impacts on the environment, such as reduced flooding, improved water quality, increased groundwater recharge, and increased protection of stream channel integrity, could benefit the agricultural industry.

Regulatory Flexibility Analysis

In accordance with the New Jersey Regulatory Flexibility Act, N.J.S.A. 52:14B-16 et seq., the Commission has evaluated whether the proposed amendments will impose any reporting, recordkeeping, and other compliance requirements on small businesses. Most businesses in the Pinelands Area may be characterized as small in size and employment compared to the rest of New Jersey. However, the proposed amendments do not differentiate by size of business and thus will impact all businesses equally.

Small businesses proposing minor development in the Pinelands Area may be required to construct and maintain stormwater management measures, albeit to a lesser extent than is required for major development. Additional costs may also be incurred from hiring professional consultants such as engineers. Small businesses proposing major development will have to comply with the Commission's more stringent, quantitative nitrogen removal standard.

The impact of the new stormwater management requirements for minor and major development is not unique to small businesses; the costs that may be incurred by small businesses are the same as to any individual person or homeowner undertaking minor or major development, as defined in the CMP.

The Commission has balanced the costs imposed on small businesses by the proposed amendments against the environmental benefits to be achieved by the new stormwater management requirements and determined that it would be inappropriate to exempt small businesses from these requirements. As noted above in the Environmental Impact statement, the additional, more stringent stormwater management requirements being proposed by the Commission will result in the infiltration of more stormwater, removal of more pollutants from stormwater runoff prior to entering groundwater table, maintenance of water levels of the Kirkwood-Cohansey Aquifer, and the further reduction of localized flooding in the Pinelands.

Housing Affordability Impact Analysis

The Commission does not anticipate this rulemaking will have a significant impact on the affordability of housing. Minor residential development will be required to retain and infiltrate stormwater runoff generated from the roof(s) of the dwellings by installing green infrastructure best management practices. In most cases, developers will have to install only one or two green infrastructure best management practices (BMPs), such as a rain garden and dry well. This requirement is not expected to add any significant cost associated with housing or have an effect on the affordability of housing.

Smart Growth Development Impact Analysis

N.J.S.A. 52:14B-4 requires that proposed amendments be evaluated to determine their impacts, if any, on housing production in Planning Areas 1 or 2, or within designated centers, under the State Development and Redevelopment Plan (State Plan). Planning Areas 1 and 2 do not exist in the Pinelands Area. Likewise, the State Plan does not designate centers within the Pinelands Area. Instead, N.J.S.A. 52:18A-206.a provides that the State Plan shall rely on the Pinelands CMP for land use planning in the Pinelands. The Commission has evaluated the impact of the proposed amendments on Pinelands management areas designated by the CMP that are equivalent to Planning Areas 1 and 2 and designated centers, namely, the Regional Growth Areas, Pinelands Villages, and Pinelands Towns.

These three management areas are designated for development by the CMP and are equivalent to designated centers under the State Plan. The rulemaking will not increase the amount of permitted residential development in these management areas and are not expected to result in any changes in housing density within designated centers or in any other portions of the Pinelands Area.

There will be no effect on new construction in Planning Areas 1 and 2, as designated by the State Development and Redevelopment Plan, as these State Planning Areas do not exist in the Pinelands Area.

Racial and Ethnic Community Criminal Justice and Public Safety Impact

The Commission has evaluated this rulemaking and determined that it will not have an impact on pretrial detention, sentencing, probation, or parole policies concerning adults and juveniles in the State. Accordingly, no further analysis is required.

Full text of the proposal follows (additions indicated with boldface **thus**; deletions indicated in brackets [thus]):

SUBCHAPTER 2. INTERPRETATIONS AND DEFINITIONS

7:50-2.11 Definitions

"HUC 11" or "hydrologic unit code 11" means an area within which water drains to a particular receiving surface water body, also known as a subwatershed, which is identified by an 11-digit hydrologic unit boundary designation, delineated within New Jersey by the United States Geological Survey.

"HUC 14" or "hydrologic unit code 14" means 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.

SUBCHAPTER 3. CERTIFICATION OF COUNTY, MUNICIPAL, AND FEDERAL INSTALLATION PLANS

7:50-3.39 Standards for certification of municipal master plans and land use ordinances

- (a) Municipal master plans and land use ordinances, and any parts thereof, shall be certified only if:
1. (No change.)
 2. They include provisions that:
 - i.-vii. (No change.)

- viii. Establish and implement a mitigation plan as part of any municipal stormwater management plan and ordinance adopted in accordance with N.J.A.C. 7:8-4.2(c)11 that:
- (1) Identifies those measures necessary to offset the granting of [exceptions to] **variances from** the standards set forth in N.J.A.C. 7:50-6.84(a)6i through v;
 - (2) Specifies that [exceptions to] **variances from** the standards set forth in N.J.A.C. 7:50-6.84(a)6i through v will be considered only in cases where an applicant is able to demonstrate **in accordance with N.J.A.C. 7:8-4.6** that such standards cannot be met on a particular parcel [or where the municipality determines that stormwater management would more effectively be achieved through alternative measures];
 - (3) Requires that any [off-site] mitigation measures identified pursuant to (a)2viii(1) above occur within the Pinelands Area and the same [drainage area] **HUC14** as the parcel proposed for development, **unless no such mitigation project is available, in which case the mitigation measures shall be located within the Pinelands Area and same HUC11 as the parcel proposed for development; and**
 - [(4) Allows for monetary contributions to be made to the municipality in lieu of performing the off-site mitigation measures identified pursuant to (a)2viii(1) above, with the

amount of any such in-lieu contribution being equivalent to the cost of implementing and maintaining the stormwater

management measures for which an exception is granted; and

- (5) Requires that the municipality expend any contributions collected pursuant to (a)2viii(4) above within five years of their receipt; and]

ix. (No change.)

3.-13. (No change.)

(b) (No change.)

SUBCHAPTER 6. MINIMUM STANDARDS FOR POINT AND NON-POINT SOURCE DISCHARGES

7:50-6.84 Minimum standards for point and non-point source discharges

(a) The following point and non-point sources may be permitted in the Pinelands:

1.-5. (No change.)

6. Surface water runoff in accordance with N.J.A.C. 7:8-4.6, 5 and 6, as amended, except as modified and supplemented **as follows** [pursuant to the following]:

- i. **For purposes of this section, the definition of terms adopted by the New Jersey Department of Environmental Protection at N.J.A.C. 7:8-1.2 are incorporated herein, unless a term is defined differently at N.J.A.C. 7:50-2.11, in which case the definition in this Plan shall apply.**

[i.]ii. Runoff rate and volume, runoff quality and groundwater recharge methodologies:

- (1) **Stormwater** [R]runoff rate and volumes shall be calculated in accordance with [the USDA Natural Resources Conservation Service (NRCS) Runoff Equation, Runoff Curve Numbers, Dimensionless Unit Hydrograph, as described in the NRCS National Engineering Handbook Part 630 - Hydrology and Title 210 - Engineering, 210-3-1 Small Watershed Hydrology (WINTR-55) Version 1.0, incorporated herein by reference, as amended and supplemented. Information regarding these methodologies is available from the Natural Resources Conservation Service website at http://www.wsi.nrcs.usda.gov/products/W2Q/H&H/Tools_Models/WinTr55.html https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf or at Natural Resources Conservation Service, 220 Davidson Avenue, Somerset, New Jersey 08873; (732) 537-6040. Alternative methods of calculation may be utilized, provided such alternative methods are at least as protective as the NRCS methodology within when considered on a regional stormwater management area basis] **N.J.A.C. 7:8-5.7, except that the Rational Method for peak flow and the Modified Rational Method for hydrograph computations shall not be used; and**

- (2) Stormwater runoff shall be calculated using NRCS methodology by separately calculating and then combining the runoff volumes from pervious and directly connected impervious surfaces within each drainage area within the parcel;
- (3) Calculations of stormwater runoff from unconnected impervious surfaces shall be based, as applicable, upon the Two-Step Method described in the New Jersey Stormwater Best Management Practices Manual developed by the New Jersey Department of Environmental Protection, dated February 2004, incorporated herein by reference, as amended and supplemented and available at <http://www.njstormwater.org/bmp-manual2.htm>, or the NRCS methodology; and]
- [(4)](2) In calculating stormwater runoff using the NRCS methodology, the appropriate 24-hour rainfall depths developed by the National Oceanic and Atmospheric Administration, https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=nj, shall be utilized. [Information regarding these rainfall data is available from the National Oceanic and Atmospheric Administration (NOAA) at <http://www.hdsc.nws.noaa.gov/hdsc/pfds/index.html> or DOC/NOAA/National Weather Service, Office of Hydrologic Development, Hydrometeorological Design Studies Center, Bldg.

SSMC2-W/OHD13, 1325 East-West Highway, Silver Spring,
Maryland 20910-3283; (301) 713-1669 extension 154.]

[ii]iii. Runoff shall meet the requirements in [(a)6ii(4) and (5) below and one of (a)6ii(1), (2) or (3)] **N.J.A.C. 7:8-5.6 and (1) and (2)** below:

- (1) The post-development stormwater runoff hydrographs generated from the parcel by a two-year, 10-year and 100-year storm, each of a 24-hour duration, shall not exceed, at any point in time, the parcel's pre-development runoff hydrographs for the same storms;
or
- (2) Under post-development site conditions:
 - (A) There shall be no increase in pre-development stormwater runoff rates from the parcel for the two-year, 10-year and 100-year storm; and
 - (B) Any increased stormwater runoff volume or change in stormwater runoff timing for the two-year, 10-year and 100-year storms shall not increase flood damage at or downstream of the parcel. When performing this analysis for the predevelopment site conditions, all off-site development levels shall reflect existing conditions. When performing this analysis for post-development site conditions, all off-site development levels shall reflect full development potential in accordance with those municipal

land use ordinances certified by the Commission pursuant to N.J.A.C. 7:50-3; or

(3) The peak post-development stormwater runoff rates for the parcel for the two-year, 10-year and 100-year storms shall be 50, 75 and 80 percent, respectively, of the parcel's peak pre-development stormwater rates for the same storms. Peak outflow rates from onsite stormwater measures for these storms shall be adjusted where necessary to account for the discharge of increased stormwater runoff rates and/or volumes from areas of the parcel not controlled by onsite measures. These percentages need not be applied to those portions of the parcel that are not proposed for development at the time an application is submitted to the Commission pursuant to N.J.A.C. 7:50-4, provided that:

- (A) Such areas have been permanently protected from future development by conservation easement, deed restriction, or other acceptable legal measures; or
- (B) A deed notice has been filed stating that such areas will be subject to the standards of this section at the point in time they are proposed for development in the future;]

[(4)] (1) There shall be no direct discharge of stormwater runoff from any point or nonpoint source to any wetland, wetlands transition area or surface waterbody. In addition, stormwater runoff shall not be directed in such a way as to increase the volume and rate of discharge into any **wetland**,

wetlands transition area or surface water body from that which existed prior to development of the parcel; and

[(5)](2) 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.

[iii.]iv. Recharge standards

(1) For all major development[s], **as defined at N.J.A.C. 7:50-2.11**, the total runoff volume generated from the net increase in impervious surfaces by a 10-year, 24-hour storm shall be retained and infiltrated onsite;

(2) **For all minor development, as defined at N.J.A.C. 7:50-2.11, that involves the construction of four or fewer dwelling units, the runoff generated from the total roof area of the dwelling(s) by a 10-year, 24-hour storm shall be retained and infiltrated as follows:**

(A) **Installation of one or more green infrastructure stormwater management measures designed in accordance with the New Jersey Stormwater Best Management Practices (BMP) Manual as defined in N.J.A.C. 7:8-1, incorporated herein by reference as amended and supplemented and available at**

https://www.nj.gov/dep/stormwater/bmp_manual2.htm

(hereinafter referred to as “BMP Manual” or “New Jersey Stormwater Best Management Practices Manual”). Appropriate green infrastructure stormwater management measures include, but are not limited to:

- (I) Dry wells;**
- (II) Pervious pavement systems; and**
- (III) Small scale bioretention systems, including rain gardens;**

(3) For minor development, as defined at N.J.A.C. 7:50-2.11, that involves any nonresidential use, the following standards shall apply:

- (A) If the proposed development will result in an increase of 1,000 square feet or more of regulated motor vehicle surfaces as defined at N.J.A.C. 7:8-1.2, the stormwater runoff quality standards contained in N.J.A.C. 7:8-5.5 shall apply. The water quality design storm volume generated from these surfaces shall be recharged onsite; and**
- (B) If the proposed development involves the grading, clearing or disturbance of an area in excess of 5,000 square feet within any five-year period, the standards**

for major development set forth at (a)6i through ix shall also apply;

(4) In order to demonstrate compliance with the requirements of (2) or (3) above, applications for minor development shall include at least the following information:

(A) A plan, certified by a design engineer, that includes the type and location of each green infrastructure stormwater management measure and a cross section drawing of each such measure showing the associated soil profile, soil permeability test elevation, soil permeability rate and the elevation of and vertical separation to the seasonal high water table;

(B) A design engineer's certification that each green infrastructure stormwater management measure will not adversely impact basements or septic systems of the proposed development;

[(2)] (5) In high pollutant loading areas (HPLA) and areas where stormwater runoff is exposed to source material, as defined at N.J.A.C. 7:8-5.4[(a)2iii(1) and (2)] (b)3i and ii, the following additional water quality standards shall apply:

(A) (No change.)

(B) The stormwater runoff originating from HPLAs and areas where stormwater runoff is exposed to source material shall

be segregated and prohibited from co-mingling with stormwater runoff originating from the remainder of the parcel **unless it is first routed through one or more stormwater management measures required in (C), below;**

- (C) The stormwater runoff from HPLAs and areas where stormwater runoff is exposed to source material shall [be subject to pretreatment to achieve 90 percent removal of total suspended solids] **incorporate stormwater management measures designed to reduce the post-construction load of total suspended solids (TSS) by at least 90 percent in stormwater runoff generated** from the water quality design storm established in N.J.A.C. 7:8-5.5[(a)](d) [prior to infiltration, using: one or more of the following measures, designed in accordance with the New Jersey Best Management Practices Manual developed by the New Jersey Department of Environmental Protection, dated February 2004, incorporated herein by reference, as amended and supplemented] **using one or more of the measures identified in (I) and (II) below. In meeting this requirement, the minimum 90 percent removal of total suspended solids may be achieved by utilizing multiple stormwater management measures in series:**

- (I) [Bioretention system] **Any measure designed in accordance with the New Jersey Stormwater Best Management Practices Manual to remove total suspended solids. Any such measure must be constructed to ensure that the lowest point of infiltration within the measure maintains a minimum of two feet of vertical separation from the seasonal high water table; and**
- [(II) Sand filter;
- (III) Wet ponds, which shall be hydraulically disconnected by a minimum of two feet of vertical separation from the seasonal high water table and shall be designed to achieve a minimum 80 percent removal of total suspended solids;
- (IV) Constructed stormwater wetland: and]
- [(V)](II) Other measures certified by the Department of Environmental Protection, including a Media Filtration System manufactured treatment device with a minimum 80 percent removal of total suspended solids as verified by the New Jersey Corporation for Advanced Technology; and
- (D) If the potential for contamination of stormwater runoff by petroleum products exists onsite, prior to being conveyed to

the [pretreatment facility] **stormwater management measure** required in [(a)6iii(4)](C) above, the stormwater runoff from the HPLAs and areas where stormwater runoff is exposed to source material shall be conveyed through an oil/grease separator or other equivalent manufactured filtering device providing for the removal of petroleum hydrocarbons.

- (6) For all major development, as defined at N.J.A.C. 7:50-2.11, stormwater management measures shall be designed to achieve a minimum of 65 percent reduction of the post-construction total nitrogen load from the developed site, including permanent lawn or turf areas that are specifically intended for active human use as described in N.J.A.C. 7:50-6.24(c)3, in stormwater runoff generated from the water quality design storm. In achieving a minimum 65 percent reduction of total nitrogen, the design of the site shall include green infrastructure in accordance with the BMP Manual and shall optimize nutrient removal. The minimum 65 percent total nitrogen reduction may be achieved by using a singular stormwater management measure or multiple stormwater management measures in series.**

[iv.]v. [Infiltration basin] **Stormwater management measure** design, siting and construction standards:

- (1) Stormwater [infiltration facilities] **management measures designed to infiltrate stormwater** shall be designed, constructed and maintained to provide a minimum separation of at least two feet between the elevation of the lowest point of [the bottom of the] infiltration [facility] and the seasonal high water table;
- (2) Stormwater [infiltration facilities] **management measures designed to infiltrate stormwater** shall be sited in suitable soils verified by [field] testing to have permeability rates between one and 20 inches per hour. A factor of safety of two shall be applied to the soil's [field-tested] permeability rate in determining the infiltration [facility's] **measure's** design permeability rate. If such soils do not exist on the parcel proposed for development or if it is demonstrated that it is not practical for engineering, environmental or safety reasons to site the stormwater infiltration [basin] **measures(s)** in such soils, the stormwater infiltration [basin] **measure(s)** may be sited in soils verified by [field] testing to have permeability rates in excess of 20 inches per hour, provided that stormwater is routed through a bioretention system prior to infiltration. Said bioretention system shall be designed, installed and maintained in accordance with the New Jersey Stormwater Best Management Practices Manual [developed by the New Jersey

Department of Environmental Protection, dated February 2004, incorporated herein by reference, as amended and supplemented];

- (3) **For all major development, as defined at N.J.A.C. 7:50-2.11,** [G]groundwater mounding analysis shall be required for purposes of assessing the hydraulic impacts of mounding of the water table resulting from infiltration of stormwater runoff from the maximum storm designed for infiltration. The mounding analysis shall provide details and supporting documentation on the methodology used. Groundwater mounds shall not cause stormwater or groundwater to breakout to the land surface or cause adverse impacts to adjacent water bodies, wetlands or subsurface structures, including, but not limited to basements and septic systems. Where the mounding analysis identifies adverse impacts, the [infiltration facility] **stormwater management measure** shall be redesigned or relocated, as appropriate;
- (4) [To the maximum extent practical, stormwater management measures on a parcel shall be designed to limit site disturbance, maximize stormwater management efficiencies, maintain or improve aesthetic conditions and incorporate pretreatment as a means of extending the functional life and increasing the pollutant removal capability of structural stormwater management facilities.] The use of stormwater management measures that are smaller in size and distributed spatially throughout a parcel, rather than the

use of a single, larger [structural] stormwater management measure shall be required [to the maximum extent practical];

- (5) **Methods of treating stormwater prior to entering any stormwater management measure shall be incorporated into the design of the stormwater management measure to the maximum extent practical;**

[(5)](6) To avoid sedimentation that may result in clogging and reduction of infiltration capability and to maintain maximum soil infiltration capacity, the construction of stormwater **management measures that rely upon** infiltration [basins] shall be managed in accordance with the following standards:

- (A) No stormwater [infiltration basin] **management measure** shall be placed into operation until its drainage area has been completely stabilized. Instead, upstream runoff shall be diverted around the [basin] **measure** and into separate, temporary stormwater management facilities and sediment basins. Such temporary facilities and basins shall be installed and utilized for stormwater management and sediment control until stabilization is achieved in accordance with N.J.A.C. 2:90, Standards for Soil Erosion and Sediment Control in New Jersey;

- (B) If, for engineering, environmental or safety reasons, temporary stormwater management facilities and sediment basins cannot be constructed on the parcel in accordance with [(a)6iv(5)](A) above, the stormwater [infiltration basin] **management measure** may be placed into operation prior to the complete stabilization of its drainage area provided that the [basin's] **measure's** bottom during this period is constructed at a depth at least two feet higher than its final design elevation. When the drainage area has been completely stabilized, all accumulated sediment shall be removed from the [infiltration basin] **stormwater management measure**, which shall then be excavated to its final design elevation; and
- (C) To avoid compacting [an infiltration basin's subgrade soils,] **the soils below a stormwater management measure designed to infiltrate stormwater**, no heavy equipment, such as backhoes, dump trucks or bulldozers shall be permitted to operate within the footprint of the stormwater [infiltration basin] **management measure**. All excavation required to construct a stormwater [infiltration basin] **management measure that relies on infiltration** shall be performed by equipment placed outside the [basin] **footprint of the stormwater management measure**. If

this is not possible, the soils within the excavated area shall be renovated and tilled after construction is completed.

Earthwork associated with stormwater [infiltration basin] **management measure** construction, including excavation, grading, cutting or filling, shall not be performed when soil moisture content is above the lower plastic limit; and

- (7) **Dry wells shall be designed to prevent access by amphibian and reptiles.**

[v.]vi. As-built requirements **for major development, as defined at N.J.A.C.**

7:50-2.11:

- (1) After all construction activities have been completed on the parcel and finished grade has been established in [the infiltration basin] **each stormwater management measure designed to infiltrate stormwater**, replicate post-development [field] permeability tests shall be conducted to determine if as-built soil permeability rates are consistent with design permeability rates. The results of such tests shall be submitted to the municipal engineer **or other appropriate reviewing engineer**. If the results of the post-development [field] permeability tests fail to achieve the minimum required design permeability rate, utilizing a factor of safety of two, the [infiltration basin] **stormwater management measure** shall be renovated and re-tested until [such minimum] **the** required permeability rates are achieved; and

(2) After all construction activities and required field testing have been completed on the parcel, as-built plans, including as-built elevations of all stormwater management measures shall be submitted to the municipal engineer **or other appropriate reviewing engineer to serve as a document of record**. Based upon **that** [the municipal] engineer's review of the as-built plans, all corrections or remedial actions deemed [by the municipal engineer to be] necessary due to the failure to comply with design standards and/or for any reason concerning public health or safety, shall be completed by the applicant. In lieu of review by the municipal engineer, the municipality may engage a licensed professional engineer to review the as-built plans and charge the applicant for all costs associated with such review.

[vi.]**vii.** Exceptions:

- [(1) The standards set forth in (a)6i through v above shall not apply to minor residential development, provided such development does not involve the construction of any new roads, or to minor non-residential development, provided such development does not involve the grading, clearing or disturbance of an area in excess of 5,000 square feet within any five-year period;
- (2) The use of nonstructural strategies in accordance with N.J.A.C. 7:8-5.3 shall not be required for development that would create less than one acre of disturbance;

- (3) Provided an applicant for major development pursuant to N.J.A.C. 7:50-4.31 through 4.50 is able to demonstrate that the standards set forth in (a)6i through v above cannot be met on the parcel proposed for development or that stormwater management would more effectively be achieved through alternative measures, strict compliance with said standards may be waived at the discretion of the municipality in which the proposed development is located, provided the municipal stormwater management plan certified by the Commission pursuant to N.J.A.C. 7:50-3 specifies the circumstances under which such alternative measures would be appropriate and identifies those parcels or projects elsewhere in the Pinelands Area where any off-site mitigation would be permitted to occur;
- (4) Provided an applicant for major public development pursuant to N.J.A.C. 7:50-4.51 through 4.60 is able to demonstrate that the standards set forth in (a)6i through v above cannot be met on the parcel proposed for development or that stormwater management would more effectively be achieved through alternative measures, an exception may be granted at the discretion of the Commission, provided any such measures occur within the Pinelands Area and within the same drainage area as the parcel proposed for development and are sufficient to offset the granting of the exception. The proposed alternative measures must be consistent

with the stormwater management plan certified by the Commission pursuant to N.J.A.C. 7:50-3 for the municipality in which the proposed development is located, unless said stormwater plan does not provide for appropriate mitigation for the particular exception being granted or identify appropriate parcels or projects where off-site mitigation may occur; and]

- (1) For applications submitted pursuant to N.J.A.C. 7:50-4.31 through 4.50, a municipality may grant a variance in accordance with N.J.A.C. 7:8-4.6, as amended, from the on-site design and performance standards for green infrastructure, the standards for groundwater recharge, stormwater runoff quality, and stormwater runoff quality at N.J.A.C. 7:8-5.3, 5.4, 5.5, and 5.6, and the on-site recharge standards set forth at (a)6iv above, provided that:**

- (A) All mitigation projects shall be located in the Pinelands Area and in the same HUC 14 as the parcel proposed for development. If the applicant demonstrates that no such mitigation project is available, the municipality may approve a variance that provides for mitigation within the same HUC 11 as the parcel proposed for development, provided the mitigation project is located in the Pinelands Area;**

- (B) The proposed mitigation project shall be consistent with the stormwater management plan certified by the Commission pursuant to N.J.A.C. 7:50-3 for the municipality in which the parcel proposed for development is located, unless said stormwater plan does not identify appropriate parcels or projects where mitigation may occur; and**
- (C) Any variance from the on-site recharge standards set forth at (a)6iv above shall require that the total volume of stormwater infiltrated by the mitigation project equals or exceeds the volume required at (a)6iv.**
- (2) For applications submitted pursuant to N.J.A.C. 7:50-4.51 through 4.60, the Commission may grant an exception in accordance with the standards contained in N.J.A.C. 7:50-4.6, as amended, from the on-site design and performance standards for green infrastructure, groundwater recharge, stormwater runoff quality, and stormwater runoff quality at N.J.A.C. 7:8-5.3, 5.4, 5.5, and 5.6 and on-site recharge standards set forth at (a)6iv above, provided the conditions set forth at (1) above are met.**
- [(5)] (3) Unless specifically included in [(a)6vi(1) through (4)] (1) and (2) above, the exemptions, exceptions, applicability standards and**

waivers of strict compliance for stormwater management contained in N.J.A.C. 7:8 shall not apply.

- (4) **No variances or exceptions shall be granted from iii(1), above, which prohibits the direct discharge of stormwater runoff to any wetland, wetlands transition area or surface waterbody and the direction of stormwater runoff in such a way as to increase in volume and rate of discharge into any wetland, wetlands transition area or surface water body from that which existed prior to development of the parcel.**

[vii.]viii. Maintenance standards:

- (1) **For all major development, as defined at N.J.A.C. 7:50-2.11, the following standards shall apply:**

[(1)](A) Maintenance plans **shall be** required pursuant to N.J.A.C. 7:8-5.8 **and** shall be supplemented [so as] to include reporting of inspection and repair activities. Said plans shall include accurate and comprehensive drawings of all stormwater management measures on a parcel, including the specific latitude and longitude and block/lot number of each stormwater management measure. Maintenance plans shall specify that an inspection, maintenance and repair report will be updated and submitted annually to the municipality;

[(2)](B) Stormwater management measure easements shall be provided by the property owner as necessary for facility inspections and maintenance and preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities. The purpose of the easement shall be specified in the maintenance agreement; and

[(3)](C) An adequate means of ensuring permanent financing of the inspection, maintenance, repair and replacement plan shall be implemented and shall be detailed in the maintenance plan. Financing methods shall include, but not be limited to[.]:

[(A)](I) The assumption of the inspection and maintenance program by a municipality, county, public utility or homeowners association;

[(B)](II) The required payment of fees to a municipal stormwater fund in an amount equivalent to the cost of both ongoing maintenance activities and necessary structural replacements.

(2) For all minor development, as defined at N.J.A.C. 7:50-2.11, the following standards shall apply:

(A) Maintenance plans shall be required for all stormwater management measures installed in accordance with (a)6iv(2) and (3), above. The BMP Manual may be

utilized as a guide for developing maintenance plans that shall include, at minimum:

- (I) A copy of the certified plan required pursuant to (a)6iv(4);**
- (II) A description of the required maintenance activities for each stormwater management measure; and**
- (III) The frequency of each required maintenance activity.**

(B) Responsibility for maintenance of stormwater management measures may be assigned or transferred to the owner or tenant of the parcel.

[viii.]ix. Unless specifically mandated pursuant to (a)6i through viii above, the New Jersey Stormwater Best Management Practices Manual [developed by the New Jersey Department of Environmental Protection, dated February 2004, as amended], may be utilized as a guide in determining the extent to which stormwater management activities and measures meet the standards of (a)6i through viii above.