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ENVIRONMENTAL PROTECTION

LAND USE MANAGEMENT

WATER RESOURCE MANAGEMENT

DIVISION OF WATER QUALITY

Coastal Zone Management Rules

Freshwater Wetlands Protection Act Rules

Stormwater Management

Flood Hazard Area Control Act Rules

New Jersey Pollutant Discharge Elimination System

Highlands Water Protection and Planning Act Rules

Proposed Repeal and New Rule: N.J.A.C. 7:8-5.3

Proposed Amendments: N.J.A.C. 7:7-25.1; 7:7A-18.1; 7:8-1.2, 1.3, 1.6, 2.4, 3.4, 3.6, 3.9, 3.10, 4.2, 4.6, 5.2, 5.4, 5.5, 5.6, and 5.9; 7:13-11.2, 18.5, and 20.1; 7:14A-24.7 and 24.7; and 7:38-10.2

Proposed New Rule: N.J.A.C. 7:8-5.6

Proposed Repeal: N.J.A.C. 7:8-5.7

Authorized By: Catherine R. McCabe, Commissioner, Department of Environmental Protection.

Authority: As to N.J.A.C. 7:7: N.J.S.A. 12:3-1 et seq., 12:5-3, 13:1D-1 et seq., 13:1D-9 et seq., 13:1D-29 et seq., and 13:9A-1 et seq.;

As to N.J.A.C. 7:7A: N.J.S.A. 13:9B-1 et seq., and 58:10A-1 et seq.;

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As to N.J.A.C. 7:8: N.J.S.A. 12:5-3, 13:1D-1 et seq., 13:9A-1 et seq., 13:19-1 et seq., 40:55D-93 to 99, 58:4-1 et seq., 58:10A-1 et seq., 58:11A-1 et seq., and 58:16A-50 et seq.

As to N.J.A.C. 7:13: N.J.S.A. 13:1D-1 et seq., 13:1D-29 et seq., 13:20-1 et seq., 58:10A et seq., 58:11A-1 et seq., and 58:16A-50 et seq.

As to N.J.A.C. 7:14A: N.J.S.A. 1B-3 et seq., 13:1D-1 et seq., 13:1D-29 et seq., 13:1E-1 et seq., 26:2C-1 et seq., 26:3A2-21, 40:55D-1 et seq., 58:10-23.11 et seq., 58:10A-1 et seq., 58:11-23 et seq., 58:11-49 et seq., 58:11-64 et seq., 58:11A-1 et seq., and 58:12A-1 et seq.

As to N.J.A.C. 7:38: N.J.S.A. 1B-15.128 et seq., 13:1D-1 et seq., 13:9B-1 et seq., 13:20-1 et seq., 23:2A-1 et seq., 58:1A-1 et seq., 58:10A-1 et seq., 58:11-23 et seq., 58:11A-1 et seq., 58:12A-1 et seq., and 58:16A-50 et seq.

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

DEP Docket Number: 03-18-10.

Proposal Number: PRN 2018-111.

A **public hearing** concerning this notice of proposal will be held on January 8, 2019, at 1:00 P.M.

at:

New Jersey Department of Environmental Protection

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Public Hearing Room, 1st Floor

401 East State Street

Trenton, NJ 08625

Directions to the public hearing room are available on the Department of Environmental Protection's website at www.nj.gov/dep/where.htm.

Submit comments by February 1, 2019, electronically at www.nj.gov/dep/rules/comments. Each comment should be identified by the applicable N.J.A.C. citation, with the commenter's name and affiliation following the comment.

The Department encourages electronic submittal of comments. In the alternative, comments may be submitted on paper to:

Gary J. Brower, Esq.

Attn.: DEP Docket No. 03-18-10

Office of Legal Affairs

Department of Environmental Protection

401 East State Street, 7th Floor

Mail Code 401-04L

PO Box 402

Trenton, New Jersey 08625-0402

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Written comments may also be submitted at the public hearing. It is requested (but not required) that anyone submitting oral testimony at the public hearing provide a copy of any prepared text to the stenographer at the hearing.

This rule proposal may be viewed or downloaded from the Department's website at www.nj.gov/dep/rules.

The agency proposal follows.

Summary

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

The Department is proposing amendments to the Stormwater Management rules, N.J.A.C. 7:8, to replace the current requirement that major developments incorporate nonstructural stormwater management strategies to the "maximum extent practicable" to meet groundwater recharge standards, stormwater runoff quantity standards, and stormwater runoff quality standards, with a requirement that green infrastructure be utilized to meet these same standards. The Department is proposing to clarify and modify the definition of major development, which defines the scope of projects to which these rules apply. The Department is proposing changes to apply the total suspended solids (TSS) removal requirement to the runoff from motor vehicle surfaces and to remove the TSS removal requirement as it applies to runoff from other impervious surfaces not traveled by automobiles, such as rooftops and sidewalks.

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The Department is proposing several changes that will support water quality and stormwater management improvements in communities with combined sewer systems. The rulemaking will also make changes to existing definitions, add new definitions and make other changes related to the changes identified above, and make minor changes to other provisions in the Stormwater Management rules as described below. The Department is additionally proposing minor amendments to provisions in the Coastal Zone Management Rules, the Freshwater Wetlands Protection Act Rules, the Flood Hazard Area Control Act Rules, the New Jersey Pollutant Discharge Elimination System rules, and the Highlands Water Protection and Planning Act Rules in order to update cross-references and incorporate other changes consistent with the proposed amendments to the Stormwater Management rules.

Stakeholder Engagement

The Department developed the proposed new rules, repeals, and amendments with extensive input from a broad range of stakeholders. Stakeholders included representatives from environmental groups, developers, academia, municipalities, counties, regional agencies, and consultants, as well as representatives from the New Jersey Department of Agriculture, the New Jersey Department of Transportation, and the New Jersey Department of Community Affairs.

The Department held stakeholder meetings in 2014, to discuss changes proposed in this rulemaking, including the proposed change to replace nonstructural stormwater management strategies with specific strategies from the New Jersey Stormwater Best Management Practice (BMP)

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Manual. The Department held three stakeholder meetings in November 2016, to discuss many of the proposed changes, including green infrastructure as a replacement for nonstructural strategies and changes that impact communities with combined sewer systems. Changes pertaining to motor vehicle surface and averaging compliance across multiple drainage areas were stakeholdered in 2011 and 2012.

The Department held a stakeholder meeting in June 2017, to understand stakeholders' perspectives on whether there are site specific constraints that would prevent the use of green infrastructure BMPs. Stakeholders generally acknowledged that there may be cases of site constraints that cannot be overcome, but that the only condition for allowing utilization of non-green infrastructure BMPs should be for technical infeasibility. Stakeholders suggested requiring applicants to perform an alternatives analysis demonstrating that each green infrastructure BMP is technically infeasible for each drainage area, if the applicant seeks to use non-green infrastructure BMPs. Most stakeholders further expressed that cost should neither be considered in the alternatives analysis, nor factored into the decision whether to permit the use of non-green infrastructure BMPs. Stakeholders suggested a grandfathering provision allowing stormwater management designs already submitted to review agencies before the effective date of the rule to be reviewed under the rules in effect when the designs were submitted. Input received during the stakeholder process has been considered by the Department in formulating the amendments, new rules, and repeals proposed below.

During this past stakeholder process, stakeholders expressed an interest in discussing issues beyond those addressed in this rulemaking. The Department is committed to continuing to hear and take into consideration stakeholders' perspectives on stormwater management issues. Therefore, the

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Department will hold additional stakeholder discussions to evaluate further potential future changes to N.J.A.C. 7:8 that are not part of this rulemaking and to the New Jersey Stormwater BMP Manual.

Additionally, the Department plans to seek input on new efforts related to training and guidance.

Green Infrastructure Best Management Practices (N.J.A.C. 7:8-4.2, 4.6, 5.2, and 5.3 and related definitions at N.J.A.C. 7:8-1.2)

Stormwater management goals and the benefits of the green infrastructure standard in management of stormwater runoff

The Stormwater Management rules provide the standards for the management of stormwater runoff associated with major development, which, under the existing rules, means development ultimately disturbing one or more acres of land, or increasing impervious surface by one-quarter acre or more. These rules require maintenance of groundwater recharge volumes, water quality control for runoff from small storm events (storms with 1.25 inches or less of rain in two hours), and control of the rate and volume of runoff associated with development. The Stormwater Management rules are implemented by the Department of Environmental Protection, the Department of Transportation, municipalities, counties, and regional planning agencies.

The existing Stormwater Management rules, at N.J.A.C. 7:8-5.3, identify nonstructural stormwater management strategies and require that they be incorporated into the design of major development to the “maximum extent practicable.” When the Department introduced

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the nonstructural stormwater management strategies in a 2004 rulemaking as the preferred method for stormwater management, with structural controls to be utilized in limited circumstances (see 35 N.J.R. 119(a)), the Department intended that the transition to nonstructural stormwater management strategies would reduce stormwater runoff volume, reduce erosion, encourage infiltration and groundwater recharge, maintain or reproduce, as closely as possible, the natural hydrologic cycle, and minimize the discharge of stormwater-related pollutants, such as TSS and nutrients. The Department anticipated that incorporation of nonstructural stormwater management strategies could help maintain the qualitative and quantitative characteristics of the site runoff through environmentally sensitive planning and source control.

As the Department began to implement the nonstructural strategies in the Stormwater Management rules, the Department observed that accurate assessment of whether nonstructural strategies proposed to be incorporated into a particular project satisfied the rules' requirement that such strategies be utilized to the "maximum extent practicable" was difficult, with the ultimate determination involving a measure of subjectivity. The Department also observed that, rather than the rules achieving the desired benefits mentioned above as a result of structural stormwater control being replaced by utilization of the nonstructural strategies identified in the rules, the difficulty in ensuring consistent determinations between the different review agencies applying the rules' standards in the determinations as to whether nonstructural strategies had been incorporated to the "maximum extent practicable" resulted

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in developers of major developments seeking to rely primarily on structural standards with few nonstructural strategies actually incorporated into development designs.

To address these identified issues and better achieve the desired benefits, the Department developed the Nonstructural Strategies Point System. This system assigned points to the various types of nonstructural strategies that could be implemented and attempted to increase predictability and uniformity of determinations by the different review agencies applying the standards contained in the rules by providing guidance to be used by review agencies in determining whether a proposed development included sufficient nonstructural strategies to satisfy the “maximum extent practicable” requirement. In addition to benefitting the agencies implementing the rules, the resulting increased predictability would benefit those proposing a development project by allowing greater certainty in design. However, in 2013, the Superior Court of New Jersey, Appellate Division, struck down the Nonstructural Strategies Point System ruling that the Department had not established the system through formal public notice and comment consistent with the Administrative Procedure Act (APA), N.J.S.A. 52:14B-1 et seq. *In re Auth. For Freshwater Wetlands Statewide Gen. Permit 6, Special Activity Transition Area Waiver for Stormwater Mgmt., Water Quality Certification*, 433 N.J. Super. 385 (App. Div. 2013).

In order to address the continuing issues in implementation of the existing rules, the Department proposes to replace the current requirement that major developments incorporate nonstructural stormwater management strategies to the “maximum extent practicable” with a requirement that such development utilize green infrastructure BMPs designed in accordance

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with the New Jersey Stormwater BMP Manual, or an alternative green infrastructure BMP approved by the reviewing agency, to meet groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards.

The use of green infrastructure BMPs, such as pervious paving, infiltration basins, and bioretention systems, will more effectively achieve the Department's goals under the existing rules of reducing stormwater runoff volume, reducing erosion, encouraging infiltration and groundwater recharge, and of maintaining, or reproducing as closely as possible, the natural hydrologic cycle and minimizing the discharge of stormwater-related pollutants, such as TSS and nutrients.

Green infrastructure is a well-established stormwater management technique within the stormwater management field and is recognized as an effective stormwater management strategy by the Department, the U.S. Environmental Protection Agency (USEPA), and cities throughout the country, such as Philadelphia, New York City, Washington DC, Pittsburgh, and Syracuse. In 2013, the USEPA published its "Green Infrastructure Strategic Agenda," which "outlines key objectives USEPA will pursue to support community efforts to build green infrastructure." The USEPA has released multiple technical resources and policy documents to advance the installation of green infrastructure, including a Municipal Handbook series to help local officials implement green infrastructure. Green infrastructure is widely recognized to be a cost-effective and resilient approach to managing stormwater while simultaneously providing environmental, social, and economic co-benefits. These co-benefits, which are further discussed in the Social Impact, Environmental Impact, and Economic Impact statements, include reduction

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in urban heat island effect, decreased energy use, removal of pollutants from the air through greater utilization of vegetation, beautification of public spaces, and increased property values. For additional information, please see the USEPA's green infrastructure website, <https://www.epa.gov/green-infrastructure/learn-about-green-infrastructure>, which includes a listing of dozens of studies, articles, and papers on the performance, benefits, and implementation of green infrastructure.

For the past several years, the Department has been actively supporting the advancement of green infrastructure in New Jersey. The Department provides both technical and financial assistance for green infrastructure projects, including loans with principal forgiveness and low interest rates for green infrastructure projects using State revolving loan funds, grant funding for green infrastructure projects using USEPA pass-through grants issued under Section 319(h) of the Federal Clean Water Act, 33 U.S.C. § 1329(h), and technical assistance to municipalities on implementing green infrastructure in their communities. The Department has also encouraged incorporation of green infrastructure in areas impacted by combined sewer overflows by requiring combined sewer overflow permittees to evaluate green infrastructure as an alternative to reduce or eliminate combined sewer overflows. In 2017, the Department released "Evaluating Green Infrastructure: A Combined Sewer Overflow Control Alternative for Long Term Control Plans" to provide guidance to permittees on how to meaningfully evaluate green infrastructure as a solution to combined sewer overflows.

The green infrastructure practices that would be authorized to be used to comply with the standards of the Stormwater Management rule under this rulemaking, manage stormwater

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runoff through infiltration into the subsoil, filtration by vegetation or soil, or reuse. The use of green infrastructure to manage stormwater creates hydrologically functional landscapes that restore the watershed's natural relationship between rainfall, runoff, infiltration, and evaporation (Coffman 2000). Conversely, developments managed with conventional stormwater management systems, which typically detain and release stormwater runoff, disrupt the natural hydrologic cycle by increasing the peak flow rate of small storm events, as well as the frequency and volume of stormwater runoff, reducing stream baseflow, increasing the frequency of low magnitude flows, and reducing storm recession time (Burns et al., 2012). Furthermore, "Stormwater control measures that harvest, infiltrate, and evapotranspire stormwater are critical to reducing the volume and pollutant loading of small storms" (National Research Council 2009).

The International Stormwater BMP Database is a project that began in 1996, under a cooperative agreement between the American Society of Civil Engineers and the USEPA. The International Stormwater BMP Database features collected data from over 600 BMPs. The database was used as the basis for multiple studies to analyze the performance of different types of BMPs in TSS removal and volume reduction. The analyses show that green infrastructure practices, such as bioretention systems and pervious paving systems generally provide higher TSS removal rates than traditional detention basins (Clary et al. 2016). The analyses also concluded that bioretention practices have a higher volume reduction percentage than traditional detention basins (Leisenring et al. 2012).

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As indicated above, one continuing goal of the Stormwater Management rules is that post-development hydrology maintain or reproduce the natural hydrologic cycle for the area of development. In the natural hydrologic cycle on undeveloped land, stormwater is managed at or near to the location it falls to the ground. Some stormwater will be intercepted by vegetation and never reach the ground, some will infiltrate into the soil and subsoil, and some will evaporate. During large storm events, some stormwater will run off the land surface where it fell and either enter a surface water body or become infiltrated or evapotranspired down gradient of where the stormwater hit the surface of the land. To mimic the natural hydrologic cycle, the proposed amendments, repeals, and new rules require stormwater runoff to be treated near the source with distributed and small-scale (limited contributory drainage area) green infrastructure BMPs to be utilized in most cases, with exceptions to the drainage area limitation discussed below. The use of these small scale and distributed green infrastructure stormwater practices, such as pervious paving, as well as certain infiltration basins and bioretention systems, has the potential to reduce the post-development peak flow rate from the area to be developed, increase groundwater recharge, improve water quality, increase on-site retention, and protect stream channels by creating a hydrologically functional landscape that mimics the pre-development runoff conditions (Coffman 2000). A literature review conducted by Ahiablame, Engel, and Chaubey showed that research broadly demonstrates that green infrastructure that infiltrates runoff provides significantly greater volume reduction in comparison to conventional stormwater systems, which results in stormwater management that more closely maintains or mimics natural hydrology (Ahiablame, Engel, and Chaubey

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2012). Furthermore, even underdrained bioretention systems, which do not retain and infiltrate all runoff, have been shown to provide a higher volume reduction than traditional detention basins (Poresky et al. 2012) and to more closely mimic natural hydrology (DeBusk, Hunt, and Line 2011).

In addition to these environmental benefits, and the economic and social benefits noted above and discussed further in the impact statements, replacing the current nonstructural management strategy with a green infrastructure standard will improve consistency in implementation by review agencies and, as such, provide applicants with greater regulatory predictability.

Implementation of green infrastructure through the Stormwater Management rules

Under the proposed amendments, “green infrastructure” is defined at N.J.A.C. 7:8-1.2 to mean stormwater management measures that manage stormwater close to its source either by infiltration into subsoil, treatment by vegetation or soil, or storage for reuse.

To effectuate the change from a requirement that major developments incorporate nonstructural stormwater management strategies to the “maximum extent practicable” to a requirement to utilize green infrastructure, the Department is proposing to repeal existing N.J.A.C. 7:8-5.3, nonstructural stormwater management strategies, and replace this section with proposed new N.J.A.C. 7:8-5.3, green infrastructure standards, and is additionally proposing to revise existing N.J.A.C. 7:8-5.2(a) to replace the requirement that major

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developments use nonstructural strategies to the “maximum extent practicable” with the requirement that the minimum design and performance standards for groundwater recharge, stormwater runoff quantity, and stormwater runoff quality are to be met by incorporating green infrastructure in accordance with proposed N.J.A.C. 7:8-5.3.

As indicated above, proposed new N.J.A.C. 7:8-5.3 specifies the types of green infrastructure BMPs that may be used for development subject to the Stormwater Management rules to meet the groundwater recharge, stormwater quantity, and stormwater quality standards, with particular requirements specified depending upon the standard to be satisfied. It also specifies limits applicable to the use of certain green infrastructure and requirements applicable where strict compliance with the generally applicable requirements is not compulsory.

To meet the groundwater recharge and stormwater runoff quality standards at proposed N.J.A.C. 7:8-5.4 and 5.5, proposed N.J.A.C. 7:8-5.3(b) requires a major development to use the green infrastructure BMPs listed in N.J.A.C. 7:8-5.2(f) Table 5-1 and/or an alternative stormwater management measure that meets the definition of green infrastructure at N.J.A.C. 7:8-1.2 and is approved in accordance with N.J.A.C. 7:8-5.2(g). As will be discussed below in the portion of the Summary entitled *Identifying the ability of BMPs to achieve the standards for groundwater recharge, stormwater quantity, and stormwater quality (N.J.A.C. 7:8-5.2(f), Tables 5-1, 5-2, and 5-3)*, the Department is proposing to incorporate into the rules three tables, identified as Table 5-1, 5-2, and 5-3, at N.J.A.C. 7:8-5.2(f) that identify BMPs presumed to be capable of contributing towards the achievement of the stormwater management standards

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when designed in accordance with the New Jersey Stormwater BMP Manual. The tables are also accompanied by notes that highlight additional specifications that are applicable to certain listed BMPs. The conditions referenced in the notes, as well as all other specifications identified in the Stormwater Best Management Practices Manual for each listed BMP, must be part of the BMP design to achieve the results presumed in the tables. Table 5-1, referenced in N.J.A.C. 7:8-5.3(b) for compliance with groundwater recharge and stormwater runoff quality standards, identifies green infrastructure BMPs that may be utilized to satisfy the water quality, quantity, and/or recharge standards. While green infrastructure BMPs identified in Table 5-2 may additionally be used to satisfy water quantity standards, only those BMPs identified in Table 5-1 may be used to satisfy the recharge and stormwater quality standards without a waiver or variance from N.J.A.C. 7:8-5.3.

Proposed new N.J.A.C. 7:8-5.3(c) requires a major development to use green infrastructure BMPs listed in Table 5-1, Table 5-2, and/or an alternative stormwater management measure that meets the definition of green infrastructure approved in accordance with N.J.A.C. 7:8-5.2(g) to satisfy the water quantity control requirement at N.J.A.C. 7:8-5.6. Proposed Table 5-2 at proposed N.J.A.C. 7:8-5.2(f) identifies BMPs that may be utilized for water quantity standards and can only be used to satisfy the water quality and/or recharge standards if a waiver from the green infrastructure requirements of N.J.A.C. 7:8-5.3 is obtained in accordance with N.J.A.C. 7:8-5.2(e) or a variance is obtained in accordance with N.J.A.C. 7:8-4.6.

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If a variance is obtained in accordance with N.J.A.C. 7:8-4.6 or a waiver from strict compliance is obtained in accordance with N.J.A.C. 7:8-5.2(e) for the enlargement of an existing public roadway or railroad, or the construction or enlargement of a public pedestrian access, proposed N.J.A.C. 7:8-5.3(d) allows a major development to use BMPs listed in Table 5-1, Table 5-2, Table 5-3, and/or an alternative stormwater management measure approved in accordance with N.J.A.C. 7:8-5.2(g) to meet groundwater recharge, stormwater runoff quantity, and stormwater runoff quality standards at N.J.A.C. 7:8-5.4, 5.5, and 5.6 at the development site. Proposed Table 5-3 identifies those BMPs that can only be used to satisfy the standards for stormwater quality, quantity, and/or recharge if a waiver from the green infrastructure requirements of N.J.A.C. 7:8-5.3 is obtained in accordance with N.J.A.C. 7:8-5.2(e) or a variance is obtained in accordance with N.J.A.C. 7:8-4.6, since the BMPs listed therein do not meet the definition of green infrastructure.

Proposed new N.J.A.C. 7:8-5.2(g) allows alternative stormwater management measures to be used to satisfy the green infrastructure requirements at N.J.A.C. 7:8-5.3 only if those measures are demonstrated by the applicant to the satisfaction of the review agency to be capable of satisfying the performance standards specified in the rules, meet the definition of green infrastructure, as defined in N.J.A.C. 7:8-1.2, and meet the drainage area limitations specified either in proposed N.J.A.C. 7:8-5.3(b) or 5.2(g), as applicable.

The Department periodically amends the BMP Manual as necessary to provide design specifications on additional BMPs or to revise the design specifications associated with existing BMPs. In the future, the Department may have reason to add BMPs. In order to ensure that

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Tables 5-1, 5-2, and 5-3 reflect the most recent version of the BMP Manual, the Department is proposing at N.J.A.C. 7:8-5.2(f) that “upon amendment of the New Jersey Stormwater Best Management Practices Manual to reflect additions or deletions of BMPs meeting these standards, or changes in the presumed performance of BMPs designed in accordance with the New Jersey Stormwater BMP Manual, the Department shall publish in the New Jersey Register a notice of administrative change revising the applicable table.”

Contributory Drainage Area Limitations

The proposed amendments and new rules require stormwater runoff to be managed by green infrastructure BMPs with smaller scale (limited contributory drainage area) green infrastructure BMPs required in most cases. While this approach will necessarily mean that certain green infrastructure measures will be limited in the contributory drainage area the measure is allowed to be designed to manage, there are green infrastructure practices, such as vegetative filter strips or cisterns, for which a limitation on contributory drainage area is unnecessary as discussed further below. Accordingly, the proposed amendments and new rules include green infrastructure BMPs that are subject to limitation on the contributory drainage area that may be managed by the BMP and those that are not. The Department proposes to define “contributory drainage area” as the area from which stormwater runoff drains to a stormwater management measure, not including the area of the stormwater management measure itself.

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As discussed above, the proposed amendments and new rules incorporate into the rules a series of tables specifying BMPs that are presumed to be capable of contributing towards the achievement of the stormwater management standards when designed in accordance with the New Jersey Stormwater BMP Manual. Where a contributory drainage area limitation is applicable to a particular green infrastructure BMP listed in Table 5-1, the drainage area limitation is identified at proposed N.J.A.C. 7:8-5.3(b). As discussed in more detail below, proposed new N.J.A.C. 7:8-5.3(b) establishes a one acre contributory drainage area limitation for dry wells; a 2.5 acre contributory drainage area limitation for small-scale bioretention systems, small-scale infiltration basins, and small-scale sand filters; a 3:1 contributory drainage area to surface area of the BMP limitation for pervious paving systems, while a contributory drainage area limitation for cisterns, grass swales, green roofs, and vegetative filter strips is not applicable.

Dry wells

In the experience of the Department, the contributory drainage area limit of one acre or less that is currently applied to dry wells designed in accordance with the New Jersey Stormwater BMP Manual results in a small-scale BMP that is successful in maintaining natural hydrology and managing stormwater runoff close to its source. Accordingly, the contributory drainage area limit for a dry well is one acre at proposed N.J.A.C. 7:8-5.3(b).

Small-scale bioretention systems, small-scale infiltration basin, and small-scale sand filters

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Bioretention systems, infiltration basins, and sand filters all rely on the use of a filter bed to provide pollutant removal. It is necessary for the stormwater runoff to be evenly distributed across the filter bed to provide the presumed pollutant removal rate. As the size of a contributory drainage area to one of these BMPs increases, so does the footprint of the BMP itself. The larger the footprint of the BMP, the more difficult it becomes for the runoff to be evenly distributed across the filter bed and the further the stormwater is being managed from its source. While a rain event that contributes sufficient runoff to spread across the entire bottom of the basin will achieve this even distribution, many rain events do not produce sufficient runoff to achieve this, especially if the BMP is designed with a large footprint. Instead, the runoff from the smaller events is filtered largely around the entrance to the BMP and the filter bed in that area is subjected to more pollutants than the areas farther from the entrance. Therefore, limiting the contributory drainage area for certain bioretention systems, infiltration basins, and sand filters will both ensure that these systems will function properly and achieve the goal of small-scale BMPs that maintain natural hydrology.

In order to determine the contributory drainage area limitation that would achieve the stated goals, while ensuring that any necessary limit remains implementable by the regulated community, the Department evaluated limitations set by other jurisdictions that would achieve a similar objective of utilization of small-scale distributed systems to mimic natural hydrology.

Many jurisdictions outside of New Jersey set limitations in their Stormwater BMP Manuals on the contributory drainage area to bioretention systems and infiltration basins. For bioretention systems, these limitations varied from as small as 2,000 square feet for a rain garden

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(a type of small-scale bioretention system) under the Maryland Environmental Site Design requirements, to as much as five acres for bioretention basins in the Georgia Coastal Stormwater Supplement. Some jurisdictions set separate limitations for rain gardens (small-scale bioretention) and larger bioretention systems. The majority of limitations were set below 2.5 acres. The Georgia Coastal Supplement sets the maximum contributory drainage area for rain gardens at 2,500 square feet. The Prince George's County Maryland Environmental Site Design requirements and Maryland Environmental Site Design requirements set the limits for bioretention systems at 20,000 square feet and 0.5 acre, respectively, and Virginia also sets a limit for rain gardens at 0.5 acre. Washington DC, Tennessee, West Virginia, and Delaware limit the contributory drainage area for rain gardens to one acre, while Maine limits the contributory drainage area for all bioretention systems to one acre. South Carolina limits the contributory drainage area for bioretention systems to two acres, and Washington DC, Tennessee, Virginia, Nashville, and West Virginia all set their contributory drainage area limits for bioretention systems at 2.5 acres. Delaware sets a limit on bioretention basin contributory drainage areas at 10 acres. However, while a maximum contributory drainage area of 10 acres is allowed, the maximum impervious surface portion of that drainage area is limited to 2.5 acres. Since the majority of stormwater managed by bioretention systems will come from impervious surfaces, in most cases the Delaware limits would result in an effective contributory drainage area significantly less than 10 acres.

The limits set by other jurisdictions for infiltration basins vary from two acres to five acres. Nashville, Prince George's County Maryland, Virginia, Washington DC, and West Virginia set their

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limits at two acres for infiltration basins, while the Georgia Coastal Supplement and South Carolina set limits at five acres.

It should be noted that the designs for these BMPs in other jurisdictions, discussed above, are not necessarily identical to the designs contained within the New Jersey Stormwater BMP Manual. While the designs for the bioretention systems and infiltration basins referenced above are generally similar enough for direct comparison, the designs for sand filters in other jurisdictions generally are not intended to infiltrate. Sand filters that are not designed to infiltrate do not meet the proposed definition of green infrastructure. Due to this fundamental difference in design, the drainage area limitations of sand filters in other jurisdictions do not provide a good basis for establishing an appropriate limitation in New Jersey for small-scale sand filters designed to infiltrate. Instead, because small-scale sand filters designed to infiltrate and small-scale infiltration basins function similarly, it is more appropriate to establish a contributory drainage area limitation for the infiltration type of sand filter design contained in the New Jersey Stormwater BMP Manual comparable to the contributory drainage area limitations on infiltration basin from other jurisdictions

Numerous entities recommend decentralization and the management of stormwater close to its source as techniques to help maintain or mimic natural hydrology (Ahiablame, Engel, and Chaubey, 2012; Majid, 2010; HUD, 2003; Coffman, 2000; USEPA, 2009). The Department also has a long history of encouraging decentralization and managing runoff close to its source to mimic natural hydrology as expressed in the 2003 Stormwater Management rule proposal (35

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N.J.R. 119(a)), the 2004 Stormwater Management rule adoption (36 N.J.R. 670(a)), and the New Jersey Stormwater BMP Manual, Chapter 2.

Based upon the well-established benefits of treating stormwater runoff close to its source and the limitations established in other states, in order to promote the goal of maintaining or reproducing natural hydrology, while recognizing the need for the BMPs to be implementable both from a design and maintenance perspective, the contributory drainage area limit for small-scale bioretention, small-scale infiltration, and small-scale sand filters is 2.5 acres at proposed N.J.A.C. 7:8-5.3(b). Because these BMPs all function similarly, the same contributory drainage area limit is applicable to all three BMPs. The Department notes that these same BMPs, bioretention, infiltration, and sand filters can be utilized on a larger scale to manage stormwater volume from less frequent storm events, specifically the two-, 10-, and 100-year storm, when designed with a detention component. Use of larger scale bioretention systems, infiltration basins, and sand filters is discussed in more detail below in the section of the summary entitled *BMPs available to meet the water quantity standard*.

Pervious Paving Systems

The pervious paving system BMP is distributed by its nature and manages the stormwater that falls directly on its surface by infiltrating that stormwater at that point. However, pervious paving systems can have additional contributory drainage areas (such as an impervious drive aisle, the stormwater runoff from which flows onto pervious paving parking spaces). If such areas result in the pervious paving area receiving an excessive flow of stormwater runoff, achievement

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of the goals of maintaining natural hydrology and managing stormwater runoff close to its source can be negatively impacted. Currently, a pervious paving system designed in accordance with the New Jersey Stormwater BMP Manual is limited to a maximum ratio of contributory drainage area to surface area of the pervious paving system of 3:1. In the Department's experience, systems designed in accordance with the New Jersey Stormwater BMP Manual receiving drainage from an area no greater than three times the surface area of the pervious paving system have been successful in maintaining natural hydrology and managing stormwater runoff close to its source. Accordingly, this contributory drainage area limitation for pervious paving systems is included at proposed N.J.A.C. 7:8-5.3(b).

Alternative stormwater management measures to satisfy the green infrastructure requirement

An alternative stormwater management measure may be used to meet the requirement to use green infrastructure if the alternative measure is approved pursuant to proposed N.J.A.C. 7:8-5.2(g) and meets the definition of green infrastructure. If an alternative stormwater management measure functions in the same manner as a BMP that is subject to a contributory drainage area limit at proposed N.J.A.C. 7:8-5.3(b), proposed N.J.A.C. 7:8-5.2(g) states that it will be subject to the same drainage area limit as the similar BMP that appears at proposed N.J.A.C. 7:8-5.3(b). Furthermore, in order to ensure that proposed alternative stormwater management measures meet the Department's goal of maintaining, or reproducing as closely as possible, the natural hydrologic cycle, proposed N.J.A.C. 7:8-5.2(g) requires both that alternative measures

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that do not function similarly to any of the BMPs with contributory drainage area limits at proposed N.J.A.C. 7:8-5.3(b) are subject to a 2.5 acre contributory drainage area limitation, excluding an alternative stormwater management measure that functions similarly to one of the BMPs discussed below to which a contributory drainage area limit is not applicable, and that alternative stormwater management measures that require large contributory drainage areas to function (such as standard constructed wetlands and wet ponds) can only be used for compliance with the stormwater runoff quantity standard, unless a waiver or variance is granted. While it is unclear to the Department at this time what type of stormwater management measures would be proposed that would not function in a similar manner to either one of the BMPs subjected to a contributory drainage area limit at proposed N.J.A.C. 7:8-5.3(b) or one of the BMPs discussed below to which a contributory drainage area is not applicable, in order to ensure that the goal of small-scale BMPs that maintain natural hydrology is achieved, the Department believes that it is appropriate to establish a default maximum drainage area limitation. Based upon the Department's review of the limitations established in other jurisdictions discussed above, the Department is proposing that the same 2.5 acre contributory drainage area limitation determined to achieve the chapter's goal of maintenance of natural hydrology for small-scale bioretention, small-scale infiltration, and small-scale sand filters be applicable to any future alternative BMP that does not function in a similar manner to one of the BMPs currently referenced in the rules. Should the Department determine that a future BMP employing some methodology not anticipated at this time could effectively address a larger contributory drainage area while still achieving the goals of this chapter, the Department will propose to make a

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different contributory drainage area limitation applicable to that BMP through future rulemaking.

BMPs to which a contributory drainage area limit is not applicable

As indicated above, while, in most cases, it is necessary to limit the size of the contributory drainage area of green infrastructure BMPs in order to maintain natural hydrology and manage stormwater runoff close to its source, the Department recognizes that there are green infrastructure practices for which a limitation on contributory drainage area is not applicable. This may be because the design of the BMP already has a built-in limitation on its contributory drainage area and/or the BMP by its nature is already distributed, such as a vegetative filter strip, and, thus, could exceed any contributory drainage area limitation while still maintaining natural hydrology and managing stormwater runoff close to its source. As such, the BMPs discussed below, when designed in accordance with the New Jersey Stormwater BMP Manual, are not subjected to a contributory drainage area limitation at proposed N.J.A.C. 7:8-5.3(b). These BMPs are grass swales, vegetative filter strips, green roofs, and cisterns.

In the Department's experience, a grass swale, when designed in accordance with the New Jersey Stormwater BMP Manual, which requires a very shallow flow depth and low velocity, and, therefore, indirectly limits the contributory drainage area, is a small-scale BMP that is successful in maintaining natural hydrology and managing stormwater runoff close to its source. Furthermore, grass swales are rarely used on their own, as they are incapable of meeting the water quality, water quantity, and groundwater recharge standards without the use of another

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BMP downstream of the grass swale. The maximum drainage area to an individual grass swale will also be controlled by any limitation applicable to the downstream BMP used in conjunction with the grass swale to achieve the applicable water quality or groundwater recharge standard. This is because the contributory drainage area to the grass swale could not exceed the limit applicable to the downstream BMP without the downstream BMP exceeding its applicable contributory drainage area limit since the grass swale would convey its drainage area to the downstream BMP. Accordingly, a contributory drainage area limit is not applicable to this BMP.

A vegetative filter strip is a strip of vegetative surface through which the stormwater runoff from an impervious surface flows. The vegetation slows and filters the runoff providing water quality treatment. In order for the vegetative filter strip to provide this treatment, the stormwater must be in the form of sheet flow, which generally has a depth of less than one tenth of one foot and can only occur for relatively short flow lengths (less than 100 or 150 feet). Since the function of the vegetative filter strip already sets significant limitations on the size of the associated drainage area, a drainage area limitation is not applicable to this BMP.

Green roofs do not have contributory drainage areas as they only manage the stormwater that falls directly on the surface of the green roof, and, thus, by their nature are distributed and manage the stormwater at its source. As such, a drainage area limitation is not applicable to a green roof.

A drainage area limitation is also not applicable to a cistern. Cisterns require the collected stormwater to be re-used. Thus, the drainage area will be limited by the demand for water use on-site, such as irrigation or non-potable indoor use, like toilet flushing.

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BMPs available to meet the water quantity standard

As noted above, major developments may utilize green infrastructure BMPs listed in either Table 5-1 or Table 5-2 to meet the water quantity standard. While some BMPs in Table 5-1 have contributory drainage area limits, BMPs in Table 5-2 are not subject to contributory drainage area limits. BMPs in Table 5-2 do not need to be subject to a contributory drainage area limitation because the benefits of small-scale decentralized stormwater management systems will be achieved through the BMPs in Table 5-1, which are required to be used to meet the groundwater recharge and water quality standards and may optionally be used to meet or assist in meeting the water quantity standard. In addition to using BMPs in Table 5-1 to meet water quality, groundwater recharge, and water quantity, major developments may also use the BMPs in Table 5-2 to meet the water quantity standard. It is unnecessary, and in some cases, particularly for larger sites, impracticable, to require major developments to meet the water quantity standard through the exclusive use of small-scale BMPs. Even in the natural environment, meaning a completely undeveloped site, significant runoff occurs during large storm events, like the two-, 10-, and 100-year storms. Because even an undisturbed site is unable to infiltrate or evapotranspire the entire quantity of these large storm events, the Department is not expecting major developments to meet the water quantity standard through the exclusive use of small-scale BMPs and, therefore, is proposing to allow major developments to also use BMPs in Table 5-2 to meet the water quantity standard. However, note that while the BMPs in Table 5-2 are not subject to maximum contributory drainage area limits, as green infrastructure,

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in accordance with the definition of green infrastructure at N.J.A.C. 7:8-1.2, they will need to allow for infiltration, filtering by vegetation or soils, and/or storage for reuse. These limits are shown as table notes for sand filters and wet ponds. The table note for sand filters requires infiltration and the table note for wet ponds requires that they be “designed to maintain at least a 10-foot wide area of native vegetation along at least 50 percent of the shoreline and to include a stormwater runoff retention component designed to capture stormwater runoff for beneficial reuse, such as irrigation.” These table notes are intended to ensure that BMPs in Table 5-2 that are used for compliance with the water quantity control standard meet the definition of green infrastructure at N.J.A.C. 7:8-1.2.

Identifying the ability of BMPs to achieve the standards for groundwater recharge, stormwater quantity, and stormwater quality (N.J.A.C. 7:8-5.2(f), Tables 5-1, 5-2, and 5-3)

In Table 2, at existing N.J.A.C. 7:8-5.5(b), the Department has identified the anticipated/presumed TSS removal rates of various BMPs when designed in accordance with the Stormwater BMP Manual. Using this table, if an applicant employs a specific BMP, and designs it in accordance with the New Jersey Stormwater Best Management Practices Manual, the review agency will presume that the specified level of TSS reduction has occurred or will occur. In this rulemaking, the Department proposes to continue to use the table as a tool to list the capabilities of BMPs to satisfy the water quality standard. However, the Department proposes to expand and separate Table 2 into proposed Table 5-1, Table 5-2, and Table 5-3, which are proposed at N.J.A.C. 7:8-5.2(f). The proposed tables list BMPs that are presumed to

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be capable of contributing towards the achievement of the stormwater management standards when designed in accordance with the Stormwater BMP Manual, with the tables broken out to identify green infrastructure BMPs that may be utilized to satisfy the water quality, quantity, and/or recharge standards (Table 5-1), green infrastructure BMPs that may be utilized for water quantity standards, but can be used to satisfy water quality and/or recharge standards only if a waiver from the green infrastructure requirements of N.J.A.C. 7:8-5.3 is obtained in accordance with N.J.A.C. 7:8-5.2(e) or a variance is obtained in accordance with N.J.A.C. 7:8-4.6 (Table 5-2), and BMPs that can be used to satisfy the standards for stormwater quality, quantity, and/or recharge only if a waiver from the green infrastructure requirements of N.J.A.C. 7:8-5.3 is obtained in accordance with N.J.A.C. 7:8-5.2(e) or a variance is obtained in accordance with N.J.A.C. 7:8-4.6 (Table 5-3).

For each of the BMPs listed in the tables, when designed in accordance with the Stormwater BMP Manual, the table identifies the presumed percentage TSS removal rate, whether the BMP is capable of satisfying the quantity standards, whether the BMP is capable of satisfying the recharge standards, what minimum separation in feet of the BMP from seasonal high water table must be maintained for the BMP to achieve the standards reflected in the tables, as well as any special conditions applicable to that particular BMP that must be present for the BMP to achieve the particular standard as reflected in the table (for example in Table 5-1, whether the BMP is subject to a maximum contributory drainage area as discussed above).

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Relocating nonstructural stormwater management strategies to Stormwater management plan requirements at N.J.A.C. 7:8-2.4(g).

While the Department is proposing to require utilization of green infrastructure, rather than continuing the current requirement that the standards in the rules be satisfied, to the “maximum extent practicable,” through the utilization of nonstructural stormwater management strategies and proposing to repeal existing N.J.A.C. 7:8-5.3, which includes that requirement at N.J.A.C. 7:8-5.3(a), the Department is not proposing to eliminate reference to the nonstructural stormwater management strategies from the rules. The nine nonstructural strategies, which include approaches such as maximizing protection of natural drainage features and minimization of land disturbance including clearing and grading, are important principles to guide a stormwater management planning effort. Under the existing rules, municipal and regional stormwater management plan requirements include multiple references to nonstructural stormwater management strategies. To support those references and to reflect the continued relevance of the nonstructural strategies in stormwater management planning, the nine nonstructural stormwater management strategies listed at current N.J.A.C. 7:8-5.3(b)1 through 9 will be relocated to proposed N.J.A.C. 7:8-2.4, Stormwater management plan requirements, at subsection (g).

Variance from design and performance standards included in municipal stormwater management plans (N.J.A.C. 7:8-4.2 and 4.6)

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The Stormwater Management rules include provisions that allow a municipality to grant a variance or exemption from the design and performance standards set forth in the municipality's approved municipal stormwater management plan provided certain requirements are met. Particularly, in accordance with existing N.J.A.C. 7:8-4.2(c)11, the approved municipal stormwater management plan must include a mitigation plan that ensures completion of offsetting mitigation within the same drainage area as the location to which the variance or exemption was granted. The mitigation plan must also ensure that the mitigation addresses the same performance standard as that for which the variance or exemption was granted. Further, in accordance with N.J.A.C. 7:8-4.6, the municipality must submit a written report to the county review agency and to the Department describing the variance or exemption and required mitigation.

Recognizing that there may be limited instances where it is technically impracticable for any green infrastructure BMP to be incorporated onto the site of a major development or for the site to accommodate green infrastructure that would fully achieve compliance with the standards contained in the rules, the Department is proposing to continue to allow variances to be granted at the local level with amendments to both N.J.A.C. 7:8-4.2(c)11 and 4.6 to provide further options with reference to mitigation and to add additional specificity.

The Department proposes to amend existing N.J.A.C. 7:8-4.2(c)11 to require a mitigation plan to also include potential mitigation projects and/or criteria for the municipality to use to evaluate mitigation projects. This change will require a municipality to identify in the plan, specific projects that it wishes to encourage and/or to include information on the criteria used

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to evaluate potential mitigation projects, which will increase predictability for applicants.

Existing N.J.A.C. 7:8-4.2(c)11 additionally requires that the mitigation plan included in a municipal stormwater management plan ensure that the mitigation is completed within the drainage area, and that the mitigation project compensates for the performance standard for which the variance or exemption is granted. As part of its effort to incorporate into the rules greater specificity as to what factors should be considered in the determination of whether a variance should be granted by a municipality, the Department proposes to remove this requirement from N.J.A.C. 7:8-4.2 and relocate it as part of proposed N.J.A.C. 7:8-4.6 with amendments. With reference to location of the mitigation, proposed N.J.A.C. 7:8-4.6(a)3iii replaces the existing requirement that mitigation occur within the same drainage area with a requirement that mitigation occur in the same 14-digit hydrologic unit code (HUC 14) as the area of the major development subject to the variance. The Department is proposing this change because a 14-digit hydrologic unit is a specifically delineated area and, therefore, provides review agencies and applicants with clarity as to the extent of the drainage area within which the mitigation project must occur. With reference to the existing requirement that the mitigation provide compensation for the same performance standard as that for which the variance was granted, that requirement continues to be applicable with proposed N.J.A.C. 7:8-4.6(a)3vi, vii, viii, and ix specifying specific mitigation requirements applicable to a mitigation project for each performance standard, as discussed further below.

Existing N.J.A.C. 7:8-4.6 allows the municipality to grant a variance or exemption from design and performance standards enumerated in the municipal stormwater management plan

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and stormwater control ordinance(s), but provides no details on what an applicant must demonstrate when requesting a variance or exemption, nor what a municipality shall consider when evaluating a variance or exemption. In order to provide guidance to municipalities making variance determinations and improve predictability for applicants seeking a variance from the design and performance standards set forth in the municipal stormwater management plan and stormwater ordinances, the Department proposes to add specificity as to what demonstrations must be made and what limitations are applicable regarding the timing and contents of any mitigation approved to compensate for the impacts created by the requested variance. This added specificity represents the minimum standards that must be satisfied for a municipality to grant a variance. Additional requirements may be imposed by municipalities. If a municipality incorporates a mitigation plan into its municipal stormwater management plan, the municipal stormwater management plan and stormwater control ordinance should specify how the municipality will process and approve or deny variance requests.

Proposed N.J.A.C. 7:8-4.6(a)1 requires that an applicant demonstrate that it is technically impracticable to meet any one or more of the design or performance standards on the major development site in order to be eligible for consideration for approval of the requested variance. While the rules acknowledge, by providing the variance option at the municipal level, that there may be cases where site constraints are present that cannot be overcome, consistent with the intent to achieve the benefits attributable to utilization of green infrastructure, allowance of a variance from the design and performance standards and the utilization of non-green infrastructure BMPs is intended to be limited to instances in which

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strict compliance with the requirements of the rules is technically impracticable. To ensure that variances are not given in inappropriate circumstances, for example, based solely upon cost or convenience considerations, technical impracticability is defined to exist only if the design and performance standard cannot be met for engineering, environmental, or safety reasons.

Further, proposed N.J.A.C. 7:8-4.6(a)1 makes clear that demonstrating that compliance is technically impracticable for one drainage area on a site does not result in the approved variance being applicable to the entire site. Instead, applicants must perform an alternatives analysis demonstrating that each green infrastructure BMP is technically infeasible for each drainage area, if the applicant seeks to use non-green infrastructure BMPs on the entire site.

While a variance may be appropriate in limited circumstances, consistent with the goal to as closely as possible maintain natural hydrology and manage stormwater close to its source, proposed N.J.A.C. 7:8-4.6(a)2 requires that a variance may be approved only if the applicant demonstrates that the proposed design results in the greatest possible compliance with the standard from which the variance is granted on-site.

In addition to providing specificity as to the demonstrations an applicant must make to be eligible for consideration for a variance, proposed N.J.A.C. 7:8-4.6 is expanded to provide greater specificity as to required mitigation that must be provided to offset impacts related to the variance where the design and performance standards cannot be met. Particularly, proposed N.J.A.C. 7:8-4.6(a)3 provides requirements regarding the type of mitigation project that will be required, the timing for both approval and construction of a mitigation project, general standards that must be satisfied by all mitigation projects related to a variance

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application, as well as requirements specific to the type of standard (green infrastructure, groundwater recharge, water quantity, and/or water quality) for which the variance is granted, as described below.

The Department proposes to allow the mitigation project to be either selected from the municipal mitigation plan incorporated into the approved municipal stormwater management plan, where the municipality has chosen to specify potential projects in the plan, or proposed by the applicant in accordance with the requirements set forth in the municipal mitigation plan. As specified in proposed N.J.A.C. 7:8-4.6(a)3, all mitigation projects conducted pursuant to a variance approval must: be approved no later than preliminary or final site plan approval of the major development, be in the same 14-digit hydrologic unit code as the area of the major development subject to the variance, be constructed prior to or concurrently with the construction of the major development, and comply with the green infrastructure standards at N.J.A.C. 7:8-5.3. These requirements are intended to ensure that the mitigation project provides the offsets required in close proximity to the area subject to the variance, includes green infrastructure, and is approved and constructed in a manner that ensures that the offsetting benefits of the mitigation project do not occur subsequent to the impacts that they are designed to offset, resulting in a period when the impacts of the variance are not compensated for.

As indicated above, the requirement under the existing rules at N.J.A.C. 7:8-4.2(c)11 that a mitigation plan that is part of a municipal stormwater management plan must ensure that mitigation is completed within the same drainage area and for the performance standard

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for which the variance was granted is relocated to be part of expanded N.J.A.C. 7:8-4.6 with amendment to require that the mitigation be within the same 14-digit hydrologic unit code as the area of the development project that was the subject of the granted variance. This was amended from the existing reference to the mitigation being in the same “drainage area” to a requirement that it be in the same HUC 14 to provide additional clarity to the scope of the drainage area to be considered for mitigation. As the existing rules refer to this hydrologic unit code (see, for example, N.J.A.C. 7:8-3.1(b)), the Department is proposing to add a definition at N.J.A.C. 7:8-1.2 for ““HUC 14” or “hydrologic unit code 14”” to make clear that an area designated as a HUC 14, also known as a subwatershed, is delineated in the State by the United States Geological Survey. The proposed definition is identical to the definition of the same term in the Department’s Water Quality Management Planning rules at N.J.A.C. 7:15-1.5.

In addition to the conditions applicable to any mitigation project approved as part of a variance, the proposed rules establish requirements specific to the standard for which the variance is granted. The proposed new requirements are intended to add specificity that will ensure that all mitigation projects granted to offset any impacts allowed by a granted variance not only provide general water quality benefits, but are sufficiently focused to fully compensate for the specific impacts to the standard for which a variance is granted.

If the variance is granted from the green infrastructure standard at N.J.A.C. 7:8-5.3, then the mitigation project must incorporate green infrastructure BMPs listed in Table 5-1 and/or alternative stormwater management measures approved in accordance with N.J.A.C. 7:8-5.2(g) that meet the definition of green infrastructure to manage an equivalent or greater area of

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impervious surface and an equivalent or greater area motor vehicle surface as the area of the major development that was subject to the granted variance in order to ensure the project provides the required offsetting benefits. Proposed N.J.A.C. 7:8-4.6(a)3vi limits the use of grass swales and vegetative filter strips in mitigation projects to projects in which they are used in combination with another non-grass swale/vegetative filter BMP. While grass swales and vegetative filter strips are considered green infrastructure, they would not be sufficient without other green infrastructure BMPs to meet the requirements at proposed N.J.A.C. 7:8-5.3, as grass swales provide only 50 or less TSS removal and no groundwater recharge, and vegetative filter strips provide no groundwater recharge, and, thus, neither should be used as the sole means of mitigation to compensate for the inability to comply with N.J.A.C. 7:8-5.3.

If a variance is granted from the groundwater recharge standard at N.J.A.C. 7:8-5.4, or the water quality standard at N.J.A.C. 7:8-5.5, in accordance with proposed N.J.A.C. 7:8-4.6(a)3vii and viii(1), respectively, the mitigation project must provide groundwater recharge or water quality treatment that equals or exceeds the groundwater recharge or water quality deficiency resulting from granting of the variance. For a grant of a variance from the recharge standard, proposed N.J.A.C. 7:8-4.6(a)3vii allows for the variance if it is demonstrated that the groundwater recharge mitigation, in combination with the groundwater recharge and/or infiltration performed at the major development site, will either equal or exceed the annual average pre-construction groundwater recharge volume for the major development site, or infiltrate a stormwater runoff volume equal to or in excess of the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm resulting from the

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major development. These options reflect that the mitigation must be demonstrated to satisfy the minimum groundwater recharge design and performance standards in the same way allowed at existing N.J.A.C. 7:8-5.4(a)2i(1) and (2) (proposed N.J.A.C. 7:8-5.4(b)1i and ii). For a variance from the water quality standard, the mitigation project must also result in removal of nutrients to the maximum extent feasible to ensure that this requirement of the stormwater runoff quality standard, codified at existing N.J.A.C. 7:8-5.5(e) (proposed N.J.A.C. 7:8-5.5(f)), continues to be satisfied. These provisions reinforce that a variance may only be granted if mitigation is provided that results in a compensatory benefit that at least equals any impact from allowance of the variance.

If a variance from the water quantity standard at N.J.A.C. 7:8-5.6 is sought, proposed N.J.A.C. 7:8-4.6(a)3ix requires that, to be found to provide sufficient compensation for the impacts authorized by the variance, a proposed mitigation project must provide peak flow rate attenuation for an equivalent area upstream on the same watercourse as the major development for which the variance is sought. In order for the mitigation project to adequately compensate for the impacts of the variance, the area managed by the mitigation project must be equivalent (or greater) in both total size and percentage of impervious surface and/or motor vehicle surface. Additionally, the applicant must perform a hydrologic and hydraulic analysis to demonstrate that the variance will not result in increased flood damage.

Once a mitigation project is completed, it is important that the mitigation project be maintained to ensure that it continues to provide the offsetting benefits that it was designed to provide and is not allowed to degrade over time resulting in negative environmental

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consequences. Proposed N.J.A.C. 7:8-4.6(a)3x requires that the applicant be the responsible party for maintenance of the mitigation project unless a public agency agrees, in writing, to assume the maintenance responsibility.

Finally, existing N.J.A.C. 7:8-4.6 requires that a municipality granting a variance or exemption submit a written report to the county review agency and the Department describing the variance or exemption, as well as the required mitigation. This requirement is relocated to proposed N.J.A.C. 7:8-4.6(b) with amendment to require that the report be submitted within 30 days of the approval of the variance. The requirement is also amended to eliminate reference to exemptions for the reason discussed below. The specified timeframe will ensure that both the Department and the county review agency are aware of approvals and will allow timely monitoring to ensure that mitigation required as a condition of granting of the variance is achieving the offsetting benefits it was designed to provide.

Existing N.J.A.C. 7:8-4.6 is entitled “Variance or exemption from the design and performance standards for stormwater management measures.” While the rules will continue to provide municipalities with the authority to grant variances if they have an approved Municipal Stormwater Management Plan that includes a mitigation plan that ensures completion of offsetting mitigation within the same area as the area subject to the variance, neither the existing rules nor the proposed amended rules allow a variance to be approved unless offsetting mitigation is required. Accordingly, the Department is proposing to remove all reference to “exemption” from the section heading and where that term currently appears in

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the section to eliminate any potential misconception that a variance in the stormwater context could include total relief from the standards required by this chapter.

As part of Subchapter 4, Municipal Stormwater Management Planning, variances, both under the existing rules and under the rules as proposed to be amended, apply only to municipal review and approval of major developments. Some major developments also require the Department's review and approval, such as projects that are subject to the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13. The proposed amendments are not intended to create a new process or program for the submission, evaluation, and granting of variances from the Department's existing permitting process. Instead, the Department will continue to use the existing mechanisms to address the limited situations where site specific or other considerations warrant relief from the green infrastructure requirements or any of the other standards. Applicants seeking relief from the proposed green infrastructure standards that do not propose a project eligible for consideration for a waiver from strict compliance in accordance with N.J.A.C. 7:8-5.29(e) (enlargement of an existing public roadway or railroad, or the construction or enlargement of a public pedestrian access) may seek a waiver/exception under the Department's Waiver Rule, N.J.A.C. 7:1B, and within the Flood Hazard Area Control Act Rules' hardship provision, N.J.A.C. 7:13-15.1.

Notice and protection of stormwater management measures

Proposed N.J.A.C. 7:8-5.2(m) requires recordation of a deed notice approved by the review agency that describes the stormwater management measure and identifies the location

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of the proposed stormwater management measure. A deed notice is a document that is recorded in the particular county's land records and provides notice to future purchasers of the land that certain conditions exist on site or certain restrictions apply to the use of the property, and these conditions or restrictions continue to apply after the transfer of ownership in the property. The deed notice in conjunction with the BMP maintenance plan, discussed below, will place future prospective owners of the property on notice of the presence, location, and maintenance obligations relative to the stormwater management measure and will ensure protection of the stormwater management measure in perpetuity. N.J.A.C. 7:8-5.2(m) will be applicable to all stormwater management measures.

The Department is proposing to provide flexibility to modify stormwater management measures, with the approval of the review agency. Particularly, proposed N.J.A.C. 7:8-5.2(n) provides that stormwater management measures may be altered or replaced if the review agency determines that the existing quality, quantity, or recharge treatment of stormwater runoff will be maintained to the same extent as previously approved, including the use of green infrastructure. Accordingly, the new subsection provides a path through which a property owner could modify the stormwater management measure, with approval from the reviewing agency, while continuing to ensure that the proposed alteration or replacement provides the necessary water quality and flood control benefits as the originally approved measure.

Existing N.J.A.C. 7:8-5.8, Maintenance requirements, requires that the BMP maintenance plan "be recorded upon the deed of record for each property on which maintenance described in the maintenance plan must be undertaken." This rulemaking does

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not include any revisions to this existing requirement. In conjunction with the deed notice, the continuing requirement to record the BMP maintenance plan ensures that potential purchasers and subsequent owners are provided notice not only of the existence and location of the stormwater management measure, but also the measures necessary to ensure that the stormwater management measure continues to function and provide the benefits it was designed to provide.

Operative Date of the Rule

The Department is proposing to utilize two mechanisms to ease implementation of the proposed amendments, repeals, and new rules; a delayed operative date for the amendments proposed at this time and inclusion of a form of “grandfathering” for projects that have progressed to the point of complete application at the point the rules become operative.

Delayed Operative Date

The Department proposes to set the operative date of the rule one year after the publication of the adoption in the New Jersey Register for three reasons. First, municipalities are given up to one year to modify their stormwater control ordinances in accordance with Part IV.A.3.e. of the New Jersey Pollutant Discharge Elimination System (NJPDDES) Tier A municipal separate storm sewer system (MS4) permit and Part IV.A.3.d. of the NJPDDES Tier B MS4 permit. Delaying the operative date of the rule to one year after adoption will minimize the timeframe in which differing stormwater rules are implemented at the State and local levels. Second, the

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Department recognizes that it takes considerable time and effort to design the stormwater system for a major development, and that this rulemaking will require a change in the way stormwater systems are designed. Delaying the operative date of the rule for one year will allow projects that are already substantially designed in reliance on the standards contained in the existing rules to proceed to complete design and application, thereby avoiding costly redesign. Third, due to the significant change in the way stormwater management systems will be designed, the Department will need to provide training to both design engineers and review engineers. Considering that there are 565 municipalities in the State and a large number of design engineers, the number of individuals requiring training likely exceeds 1,000. Delaying the operative date for one year will give the Department the required time to offer training to the large number of engineers likely to design or review projects affected by the changes.

“Grandfathering” of major development applications (N.J.A.C. 7:8-1.6)

To support the implementation of this rulemaking, the Department is proposing changes to N.J.A.C. 7:8-1.6, Applicability to major development. In 2004, the then-existing Stormwater Management rules were repealed and replaced by the current chapter, with the then-new rules effective February 2, 2004. To accommodate projects that had already reached milestones reflecting a significant investment for design in compliance with the standards that were mandated by the prior rules, existing N.J.A.C. 7:8-1.6 was incorporated into the chapter to make clear that, while generally all major development must comply with the requirements of the rules reflected in the Administrative Code after the adoption, projects that had obtained certain

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identified approvals prior to the February 2, 2004 effective date of the then-new rules were excepted from the requirement to comply with the new rules. Instead, major developments having obtained the requisite approvals identified in N.J.A.C. 7:8-1.6(b) and, if applicable, (c) were allowed to continue to proceed under the prior rules in recognition of the level of investment in design that had been made as reflected in the acquired approvals. Further subsections of N.J.A.C. 7:8-1.6 specify when the exemption from application of the new rules expires and also identify limitations on the land area and scope of project that is covered by the exemption.

The Department is proposing several amendments to N.J.A.C. 7:8-1.6 to provide a modified form of “grandfathering” that would be applicable to the changes being proposed at this time. In recognition that the proposed amendments, including the proposed amendment to require utilization of green infrastructure with very limited exception, could require significant redesign of projects that had similarly progressed in reliance on the existing rule requirements, the Department proposes to revise the dates that had been incorporated to provide limited “grandfathering” at N.J.A.C. 7:8-1.6(b) to reflect that major development qualifying for the exception will be subject to the requirements of the rules in effect one day before the operative date of this rulemaking (with the actual date one day prior to the date one year after publication of the notice of adoption in the New Jersey Register to be incorporated into the rule). Corresponding changes are proposed in both N.J.A.C. 7:8-1.6(b) and (c) to replace existing references to the February 2, 2004 effective date of the new rules adopted at that time with the operative date of the amendments proposed at this time (again, with the actual date to be inserted when the changes proposed at this time become operative).

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In addition to updating the dates used to determine applicability of the grandfather provisions to major development and to refer to the rules that will be applicable to major development that does qualify under the exception to the general requirement that all major development satisfy the rules as amended, the Department is proposing to amend what is required to demonstrate qualification for the exception. Particularly, while the existing rule addressing grandfathering as part of the 2004 rulemaking bases eligibility for the exception on the major development having received certain specified approvals prior to the effective date of the 2004 rulemaking, the Department proposes to instead base eligibility on submission of an application for the specified approvals. Accordingly, proposed N.J.A.C. 7:8-1.6(b)1 provides that major development that does not require a Department approval specified in N.J.A.C. 7:8-1.6(c) will continue to be subject to the requirements applicable immediately before the operative date of the currently proposed amendments, as long as an application for one of the specified local approvals under the Municipal Land Use Law has been submitted for the major development prior to the operative date of the proposed amendments. In order to qualify as an application for purposes of this grandfathering exception, the application submission must include the application form and all accompanying documents required by ordinance for approval. It should be noted that this grandfathering provision applies to projects subject to the Residential Site Improvement Standards, N.J.A.C. 5:21, which requires projects to meet the Stormwater Management rules. Reviews conducted by a municipality for projects that are not subject to the Residential Site Improvement Standards are conducted in accordance with the municipal stormwater control ordinance. As a result, the effective date of the ordinance will

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determine the standards under which the project is reviewed. This proposed change makes the applicability section consistent with the Municipal Land Use Law, which requires that development applications be evaluated under the ordinance(s) in effect at the time of application (see N.J.S.A. 40:55D-10.5). Where major development requires one of the Department approvals enumerated at N.J.A.C. 7:8-1.6(b)2 in addition to Municipal Land Use Law approval, the existing rules require that the major development has obtained both the municipal approval and the applicable Department permit prior to the effective date of the 2004 rules and that the Department permit included a stormwater management review component for the major development to qualify for grandfathering under the rules prior to adoption of the then new rules. Consistent with the change proposed when only municipal approval is required, N.J.A.C. 7:8-1.6(b)2 and (c) are proposed to be amended to provide that the major development will qualify to continue to be processed under the rules prior to the operative date of these amendments provided that a technically complete permit application was submitted prior to the operative date and the permit application included a stormwater management review component. Under the identified rules, a technically complete application is one that includes all application requirements specified in the applicable rules with each application item being determined to be adequate to allow the Department to determine if the proposed project complies with the applicable rule chapter. The Department proposes to add the Highlands Water Protection and Planning Act to the existing list of statutes for which a technically complete permit application must have been submitted to the Department prior to the operative date in order to be reviewed under the requirements of the Stormwater

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Management rules prior to the operative date of the currently proposed amendments. Since the proposed grandfathering will be tied to the submission of a technically complete application rather than requiring approval, existing N.J.A.C. 7:8-1.6(b)3 is no longer relevant and is proposed to be deleted.

The Department is additionally proposing to modify existing N.J.A.C. 7:8-1.6(e), which specifies the limitations applicable to grandfathering under N.J.A.C. 7:8-1.6(b) and actions that will be deemed to void qualification of a project for processing under the prior stormwater management requirements. Since the proposed grandfathering will be tied to the submission of a technically complete application rather than requiring approval, references in existing subsection (e) to approvals obtained under the grandfathering provision, N.J.A.C. 7:8-1.6(b), are amended to refer to applications and approvals. Further, the list of examples of impacts on water resources that must be considered when determining if a revision would void grandfathering granted pursuant to N.J.A.C. 7:8-1.6(b) is proposed for amendment. Proposed amendments to N.J.A.C. 7:8-1.6 reflect the proposed amendments to the applicability of the stormwater runoff quality standards and the definition of major development discussed below. The Department additionally proposes to update the existing reference to new encroachments in the special water resource protection area (SWRPA). The SWRPA was a 300-foot wide area adjacent to each side of water bodies designated as Category One waters pursuant to the Surface Water Quality Standards, N.J.A.C. 7:9B, and their associated perennial or intermittent streams that drained into or upstream of the Category One waters, which was intended to prevent adverse impacts resulting from stormwater runoff to Category One waters. As the

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Flood Hazard Area Control Act (FHACA) Rules also established a 300-foot riparian zone along Category One waters and a slightly different set of tributaries, in 2016, the Department deleted provisions related to the SWRPA from the Stormwater Management rules and incorporated new standards into the similar 300-foot riparian zone in the FHACA Rules in order to create a 300-foot buffer with uniform standards applicable to a uniform set of surface waters (see 47 N.J.R. 1041(a); 48 N.J.R. 1067(a)). To reflect this change, reference to the SWRPA is proposed to be replaced with reference to the 300-foot riparian zone contained in the FHACA Rules at N.J.A.C. 7:13-4.1(c)1. While protections previously provided to SWRPAs under the Stormwater Management rules were incorporated into the FHACA Rules' 300-foot riparian zone, local stormwater control ordinances may still include the SWRPA provisions or similar near-stream protected areas along Category One waters. Accordingly, in addition to reference to the FHACA Rules' 300-foot riparian zone, it is also necessary to include new encroachments into 300-foot near-stream protected areas as an impact to be considered when determining if the grandfathering is still valid. Since the term SWRPA is no longer used in the Stormwater Management rules, it would be confusing to continue to use that term in N.J.A.C. 7:8-1.6(e). Accordingly, reference to 300-foot near-stream protected areas is proposed to be added at recodified N.J.A.C. 7:8-1.6(e)6 to reflect the similar protections that continue to be included in some municipal ordinances, regardless of what they may be referred to as in the particular ordinance.

The Department also proposes to delete N.J.A.C. 7:8-1.6(f), which references conflict with the Coastal Permit Program rules, as the subsection is no longer relevant because the revised

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grandfathering provisions remove the potential conflicts that existed at the time of the rule adoption in 2004.

Reducing Combined Sewer Overflows (CSOs) through Stormwater Management

The Department is proposing several changes that will support water quality and stormwater management improvements in municipalities with combined sewer systems (CSS). CSSs carry both sanitary sewage and stormwater within the same pipes. During dry weather, sewage flows to the sewage treatment plant, where it receives appropriate treatment before it is discharged to the watercourse. However, during periods of heavy rain or snowmelt, the additional volume of stormwater overwhelms the system and, rather than being conveyed to the sewage treatment plant, the combined sewage and stormwater overflows into nearby watercourses. There are 210 combined sewer overflow outfalls in New Jersey that collectively discharge billions of gallons of stormwater combined with untreated wastewater into watercourses each year.

In 2015, the Department issued individual NJPDES permits to 25 CSO permittees that require the permittees to develop and submit a Long Term Control Plan to reduce or eliminate CSOs. As part of the issuance of these permits, the Department increased its commitment to, and partnership with, CSO permittees and the communities impacted by CSOs to support compliance with the CSO permit and to advance water quality improvements in those communities through the reduction or elimination of combined sewer overflows. As part of this commitment, the Department provides extensive technical and compliance assistance to

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permittees; actively participates in community engagement activities in municipalities with CSSs; and continues to offer incentivized financing through the New Jersey Water Bank, formerly known as the Environmental Infrastructure Financing Program, for green infrastructure projects in municipalities with CSSs or for projects that reduce the stormwater entering the combined sewer system. The Department has also worked with several major development projects within municipalities with CSSs to address reduction of CSOs and how major development projects could better manage stormwater to limit impacts to CSSs. For more information on CSOs and the Department's collaboration with communities to address the impacts of CSOs, see <http://www.nj.gov/dep/dwg/cso.htm>.

The proposed changes discussed below advance stormwater management improvements in municipalities with CSSs and tidal communities.

Quantity control of discharge in tidal flood hazard area (N.J.A.C. 7:8-5.6 and related definition at N.J.A.C. 7:8-1.2)

In order to more clearly present the required stormwater standards, the Department proposes to relocate the stormwater runoff quantity standards, which are currently addressed in conjunction with the erosion control and groundwater recharge standards in existing N.J.A.C. 7:8-5.4, from N.J.A.C. 7:8-5.4 to proposed new N.J.A.C. 7:8-5.6 with the changes discussed below. While the changes discussed below will affect all tidal flood hazard areas in the State, because a large majority of municipalities with CSSs are within the tidal flood hazard area, the changes proposed are particularly important for addressing CSOs.

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Existing N.J.A.C. 7:8-5.4 provides three potential options for applicants to provide quantity control to prevent downstream impacts from increased rate, volume, and/or change in timing of stormwater runoff from major developments at N.J.A.C. 7:8-5.4(a)3, with the three demonstration methods described at N.J.A.C. 7:8-5.4(a)3i, ii, and iii. These three analyses that may be used to make the required demonstration are proposed to be recodified at N.J.A.C. 7:8-5.6(b)1, 2, and 3 without amendment. Recognizing the different concerns applicable in tidal flood hazard areas, existing N.J.A.C. 7:8-5.4(a)3iv specifies that the stormwater runoff quantity analyses identified in N.J.A.C. 7:8-5.4(a)3i, ii, and iii are only required in tidal flood hazard areas if the increased volume of stormwater runoff could increase flood damages below the point of discharge.

The Department proposes to revise existing N.J.A.C. 7:8-5.4(a)3iv at proposed N.J.A.C. 7:8-5.6(b)4 to better reflect the intent of the above provisions as specified in response to comments in the 2004 rule adoption, as discussed further below. Particularly, proposed N.J.A.C. 7:8-5.6(b)4 states that quantity control is required in tidal flood hazard, areas unless the design engineer demonstrates through hydrologic and hydraulic analysis that the increased rate and/or increased volume of stormwater runoff will not result in additional flood damage below the point of discharge. No analysis is required if the stormwater is discharged directly into any ocean, bay, inlet, or the reach of any watercourse between its confluence with an ocean, bay, or inlet, and the first water control structure.

Stormwater discharge has a *de minimis* impact on the receiving waterbody's water level when discharged directly into tidal waterbodies, such the ocean, bays, or inlets. However, when

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discharge points are within a flood hazard area but do not discharge directly into a tidal waterbody, the discharge must be conveyed through sewers, channels, or pipes. Because both combined sewer systems and separate storm sewer systems are rarely designed to handle flows from large storms, the potential for localized flooding exists along contributing developments in the combined sewer systems or separate storm sewer system.

Many review agencies have misinterpreted N.J.A.C. 7:8-5.4(a)3iv to exempt major developments in tidal flood hazard areas from the water quantity requirements without considering the location of the discharges into the sewer, the capacity of the sewer to convey such increased volume of stormwater runoff, and that the peak flow and volume of the discharge may raise the water level over downstream water control structures. The proposed change will eliminate any such misconception and, as a result, directly reduce the potential for localized flooding in all tidal communities, including municipalities with CSSs, as CSO sewersheds are often fully or partially within a tidal flood hazard area.

In the 2004 rule adoption, the Department explained that “if there is a water control structure downstream of any proposed discharge point, and there is an increase in the peak flow rates at the structure, then the design engineer must demonstrate that the increased flow into the water body will not adversely affect any existing structures.” (36 N.J.R. 729). In drafting N.J.A.C. 7:8-5.4(a)3iv, the Department intended that analyses would be required to demonstrate that increased flow into a tidal waterbody would not adversely affect existing structures where there was any question as to whether increased flow rates could impact structures or have impacts on flooding; it did not intend to provide as broad an exemption to

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water quantity requirement to discharges in tidal flood hazard areas as has been in some cases granted by review agencies. As many combined sewer systems and separate storm sewer systems have limited hydraulic capacity to convey large peak flow, the downstream flood damage caused by the stormwater discharge from a proposed development is presumed to occur and needs to be controlled. An applicant may rebut this presumption by demonstrating, through a hydrologic and hydraulic analysis, that there will be no downstream flood damage. Evidence of stormwater discharge directly into an ocean, bay, inlet, or the reach of any watercourse between its confluence with an ocean, bay, or inlet and the first water control structure is sufficient to rebut the presumption.

In light of the exception from water quantity analysis in tidal flood hazard areas for direct discharge of stormwater directly into the reach of a watercourse between its confluence with an ocean, bay, inlet and the first water control structure, the Department proposes to add a definition at N.J.A.C. 7:8-1.2 for “water control structure” to clarify the type of structure referenced. While generally a direct discharge to certain waters in a tidal flood hazard area will not create flood damage issues, it is the Department's experience that many structures placed within or adjacent to a channel affect flooding, regardless of whether they were intended to have such an effect. Accordingly, the presence of such structures between the discharge and the ocean, bay, or inlet to which the waterbody flows increases the need for careful analysis of potential flooding impacts, even in tidal flood hazard areas. The proposed definition is identical to the definition of the same term in the Flood Hazard Area Control Act Rules at N.J.A.C. 7:13-1.2.

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Applicability of the water quality standards to discharges into combined sewer systems (N.J.A.C.

7:8-5.5(c)

The Department's current stormwater runoff quality standards at recodified N.J.A.C. 7:8-5.5(b) provide that stormwater management measures must be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80 percent of the anticipated load from the developed site, expressed as an annual average. Recodified N.J.A.C. 7:8-5.5(c) provides that, "The requirement to reduce TSS does not apply to any stormwater runoff in a discharge regulated under a numeric effluent limitation for TSS imposed under the New Jersey Pollutant Discharge Elimination System (NJPDES) rules, N.J.A.C. 7:14A, or in a discharge specifically exempt under a NJPDES permit from this requirement."

Some applicants seeking approval of major developments served by combined sewer systems have mistakenly interpreted existing N.J.A.C. 7:8-5.5(a) (which is broken into subsections (a), (b), (c), and (d), as proposed) as providing an exemption from the TSS reduction requirement for the stormwater discharged into a combined sewer system because the receiving sewage treatment plant has a NJPDES permit with a numeric effluent limitation for TSS. Rather than granting a blanket exemption from TSS reduction requirements for any major development discharging to a CSS, an allowance that would only further continue problems created by CSSs, by focusing on runoff addressed by a numeric effluent limitation in a NJPDES permit, or a discharge specifically exempt from the TSS removal requirement under a NJPDES

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permit, the rule limits those qualifying under this provision to major developments covered by a NJPDES permit issued to that development addressing TSS from stormwater runoff.

Consistent with the focus on permits issued to the major development addressing runoff, and not any permit obtained by the treatment plant, when new N.J.A.C. 7:8 was adopted in 2004, the Department explained that it was “not the Department's intention to require existing NJPDES permittees with a permit that addresses stormwater runoff through imposition of a numeric effluent limitation for TSS to modify their permit.” (36 N.J.R. 712) As further evidence of the intent that this provision refers to a NJPDES permit obtained by the major development and not to the NJPDES permit held by the sewage treatment system, the Department further noted that “where a discharge containing a numeric TSS effluent limitation applies to only a portion of the site, the remaining portion of the site must continue to meet the full requirements of N.J.A.C. 7:8-5.5.” (36 N.J.R. 713)

Therefore, a development that is served by a combined sewer system, but does not itself have a NJPDES permit with a numeric effluent limitation for TSS, is subject to the 80 percent TSS reduction requirement in N.J.A.C. 7:8-5.5. And, even if the development receives a NJPDES permit with a numeric effluent limitation for TSS, the exemption extends only to the portion of the site subject to the NJPDES permit. The remaining portion of the development will be subject to the 80 percent TSS reduction requirement.

To eliminate any potential for further misinterpretation, the Department proposes to add language to further clarify and reiterate that all major developments, including those served by combined sewer system, are subject to the TSS reduction requirement, unless the

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development itself is subject to a NJPDES permit that imposes a numeric effluent limit on TSS in the runoff discharge from the development or the development is specifically exempted from the TSS removal requirement in a NJPDES permit to which the development is subject. This portion of existing N.J.A.C. 7:8-5.5(a) and the proposed clarification are codified as proposed N.J.A.C. 7:8-5.5(c) as a result of other proposed amendments to N.J.A.C. 7:8-5.5 discussed elsewhere.

Expansion of municipality's planning flexibility for CSOs and flood control (N.J.A.C. 7:8-4.2(c)14 and related definitions at N.J.A.C. 7:8-1.2)

Existing N.J.A.C. 7:8-3 encourages regional stormwater management planning directed toward regions including multiple municipalities. The current rules require the water quantity standards to be met on site, unless a regional stormwater management plan, as described in N.J.A.C. 7:8-3.6(c), establishes alternative design and performance standards that are at least as protective as the design and performance standards that would otherwise be applicable to an individual site. N.J.A.C. 7:8-3.7 also gives the regional stormwater management planning committee establishing the regional stormwater plan discretion in selecting the stormwater management measures that would be used under the plan to meet the design and performance standard set forth in that plan. Through this planning discretion, a regional stormwater management planning committee may establish a regional stormwater basin with alternative design and performance standards to achieve water quantity control and flood control in municipalities with CSSs. However, the current rules do not provide an individual municipality

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the same flexibility as provided to regional planning committees to establish such alternative standards and regional stormwater basins. The Department proposes to allow municipalities with combined sewer systems to establish community basins that one or more developments could utilize to meet the developments' water quantity requirements. The definition for "community basin," will be in proposed N.J.A.C. 7:8-1.2, referenced further below.

Municipalities with CSSs are currently developing Long Term Control Plans to reduce or eliminate CSOs. While the exact cost for implementing these plans is not yet known, the Department estimates that the Statewide cost will be in the billions of dollars. Due to the high cost and complexity of efforts to address CSOs, it is the Department's intent to give these communities additional options to address CSOs in a cost-effective manner. Additionally, some municipalities with CSSs experience localized street flooding or basement flooding caused by the backup of the CSS. In some cases, the floodwater is a mix of stormwater and untreated sewage. Direct contact with stormwater combined with sewage is a public health concern. Therefore, because of the environmental impact to the receiving waterbodies and the public health impact to the community, the Department proposes to afford municipalities with CSS the flexibility to establish community basins to reduce CSOs and flooding that major development sites can also use to meet their quantity control requirement.

Community basins may only be utilized in municipalities with CSSs or municipalities with separate storm sewer systems that are hydraulically connected to a CSS and the municipal plan includes a demonstration, through hydrologic and hydraulic analysis, that the community basin(s) would alleviate existing or prevent potential flood damage or CSO.

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The municipality would design the community basin to address the flooding and/or CSO problem, and also to address stormwater from the surrounding lots. In these situations, the community basin could result in a net positive for the surrounding developments by reducing the footprint of land required to be dedicated for stormwater management, reducing the costs to the community by allowing it to address an existing problem in a cost-effective manner, and improving water quality through reduced CSO while still meeting the standards contained in the Stormwater Management rules.

The Department proposes new N.J.A.C. 7:8-4.2(c)14 to specify the requirements under which a municipality with a CSS may establish such a community basin. By providing municipalities with the flexibility to establish a “community basin,” as defined in proposed N.J.A.C. 7:8-1.2, major developments within a municipality that establishes a community basin are also afforded flexibility in meeting the stormwater runoff quantity standards by using the off-site community basin to do so. Because community basins will be used for quantity control, the proposed definition limits community basins to BMPs listed in Table 5-2 with the exclusion of bioretention systems. Bioretention systems rely heavily upon vegetation that can withstand repeated inundation. The sites contributing stormwater to a community basin are required to meet the water quality and groundwater recharge standard by using green infrastructure on site, and, therefore, during storm events that do not exceed the water quality storm, which is approximately 90 percent of all storm events that occur during an average year, little to no runoff would be conveyed to the community basin. Thus, there would be insufficient hydrology to maintain the vegetation. Therefore, the proposed definition for community basin limits the

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available BMPs to infiltration basins, sand filters designed to infiltrate, standard constructed wetlands, or wet ponds.

Since the community basin is intended to provide stormwater runoff quantity control for the contributory sites in a manner that helps alleviate potential flood damage or combined sewer overflow, the requirements proposed at N.J.A.C. 7:8-4.2(c)14 are designed to ensure that every aspect of the system, from the water leaving the contributory sites, to the manner of conveying the stormwater to the community basin, to the basin itself, is achieving that goal. Accordingly, proposed N.J.A.C. 7:8-4.2(c)14iii and iv require that the community basin is capable of providing sufficient quantity control to address all of the stormwater draining into it and that the conveyance from the contributory site to the community basin is capable of carrying stormwater from the 100-year storm to the community basin. Furthermore, since the community basin can only be used for quantity control, N.J.A.C. 7:8-4.2(c)14ii makes clear that the water quality, groundwater recharge, and green infrastructure requirements continue to be required to be met on each contributory site, unless a variance (which would require mitigation) has been granted.

As discussed above, one of the major goals of this rulemaking is to ensure that future major developments incorporate small scale distributed green infrastructure BMPs into their design. As an exception to the general preference for small scale BMPs, the Department intends to limit the applicability of community basins to situations where it has been demonstrated that the community basin will help address existing or potential flooding or CSO problems in CSS municipalities as a means of alleviating the public health and environmental issues unique to

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these communities. This limitation is effectuated in the lead-in language of proposed N.J.A.C. 7:8-4.2(c)14 and at proposed N.J.A.C. 7:9-4.2(c)14i. Lastly, this paragraph requires that the municipality maintain the basin and that the municipality adopt ordinances to regulate the use of the basin to ensure that the basin, the sites contributing to the basin and the systems conveying stormwater between the contributing sites and the basin continue to serve the intended function of alleviating or preventing flood damage or CSOs as time passes.

Major Development Subject to Stormwater Runoff Quality Standards

Applicability of stormwater runoff quality standards; motor vehicle surface (N.J.A.C. 7:8-5.5)

Existing N.J.A.C. 7:8-5.5 requires a proposed project to include stormwater quality controls to remove 80 percent of the TSS and reduce post-construction nutrient load to the maximum extent feasible when the project would increase impervious surface by one-quarter of an acre or more. The term “impervious surface” is defined at N.J.A.C. 7:8-1.2 as a surface that has been covered with a layer of material, so that it is highly resistant to infiltration by water. As indicated in the Department’s Stormwater Management Rules Frequent Asked Questions (FAQ) document (available at http://www.njstormwater.org/sw_rule_faqs.htm), examples of impervious surfaces include concrete, asphalt, driveways, basketball courts, concrete patios, swimming pools, and buildings.

Many studies have indicated that petroleum hydrocarbons, oils, sediments, suspended solids, and other pollutants from motor vehicles contribute significantly to pollution deposited on the surfaces that are used by motor vehicles (Hoffman, 1982; Stenstrom, 1982; Hewitt,

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1992; Pitt, 2005; Aryal, 2005; Rowe, 2011). Studies also show that stormwater runoff from a roof often contains less TSS that contribute to adverse water quality impacts than stormwater runoff from motor vehicle surfaces (Pitt, 1986; Bannerman, 1993; Pitt, 2005). Stormwater runoff from sidewalks and similar surfaces not traversed by motor vehicles similarly has reduced levels of TSS with a correspondingly reduced contribution to adverse water quality impacts. Therefore, the Department has long considered the runoff from those surfaces to not be a significant contributor of TSS. As such, in applying the rule to major developments, the Department does not focus on TSS removal for rooftops and sidewalks. Nevertheless, local reviewing agencies might apply the TSS removal requirement to rooftop or sidewalk surfaces. The proposed amendments will ensure consistent application of the stormwater runoff quality control standards by all entities utilizing the standards contained in this chapter with regulation at all levels focused on the surfaces that are having the greatest impacts.

The proposed amendments will additionally help eliminate any argument as to what surfaces should be taken into account in determining whether a particular development is required to satisfy the rules' stormwater runoff quality standards. Particularly, it has been the Department's experience in implementing the existing rules that, in order to avoid the stormwater runoff quality control standards, applicants have sought to use gravel or stone parking areas arguing that these materials should not be considered impervious surface. However, unpaved parking/storage surface, roadways, and driveways have been shown to contribute significant TSS loadings to streams (Reid, 1984; Pitt, 1986; Clinton, 2003; Bloser, 2012). Allowing gravel, stone, or other unpaved areas utilized by motor vehicles to be

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considered to be pervious surface and, thus, not subject to the TSS removal requirement, would be inconsistent with the purpose of the rules to minimize the impact of stormwater runoff on water quality. Thus, the Department proposes to revise N.J.A.C. 7:8-5.5 to require that the rules' stormwater runoff quality standards, including removal of 80 percent TSS and reduction of nutrient load to the maximum extent feasible, be applicable to protect water quality when one-quarter acre of motor vehicle surface is proposed.

To make clear what is considered to be a "motor vehicle surface" for the purposes of these rules, the Department proposes to define that term at N.J.A.C. 7:8-1.2 to include both pervious and impervious surfaces that are intended to be used by motor vehicles and/or aircraft, and will be directly exposed to precipitation in any rain event, with examples provided of some of the more common surfaces included within the term. Because the rules are concerned with impacts from stormwater runoff, only surfaces that will be exposed to precipitation at any time are considered in determining the applicability of the stormwater runoff quality standards. Accordingly, if a proposed project includes a three level parking garage with parking on the roof, only the roof of the structure would be included in calculating the total motor vehicle surface included within the development site.

To complement the proposed definition of motor vehicle surface, the Department also proposes to define "motor vehicle." In this rule, motor vehicles include most types of equipment that would generally be considered to be motor vehicles, but excludes specific vehicles that are not considered to be a significant source of impact to the water quality of stormwater runoff, such as golf carts, farm tractors, and snowmobiles. However, it should be

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noted that, in determining whether an area is considered motor vehicle surface for purposes of determining the applicability of the rules, it is the overall use of the area that is taken into account. So, for example, while a boat is not considered a motor vehicle, an area used to display boats on land for sale or storage purposes would be considered to be a motor vehicle surface if vehicles such as automobiles or trucks are utilized on the surface to move the boats.

Proposed amendments to the definition of major development (N.J.A.C. 7:8-1.2)

The requirements of the Stormwater Management rules are applicable to “major development.” Major development is defined at N.J.A.C. 7:8-1.2. The Department is proposing to delete the existing definition of “major development” at N.J.A.C. 7:8-1.2 and replace it with a new definition that continues the existing thresholds with clarifying amendments and incorporates a new threshold reflective of proposed amendments to the stormwater runoff quality standards, as described above. The proposed definition will also include several other amendments, which are discussed below.

Before explaining the proposed changes to the major development definition, it is important to recognize that existing N.J.A.C. 7:8-4.2, Municipal stormwater management plans and elements, states that “for the purposes of this subchapter, major development is limited to projects that ultimately disturb one or more acres of land.” Therefore, municipal stormwater control ordinances are only required to define major development as ultimately disturbing one or more acres of land, though municipalities have the ability to create a more restrictive

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definition, such as including the one-quarter acre of impervious surface threshold or any other more restrictive trigger, as many municipalities have done. The proposed changes to the major development definition discussed below do not change existing N.J.A.C. 7:8-4.2(a). As stated in the 2003 Stormwater Management rulemaking, “the limit of the threshold of major development for municipal stormwater management plans is to provide consistency with the Federal requirements for the NJPDES Stormwater Regulation Program.” (35 N.J.R. 128) Therefore, the proposed changes to the major development definition will affect projects reviewed by the Department’s Division of Land Use Regulation. The proposed definition will only affect projects reviewed by a local review agency if that review agency voluntarily adopts the proposed definition at N.J.A.C. 7:8-1.2 in its municipal stormwater control ordinance. That said, the clarification of the term “ultimately” is intended to apply to projects reviewed by a local review agency since that term is contained in existing N.J.A.C. 7:8-4.2.

The existing rules define major development as development that provides for ultimately disturbing one or more acres of land or increasing impervious surface by one-quarter acre or more. The existing definition establishes a threshold intended to capture developments that have major impacts to stormwater runoff quality, stormwater runoff quantity, and groundwater recharge. The Department is proposing the following four changes/clarifications to the major development definition:

1. Changes to reflect the amendments to the stormwater runoff quality applicability;
2. Clarification of the meaning of the term “ultimately” in the existing definition;

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3. Clarification of situations where impacts to existing stormwater conveyance systems or treatment systems should be counted towards the threshold; and
4. Removal of the description of disturbance from the definition and creation of a separate definition of disturbance.

Each of these proposed changes to, and clarifications of, the definition of major development is discussed in detail below.

Changes to “major development” to reflect the amendments to the stormwater runoff quality applicability

As discussed above, the Department is proposing to make amendments to the stormwater runoff quality standards, codified at N.J.A.C. 7:8-5.5, to refocus the applicability of water quality controls on stormwater runoff from the current measures that apply to impervious surfaces in general to instead making stormwater quality control in runoff applicable to motor vehicle surfaces. To reflect this change, a new threshold is added to the definition of “major development.” Particularly, reflecting that this new category of surface replaces impervious surfaces for stormwater runoff quality control purposes, a proposed new threshold is added to the definition indicating that a development will be considered major development if, individually or cumulatively, it results in the creation of one-quarter acre or more of “regulated motor vehicle surface,” which is further discussed below.

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Clarification of the meaning of the use of the term “ultimately” in the existing definition of “major development”

The Department is proposing to clarify the existing scope of the major development definition to more clearly express what activities are taken into account in determining if a proposed development ultimately causes impacts equal to or greater than the thresholds established in the definition. Particularly, the Department is proposing to incorporate into the new definition the specific timeframe within which prior development is considered in conjunction with proposed new development to determine the ultimate impact of the development.

It has been the Department’s experience that some applicants have attempted to circumvent regulation by phasing or dividing projects into pieces that, individually, are below the threshold of major development. The focus of the existing definition of “major development” on ultimate disturbance and on the ultimate increase in impervious surface precludes such an attempt to conduct projects in a manner that avoids compliance with the standards contained in the rules. By subjecting such development to the rules’ requirements, the definition ensures that the very negative impacts to public health and safety, private property, and the environment that the rules are designed to avoid do not occur as a result of efforts to circumvent the rules. Accordingly, the Department has regulated such developments as major developments under the existing rules if they cumulatively exceeded the threshold established by the rules.

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In order to clarify this approach and the timeframe within which previous development of the site is considered, the Department proposes to incorporate into the definition of “major development” the timeframe within which the cumulative impacts of a development will be considered in determining if the current development qualifies as major development subject to the requirements of the rules. Particularly, reflecting the date that the existing definition of “major development” was amended to base applicability of the rules upon disturbance and impervious cover, in determining whether a current development meets the one acre of disturbance or one-quarter acre of impervious surface threshold in order to be considered major development subject to the requirements of the rules, the proposed new definition reflects that the Department considers the cumulative total of disturbance and cumulative total of creation of impervious surface since February 2, 2004.

Similarly, in light of the proposed amendment to base applicability of the stormwater runoff quality standard on the creation of regulated motor vehicle surface, consideration of whether a proposed development constitutes major development subject to the rules in the future will necessarily include consideration of the amount of regulated motor vehicle surface proposed in the new development, as well as motor vehicle surface created within the appropriate timeframe. Since the concept of motor vehicle surface as a trigger for regulation under the Stormwater Management rules is created under this rulemaking, the proposed definition specifies that only regulated motor vehicle surface created after the operative date of this rulemaking will be considered in determining if the proposed development is considered “major development” subject to the Stormwater Management rules.

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Consistent with the Department's intent to ensure that the benefits to public safety and the environment achieved by the rules are not circumvented and, as expressed in the existing definition, it is the ultimate impact that is considered in determining if the current proposed project constitutes major development subject to the Stormwater Management rules requirements. Accordingly, the proposed definition makes clear that where a current development application is part of a common plan of development or sale, such as an application seeking approval of the first phase of a planned multi-phase project, the rules require that the ultimate impacts of the development be considered in determining if the development is of a magnitude that requires stormwater to be managed in accordance with the standards contained in this chapter. This approach is consistent with the approach taken under the Federal rules for small municipal separate storm sewer system permits, which include provisions for regulating projects less than one acre that are part of a larger common plan of development greater than or equal to one acre (see 40 CFR 122.34(b)(4) and (5)).

To more clearly express the applicability of the definition of "major development" to include the cumulative impact of phased projects, consistent with the approach reflected in the Federal rules, the Department proposes to revise the definition of major development to explicitly state that projects that individually disturb less than one acre or individually create less than one-quarter acre of impervious surface, or create less than one-quarter acre of motor vehicle surface, but are part of a larger common plan of development or sale that does disturb cumulatively a total of one acre or more of land or does create one-quarter acre or more of

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impervious surface, one-quarter acre or more of motor vehicle surface, or a combination of the two that exceeds one-quarter acre, are considered major development.

Impacts to existing stormwater conveyance systems or treatment systems as components of major development (definitions of “regulated impervious surface” and “regulated motor vehicle surface” at N.J.A.C. 7:8-1.2)

In addition to the clarifications and amendments described above, the proposed definition of major development includes new terminology intended to better describe those activities that have impacts that are intended to be subject to review under the Stormwater Management rules.

While development that qualifies as major development as a result of ultimately disturbing one or more acres of land is conceptually straight-forward, increases in impervious surface that have stormwater impacts occur through more than just the creation of impervious surface. In some situations, the proposed development may not propose increases of impervious surface, but instead may increase the size of the stormwater conveyance system, which would carry more flow to the receiving waterbody and increase the risk of flood damage. In another situation, a new collection system could be constructed where one did not exist. This could also have the potential to increase downstream flood damage.

As is the case with impervious surfaces, a net increase in the amount of motor vehicle surface will create an obvious potential impact to water quality. However, in some situations, a redevelopment project may not result in more acreage of motor vehicle surface, but the

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proposed alteration or removal of the existing stormwater management measures treating the runoff from the existing motor vehicle surface, which itself may cause a negative impact to the water quality of stormwater runoff leaving the project site. For example, the removal of existing roadside swales or vegetative filter strips adjacent to an existing motor vehicle surface as part of a proposed redevelopment or a change from the discharge of stormwater runoff from an existing motor vehicle surface into a combined sewer system to a direct discharge into a waterbody, will result in a negative impact on water quality equivalent to the impact from an increase in the total area of motor vehicle surface.

Currently, the Department's FAQ document clarifies that these situations result in impacts to water quantity and water quality that should be counted towards the threshold of major development. To formalize longstanding interpretation and policy, the Department proposes to modify the definition of "major development" to make clear that these types of impacts are considered in conjunction with the creation of additional impervious surface and/or motor vehicle surface in determining if the proposed development should be considered a major development subject to the standards contained in the rules.

These clarifications will be accomplished by the creation of two defined terms, "regulated impervious surface" and "regulated motor vehicle surface," incorporated within the proposed new definition of "major development." Particularly, the proposed definition of "major development" includes the disturbance of one or more acres of land since February 2, 2004, the creation of one-quarter acre or more of "regulated impervious surface" since February 2, 2004, and the creation of one-quarter acre or more of "regulated motor vehicle

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surface” since the operative date of this rulemaking, or a combination of “regulated impervious surface” since February 2, 2004 and “regulated motor vehicle surface” since the operative date of this rulemaking that totals to one-quarter acre or more. The combination of “regulated impervious surface” and “regulated motor vehicle surface” as a trigger for requiring compliance with these rules is necessary to prevent the cumulative adverse water quantity and groundwater recharge impacts that would result from the creation of both “regulated impervious surface” and “regulated motor vehicle surface” that are individually below the one-quarter acre threshold, but are cumulatively above that threshold. It should be noted that the same area should not be counted multiple times towards the cumulative one-quarter acre threshold. For example, a paved parking lot is both an impervious surface and a motor vehicle surface. If an applicant proposes a one-eighth acre paved parking lot, while the area would be considered one-eighth acre of regulated impervious surface and would also be considered one-eighth acre of regulated motor vehicle surface, it would be inappropriate to treat the single one-eighth acre area as a cumulative one-quarter acre in determining whether the proposed development constitutes “major development” subject to the rules.

“Regulated impervious surface” is proposed to be defined to include, alone or in combination: a net increase in impervious surface; the total area of impervious surface collected by a new stormwater conveyance system; the total area of impervious surface proposed to be newly collected by an existing stormwater conveyance system; and/or the total area of impervious surface collected by an existing stormwater conveyance system where the capacity of the existing stormwater collection system is increased. As discussed above, each of the final

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three of these activities has the potential to increase flooding in the receiving waterbody in the same manner as the actual creation of impervious surface, since stormwater runoff from those existing surfaces would be discharged to a watercourse where it previously was not discharged or would be discharged at the existing location at a faster rate than before the modification or creation of the storm sewer system.

The Department proposes to define “regulated motor vehicle surface,” to include any net increase in motor vehicle surface; and/or any motor vehicle surface that is currently receiving water quality treatment either by vegetation or soil, by an existing stormwater management measure, or by treatment at wastewater treatment plant, where the water quality treatment will be modified. Similar to the impacts that can occur as a result of the conveyance system changes discussed above in the summary of the proposed definition of “regulated impervious surface,” changes to, or elimination of, existing treatment measures have the potential to adversely impact water quality in the same manner as the actual creation of motor vehicle surface.

Incorporation of these two new defined terms into the proposed definition of major development will make clear that, because of the potential impacts they have on flooding and/or water quality, all of the activities listed in both of those definitions will be considered in determining if the proposed development meets the one-quarter acre threshold for regulation under these rules.

Definition of disturbance

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The existing definition of “major development” includes a description of the acts constituting disturbance as “the placement of impervious surface or exposure and/or movement of soil or bedrock or clearing, cutting, or removing of vegetation.” The Department has not included the existing description of disturbance in the proposed new definition of “major development,” but instead proposes to add a separate new definition of “disturbance,” which differs slightly from the existing description included within the definition of “major development.” Specifically, the proposed definition includes not only the placement of impervious surface, but also the reconstruction of impervious surface. Reconstruction is added to the definition to clarify what is considered disturbance. While reconstruction would generally include the exposure and/or movement of soil, in the Department’s experience, the existing definition led some applicants to question if existing impervious surface reconstruction constituted disturbance, especially when the exposure and/or movement of soils only occurred in non-native soils placed as part of the original impervious surface construction. The addition of specific reference to reconstruction will clarify that all reconstruction constitutes disturbance. As stated in the FAQ Document, the Department does not consider milling and repaving as disturbance. Consistent with this, the Department is amending the definition to make clear that milling and repaving is not considered disturbance.

Additionally, the proposed definition expands what is considered to be disturbance to include the placement or reconstruction of motor vehicle surface. This addition is necessary in light of the changes made to the definition of major development as related to the applicability of the water quality standard, as summarized above.

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Additional Clarifications and Revisions

Applicability of green infrastructure requirement to sewer improvement and sewer separation projects (N.J.A.C. 7:8-5.3(e))

As summarized above, the proposed new definition of “regulated impervious surface” includes “the total area of impervious surface collected by a new stormwater conveyance system” and “the total area of impervious surface collected by an existing stormwater conveyance system where the capacity of that conveyance system is increased.” Accordingly, if a sewer separation project or a project to increase the capacity of an existing, undersized storm sewer system that collects an area that includes total impervious surface of one quarter acre or more, it would be considered to be major development under paragraphs 2 and 3 of the proposed definition of “regulated impervious surface” and, thus, subject to the requirements of this chapter. Similarly, a sewer separation project or a project that replaced roadside swales with a piped collection system would be a major development under paragraph 3 of that definition, if it accepted stormwater runoff from one quarter acre or more of new or existing motor vehicle surface. As major development, such projects would be subject to all requirements of the rules, including compliance with the green infrastructure standard. However, it is not the Department’s intention for storm sewer improvement projects, including sewer separation projects, to be held to the proposed green infrastructure standard if the only way to satisfy that requirement would involve installing green infrastructure on property not owned by the government agency or sewerage authority undertaking the sewer improvement

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project. Due to the various property owners in the drainage area of the sewer improvement project, it would be highly impracticable for a government agency or sewer utility to install enough green infrastructure throughout the sewer improvement project's drainage area to meet the water quantity, water quality, and groundwater recharge standards. The water quantity, water quality, and groundwater recharge standards, as applicable, would still need to be met, but not exclusively through the installation of green infrastructure. Accordingly, at proposed new N.J.A.C. 7:8-5.3(e), an exception is provided for storm sewer improvement projects, including sewer separation, undertaken by a government agency or sewerage authority, specifying that the requirements of N.J.A.C. 7:8-5.3 apply only to the areas owned in fee simple by the government agency or sewerage authority, and areas within a right-of-way or easement held or controlled by the government agency or sewerage authority; the entity is not required to obtain additional property or property rights to fully satisfy the green infrastructure requirements of N.J.A.C. 7:8-5.3. This proposed revision does not relieve the government agency from the potential need to acquire property to meet the quantity, quality, or groundwater recharge standards.

Applicability of runoff quality standards to single-family homes (N.J.A.C. 7:8-5.5(j))

The Department does not intend for the stormwater runoff quality requirement to remove TSS from permeable motor vehicle surface to apply to an individual single-family home that is not part of a larger development that has received preliminary or final site plan approval prior to the publication date of this notice of proposal. As such, at proposed N.J.A.C. 7:8-5.5(j),

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the Department proposes to state that single-family homes that are not part of larger developments are exempt from the stormwater runoff quality section of the rules if the proposed driveway is constructed of permeable materials, and that single-family home received preliminary or final site plan approval prior to the publication date of this notice of proposal.

Assessment of hydraulic impact on groundwater table and potential adverse hydraulic impacts

(N.J.A.C. 7:8-5.2(h))

The existing rules, at N.J.A.C. 7:8-5.4(a)2, provide minimum design and performance standards for groundwater recharge, including required demonstrations designed to ensure that the potential hydraulic impacts of the major development are adequately assessed. Assessment of hydraulic impacts is important to ensure that adverse impacts, such as surficial ponding, flooding of basements, or interference with the proper operation of subsurface sewage disposal systems, does not occur. While assessment of hydraulic impacts is significant in the context of groundwater recharge, hydraulic considerations are also significant in any stormwater management measures designed to infiltrate stormwater in subsoil regardless of the standard the stormwater management measure is intended to meet. To reflect the significance of hydraulic analysis beyond the groundwater recharge context, the Department proposes to relocate the analyses currently specified at existing N.J.A.C. 7:8-5.4(a)2iv to 5.2, which includes provisions that are generally applicable to all major developments, at proposed N.J.A.C. 7:8-5.2(h), with amendment.

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Particularly, the Department proposes to amend the existing language of N.J.A.C. 7:8-5.4(a)2iv in two ways. First, the existing analysis is amended to add an additional example of a potential adverse hydraulic impact that must be avoided. The additional example makes clear that the design must avoid hydraulic impacts that would interfere with the proper functioning of the stormwater management measure itself. Second, the Department proposes to amend the existing indication that one potential adverse hydraulic impact that must be avoided is interference with the proper operation of subsurface sewage disposal systems and other subsurface structures in the vicinity or down gradient of the groundwater recharge area with an indication that the design must avoid impacts to such systems and structures within the zone of influence of the groundwater mound, rather than in the vicinity or downgradient of the groundwater recharge area. This change is intended to provide a clearer boundary for the analysis than the existing reference to the “vicinity” of the groundwater recharge area and “downgradient of the groundwater recharge area.”

Water quality design storm distribution (N.J.A.C. 7:8-5.5)

In accordance with N.J.A.C. 7:8-5.5, water quality calculations are required to take into account the distribution of rain from the water quality design storm (a storm of 1.25 inches of rain in a two-hour period). Table 1 at existing N.J.A.C. 7:8-5.5(a) provides cumulative rainfall amounts for the water quality design storm distributed over the two-hour period of the storm in five-minute intervals. Depending on the computer program used for computation, basing the calculations upon five-minute intervals may limit the ability to accurately calculate peak flow

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rates, since some programs limit the calculation time interval to no less than the rainfall time interval, and the peak flow rate may change significantly over a five-minute time interval.

Therefore, the Department proposes to replace the existing Table 1 with a new Table 5-4 at proposed N.J.A.C. 7:8-5.5(d). Proposed new Table 5-4 provides the same information as contained in existing Table 1 with information provided for the water quality design storm distribution in one-minute intervals. A smaller time interval will allow for more accurate estimation of the peak flow rate (again depending on the computer program utilized). This more accurate estimation will ensure that BMPs that are sized based upon peak flows, such as manufactured treatment devices, are sized appropriately.

Stormwater quality, quantity, and groundwater recharge standards at sites containing multiple drainage areas (N.J.A.C. 7:8-5.2(l) and 5.6(c))

A development site may have multiple drainage areas that may have different discharge points for the stormwater runoff leaving the site. Existing N.J.A.C. 7:8-5.5(d) prohibits use of a weighted average of the TSS removal rates from different drainage areas to achieve the 80 percent TSS removal rate, unless the runoff from the drainage areas converges before leaving the site. This subsection of the rules is intended to prevent a situation where one discharge point has runoff excessively treated for TSS removal, but another discharge point has runoff loaded with pollutants that could create unacceptable impacts to receiving waters.

While the existing rules at N.J.A.C. 7:8-5.5(d) allow the stormwater runoff quality standard TSS removal requirement for a site that contains multiple drainage areas on one site

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that converge on site to be demonstrated through a weighted average calculation, the rules are silent on whether the same convergence requirement is applicable before a weighted average analysis can be used to demonstrate compliance with the water quantity and groundwater recharge standards when there are multiple drainage areas on one site. Absent such a requirement that runoff converge on site before averaging can be used to demonstrate compliance, a development project could be designed such that one runoff discharge far exceeds the requirements of the water quantity standard, but another discharge point is proposed without quantity controls that increases the risk of flood damage downstream of that discharge. Similarly, a development with two drainage areas could be designed to have one groundwater recharge area exceed the recharge requirement but another groundwater recharge area provide no groundwater recharge, with the weighted average of the two points arguably in compliance with the standard contained in the rules.

The purpose of design and performance standards for water quality, water quantity, and groundwater recharge is to minimize the adverse impact of stormwater runoff on water quality and water quantity, and to minimize the loss of groundwater recharge caused by a major development. A situation that allows a greater risk of adverse impact of runoff peak flow to one downgradient area than another, or a greater impact on groundwater in one area than another area of the site, undermines the purpose of the rules.

Therefore, the Department proposes to relocate the requirement found at existing N.J.A.C. 7:8-5.5(d) that provides that the water quality standard must be met in each drainage area on-site unless the runoff from the subareas converge before leaving the site to N.J.A.C.

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7:8-5.2, which includes provisions that are generally applicable to all major developments, and to make it additionally applicable to water quantity and groundwater recharge. Particularly, this requirement is relocated to proposed N.J.A.C. 7:8-5.2(l) with amendment. The relocated, amended provision will prevent a situation such as those described above where adverse impacts in one drainage area could be argued to be offset by excess control provided in another drainage area. The Department proposes to allow a weighted average of the controls implemented in the drainage areas if the runoff from those drainage areas converge on site and it is demonstrated that use of a weighted average will not result in any adverse environmental impacts. This will provide flexibility while ensuring compliance with the standards and goals of the Stormwater Management rules.

With reference to stormwater runoff quantity, regardless of whether multiple, clearly defined drainage areas are present on site or not, it is important that the quantity of stormwater runoff leaving the site be controlled at all boundaries of the site to ensure impacts to surrounding features are avoided. Accordingly, the Department has proposed, at N.J.A.C. 7:8-5.6(c), to address situations where there are numerous lots, roadways, watercourses, or storm sewer systems abutting the proposed major development, but not clearly defined separate drainage areas. The proposed subsection makes clear that the stormwater runoff quantity standards must be met at all portions of the site's boundary. This proposed subsection will ensure that additional flooding is not caused on any of these abutting lots, roadways, or watercourses, and that a receiving storm sewer system is not overwhelmed by increased stormwater runoff from the proposed major development.

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Tidal Flood Hazard Area (N.J.A.C. 7:8-1.2)

The existing definition of “Tidal Flood Hazard Area” is inconsistent with the definition of the same term that is one component of the definition of “flood hazard area” in the Department’s Flood Hazard Area Control Act Rules at N.J.A.C. 7:13-1.2. The Department proposes to amend the definition to make it consistent with the language and intent in the Flood Hazard Area Control Act Rules, with two differences. First, reference to the flood hazard area design flood elevation appearing in the Flood Hazard Area Control Act Rules has been simplified to refer to the flood elevation resulting from the two-, 10-, or 100-year storm, as applicable, since the Stormwater Management rules do not regulate based upon the flood hazard area design flood, but instead based upon the two-, 10-, or 100-year storm. The Department is also proposing an additional last sentence in the proposed definition that is not part of the Flood Hazard Area Control Act Rules definition to clarify that, while a flood hazard area may be tidal in the 100-year storm, that does not necessarily mean that it is also tidal in the two- or 10-year storms. This is intended to clarify that individual consideration should be given whether the flood hazard area resulting from each of the two-, 10-, and 100-year storms is tidal or fluvially controlled when determining if stormwater runoff quantity control is required.

New Jersey Stormwater Best Management Practices (BMP) Manual (N.J.A.C. 7:8-1.2)

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The New Jersey Stormwater Best Management Practices (BMP) Manual is not a defined term within the existing Stormwater Management rule, though the term is used within the rule text. In order to provide clarity on the meaning of that term, as well as what is contained within the BMP Manual, the Department is proposing to add a definition of the New Jersey Stormwater Best Management Practices (BMP) Manual at N.J.A.C. 7:8-1.2.

Update of sources of technical guidance

The Department also proposes to update references to technical guidance, and to modify those references that have either become obsolete or have been updated by the respective authors.

In addition to the Department sources of technical guidance identified at N.J.A.C. 7:8-5.9(a), the existing rules also identify other sources of technical guidance for stormwater management measures at N.J.A.C. 7:8-5.9(b). Included in the list of additional sources of technical guidance at existing N.J.A.C. 7:8-5.9(b)1 is the Standards for Soil Erosion and Sediment Control in New Jersey, which are incorporated by reference into the State Soil Conservation Committee rules at N.J.A.C. 2:90-1.3. Both existing N.J.A.C. 7:8-5.4(a)1 and proposed N.J.A.C. 7:8-5.2 designate the Soil Erosion and Sediment Control Act and implementing rules as the source for the minimum design and performance standards for erosion control. Therefore, the Department proposes to delete reference to these same standards as an additional source for technical guidance. The existing rules also list Rutgers Cooperative Extension Service and Soil

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Conservation Districts as sources to obtain additional technical guidance. While these entities continue to provide information related to stormwater management and soil erosion/conservation, identification of them as sources in this context could cause confusion regarding these entities' ability to provide binding advice regarding the New Jersey Stormwater Best Management Practices Manual and compliance with the requirements in N.J.A.C. 7:8-5.2(f) and (g). Accordingly, the Department proposes to delete this subsection.

Reorganization of the stormwater control standards

Existing sections in N.J.A.C. 7:8-5 are arranged so that provisions that are generally applicable to all stormwater management measures appear in N.J.A.C. 7:8-5.2, nonstructural strategies appear in N.J.A.C. 7:8-5.3, erosion control, groundwater recharge, and runoff quantity standards all appear in N.J.A.C. 7:8-5.4, runoff quality standards are contained in N.J.A.C. 7:8-5.5, methods for calculation of stormwater runoff and groundwater recharge are specified in N.J.A.C. 7:8-5.6, and standards for structural stormwater management measures are codified in N.J.A.C. 7:8-5.7.

Since the proposed rules incorporate a green infrastructure standard to replace the nine nonstructural stormwater management strategies in Subchapter 5, a separate N.J.A.C. 7:8-5.7 for structural stormwater management measures is unnecessary. Additionally, breaking the stormwater runoff quantity control and groundwater recharge standards into their own sections will make the rule more understandable and user-friendly. Therefore, the Department proposes to reorganize and amend particular sections in N.J.A.C. 7:8-5 as follows:

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- green infrastructure standards in N.J.A.C. 7:8-5.3;
- groundwater recharge standards in N.J.A.C. 7:8-5.4;
- stormwater runoff quality standards to remain in N.J.A.C. 7:8-5.5;
- stormwater runoff quantity standards in N.J.A.C. 7:8-5.6; and
- calculation of stormwater runoff and groundwater recharge in recodified N.J.A.C. 7:8-5.7.

In addition to the relocation, with modification, of existing N.J.A.C. 7:8-5.4(a)2iv to proposed N.J.A.C. 7:8-5.2(h) discussed above, the Department is proposing to relocate existing N.J.A.C. 7:8-5.4(b) to proposed N.J.A.C. 7:8-5.2(k) with an updated cross-reference, existing N.J.A.C. 7:8-5.7(a) to proposed N.J.A.C. 7:8-5.2(i), and existing N.J.A.C. 7:8-5.7(c) to proposed N.J.A.C. 7:8-5.2(j). Existing N.J.A.C. 7:8-5.7(b) is proposed for deletion as the provisions contained therein have been incorporated into proposed N.J.A.C. 7:8-5.2(f) and (g). The Department also proposes to move the erosion control standards from existing N.J.A.C. 7:8-5.4(a)1 to proposed N.J.A.C. 7:8-5.2(a)1. As indicated above, the erosion control standards are those set forth by the Soil Erosion and Sediment Control Act and those rules implementing that Act. Accordingly, erosion control standards do not require a separate section in the proposed rule.

Revising references to Water Quality Management Planning rules

In November 2016, the Department repealed the previous Water Quality Management (WQMP) Rules and replaced them with new WQMP Rules at N.J.A.C. 7:15. The Stormwater Management rules cross-reference various processes under the WQMP Rules that were

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continued in the new WQMP Rules, but at different codifications within those rules. To align the Stormwater Management rules with the new WQMP rules, the Department proposes to update various references to the WQMP rules. Specifically, at N.J.A.C. 7:8-3.9, the Department proposes to update cross-references to the current codification of provisions in N.J.A.C. 7:15-3. Accordingly, N.J.A.C. 7:8-3.9(b) and (c) are proposed for amendment to reference the current wastewater management plan revision and amendment processes at N.J.A.C. 7:15-3.4 and 3.5, respectively. Similarly, the cross-reference in N.J.A.C. 7:8-3.10(a)4 to the WQMP rules will be updated to reference the current codification of consistency determination provisions at N.J.A.C. 7:15-3.2.

Changes to other Department rules referencing N.J.A.C. 7:8

Several other Department rules reference the Stormwater Management rules. The Department proposes minor changes to the following rules to update cross-references to N.J.A.C. 7:8 to reflect the proposed changes to rule structure and to modify references to nonstructural stormwater management strategies: the Coastal Zone Management Rules, N.J.A.C. 7:7; the Freshwater Wetland Protection Act Rules, N.J.A.C. 7:7A ; the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13; the New Jersey Pollutant Discharge Elimination System, N.J.A.C. 7:14A; and the Highlands Water Protection and Planning Act Rules, N.J.A.C. 7:38.

A list of reference material that assisted in the development of the proposed amendments, new rules, and repeals is provided below.

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Social Impact

The Department anticipates that this rulemaking will result in a positive social impact by 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. The social benefits discussed in this statement are both direct benefits and ancillary benefits

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resulting from the management of stormwater. The majority of these positive social impacts will be due to the increased use of green infrastructure that will result from the rulemaking.

The direct stormwater benefits will result both from the increased use of green infrastructure that will result from this rulemaking and from the proposed clarification to the water quantity standard that will ensure flooding impacts do not occur between major developments and the point where stormwater from the major development ultimately reaches a tidal watercourse. The stormwater volume reduction provided by green infrastructure reduces flooding in small storm events, improves water quality through means including minimization of discharge during small storm events (including CSO), protects the integrity of stream channels, reduces erosion, and helps to maintain the adequacy of bridges and culverts. The clarification to the water quantity requirement in tidal areas will also protect the integrity of stream channels, reduce erosion, and help to ensure the adequacy of bridges and culverts. Furthermore, the benefits of green infrastructure discussed in this notice of proposal help to improve community's resiliency to the effects of climate change. All of these benefits will result in fewer disruptions to people's lives, such as flooded roadways and will provide for greater protection of public health, safety, and welfare, and the environment.

Besides the stormwater management benefits of green infrastructure, there are many other ancillary social benefits, which are discussed below.

Traditional impervious surfaces, such as asphalt, absorb more heat during the day and release heat more slowly than natural ground cover. This results in overall warmer temperatures in urban areas, which is known as urban heat island effect. The use of green

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infrastructure reduces the urban heat island effect by relying more on vegetated BMPs, such as green roofs, and by utilizing pervious paving surfaces, which stay cooler than traditional pavement. This reduction in the urban heat island effect directly results in more comfort and less health risk from high temperatures during summer months.

Green infrastructure can also reduce energy costs in two main ways. First, as discussed above with reference to the reduced heat island effect, green infrastructure reduces temperatures in urban areas. Second, vegetated BMPs, such as rain gardens along buildings or green roofs, provide shade and/or insulation to buildings. The reduced temperatures, shade, and/or insulation will reduce the energy necessary for heating and/or cooling of the building. This lower energy consumption avoids the creation of additional pollutants during energy production.

Vegetation, such as the plantings that are associated with many green infrastructure BMPs, removes pollutants from the air. The air pollutants removed include carbon monoxide (CO), carbon dioxide (CO₂), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), and fine particulate matter with diameters of 2.5 micrometers or less (PM_{2.5}). The removal of these pollutants reduces the health impacts to the general public that results from inhalation of pollutants.

Green infrastructure has both inherent ancillary benefits and versatility in its design allowing for design specific co-benefits. Beautification of public spaces, traffic calming, and increased recreational opportunities are three co-benefits that can be specifically achieved when designing and installing green infrastructure. Green infrastructure BMPs, such as curb

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bump-out rain gardens, are often designed with the dual purpose of managing stormwater and calming traffic. Pervious paving systems are less susceptible to ice forming on the surface, thus providing both a safer surface for pedestrians and vehicles, and reducing the quantity of deicer needed to treat the surface. Green infrastructure can contribute to a reduced demand and stress on existing water infrastructure, both potable water and stormwater, by storing stormwater for non-potable re-use and/or mimicking natural processes by infiltrating or evapotranspiring stormwater rather than discharging it into stormwater collection systems or combined sewer systems.

While the nonstructural stormwater management strategies in the existing rule are intended to provide many of the same social benefits that are provided by green infrastructure, the requirement of the existing rule that nonstructural strategies be used to the “maximum extent practicable” has not resulted in the level of nonstructural strategies originally anticipated, and had made it very difficult for applicants to anticipate what must be included in a project design to satisfy the “maximum extent practicable” standard. The Department anticipates that the proposed requirement to use green infrastructure will be far more successful in achieving the targeted social benefits.

Economic Impact

While the majority of the changes to the Stormwater Management rules are expected to have little to no economic impact, the change requiring the use of green infrastructure BMPs to meet the water quantity, water quality, and groundwater recharge standards is expected to have an overall positive economic impact. The following parties may be economically affected

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by the proposed amendments, repeals, and new rules: land developers, suppliers of green infrastructure components (such as plants, pervious pavement, bioretention soil mixes), manufacturers of manufactured treatment devices (MTDs), and other conventional stormwater inputs, property owners, applicants, and review agencies.

Land Developers

The Department believes the proposed green infrastructure requirement will not significantly affect the costs of a land developer's project, which meets the proposed definition of "major development" at N.J.A.C. 7:8-1.2, due to the opportunities offered by green infrastructure BMPs to manage stormwater cost-effectively. While green infrastructure costs may vary widely depending on the green infrastructure BMP utilized and the needs and constraints of a development site, green infrastructure provides opportunities for cost-effective management of stormwater compared to conventional stormwater management measures that are commonly implemented under the current Stormwater Management rules. Research by the USEPA showed 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, MTDs, 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

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property values (USEPA, 2007). Furthermore, economic modeling of three development scenarios showed that green infrastructure resulted in, on average, a 19.3 percent savings in construction costs versus gray infrastructure (Jaffe, 2010).

Since green infrastructure is typically distributed and small scale, developers may have to install multiple green infrastructure BMPs on a single major development site to manage stormwater, whereas under the current rules fewer larger stormwater management BMPs may be sufficient. Costs will vary depending on the scope of the project and the BMPs chosen. There are 10 specified green infrastructure BMPs that can be used to meet the water quality, water quantity, and groundwater recharge standards, such as small-scale bioretention systems, grass swales, small-scale infiltration basins, and pervious paving systems, and an additional five BMPs that may be used to meet the water quantity standard, such as wet ponds and standard constructed wetlands. Additionally, the rules allow for implementation of other green infrastructure measures provided the design engineer demonstrates to the review agency the capability of the proposed alternative stormwater management measures to achieve the standards in the rules and that the proposed alternative meets the proposed “green infrastructure” definition at N.J.A.C. 7:8-1.2. Due to the diversity of BMPs that can be utilized, green infrastructure can be readily incorporated into a variety of locations within a major development without significant alterations to the site design. For example, a parking lot could have a pervious paving system and/or bioretention swales within a parking island.

Existing N.J.A.C. 7:8-5.5 requires a proposed project to include stormwater quality controls to remove 80 percent of the TSS and reduce post-construction nutrient load to the

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maximum extent feasible when the project would increase regulated impervious surface by one-quarter of an acre or more. The proposed amendments require that the stormwater runoff quality standards be applicable when the major development increases regulated motor vehicle surface by one-quarter acre or more.

This proposed amendment may increase costs on projects that include pervious motor vehicle surface, as the proposed amendments require that these surfaces be treated for water quality, while the existing rules do not. However, the existing rules do require that a major development with pervious motor vehicle surface address both the water quantity and groundwater recharge standards. The exact cost of the added requirement to treat water quality cannot be estimated, as it is dependent on the size of the project and the BMPs implemented. In the BMP Manual, the Department identified nine BMPs that can contribute to compliance with the stormwater runoff quantity and groundwater recharge standards under the existing rules, such as bioretention, infiltration basins, and pervious paving. Four of those BMPs, including bioretention and pervious paving, could also meet the proposed requirements to provide water quality treatment and meet the proposed requirement to use green infrastructure. In situations where one of those four BMPs were used for stormwater runoff quantity and groundwater recharge compliance, additional BMPs would not be necessary to meet the water quality standard and, therefore, would result in no added cost to the land developer.

This rulemaking may add to the cost of development projects in tidal areas. Quantity control is required for discharges into tidal flood areas, except discharges directly into an ocean,

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bay, inlet, or the reach of any watercourse between an ocean, bay, or inlet and the first water control structure, unless the applicant demonstrates that the stormwater runoff will not result in additional flood damage below the point of discharge. As indicated in the Summary, while such a demonstration is referenced in the existing rule, some review agencies have misinterpreted the current requirement and have not always required such a demonstration. As a result, in the areas within the jurisdiction of those review agencies, this clarification will likely result in project applicants performing additional hydrologic and hydraulic analysis demonstrating that the proposed major development will not result in additional flood damage or the proposed major development design will be required to incorporate additional stormwater quantity control measures.

Suppliers of Green Infrastructure Inputs

The Department expects a positive economic impact to providers of soils, plants, and other materials related to the construction of green infrastructure. Additionally, as these products are often purchased locally, the positive impact is anticipated to be felt primarily in the local economy.

Manufacturers of Manufactured Treatment Devices (MTDs) and Other Conventional Stormwater

Inputs

Under this rulemaking, a major development must use green infrastructure BMPs to meet the stormwater runoff quality, stormwater runoff quantity, and groundwater recharge standards. As a result, providers of conventional stormwater materials, such as manufactured treatment devices (MTDs), concrete, pipes, and inlets may experience a reduced demand for

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their existing products. The majority of MTD manufacturers are based out-of-State and, as such, the Department expects a minimal impact on the New Jersey State economy due to the changes in the rule affecting MTDs. The rule rulemaking affects only a portion of uses of conventional type (non-green infrastructure) MTDs, as MTDs for road projects with a waiver from strict compliance, pre-treatment of certain other BMPs, retrofits of existing BMPs, and projects that are not major development will be unaffected by these changes. While these uses will be unaffected by the rulemaking, the Department acknowledges that the overall reduction in demand for MTDs may be significant for the few MTD companies that may be located in New Jersey.

The reduction in demand for MTDs, however, may be partially offset by an increase in new certifications for MTDs that meet the definition of green infrastructure. While two MTDs certified by the Department meet the green infrastructure definition, and, thus, can still be used towards compliance with the stormwater quality standard, the rulemaking includes a delayed operative date, which will provide interested MTD manufacturers additional time to receive certification for new MTDs that meet the definition of green infrastructure, before the rules become operative. There may be existing MTDs that meet the definition of green infrastructure that have not previously sought Department certification but will now do so. Additionally, the Department anticipates that the change from conventional stormwater management to the use of green infrastructure will spur innovation and development of new MTDs that meet the definition of green infrastructure and will seek certification in the future. However, the Department cannot predict the direct effect of additional MTD certifications on

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the New Jersey economy, as it is unknown where the companies producing those MTDs would be located.

The Department has determined that the increased protection of human health, safety, and welfare, and the environment that will result from this rulemaking through reduced flooding, improved water quality, reduced CSO, protection of stream channels, reduced erosion, and maintained adequacy of bridge and culvert, as well as the non-monetized benefits of green infrastructure discussed in the Social Impact above, such as reduced urban heat island effect, reduced energy demand, improved air quality, and reduced stress on existing water infrastructure outweigh the effect on the manufacturers of MTDs that are based in New Jersey. Furthermore, the Department anticipates that the minimal adverse effect on the overall New Jersey economy resulting from a decrease in demand for MTDs would be offset by the increased demand for green infrastructure inputs discussed above. Since the green infrastructure inputs, such as native plants, are more likely to be purchased in State than out-of-State, and the purchasing of MTDs is more likely to be from out-of-State than in State, the overall effect on the New Jersey economy is expected to be positive.

Property Owners

In general, the Department expects no significant increased economic impact to property owners who assume the cost of operation and maintenance of green infrastructure. As with all stormwater management measures, various life-cycle costs are associated with the operation and maintenance of stormwater infrastructure. It is generally recognized that green infrastructure maintenance is equal to or lower than the maintenance cost of conventional

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stormwater management measures (American Rivers et al., 2016; American Rivers and Green for All, 2013; Houle, 2013; MacMullan and Reich, 2007; USEPA, 2000). The maintenance activities required for green infrastructure is comparable in nature to maintaining stormwater management measures that are installed under the current rules. For example, the maintenance of green infrastructure may require less maintenance work, such as routine landscaping by hand, at individual BMPs, but that work will be necessary at more installation locations within a major development. Conversely, the maintenance of non-green infrastructure stormwater management measures, such as maintaining a large detention basin, may require more work, such as sediment removal by heavy machinery, at a single location within a major development. Two literature reviews found that the maintenance of low impact development practices, which includes green infrastructure, is less costly than the maintenance of conventional stormwater measures (USEPA, 2000; MacMullan and Reich, 2007).

Furthermore, a comparison of maintenance cost and labor demands for various GI and conventional stormwater BMPs showed that GI systems, in most cases, have lower overall maintenance costs and require fewer personnel hours for maintenance (Houle, 2013). The rulemaking does not include changes to stormwater maintenance requirements.

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. For example, green infrastructure manages stormwater while also adding aesthetic value, open space potential, and recreational opportunities to a developed site. Research by the USEPA shows that low

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impact development, including green infrastructure, can increase property values, the desirability of a property, and the speed of sales; thereby having a positive economic impact to property owners (USEPA, 2007). The potential for increased property values, which were shown to be over 10 percent for properties located within one-quarter mile of a public green infrastructure project in the City of Philadelphia and about 1.7 percent for properties located within one-quarter mile of private green infrastructure projects in the City of Philadelphia (Econsult Solutions, 2016), and improved site aesthetics associated with green infrastructure suggest that green infrastructure requirements will have a positive effect on New Jersey property owners.

Applicants and Review Agencies

Overall, the Department expects the implementation of the rulemaking to improve regulatory predictability and to have a positive economic impact on the Department, local review agencies, and developers. Replacing the nonstructural management strategies in the current rule with the proposed specific and objective green infrastructure standard will provide clearer direction for designing and reviewing stormwater management features. Increased regulatory consistency and predictability reduces costs to the Department, local review agencies, and project applicants by reducing the time spent on preparing, submitting, and reviewing a permit application. The allowance for a one-year delay in the operative date of the rulemaking will minimize or eliminate any negative economic impact to projects that are already substantially designed. The one-year delay allows major developments that are substantially designed to be reviewed under the current rules, and allows future major

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developments sufficient notice and lead time to incorporate the amended requirements of the revised stormwater management rules into their site designs.

Most review agencies are municipalities who own and operate a municipal separate storm sewer system or a combined sewer system. Because green infrastructure reduces the volume of stormwater through infiltration, evapotranspiration, or reuse, downstream storm sewer systems, whether separate or combined, 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 (Jaffe, 2010; MacMullan and Reich 2007).

Environmental Impact

The Department anticipates that the proposed amendments requiring utilization of green infrastructure BMPs will have a positive environmental impact including improved water quality, reduced flooding potential, increased groundwater recharge, and improved maintenance of natural hydrology. Green infrastructure BMPs more effectively maintain or mimic natural hydrology, and provide environmental benefits by infiltrating precipitation to replenish groundwater and stream base flow, evapotranspiring and evaporating precipitation to reduce stormwater discharge volume, and intercepting precipitation to reduce runoff and erosion. Green infrastructure BMPs, such as pervious paving, infiltration basins, and

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bioretention systems, will provide water quantity, water quality, and groundwater recharge benefits.

The proposed amendment to apply the water quality design and performance standard to the runoff from motor vehicle surface, regardless of if that motor vehicle surface is impervious or pervious, will refocus the water quality design and performance standard, so that it is not applicable to impervious surfaces that are not used as motor vehicle surfaces. As a result of the proposed amendment, while the requirements applicable to impervious surfaces utilized by motor vehicles will remain unchanged, instead of requiring water quality control of runoff from other impervious surfaces, the amendment will instead impose water quality control on runoff from pervious surfaces utilized by motor vehicles – surfaces that are not subject to the water quality standards under the existing rules. While non-motor vehicle impervious surfaces, such as decks, patios, roofs, and sidewalks, do contribute TSS, they are not a significant source of TSS. In contrast, motor vehicle surfaces are a significant source of TSS, regardless of if the surface is pervious or impervious. As a result of the difference in TSS contribution between non-motor vehicle impervious surfaces and pervious motor vehicle surfaces, the Department anticipates a positive net environmental impact from this proposed change.

The proposed change to the definition of major development to more clearly express that phased or divided projects that are individually below the threshold for major development but are cumulatively over that threshold are considered major development will ensure that the water quality, water quantity, and groundwater recharge benefits provided by

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the rules are consistently achieved. The proposed definitions of regulated impervious surface will similarly ensure that currently applicable standards area are uniformly applied.

The proposed change to clarify that the exemption from TSS removal requirements for stormwater runoff in a discharge regulated under a numeric effluent limitation for TSS imposed under a NJPDES permit, or in a discharge specifically exempt under a NJPDES permit only applies to major developments discharging to a combined sewer system (CSS) if the major development itself has a permit with a TSS effluent limit will improve water quality within CSS communities. The proposed change to clarify the water quantity control exemption in tidal flood hazard areas will reduce the flow of stormwater entering a combined sewer system and, thus, potentially reduce combined sewer overflows as well.

The proposed change to allow municipalities to establish community basins in the municipal stormwater management plans will benefit CSS communities by reducing CSOs and local flooding issues, which will provide both environmental and public health benefits. The proposed amendment requiring assessment of hydraulic impact on the groundwater table for all infiltration BMPs has a positive environmental impact by minimizing adverse impacts associated with groundwater mounding, which is a localized rise in the groundwater table. Groundwater mounding can slow infiltration rates and contribute to the poor functionality of stormwater basins. Groundwater mounding can additionally have an adverse impact on nearby structures, such as basements or septic systems.

The proposed deed notice of stormwater management measures will help ensure that stormwater management measures are protected and maintained. The proposed rule clarifies

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the process for requesting and evaluating a proposed modification, replacement, or relocation of an existing BMP, including failing BMPs. This process requires that the existing quality, quantity, or recharge treatment of stormwater runoff will be maintained to the same extent as previously approved. This change will have a positive environmental impact to water quantity, water quality, and groundwater recharge benefits since the function and operation of failed stormwater management measures can be restored and continued.

Federal Standards Statement

Executive Order No. 27 (1994) and N.J.S.A. 52:14B-1 et seq. (as amended by P.L. 1995, c. 65), require State agencies which adopt, readopt, or amend State rules that exceed any Federal standards or requirements to include in the rulemaking document a Federal standards analysis. There are several Federal programs concerning stormwater runoff and nonpoint source pollution control. These proposed amendments, do not change the limits that are within the Federal programs. Instead they change the way that the limits are evaluated, which is not discussed in the Federal programs. The Federal programs are discussed below.

Clean Water Act

The Federal Clean Water Act (33 U.S.C. §§ 1251 et seq.) requires permits under Section 402 of that Act (33 U.S.C. § 1342) for certain stormwater discharges. The Department's requirements to obtain such permits are set forth in the New Jersey Pollutant Discharge Elimination System Rules, N.J.A.C. 7:14A, rather than in the Stormwater Management rules being amended.

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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 Department developed a management program for nonpoint source control under which the Department issues grants to local, regional, State, and interstate agencies, as well as to nonprofit organizations to, for example, develop or monitor BMPs to control stormwater.

Coastal Zone Management Act

Under Section 6217(g) of the Coastal Zone Management Act Reauthorization and Amendments of 1990 (CZARA), P.L. 101-508, the USEPA has published "Guidance Specifying Management Measures For Sources of Nonpoint Pollution In Coastal Waters" (CZARA 6217(g) Guidance). States may opt to participate or not participate in the overall coastal zone management program, with no penalty for non-participation other than the loss of Federal grants for this program. No mandatory Federal standards or requirements for nonpoint sources pollution control are imposed. The CZARA 6217(g) Guidance includes management measures for stormwater runoff and nonpoint source pollution control from land development, as well as many other source types. The Department has developed a coastal zone management program, including a component addressing coastal nonpoint pollution control. The Stormwater Management rules at N.J.A.C. 7:8 are one means by which the Department implements its nonpoint pollution control program.

The Department has determined that the proposed amendments, new rules, and repeals do not contain any standards or requirements that exceed the standards or

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requirements imposed by Federal law. Accordingly, Executive Order No. 27 (1994) and N.J.S.A. 52:14B-1 et seq. (P.L. 1995, c. 65), do not require any further analysis.

Jobs Impact

The Department anticipates that this rulemaking will have minimal, if any, impact on job creation and retention in New Jersey. The improved clarity and specificity by replacing the nonstructural standard with a specific and objective green infrastructure standard may cause a reduction in the amount of time required by consultants, engineers, and other professionals to demonstrate compliance with this requirement. The green infrastructure standard may increase the demand for soil and vegetation, and as such, that increased demand could have a positive impact on jobs. There may be a minimal shift towards jobs or expertise associated with installation and maintenance of green infrastructure. Overall, the Department does not believe that the rulemaking will result in a significant impact on jobs.

Agriculture Industry Impact

Pursuant to N.J.S.A. 52:14B-4(a)2, the Department has evaluated this rulemaking to determine the nature and extent of the impact on the agricultural industry. The Department anticipates that the proposed green infrastructure standard will not have a significant impact on the agricultural industry because agricultural activities that meet the definition of major development are already regulated under the existing stormwater rules to meet erosion control, water quality, water quantity, and groundwater recharge standards. The Department is not proposing to change the erosion control, water quality, water quantity standards, and groundwater recharge standard. The Department is proposing to replace the requirement that

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the standards are met to the “maximum extent practicable” with nonstructural strategies to a requirement that the standards are met using green infrastructure. This rulemaking provides clarity and specificity on which stormwater management strategies meet the green infrastructure definition and the stormwater management strategies’ presumed capabilities of contributing towards the achievement of the stormwater management standards when designed in accordance with the New Jersey Stormwater BMP Manual. The Department does not anticipate that there are many cases in which it will be technically infeasible to meet these standards using green infrastructure. If the Department is the review agency for an application in such a situation, relief can be sought through the Waiver Rule at N.J.A.C. 7:1B, or if the application is for a permit under the Flood Hazard Area Control Act Rule at N.J.A.C. 7:13, through a hardship exception. The proposed treatment of runoff from motor vehicle surface will not have a significant adverse impact on agricultural industry since farming vehicles for agricultural activities in a farm field are excluded from the definition of motor vehicle. The proposed amendments related to developments in combined sewer systems areas will not have a significant adverse impact on agricultural industry because agricultural activities do not commonly occur in those areas. Other proposed amendments to clarify the rules will not have a significant adverse impact on agricultural industry because the clarification of rules does not impose new requirements on the agricultural industry. To the extent that these rules provide multiple benefits, such as reduced flooding, improved water quality, increased groundwater recharge, and increased protection of stream channel integrity, the agricultural industry will be positively impacted.

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Regulatory Flexibility Analysis

In accordance with the New Jersey Regulatory Flexibility Act, N.J.S.A. 52:14B-16 et seq., the Department has evaluated any reporting, recordkeeping, and other compliance requirements that the proposed amendments would impose upon small businesses.

To comply with the stormwater management requirements of the rules, small businesses proposing a major development, as defined by the rulemaking, may be required to utilize BMPs for stormwater control that they would not otherwise utilize under the existing rules. Under the current rules a small business that undertakes a major development, as defined by the rule, may choose BMPs that are green infrastructure to meet the water quantity, water quality, and groundwater recharge standards of this rule. Under the proposed amendments, small businesses that undertake a major development, as defined by the rules, will be required to use green infrastructure to meet the water quantity, water quality, and groundwater recharge standard. The impact of the green infrastructure standard is not unique to small businesses; the costs that may be incurred by small businesses are the same as to any person undertaking a major development as defined by these rules.

As noted above in the Environmental Impact statement, the required use of green infrastructure BMPs will result in improved water quality, reduced flooding potential, increased groundwater recharge, and improved maintenance of natural hydrology. Additionally, changes to address combined sewer overflows will result in water quality, flooding, and public health benefits.

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Since the amendments are the minimum necessary to protect public health and safety and the environment, adopting differing standards applicable to small businesses is neither appropriate nor sufficiently protective of the residents of New Jersey from the deleterious impacts resulting from unmanaged stormwater runoff.

Housing Affordability Impact Analysis

In accordance with N.J.S.A. 52:14B-4.1b, as amended effective July 17, 2008, by P.L. 2008, c. 46, the Department has evaluated this rulemaking to determine their impact, if any, on the affordability of housing. The proposed amendments will result in a positive social impact on the public in general including reduced flooding, improved water quality, increased groundwater recharge, increased protection of stream channel integrity, reduced erosion, maintained adequacy of bridges and culverts, improved air quality, reduced heat island effect, decreased energy use, beautification of public spaces, increased recreational opportunities, and improved public safety, all of which result in more resilient communities. The proposed amendments also provide clarity and improve consistency in implementation by review agencies and, as such, will improve regulatory predictability. However, the Department believes it is unlikely that the impacts associated with this rulemaking would evoke a change in the average costs associated with housing or have an effect on the affordability of housing.

Smart Growth Development Impact Analysis

In accordance with N.J.S.A. 52:14B-4, as amended effective July 17, 2008, by P.L. 2008, c. 46, the Department has evaluated the rulemaking to determine the impact, if any, on housing production in Planning Areas 1 or 2, or within designated centers, under the State Development

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and Redevelopment Plan (State Plan). As indicated in the Economic Impact statement and Social Impact statement above, the rulemaking provides clarity and will improve consistency in implementation by review agencies and as such will improve regulatory predictability, having a positive impact by reducing the overall cost of compliance. However, the proposed amendments are not anticipated to have an overall impact on housing. Therefore, while these changes may result in some cost savings, such savings will not be large enough to evoke a change in housing production in Planning Areas 1 or 2, or within designated centers.

Racial and Ethnic Community Criminal Justice and Public Safety Impact

The Department 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 rules proposed for repeal may be found in the New Jersey Administrative Code at N.J.A.C. 7:8-5.3 and 5.7.

Full text of the proposed amendments and new rules follows (additions indicated in boldface **thus**; deletions indicated in brackets [thus]):

CHAPTER 7

COASTAL ZONE MANAGEMENT RULES

SUBCHAPTER 25. APPLICATION FEES

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7:7-25.1 Application fees

(a)-(f) (No change)

(g) The fees for applications under this chapter are set forth in Table A below:

Table A
APPLICATION FEES

...

Additional application fee for stormwater review if a project is a “major development” pursuant to the Stormwater Management Rules (see N.J.A.C. 7:8-1.2)

	Fee ¹
...	
Additional fee for review of runoff quantity calculations (see N.J.A.C. 7:8-[5.4]5.6)	\$250.00 per acre of land disturbed by the project (or fraction thereof)
...	

¹The additional application fee for stormwater review set forth in this table shall not exceed \$20,000.

CHAPTER 7A

FRESHWATER WETLANDS PROTECTION ACT RULES

SUBCHAPTER 18. APPLICATION FEES

7:7A-18.1 Application fees

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(a) - (e) (No change.)

(f) The fees for applications under this chapter are set forth in Table 18.1 below:

Table 18.1

APPLICATION FEES

...

Additional application fee for stormwater review if a project is a “major development”

pursuant to the Stormwater Management Rules (see N.J.A.C. 7:8-1.2)

	Fee ¹
...	
Additional fee for review of runoff quantity calculations (see N.J.A.C. 7:8-[5.4]5.6)	\$250.00 per acre of land disturbed by the project (or fraction thereof)
...	

¹The additional application fee for stormwater review set forth in this table shall not exceed \$20,000.

CHAPTER 8

STORMWATER MANAGEMENT

SUBCHAPTER 1. GENERAL PROVISIONS

7:8-1.2 Definitions

The following words and terms, when used in this chapter, shall have the following meanings

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unless the context clearly indicates otherwise.

...

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

...

“Contributory drainage area” means the area from which stormwater runoff drains to a stormwater management measure, not including the area of the stormwater management measure itself.

...

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

...

“Green infrastructure” means a stormwater management measure that manages stormwater close to its source by:

- 1. Treating stormwater runoff through infiltration into subsoil;**

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2. Treating stormwater runoff through filtration by vegetation or soil; or

3. Storing stormwater runoff for reuse.

"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.

...

["Major development" means any "development" that provides for ultimately disturbing one or more acres of land or increasing impervious surface by one-quarter acre or more. Disturbance for the purpose of this rule is the placement of impervious surface or exposure and/or movement of soil or bedrock or clearing, cutting, or removing of vegetation. Projects undertaken by any government agency which otherwise meet the definition of "major development" but which do not require approval under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., are also considered "major development."]

"Major development" means 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 (the operative date of this rulemaking); or

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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.

Major development includes all developments that are part of a common plan of development or sale (for example, phased residential development) that collectively or individually meet any one or more of paragraphs 1, 2, 3, or 4 above. Projects undertaken by any government agency that otherwise meet the definition of “major development” but which do not require approval under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., are also considered “major development.”

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

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

...

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“New Jersey Stormwater Best Management Practices (BMP) Manual” or “BMP Manual”

means the manual maintained by the Department providing, in part, design specifications, removal rates, calculation methods, and soil testing procedures approved by the Department as being capable of contributing to the achievement of the stormwater management standards specified in this chapter. The manual is periodically amended by the Department as necessary to provide design specifications on additional best management practices and new information on already included practices reflecting the best available current information regarding the particular practice and the Department’s determination as to the ability of that best management practice to contribute to compliance with the standards contained in this chapter. Alternative stormwater management measures, removal rates, or calculation methods may be utilized, subject to any limitations specified in this chapter, provided the design engineer demonstrates to the review agency, in accordance with N.J.A.C. 7:8-5.2(f), that the proposed measure and its design will contribute to achievement of the design and performance standards established by this chapter.

...

“Regulated impervious surface” means any of the following, alone or in combination:

- 1. A net increase of impervious surface;**
- 2. The total area of impervious surface collected by a new stormwater conveyance system;**
- 3. The total area of impervious surface proposed to be newly collected by an existing stormwater conveyance system; and/or**

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4. **The total area of impervious surface collected by an existing stormwater conveyance system where the capacity of that conveyance system is increased.**

“Regulated motor vehicle surface” means any of the following, alone or in combination:

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

...

"Stormwater management measure" means any [structural or nonstructural strategy,] practice, technology, process, program, or other method intended to control or reduce stormwater runoff and associated pollutants, or to induce or control the infiltration or groundwater recharge of stormwater or to eliminate illicit or illegal nonstormwater discharges into stormwater conveyances.

...

["Tidal Flood Hazard Area" means a flood hazard area, which may be influenced by stormwater runoff from inland areas, but which is primarily caused by the Atlantic Ocean.]

"Tidal Flood Hazard Area" means a flood hazard area in which the flood elevation resulting from the two-, 10-, or 100-year storm, as applicable, is governed by tidal flooding from the Atlantic Ocean. Flooding in a tidal flood hazard area may be contributed to, or influenced by,

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stormwater runoff from inland areas, but the depth of flooding generated by the tidal rise and fall of the Atlantic Ocean is greater than flooding from any fluvial sources. In some situations, depending upon the extent of the storm surge from a particular storm event, a flood hazard area may be tidal in the 100-year storm, but fluvial in more frequent storm events.

...

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

...

7:8-1.3 Program information

Questions or submissions regarding this chapter should be directed to the Division of [Watershed Management] **Water Quality**, New Jersey Department of Environmental Protection, **Mail Code 401-02B**, PO Box [418] **420**, Trenton, New Jersey 08625-**0420**.

7:8-1.6 Applicability to major development

(a) (No change.)

(b) The following major development shall be subject to the stormwater management

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requirements in effect on [February 1, 2004, copies of which are available from the Department at the address specified in N.J.A.C. 7:8-1.3] **(one day before the operative date of this amendment):**

1. Major development [which] **that** does not require any of the Department permits listed in (c) below and [which] **that** has [received] **submitted an application that includes both the application form and all accompanying documents required by ordinance for** one of the following approvals pursuant to the Municipal Land Use Law (N.J.S.A. 40:55D-1 et seq.) prior to [February 2, 2004] **(the operative date of this proposed amendment):**

i.-iv. (No change.)

v. Preliminary subdivision approval where no subsequent site plan approval is required; **and**

[2. Major development which has received one of the approvals pursuant to the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., in (b)1 above prior to February 2, 2004 and has secured at least one of the applicable permits listed in (c) below from the Department by February 2, 2004 and provided that the permit included a stormwater management review component; and

3. Major development undertaken by any government agency, which does not require approval under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., provided that the project has secured at least one of the applicable Department permits listed in (c) below prior to February 2, 2004, and provided that the permit included a stormwater management review component.]

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2. Major development for which a technically complete application was submitted to the Department for one of the approvals listed at (c) below prior to (the operative date of this proposed amendment), provided that the application included a stormwater management review component.

(c) For the purposes of this section, the term "permit" shall include transition area waivers under the Freshwater Wetlands Protection Act. In order to qualify under (b)2 [or 3] above, a **technically complete permit application must have been submitted to the Department** for the major development [must have obtained at least one Department permit granted] under the following statutes [and], provided that the permit included a stormwater management review component, prior to [February 2, 2004] **(the operative date of this proposed amendment):**

1.-2. (No change.)

3. Coastal Area Facility Review Act, N.J.S.A. 13:19-1 et seq.; [or]

4. Waterfront and Harbor Facilities Act, N.J.S.A. 12:5-3; **or**

5. Highlands Water Protection and Planning Act, N.J.S.A. 13:20.

(d) (No change.)

(e) An exemption under (b) above is limited to the land area and the scope of the project addressed by the qualifying **application(s) or subsequent** approval(s) [and permit(s)].

Exemptions under this section shall be deemed void if revisions are made to the qualifying [approval or permit] **application** in (b) above **or its subsequent approval**, including **applications or approvals** under the Municipal Land Use Law, unless [upon application,] the [Department] **review agency** determines that each revision would have a de minimis impact on water

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resources. In making this determination, the [Department] **review agency** shall consider the extent of any impacts on water resources resulting from the revision, including, but not limited to:

1. (No change.)

2. Increases in **regulated** impervious surface;

3. Increases in regulated motor vehicle surface;

Recodify existing 3.-4. as **4.-5.** (No change in text.)

[5.] **6.** New encroachments in [special water resource protection areas] **300-foot wide near-stream areas protected through ordinance or regulation including the 300-foot riparian zone as established at N.J.A.C. 7:13-4.1(c)1;** and

[6.] **7.** (No change in text.)

[(f) In case of conflict with the Coastal Zone Management Rules at N.J.A.C. 7:7-26.1(e), the requirements of this chapter shall supersede.]

SUBCHAPTER 2. GENERAL REQUIREMENTS FOR STORMWATER MANAGEMENT PLANNING

7:8-2.4 Stormwater management plan requirements

(a) A stormwater management plan shall include [structural] **stormwater management measures, including green infrastructure**, and nonstructural stormwater management strategies necessary to meet the stormwater management goals of this chapter.

(b)-(f) (No change.)

(g) For stormwater management plans developed pursuant to N.J.A.C. 7:8-3 and 4,

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“nonstructural stormwater management strategies” may include one or more of the following practices that:

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

2. Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces;

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

4. Minimize the decrease in the "time of concentration" from pre-construction to post-construction. "Time of concentration" is defined as the time it takes for runoff to travel from the hydraulically most distant point of the drainage area to the point of interest within a watershed;

5. Minimize land disturbance, including clearing and grading;

6. Minimize soil compaction;

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

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

9. Provide other source controls to prevent or minimize the use or exposure of pollutants from development sites in order to prevent or minimize the release of those pollutants into stormwater runoff. These source controls include, but are not limited to:

i. Development design features that help to prevent accumulation of trash and

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debris in drainage systems;

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

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

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

SUBCHAPTER 3. REGIONAL STORMWATER MANAGEMENT PLANNING

7:8-3.4 Characterization and assessment of the regional stormwater management planning area

(a) The regional stormwater management plan shall include a characterization and assessment that addresses the following components, unless the committee determines that a component is not appropriate for the regional stormwater management planning area and provides a rationale for not including the component:

1. Maps showing the following information. Maps developed on a Geographical Information System shall meet the Digital Data standards in N.J.A.C. 7:1D unless a rationale for a different format is provided.

i. – xii. (No change.)

xiii. Each waterbody designated as a water quality limited surface water

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pursuant to N.J.A.C. 7:15-[6]5;

xiv. – xv. (No change.)

2. – 4. (No change.)

5. An identification and evaluation of existing municipal, county, State, Federal, and other stormwater-related groundwater recharge, water quality, and water quantity regulations and programs shall be conducted, including, where applicable, programs to develop total maximum daily loads (TMDLs) in accordance with N.J.A.C. 7:15-[7]5; and

6. (No change.)

(b) – (e) (No change.)

7:8-3.6 Drainage area-specific design and performance standards

(a) (No change.)

(b) Drainage area-specific design and performance standards may include performance standards for control of stormwater quantity, erosion, groundwater recharge, and stormwater quality, as well as design standards for [particular structural] **stormwater management measures, including green infrastructure**, and nonstructural stormwater management strategies.

(c) (No change.)

(d) For [structural] stormwater management measures, drainage area-specific design and performance standards shall conform to the general standards at N.J.A.C. 7:8-[5.7]5.2(f), (g), (i), and (j).

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(e) (No change.)

7:8-3.9 Regional stormwater management plan review, adoption, and amendment and/or revision

(a) (No change.)

(b) In reviewing a regional stormwater management plan submitted under (a) above, the Department shall determine whether the plan conforms to the requirements of this chapter. The Department will disapprove, return for additional information, or proceed with a proposed amendment in accordance with N.J.A.C. 7:15-[3.4(g)]**3.5(g)**.

(c) Modifications to an adopted regional stormwater management plan shall be processed as [an] **a revision or** amendment [or revision] in accordance with N.J.A.C. 7:15-3.4[(b)5] or 3.5[(b)5], as applicable.

7:8-3.10 Implementation of adopted regional stormwater management plan

(a) Once the regional stormwater management plan has been adopted pursuant to N.J.A.C. 7:8-3.9, implementation responsibilities are as follows:

1. – 3. (No change.)

4. The Department shall not issue a permit for a project or activity that conflicts with an Areawide Water Quality Management Plan pursuant to N.J.A.C. 7:15-[3.1]**3.2**.

SUBCHAPTER 4. MUNICIPAL STORMWATER MANAGEMENT PLANNING

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7:8-4.2 Municipal stormwater management plan and elements

(a)–(b) (No change.)

(c) A municipal stormwater management plan shall, at a minimum:

1.-7. (No change.)

8. Evaluate the extent to which the municipality's entire master plan (including the land use plan element), official map, and development regulations (including the zoning ordinance) implement **green infrastructure and** the principles expressed in **the nonstructural stormwater management strategies at N.J.A.C. 7:8-[5.3(b)]2.4**. This evaluation shall also be included (with updating as appropriate) in the reexamination report adopted under N.J.S.A. 40:55D-89;

9.-10. (No change.)

11. In order to grant a variance [or exemption] from the design and performance standards in N.J.A.C. 7:8-5, include a mitigation plan that identifies what measures are necessary, **potential mitigation projects, and/or criteria to evaluate mitigation projects that can be used** to offset the deficit created by granting [the] a variance [or exemption] **in accordance with N.J.A.C. 7:8-4.6**. [The mitigation plan shall ensure that mitigation is completed within the drainage area and for the performance standard for which the variance or exemption was granted;]

12. Include a copy of the recommended implementing stormwater control ordinance(s) requiring stormwater management measures; [and]

13. The municipal stormwater management plan may also include a stream corridor protection plan to address protection of areas adjacent to waterbodies[.]; **and**

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14. If a municipality that includes an area served by a combined sewer system or a separate storm sewer system that is hydraulically connected to a combined sewer system seeks to establish a community basin(s), include a demonstration, through hydrologic and hydraulic analysis, that the community basin(s) would alleviate existing or prevent potential flood damage or combined sewer overflow. A municipality may allow developments to use the community basin to meet the stormwater runoff quantity control standards at N.J.A.C. 7:8-5.6, provided the following minimum requirements are met:

i. Each contributory site to the community basin is presently served by a combined sewer system or a separate storm sewer system that is hydraulically connected to the combined sewer system;

ii. The runoff from each contributory site meets the green infrastructure, groundwater recharge, and water quality standards at N.J.A.C. 7:8-5.3, 5.4, and 5.5, as applicable, before leaving the site, unless a variance is granted pursuant to N.J.A.C. 7:8-4.6;

iii. The conveyance from each contributory site to the community basin is capable of carrying the 100-year storm to the community basin without overflow;

iv. The community basin has sufficient capacity to meet the stormwater runoff quantity standards considering all stormwater contributing to the community basin;

v. The municipality is the party responsible for the maintenance of the

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community basin in accordance with N.J.A.C. 7:8-5.8; and

vi. The municipality adopts ordinances to regulate the conditions and limitations of the inflow contributing to the community basin to ensure the continued function of the community basin.

7:8-4.6 Variance [or exemption] from the design and performance standards for stormwater management measures

(a) A municipality may grant a variance [or exemption] from the design and performance standards for stormwater management measures set forth in its approved municipal stormwater management plan and stormwater control ordinance(s), provided the municipal plan includes a mitigation plan in accordance with N.J.A.C. 7:8-4.2(c)11 and the [municipality submits a written report to the county review agency and the Department describing the variance or exemption and the required mitigation.] **following conditions are met:**

1. The applicant demonstrates that it is technically impracticable to meet any one or more of the design and performance standards on-site. For the purposes of this analysis, technical impracticability exists only when the design and performance standard cannot be met for engineering, environmental, or safety reasons. A municipality's approval of a variance shall apply to an individual drainage area and design and performance standard and shall not apply to an entire site or project, unless an applicant provides the required analysis for each drainage area within the site and each design and performance standard;

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2. The applicant demonstrates that the proposed design achieves the maximum possible compliance with the design and performance standards on-site; and

3. A mitigation project in accordance with the following is implemented.

i. The mitigation project may be selected from the municipal mitigation plan or may be proposed by the applicant, provided it meets the criteria in the municipal mitigation plan.

ii. The mitigation project shall be approved no later than preliminary or final site plan approval of the major development.

iii. The mitigation project shall be located in the same HUC 14 as the area of the major development subject to the variance.

iv. The mitigation project shall be constructed prior to, or concurrently with, the major development.

v. The mitigation project shall comply with the green infrastructure standards at N.J.A.C. 7:8-5.3.

vi. If the variance that resulted in the mitigation project being required is from the green infrastructure standards at N.J.A.C. 7:8-5.3, then the mitigation project must use green infrastructure BMPs in Table 5-1, and/or an alternative stormwater management measure approved in accordance with N.J.A.C. 7:8-5.2(g) that meets the definition of green infrastructure to manage an equivalent or greater area of impervious surface and an equivalent or greater area of motor vehicle surface as the area of the major development subject to the variance. Grass swales and vegetative filter strips may only be used in the

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mitigation project if the proposed project additionally includes a green infrastructure BMP other than a grass swale or vegetative filter strip. The green infrastructure used in the mitigation project must be sized to manage the water quality design storm, as defined at N.J.A.C. 7:8-5.5(d), at a minimum, and is subject to the applicable contributory drainage area limitation specified at N.J.A.C. 7:8-5.2(g) or 5.3(b), as applicable.

vii. A variance from the groundwater recharge standards at N.J.A.C. 7:8-5.4 may be granted if one of the following is met:

(1) The average annual groundwater recharge provided by the mitigation project must equal or exceed the average annual groundwater recharge deficit resulting from granting the variance for the major development; or

(2) Runoff infiltrated during the two-year storm from the mitigation project must equal or exceed the deficit resulting from granting the variance from the required infiltration of the increase in runoff volume from pre-construction to post-construction from the major development.

viii. A variance from the stormwater runoff quality standards at N.J.A.C. 7:8-5.5 may be granted if the following are met:

(1) The total drainage area of motor vehicle surface managed by the mitigation project(s) must equal or exceed the drainage area of the area of the major development subject to the variance and must provide sufficient TSS removal to equal or exceed the deficit resulting from granting the variance for the major development; and

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(2) The mitigation project must remove nutrients to the maximum extent feasible in accordance with N.J.A.C. 7:8-5.5(f).

ix. A variance from the stormwater runoff quantity standards at N.J.A.C. 7:8-5.6 may be granted if the following are met:

(1) The applicant demonstrates, through hydrologic and hydraulic analysis, including the effects of the mitigation project, that the variance will not result in increased flooding damage below each point of discharge of the major development;

(2) The mitigation project discharges to the same watercourse and is located upstream of the major development subject to the variance; and

(3) The mitigation project provides peak flow rate attenuation in accordance with N.J.A.C. 7:8-5.6(b)3 for an equivalent or greater area than the area of the major development subject to the variance. For the purposes of this demonstration, equivalent includes both size of the area and percentage of impervious surface and/or motor vehicle surface.

x. The applicant shall be responsible for preventive and corrective maintenance (including replacement) of the mitigation project and shall be identified as such in the maintenance plan established in accordance with N.J.A.C. 7:8-5.8. This responsibility is not transferable to any entity other than a public agency, in which case, a written agreement with that public agency must be submitted to the review agency.

(b) Any approved variance shall be submitted by the municipal review agency to the county review agency and the Department, by way of a written report describing the variance, as

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well as the required mitigation, within 30 days of the approval.

SUBCHAPTER 5. DESIGN AND PERFORMANCE STANDARDS FOR STORMWATER MANAGEMENT MEASURES

7:8-5.2 Stormwater management measures for major development

(a) Stormwater management measures for major development shall be [developed to meet the] **designed to provide** erosion control, groundwater recharge, stormwater runoff quantity **control**, and stormwater runoff quality [standards at N.J.A.C. 7:8- 5.4 and 5.5. To the maximum extent practicable, these standards shall be met by incorporating nonstructural stormwater management strategies at N.J.A.C. 7:8-5.3 into the design. If these measures alone are not sufficient to meet these standards, structural stormwater management measures at N.J.A.C. 7:8-5.7 necessary to meet these standards shall be incorporated into the design.] **treatment as follows:**

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

2. The minimum design and performance standards for groundwater recharge, stormwater runoff quality, and stormwater runoff quantity at N.J.A.C. 7:8-5.4, 5.5, and 5.6 shall be met by incorporating green infrastructure in accordance with N.J.A.C. 7:8-5.3.

(b) - (d) (No change.)

(e) A waiver from strict compliance from the **green infrastructure**, groundwater recharge,

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stormwater runoff quantity, and stormwater runoff quality requirements at N.J.A.C. 7:8-5.3, 5.4, [and] 5.5, **and 5.6** may be obtained for the enlargement of an existing public roadway or railroad, or the construction or enlargement of a public pedestrian access, provided that the following conditions are met:

1. (No change.)

2. The applicant demonstrates through an alternatives analysis, that through the use of [nonstructural and structural] stormwater management [strategies and] measures, the option selected complies with the requirements of N.J.A.C. 7:8-5.3, 5.4, [and] 5.5, **and 5.6** to the maximum extent practicable;

3. The applicant demonstrates that, in order to meet the requirements at N.J.A.C. 7:8-5.3, 5.4, [and] 5.5, **and 5.6** existing structures currently in use, such as homes and buildings would need to be condemned; and

4. The applicant demonstrates that it does not own or have other rights to areas, including the potential to obtain through condemnation lands not falling under (e)3 above within the upstream drainage area of the receiving stream, that would provide additional opportunities to mitigate for requirements of N.J.A.C. 7:8-5.3, 5.4, [and] 5.5, **and 5.6** that were not achievable [on-site] **onsite**.

(f) The tables below summarize the ability of stormwater best management practices identified and described in the New Jersey Stormwater Best Management Practices Manual to satisfy the green infrastructure, groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards specified in this chapter. When designed in

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accordance with the New Jersey Stormwater Best Management Practices Manual and this chapter, the stormwater management measures listed in Tables 5-1, 5-2, and 5-3 shall be presumed to be capable of providing stormwater controls for the design and performance standards as outlined in the tables below. Upon amendment of the New Jersey Stormwater Best Management Practices Manual to reflect additions or deletions of BMPs meeting these standards, or changes in the presumed performance of BMPs designed in accordance with the New Jersey Stormwater BMP Manual, the Department shall publish in the New Jersey Register a notice of administrative change revising the applicable table.

Table 5-1

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

Best Management Practice	Stormwater Runoff Quality TSS removal rate (percent)	Stormwater Runoff Quantity	Groundwater Recharge	Minimum separation from seasonal high water table (feet)
Cistern	0	Yes	No	-
Dry Well^(a)	0	No	Yes	2
Grass Swale	50 or less	No	No	2^(e) 1^(f)
Green Roof	0	Yes	No	-

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Manufactured Treatment Device^{(a) (g)}	50 or 80	No	No	Dependent upon the device
Pervious Paving System^(a)	80	Yes	Yes ^(b) No ^(c)	2 ^(b) 1 ^(c)
Small- Scale Bioretention System^(a)	80 or 90	Yes	Yes ^(b) No ^(c)	2 ^(b) 1 ^(c)
Small-Scale Infiltration Basin^(a)	80	Yes	Yes	2
Small-Scale Sand Filter ^{(a)(b)}	80	Yes	Yes	2
Vegetative Filter Strip	60-80	No	No	-

Table 5-2

Green Infrastructure BMPs for Stormwater Runoff Quantity (or for Groundwater Recharge and/or Stormwater Runoff Quality with a Waiver or Variance from N.J.A.C. 7:8-5.3)

Best Management Practice	Stormwater Runoff Quality	Stormwater Runoff Quantity	Groundwater Recharge	Minimum separation from seasonal high
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	TSS removal rate (percent)			water table (feet)
Bioretention System	80 or 90	Yes	Yes ^(b) No ^(c)	2 ^(b) 1 ^(c)
Infiltration Basin	80	Yes	Yes	2
Sand Filter ^(b)	80	Yes	Yes	2
Standard Constructed Wetland	90	Yes	No	N/A
Wet Pond ^(d)	50-90	Yes	No	N/A

Table 5-3

BMPs for Groundwater Recharge, Stormwater Runoff Quality, and/or Stormwater Runoff

Quantity only with a Waiver or Variance from N.J.A.C. 7:8-5.3

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Best Management Practice	Stormwater Runoff Quality TSS removal rate (percent)	Stormwater Runoff Quantity	Groundwater Recharge	Minimum separation from seasonal high water table (feet)
Blue Roof	0	Yes	No	N/A
Extended Detention Basin	40-60	Yes	No	1
Manufactured Treatment Device ^(h)	50 or 80	No	No	Dependent upon the device
Sand Filter^(c)	80	Yes	No	1
Subsurface Gravel Wetland	90	No	No	1
Wet pond	50-90	Yes	No	N/A

Notes to Tables 5-1, 5-2, and 5-3: (a) subject to the applicable contributory drainage area limitation specified at N.J.A.C. 7:8-5.3(b); (b) designed to infiltrate into the subsoil; (c) designed with underdrains; (d) designed to maintain at least a 10-foot wide area of native vegetation along at least 50 percent of the shoreline and to include a stormwater runoff retention component designed to capture stormwater runoff for beneficial reuse, such as irrigation; (e) designed with a slope of less than two percent; (f) designed with a slope of equal to or greater than two percent; (g) manufactured treatment devices that meet the definition of green

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infrastructure at N.J.A.C. 7:8-1.2; (h) manufactured treatment devices that do not meet the definition of green infrastructure at N.J.A.C. 7:8-1.2.

(g) An alternative stormwater management measure, alternative removal rate, and/or alternative method to calculate the removal rate may be used if the design engineer demonstrates the capability of the proposed alternative stormwater management measure and/or the validity of the alternative rate or method to the review agency. Where the Department is the review agency, documentation must be submitted in accordance with N.J.A.C. 7:8-1.3. Where the Department is not the review agency, a copy of any approved alternative stormwater management measure, alternative removal rate, and/or alternative method to calculate the removal rate shall be provided to the Department in accordance with N.J.A.C. 7:8-1.3. Alternative stormwater management measures may be used to satisfy the requirements at N.J.A.C. 7:8-5.3 only if the measures meet the definition of green infrastructure at N.J.A.C. 7:8-1.2. Alternative stormwater management measures that function in a similar manner to a BMP listed at N.J.A.C. 7:8-5.3(b) are subject to the contributory drainage area limitation specified at N.J.A.C. 7:8-5.3(b) for that similarly functioning BMP. Alternative stormwater management measures approved in accordance with this subsection that do not function in a similar manner to any BMP listed at N.J.A.C. 7:8-5.3(b) shall have a contributory drainage area less than or equal to 2.5 acres, except for alternative stormwater management measures that function similarly to cisterns, grass swales, green roofs, standard constructed wetlands, vegetative filter strips, and wet ponds, which are not subject to a

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contributory drainage area limitation. Alternative measures that function similarly to standard constructed wetlands or wet ponds shall not be used for compliance with the stormwater runoff quality standard unless a variance in accordance with N.J.A.C. 7:8-4.6 or a waiver from strict compliance in accordance with N.J.A.C. 7:8-5.2(e) is granted from N.J.A.C. 7:8-5.3.

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

(i) Design standards for stormwater management measures are as follows:

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

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

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one-inch spacing between the bars to the elevation of the water quality design storm. For elevations higher than the water quality design storm, the parallel bars at the outlet structure shall be spaced no greater than one-third the width of the diameter of the orifice or one-third the width of the weir, with a minimum spacing between bars of one inch and a maximum spacing between bars of six inches. In addition, the design of trash racks must comply with the requirements of N.J.A.C. 7:8-6.2(a);

3. Stormwater management measures shall be designed, constructed, and installed to be strong, durable, and corrosion resistant. Measures that are consistent with the relevant portions of the Residential Site Improvement Standards at N.J.A.C. 5:21-7.3, 7.4, and 7.5 shall be deemed to meet this requirement;

4. Stormwater management basins shall be designed to meet the minimum safety standards for stormwater management basins at N.J.A.C. 7:8-6; and

5. The size of the orifice at the intake to the outlet from the stormwater management basin shall be a minimum of two and one-half inches in diameter.

(j) Manufactured treatment devices may be used to meet the requirements of this subchapter under the circumstances described in N.J.A.C. 7:8-5.3(d), provided the pollutant removal rates are verified by the New Jersey Corporation for Advanced Technology and certified by the Department.

(k) Any application for a new agricultural development that meets the definition of major development at N.J.A.C. 7:8-1.2 shall be submitted to the Soil Conservation District for review and approval in accordance with the requirements at N.J.A.C. 7:8-5.4 and 5.6 and any

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applicable Soil Conservation District guidelines for stormwater runoff quantity and erosion control. For purposes of this section, "agricultural development" means land uses normally associated with the production of food, fiber, and livestock for sale. Such uses do not include the development of land for the processing or sale of food and the manufacture of agriculturally related products.

(l) If there is more than one drainage area, the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at N.J.A.C. 7:8-5.4, 5.5, and 5.6 shall be met in each drainage area, unless the runoff from the drainage areas converge onsite and no adverse environmental impact would occur as a result of compliance with any one or more of the individual standards being determined utilizing a weighted average of the results achieved for that individual standard across the affected drainage areas.

(m) Any stormwater management measure authorized under this chapter or under a municipal stormwater management plan or ordinance shall be reflected in a deed notice recorded in the Office of the County Clerk or the registrar of deeds and mortgages of the county in which the development, project, project site, or mitigation area containing the stormwater management measure is located. A form of deed notice shall be submitted to the reviewing agency for approval prior to filing. The deed notice shall contain a description of the stormwater management measure(s) used to meet the green infrastructure, groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at N.J.A.C. 7:8-5.3, 5.4, 5.5, and 5.6 and shall identify the location of the stormwater management measure(s) in NAD 1983 State Plane New Jersey FIPS 2900 US Feet or Latitude

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and Longitude in decimal degrees. The deed notice shall also reference the maintenance plan required to be recorded upon the deed pursuant to N.J.A.C. 7:8-5.8(d). Prior to the commencement of construction, proof that the above required deed notice has been filed shall be submitted to the review agency. Proof that the required information has been recorded on the deed shall be in the form of either a copy of the complete recorded document or a receipt from the clerk or other proof of recordation provided by the recording office. However, if the initial proof provided to the review agency is not a copy of the complete recorded document, a copy of the complete recorded document shall be provided to the review agency within 180 calendar days of the authorization granted by the review agency.

(n) A stormwater management measure approved under this chapter or a municipal stormwater management plan or ordinance may be altered or replaced with the approval of the applicable review agency, if the review agency determines that the proposed alteration or replacement meets the design and performance standards pursuant to N.J.A.C. 7:8-5 and provides the same level of stormwater management as the previously approved stormwater management measure that is being altered or replaced. If an alteration or replacement is approved, a revised deed notice shall be submitted to the reviewing agency for approval and subsequently recorded with the appropriate Office of the County Clerk or the registrar of deeds and mortgages and shall contain a description and location of the stormwater management measure, as well as reference to the maintenance plan, in accordance with (m) above. Prior to the commencement of construction, proof that the above required deed

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notice has been filed shall be submitted to the review agency in accordance with (m) above.

7:8-5.3 Green infrastructure standards

(a) This section specifies the types of green infrastructure BMPs that may be used to satisfy the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards.

(b) To satisfy the groundwater recharge and stormwater runoff quality standards at N.J.A.C. 7:8-5.4 and 5.5, the design engineer shall utilize green infrastructure BMPs identified in Table 5-1 at N.J.A.C. 7:8-5.2(f) and/or an alternative stormwater management measure approved in accordance with N.J.A.C. 7:8-5.2(g). The following green infrastructure BMPs are subject to the following maximum contributory drainage area limitations:

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

(c) To satisfy the stormwater runoff quantity standards at N.J.A.C. 7:8-5.6, the design engineer

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shall utilize BMPs from Table 5-1 or from Table 5-2 and/or an alternative stormwater management measure approved in accordance with N.J.A.C. 7:8-5.2(g).

(d) If a variance in accordance with N.J.A.C. 7:8-4.6 or a waiver from strict compliance in accordance with N.J.A.C. 7:8-5.2(e) is granted from the requirements of this section, then BMPs from Table 5-1, 5-2, or 5-3, and/or an alternative stormwater management measure approved in accordance with N.J.A.C. 7:8-5.2(g) may be used to meet the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at N.J.A.C. 7:8-5.4, 5.5, and 5.6.

(e) For separate or combined storm sewer improvement projects, such as sewer separation, undertaken by a government agency or sewerage authority, the requirements of this section shall only apply to areas owned in fee simple by the government agency or sewerage authority, and areas within a right-of-way or easement held or controlled by the government agency or sewerage authority; the entity shall not be required to obtain additional property or property rights to fully satisfy the requirements of this section. Regardless of the amount of area of a separate or combined storm sewer improvement project subject to the green infrastructure requirements of this section, each project shall fully comply with the applicable groundwater recharge, stormwater runoff quality control, and stormwater runoff quantity standards at N.J.A.C. 7:8-5.4, 5.5, and 5.6, unless the project is granted a waiver from strict compliance in accordance with N.J.A.C. 7:8-5.2(e).

7:8-5.4 [Erosion control, groundwater] **Groundwater** recharge [and runoff quantity] standards

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(a) This section contains minimum design and performance standards [to control erosion, encourage and control infiltration and] **for** groundwater recharge[, and control stormwater runoff quantity impacts of major development].

[1. The minimum design and performance standards for erosion control are those established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq. and implementing rules.]

[2.] **(b)** The minimum design and performance standards for groundwater recharge are as follows:

[i.] **1.** The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at N.J.A.C. 7:8-[5.6]**5.7**, either:

Recodify existing (1) and (2) as **i. and ii.** (No change in text.)

[ii.] **2.** This groundwater recharge requirement does not apply to projects within the “urban redevelopment area,” or to projects subject to [(a)2iii] **(b)3** below.

[iii.] **3.** (No change in text.)

[iv. The design engineer shall assess the hydraulic impact on the groundwater table and design the site so as to avoid adverse hydraulic impacts. Potential adverse hydraulic impacts include, but are not limited to, exacerbating a naturally or seasonally high water table so as to cause surficial ponding, flooding of basements, or interference with the proper operation of subsurface sewage disposal systems and other subsurface structures in the vicinity or downgradient of the groundwater recharge area.

3. In order to control stormwater runoff quantity impacts, the design engineer shall,

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using the assumptions and factors for stormwater runoff calculations at N.J.A.C. 7:8-5.6,

complete one of the following:

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

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

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

iv. In tidal flood hazard areas, stormwater runoff quantity analysis in accordance with (a)3i, ii and iii above shall only be applied if the increased volume of stormwater runoff could increase flood damages below the point of discharge.

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(b) Any application for a new agricultural development that meets the definition of major development at N.J.A.C. 7:8-1.2 shall be submitted to the Soil Conservation District for review and approval in accordance with the requirements of this section and any applicable Soil Conservation District guidelines for stormwater runoff quantity and erosion control. For purposes of this section, "agricultural development" means land uses normally associated with the production of food, fiber and livestock for sale. Such uses do not include the development of land for the processing or sale of food and the manufacture of agriculturally related products.]

7:8-5.5 Stormwater runoff quality standards

(a) This section contains the minimum design and performance standards to control stormwater runoff quality impacts of major development. Stormwater runoff quality standards are applicable when the major development results in an increase of one-quarter acre or more of regulated motor vehicle surface.

[(a)] **(b)** Stormwater management measures shall be designed to reduce the post-construction load of total suspended solids (TSS) in stormwater runoff generated from the water quality design storm [by 80] **as follows:**

1. Eighty percent TSS removal of the anticipated load [from the developed site], expressed as an annual average **shall be achieved for the stormwater runoff from the net increase of motor vehicle surface.** [Stormwater management measures shall only be required for water quality control if an additional one-quarter acre of impervious surface is being

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proposed on a development site.]

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

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

(d) The water quality design storm is 1.25 inches of rainfall in two hours. Water quality calculations shall take into account the distribution of rain from the water quality design storm, as reflected in Table [1] **5-4** below. The calculation of the volume of runoff may take into account the implementation of [non-structural and structural] stormwater management measures.

[Table 1: Water Quality Design Storm Distribution

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Time	Cumulative	Time	Cumulative
	Rainfall		Rainfall
<u>(Minutes)</u>	<u>(Inches)</u>	<u>(Minutes)</u>	<u>(Inches)</u>
0	0.0000	65	0.8917
5	0.0083	70	0.9917
10	0.0166	75	1.0500
15	0.0250	80	1.0840
20	0.0500	85	1.1170
25	0.0750	90	1.1500
30	0.1000	95	1.1750
35	0.1330	100	1.2000
40	0.1660	105	1.2250
45	0.2000	110	1.2334
50	0.2583	115	1.2417
55	0.3583	120	1.2500
60	0.6250		

(b) For purposes of TSS reduction calculations, Table 2 below presents the presumed removal rates for certain BMPs designed in accordance with the New Jersey Stormwater Best Management Practices Manual. The BMP Manual may be obtained from the address

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identified in N.J.A.C. 7:8-1.3 or found on the Department’s website at www.njstormwater.org.

The BMP Manual and other sources of technical guidance are listed in N.J.A.C. 7:8-5.9(a). TSS reduction shall be calculated based on the removal rates for the BMPs in Table 2 below.

Alternative removal rates and methods of calculating removal rates may be used if the design engineer provides documentation demonstrating the capability of these alternative rates and methods to the review agency. Where the Department is not the review agency, a copy of any approved alternative rate or method of calculating the removal rate shall be provided to the Department at the address at N.J.A.C. 7:8-1.3.]

Table 5-4: Water Quality Design Storm Distribution

Time (Minutes)	Cumulative Rainfall (Inches)	Time (Minutes)	Cumulative Rainfall (Inches)	Time (Minutes)	Cumulative Rainfall (Inches)
1	0.00166	41	0.1728	81	1.0906
2	0.00332	42	0.1796	82	1.0972
3	0.00498	43	0.1864	83	1.1038
4	0.00664	44	0.1932	84	1.1104
5	0.00830	45	0.2000	85	1.1170
6	0.00996	46	0.2117	86	1.1236
7	0.01162	47	0.2233	87	1.1302
8	0.01328	48	0.2350	88	1.1368
9	0.01494	49	0.2466	89	1.1434
10	0.01660	50	0.2583	90	1.1500
11	0.01828	51	0.2783	91	1.1550
12	0.01996	52	0.2983	92	1.1600
13	0.02164	53	0.3183	93	1.1650
14	0.02332	54	0.3383	94	1.1700
15	0.02500	55	0.3583	95	1.1750
16	0.03000	56	0.4116	96	1.1800
17	0.03500	57	0.4650	97	1.1850

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18	0.04000	58	0.5183	98	1.1900
19	0.04500	59	0.5717	99	1.1950
20	0.05000	60	0.6250	100	1.2000
21	0.05500	61	0.6783	101	1.2050
22	0.06000	62	0.7317	102	1.2100
23	0.06500	63	0.7850	103	1.2150
24	0.07000	64	0.8384	104	1.2200
25	0.07500	65	0.8917	105	1.2250
26	0.08000	66	0.9117	106	1.2267
27	0.08500	67	0.9317	107	1.2284
28	0.09000	68	0.9517	108	1.2300
29	0.09500	69	0.9717	109	1.2317
30	0.10000	70	0.9917	110	1.2334
31	0.10660	71	1.0034	111	1.2351
32	0.11320	72	1.0150	112	1.2367
33	0.11980	73	1.0267	113	1.2384
34	0.12640	74	1.0383	114	1.2400
35	0.13300	75	1.0500	115	1.2417
36	0.13960	76	1.0568	116	1.2434
37	0.14620	77	1.0636	117	1.2450
38	0.15280	78	1.0704	118	1.2467
39	0.15940	79	1.0772	119	1.2483
40	0.16600	80	1.0840	120	1.2500

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

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

Where

R = total TSS percent load removal from application of both BMPs, and

A = the TSS percent removal rate applicable to the first BMP

B = the TSS percent removal rate applicable to the second BMP

[Table 2: TSS Removal Rates for BMPs

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<u>Best Management Practice</u>	<u>TSS Percent Removal Rate</u>
Bioretention Systems	90
Constructed Stormwater Wetland	90
Extended Detention Basin	40-60
Infiltration Structure	80
Manufactured Treatment Device	See N.J.A.C.7:8-5.7(d)
Sand Filter	80
Vegetative Filter Strip	60-80
Wet Pond	50-90

(d) If there is more than one onsite drainage area, the 80 percent TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a calculation using a weighted average.]

[(e)] **(f)** Stormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated from the water quality design storm. In achieving reduction of nutrients to the maximum extent feasible, the design of the site shall include [nonstructural strategies and structural measures] **green infrastructure BMPs** that optimize nutrient removal while still achieving the performance standards in N.J.A.C. 7:8-5.4 [and 5.5] **and 5.6 and this section.**

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[(f) Additional information and examples are contained in the New Jersey Stormwater Best Management Practices Manual, which may be obtained from the address identified in N.J.A.C.

7:8-1.3.]

(g)-(i) (No change.)

(j) This section does not apply to the construction of one individual single-family dwelling, provided that is not part of a larger development or subdivision that has received preliminary or final site plan approval prior to December 3, 2018, and that the motor vehicle surfaces are made of permeable material(s) such as gravel, dirt, and/or shells.

7:8-5.6 Stormwater runoff quantity standards

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

(b) In order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at N.J.A.C. 7:8-5.7, complete one of the following:

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

2. Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving

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the site for the two-, 10-, and 100-year storm events and that the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site.

This analysis shall include the analysis of impacts of existing land uses and projected land uses assuming full development under existing zoning and land use ordinances in the drainage area;

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

4. In tidal flood hazard areas, stormwater runoff quantity analysis, in accordance with (b)1, 2, and 3 above, is required unless the design engineer demonstrates through hydrologic and hydraulic analysis that the increased volume, change in timing, or increased rate of the stormwater runoff, or any combination of the three will not result in additional flood damage below the point of discharge of the major development. No analysis is required if the stormwater is discharged directly into any ocean, bay, inlet, or the reach of any watercourse between its confluence with an ocean, bay, or inlet and downstream of the first water control structure.

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

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7:8-[5.6]5.7 Calculation of stormwater runoff and groundwater recharge

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

1. The design engineer shall calculate runoff using one of the following methods:

i. The USDA Natural Resources Conservation Service (NRCS) methodology,

including the NRCS Runoff Equation and Dimensionless Unit Hydrograph, as described in

[Section 4, National Engineering Handbook (NEH-4), dated July 2002] **Chapters 7, 9, 10, 15, and**

16, Part 630, Hydrology National Engineering Handbook, incorporated herein by reference, as

amended and supplemented. This methodology is additionally described in Technical Release 55-

-Urban Hydrology for Small Watersheds (TR-55), dated June 1986, incorporated herein by

reference, as amended and supplemented. Information regarding the methodology is available

from the Natural Resources Conservation Service website at

[<http://www.wcc.nrcs.usda.gov/water/quality/common/neh630/4content.html>]

https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf or at **United**

States Department of Agriculture Natural Resources Conservation Service, 220 Davison Avenue,

Somerset, New Jersey 08873; [(732) 537-6040;] or

ii. The Rational Method for peak flow and the Modified Rational Method for

hydrograph computations. The rational and modified rational methods are described in

"Appendix A-9 Modified Rational Method" in the Standards for Soil Erosion and Sediment

Control in New Jersey, July 1999, **as amended and supplemented**. This document is available

from the State Soil Conservation Committee or any of the Soil Conservation Districts listed at

N.J.A.C. 2:90-1.3(a)4. The location, address, and telephone number [or] **for** each Soil Conservation

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District is available from the State Soil Conservation Committee, [P.O.] PO Box 330, Trenton, NJ 08625[, 609-292-5540]. The document is also available at

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

2. – 5. (No change.)

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

1. The New Jersey Geological Survey Report GSR-32 A Method for Evaluating Groundwater-Recharge Areas in New Jersey, incorporated herein by reference as amended and supplemented. Information regarding the methodology is available from the New Jersey Stormwater Best Management Practices Manual; at the New Jersey Geological **and Water** Survey website at [<http://www.state.nj.us/dep/njgs/>] <http://www.nj.gov/dep/njgs>; or at New Jersey Geological **and Water** Survey, 29 Arctic Parkway, PO Box [427] **420 Mail Code 29-01**, Trenton, NJ [08625-0427; (609) 984-6587] **08625-0420**.

7:8-5.9 Sources for technical guidance

(a) Technical guidance for stormwater management measures can be found in the documents listed at (a)1 and 2 below, which are available [from Maps and Publications, Department of Environmental Protection, 428 East State Street, PO Box 420, Trenton, New Jersey, 08625; telephone (609) 777-1038] at http://www.nj.gov/dep/stormwater/bmp_manual2.htm.

1. Guidelines for stormwater management measures are contained in the New Jersey Stormwater Best Management Practices Manual, [2002] as amended **and supplemented**.

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Information is provided on stormwater management measures such as[:], **but not limited to, those listed in Table 5-1, Table 5-2, and Table 5-3.**

- [i. Bioretention systems;
- ii. Constructed stormwater wetlands;
- iii. Dry wells;
- iv. Extended detention basins;
- v. Infiltration structures;
- vi. Manufactured treatment devices;
- vii. Pervious paving;
- viii. Sand filters;
- ix. Vegetative filter; and
- x. Wet pond.

2. The New Jersey Department of Environmental Protection Stormwater Management Facilities Maintenance Manual, as amended.]

2. Additional maintenance guidance is available on the Department's website at

http://www.nj.gov/dep/stormwater/maintenance_guidance.htm.

[(b) Additional technical guidance for stormwater management measures can be obtained from the following:

1. The "Standards for Soil Erosion and Sediment Control in New Jersey" promulgated by the State Soil Conservation Committee and incorporated into N.J.A.C. 2:90. Copies of these standards may be obtained by contacting the State Soil Conservation Committee or any of the

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

2. The Rutgers Cooperative Extension Service, 732-932-9306; and

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

CHAPTER 13

FLOOD HAZARD AREA CONTROL ACT RULES

SUBCHAPTER 11. AREA-SPECIFIC REQUIREMENTS FOR INDIVIDUAL PERMITS

7:13-11.2 Requirements for a regulated activity in a riparian zone

(a) - (i) (No change.)

(j) The Department shall issue an individual permit for the construction or reconstruction of a stormwater discharge, including the stormwater pipe leading to the discharge, as well as any associated conduit outlet protection and/or conveyance swale, which results in clearing, cutting, and/or removal of riparian zone vegetation, only if:

1. – 2. (No change.)

3. Where the stormwater discharge, conduit outlet protection, and/or conveyance swale is located within a 300-foot riparian zone, and the stormwater discharge is associated with a major development, as defined at N.J.A.C. 7:8-1.2, the applicant demonstrates that all

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runoff from the water quality design storm, as defined at N.J.A.C. 7:8-5.5[(a)], is infiltrated outside the riparian zone and/or discharged outside the riparian zone, to the maximum extent practicable.

i. (No change.)

(k) – (z) (No change.)

SUBCHAPTER 18. APPLICATION REQUIREMENTS

7:13-18.5 Engineering report requirement for an application for a verification based on Methods 4, 5, or 6 or for an individual permit

(a) In addition to the requirements at N.J.A.C. 7:13-18.2 and 18.4, an application for a verification based on Methods 4, 5, or 6, pursuant to N.J.A.C. 7:13-3.4(f), 3.5, and 3.6, respectively, or for an individual permit shall include an engineering report. The engineering report shall include:

1. – 7. (No change.)

8. For an application for an individual permit for which the Department is reviewing a stormwater management plan pursuant to N.J.A.C. 7:13-12.2, the following information, where applicable:

[i. An explanation of how nonstructural stormwater management strategies have been maximized on site, as required at N.J.A.C. 7:8-5.3;]

i. A demonstration of how green infrastructure has been incorporated to meet the requirements at N.J.A.C. 7:8-5.3;

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ii. A demonstration of how the regulated activity and/or project meets the groundwater recharge standards at N.J.A.C. 7:8-5.4[(a)2](b);

iii. A table [which] **that** compares existing and proposed stormwater discharges for the [two-year, 10-year] ~~two-, 10-~~, and 100-year storm in order to demonstrate compliance with the runoff quantity standards at N.J.A.C. 7:8-[5.4(a)3]5.6; and

iv. (No change.)

9. (No change.)

SUBCHAPTER 20. APPLICATION FEES

7:13-20.1 Application fees

(a) - (d) (No change.)

(e) The fees for applications under this chapter are set forth in Table 20.1 below:

Table 20.1
APPLICATION FEES

...

Additional application fee for stormwater review if a project is a “major development” pursuant to the Stormwater Management Rules (see N.J.A.C. 7:8-1.2)³

	Fee
...	

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Additional fee for review of runoff quantity calculations (see N.J.A.C. 7:8-[5.4]5.6)	\$250.00 per acre of land disturbed by the project (or fraction thereof)
...	

¹⁻³ (No change.)

CHAPTER 14A

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

SUBCHAPTER 24. ADDITIONAL REQUIREMENTS FOR CERTAIN STORMWATER DISCHARGES

7:14A-24.7 Permit application requirements for stormwater discharges associated with industrial activity or small construction activity, and for certain other stormwater DSW

(a) Operating entities for stormwater discharges associated with industrial activity or small construction activity (from point or nonpoint sources), and for industrial or commercial stormwater DSW (from point or nonpoint sources) identified under N.J.A.C. 7:14A-24.2(a)1 or 7, shall apply for an individual NJPDES DSW permit or request authorization under a final stormwater general NJPDES DSW permit in accordance with the deadlines set forth at N.J.A.C.

7:14A-24.4. Any such operating entity that is required or seeks to obtain an individual DSW permit shall submit an individual permit application in accordance with the requirements of N.J.A.C. 7:14A-4 as modified and supplemented by this section and N.J.A.C. 7:14A-24.8. Except as provided in (a)2 and (b) below, this individual permit application shall include (for discharges composed entirely of stormwater) the NJPDES-1 Form, NJPDES Form RF, and NJPDES Form R,

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Part A (the facility's residual use or residual disposal practices may require the completion of additional sections of Form R). If this individual permit application is for a stormwater discharge mixed with domestic sewage and/or an industrial nonstormwater discharge that requires a NJPDES-DSW permit, the operating entity shall comply with N.J.A.C. 7:14A-4, but is exempt from the requirements of (a)1 and 2 below, and shall not submit NJPDES Form RF.

1. Except as provided in (a)2, [through 4, (a)6] **3, 4, and 6** and (b) below, an individual permit application for a stormwater DSW under this subsection shall include the following:

i. – iv. (No change.)

v. An estimate of the area of impervious surfaces (including paved areas and building roofs) and the total drainage area of each outfall and of each area not served by an outfall and a narrative description of the following on-site features at the facility:

(1) – (5) (No change.)

(6) The location and a description of existing [structural and non-structural control] **stormwater management** measures to reduce pollutants in stormwater runoff; and

(7) (No change.)

vi. – xii. (No change.)

2. Except as provided in (a)5 below, the operating entity for an existing or new stormwater discharge that is associated with construction activity solely under subparagraph 1x of the definition of “stormwater discharge associated with industrial activity” in N.J.A.C. 7:14A-1.2, or solely under the definition of “stormwater discharge associated with small construction

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activity” in N.J.A.C. 7:14A-1.2, is exempt from the requirements of (a)1 above and N.J.A.C.

7:14A-4.3(a)11, (a)15 through 22, (c), and (d) and 4.4, and shall not submit NJPDES Form RF.

Such operating entity shall, if applying for an individual NJPDES DSW permit, submit the

NJPDES-1 Form, NJPDES Form RFC, and NJPDES Form R, Part A (the facility’s residual use or

residual disposal practices may require the completion of additional sections of Form R). The

application

shall include the following:

i.-iii. (No change.)

iv. A stormwater pollution prevention plan for the construction activity. This

stormwater pollution prevention plan shall include:

(1) - (4) (No change.)

(5) A site map showing:

(A) - (J) (No change.)

(K) Locations of proposed major [structural and nonstructural]

best management practices (BMPs) to control stormwater pollutants during and after

construction;

(L) - (M) (No change.)

(6) - (9) (No change.)

v. - vi. (No change.)

3. - 5. (No change.)

(b) - (c) (No change.)

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CHAPTER 38

HIGHLANDS WATER PROTECTION AND PLANNING ACT RULES

SUBCHAPTER 10. FEES

7:38-10.2 Fee tables

(a)-(d) (No change.)

(e) In addition to the fee in (d) above, the fee for a Highlands Preservation Area Approval that requires a stormwater review in accordance with N.J.A.C. 7:38-6.1(d) shall be:

1. (No change.)

2. Additional fee for the review of groundwater recharge calculations, pursuant to N.J.A.C. 7:8-5.4[(a)2]**(b)1**, per land area disturbed by the project:

i. – iv. (No change.)

3. Additional fee for the review of runoff quantity calculations, pursuant to N.J.A.C. 7:8-[5.4(a)3]**5.6(b)**, per land area disturbed by the project:

i. – iv. (No change.)

4. (No change.)

(f)-(k) (No change.)