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THE PINELANDS COMMISSION
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PHILIP D. MURPHY
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Acting Executive Director

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MEMORANDUM

To: CMP Policy & Implementation Committee

From: Susan R. Grogan
Acting Executive Director

Date: October 20, 2021

Subject: October 29, 2021 Committee meeting

Enclosed please find the agenda for the Committee's upcoming meeting on October 29, 2021. We have also enclosed the following:

- The minutes from the Committee's September 24, 2021 meeting;
- A draft resolution and report recommending acceptance of four additional technologies into the Alternate Design Treatment Systems Pilot Program; and
- A draft resolution and adoption notice for the Commission's proposed stormwater management amendments, as well as a summary of the oral testimony received at the public hearing, copies of all written public comments received on the amendments, and the rule proposal as published in the New Jersey Register in July.

Please note that a list and description of potential CMP amendments for the Committee's discussion and prioritization will be provided early next week.

The Committee meeting will be conducted via teleconference. Specific access information will be provided to all Committee members in a separate email. The public will be able to view and participate in the meeting through the following YouTube link:

https://www.youtube.com/channel/UCBgpC8sbR3Acrjo7ppxs3Uw

/CS15
cc: All Commissioners (agenda only)

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CMP POLICY & IMPLEMENTATION COMMITTEE MEETING

October 29, 2021 - 9:30 a.m.

Pinelands Commission YouTube link:
https://www.youtube.com/channel/UCBgpC8sbR3Acrjo7ppxs3Uw

Agenda

1. Call to Order

2. Adoption of minutes from the September 24, 2021 CMP Policy & Implementation Committee meeting

3. Pilot Program for Alternate Design Treatment Systems

   - Review of staff's recommendations concerning additional technologies
   - Recommendation to Commission

4. Stormwater management

   - Review of public comments and draft adoption notice
   - Recommendation to Commission

5. Electric Transmission Right-of-Way Maintenance Pilot Program

   - Review of draft CMP amendments

6. Discussion of priorities and schedules for CMP Amendments

7. Public Comment

CMP POLICY & IMPLEMENTATION COMMITTEE MEETING

This meeting was conducted remotely
All participants were present via Zoom conference
The public could view/comment through Pinelands Commission YouTube link:
https://www.youtube.com/channel/UCBgpC8sbR3Acrjo7ppxs3Uw
Meeting ID: 833 5477 1666.
September 24, 2021 - 9:30 a.m.

MINUTES

MEMBERS IN ATTENDANCE: Chairman Richard Prickett, Alan Avery, Ed Lloyd, and Mark Lohbauer

MEMBERS ABSENT: Jerome H. Irick

STAFF PRESENT: Susan R. Grogan, Stacey P. Roth, Charles Horner, Ed Wengrowski, Brad Lanute, Gina Berg, Kim Laidig, John Bunnell, Ernest Deman, Paul Leakan, and Dawn Holgersen. Also present was Rudy Rodas, with the Governor's Authorities Unit.

1. Call to Order

Chairman Prickett called the Comprehensive Management Plan (CMP) Policy and Implementation (P&I) Committee meeting to order at 9:33 a.m. and Ms. Grogan identified all staff attending/participating in the meeting.

2. Adoption of minutes from the July 30, 2021 CMP Policy and Implementation Committee meeting

Commissioner Lohbauer moved the adoption of the minutes of the July 30, 2021 Committee meeting. Commissioner Lloyd seconded the motion. All voted in favor.

3. Update on Pinelands Conservation Fund Land Acquisition grants

Ms. Berg provided an update on the Pinelands Conservation Fund Land Acquisition grants.

Ms. Berg explained that the application acceptance time period began in March and ended in July.

She said only one application was received. She indicated that the parcel was already preserved through the Pinelands Development Credit (PDC) program and that it did not fit well in the matrix.

Ms. Berg recommended that the Commission not proceed with funding and reopen the application process next year using the same matrix.

Commissioner Lohbauer remarked that he liked the scoring guidelines and asked if they may have been too strict.

Ms. Berg said that she spoke to other agencies, and they were very supportive of the criteria. She said that finding grassland habitat is difficult.

Commissioner Lloyd moved to approve the recommendation to not proceed with funding and reopen the application process next year. Commissioner Lohbauer seconded the motion.

Chairman Prickett asked if proposals including Atlantic white cedars would be something to look at next year.

Ms. Berg said that may be something to add to the matrix.

In response to a question from Chairman Prickett, Ms. Grogan said that properties funded by the Land Acquisition grants would still be privately owned. She also said that PDC-severed properties had received funding in the past. She said that there could be a benefit if a non-profit purchased these properties in instances where there is absentee ownership.

All voted in favor of postponing the Pinelands Conservation Fund Land Acquisition grant funding until next year.

Commissioner Avery joined the meeting at 9:49 a.m.

4. Electric Transmission Right-of-Way Maintenance Pilot Program

Ms. Grogan said that the pilot program was an inter-office cooperative effort.

She said that work on the program began in 2004 with a Memorandum of Agreement (MOA) with the Board of Public Utilities (BPU). The BPU provided funding to the Commission for research.

She said that the Pilot Program was adopted in 2009. She indicated that the program covered about 3,000 spans. She said that the Pilot Program was scheduled to last for 10 years.

Ms. Grogan stated that a 2-year extension was granted by the Commission so that staff could finalize its monitoring and evaluation reports.

Mr. Horner began the presentation on the Pilot Program. *(attached to these minutes and on the Commission's website at: https://www.nj.gov/pinelands/home/presentations/Electric%20transmission%20ROW%20Monitoring%20Pilot%20Program%209%2024%202021%20Final.pdf).*

Mr. Horner said that most of the site data presented was collected between 2016 and 2018. He said that there was difficulty accessing spans during the pandemic.

Mr. Horner explained that the Right-of-Way (ROW) Plan was approved in 2009 and added to the CMP as a Pilot Program. He said that it specifies a vegetation management prescription for each of the 3,041 spans.

He said that yearly reports began in 2010 from the three utility companies and staff conducted site inspections. He said that many of the inspections were conducted by former staff member Jean Montgomerie.

Mr. Horner mentioned that he is presenting the third progress report and that the reports were required by the Pilot Program and that they must address three specific items.

He said the first item is the type and extent of vegetation management activities undertaken by the three utility companies.

Mr. Horner said that Jersey Central Power and Light (JCP&L) and Public Service Electric and Gas (PSE&G) managed all their spans. He mentioned that the number of spans was not relative to the acreage involved.

He said the second item addressed any significant problems. He said that there were no significant problems or issues. Mr. Horner noted that there were 33 miles of newer electric transmission line spans along the Garden State Parkway (GSP) between the Townships of Barnegat and Egg Harbor that were not included in the ROW Plan.

He said the third item is a need for any amendments to the ROW Plan. He indicated that no new amendments to the ROW Plan were identified that were not previously identified in prior progress reports.

Mr. Horner said that there were struggles with prescriptions for wetlands spans. He said that there were issues with the use of vehicles to cut and remove trees and that hand cutting was problematic.

He said that when threatened and endangered (T&E) species were identified, it required a different approach to protect the species while maintaining the ROW.

He said there was difficulty in defining what constitutes “access road maintenance”. He said that the utility companies had not maintained some of the access roads. He also said there were applications to improve some of the access roads.

Mr. Horner said that in the early years there was an issue with the utility companies and contractors understanding the prescriptions, but that issue was resolved over time.

In response to Commissioner Lloyd’s question, Mr. Horner stated that the 33 miles of line spans will be addressed in the CMP amendments.

In response to Commissioner Lloyd's concern that issues were not listed in the presentation, Mr. Horner said that he would create a slide to outline past issues.

In response to a question from Commissioner Lohbauer, Mr. Horner explained that the use of herbicides was not authorized. He said that the provision prohibiting the use of herbicides is in the CMP and that the ROW Plan was not intended to supersede it.

Commissioner Lohbauer said that he is proud that the Pilot Program was applied successfully with each span having its own plan.

In response to Chairman Prickett's question regarding the use of vehicles in wetlands, Mr. Horner said that the techniques did not change and that they were using existing access roads and the boom mower technique.

Mr. Laidig continued the presentation. He said that the second part of the Pilot Program determined whether the prescriptions resulted in stable and sustainable early successional habitats that have characteristics of the Pinelands.

He said that the Science staff monitored 24 spans annually between 2011 and 2017. He said that staff monitored 6 types of spans, with two types of prescription (cut manually or mowed), widespread, among the 3 utility companies.

Mr. Laidig said that the first analysis was whether the plant communities are considered stable. He said that staff compared dominant shrubs and herbaceous plant species and determined that they were consistent over the monitoring period.

He said that staff also compared year-to-year gains and losses in plants and determined that there were few additions or losses. He concluded that dominant plant species were not affected by vegetation management, which indicated a high degree of stability.

Mr. Laidig said that the second analysis is how often vegetation management occurred. He said that during the evaluation period, the 24 spans were managed one to three times for an average 3- to 4-year return interval.

He said that the third analysis is whether plant species in the managed ROW are characteristic Pinelands species.

He said that the comparison to adjacent forest plants determined that the woody species were similar, but the herbaceous species differed. He said that the removal of canopy in the ROW allowed more herbaceous species to grow.

Mr. Laidig said that the comparison to access road and tower plants determined that ROW plots had a higher percentage of native Pinelands species while tower and access road plots supported a higher percentage of introduced species. He said that limiting the amount of disturbance may

help reduce the amount of introduced species. He mentioned that some of the access roads may not have been created by the utility companies.

Ms. Roth continued the presentation. She explained that the evaluation of the Pilot Program was determined by four criteria.

She said the first was that the vegetation management prescriptions had been implemented in a reliable and predictable way.

She said the second was the vegetation management prescriptions had resulted in relatively stable and sustainable early successional habitat that is characteristic of the Pinelands and which provides habitat for native Pinelands plants and animals, including T&E species.

She said the third was the vegetation management prescriptions have contributed to the reliability and safety of the electric transmission system in the Pinelands by creating and maintaining low-growth vegetation communities.

She said the fourth is the notification and inspection system authorized in the Pilot Program that simplified Pinelands permitting procedures for the utility companies and the Commission staff.

Ms. Roth said the staff's conclusion is that the Pilot program was successful and the vegetation management prescriptions were implemented consistently.

She said that through vegetation monitoring, it was determined that implementation of the vegetation management prescriptions resulted in low species turnover in the managed ROW, and that equated to a high degree of plant community stability.

She said that vegetation within the managed ROW consisted of characteristic Pinelands plant species that were similar to adjacent forested areas. She also said these plant communities provided habitat for T&E species.

She said that a return interval of 3-4 years was required to maintain low-growth plant communities using the vegetation management prescriptions in the ROW.

Ms. Roth said the Pilot Program simplified the permitting process for the utilities and Commission staff by providing certainty to the utility companies as to what prescriptions were permitted. In addition, the program resulted in a reduction in submission and review of individual development applications for vegetation management. She also said that annual reporting and inspections confirmed that vegetation management was being implemented as prescribed.

Ms. Roth said that the CMP should be amended to repeal the Pilot Program rules, permanently incorporate the ROW plan, provide that vegetation management for existing ROWs that have a prescription in the ROW plan do not have to submit an application to the Commission, and to

include vegetation management standards that will be applicable to new or expanded facilities and development within electric transmission line ROWs within the Pinelands Area.

Commissioner Lohbauer expressed concern that some spans with multiple access roads may be vulnerable to off-road vehicle (ORV) use.

Mr. Laidig agreed. He said that more gates have been installed by the utility companies to prevent access.

Commissioner Lohbauer also expressed concern regarding access road disturbance from ORV use creating an invasive species issue.

He went on to say that he supports making the ROW Plan permanent and that this could possibly be used as guidance elsewhere for vegetation management.

In response to a question from Commissioner Lloyd, Ms. Roth indicated that an application would have to be submitted for vegetation management in the 33-mile span that was not previously included in the ROW plan.

Ms. Grogan said that the CMP amendment would apply to existing spans that were in the Pilot Program and that standards and prescriptions will be put in place for other spans not previously included in the ROW plan. She said that an application would be required for new towers/spans or expansion of the managed portion of existing spans.

Commissioner Lloyd expressed concern that utility companies may avoid rules by not applying.

Ms. Roth replied that, even though an application is not required, they would still be obligated to meet the standards that will be in the CMP.

Ms. Grogan said that if the utility company proposes something that is not in the ROW Plan, they will have to submit a development application. She reiterated as long as the vegetation management activities follow the standards in the Plan, no application would be required. She said the intent was to continue the process that was in the Pilot Program because of its success.

Commissioner Avery asked about lines that were not in the ROW Plan, specifically the 33 miles of line that was mentioned, if the utility companies have to characterize each span as to what types of plants exist and what prescriptions are assigned. Ms. Grogan replied yes, that would be done as part of a development application.

Mr. Horner said that the application for line installation includes standards for vegetation clearing and that the CMP amendment would have basic standards that the utility companies would have to abide by.

In response to a question from Commissioner Avery, Mr. Horner said that the Commission would receive information from the applicant, such as wetlands mapping, that would provide the guidance needed to create the appropriate prescription.

In response to a question from Chairman Prickett, Mr. Laidig said that the Commission does not have information on whether T&E species have been introduced or expanded in the ROW. He said that staff did find T&E species in their research plots.

Mr. Bunnell said that removing canopy and mowing does create habitat suitable for T&E species.

In response to another question from Chairman Prickett, Mr. Bunnell said that he had hoped to add T&E animal research to the Pilot Program, but that didn't come to be. He said that reptiles/snakes may have used the open areas.

In response to an additional question from Chairman Prickett, Ms. Roth indicated that removal of tall vegetation was intended to avoid damage to electric lines and that fire was not a concern.

In response to Chairman Prickett's question regarding site inspection, Ms. Grogan said that there have been many site inspections. She said that the intention is to have fewer inspections in the future, based on the demonstrated success of the program over the past 10-12 years. She went on to say that funding for the inspections was provided in the Pilot Program.

In response to a question from Chairman Prickett, Ms. Roth said that the ROW Plan allows the Executive Director to make minor alterations to the prescriptions. She said that former Executive Director Nancy Wittenberg approved one change and also denied a change. She said the denied change was for the use of herbicide. She went on to say that any major changes would require an application or rule change.

Chairman Prickett expressed concern on the priority of the CMP amendments for the ROW Plan. Ms. Grogan indicated that it is on the top of the list so as to avoid a gap in rules. She said that she hopes to have a draft of amendments prepared for the October meeting and that staff have already begun writing the draft.

Ms. Grogan also said that the staff provided copies of its memorandum and report to the BPU and utility companies. They will also be provided with copies of any draft amendments for comment.

Chairman Prickett stressed the importance of the CMP amendments. He said that he appreciates the cooperation of the utility companies.

5. Overview of the New Jersey Cannabis Regulatory Commission's newly adopted rules

Ms. Roth provided a presentation on the New Jersey Cannabis Regulatory Commission's newly adopted rules *(attached to these minutes and on the commission website at: https://www.nj.gov/pinelands/home/presentations/2021.09.24%20-%20PandI%20-%20Cannabis%20Presentation%20Final.pdf).*

Ms. Roth indicated that the New Jersey Cannabis Regulatory Commission (CRC) adopted its rules as Special Adopted rules on August 19, 2021, under the authority of the New Jersey Cannabis Regulatory, Enforcement Assistance, and Marketplace Modernization Act (CREAMM). She said the rules expire on August 19, 2022. She said that it was to give the CRC time for the normal rulemaking process.

She said that the CRC covers all aspects of the process for the personal (adult) use of cannabis. She said that the rules address the purchase, sale, cultivation, production, manufacturing, transportation, and delivery of cannabis/cannabis items.

She said that the CREAMM Act establishes six classes of license based on which part of the process for cannabis use a company will participate in.

Ms. Roth said that the Class 1 license is for cannabis cultivators and authorizes a business to grow and process the cannabis. She said they are also authorized to sell the item to other cultivators, manufacturers, wholesalers, and retailers.

Ms. Roth noted that cannabis cultivation cannot be located on lands assessed under the Farmland Assessment Act due to the federal prohibition on cannabis.

Ms. Roth indicated a lack in clarity in describing some of the cultivation activities as agriculture or agricultural processing.

She said that the Class 2 license is for cannabis manufacturers. She said that the license authorizes the preparation or conversion of useable cannabis to produce a cannabis product. She mentioned that all manufacturing must take place in an enclosed, indoor, locked facility.

Ms. Roth said the Class 3 license is for cannabis wholesalers, the Class 4 license is for cannabis distributors, the Class 5 license is for cannabis retailers, and the Class 6 license is for cannabis deliveries.

Ms. Roth said that municipalities had until August 21, 2021 to pass ordinances prohibiting the operation of cannabis- related businesses. If they failed to pass an ordinance, they would be subject to default provisions. She said those provisions would permit cultivation, manufacturing, wholesale, and distribution facilities in all municipal industrial zones. She said it would also permit retail facilities as a conditional use in all municipal commercial or retail zones.

She said that municipalities in default would be subject to a 5-year period where the default provisions would apply. After the 5-year period, the municipality would have 180 days to adopt

an ordinance. She also said that a cannabis business established within the default period would not be subject to new ordinances.

She said that municipalities that are not in default may adopt standards that are not in conflict with CREAMM such as limitations on the number of permitted cannabis businesses, maximum number of each class of license, restrictions on the operation of cannabis businesses, civil penalties for violations, and local licensing requirements.

She said those municipalities may prohibit outdoor cultivation and most Pinelands municipalities have done so. She also said municipalities may provide input to the CRC on the issuance of a license to a particular facility.

Mr. Lanute continued the presentation. He said that so far, 34 Pinelands Area municipalities have adopted ordinances prohibiting all classes of cannabis business. He said that some municipalities may have done so in order to give themselves time to decide which classes the municipality would want to approve.

He said that 17 municipalities have adopted ordinances to permit one or more classes of cannabis business. He also said the status of two municipalities is not known at this time. He said he believes they may be in default.

Mr. Lanute explained what classes of business would be allowed in the different Pinelands management areas. He said in the Forest and Agricultural Production Areas, cultivation would be permitted as long as the growth of cannabis is considered agriculture. He said that classes 2-4 could be permitted as light industrial uses, but the CMP provides very limited opportunities for light industrial uses in the Forest and Agricultural Production Areas. He said for classes 5 and 6, roadside retail sales and services establishments are permitted under very limited circumstances in these two management areas . He said they would have to be located within 300 feet of businesses that had been established prior to February 7, 1979.

Mr. Lanute outlined some questions that have been raised while reviewing the ordinances. The first question is whether cannabis cultivation meets the CMP definition of “agricultural or horticultural purpose or use”. The second and third questions ask to what extent cultivation and manufacturing activities permitted by the CRC fall under the CMP definition of “agricultural products processing facilities”.

He said that some of the language in the rules regarding cultivation are close to the definition of agricultural processing in the CMP. He noted the drying of cannabis as an example.

Ms. Grogan emphasized the concern about whether cannabis cultivation is considered agriculture. She said that if it is, no application to the Commission would be required and it would be a permitted use in most Pinelands Management Areas. She said that the CRC rules, while not being as clear as hoped, indicated the cultivation of cannabis is considered an

agricultural use. This interpretation has been confirmed through discussions with State Agriculture Development Committee (SADC) staff as well.

She also said that cannabis processing facilities would be considered agricultural processing, which is allowed in the Agricultural Production Area with application. She said that the Commission is also reviewing the ordinances to ensure that they make a direct reference to the definition of and standards for agricultural products processing facilities in the CMP.

Ms. Grogan identified a concern with the size of indoor cannabis cultivation facilities. She said that she has seen some proposals, and that the buildings look similar to a large warehouse. She said that the Commission will need to look at the CMP to create standards for this type of facility. She mentioned that when the rules were created 40 years ago, this type of large agricultural structure was not common.

Commissioner Avery asked: If this activity is viewed as agriculture, how would additional regulations affect the Pinelands Protection Act's mission to "preserve and enhance agriculture"?

Ms. Grogan clarified that cannabis cultivation is agriculture, which will be allowed and encouraged, as with any other form of agriculture. She said the Commission should simply ensure that these larger structures adhere to environmental standards.

In response to Commissioner Avery's question regarding the difference between an indoor cannabis growing facility and a cranberry processing facility, Ms. Grogan said that if it is a processing facility, it would require an application and is permitted in the Agricultural Production area. She said the issue is growing in large, warehouse type buildings. She said that the Pinelands does not have many large indoor growing facilities, but the Commission should consider creating standards and requiring applications for these facilities.

In response to another question from Commissioner Avery, Mr. Lanute indicated that the CRC will have 37 cultivation licenses available statewide in the 2-year period starting in February 2021. It could be adjusted due to supply and demand.

Ms. Grogan said there may not be many large-scale growing facilities proposed in Agricultural Production Areas. Thus far, most proposals are in management areas where the use is permitted and requires application because processing is involved.

Commissioner Lohbauer expressed concern about the staff interpretation of the CMP to consider the cultivation of cannabis as agriculture. He asked if the Commission should make the decision.

Ms. Grogan said the Commission will ultimately make the determination by adopting rules. She said that it would be better to have a consistent definition. She said, for example, if the Commission says it is not agriculture and the SADC says it is, it could affect farmland preservation programs.

She said the best approach would be to ensure that the municipal ordinances include language that is consistent with definitions in the CMP.

Commissioner Lohbauer agreed that this is a complex situation. He mentioned that the Commission should examine what the legislative intent was regarding the definition of agriculture in the Pinelands Protection Act and the CMP.

Mr. Lanute added that the agricultural definition in the CMP came directly from the Pinelands Protection Act. He said that staff members have looked to the language for guidance on this matter. He also said that the legislators that crafted the Act probably did not envision agriculture in these large warehouse buildings.

Ms. Roth said that the State issued a summary document for the rules. She said it gave the municipalities the right to put limitations on how cannabis businesses would look in their own community.

Commissioner Avery commented on the situation with Tuckahoe Turf Farms, whereby the Legislature ultimately decided to modify and create definitions applicable in the Pinelands Area. He said this was an injustice to the Pinelands Protection Act. He said that he doesn't want to see a similar outcome with the cannabis rules.

Ms. Roth pointed out language in the Pinelands Protection Act that defines agriculture as "crops beneficial to man". She said that it is a broad definition and that growing cannabis as a cash crop could be perceived as agricultural "crops beneficial to man". She echoed Ms. Grogan's concern on the size of the structure not being consistent overall with the regional planning objectives in the Act.

Chairman Prickett expressed concern that the large structures could make the soil infertile. He also spoke on the thought of cannabis being considered an invasive species. He said that the Commission should have concerns about how cannabis will affect Pineland native plants.

In response to a question from Chairman Prickett, Mr. Lanute indicated that a 37-license limit was only for the Class 1 cannabis cultivator. He said that the other licenses do not have a limit.

Chairman Prickett questioned whether the Commission should act quickly to make CMP amendments.

Ms. Grogan said that, given the license limit of 37 applies to the entire state, she doesn't foresee there being too many applications in the Pinelands Area immediately. She also said that since it is agriculture-related, the Commission's mission to preserve and enhance agriculture should be kept in mind.

She said that the Commission take care when creating CMP amendments related to agriculture. She said staff will continue to coordinate with SADC for guidance. She also said that is will take a few months to draft language for potential amendments.

Commissioner Lloyd echoed Commissioner Avery's concern regarding the situation with Tuckahoe Turf Farms.

Chairman Prickett suggested that the Committee revisit this matter in the future.

Mr. Horner left the meeting at 12:03 p.m.

Public Comment

Rhyan Grech, a representative from the Pinelands Preservation Alliance (PPA), thanked the Committee for the informative presentation on the cannabis rules. She said that she looks forward to hearing comments from Commissioners Jerome Irick and Shannon Higginbotham.

She recognized the success of the ROW Pilot Program. She expressed concern with applications not being required and less inspections and how it could lead to the utility companies not keeping up with the maintenance.

She also expressed concern with the land disturbance when a new electric line is installed. She said that it could create habitat for T&E species that would make prior studies of the area outdated, and that the maintenance plans could potentially be inappropriate in that instance. She also stressed the importance of having more oversight of the maintenance.

Ms. Grech also expressed concern about ORV use. She encouraged the Commission to urge the New Jersey Department of Environmental Protection (NJDEP) to proceed with the studies.

Chairman Prickett commented that he saw the damage from ORV use on Google Earth. He said the damage in ROWs is significant. He also said that utility companies are probably working to regulate the use of ORVs but assumed it was a difficult task.

Commissioner Lloyd suggested the Commission ask the utility companies for their input on the matter.

Commissioner Avery commented that the utility companies have been more active in installing gates and keeping them closed. He also mentioned the difficulty in blocking off all of the sand roads.

Commissioner Lohbauer expressed his thanks to Governor Phil Murphy and NJDEP Commissioner Shawn LaTourette for the program they announced yesterday for the restoration of Atlantic white cedar forests in the Pinelands. He also said that Chairman Prickett was a strong advocate.

Chairman Prickett echoed Commissioner Lohbauer's sentiment. He also described the benefits of the Atlantic white cedar forests.

Chairman Prickett closed public comment at 12:14 p.m.

There being no further discussion, Commissioner Lohbauer moved the adjournment of the meeting. Commissioner Avery seconded the motion. The meeting adjourned at 12:15 p.m.

Certified as true and correct

Dawn Holgersen
Office Assistant
October 14, 2021

NJ Pinelands Electric Transmission Right-of-Way Vegetation Management Plan

Policy & Implementation Committee Meeting

9/24/2021

Background

- The New Jersey Pinelands Electric-Transmission Right-of-Way Vegetation Management Plan (ROW Plan) is incorporated into the CMP as a "Pilot Program."

- The ROW Plan specifies a vegetation management prescription for each of the 3,041 electric transmission line spans. A span is the segment of the utility company right-of-way located between two electric transmission line towers.

- Each year beginning in 2010, the three utility companies report to the Commission the individual spans subject of vegetation management in the prior year.

- The Commission staff site inspects the spans for conformance with the required vegetation management prescriptions.

Progress Reports

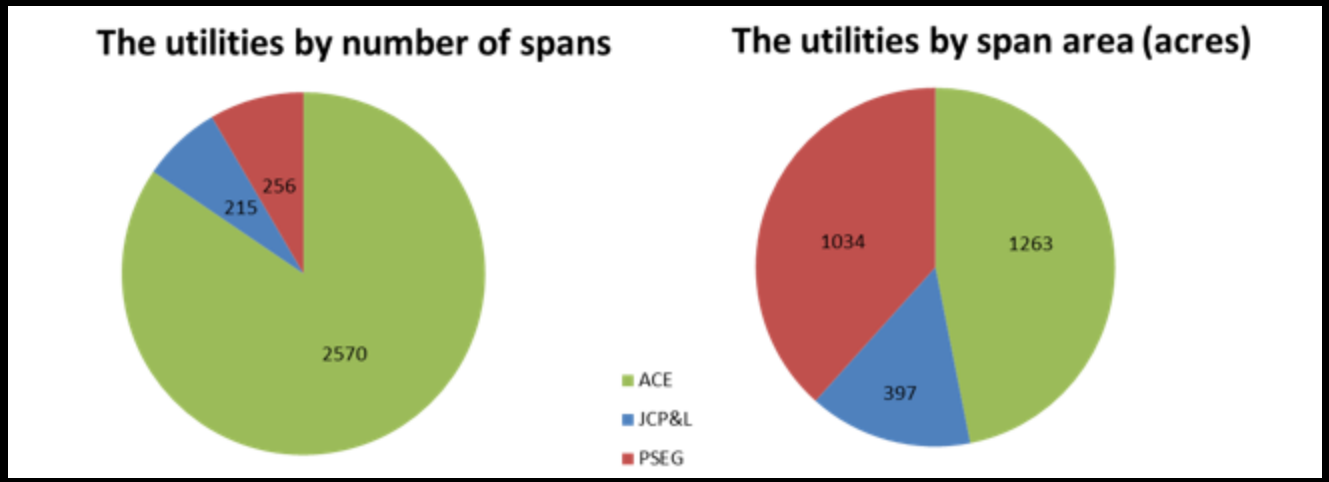
- The CMP Pilot Program requires progress reports.
- Each progress report must address three specific items.

First Progress Report:	2010-2012
Second Progress Report:	2013-2015
Third Progress Report:	2016-2018

Summary of 2016-2018 Progress Report

Item One: The type and extent of vegetation management activities undertaken by the three utility companies

Atlantic City Electric:	managed 1,163 of its 2,570 spans
Jersey Central Power and Light:	managed all 215 of its 215 spans
Public Service Electric and Gas:	managed all 256 of its 256 spans



Item Two: Any significant problems

- As would be expected after six years of experience with the ROW Plan, there were no significant problems or issues

- Note that 33 miles of new electric transmission line spans along the Garden State Parkway between Barnegat Township and Egg Harbor Township were not included in the ROW Plan

Item Three: Need for any amendments to the ROW Plan

- As would be expected after six years of experience with the ROW Plan, no new amendments to the ROW Plan were identified that were not previously identified in prior Progress Reports

Vegetation Monitoring

Criterion #2: Determine "whether the vegetation management prescriptions have resulted in relatively **stable** and **sustainable** early successional habitats that are **characteristic** of the Pinelands and which provide habitat for native-Pinelands plants and animals, including threatened and endangered species."

1. **Are right-of-way plant communities stable?**
2. **How often did vegetation management occur?**
3. **Are plant species in the managed rights-of-way characteristic Pinelands species?**

Monitored vegetation annually 2011-2017

24 Spans (6 Types, 2 Prescriptions, Widespread, 3 utilities)

1. Are ROW plant communities stable?

- Compared year-to-year dominant species

Dominant shrubs and dominant herbaceous plant species were largely consistent over the monitoring period.

- Compared year-to-year gains and losses in all species

Few, year-to-year, additions or losses in individual plant species

Conclusion:

Few changes in dominant shrub and herb species and low gains and losses in plants indicated a relatively high degree of stability in the managed ROW vegetation

Dominant shrub stability

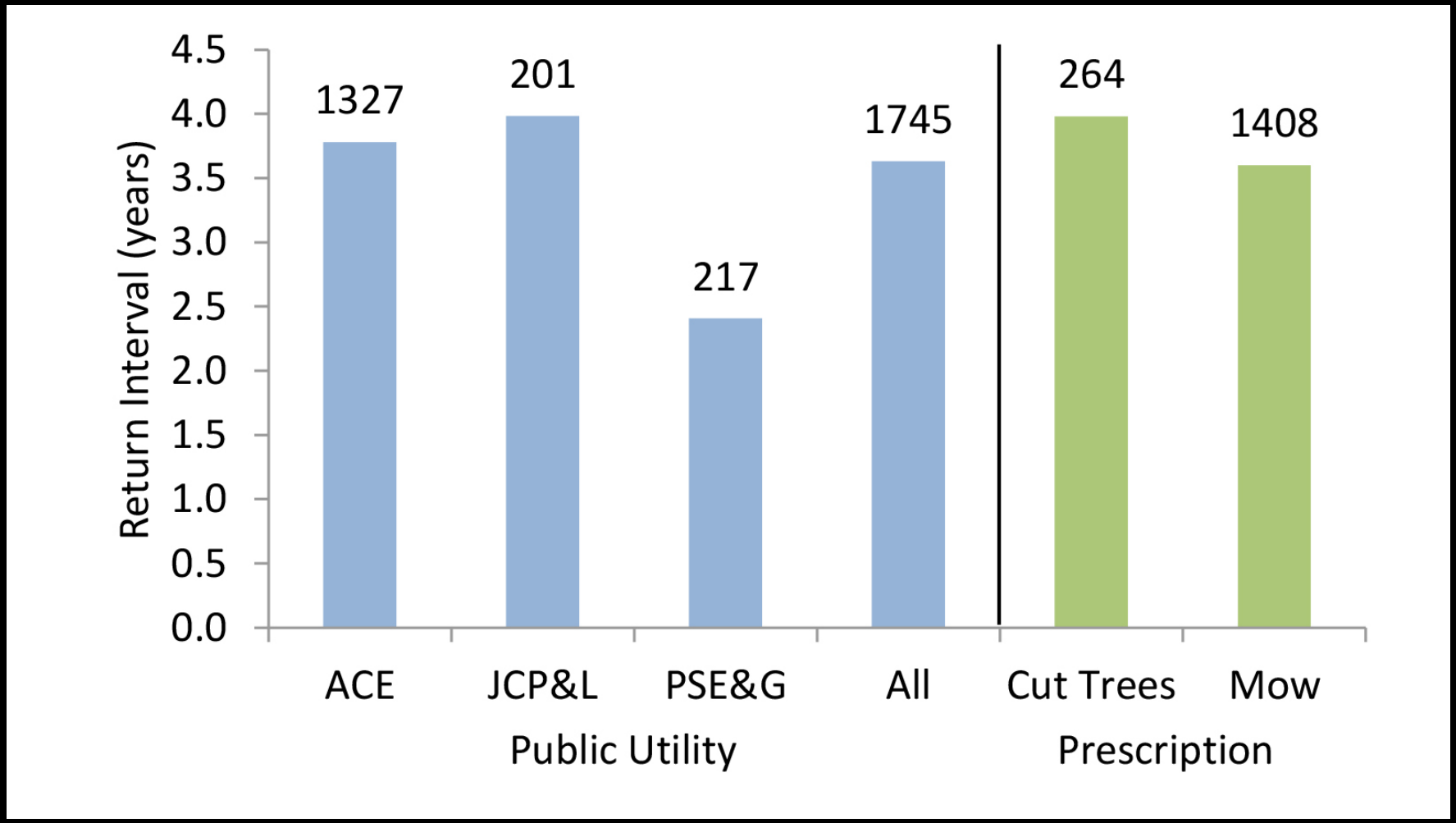
Group	Span	Dominant species*	2011	2012	2013	2014	2015	2016	2017
Upland herb	J25	golden heather	○	○	○	○	○	○	○
	J28	highbush blueberry	○	○	○	○	○	●	○
	N103	lowbush blueberry	○	○	○	○	○	○	○
	S423	blackberry	○	○	○	○	○	○	○
Upland scrub	A33	bear oak	○	○	○	○	○	○	○
	A36	bear oak	○	○	○	○	○	○	○
	N102	bear oak	○	○	○	○	○	○	○
	N114	bear oak	○	○	○	○	○	○	○
Upland shrub	A29	lowbush blueberry	○	○	○	○	○	○	○
	J13	lowbush blueberry	●	●	○	○	○	○	○
	J18	black huckleberry	○	○	●	○	●	○	●
	S384	lowbush blueberry	○	○	○	○	○	○	○
Upland tree	N112	lowbush blueberry	○	○	○	○	●	○	○
	S364	bear oak	○	○	○	○	○	○	○
	S372	black huckleberry	○	○	○	○	●	○	○
	S442	lowbush blueberry	○	○	○	○	○	○	○
Wetland cedar	A16	highbush blueberry	○	○	○	○	○	○	○
	A65	bayberry	○	○	○	○	○	○	○
	J11	leatherleaf	○	○	○	○	○	○	○
	J20	sweet pepperbush	○	○	○	○	○	○	○
Wetland shrub	A147	dangleberry	○	○	○	○	○	○	○
	J27	sheep laurel	○	●	○	○	○	○	○
	N115	sheep laurel	○	○	○	○	○	○	○
	N81	dangleberry	○	○	○	○	○	○	○

2. How often did vegetation management occur?

24 study spans:
1 to 3 times (1x = 11 spans, 2x = 9 spans, 3x = 4 spans)

All Pinelands spans (N = 1745):
3- to 4-year return intervals were typically used to manage vegetation in Pinelands rights-of-way.

Management return interval



3. Are plant species in managed rights-of-way characteristic Pinelands species?

- Comparison to adjacent forest plants (composition and number of species)

Woody species similar

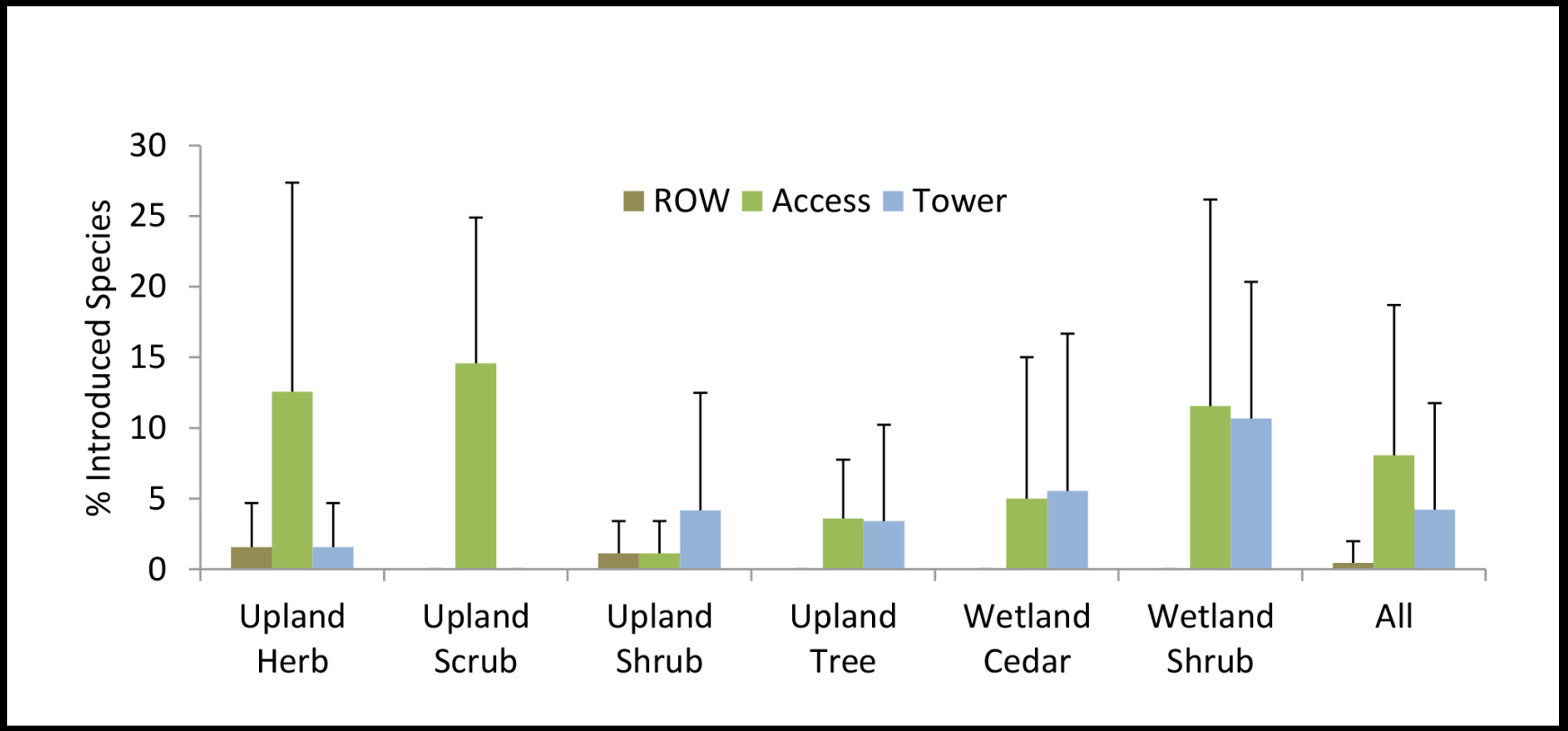
Herbaceous species differed

- Comparison to access road and tower plants

ROW plots higher % of native Pinelands species

Tower and access road plots supported a higher % of introduced species

Introduced species



Evaluation of the Pilot Program

- N.J.A.C. 7:50-10.35(a)
  - The success of the Pilot Program is to be determined based on the following criteria:

1. The vegetation management prescriptions have been implemented in a reliable and predictable way;

2. The vegetation management prescriptions have resulted in relatively stable and sustainable early successional habitats that are characteristic of the Pinelands and which provide habitat for native Pinelands plants and animals, including threatened and endangered species;

3. The vegetation management prescriptions have contributed to the reliability and safety of the electric transmission system in the Pinelands by creating and maintaining low growth vegetation communities; and

4. The notification and inspection system authorized in this pilot program has simplified Pinelands permitting procedures for the utility companies and the Commission's staff.

Conclusions

- The Pilot Program was successful.
- The vegetation management prescriptions were implemented consistently.
- Through vegetation monitoring, it was determined that implementation of the vegetation management prescriptions resulted in:

1. Species turnover in the managed RsOW was low and equated to a high degree of plant community stability.
2. Vegetation within the managed RsOW consisted of characteristic Pinelands plant species that were similar to adjacent forest areas.
3. To the extent the extent these plant communities provided habitat for T&E species, these species were likely to be found in the managed ROW.
4. A return interval of 3-4 years was required to maintain low growth plant communities using the vegetation management prescription in the RsOW.

Conclusions (cont.)

- Implementation of the vegetation management prescriptions resulted in:

  1. Elimination of tall vegetation within the managed RsOW;
  2. Maintenance of low growth plant communities; and
  3. Contributed to reliability and safety of the electric transmission system in the Pinelands.

- Pilot Program simplified the permitting process for the utilities and the Commission's staff:

  1. Provided vegetation management prescriptions per span to utility companies – predictability, consistency – all vegetation management prescriptions conducted in accordance with prescriptions
  2. Reduction in submission and review of individual development applications to conduct vegetation management in RsOW.
  3. Annual reporting and inspections confirmed vegetation management prescriptions were being implemented as prescribed.

Recommendations

- CMP should be amended to:

1. Permanently incorporate the ROW Plan;

2. Repeal ROW Pilot Program rules (N.J.A.C. 7:50-10.31 to -10.35); and

3. Provide that vegetation management of existing RsOW for which prescriptions are included within the ROW Plan do not have to submit individual applications to the Commission; and

4. Include vegetation management standards within N.J.A.C. 7:50-6, Part II (Vegetation) that will be applicable to new or expanded facilities and development within electric transmission line RsOW within the Pinelands Area.

Questions?

STATE CANNABIS RULES AND THE PINELANDS CMP

Pinelands Commission

Policy & Implementation Committee

9/24/2021

Presentation outline

- Cannabis business licensing classes
- Municipal role in cannabis licensing process
- Status of Pinelands municipal ordinances

Cannabis Rules N.J.A.C. 17:30

- Rules were adopted as Special Adopted Rules on August 19, 2021.
  - Effective Date: August 19, 2021
  - Expiration Date: August 19, 2022
- Authority: New Jersey Cannabis Regulatory, Enforcement Assistance, and Marketplace Modernization Act (CREAMM), N.J.S.A. 24:6I-31 *et seq.*
- The Cannabis Regulatory Commission is charged with overseeing the development, regulation and enforcement activities associated with the personnel (adult) use of cannabis in accordance with CREAMM
- Rules address the purchase, sale, cultivation, production, manufacturing, transportation, and delivery of cannabis or cannabis items

Recreational Use Licenses

- The CREAMM Act established six (6) classes of licenses for recreational cannabis businesses
  - Class 1 License – Cannabis Cultivator
  - Class 2 License – Cannabis Manufacturer
  - Class 3 License – Cannabis Wholesaler
  - Class 4 License – Cannabis Distributor
  - Class 5 License – Cannabis Retailer
  - Class 6 License – Cannabis Delivery

Class 1 – Cannabis Cultivator

- A licensed cannabis cultivator is authorized to:
  - 1. Possess, propagate, germinate, plant, cultivate, grow, harvest, dry, cure, process, and package; and
  - 2. Transport, transfer, distribute, supply, and sell this usable or unusable cannabis to other cannabis cultivators or cannabis manufacturers, sell usable cannabis to cannabis wholesalers, or cannabis retailers.
- A licensed cannabis cultivator is not licensed or authorized to:
  - 1. Manufacture or otherwise create cannabis products; or
  - 2. Transport, transfer, distribute, supply, or sell cannabis, usable cannabis, cannabis products, paraphernalia, or related supplies to consumers.
- Cannabis cultivation may occur indoors or outdoors
  - Outdoor cultivation may occur in a full greenhouse with rigid walls, a partial greenhouse, a hoop house, or other non-rigid structure, or an expanse of open or cleared ground fully enclosed by a physical-barrier
- Cannabis cultivation shall not be located on lands valued, assessed or taxed as an agricultural or horticultural use pursuant to the Farmland Assessment Act

Cannabis Cultivation Production Management Tiers

- All cannabis cultivators are assigned a cultivation production management tier
- **Mature Cannabis Plant Grow Canopy** - the total square feet in which a cannabis cultivator plants and grows cannabis plants, and does not include area exclusively used for harvesting, drying, curing, packaging, labeling or storing cannabis

Production Management Tier	Mature Cannabis Plant Canopy	
	Minimum Square Feet	Maximum Square Feet
Microbusiness	-	2,500
1	-	10,000
2	10,000	25,000
3	25,000	50,000
4	50,000	75,000
5	75,000	100,000
6	100,000	150,000

Class 2 – Cannabis Manufacturer

- Defined as preparing, compounding, mixing, or converting usable cannabis to produce, make, or other create a cannabis product
- **Cannabis product** is a cannabis concentrate or a cannabis infused product that a cannabis manufacturer manufacturers produces or creates from usable cannabis or cannabis concentrate
- **Cannabis infused product** is a product manufactured by a cannabis manufacturer in an authorized form that contains usable cannabis or cannabis concentrate, in solid or liquid form, and one or more ingredients intended for human consumption or use, including an ingestible product, inhalable product or dermal product
- All manufacturing of cannabis must take place in an enclosed indoor, and locked facility

Remaining Cannabis Licenses

Class 3 – Cannabis Wholesaler

- Stores, sells or otherwise transfers recreational use cannabis items between cannabis cultivators, wholesalers or retailers

Class 4 – Cannabis Distributor

- Transports cannabis items in bulk between cannabis cultivators, manufacturers or retailers within the State of New Jersey

Class 5 – Cannabis Retailer

- Purchases recreational use cannabis from licensed cultivators, manufacturers, or wholesalers and sells those items in a retail store

Class 6 – Cannabis Delivery

- Transports a consumer's purchases of recreational cannabis and related supplies from the retailer to that customer

Municipal Authority Provisions in CREAMM

- Municipalities had until 8/21/2021 to pass ordinances prohibiting the operation of cannabis-related businesses. Failure to pass an ordinance prohibiting cannabis establishments results in default provisions as follows:
  - Cultivation, manufacturing, wholesale and distribution facilities are permitted in all municipal industrial zones; and
  - Retail facilities are permitted as a conditional use in all municipal commercial or retail zones

Municipal Authority in CRC Special Regulations

- Municipalities (not in default) may adopt standards that are not in conflict with CREAMM, such as:
  - Limitations on the number of permitted cannabis businesses (maximum number of each class of license permitted)
  - Restrictions on the location, manner, and time of operation of cannabis businesses, except for the times of operation of a delivery service
  - Civil penalties for violations
  - Local licensing requirements
- Municipalities may prohibit outdoor cultivation (and most have)
- Municipalities may provide input to the CRC on the issuance of a license to a particular facility
  - Letter or affidavit from municipal officials indicating whether the location of the facility conforms to zoning requirements and has received approvals (including variances)
  - Proof of local support for the suitability of a cannabis facility's proposed location

Status of Pinelands Area Cannabis Ordinances

- 34 municipalities have adopted ordinances prohibiting all classes of cannabis business
  - Subject to change; towns may decide to permit one or more classes in the future
- 17 municipalities have adopted ordinances to permit one or more classes of cannabis business
- 2 municipalities status not known

Pinelands Management Areas and Cannabis Business Classes

Cannabis Business Classes Permitted by Pinelands Management Area

Business Class	PAD/SAPA	FA/APA	RDA/PV/ PT/RGA
Class 1 - Cultivation	N	P	P
Class 2 – Manufacture	N	Limited	P
Class 3 – Wholesale	N	Limited	P
Class 4 – Distribution	N	Limited	P
Class 5 – Retail	N	Limited	P
Class 6 – Delivery	N	Limited	P
P = Permitted / N = Not Permitted			

- Light industrial uses are permitted in very limited areas of the FA/APA.
- Roadside retail sales and service establishments are permitted in very limited areas of the FA/APA

Questions raised during review of ordinances

- Does cannabis cultivation meet the CMP definition of "agricultural or horticultural purpose or use"?
- To what extent do cultivation activities permitted by the CRC fall under the CMP definition of "agricultural products processing facility"?
- To what extent do manufacturing activities permitted by the CRC fall under the CMP definition of "agricultural products processing facility"?

Outstanding Concerns

- Large cannabis cultivation operations
  - Agriculture is exempt from application to the Commission
  - Scale of facilities permitted under the CRC rules (up to 150,000 s.f.)
    - Particularly impacts of large structures for indoor cultivation in the FA and APA
  - Water consumption
  - Wastewater on septic

Questions?

RESOLUTION OF THE NEW JERSEY PINELANDS COMMISSION

NO. PC4-21-_____

TITLE: To Authorize the Participation of Four New Advanced Wastewater Treatment Technologies in the Pinelands Commission's Alternate Design Treatment Systems Pilot Program

Commissioner _____ moves and Commissioner _____ seconds the motion that:

WHEREAS, on May 10, 2002, the Pinelands Commission established the Alternate Design Treatment Systems Pilot Program through its adoption of amendments to the Comprehensive Management Plan (CMP); and

WHEREAS, the Alternate Design Waste Water Treatment Systems Pilot Program is authorized as a means to test whether specifically authorized systems can be maintained and operated so as to meet the water quality standards contained in N.J.A.C. 7:50-6, Part VIII with maintenance requirements that a homeowner can be reasonably expected to follow.

WHEREAS, through the Pilot Program, a total of seven technologies have been evaluated, four of which have demonstrated success in meeting CMP water quality standards and been authorized for residential use on a permanent basis by the Commission; and

WHEREAS, following permanent authorization of the SeptiTech technology and removal of the BioBarrier technology from the Pilot Program in December 2020, only one technology (Hoot ANR) remained, and the Executive Director determined it was appropriate to issue an invitation for up to five new technologies to participate in the Pilot Program; and

WHEREAS, the CMP provides an opportunity for the expansion of the Pilot Program to include additional residential wastewater nutrient reducing technologies that have attained verification and/or certification through the United States Environmental Protection Agency Environmental Technology Verification (USEPA ETV) program or the National Sanitation Foundation/American National Standards Institute (NSF/ANSI) Standard 245 testing program; and

WHEREAS, N.J.A.C. 7:50-10.23(b) of the CMP sets forth the minimum submission requirements in order for USEPA ETV and/or NSF/ANSI Standard 245 certified technologies to be considered for participation in the pilot program; and

WHEREAS, pursuant to N.J.A.C. 7:50-10.23(b)1, vendors of eligible technologies wishing to participate in the pilot program are required to submit all laboratory test data and reports associated with the technology's attainment of verification and/or certification status, a description of the distribution and technical support system that the technology vendor will use to supply and service systems in the Pinelands Area, a comprehensive cost estimate of the technology, the expected total nitrogen concentration to be achieved by the technology when serving residential development in the Pinelands Area and an escrow in the amount of $2,500 to cover the cost of review for entry into the pilot program; and

WHEREAS, on May 3, 2021, the Executive Director issued letters of invitation to fourteen eligible technology vendors announcing the opportunity to apply to participate in the pilot program and posted the application details on the Commission's website; and

WHEREAS, on May 3, 2021, public notice of the opportunity for eligible technologies to apply to participate in the Commission's pilot program was published in the New Jersey Register (see 53 N.J.R. 5(1)); and

WHEREAS, the Executive Director established August 6, 2021 as the deadline for receipt of applications; and

WHEREAS, complete applications were received by the Commission by the application deadline from four eligible technology vendors; and

WHEREAS, Commission staff has reviewed the applications and supporting data and determined that three of the technologies (Fuji Clean USA, LLC, Residential CEN Series system; Waterloo Biofilter Systems, Inc., Waterloo Biofilter Residential Model treatment system; and Busse Innovative Systeme GmbH, Model MF-B-400 wastewater treatment system) have an anticipated total nitrogen concentration of ≤ 14 mg/l, which, for piloting purposes, qualifies these treatment systems for use by residential development on minimum one acre parcels; and

WHEREAS, the fourth technology (Adelante Consulting, Inc., Pugo Residential wastewater treatment system) has an anticipated total nitrogen concentration of ≤ 17 mg/l, which, for piloting purposes, qualifies this treatment system for use by residential development on minimum 1.26 acre parcels; and

WHEREAS, the Acting Executive Director has submitted a report to the Commission entitled "Recommended Approval of Three New and One Readmitted Advanced Wastewater Treatment Technologies for Participation in the Alternate Design Treatment Systems Pilot Program", dated October 14, 2021, and has recommended that the Commission authorize the four advanced wastewater treatment systems to participate in the Commission's pilot program; and

WHEREAS, the Commission's CMP Policy & Implementation Committee has reviewed the Acting Executive Director's report and has recommended that the four identified wastewater treatment systems be accepted into the pilot program; and

WHEREAS, the Pinelands Commission accepts the recommendations of the Acting Executive Director; and

WHEREAS, pursuant to N.J.S.A. 13:18A-5h, no action authorized by the Commission shall have force or effect until ten (10) days, Saturdays, Sundays and public holidays excepted, after a copy of the minutes of the meeting of the Commission has been delivered to the Governor for review, unless prior to expiration of the review period the Governor shall approve same, in which case the action shall become effective upon such approval.

NOW, THEREFORE BE IT RESOLVED that:

1. The following systems are hereby authorized to participate in the Pinelands Commission's Alternate Design Treatment Systems Pilot Program in accordance with the Acting Executive Director's October 14, 2021 report and recommendations:

    a. Fuji Clean USA, LLC, Residential CEN Series
    b. Waterloo Biofilter Systems, Inc., Waterloo Biofilter Residential Model
    c. Adelante Consulting, Inc., Pugo Residential
    d. Busse Innovative Systeme GmbH, Model MF-B-400

2. Notice of this determination shall be published on the Commission's website and in the New Jersey Register.

Record of Commission Votes

	AYE	NAY	NP	A/R*		AYE	NAY	NP	A/R*		AYE	NAY	NP	A/R*
Avery					Jannarone					Quinn				
Christy					Lloyd					Rohan Green				
Higginbotham					Lohbauer					Prickett				
Irick					Pikolycky									

*A = Abstained / R = Recused

Adopted at a meeting of the Pinelands Commission Date: _____

Susan R. Grogan
Acting Executive Director

Richard Prickett
Chairman

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SHEILA Y. OLIVER
Lt. Governor

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Application Specific Information: AppInfo@pinelands.nj.gov

RICHARD PRICKETT
Chairman
SUSAN R. GROGAN
Acting Executive Director

Acting Executive Director's Report to the Pinelands Commission

Recommended Approval of Three New and One Readmitted Advanced Wastewater Treatment Technologies for Participation in the Alternate Design Treatment Systems Pilot Program

October 14, 2021

Introduction

The Pinelands Commission established the Alternate Design Treatment Systems Pilot Program through adoption of amendments to the Comprehensive Management Plan (CMP) that took effect in 2002. The Pilot Program was authorized as a means to test whether specific wastewater treatment systems could be maintained and operated for residential use in the Pinelands Area so as to meet the water quality standards of the CMP, with maintenance requirements that homeowners could reasonably be expected to follow. A total of seven technologies have been evaluated through the Pilot Program to date, four of which have demonstrated success in meeting CMP water quality standards and been authorized for residential use on a permanent basis. These include the Amphidrome, Bioclere, Fast and SeptiTech treatment technologies.

Amendments to the CMP, at N.J.A.C. 7:50-2.11, 6.84, and 10.21-10.23, effective October 18, 2010, authorized the Commission to approve additional technologies for participation in the Pilot Program. Eligibility for participation is based upon a technology's having attained verification and/or certification status through the United States Environmental Protection Agency (USEPA) Environmental Technology Verification (ETV) program or the National Sanitation Foundation /American National Standards Institute (NSF/ANSI) Standard 245 testing program.

The CMP provides that no more than six alternate design treatment technologies shall be approved for use in the pilot program at any one time. As of December 2020, the Hoot ANR wastewater treatment technology is the only technology participating in the pilot program. Therefore, up to five new technologies may be authorized for participation at this time.

Pilot Program Timelines

On May 3, 2021, Commission staff issued letters of invitation to the manufacturers or vendors of fourteen (14) USEPA ETV and/or NSF/ANSI eligible treatment technologies announcing the opportunity to apply to participate in the expanded pilot program. A public notice to this effect was published in the May 3, 2021 New Jersey Register and a similar announcement was posted on the Commission's website. The Executive Director established August 6, 2021 as the deadline for the receipt of complete applications by the Commission.

The CMP requires that the Executive Director review the submitted documents for the technologies seeking participation, determine the eligibility of the technologies based upon a comprehensive assessment of the submissions, and determine the minimum lot size on which each technology could be authorized for residential use. Based on the August 6, 2021 submission deadline, the Executive Director's findings are to be submitted to the Commission no later than November 4, 2021.

Upon receipt of the Executive Director's report, the Commission must determine whether each technology should be approved for participation in the pilot program and thereafter ensure that any such determination is published in the New Jersey Register and posted and made available electronically on the Commission's website. Commission action must occur within 120 days of the deadline for receipt of applications, or December 4, 2021.

Application Requirements

To be considered for participation, manufacturers or vendors of eligible technologies were required to submit information including laboratory test data and reports associated with attainment of the requisite USEPA ETV or NSF/ANSI testing programs, a description of the distribution and support system for the sale and support of treatment units in the Pinelands Area, an estimate of the cost of the technology, the expected total nitrogen concentration to be achieved by the technology and an escrow in the amount of $2,500 to cover the cost of review for entry into the pilot program.

Submission Summary

Four USEPA ETV and/or NSF/ANSI Standard 245 certified treatment technologies submitted complete applications to the Commission prior to the August 6, 2021 submission deadline. Three of the technologies are new to the Pinelands pilot program and one, the Busse technology, has applied for readmission to the pilot program after having been previously dropped from the program for lack of system installations. The four eligible technologies include: the Fuji Clean USA, LLC, Residential CEN Series system; the Adelante Consulting, Inc., Pugo Residential wastewater treatment system; the Waterloo Biofilter Systems, Inc., Waterloo Biofilter Residential Model treatment system; and the Busse Innovative Systeme GmbH, Model MF-B-400 wastewater treatment system. These treatment technologies are summarized in the attached memoranda prepared by Ed Wengrowski, the Commission's Environmental Technologies Coordinator.

Recommendations

Based upon each technology's attainment of USEPA ETV and/or NSF/ANSI Standard 245 certification status, the expected total nitrogen concentration in treated wastewater, the required submission and approval of documents required at N.J.A.C 7:50-10.22(a)2ii through vi., and subject to the provisions of N.J.A.C 7:50-10.22(a)3 which provide for future adjustments to minimum lot size requirements, it is my recommendation that the Commission authorize the Fuji Clean USA, LLC, Residential CEN Series system, the Adelante Consulting, Inc., Pugo Residential wastewater treatment system, the Waterloo Biofilter Systems, Inc., Waterloo Biofilter Residential Model treatment system and the Busse Innovative Systeme GmbH, Model MF-B-400 wastewater treatment system for participation in the Commission's Alternate Design Wastewater Treatment Systems Pilot Program to serve residential development. Based upon the expected total nitrogen concentration in treated effluent, the Fuji Clean USA technology, Waterloo Biofilter technology and the Busse technology are eligible to serve residential development on minimum one acre parcels. The Pugo technology is eligible to serve residential development on minimum 1.26 acre parcels.

Attachments:

Memorandum dated October 14, 2021: Fuji Clean USA
Memorandum dated October 7, 2021: Waterloo Biofilter
Memorandum dated October 6, 2021: Pugo
Memorandum dated October 11, 2021: Busse

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Application Specific Information: AppInfo@pinelands.nj.gov

RICHARD PRICKETT
Chairman
SUSAN R. GROGAN
Acting Executive Director

MEMORANDUM

To: Susan Grogan,
Acting Executive Director

From: Ed Wengrowski,
Environmental Technologies Coordinator

Date: October 14, 2021

Subject: Pinelands Pilot Program for Alternate Design Wastewater Treatment Systems
Recommended Approval of the Fuji Clean USA Wastewater Treatment System

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Fuji Clean USA, LLC the manufacturer of the Residential CEN Series of wastewater treatment systems has applied to the Pinelands Commission to participate in the Pinelands Alternate Design Treatment Systems Pilot Program. The Fuji Clean Residential CEN Series technology is an NSF/ANSI Standard 245 (nitrogen reducing) certified wastewater treatment technology.

The 2010 amendments to the Pinelands Comprehensive Management Plan (CMP) authorize the Commission to expand the alternate design pilot program by adding additional residential nutrient reducing onsite wastewater treatment technologies that attained verification and/or certification through either the United States Environmental Protection Agency, Environmental Technology Verification (USEPA ETV) Program or the National Sanitation Foundation (Now NSF International)/American National Standards Institute (NSF/ANSI) Standard 245 testing program.

NSF International has certified by performance evaluation that the Fuji Clean CEN5, manufactured by Fuji Clean USA has fulfilled the requirements of NSF/ANSI Standard 245. The Fuji Clean USA CEN5 treatment system successfully met the requirement of Standard 245 by producing a median effluent total nitrogen concentration of 10 mg/L (ppm).

Pursuant to the provisions of the Comprehensive Management Plan (CMP) at N.J.A.C. 7:50-10.23(b)1, the manufacturer or agent of an alternate design treatment system that has attained verification and/or certification status through the USEPA Environmental Technology Verification program or NSF/ANSI Standard 245 testing program and which seeks to participate in the Pinelands Alternate Design Treatment Systems Pilot Program must apply to the Commission to be considered for participation. Such requests are required to be accompanied by the following:

(i) All laboratory test data and reports associated with the technology's participation in the USEPA ETV or NSF/ANSI Standard 245 testing program.

(i) A description of the distribution and technical support system that the technology vendor will utilize to supply and support the treatment system in the Pinelands Area;

(ii)An estimate of the cost of the technology including but not limited to equipment, shipping, warranty, operation and maintenance services and effluent monitoring; and

(iii) The expected total nitrogen concentration to be achieved by the technology when serving residential development in the Pinelands Area.

In conformance with the requirements of N.J.A.C. 7:50-10.23(b)1, Fuji Clean USA has submitted the following documentation:

1. One report entitled: Wastewater Technology, NSF/ANSI Standard 245 – Wastewater Treatment Systems – Nitrogen Reduction Final Report: Fuji Clean USA, LLC CEN5 13/15/055/0030 (66 pages).

2. One page letter from Fuji Clean USA, LLC, dated August 4, 2021, requesting inclusion of the Fuji Clean CEN model series wastewater treatment technology in the New Jersey Pinelands Alternate Design Treatment Systems Pilot Program.

3. One page description of the technology Distribution and Support Plan

4. Twenty-five-page Contractor Installation Manual Residential Systems CE and CEN Models (rev. 6-30-2021)

5. One page Installer Training Outline

6. Seventeen page Owner's Manual – Residential Systems (Rev. 7-7-2019)

7. Twenty-eight page Operation and Maintenance Manual Residential Systems CE and CEN Models (Rev 3-9-2020)

8. Four page Fuji Clean USA Treatment System Sampling Protocol

9. 2 page cut sheet describing the features and specifications of the XPERT ALERT WiFi Alarm System

10. The Fuji Clean USA five-year system warranty

11. The Fuji Clean USA five-year system Maintenance and Service Contract Items

12. Fuji Clean USA treatment system cost information

13. Various State Approval Documents and system performance reports and exhibits

I have reviewed the above materials and offer the following comments:

The Fuji Clean treatment system utilizes a "contact filtration" treatment process consisting of a controlled, circuitous flow train through anaerobic and aerobic chambers during which time the wastewater is in direct contact with assorted proprietary fixed film media on which biological digestion of organic matter occurs. The media is also designed and positioned to provide mechanical filtration of wastewater. Nitrogen removal is accomplished through a series of aerobic-anaerobic bio-degradations, which result from recirculating the waste stream though aerobic and anaerobic chambers multiple times. Four distinctive steps (chemical and mechanical) are involved. The first is the anaerobic hydrolysis reaction for protein and amino acid to decompose and form ammonium nitrogen. The second is in an aerobic chamber where oxygen is introduced, and bacteria nitrify (oxidize) ammonium nitrogen to form nitrite and then nitrate ions (biological nitrification). In the third step, which is mechanical, liquid containing nitrite and nitrate ions is returned, via an airlift pump, to the anaerobic chamber. Then, in the fourth step, these ions are reduced in an anaerobic chamber, by anaerobic bacteria and organic substances, to form nitrogen gas.

Pursuant to the pilot program requirements, the Fuji Clean USA monitoring protocol requires effluent samples to be collected quarterly, beginning no more than three months after the date of issuance of the certificate of occupancy. Wastewater effluent monitoring data will be conducted for a period of three years for a total of twelve samples from each system. Wastewater testing parameters will include nitrate-nitrogen, nitrite-nitrogen, ammonia-nitrogen, total kjeldahl nitrogen, and total nitrogen. A NJ certified laboratory will conduct all the required analyses. Sample procurement will be in accordance with the latest version of the NJDEP "Field Sampling Procedures Manual". Laboratory analytical methods and quality control/quality assurance procedures must conform to the requirements of N.J.A.C. 7:18 et seq.

Fuji Clean USA, LLC estimates that the total cost for a Fuji Clean USA CEN 5 (450 gpd) treatment system (exclusive of the soil dispersal field) sized to serve a typical four-bedroom home will be on the order of $12,575. The firm has identified local supply and support services for the treatment system.

Recommendation

Based upon a review of materials submitted by Fuji Clean USA, LLC for the Fuji Clean USA CEN Series wastewater treatment system, it is my recommendation that the Pinelands Commission approve the Fuji Clean USA CEN Series Treatment System for participation in the Pinelands Pilot Program for Alternate Design Wastewater Treatment Systems. The anticipated total nitrogen concentration in treated effluent from the Fuji Clean USA Wastewater Treatment System is $\leq$ 14 mg/l which, for piloting purposes, qualifies the treatment system for use by single family residential development on minimum one-acre parcels.

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General Information: Info@pinelands.nj.gov
Application Specific Information: AppInfo@pinelands.nj.gov

RICHARD PRICKETT
Chairman
SUSAN R. GROGAN
Acting Executive Director

MEMORANDUM

To: Susan Grogan,
Acting Executive Director

From: Ed Wengrowski,
Environmental Technologies Coordinator

Date: October 7, 2021

Subject: Pinelands Pilot Program for Alternate Design Wastewater Treatment Systems
Recommended Approval of the Waterloo Biofilter Wastewater Treatment System

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Waterloo Biofilter Systems, Inc. the manufacturer of the Waterloo Biofilter Model 4-Bedroom wastewater treatment technology has applied to the Pinelands Commission to participate in the Pinelands Alternate Design Treatment Systems Pilot Program. The Waterloo Biofilter technology has been verified by the U.S. Environmental Protection Agency (USEPA) Environmental Technology Verification (ETV) Program to be capable of achieving high levels of nitrogen removal from domestic (residential) wastewater.

The 2010 amendments to the Pinelands Comprehensive Management Plan (CMP) authorize the Commission to expand the alternate design pilot program by adding additional residential nutrient reducing onsite wastewater treatment technologies that attained verification and/or certification through either the United States Environmental Protection Agency, Environmental Technology Verification (USEPA ETV) Program or the National Sanitation Foundation (Now NSF International)/American National Standards Institute (NSF/ANSI) Standard 245 testing program.

The USEPA ETV Program has verified by performance evaluation that the Waterloo Biofilter Model 4-Bedroom, manufactured by Waterloo Biofilter Systems, Inc. has fulfilled the requirements of the USEPA ETV residential wastewater treatment system nitrogen reduction program. Waterloo Biofilter Model 4-Bedroom treatment system successfully met the requirements of the USEPA ETV program by producing a median effluent total nitrogen concentration of 13 mg/L (ppm).

Pursuant to the provisions of the Comprehensive Management Plan (CMP) at N.J.A.C. 7:50-10.23(b)1, the manufacturer or agent of an alternate design treatment system that has attained verification and/or certification status through the USEPA Environmental Technology Verification program or NSF/ANSI Standard 245 testing program and which seeks to participate in the Pinelands Alternate Design Treatment Systems Pilot Program must apply to the Commission to be considered for participation. Such requests are required to be accompanied by the following:

(i) All laboratory test data and reports associated with the technology's participation in the USEPA ETV or NSF/ANSI Standard 245 testing program.

(i) A description of the distribution and technical support system that the technology vendor will utilize to supply and support the treatment system in the Pinelands Area;

(ii)An estimate of the cost of the technology including but not limited to equipment, shipping, warranty, operation and maintenance services and effluent monitoring; and

(iii) The expected total nitrogen concentration to be achieved by the technology when serving residential development in the Pinelands Area.

In conformance with the requirements of N.J.A.C. 7:50-10.23(b)1, Waterloo Biofilter Systems, Inc. has submitted the following documentation:

1. One report entitled: Environmental Technology Verification Report, Reduction of Nitrogen in Domestic Wastewater from Individual Residential Homes, Waterloo Biofilter Systems, Inc. Waterloo Biofilter® Model 4 Bedroom Prepared by NSF under a cooperative Agreement with the U.S. Environmental Protection Agency (87 pages)

2. Three page application from Waterloo Biofilter Systems, Inc, received August 6, 2021, requesting inclusion of the Waterloo Biofilter wastewater treatment technology in the New Jersey Pinelands Alternate Design Treatment Systems Pilot Program. Also included in the application is the anticipated cost of the system and a description of the technology's distribution and support plan.

3. Thirty-six page Waterloo Information Package, NJ Pinelands Commission, dated September 2021 including Waterloo Smart Panel Functional Brief, Waterloo Smart Panel Brochure, Waterloo Biofilter Owner's Manual – Waterloo Baskets, Waterloo Biofilter Owner's Manual – Waterloo Smart Panel, Waterloo Baskets Schematic, Waterloo Biofilter Baskets + WaterNOx-LS Schematic, and Waterloo Biofilter Residential Brochure.

4. Twenty page Waterloo Biofilter Basket Biofilter Owner's Manual including 5 year warranty

5. Eight page Waterloo Biofilter Smart Panel Owner's Manual.

6. Two page Waterloo Biofilter Smart Panel information sheet.

7. One page Waterloo Biofilter Smart Panel Process Controller operational details.

8. Three page Waterloo Biofilter Wastewater Monitoring Protocol

9. Six page Waterloo Biofilter Wastewater Treatment System 5-year Service Contract

10. Two page Waterloo Biofilter Deed Notice

I have reviewed the above materials and offer the following comments:

The Waterloo Biofilter® Model 4-Bedroom system is a two stage treatment technology, based on a fixed film trickling filter, using patented foam cubes to achieve treatment. The first stage of treatment occurs in the primary tank (normally a 1,500 gallon two compartment septic tank, a single compartment tank was used for the test) in which the solids are settled and partially digested. The second stage, the Biofilter® unit, is a separate system that provides secondary wastewater treatment. Microorganisms present in the wastewater attach to the Waterloo® patented foam media and use the nutrients and organic materials provided by the constant supply of fresh wastewater to form new cell mass. The system does not have a fan, as passive aeration to support the microorganisms is provided by openings in the Biofilter® housing and the characteristics of the foam material, allowing air to freely pass through the media.

The Waterloo Biofilter® system is designed to remove total nitrogen from the wastewater by nitrification and denitrification. Nitrification occurs in the aerobic Biofilter® unit, where ammonia nitrogen is converted to nitrite and nitrate (predominately nitrate), while denitrification occurs in the anaerobic/anoxic primary tank, where the nitrite/nitrate is converted to nitrogen gas.
Pursuant to the pilot program requirements, the Waterloo Biofilter monitoring protocol requires effluent samples to be collected quarterly, beginning no more than three months after the date of issuance of the certificate of occupancy. Wastewater effluent monitoring data will be conducted for a period of three years for a total of twelve samples from each system. Wastewater testing parameters will include nitrate-nitrogen, nitrite-nitrogen, ammonia-nitrogen, total kjeldahl nitrogen, and total nitrogen. A NJ certified laboratory will conduct all the required analyses. Sample procurement will be in accordance with the latest version of the NJDEP "Field Sampling Procedures Manual". Laboratory analytical methods and quality control/quality assurance procedures must conform to the requirements of N.J.A.C. 7:18 et seq.

Waterloo Biofilter Systems, Inc. estimates that the total cost for a Waterloo Biofilter Model 4-Bedroom treatment system (exclusive of the soil dispersal field) sized to serve a typical four-bedroom home will be on the order of $14,700. The firm has identified regional supply and support services for the treatment system.

Recommendation

Based upon a review of materials submitted by Waterloo Biofilter Systems, Inc for the Waterloo Biofilter Model 4-Bedroom wastewater treatment system, it is my recommendation that the Pinelands Commission approve the Waterloo Biofilter Treatment System for participation in the Pinelands Pilot Program for Alternate Design Wastewater Treatment Systems. The anticipated total nitrogen concentration in treated effluent from the Waterloo Biofilter Wastewater Treatment System is $\leq$ 14 mg/l which, for piloting purposes, qualifies the treatment system for use by single family residential development on minimum one-acre parcels.

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RICHARD PRICKETT
Chairman
SUSAN R. GROGAN
Acting Executive Director

MEMORANDUM

To: Susan Grogan,
Acting Executive Director

From: Ed Wengrowski,
Environmental Technologies Coordinator

Date: October 6, 2021

Subject: Pinelands Pilot Program for Alternate Design Wastewater Treatment Systems
Recommended Approval of the Pugo Wastewater Treatment System

Adelante Consulting, Inc. the manufacturer of the Pugo wastewater treatment system has applied to the Pinelands Commission to participate in the Pinelands Alternate Design Treatment Systems Pilot Program. The Pugo system is an NSF/ANSI Standard 245 (nitrogen reducing) certified wastewater treatment technology.

The 2010 amendments to the Pinelands Comprehensive Management Plan (CMP) authorize the Commission to expand the alternate design pilot program by adding additional residential nutrient reducing onsite wastewater treatment technologies that attained verification and/or certification through either the United States Environmental Protection Agency, Environmental Technology Verification (USEPA ETV) Program or the National Sanitation Foundation (Now NSF International)/American National Standards Institute (NSF/ANSI) Standard 245 testing program.

NSF International has certified by performance evaluation that the Pugo system, manufactured Adelante Consulting, Inc. has fulfilled the requirements of NSF/ANSI Standard 245. The Pugo treatment system successfully met the requirement of Standard 245 by producing a median effluent total nitrogen concentration of 17 mg/L (ppm).

Pursuant to the provisions of the Comprehensive Management Plan (CMP) at N.J.A.C. 7:50-10.23(b)1, the manufacturer or agent of an alternate design treatment system that has attained verification and/or certification status through the USEPA Environmental Technology Verification program or NSF/ANSI Standard 245 testing program and which seeks to participate in the Pinelands Alternate Design Treatment Systems Pilot Program must apply to the Commission to be considered for participation. Such requests are required to be accompanied by the following:

(i) All laboratory test data and reports associated with the technology's participation in the USEPA ETV or NSF/ANSI Standard 245 testing program.

(i) A description of the distribution and technical support system that the technology vendor will utilize to supply and support the treatment system in the Pinelands Area;

(ii)An estimate of the cost of the technology including but not limited to equipment, shipping, warranty, operation and maintenance services and effluent monitoring; and

(iii) The expected total nitrogen concentration to be achieved by the technology when serving residential development in the Pinelands Area.

In conformance with the requirements of N.J.A.C. 7:50-10.23(b)1, Adelante Consulting, Inc. has submitted the following documentation:

1. One report entitled: Wastewater Technology, NSF/ANSI Standard 245 – Wastewater Treatment Systems – Nitrogen Reduction Final Report: Adelante Consulting, Pugo Systems 15/09/055/0030 (53 pages).

2. One page letter with four-page attachment from Adelante Consulting, Inc., received on July 28, 2021, requesting inclusion of the Pugo wastewater treatment technology in the New Jersey Pinelands Alternate Design Treatment Systems Pilot Program.

3. One page description of the technology distribution and technical support system that the technology vendor will utilize to supply and support the treatment system in the Pinelands Area;

4. Eight page Pugo Systems Operation and Maintenance Manual

5. Four page Pugo Systems Owner's Manual

6. One page Adelante Consulting, Inc Pugo Systems five-year warranty

7. Two page 5-year Operation and Maintenance Contract

8. Two page Pugo Systems Treatment System Sampling Protocol

9. Two page Pugo Systems Product Overview

10. One page Pugo Systems Deed Notice

11. One page Pugo system engineering details design plan

12. Two page cut sheet detailing the Remote Monitoring/Management Systems (RMSYS) alarm system features and specifications

13. Pugo system treatment system cost information.

I have reviewed the above materials and offer the following comments:

The Pugo Systems is an integrated treatment system that employs physical separation (sedimentation and flotation), aerobic biological treatment with fixed media, biological denitrification, and sedimentation.

Physical separation of floatable and sinkable solids in the influent wastewater occurs in the first chamber of the unit. Settleable solids are allowed to settle much as they would in a conventional septic tank. A submerged outlet baffle is used to retain floatable solids in this chamber. Sludge and scum are periodically removed from this chamber through vacuuming in the same manner as with a conventional septic tank.

Aerobic biological treatment using fixed media occurs in the second chamber. Effluent from the first chamber flows through the second chamber and the media bags, which are stacked. The treatment zone is a fixed bed zone consisting of bagged aerobic media. After passing through the media bed, water either flows through the outlet baffle and into the clarification chamber or is recirculated back to the first chamber. The air flow for aeration is provided by the 85 L/min pump. Air is distributed through perforated pipes located beneath the media and bubbles up through the media, providing oxygen for aerobic treatment. Excess biomass that sloughs off of the media is removed from the treatment chamber by the recirculation system and returned to the first chamber. Recirculation is accomplished through air-lift pumping, with a portion of the air from the aeration pump injected near the bottom of the lift tube. The recirculation rate is controlled by a needle valve on the air line to the lift tube.

During Aerobic Treatment, a portion of effluent from the second chamber is removed from the bottom of the chamber and recirculated back to the first chamber using an air-lift pump. Recirculation serves two purposes. First, recirculation creates a constant flow of wastewater through the treatment unit, thereby creating more stable operating conditions. Second, recirculation of nitrified effluent from the aeration chamber to the first chamber allows removal of nitrogen from the wastewater by biological denitrification. The reduced organic nitrogen in the effluent from the first chamber is oxidized to nitrate in the aerobic treatment zone. This nitrate containing wastewater is recirculated back to the influent chamber. Oxidation of a portion of the organic carbon in the influent to the tank creates an anoxic zone in the first chamber. The presence of anoxic conditions, organic carbon, and nitrate allows biological denitrification to occur, reducing the nitrate to nitrogen gas, which is vented from the system.

The third chamber is used for clarification of the effluent from the aerobic treatment unit. Water flows from a baffle, located midway up the treatment chamber wall into the sedimentation chamber baffle set at a 45-degree angle. This causes the water to circulate through the chamber to the outlet baffle, which is

set at a 45-degree angle in the opposite direction. As the water circulates through the chamber, solids settle and accumulate at the bottom of the chamber.

Pursuant to the pilot program requirements, the Pugo system monitoring protocol requires effluent samples to be collected quarterly, beginning no more than three months after the date of issuance of the certificate of occupancy. Wastewater effluent monitoring data will be conducted for a period of three years for a total of twelve samples from each system. Wastewater testing parameters will include nitrate-nitrogen, nitrite-nitrogen, ammonia-nitrogen, total kjeldahl nitrogen, and total nitrogen. A NJ certified laboratory will conduct all the required analyses. Sample procurement will be in accordance with the latest version of the NJDEP "Field Sampling Procedures Manual". Laboratory analytical methods and quality control/quality assurance procedures must conform to the requirements of N.J.A.C. 7:18 et seq.

Adelante Consulting estimates that the total cost for a Pugo treatment system (exclusive of the soil dispersal field) sized to serve a typical four-bedroom home will be on the order of $14,864. The firm has identified regional supply and support service providers for the treatment system.

Recommendation

Based upon a review of materials submitted by Adelante Consulting for the Pugo wastewater treatment system, it is my recommendation that the Pinelands Commission approve the Pugo treatment system for participation in the Pinelands Pilot Program for Alternate Design Wastewater Treatment Systems. The anticipated total nitrogen concentration in treated effluent from the Pugo system is $\leq$ 17 mg/l which, for piloting purposes, qualifies the treatment system for use by single family residential development on minimum 1.26-acre parcels.

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Application Specific Information: AppInfo@pinelands.nj.gov

RICHARD PRICKETT
Chairman
SUSAN R. GROGAN
Acting Executive Director

MEMORANDUM

To: Susan Grogan,
Acting Executive Director

From: Ed Wengrowski,
Environmental Technologies Coordinator

Date: October 11, 2021

Subject: Pinelands Pilot Program for Alternate Design Wastewater Treatment Systems
Recommended Approval of the Busse Wastewater Treatment System

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Busse Innovative Systeme GmbH, the manufacturer of the Busse Model MF-B-400 wastewater treatment systems has applied to the Pinelands Commission through its local agent, Busse NY, to participate in the Pinelands Alternate Design Treatment Systems Pilot Program. The Busse Model MF-B-400 technology is an NSF/ANSI Standard 245 (nitrogen reducing) certified wastewater treatment technology.

The 2010 amendments to the Pinelands Comprehensive Management Plan (CMP) authorize the Commission to expand the alternate design pilot program by adding additional residential nutrient reducing onsite wastewater treatment technologies that attained verification and/or certification through either the United States Environmental Protection Agency, Environmental Technology Verification (USEPA ETV) Program or the National Sanitation Foundation (Now NSF International)/American National Standards Institute (NSF/ANSI) Standard 245 testing program.

NSF International has certified by performance evaluation that the Busse Model MF-B-400 manufactured by Busse Innovative Systeme GmbH has fulfilled the requirements of NSF/ANSI Standard 245. The Busse Model MF-B-400 treatment system successfully met the requirement of Standard 245 by producing a median effluent total nitrogen concentration of 15 mg/L (ppm).

Pursuant to the provisions of the Comprehensive Management Plan (CMP) at N.J.A.C. 7:50-10.23(b)1, the manufacturer or agent of an alternate design treatment system that has attained verification and/or certification status through the USEPA Environmental Technology Verification program or NSF/ANSI Standard 245 testing program and which seeks to participate in the Pinelands Alternate Design Treatment Systems Pilot Program must apply to the Commission to be considered for participation. Such requests are required to be accompanied by the following:

(i) All laboratory test data and reports associated with the technology's participation in the USEPA ETV or NSF/ANSI Standard 245 testing program.

(i) A description of the distribution and technical support system that the technology vendor will utilize to supply and support the treatment system in the Pinelands Area;

(ii)An estimate of the cost of the technology including but not limited to equipment, shipping, warranty, operation and maintenance services and effluent monitoring; and

(iii) The expected total nitrogen concentration to be achieved by the technology when serving residential development in the Pinelands Area.

In conformance with the requirements of N.J.A.C. 7:50-10.23(b)1, Busse NY has submitted the following documentation:

1. One report entitled: Wastewater Technology, NSF/ANSI Standard 245 – Wastewater Treatment Systems – Nitrogen Reduction Final Report: Busse Innovative Systeme GmbH, Model MF-B-400 Wastewater Treatment System 07/11/055/0030 (187 pages).

2. One page Busse Technical Checklist and Field Maintenance Report

3. Five page 5-year Busse Warranty

4. Seventeen page Busse Engineering Plans as approved by various NY and MA jurisdictions

5. Forty page Owner's Manual

6. Four page Busse Deed Notice

7. Three page Wastewater Sampling Protocol

8. Three page Busse Minimum Required Maintenance & Service Contract Items

9. Two page Busse Membrane Cleaning Manual for Kubota M-Box & Busse Plate Membrane

10. Sixty-nine page packet (Appendix A) containing Materials, Characteristics, Components, Design Specifications including system Alarm specifications

11. Twenty-two page document identifying various state approvals of the Busse treatment system

12. One-hundred-eighty-seven page document identifying various Busse certifications by US and European Union certification listings

13. One page document identifying Busse system cost information

14. Thirteen page document containing Buse Brochures, Sales, Promotion and Handout documents

15. Sixty-six page document containing Busse Power Point Presentation

I have reviewed the above materials and offer the following comments:

The Busse Model MF-B-400 is a small-scale membrane bioreactor. The bioreactor provides an aerobic environment where microorganisms present in the wastewater can remove soluble contaminants, using them as a source of energy for growth and production of new microorganisms. The organisms tend to be flocculent and form clumps, or floc, that physically entrap particulate organic matter. The organic matter is attacked by extracellular enzymes that solubilize the solids to make them available to the microorganisms as a food source. The conversion of the organic matter from soluble to biological solids allows for removal of the organic matter by settling and filtration of the solids in the treatment process.

The membranes provide a barrier that retains the microorganisms, allowing them to remain in the treatment process for long periods of time. The large inventory of biological solids in the process provides a buffer for shock loading of organic matter. The long residence time in the treatment system allows for the organisms to consume themselves, reducing the total amount of solids produced by the treatment process.

The organisms primarily responsible for the degradation of the organic matter are aerobic bacteria. As such, the transfer of oxygen into the wastewater by an aeration system is critical to the treatment process. The aeration system also provides for the mixing of the wastewater and organisms to provide contact between the organic contaminants in the wastewater and the organisms that provide for removal of the contaminants.

Pursuant to the pilot program requirements, the Busse Model MF-B-400 monitoring protocol requires effluent samples to be collected quarterly, beginning no more than three months after the date of issuance of the certificate of occupancy. Wastewater effluent monitoring data will be conducted for a period of three years for a total of twelve samples from each system. Wastewater testing parameters will include nitrate-nitrogen, nitrite-nitrogen, ammonia-nitrogen, total kjeldahl nitrogen, and total nitrogen. A NJ certified laboratory will conduct all the required analyses. Sample procurement will be in accordance with the latest version of the NJDEP “Field Sampling Procedures Manual”. Laboratory analytical methods and quality control/quality assurance procedures must conform to the requirements of N.J.A.C. 7:18 et seq.

Busse NY estimates that the total cost for a Busse Model MF-B-400 treatment system (exclusive of the soil dispersal field) sized to serve a typical four-bedroom home will be on the order of $31,000. The firm has identified regional supply and support services for the treatment system.

Recommendation

Based upon a review of materials submitted by Busse NY for the Busse Model MF-B-400 wastewater treatment system, it is my recommendation that the Pinelands Commission approve the Busse Model MF-B-400 Treatment System for participation in the Pinelands Pilot Program for Alternate Design

Wastewater Treatment Systems. The NSF testing program produced a median total nitrogen concentration of 15 mg/L in effluent treated by the Busse Model MF-B-400 Wastewater Treatment System.

The manufacturer reports that the system will produce effluent with a total nitrogen concentration of ≤ 14 mg/l or less with some minor programming changes and a slight increase in energy usage. With these minor operating adjustments, the anticipated total nitrogen concentration in treated effluent from the Busse Model MF-B-400 Wastewater Treatment System is ≤ 14 mg/l which, for piloting purposes, qualifies the treatment system for use by single family residential development on minimum one acre parcels.

RESOLUTION OF THE NEW JERSEY PINELANDS COMMISSION

NO. PC4-21-_____

TITLE: To Revise and Adopt Proposed Amendments to the Comprehensive Management Plan (Stormwater Management)

Commissioner _____ moves and Commissioner _____ seconds the motion that:

WHEREAS, on February 4, 2004, the New Jersey Department of Environmental Protection (NJDEP) adopted a set of Stormwater Management Rules (N.J.A.C. 7:8) that addressed stormwater-related water quality, groundwater recharge and water quantity impacts of major development; and

WHEREAS, the Pinelands Commission conducted a detailed review of the 2004 NJDEP regulations and identified amendments to the Pinelands Comprehensive Management Plan (CMP) that were necessary to integrate the NJDEP's new regulations, reflect then state-of-the-art stormwater engineering practices and provide for enhanced protection of Pinelands resources; and

WHEREAS, following adoption by the Pinelands Commission**,** these CMP amendments took effect on May 1, 2006 and were subsequently implemented by Pinelands municipalities through the adoption of Stormwater Management Plans and Stormwater Control Ordinances; and

WHEREAS, on October 25, 2019, the NJDEP adopted amendments to its Stormwater Management Rules, focusing on the use of green infrastructure to meet groundwater recharge, stormwater runoff quantity and stormwater runoff quality standards; and

WHEREAS, the amended NJDEP rules took effect on March 2, 2020; and

WHEREAS, the Pinelands Commission again identified the need to once again amend the CMP in order to integrate the new NJDEP regulations; and

WHEREAS, the Pinelands Commission determined that it is appropriate and necessary to modify the amended NJDEP rules to provide enhanced protection of Pinelands resources and address the potential impacts of climate change on stormwater runoff; and

WHEREAS, the Commission therefore proposed adoption of more stringent standards, requiring stormwater management for both major and minor development and limiting the potential for variations or exceptions from stormwater management requirements; and

WHEREAS, on June 11, 2021, the Pinelands Commission authorized the publication of the proposed amendments through adoption of Resolution PC4-21-16; and

WHEREAS, the proposed amendments were published in the July 19, 2021 issue of the New Jersey Register at 53 N.J.R. 1195(a), posted on the Commission's website and distributed to all Pinelands municipalities and counties, the Pinelands Municipal Council and a wide range of interested parties; and

WHEREAS, the Pinelands Commission held a public hearing to elicit public comment on the proposed amendments on September 1, 2021; and

WHEREAS, the Pinelands Commission also solicited written comment on the proposed amendments through September 17, 2021; and

WHEREAS, the Pinelands Commission received both oral and written comments on the proposed amendments; and

WHEREAS, based upon further review of the proposed amendments and public comments, the Commission's Policy & Implementation Committee recommended at its October 29, 2021 meeting that

the proposed Comprehensive Management Plan amendments be adopted with minor clarifications and corrections; and

WHEREAS, these minor clarifications and corrections are reflected in the attached Notice of Adoption, dated October ___, 2021; and

WHEREAS, the Pinelands Commission has reviewed the October __, 2021 Notice of Adoption and all public comments received by the Commission on the proposed amendments; and

WHEREAS, the Pinelands Commission desires to revise and adopt the proposed amendments in accordance with the October __, 2021 Notice of Adoption; and

WHEREAS, pursuant to N.J.S.A. 13:18A-5h, no action authorized by the Commission in adopting the Comprehensive Management Plan or amendments thereto shall have force or effect until thirty (30) days, Saturdays, Sundays and public holidays excepted, after a copy of the minutes of the meeting of the Commission has been delivered to the Governor for review, unless prior to expiration of the review period the Governor shall approve same, in which case the action shall become effective upon such approval.

NOW, THEREFORE BE IT RESOLVED that

1. The Pinelands Commission hereby revises the proposed Comprehensive Management Plan amendments, as published in the July 19, 2021 New Jersey Register, in accordance with the attached October ___, 2021 Notice of Adoption.

2. The Pinelands Commission hereby adopts the proposed Comprehensive Management Plan amendments, as published in the July 19, 2021 New Jersey Register, and in accordance with the attached October ___, 2021 Notice of Adoption.

3. The Acting Executive Director shall forward the amendments and minutes of this action to the Governor of the State of New Jersey, and shall also forward these amendments to the United States Secretary of the Interior for review in accordance with Section 502 of the National Parks and Recreation Act of 1978.

4. The amendments shall take effect as provided in the Pinelands Protection Act and upon publication in the New Jersey Register.

Record of Commission Votes

	AYE	NAY	NP	A/R*		AYE	NAY	NP	A/R*		AYE	NAY	NP	A/R*
Avery					Jannarone					Quinn				
Christy					Lloyd					Rohan Green				
Higginbotham					Lohbauer					Prickett				
Irick					Pikolycky									

*A = Abstained / R = Recused

Adopted at a meeting of the Pinelands Commission Date: _____

Susan R. Grogan
Acting Executive Director

Richard Prickett
Chairman

ENVIRONMENTAL PROTECTION

PINELANDS COMMISSION

Pinelands Comprehensive Management Plan

Definitions; Standards for Certification of Municipal Master Plans and Land Use Ordinances; and Minimum Standards for Point and Non-Point Source Discharges

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

Proposed: July 19, 2021 at 53 N.J.R. 1195(a)

Adopted: _____ by the New Jersey Pinelands Commission,
Susan R. Grogan, Acting Executive Director

Filed: , as R. d. , **with non-substantive changes** not requiring additional public notice and comment (see N.J.A.C. 1:30-6.3).

Authorized by: New Jersey Pinelands Commission

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

Effective Date:

Expiration Date: Exempt.

The New Jersey Pinelands Commission (Commission) is adopting amendments to Subchapter 2, Interpretations and Definitions, Subchapter 3, Certification of County, Municipal, and Federal Installation Plans, and Subchapter 6, Management Programs and Minimum Standards of the Pinelands Comprehensive Management Plan (CMP). The amendments were proposed on July 19, 2021 at 53 N.J.R. 1195(a). The adopted amendments relate to stormwater management in the Pinelands Area and harmonize the CMP with the stormwater management rules adopted by the New Jersey Department of Environmental Protection in 2019 (see 50 N.J.R. 2375(a)), with modifications consistent with the goals of the CMP and in recognition of the special resources of the Pinelands that the Commission is charged with protecting.

The Pinelands Commission transmitted the notice of proposal to each Pinelands municipality and county, as well as to other interested parties, for review and comment. Additionally, the Pinelands Commission:

- Sent notice of the public hearing to all persons and organizations that subscribe to the Commission's public hearing registry;
- Sent notice of the public hearing and provided a copy of the notice of proposal to all Pinelands counties and municipalities, a lengthy list of municipal and consulting engineers who typically represent applications or submit development applications to the Commission, and other interested parties;
- Placed advertisements of the public hearing in the four official newspapers of the Commission, as well as on the Commission's own web page;
- Submitted the proposed amendments to the Pinelands Municipal Council pursuant to N.J.S.A. 13:18A-7.f;
- Distributed the proposed amendments to the news media maintaining a press office in the State House Complex; and
- Published a copy of the proposed amendments on its web page at www.nj.gov/pinelands.

Summary of Hearing Officer Recommendations and Agency Response:

A formal public hearing was held in live video format (Zoom) before the Commission staff on September 1, 2021. Instructions for how to participate in the video hearing were included in the public hearing notice as well as on the Commission’s website. The public hearing was recorded

in video format and is on file in the Commission's digital records. Six people called in to provide oral testimony on the notice of proposal.

In addition to the oral comments, the Commission received 10 written comments, two of which were from individuals that provided oral comment at the public hearing.

Summary of Public Comments and Agency Responses:

The Commission accepted oral comments on the July 19, 2021 proposal at the above-discussed September 1, 2021 public hearing and written comments by regular mail, facsimile or e-mail through September 17, 2021.

The following individuals and organizations submitted comments:

1. Rhyan Grech, Pinelands Preservation Alliance
2. Georgina Shanley, Citizens United for Renewable Energy
3. Marie Pezzato, resident of Burlington County
4. Wendy Brophy, former Tabernacle resident, current Ocean County resident
5. Charles Caruso, in personal capacity
6. Sandra Blick (public hearing) and Joseph Sweger (written comment), New Jersey Department of Transportation
7. L. Stanton Hales, Jr. PhD, Barnegat Bay Partnership
8. Stephen M. Mazur, PE, PP, PTOE, CME, South Jersey Transportation Authority
9. Patrick Stewart, New Jersey Society of Professional Engineers
10. Tony DiLodovico, Tony D Environmental Permitting, LLC
11. Dan Kennedy, P.P., MCRP, Utility and Transportation Contractors Association
12. Robert J. Fischer, P.E., New Jersey Turnpike Authority

13. Hunter Birckhead, P.E., CFM, Colliers Engineering

14. Grant Lucking, New Jersey Builders Association

The Commission's detailed response to the comments is set forth below. The numbers in parentheses after each comment correspond to the list of commenters above.

General Comments

1. COMMENT: Several commenters expressed general support for the proposal, with many stating that the proposal will strengthen and enhance stormwater protection in the Pinelands. Two commenters added that the proposal will have the same benefits in Barnegat Bay. Some expressed appreciation for the efforts of the Pinelands Commission to go further than the stormwater rules recently adopted by the New Jersey Department of Environmental Protection (NJDEP) in protecting the natural resources of the Pinelands. (1, 2, 3, 5, 7, 9)

RESPONSE: The Commission thanks the commenters for their support.

2. COMMENT: Several commenters noted that the additional protections provided for in the rule proposal are important in the face of climate change and its impact on stormwater runoff. (1, 3, 7)

RESPONSE: The Commission thanks the commenters for their support.

3. COMMENT: Two commenters stated that the proposed changes establish reasonable requirements for home builders and developers. (5, 7)

RESPONSE: The Commission thanks the commenters for their support.

4. COMMENT: Two commenters stated that they believe municipalities that have areas both within and outside the Pinelands Area should be encouraged to apply the Commission's stormwater rules that are superior to the NJDEP rules, both within and outside the Pinelands

Area. The commenters submit that such a change would result in overall improvements in water quality in the Pinelands and adjoining areas and give municipalities additional flexibility in their management of stormwater. (5, 7)

RESPONSE: The Commission appreciates the commenters' interest in improving water quality in the Pinelands Area and in the areas adjacent to it. Pursuant to the Pinelands Protection Act at N.J.S.A. 13:18A-8, the Commission's regulatory authority is limited to the State designated Pinelands Area. Consequently, the Commission cannot mandate that municipalities implement the Commission's stormwater rules in those portions of the municipality located outside of the Pinelands Area.

5. COMMENT: Three commenters requested an exception for de minimis impact for public roadway projects. For example, a threshold of allowable impervious surface with no additional BMP required for each HUC14. (6, 8, 11)

RESPONSE: Neither the current stormwater management rules nor the proposed rules provide a means for granting exceptions for de minimis impacts for public roadway projects. Additionally, it is not feasible within the context of the proposed rule to address all situations where exceptions for de minimis impacts could be sought by a public agency. However, pursuant to N.J.A.C. 7:50-4.52 of the CMP, the Commission may enter into an intergovernmental agreement that authorizes a public agency to undertake development activities that are not fully consistent with Pinelands land use and development standards. Such an agreement could address specific concerns of intergovernmental agency staff and could provide a formal means of defining potentially de minimis impacts as well as streamlined application and review procedures on a more comprehensive basis.

6. COMMENT: One commenter relayed her personal experience installing a rain

garden at her house, with guidance from Rutgers University, that has been successful in combating flooding issues on her property. She explained that her community had once been forested but is now a housing development that has drainage issues when it rains. She feels that if her one rain garden can be so successful for one house, the State should adopt stronger stormwater management requirements. (4)

RESPONSE: The Commission thanks the commenter for her support.

7. COMMENT: One commenter advised the Pinelands Commission that he and another engineer have submitted updates to Chapter 9 NEH4 Part 630 Hydrology to USDA NRCS for their review. Among the recommended changes is the acknowledgment that the Curve Number Method is not applicable in forest HSG A and B soils. They conducted a hydrology study in McDonald's Branch within the Pinelands National Reserve which confirmed their findings. He suggested an informal meeting with Pinelands Commission staff to discuss these findings on the proper use of the Curve Number in the Pinelands National Reserve and to address storm water management on a valid scientific basis. (13)

RESPONSE: The Commission thanks the commenter for the offer to meet with the Pinelands Commission staff to discuss recommendations on the use of the Curve Number in the Pinelands National Reserve. The Commission suggests meeting after the USDA NRCS has reviewed the commenter's report and has issued a formal response thereto.

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

8. COMMENT: Three commenters requested that the Rational Method be acceptable when assessing peak flows and that the NRCS method limits apply only for runoff volume calculations and the sizing of a stormwater management measure. (6, 8, 11)

RESPONSE: The proposed amendments at N.J.A.C. 7:50-6.84(a)6ii(1) prohibit use of the Rational Method only when calculating rates of stormwater runoff and volume of stormwater to be recharged. They codify the Commission's long-standing policy to prohibit use of the Rational Method for demonstrating compliance with the runoff requirements and recharge standards in the CMP. The Rational Method can continue to be utilized for stormwater system design purposes for standards that are not specifically addressed in the CMP (e.g., calculations for sizing stormwater conveyance pipe).

Runoff requirements (recodified N.J.A.C. 7:50-6.84(a)6iii)

9. COMMENT: Several commenters urged the Commission to leave intact the requirement for applicants to file a deed notice on any undeveloped area of the property in order to be allowed to deduct that acreage from stormwater calculations. One of the commenters stated that deeds allow for accurate tracking of portions of properties be useful down the road, particularly after properties have changed hands. Two of the commenters stated that the current rule, which permanently restricts those areas from development, is more protective of Pinelands habitats, biotic resources, and water quality throughout all Pinelands watersheds, including the Barnegat Bay. (1, 5, 7)

RESPONSE: Prior to the adoption of these amendments, the CMP provided applicants with two options for the undeveloped portions of their parcels: recordation of a permanent deed restriction or the filing of a deed notice. The Commission chose to remove the option for an

applicant to impose a permanent deed restriction on the undeveloped portion of a parcel of land because applicants rarely, if ever, chose this option as a way of demonstrating compliance with stormwater management requirements. They more frequently opted to file a deed notice stating that the undeveloped portion of the parcel would be subject to CMP stormwater management requirements when and if a proposal for its development was submitted in the future. The Commission has determined that deed notices are not necessary because any future development of the parcel, including any area referenced in a deed notice, would have to meet all CMP standards, including stormwater management standards. In addition, the Commission has an accurate and effective application tracking database and process that serve the same purpose as the deed notice – to ensure that applicants meet the CMP stormwater management requirements when any remaining portion of a parcel in the Pinelands Area is developed.

10. COMMENT: Two commenters expressed concern that prohibiting stormwater runoff from being directed in such a way as to increase volume and rate of discharge into any wetland, wetlands transition area at N.J.A.C. 7:50-6.84(a)6iii(1) appears to require infiltration of the increased in runoff from the 100-year storm. The commenters state that this is contrary to the Commission's long-established position that it only requires infiltrating the increase in runoff from the 10-year storm runoff. (10, 14)

RESONSE: The Commission believes the commenters have misinterpreted this amendment. It does not require infiltration of the increase in runoff from the 100-year storm. The Commission is merely adding "wetlands" and "wetlands transition areas" to the existing prohibition against directing stormwater runoff in such a way as to increase the volume and rate of discharge into a surface water body. The Commission historically has not allowed applicants to direct stormwater in a way that that increases the volume and rate of discharge into wetlands

and wetlands transition areas and this amendment simply codifies this existing, long-standing practice.

Recharge standards (recodified N.J.A.C. 7:50-6.84(a)6iv)

11. COMMENT: One commenter applauded the Commission's proposal to exceed DEP's standards regarding nitrogen removal and minor development. The commenter stated that the CMP already further protected surface waters and areas around high pollutant areas, and the new standards are appropriate to preserve the quantity and quality of the Kirkwood Cohansey aquifer. (1)

RESPONSE: The Commission thanks the commenter for its support.

12. COMMENT: Three commenters believe that the major and minor development thresholds should not include temporary disturbances as part of public roadway projects that will be restored upon the completion of the project. (6, 8, 11)

RESPONSE: The proposed amendments do not change the definitions of major and minor development in the CMP and the Commission does not see a need to make any changes to these definitions at this time. The CMP does not distinguish between temporary or permanent disturbance. Both have always been required to be considered in stormwater calculations and the Commission continues to believe that is appropriate.

13. COMMENT: Three commenters believe the threshold for both major and minor development projects should be determined on a watershed basis, not the project in its entirety, as roadway projects cross multiple watersheds. (6, 8, 11)

RESPONSE: The Commission notes that the current proposal does not include any changes to the current CMP definitions of major and minor development. The CMP requires an applicant to consider the total amount of proposed disturbance associated with a development

application submitted to the Commission. The Commission does not believe any changes are warranted.

14. COMMENT: Two commenters expressed support for the definitions of major and minor development in the proposed rule because the definitions enable better protection of Pinelands resources beyond that provided by the current NJDEP rules. (5, 7)

RESPONSE: The Commission thanks the commenters for their support.

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

15. COMMENT: Two commenters believe the recharge standards for minor residential development should be expanded to include recharge from all impervious surfaces in the development, such as driveways, and not just from roofs. (5, 7)

RESPONSE: The proposed recharge standards for minor residential development offer greater protection of Pinelands resources than both the current CMP and the NJDEP stormwater rules. The Commission does not agree that those standards should be expanded any further at this time, given the proposed rule already captures smaller development projects that would not be subject to stormwater management requirements under the NJDEP rule.

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

16. COMMENT: Three commenters expressed concern over the effect of the infiltration thresholds on public roadway projects. They stated that the requirement for infiltration for greater than 1,000 square feet of regulated motor vehicle surface for minor non-residential development will cause project delays, additional costs for design, right-of-way acquisition and maintenance for additional BMPs. Drainage issues that could have been resolved with a few

additional inlets may now require BMPs. The commenters request a waiver process for public roadway projects. (6, 8, 11)

RESPONSE: The Commission does not believe that it is necessary or appropriate to incorporate a special waiver process for public roadway projects. The amendments already provide the Commission with the ability to grant exceptions and allow for off-site mitigation for all public development projects that cannot meet CMP on-site design and performance standards for green infrastructure, groundwater recharge, stormwater runoff quality, and stormwater runoff quality for public development projects.

17. COMMENT: Three commenters stated that at locations where the water table is high, infiltration will not function, yet the new criteria will require more infiltration BMPs. The commenters recommend that N.J.A.C. 7:50-6:84(a)6vii indicate that where infiltration is not feasible within the project area, infiltration will not be required for minor non-residential development. (6, 8, 11)

RESPONSE: The Commission is not amenable to this request, as the amendments provide for the granting of exceptions at N.J.A.C. 7:50-6.84(a)6vii, which allow for off-site mitigation for minor non-residential projects that cannot meet the on-site design and performance standards for green infrastructure, groundwater recharge, stormwater runoff quality, and stormwater runoff quality for public development projects.

18. COMMENT: Several commenters questioned the basis for recharge standards for an increase of 1,000 square feet of regulated motor vehicle surfaces. One commenter requested justification for the additional recharge standard and two commenters asked: (1) why the Commission is deviating from existing standards; and (2) how the Commission determined that 1,000 square feet is appropriate. (10, 11, 14)

RESPONSE: To strengthen the protection of Pinelands water resources, the Commission decided to improve stormwater runoff quality from minor nonresidential regulated motor vehicle surfaces, as defined at N.J.A.C. 7:8-1.2. Regulated motor vehicle surfaces are subject to contamination from automotive chemicals. These pollutants frequently bind to soil particulates (sand, silt, and clay) that collect on regulated motor vehicle surfaces. The proposed amendments require that stormwater runoff originating from new regulated motor vehicle surfaces be treated to remove 80 percent of total suspended solids (TSS) from the water quality design storm (1.25 inches/2-hours). Treated stormwater, free of most particulate-bound pollutants, is then recharged to groundwater.

The Commission selected 1,000 square feet as the threshold at which enhanced water quality protections were warranted based upon the area of standard parking spaces and interior roadway widths to access those spaces, as well as the typical length and width of highway acceleration and deceleration lanes. The addition of four new parking spaces and the necessary travel lanes to access those spaces would create approximately 1,000 square feet of new regulated motor vehicle surface. Under the proposed amendments, parking lot expansions exceeding four parking spaces and highway acceleration and deceleration lanes, for example, would be subject to the enhanced stormwater quality and groundwater recharge standard. Increases in regulated motor vehicle surface below the 1,000 square feet threshold would not be subject to the TSS removal and groundwater recharge standard as they are considered to be de minimis for regulatory purposes.

The Commission's decision to set 1,000 square feet as the threshold for TSS removal was also based on the minimum size of non-residential development that requires Commission review. Under the review requirements and exemptions contained in the CMP at N.J.A.C. 7:50-

4.1(a)8ii, the expansion of a parking lot by 1,000 square feet or less would not require application to the Commission and therefore would not require Commission review. The threshold for the recharge standard for minor nonresidential regulated motor vehicle surfaces at 1,000 square feet is thus consistent with the CMP's review requirements for non-residential development.

This proposed stormwater runoff quality standard provides greater protection of the Pinelands water resources than NJDEP's stormwater runoff quality standards provide. NJDEP's stormwater runoff quality standards at N.J.A.C 7:8-5.5 require 80 percent TSS removal and groundwater recharge from regulated motor vehicle surfaces when major development results in an increase of 10,890 square feet or more of regulated motor vehicle surface.

The Commission is making a minor, non-substantive change to the proposed amendments, at recodified N.J.A.C. 7:50-6.84(a)6iv(3)(A), to clarify that it will require 80 percent TSS removal from stormwater runoff from regulated motor vehicle surface for all development (major and minor) that results in an increase of greater than 1,000 square feet of regulated motor vehicle surface. Development that results in 1,000 square feet or less of regulated motor vehicle surface will not be subject to the 80 percent TSS removal requirement.

19. COMMENT: A commenter asked that the Commission consider expanding the recharge standards for minor non-residential development to require onsite infiltration if more than 500 square feet of regulated motor-vehicle surface is added (as opposed to the proposed 1,000 square feet). The commenter referenced the Commission's rule proposal summary which stated that chemicals from *individual* parking spaces warrant removal before they enter the groundwater table, adding that some municipalities have already considered using the 500 square foot benchmark. (7)

RESPONSE: The Commission does not believe that expansion of this provision to 500 square feet is appropriate given the CMP does not require review for the expansion of a parking lot of up to 1,000 square feet. Individual municipalities, however, may choose to apply a stricter standard in their land use ordinances if they believe they have the enabling authority to do so. See also response to comment #18, above.

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

20. COMMENT: Several commenters enthusiastically supported the Commission's proposal to exceed NJDEP's standards regarding nitrogen removal, recognizing nitrogen as a significant source of harm to the Pinelands. One commenter also noted the downstream impacts of nitrogen on Barnegat Bay. (1, 5, 7)

RESPONSE: The Commission thanks the commenters for their support.

21. COMMENT: Two commenters expressed concern with the 65 percent nitrogen removal standard. One commenter explicitly opposed it; one asked how the Commission came up with standard; and both requested justification for having a specific nitrogen standard and requested scientific information, literature, studies, and Pinelands-specific studies to support the standard. (10, 14)

RESPONSE: The Commission's decision to establish a specific, quantitative nitrogen removal standard is based on: (1) the need for the development community to have a specific, quantitative standard to help improve the predictability and efficiency of regulatory reviews; (2) the unique characteristics of ground and surface water in the Pinelands and the need to afford these resources the highest levels of protection; (3) a longstanding objective of the Pinelands Commission to control the amount of nitrogen entering the environment, as reflected in the CMP; and (4) peer-reviewed scientific research.

In its experience reviewing stormwater management plans, the Commission has found that it is often difficult for stormwater management system designers and regulatory design reviewers to agree on whether a plan meets the NJDEP standard that nitrogen be removed from stormwater runoff to the "maximum extent feasible." N.J.A.C 7:8-5. 5(f). The Commission believes that the "maximum extent feasible" standard does not provide the necessary predictability for the development community and often delays regulatory reviews. The Commission concluded that setting a quantitative standard that can be achieved by using the NJDEP's NJ Stormwater Best Management Practices (BMP) Manual inserts specificity and clarity into the regulatory process for both designers and reviewers of stormwater management systems. The BMP Manual provides both individual BMP nitrogen removal rates as well as a simple way to calculate how BMPs can be arranged in series to attain 65 percent nitrogen removal.

Numerous scientific studies have demonstrated that unpolluted groundwater aquifers and surface waters in the Pinelands Area are characterized by very low concentrations of nutrients, including nitrogen, with natural nitrate-nitrogen concentrations being reported as low as 0.17 ppm. Pinelands surface waters are classified by NJDEP as Outstanding National Resource Waters and are identified as Pinelands (PL) waters. These PL water resources are afforded the highest level of protection under NJDEP's Surface Water Quality Standards, N.J.A.C 7:9B. Similarly, groundwater in the Pinelands Protection Area, classified as Class 1-PL (Pinelands Protection Area) are known as Ground Water of Special Ecological Significance and, pursuant to NJDEP regulations, "background water quality" is to be maintained. (See N.J.A.C 7:9C).

The requirement to remove at least 65% of nitrogen in stormwater runoff from the water quality storm at major development sites is based on this mandate that waters of the Pinelands Area be afforded the highest level of protection from pollution.

The proposed removal standard is also consistent with a fundamental objective of the Pinelands CMP to control the amount of nitrogen that enters the Pinelands environment. N.J.A.C 7:50-10.21(b). This objective is reflected in the CMP requirement, adopted in 2002, that total nitrogen concentrations in wastewater discharged from septic systems be reduced by 65 percent when septic systems are used on one-acre lots in the Pinelands Area. N.J.A.C. 7:50-10.21.

Multiple studies by the Pinelands Commission and others have demonstrated the connection between land use, the occurrence of nitrogen and other pollution-related contaminants, and changes in native Pinelands plant and animal assemblages. Land use that involves application of fertilizer or the deposition of pet waste degrades ambient Pinelands water quality, which allows the invasion and establishment of non-native plants and animals that can outcompete, prey upon, and eventually eliminate native Pinelands species. All but the Brown and Rhodehamel studies listed below are scientific research papers that were published in peer-reviewed journal articles.

Brown, K. W. and Associates. 1980. An assessment of the impact of septic leach fields, home lawn fertilization and agricultural activities on groundwater quality. Prepared for the New Jersey Pinelands Commission, College Station, TX, 77840. March 1980, 108 pp.

Bunnell, J. F. and R. A. Zampella. 2008. Native fish and anuran assemblages differ between impoundments with and without non-native centrarchids and Bullfrogs. Copeia 2008:931-939.

Dow, C. L. and R. A. Zampella. 2000. Specific conductance and pH as indicators of watershed disturbance in streams of the New Jersey Pinelands, U.S.A. Environmental Management. 26:437-445.

Rhodehamel, E.C. 1970. A hydrologic analysis of the New Jersey Pine Barrens. New Jersey Department of Environmental Protection, Div. of Water Policy and Supply, Water Resources Circular No. 22.

Smalling, K. L., S. E. Breitmeyer, J. F. Bunnell, K. J. Laidig, P. M. Burritt, M, C. Sobel, J. A. Cohl, M. L. Hladik, K. M. Romanok, and P. M. Bradley. 2021. Assessing the ecological functionality and integrity of natural ponds, excavated ponds and stormwater basins for conserving amphibian diversity. Global Ecology and Conservation 30:e01765.

Zampella, R. A. 1994. Characterization of surface water quality along a watershed disturbance gradient. Water Resources Bulletin 30:605-611.

Zampella, R. A. and J. F. Bunnell. 1998. Use of reference-site fish assemblages to assess aquatic degradation in Pinelands streams. Ecological Applications 8:645-658.

Zampella, R. A. and K. J. Laidig. 1997. Effect of watershed disturbance on Pinelands stream vegetation. Journal of the Torrey Botanical Society 124:52-66.

Zampella, R. A., N. A. Procopio, R. G. Lathrop, C. L. Dow. 2007 Relationship of land-use/land-cover patterns and surface-water quality in the Mullica River Basin. Journal of the American Water Resources Association 43:594-604.

22. COMMENT: Several commenters expressed concern over the ability of applicants to prove they have achieved 65 percent nitrogen removal. Two commenters asked how the standard will be enforced. One commenter believes the rule should explicitly address how the standard will be enforced. (5, 7, 10, 14)

RESPONSE: As noted in our response to #21, above, the NJDEP BMP Manual provides nitrogen percentage removal rates for individual stormwater BMPs and also provides a methodology of how to calculate the percentage of nitrogen removed from stormwater when individual BMPs are arranged in series. When developing a stormwater management plan, an applicant will be required to evaluate the nitrogen removal from each stormwater BMP and to calculate the total nitrogen removal percentage when two or more BMPs are arranged in series. This computational method will be relied upon to confirm that the proposed stormwater management plan meets the Commission's minimum 65% nitrogen removal standard.

23. COMMENT: Two commenters suggested that a water quality assessment be performed prior to introducing a water quality standard such as nitrogen removal rates. One commenter compared nitrogen removal to removal of total suspended solids (TSS), stating that TSS removal is a secondary treatment standard so 80 percent removal of TSS does not need to be specifically justified. The commenter stated that nitrogen, however, is a nutrient subject to water quality standards and that it is inappropriate to require a set percentage removal standard throughout the Pinelands without a specific water quality assessment. (10, 14)

RESPONSE: The Commission agrees that the requirement to remove 80 percent of TSS from stormwater runoff does not need to be justified, however, it is important to note that TSS removal accomplishes significant reductions in the pollutant load that adsorbs to solids suspended in stormwater runoff.

With respect to the nitrogen removal standard, as noted in the response to comment #21, above, numerous research studies by the Pinelands Commission and others have characterized ambient surface and groundwater quality in the Pinelands Area and have identified water quality impairments, including elevated nitrogen concentrations related to land use. Also as noted in #21, above, the NJDEP's Surface Water Quality Standards (see N.J.A.C 7:9B) and Groundwater Quality Standards (see N.J.A.C. 7:9C) establish "nondegradation" and "background water quality," respectively) as the applicable water quality standards in the Pinelands Area. The Commission disagrees that additional water quality assessments are needed to support the adoption of a minimum 65 percent nitrogen removal standard.

Further, the Commission believes it is appropriate to establish a quantitative removal standard for nitrogen. The March 1980 assessment by K.W. Brown and Associates cited in the response to comment #21, above, included a review of available information on the potential

movement of nutrients (including nitrogen) to groundwater from fertilized lawns in light of the characteristics of Pinelands Area soils. Brown notes that lawn fertilization would be expected to add large amounts of nitrogen to the groundwater and even larger acreages than are required for septic fields would need to be set aside to allow dilution of the nitrogen laden stormwater to reach acceptable levels. Brown reports that up to 52 percent of nitrogen applied as inorganic N may be leached to groundwater as nitrate. Slow release organic nitrogen sources are reported to leach approximately 33 percent of the applied nitrogen as nitrate to the groundwater aquifer.

Based on Brown's work in which various nitrogen fertilizer applications are anticipated each year, coupled with Rhodehamel's findings in the work cited in the response to comment #21, above, that an average of 20 inches of water infiltrates and percolates to groundwater annually, nitrate-nitrogen concentrations ranging from a high of 16.9 ppm (inorganic nitrogen fertilizer) to a low of 3.9 ppm (inorganic nitrogen fertilizer) would occur in groundwater beneath lawn areas.

Assuming lawn areas in the Pinelands Area are fertilized using (slow release) organic forms of nitrogen, Brown calculated the resultant nitrate-nitrogen concentrations in groundwater beneath the lawn area for the three fertilizer application scenarios presented below:

1. A 1,000 square foot house with a 1 car garage and 50 ft long driveway on a 0.25 acre lot. All land not occupied by the house and drive will be lawn.
2. A 1,500 square foot house with a 2 car garage and 200 ft long drive on a 1.0 acre lot. Eighty percent of land not occupied by the house and drive will be lawn.
3. A 2,000 square foot house with a 2 car garage and 500 ft 2 utility building with 1.5 acres of lawn on a 5 acre lot.

Based upon a homeowner's fertilizing his or her lawn area with an inorganic (slow release) fertilizer formulation of 2 lb. N/1000 square feet in April-May and 1 lb. N/1000 square feet each June and August, the concentration of nitrate entering the groundwater aquifer from these three scenarios would be 10.7 ppm, 9.4 ppm and 3.9 ppm respectively with an average concentration of 8 ppm. Reducing the average value by 65 percent would result in water infiltrating to the underlying water table aquifer containing 2.8 ppm nitrate, which although still above the Pinelands Area water quality standard of 2 ppm nitrate-nitrogen, is a vast improvement.

If the Commission required more than 65 percent nitrogen removal from stormwater runoff using green infrastructure (GI) BMPs, at least three GI BMPs in series would be required. The Commission has determined that these multiple measures are not feasible in most instances and that 65 percent removal is more easily achievable, provides a significant reduction in the concentration of nitrate entering the aquifer and is thus appropriate at this time.

24. COMMENT: Two commenters requested that the Commission follow NJDEP's lead regarding nutrient removal rates, stating that further study and evaluation are necessary for both a prudent rate of removal and the rate at which specific BMPs can achieve this result. One of the commenters noted that he is on the stakeholder subgroup that has been investigating the nutrient removal issue and that they are a long way away from agreeing that a numerical standard is appropriate, no less a specific percentage removal standard. They stated that there are no specific studies that address a statewide percentage total nitrogen removal standard and that the performance of BMPs to reduce nutrients is "all over the place." (10, 14)

RESPONSE: As noted in the response to comment #21, above, the requirement to remove at least 65 percent of nitrogen in stormwater runoff from the water quality storm at major

development sites is based on a fundamental objective of the CMP to control the amount of nitrogen that enters the Pinelands environment. See N.J.A.C 7:50-10.21(b). Ample research has characterized the Pinelands Area as an ecologically sensitive environment, particularly vulnerable to excessive nitrogen loading that can lead to eutrophication, proliferation of invasive species and the decline of native Pinelands plants and animals. The lack of consensus among the stakeholder subgroup investigating the applicability of a statewide nutrient removal percentage has no relevance to the uniquely environmentally sensitive Pinelands environment.

The Commission is aware that the BMP Manual, Chapter 4, Table 4.2 "Typical Phosphorous and Nitrogen Removal Rates for BMPs" provides the "Total Nitrogen Removal Rates (%)" for various stormwater BMPs and that such values should be considered typical values based upon data from a range of research studies. While the reported total nitrogen removal rates may be based on a range of studies, the Commission believes that it is important to act now to protect Pinelands water resources by establishing minimum nitrogen removal rates from stormwater runoff. The Commission is relying on the best information currently available, including the existing assessments of Pinelands water quality, the known impacts of land use on the ecologically sensitive Pinelands ecosystem, the need to protect Pinelands water resources and the information provided by the NJDEP for typical nitrogen removal rates of various BMPs.

25. COMMENT: A commenter noted that BMPs will need to be studied and provided to address water quality standards as the stormwater rules only require water quality treatment from motor vehicle areas. (14)

RESPONSE: The Commission supports further research on the performance of stormwater BMPs and, in fact, applied jointly with the USGS New Jersey Water Science Center

for grant funding to evaluate BMP nutrient attenuation performance in the Pinelands Area. However, the requested grant funding for that research was not provided.

26. COMMENT: A commenter noted that since the stormwater regulations only require water quality treatment from motor vehicle areas, there will have to be separate BMPs for vegetative areas. (10)

RESPONSE: The Commission recognizes that a design engineer may be required to utilize separate BMPs to meet all stormwater management standards for a given project.

27. COMMENT: Two commenters expressed concern that combining the runoff from motor vehicle and vegetative surfaces into one water quality BMP will exacerbate the requirement to restrict the drainage areas to 1 and 2.5 acres. (10, 14)

RESPONSE: The commenters did not provide specific examples to illustrate their concerns, but the Commission does not anticipate that combining runoff from the two surfaces will be problematic. The design engineer is not limited in the number of BMPs that could be utilized to meet all stormwater management standards. Additionally, the engineer may design the project so that the runoff from the motor vehicle and vegetated surfaces remain separate and are not combined into the same BMP.

28. COMMENT: Four commenters requested an exception for public roadway projects from the nitrogen removal requirement based on their assumption that the new standard is intended to address only nitrogen loading produced by fertilizer. Although the rule proposal summary references lawn and turf areas specifically intended for active human use, public roadway projects use fertilizer when initially establishing vegetation. The commenters thought that this description of lawn and turf areas is vague. For public roadway projects, fertilizer is applied only during initial construction activities in accordance with the Standards for Soil

Erosion and Sediment Control in New Jersey and is not a contributor to nitrogen loading in stormwater beyond the construction period. The commenters recommended that the Commission not classify roadway embankments, specifically limited access highways, as areas of "active human use" that would require nitrogen treatment. (6, 8, 11, 12)

RESPONSE: The amendments require a 65 percent reduction of the post-construction total nitrogen load "from the developed site, including permanent lawn or turf areas that are specifically intended for active human use…" (Proposed N.J.A.C. 7:50-6.84(a)6iv(6)). Vegetated areas associated with public roadway projects, are typically not managed in such a way that they receive, or have the potential to receive, regular applications of fertilizer. Nor are they intended for active human use. They are therefore not considered to be permanent lawn or turf areas and are not required to meet the 65 percent reduction of the post-construction total nitrogen load rule amendment. The Commission recognizes that a one-time application of fertilizer may be necessary to establish a meadow area or stabilize a road shoulder. If there was no plan for routine or regular application of fertilizer in the future, such areas would not be considered part of the "developed site" for purposes of meeting this standard.

29. COMMENT: Four commenters said that it is impractical to use two green infrastructure BMPs in series to achieve the 65 percent nitrogen reduction in linear transportation projects. (6, 8, 11, 12)

RESPONSE: The Commission disagrees. Provided that the vegetated areas are not intended to receive, or have the potential to receive, regular applications of fertilizers, the standard would not apply to linear roadway projects. See response to Comment #28, above.

30. COMMENT: Two commenters stated that using two green infrastructure (GI) BMPs in series to achieve the 65 percent nitrogen reduction could require greater amounts of

disturbance to achieve. The commenters recommended a lower nitrogen load requirement so that the limit can be met without BMPs installed in series and, if needed, without an infiltration basin. (11, 12).

RESPONSE: The Commission recognizes that the use of multiple GI BMPs in series would be required to achieve the minimum 65 percent reduction on total nitrogen in stormwater runoff. The Commission envisions that this would most often be accomplished by routing stormwater runoff through a Vegetative Filter Strip prior to discharge to a Small-Scale Infiltration Basin. Vegetative Filter Strips may consist of meadow cover, planted woods, existing forest areas and other vegetated areas that are not managed in such a way that they receive, or have the potential to receive, regular applications of fertilizer. Where existing forest areas are present and can provide the requisite sheet flow, the Commission would expect that those forest areas be left intact and utilized for both TSS and nutrient removal. Planted woods and meadow cover, while requiring temporary disturbance would also be suitable for use in combination with a Small Scale Infiltration Basin. The use of turf grass vegetation in a Vegetative Filter Strip, while identified as an acceptable vegetative cover per the NJDEPs BMP Manual, would not be suitable for use in the Pinelands Area given these areas are typically managed to receive, or have the potential to receive, regular applications of fertilizers.

Alternatively, the minimum 65 percent nitrogen removal requirement could be met by routing stormwater through an under-drained Small-Scale Bioretention System (such as a bioswale) with discharge to a Small-Scale Infiltration Basin. While the construction of a Small-Scale Bioretention System would also require temporary disturbance, these systems can be vegetated with a Terrestrial Forested Community, Site-Tolerant Grasses both of which provide

TSS removal and nutrient uptake as well as the removal of a wide range of pollutants with an esthetically pleasing appearance on the landscape.

The Commission has determined that the environmental benefits of nitrogen attenuation provided by these GI BMPs and the importance of ground water recharge to maintain groundwater levels in the Kirkwood Cohansey Aquifer outweighs the temporary disturbance associated with GI BMP construction.

31. COMMENT: Several commenters expressed concern over the removal of nitrogen from water that has been infiltrated. Two commenters stated that to meet the nitrogen removal standard would require a minimum of two BMPs, but following infiltration of the water quality design storm, there will be insufficient flow left to send to another BMP. The commenters stated that further complicating this is NJDEP's requirement that the lower percentage removal BMP be used first in a series. In addition, they said that the only way to achieve a 65 percent removal rate is to use a vegetative filter strip followed by an infiltration basin, which is highly impractical for residential subdivisions because lawn areas would have to sheet flow to an additional vegetated area, which can't be part of the lawn, and then sheet flow to an infiltration basin, resulting in multiple vegetated filer and infiltration basin BMPs on each lot. Three commenters requested that if the Water Quality design storm is being infiltrated, no additional treatment should be required to address the nitrogen removal criteria. (6, 8, 10, 11, 14)

RESPONSE: The Commission agrees that it will be necessary to use two GI BMPs in series to meet the minimum 65 percent nitrogen removal standard. However, as noted in the response to comment #30, above, this could be achieved either through the use of a Small-Scale Filter Strip followed by a Small-Scale Infiltration Basin or an under-drained Small-Scale Bioretention System followed by a Small-Scale Infiltration Basin. The Commission disagrees

that the need to use the GI BMP that provides the lower nitrogen removal first in the treatment train is problematic or presents a further design complication. The Commission acknowledges that stormwater that flows over lawn areas in a residential subdivision and then directly into an infiltration BMP may now have to first flow through a vegetative filter strip that is not part of the maintained lawn area, prior to entering the infiltration BMP, to meet the standard. The Commission does not believe that smaller storm events, such as the Water Quality Design Storm, if partially infiltrated or evaporated prior to reaching the Small-Scale Infiltration Basin, is problematic. As noted in the responses to comments #21 and #24, above, the requirement to remove at least 65 percent of nitrogen in stormwater runoff from the water quality storm at major development sites is based on a fundamental objective of the Pinelands Comprehensive Management Plan to control the amount of nitrogen that enters the Pinelands environment. (N.J.A.C 7:50-10.21(b)). Further, the NJDEP's Surface Water Quality Standards at N.J.A.C 7:9B and Groundwater Quality Standards at N.J.A.C 7:9C impose non-degradation and background water quality standards that are the most protective of Pinelands water resources. As a result of the fundamental principal of the CMP, and the highly protective water quality standards that apply to the Pinelands Outstanding National Resource Waters and Ground Water of Special Ecological Significance, the Commission is committed to the minimum 65 percent nitrogen removal standard applicable to the Water Quality Design Storm.

32. COMMENT: Three commenters requested that Constructed Gravel Wetlands be approved as a BMP because it has 90 percent nitrogen removal rate (6, 8, 11)

RESPONSE: The Commission acknowledges that Subsurface Gravel Wetlands are an effective method of removing nitrogen. However, because the NJDEP does not recognize Subsurface Gravel Wetlands as a GI BMP and because nutrient reduction must be achieved

through the use of GI BMPs before non-GI BMPs may be used, the Commission suggests that the commenters bring this matter to the attention of the NJDEP for consideration.

N.J.A.C. 7:50-6.84(a)6v

33. COMMENT: Three commenters recommended that the groundwater mounding analysis that is required for major development also be required for minor development, as it is indicative of whether the facilities will infiltrate. Failure to infiltrate could adversely impact adjacent properties, including the State Roadway system. (6, 8, 11)

RESPONSE: The proposed amendments impose stormwater infiltration requirements for minor development. The current rule does not impose any infiltration requirement on minor development, and therefore the proposed amendment will be more protective of adjacent properties including the State Roadway system. The Commission does not agree that requiring a groundwater mounding analysis for each minor development is necessary since it is anticipated that, when compared to the current rule, the proposed amendments will result in the retention and infiltration of a greater volume of stormwater throughout the Pinelands Area, and that the rule will result in less stormwater runoff onto adjacent properties and roadways. While the Commission has chosen not to impose a requirement to provide a groundwater mounding analysis for minor development, such an analysis may be required by other government entities that have regulatory authority over the development.

34. COMMENT: Three commenters stated that the requirement for spatial distribution of smaller stormwater management measures may not always be practicable for public roadway projects and is the basis for NJDEP's plans to amend its stormwater management rules to allow flexibility for major developments associated with public roadways. The commenters requested

that the rule continue to allow spatial distribution of smaller stormwater management measures "to the maximum extent practical" for public roadway projects and that the CMP state that it will incorporate any future amendments to NJDEP's stormwater management rules, N.J.A.C. 7:8-5 and 6, that provide flexibility for green infrastructure for roadways. (6, 8, 11)

RESPONSE: The Commission's proposed amendments allow flexibility for the placement of BMPs for major development associated with public roadways. These measures may include the use of two or more retention swales situated on opposite sides of a roadway, or the use of subsurface porous infiltration pipe within linear stone trenches along portions of the proposed road improvements. In addition, the Commission will continue to allow alternative measures for public development projects as set forth in at recodified N.J.A.C. 7:50-6.84(a)6vii, and through incorporation of N.J.A.C. 7:8-4.6, when the stormwater management standards cannot be met on the parcel proposed for development or when stormwater management would more effectively be achieved through alternative measures.

Should DEP adopt amendments to N.J.A.C. 7:8-4.6, 5, and 6 in the future, such amendments will automatically be applicable to development in the Pinelands Area by virtue of the cross-references contained at N.J.A.C. 7:50-6.84(a)6 and N.J.A.C. 7:50-6.84(a)6vii(1) and (2), provided the amendments are not inconsistent with the modifications and supplementary provisions expressly set forth in the CMP. The words "as amended" were mistakenly deleted from the introductory paragraph of N.J.A.C. 7:50-6.84(a)6 and are being restored upon adoption of these amendments. Additionally, the Commission may choose to engage in a future rulemaking process, akin to the one it undertook in 2006 and this one, should DEP promulgate significant amendments to its stormwater management regulations that require modification for the Pinelands Area.

35. COMMENT: Three commenters requested that the pretreatment requirement in N.J.A.C. 7:50-6:84(a)6v(5) specifically indicate that sediment forebays within a basin meet the pretreatment criteria. (6, 8, 11)

RESPONSE: The use of sediment forebays as a method of pretreatment has been accepted, and will continue to be accepted, as a method of pretreating stormwater prior to entering a basin. The Commission has chosen not to identify specific methods of pretreatment in the rule given that many different structural and non-structural methods may be acceptable. Additionally, the Commission wishes to allow flexibility for the use of future technologies and methods to meet this standard.

36. COMMENT: Two commenters stated that the proposed requirement that "methods of treating stormwater prior to entering any stormwater management measure shall be incorporated into the design of the stormwater management measure to the maximum extent practical" needs to be better defined. The commenters asked the Commission to identify the other methods of treating stormwater that are not stormwater management measures and asked how one incorporates these other methods of treatment into the design of the stormwater management measure if they are not part of the stormwater management measure. (10, 14)

RESPONSE: The requirement to pretreat stormwater “to the maximum extent practical” is in the current rule, recodified at N.J.A.C. 7:50-6.84(a)6v(5), and the requirement itself is not part of the proposed amendments. The Commission is merely proposing to separate this requirement from the other standards in that provision. As stated in the response to comment #35, above, the Commission has chosen not to identify specific methods of pretreatment in the rule as it recognizes that many different structural and non-structural methods may be acceptable.

The Commission also wishes to allow flexibility for the use of future technologies and methods to meet this standard.

Exceptions (recodified N.J.A.C. 7:50-6.84(a)6vii)

37. COMMENT: Three commenters stated that a waiver from full compliance with the standards should be available for public roadway projects to recognize the benefit versus the impact of the placement of the infiltration BMP in ecologically valuable areas. (For example, if a major development project increases impervious area by 100 square feet in a HUC14 watershed and the feasible locations of infiltration BMPs are in environmentally sensitive areas, such as threatened/endangered species habitat.) (6, 8, 11)

RESPONSE: The Commission shares the commenters' concern regarding the potential impact of infiltration BMPs within environmentally sensitive areas. Both the current rule, recodified at N.J.A.C. 7:50-6.84(a)6vii, and the proposed amendments (through incorporation of N.J.A.C. 7:8-4.6) provide methods of managing stormwater offsite if the applicant demonstrates that it is technically impracticable to meet one or more of the design and performance standards on-site. As part of this analysis in the proposed amendments, technical impracticability exists when the design and performance standard cannot be met for engineering, environmental, or safety reasons. As discussed in the response to comment #16, above, the Commission is not amenable to adding a process for obtaining waivers from full compliance with the proposed amendments for public roadway projects.

38. COMMENT: A commenter requested that the Commission adopt NJDEP's provisions for waivers and exemptions for public development projects, allow for grandfathering, or delay application of the new standards after the rule is adopted. The

commenter expressed concern that the absence of these provisions will make the transition to these revised regulatory standards very challenging for active applicants in various stages of design, including critically needed infrastructure projects that meet the definition of a major development. (11)

RESPONSE: The Commission is not amenable to this request, given the amendments already provide for the ability of the Commission to grant an exception and allow for off-site mitigation for public development projects that cannot meet the on-site design and performance standards for green infrastructure, groundwater recharge, stormwater runoff quality, and stormwater runoff quality for public development projects.

39. COMMENT: Two commenters noted a citation error in N.J.A.C 7:50-6.84(a)6vii(2), which refers to the first part of the recharge standards at (a)6iv(1) instead of the off-site mitigation requirements at (a)6vii(1)(A). (11, 12)

RESPONSE: The Commission thanks the commenter for noting the citation error which has been corrected in this adoption.

40. COMMENT: A commenter noted an incorrect citation in N.J.A.C. 6:84(a)6vii(2), which states that "the Commission may grant an exception in accordance with the standards described at N.J.A.C. 7:50-4.6, as amended ..." N.J.A.C. 7:50-4.6 is a reserved section. (6)

RESPONSE: The Commission thanks the commenter for noting the citation error, which has been corrected to "N.J.A.C. 7:8-4.6" in this adoption. This corrected citation references the standards in NJDEP's stormwater management rule for granting municipal variances from the design and performance standards for stormwater management measures. By incorporating this provision into N.J.A.C. 6:84(a)6vii(2), the Commission will be applying these same standards to exceptions from the on-site design and performance standards for green

infrastructure, groundwater recharge, stormwater runoff quality, and stormwater runoff quality and on-site recharge standards for public development projects.

41. COMMENT: Two commenters expressed support for the requirement that mitigation projects approved by variance be located within either the same HUC-14 or HUC-11 watershed as the parcel proposed for development but requested that the provision be amended to allow the mitigation project to be located outside the Pinelands Area. (5, 7)

RESPONSE: As stated in response to Comment #4, pursuant to the Pinelands Protection Act, the Commission's jurisdiction is limited to the boundaries of the State designated Pinelands Area. Given the Commission would not be able to regulate mitigation projects conducted outside of the Pinelands Area, locating mitigation projects outside the Pinelands Area to address regulatory obligations within the Pinelands Area is not appropriate.

Maintenance standards (Recodified N.J.A.C. 7:50-6.84(a)6viii)

42. COMMENT: Several commenters expressed support for the maintenance plan requirements for major and minor development but noted that maintenance plans must be enforced because improper maintenance and monitoring of stormwater infrastructure can lead to malfunction or contribute to worsening stormwater issues. The commenters noted that failure to maintain stormwater management infrastructure is a documented, common, and serious problem that results in adverse impacts to water quality in watersheds and coastal waterbodies, such as Barnegat Bay. (1, 5, 7)

RESPONSE: The Commission appreciates the commenters' support of the maintenance plan requirements. While the Commission understands the commenters' concerns, it notes that the respective municipalities are responsible for enforcing implementation of stormwater

maintenance plans, as required by the conditions in each municipality's Municipal Separate Storm Sewer System (MS4) NJPDES Permit. Further, it should be noted that major developments must include a deed notice on the property, which describes the stormwater management measures associated with the project and includes the location of each in NAD 1983 State Plan New Jersey FIPS 2900 US Feet or Latitude and Longitude in decimal degrees. The referenced maintenance plans must also be attached to the deed.

43. COMMENT: Two commenters stated that the responsibility for maintenance of stormwater management measures should be restricted to measures that only collect runoff from the owner/tenant parcel. (10, 14)

RESPONSE: Because improperly maintained stormwater BMPs impact the natural resources of the Pinelands environment as well as adjacent properties and roadways, the Commission disagrees with the comment and will continue to require that all stormwater BMPs be maintained in accordance with the proposed amendments.

Federal Standards Statement

Section 502 of the National Parks and Recreation Act of 1978 (16 U.S.C. § 471i) called upon the State of New Jersey to develop a comprehensive management plan for the Pinelands National Reserve. The original plan adopted in 1980 was subject to the approval of the United States Secretary of the Interior, as are all amendments to the plan.

The Federal Pinelands legislation sets forth rigorous goals that the plan must meet, including the protection, preservation, and enhancement of the land and water resources of the Pinelands. The adopted amendments are designed to meet those goals by imposing stringent

stormwater management requirements on development in the Pinelands Area, which will provide greater protection of the Pinelands resources.

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

There are no other Federal requirements which apply to the subject matter of these amendments and new rule.

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

7:50-2.11 Definitions

(No change from proposal).

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

(a) (No change from proposal).

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

(a)6 Surface water runoff in accordance with N.J.A.C. 7:8-4.6, 5, and 6, ***as amended*** except as modified and supplemented as follows:

(a)6i – iii. (No change from proposal).

(a)6iv. Recharge standards:

(1) (No change from proposal).

(2) (No change from proposal).

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

(A) If the proposed development will result in an increase of ***greater than*** 1,000 square feet *[or more]* of regulated motor vehicle surfaces as defined at N.J.A.C. 7:8-1.2, the stormwater runoff quality standards contained at N.J.A.C. 7:8-5.5 shall apply. The water quality design storm volume generated from these surfaces shall be recharged onsite; and

(B) (No change from proposal).

(4) - (5) (No change from proposal).

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

(a)6v- vi. (No change from proposal).

(a)6vii. Exceptions:

(1) (No change from proposal).

(2) For applications submitted pursuant to N.J.A.C. 7:50-4.51 through 4.60, the Commission may grant an exception in accordance with the standards described at ***N.J.A.C. 7:8-4.6*** *[N.J.A.C. 7:50-4.6]*, as amended, from the on-site design and performance standards for green infrastructure, groundwater recharge, stormwater runoff quality, and stormwater runoff quality at N.J.A.C. 7:8-5.3, 5.4, 5.5, and 5.6 and on-site recharge standards set forth at **(**a)6iv above, provided the conditions set forth at ***(a)6vii(1)(A)*** *[(a)6iv(1)*] above are met**.**

(3) to (4) (No change from proposal).

(a)6viii - ix. (No change from proposal).

Summary of Oral Comments on Proposed Stormwater Management Amendments[1]
Public Hearing September 1, 2021

1. Georgina Shanley, Citizens United for Renewable Energy

Ms. Shanley agrees with the comments of the Pinelands Preservation Alliance, noting that water is the lifeblood of the Pinelands and has to be protected. She applauds the Pinelands Commission for the strong protections that are included in the rule proposal.

2. Maria Pezzato, resident of Burlington County

Ms. Pezzato commends the Pinelands Commission for fighting against global warming and preserving the State's waters, especially the aquifer.

3. Wendy Brophy, former Tabernacle resident, current Ocean County resident

With guidance from Rutgers University, Ms. Brophy recently installed a rain garden and pollinator garden at her house that has been successful in combating flooding issues on her property. She explained that her community had once been forested but is now a housing development that has drainage issues when it rains. She feels that if her one rain garden can be so successful for one house, the State should adopt stronger stormwater management requirements. She agrees with the comments provided by the Pinelands Preservation Alliance and Georgina Shanley.

4. Charles Caruso, individual

Mr. Caruso stated that he is he Chairman of the Barnegat Bay Partnership Stormwater Work Group but that his comments are in his personal capacity.

He supports the proposed amendments and appreciates the efforts of the Pinelands Commission and staff to protect the resources of the Pinelands beyond what is provided for in DEP's stormwater rule. The proposed changes will strengthen and enhance stormwater management in the Pinelands area and downstream in Barnegat Bay while establishing reasonable requirements of builders and developers.

Major and minor development. Mr. Caruso supports the definitions of these terms in the proposed rule as they provide protection beyond that provided by the DEP rules. He believes, however, that the recharge standards for minor residential development should be expanded to include recharge from all impervious surfaces in the development, such as driveways, and not just from roofs.

Nitrogen removal. Mr. Caruso supports the new nitrogen removal standard as it recognizes nitrogen as a significant source of harm to both the Pinelands and the

downstream impacts on Barnegat Bay. He believes, however, that the rule should address enforcement of the nitrogen removal standard.

Municipal variances for private development. Mr. Caruso supports the requirement that mitigation projects approved by variance be located in same HUC 11 or HUC 14 watershed as the parcel proposed for development, but believes that the provision should be amended to allow the mitigation project to occur outside Pinelands Area.

Runoff requirement. Mr. Caruso opposes the proposal to remove the requirement for filing deed restrictions on open space that is excluded from stormwater runoff calculations. He concurs with the position of the Pinelands Protection Alliance on this proposed rule amendment and notes that the requirement protects Pinelands resources.

Maintenance. Mr. Caruso supports the proposed changes for maintenance of stormwater management infrastructure but believes the rule should include enforcement mechanisms in the event infrastructure is not maintained. He stated that failure to maintain infrastructure is fairly common and noted that this has been a serious problem in the past.

Applicability outside the Pinelands. Mr. Caruso believes that municipalities with land both outside and inside the Pinelands should be encouraged to apply the stricter stormwater management rules to areas outside the Pinelands.

[1] Two other individuals offered oral testimony at the public hearing but subsequently submitted their comments on writing. Rather than summarize their oral testimony, copies of their letters have been provided.

Pinelands CMP Amendment Proposal
53 N.J.R. 1195(a)
Comment 1

PINELANDS PRESERVATION ALLIANCE

Bishop Farmstead ◆ 17 Pemberton Road ◆ Southampton, NJ 08088

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September 17, 2021

Acting Executive Director Susan Grogan
New Jersey Pinelands Commission
15 Springfield Road
Pemberton, NJ 08068

Re: Proposed Stormwater Amendments to Pinelands Comprehensive Management Plan

Dear Acting Director Grogan,

Pinelands Preservation Alliance (PPA) would like to express support for the proposed amendments to the Comprehensive Management Plan (CMP) revising stormwater management standards for development within the Pinelands Area. PPA recognizes that the proposed changes would go a step further than the New Jersey Department of Environmental Protection's (DEP) revised rules at N.J.A.C. 7:8, offering additional protections to the natural resources of the Pinelands. These additional protections adhere to the spirit of the Pinelands Protection Act and are especially crucial in the face of climate change.

According to the Mullica River Watershed Stormwater Basin Assessment Project conducted by the Pinelands Commission in 2005, 70% of sampled stormwater management facilities did not function properly. Specifically, they were found to contain standing water beyond the proper infiltration time frame. The report "revealed severe deficiencies in the site selection and soil assessment methodologies, construction practices, post construction performance verification and long-term basin infiltration surface maintenance" of the sampled basins.

PPA is supportive of maintenance plan requirements for both major and minor development, as improper maintenance and monitoring of stormwater infrastructure can lead to malfunction, or even contribute to worsening stormwater issues. But maintenance plans are ineffective if they aren't followed. Despite the fact that the basins in the Mullica River study area all had some form of maintenance plan, "[f]ollow up site visits to these same basins indicated that the required basin maintenance is not occurring." Clearly, maintenance plans must be enforced and go beyond simple mowing: "Even though 57% of the basins appeared to be mowed, 74% of those had standing water present, indicating that mere mowing provides little or no benefit to basin hydraulic performance."

We applaud the Commission's proposal to exceed DEP's standards regarding nitrogen removal and minor development inclusion. The CMP already further protected surface waters and areas around high pollutant areas, and the new standards are appropriate to preserve the quantity and quality of the Kirkwood Cohansey aquifer water.

In recodified N.J.A.C. 7:50-6.84(a)6iii, the Commission proposes to remove a requirement for applicants to file a deed notice on any undeveloped area of the property in order to deduct it from stormwater calculations. We urge the Commission to leave this requirement in place. Deeds allow for accurate tracking of portions of properties that can come in useful years and landowners after the fact.

Pinelands Preservation Alliance thanks the Pinelands Commissioners and staff for the significant effort put forth to strengthen stormwater management requirements in the Pinelands.

Sincerely,

Rhyan Grech
Policy Advocate

Pinelands CMP Amendment Proposal
53 N.J.R. 1195(a)
Comment 6

State of New Jersey

DEPARTMENT OF TRANSPORTATION
P.O. Box 600
Trenton, New Jersey 08625-0600

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

DIANE GUTIERREZ-SCACCETTI
Commissioner

September 14, 2021

Susan R. Grogan, P.P., AICP
Acting Executive Director
Pinelands Commission
PO Box 539
New Lisbon, NJ 08064

Re: Proposed Amendments to the Pinelands Comprehensive Management Plan

Dear Ms. Grogan,

NJDOT offers the following comments regarding the proposed changes to the Pinelands Comprehensive Management Plan:

1. The revisions to the Pinelands CMP are in response to the recent updates to the NJDEP Stormwater Management (SWM) rules. In the June 21, 2021 NJ Register, 53 NJR 1085(a), NJDEP published a notice of readoption of the SWM rules, which state "The Department intends to propose further amendments to allow flexibility for major developments associated with public roadways in meeting the green infrastructure requirements at N.J.A.C. 7:8-5.3" to recognize the challenges associated with the newly adopted rules. The Pinelands cross-reference to the SWM rules should indicate that it will incorporate the future amendments to NJAC 7:8-5 and 6 that provide flexibility for green infrastructure for roadways.

2. At NJAC 7:50-6.84(a)6iv(3)(A), infiltration is proposed to be required when an excess of 1,000 sf of regulated motor vehicle surface is proposed for minor non-residential development. In addition to increases in roadway surface, "regulated motor vehicle surface" includes roadways that currently drain to vegetation, but will be collected into a storm sewer system under proposed conditions. If there is drainage issue that could have been resolved with a few additional inlets, infiltration Best Management Practices (BMPs) may now be required. This would result in project delays, and additional costs associated with design, right-of-way (ROW) acquisition, and maintenance for the additional BMPs. NJDOT requests that the Pinelands Commission reconsider this criterion or develop a waiver process for public roadway projects.

3. The requirement to create dispersed BMPs for compliance with the stormwater management criteria in NJAC 7:50-6.84(a)6v.(4) is proposed to be revised to remove "to the maximum extent practical." The removal of this language limits the inflow drainage area into stormwater BMPs. The limitation of the drainage area for roadway projects is not practical due to the need to maximize the use of ROW, and the amount of the off-site inflow areas that flow into the State Roadway system. This is the basis of the NJDEP SWM rule change discussed above in Comment 1. NJDOT recommends that the term "maximum extent practical" remain in the language for public roadway projects.

4. At NJAC 6:84(a)6v(3), NJDOT recommends that groundwater mounding analysis be required for stormwater infiltration facilities for minor development as well as major development. Mounding analysis is indicative of whether the facilities will infiltrate and should be required for all development. Failure to infiltrate could adversely impact adjacent properties including the State Roadway system.

5. At NJAC 6:84(a)6v(5), NJDOT recommends that the pretreatment requirement specifically indicates that sediment forebays within a basin meet the pretreatment criteria.

6. There are locations where the water table is high and infiltration will not function. The new criteria require more infiltration BMPs. NJDOT recommends that NJAC 6:84(a)6vii indicate that where infiltration is not feasible within the project area, infiltration will not be required for minor non-residential development.

7. At NJAC 6:84(a)6vii(2), the proposed rule indicates that "the Commission may grant an exception in accordance with the standards described at NJAC 7:50-4.6, as amended ..." This section of the CMP is reserved and this appears to be an erroneous citation.

8. The summary indicates that the nitrogen removal standard targets nitrogen fertilizer applied to turf specifically intended for active human use. Transportation agencies do not include turf or lawn areas associated with active human use as defined in NJAC 7:50-6.24(c)3. (Active human use: Permanent lawn or turf areas shall be limited to those specifically intended for active human use such as play fields, golf courses and lawns associated with a residence or other principal non-residential use.) NJDOT does not fertilize areas except when initially establishing vegetation and we recommend that roadway runoff should not be required to reduce nitrogen by 65% for public roadway projects.

9. The BMPs in the NJ Stormwater BMP Manual Chapter 5 provide reductions in nitrogen from surface runoff. This chapter does not address the removal of nitrogen from water that is infiltrated. The proposed Pinelands rules require a 65% nitrogen removal for runoff from major development (disturbance in excess of 5,000 sf) and requires the use of Green Infrastructure (GI) BMPs to achieve this requirement. The highest nitrogen removal of a GI BMP in the NJ Stormwater BMP Manual is 50%. Therefore, two GI BMPs in series would be needed to address this standard, which is impractical in practice. NJDOT recommends that if the Water Quality design storm is being infiltrated, no additional treatment should be required to address the nitrogen removal criteria.

10. The Constructed Gravel Wetlands has a nitrogen removal rate of 90% and is a not a GI BMP per NJDEP. NJDOT recommends that the Pinelands Commission recognize Constructed Gravel Wetlands as a GI BMP.

11. The rational method is the standard method for computing runoff for pipe sizing and has been used to demonstrate that there is no increase in flows at a discharge point. The Pinelands Commission, consistent with NJDEP, is proposing to limit the use of runoff calculations to the NRCS method. Under the SWM rules operative as of March 2, 2021, NJDEP will continue to allow the use of the rational method for pipe flows and capacity. NJDOT recommends that the rational method should still be acceptable when assessing peak flows, and that the NRCS method limits apply only for runoff volume calculations and the sizing of a stormwater management measure.

12. NJDOT recommends that the Pinelands Commission recognizes the intrinsic value and the linear nature of public roadway projects in the following ways:

    - Roadway projects cross multiple watersheds and the threshold for both major or minor development projects should be based on a watershed, not the project in its entirety.
    - In addition, the major and minor development thresholds should not include the temporary disturbance that will be restored upon the completion of the project.
    - An allowable de minimis impact for public roadway projects should be included in the Pinelands rules. (For example, a threshold of allowable impervious with no additional BMP required for each HUC14.)
    - A waiver from full compliance with the standards should be available for public roadway projects, to recognize the benefit vs. the impact of the placement of the infiltration BMP in ecologically valuable areas. (For example, if a major development project increases impervious area by 100 square feet in a HUC14 watershed and the feasible locations of infiltration BMPs are in environmentally sensitive areas, such as threatened/endangered species habitat.)

If you have any questions regarding these comments, please contact Sandra Blick at (609) 963-1102 or at sandra.blick@dot.nj.gov.

Sincerely,

Joseph Sweger
Executive Manager
Bureau of Landscape Architecture and Environmental Solutions

Pinelands CMP Amendment Proposal
53 N.J.R. 1195(a)
Comment 7

BARNEGAT BAY PARTNERSHIP
RESEARCH · EDUCATE · RESTORE

17 September 2021

Susan R. Grogan, Acting Executive Director
New Jersey Pinelands Commission
P.O. Box 359
New Lisbon, New Jersey 08064
VIA EMAIL

Re: Proposed amendments to NJAC 7:50-2.11, 3.39, and 6.84 (Pinelands Stormwater Management Rules)

Dear Ms. Grogan,

I am submitting these comments to the New Jersey Pinelands Commission regarding the proposed amendments to NJAC 7:50-2.11, 3.39, and 6.84, the Comprehensive Management Plan (CMP) stormwater rules, on behalf of the Barnegat Bay Partnership (BBP), which comprises federal, state, and local government agencies, academic institutions, nongovernmental organizations, and businesses working together to restore and protect a nationally significant estuary, the Barnegat Bay.

AUTHORITY

The BBP submits these comments pursuant to Section 320 of the Clean Water Act (33 U.S.C. §1330; as amended by P.L. 100-4, 114-162, and 116-337), which established the Barnegat Bay as an estuary of national significance. Section 320 further identifies important purposes of our management conference: addressing point and nonpoint sources of pollution, maintaining sustainable populations of fishes and wildlife, protecting their habitats, and assuring that the designated uses of the estuary are protected. In accordance with the BBP's Memorandum of Understanding Regarding the Roles and Responsibilities of Partners and its attendant charters and policies, the U.S. Environmental Protection Agency (EPA), N.J. Department of Environmental Protection (NJDEP), and N.J. Pinelands Commission neither participated in the development of these comments nor reviewed them for endorsement.

COMMENTS

The Barnegat Bay Partnership supports the Pinelands Commission's proposed amendments to the CMP Stormwater Rules. We appreciate the efforts of the Pinelands Commission to protect the resources of the Pinelands beyond what is provided for in the NJDEP stormwater rules and to further address the impact of climate change on stormwater runoff. The proposed changes will strengthen and enhance stormwater management in the Pinelands Area and downstream in the Barnegat Bay, while establishing reasonable requirements for home builders and developers. The BBP has specific comments in the following areas.

Ocean County College | College Drive | PO Box 2001 | Toms River, NJ 08754
phone (732) 255-0472 | fax (732) 255-0358
barnegatbaypartnership.org

Major and Minor Development

The BBP supports the proposed rule definitions of major and minor development, because the definitions enable better protection of Pinelands resources beyond that provided by the current NJDEP rules. However, we believe the recharge standards for minor residential development should be expanded to include recharge from all impervious surfaces (*e.g.*, driveways) and not just from roofs in the proposed development. We also ask that the NJDEP consider expanding the recharge standards for minor non-residential development to require onsite infiltration if more than 500 square feet of regulated motor-vehicle surface is added (as opposed to the proposed 1000 square feet). As the Pinelands Commission stated in its description of the rule amendments, even chemicals from *individual* parking spaces warrant removal before they enter the groundwater table. Some municipalities have already considered using the 500 square foot benchmark.

Nitrogen Removal

The BBP enthusiastically supports the new requirement of a nitrogen removal standard for major development. The Pinelands Commission recognizes nitrogen as a significant source of harm to the Pinelands flora and fauna, and that the NJDEP standard is not sufficiently protective of Pinelands resources. Nitrogen pollution promotes some invasive species, potentially reduces blueberry production, and may contribute to downstream impacts to receiving waterbodies, including the Barnegat Bay. The 65% removal standard is a good starting point; however, we encourage clarification of how the standard is achieved and enforced.

Municipal Variances for Private Development

The BBP supports the requirement that mitigation projects approved by variance be located within either the same HUC-14 or HUC-11 watershed as the parcel proposed for development, however, we believe that the provision *might* be amended to allow the mitigation project to be located outside the Pinelands Area. This change would be allowable, should the Pinelands Stormwater Rules be applied to the total area of municipalities that have areas both within and outside the Pinelands Area (see Applicability Outside the Pinelands Area below).

Runoff Requirements

The BBP opposes the proposed change at NJAC 7:50-6.84(a)6iii that would remove the requirement for filing a deed restriction on open space excluded from stormwater runoff calculations. We believe that the current rule, which permanently restricts those areas from development, is more protective of Pinelands habitats, biotic resources, and water quality throughout all Pinelands watersheds, including the Barnegat Bay.

Maintenance

The BBP supports the proposed rule changes for stormwater maintenance standards; the proposed changes would slightly modify stormwater maintenance plans for major development and now include requirements of maintenance plans for minor development. However, the BBP asks the Pinelands Commission and the NJDEP to clarify their review and enforcement of maintenance plans. Failure of maintenance of many stormwater BMPs historically has been a serious problem, which results in adverse impacts to water quality in watersheds and coastal waterbodies, such as Barnegat Bay.

Applicability Outside the Pinelands Area

Municipalities that have areas both within and outside the Pinelands Area should be encouraged to apply these stormwater rules that are superior to the NJDEP rules, both within and outside the Pinelands Area. Combined with our recommendation regarding municipal variances, this change would result in overall

improvements in water quality in Pinelands and adjoining areas, and give municipalities additional flexibility in their management of stormwater.

We hope that you find our comments to be constructive and consistent with the BBP's 2021 Comprehensive Conservation Management Plan, including our mission to protect water quality, habitats, and biotic resources throughout the Barnegat Bay and its contributing watershed, much of which lies within the Pinelands National Reserve. We hope you find that our comments are consistent with the Pinelands Comprehensive Management Plan and welcome the opportunity to discuss them in more detail. If you have any questions, please feel free to contact me (shales@ocean.edu) or Dr. Jim Vasslides (jvasslides@ocean.edu), our Program Scientist, at 732-255-0472.

Sincerely,

L. Stanton Hales, Jr., Ph.D.
Director

cc: Dr. Elizabeth Lacey, Stockton University, STAC Chair
Mr. Gregg Sakowicz, JCNERR, Rutgers University, STAC Vice-Chair
Ms. Karen Green, NOAA-NMFS, Advisory Committee Co-Chair
Mr. Charles Caruso, Pinelands Preservation Alliance, Stormwater Working Group Chair

Pinelands CMP Amendment Proposal
53 N.J.R. 1195(a)
Comment 8

SOUTH JERSEY TRANSPORTATION AUTHORITY

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Philip D. Murphy
Governor

Sheila Y. Oliver
Lt. Governor

Diane Gutierrez-Scaccetti
Chair

Stephen F. Dougherty
Executive Director

September 15, 2021

Susan R. Grogan, P.P., AICP
Acting Executive Director
Pinelands Commission
PO Box 539
New Lisbon, NJ 08064

Re: Proposed Amendments to the Pinelands Comprehensive Management Plan

Dear Ms. Grogan,

The South Jersey Transportation Authority (SJTA) has been working closely the New Jersey Department of Transportation (NJDOT) and the New Jersey Turnpike Authority (NJTA), collectively reviewing proposed rule changes by the New Jersey Department of Environmental Protection (NJDEP) and the Pinelands Commission. So as not to provide duplicative comments, please be advised that the SJTA agrees with and supports the comments provide to you from the NJDOT in the attached letter.

Should you have any questions, please contact me at smazur@sjta.com or 609-820-2077.

Respectfully,

Stephen M. Mazur, PE, PP, PTOE, CME
Chief Engineer/Director of Engineering

State of New Jersey

DEPARTMENT OF TRANSPORTATION
P.O. Box 600
Trenton, New Jersey 08625-0600

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

DIANE GUTIERREZ-SCACCETTI
Commissioner

September 14, 2021

Susan R. Grogan, P.P., AICP
Acting Executive Director
Pinelands Commission
PO Box 539
New Lisbon, NJ 08064

Re: Proposed Amendments to the Pinelands Comprehensive Management Plan

Dear Ms. Grogan,

NJDOT offers the following comments regarding the proposed changes to the Pinelands Comprehensive Management Plan:

1. The revisions to the Pinelands CMP are in response to the recent updates to the NJDEP Stormwater Management (SWM) rules. In the June 21, 2021 NJ Register, 53 NJR 1085(a), NJDEP published a notice of readoption of the SWM rules, which state "The Department intends to propose further amendments to allow flexibility for major developments associated with public roadways in meeting the green infrastructure requirements at N.J.A.C. 7:8-5.3" to recognize the challenges associated with the newly adopted rules. The Pinelands cross-reference to the SWM rules should indicate that it will incorporate the future amendments to NJAC 7:8-5 and 6 that provide flexibility for green infrastructure for roadways.

2. At NJAC 7:50-6.84(a)6iv(3)(A), infiltration is proposed to be required when an excess of 1,000 sf of regulated motor vehicle surface is proposed for minor non-residential development. In addition to increases in roadway surface, "regulated motor vehicle surface" includes roadways that currently drain to vegetation, but will be collected into a storm sewer system under proposed conditions. If there is drainage issue that could have been resolved with a few additional inlets, infiltration Best Management Practices (BMPs) may now be required. This would result in project delays, and additional costs associated with design, right-of-way (ROW) acquisition, and maintenance for the additional BMPs. NJDOT requests that the Pinelands Commission reconsider this criterion or develop a waiver process for public roadway projects.

3. The requirement to create dispersed BMPs for compliance with the stormwater management criteria in NJAC 7:50-6.84(a)6v.(4) is proposed to be revised to remove "to the maximum extent practical." The removal of this language limits the inflow drainage area into stormwater BMPs. The limitation of the drainage area for roadway projects is not practical due to the need to maximize the use of ROW, and the amount of the off-site inflow areas that flow into the State Roadway system. This is the basis of the NJDEP SWM rule change discussed above in Comment 1. NJDOT recommends that the term "maximum extent practical" remain in the language for public roadway projects.

4. At NJAC 6:84(a)6v(3), NJDOT recommends that groundwater mounding analysis be required for stormwater infiltration facilities for minor development as well as major development. Mounding analysis is indicative of whether the facilities will infiltrate and should be required for all development. Failure to infiltrate could adversely impact adjacent properties including the State Roadway system.

5. At NJAC 6:84(a)6v(5), NJDOT recommends that the pretreatment requirement specifically indicates that sediment forebays within a basin meet the pretreatment criteria.

6. There are locations where the water table is high and infiltration will not function. The new criteria require more infiltration BMPs. NJDOT recommends that NJAC 6:84(a)6vii indicate that where infiltration is not feasible within the project area, infiltration will not be required for minor non-residential development.

7. At NJAC 6:84(a)6vii(2), the proposed rule indicates that "the Commission may grant an exception in accordance with the standards described at NJAC 7:50-4.6, as amended ..." This section of the CMP is reserved and this appears to be an erroneous citation.

8. The summary indicates that the nitrogen removal standard targets nitrogen fertilizer applied to turf specifically intended for active human use. Transportation agencies do not include turf or lawn areas associated with active human use as defined in NJAC 7:50-6.24(c)3. (Active human use: Permanent lawn or turf areas shall be limited to those specifically intended for active human use such as play fields, golf courses and lawns associated with a residence or other principal non-residential use.) NJDOT does not fertilize areas except when initially establishing vegetation and we recommend that roadway runoff should not be required to reduce nitrogen by 65% for public roadway projects.

9. The BMPs in the NJ Stormwater BMP Manual Chapter 5 provide reductions in nitrogen from surface runoff. This chapter does not address the removal of nitrogen from water that is infiltrated. The proposed Pinelands rules require a 65% nitrogen removal for runoff from major development (disturbance in excess of 5,000 sf) and requires the use of Green Infrastructure (GI) BMPs to achieve this requirement. The highest nitrogen removal of a GI BMP in the NJ Stormwater BMP Manual is 50%. Therefore, two GI BMPs in series would be needed to address this standard, which is impractical in practice. NJDOT recommends that if the Water Quality design storm is being infiltrated, no additional treatment should be required to address the nitrogen removal criteria.

10. The Constructed Gravel Wetlands has a nitrogen removal rate of 90% and is a not a GI BMP per NJDEP. NJDOT recommends that the Pinelands Commission recognize Constructed Gravel Wetlands as a GI BMP.

11. The rational method is the standard method for computing runoff for pipe sizing and has been used to demonstrate that there is no increase in flows at a discharge point. The Pinelands Commission, consistent with NJDEP, is proposing to limit the use of runoff calculations to the NRCS method. Under the SWM rules operative as of March 2, 2021, NJDEP will continue to allow the use of the rational method for pipe flows and capacity. NJDOT recommends that the rational method should still be acceptable when assessing peak flows, and that the NRCS method limits apply only for runoff volume calculations and the sizing of a stormwater management measure.

12. NJDOT recommends that the Pinelands Commission recognizes the intrinsic value and the linear nature of public roadway projects in the following ways:

    - Roadway projects cross multiple watersheds and the threshold for both major or minor development projects should be based on a watershed, not the project in its entirety.
    - In addition, the major and minor development thresholds should not include the temporary disturbance that will be restored upon the completion of the project.
    - An allowable de minimis impact for public roadway projects should be included in the Pinelands rules. (For example, a threshold of allowable impervious with no additional BMP required for each HUC14.)
    - A waiver from full compliance with the standards should be available for public roadway projects, to recognize the benefit vs. the impact of the placement of the infiltration BMP in ecologically valuable areas. (For example, if a major development project increases impervious area by 100 square feet in a HUC14 watershed and the feasible locations of infiltration BMPs are in environmentally sensitive areas, such as threatened/endangered species habitat.)

If you have any questions regarding these comments, please contact Sandra Blick at (609) 963-1102 or at sandra.blick@dot.nj.gov.

Sincerely,

Joseph Sweger
Executive Manager
Bureau of Landscape Architecture and Environmental Solutions

Pinelands CMP Amendment Proposal
53 N.J.R. 1195(a)
Comment 9

NSPE-NJ™ NEW JERSEY S
PROFESSIONA

Susan R. Grogan, P.P., AICP
Acting Executive Director Pinelands Commission
PO Box 359 New Lisbon, NJ 08064

Dear Acting Executive Director Pinelands Commission:

The New Jersey Society of Professional Engineers write to express no concerns with the pending "DEP stormwater rule" or "DEP rule" adoption. We do recognize in the proposed rule that the role of the Professional Engineer (PE) is vital in the Stormwater process. We agree and support the role of the PE in this process.

There are many powerful reasons both professional and personal for earning and maintaining a PE license. Only a licensed engineer, for instance, may prepare, sign, seal and submit engineering plans and drawings to a public authority for approval, or to seal engineering work for public and private clients.

For consulting engineers and private practitioners, licensure is a vital necessity. In fact, it is a legal requirement for those who are in responsible charge of work, be they principals or employees.

More and more with each passing day, government agencies, educational institutions and private industries are requiring that they hire and contract only with licensed professional engineers. This is a trend that is almost certain to continue in the future and we support that the pending DEP rule continues this trend regarding the role of the PE.

Sincerely,

Patrick Stewart, Executive Director
New Jersey Society of Professional Engineers

Pinelands CMP Amendment Proposal
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Comment 10

Tony D Environmental Perm

September 16, 2021 Proposal No. PRN: 2021-063

Via Email (planning@pinelands.nj.gov)
Susan R. Grogan, P.P., AICP Acting Executive Director Pinelands Commission
PO Box 359
New Lisbon, NJ 08064

Re: Proposal Number: PRN 2021-063.
Comments to Proposed Amendments: N.J.A.C. 7:50-2.11, 3.39, and 6.84

Dear Ms. Grogan,

Tony DEP is pleased to provide the below comments on the Pinelands Commission's proposal to amend N.J.A.C. 7:50-2.11, 3.39 and 6.84:

N.J.A.C. 7:50-6.84(a)6iv(6) - I seriously believe that you should not move forward with the requirement for a minimum of 65% nitrogen removal. Comments on/reasons for this are:

1. What is the justification for a specific % total nitrogen standard?

2. Are you relying on any specific scientific literature or studies to defend a specific blanket % removal standard?

3. Are there any Pineland specific studies on this?

4. TSS is a secondary treatment standard so 80% removal of TSS does not need to be specifically justified. Nitrogen, however, is a nutrient subject to water quality standards and it is inappropriate to require a set % removal standard throughout the Pinelands without a specific water quality assessment.

5. Why 65%?

6. How are you planning to have an applicant prove 65%?

7. NJDEP does not have a specific nitrogen removal standard and the NJDEP regulations only provide specific BMP % removals for TSS.

8. In adopting the new stormwater standard, NJDEP specifically states that, as part of the ongoing stakeholder process, the Department is currently exploring potential changes to the nutrient standard at N.J.A.C. 7:8-5.5(f) and should the Department determine that it is appropriate to amend the rules to incorporate numerical nutrient removal standards, additional information will be provided on the BMPs capable of achieving the standard as part of any future rule making and in amendments to the New Jersey Stormwater BMP manual. The Pinelands needs to wait for NJDEP to conclude that a numerical nutrient standard is appropriate and

utilize the BMP's that the Department concludes are capable of meeting the standard.

9. I am on the stakeholder subgroup that has been investigating the nutrient removal issue and we are a long way away from agreeing that a numerical standard is appropriate no less a specific % removal standard. There are no specific studies that address a statewide % total nitrogen removal standard and the performance of BMPs to reduce nutrients is all over the place.

10. Since the stormwater regulations only require water quality treatment from motor vehicle areas, there will have to be separate BMPs for vegetative areas.

11. Combining the motor vehicle and vegetation runoffs into one water quality BMP will exacerbate the requirement to restrict the drainage areas to 1 and 2.5 acres.

12. If you move forward now with a specific % removal standard, the only BMP performance information in NJDEP guidance is the chart in Chapter 4 of the BMP Manual which gives the following removal rates:

Table 4.2 – Typical Nitrogen Removal Rates for BMPs:

Bioretention Basin 30%

Constructed Stormwater Wetland 30%

Extended Detention Basin 20%

Infiltration Basin 50%

Pervious Paving 50%

Sand Filter 35%

Vegetative Filter 30%

Wet Pond 30%

The NJDEP regulations do not allow use of constructed stormwater wetlands, extended detention basins and wet ponds for water quality treatment.

As you can see, there are no BMPs that are given a 65% removal rate, so, using this chart would require a minimum of two BMPs since once you infiltrate the water quality storm there is no flow left to send to another BMP. Also, NJDEP requires that the lower % removal BMP be used first in series. This means that the only way to achieve 65% is to use a vegetative filter strip followed by an infiltration basin. This is impractical for residential subdivisions in that lawn areas would have to sheet flow to an additional vegetated area, which cannot be part of the lawn and then sheet flow to an infiltration basin. You will have multiple vegetated filter and infiltration basin BMPs on each lot.

6.84(a)6iii(1): The proposed requirement that "stormwater runoff shall not be directed in such a way as to increase the volume and rate of discharge into any wetland, wetlands transition area or surface water body from that which existed prior to development of the parcel" would appear to require that one has to infiltrate the increase in the 100-year storm runoff. This would be contrary to the Pinelands long established position that it only requires infiltrating the increase in the 10-year storm runoff and not the 100-year storm runoff.

iv(3)(A): What is the justification for regulating motor vehicle surfaces as small as 1,000 SF?

v(5): The proposed requirement that "methods of treating stormwater prior to entering any stormwater management measure shall be incorporated into the design of the stormwater management measure to the maximum extent practical" needs to be better defined. What are "other methods of treating stormwater" that are not stormwater management measures. How does one incorporate these other methods of treatment into the design of the stormwater management measure if they are not part of the stormwater management measure?

viii(2)(B): Responsibility for maintenance of stormwater management measures that may be assigned or transferred to the owner or tenant of the parcel should be restricted to measures that only collect runoff from the owner/tenant parcel.

Should you have any questions, please call me at 732-740-5725 or email me at the address listed below.

Very truly yours,

Tony D Environmental Permitting, LLC

Tony DiLodovico
President
TonyDEP.llc@gmail.com

UTILITY and TRANSPORTATION
CONTRACTORS ASSOCIATION OF

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The National-Award-Winning Construction Association

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September 16, 2021

Susan R. Grogan, P.P., AICP,
Acting Executive Director Pinelands Commission

VIA ELECTRONIC MAIL planning@pinelands.nj.gov

Re: Pinelands CMP Proposed Amendments (N.J.A.C. 7:50-2.11, 3.39, and 6.84)

Dear Ms. Grogan:

Please accept the following comments on the above referenced rule amendments on behalf of the Utility and Transportation Contractors Association of NJ (UTCA).

When the New Jersey Department of Environmental Protection (DEP) adopted its 2020 amendments to its stormwater management rule, UTCA agreed that the rule proposal was necessary to create clear standards for stormwater management techniques that can meet the "maximum extent practicable" test in the existing Stormwater Management rules at N.J.A.C. 7:8-5.3.

This rule proposal suffers from the lack of consultation with the leadership or staff at the NJ Department of Transportation or any other transportation agencies including but not limited to the NJ Turnpike Authority and South Jersey Transportation Authority. These public agencies have subject matter expertise in stormwater management as it related to public development throughout the area subject to Pinelands Commission (Commission) jurisdiction. These agencies have existing assets they need to manage and have planned projects to be proposed for approvals to implement their capital plans. We request that you take the comments you receive from them seriously and if necessary, repropose this regulatory reform with their input considered.

The UTCA supported aspects of the DEP 2020 amendments to its stormwater management rule including the following:

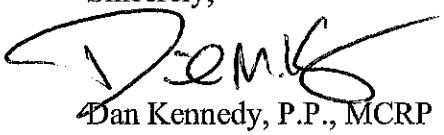
- The DEP proposal offered flexibility for the new requirement that major developments utilize green infrastructure to meet the "maximum extent practicable" standards of the Stormwater Management rules including, but not limited, to the ability to obtain a variance or waiver from strict compliance for enlargement of an existing public roadway or railway.
- The DEP proposal appropriately included a delayed operative date and "grandfathering" of major development applications to deal with fairness issues related to the transition to relevant new standards related to project design and layout

In reviewing the proposal, we note that the Commission has decided not to adopt the DEP provisions for waivers and exemptions for public development projects at N.J.A.C. 7:50-5 nor allow for any grandfathering or appropriate delays of application of these new standards after the rule is adopted. The UTCA recommends that the Commission repropose this rule with these aspects resolved. The absence of these two provisions will make the transition to these revised regulatory standards very challenging for active applicants in various stages of design, including critically need infrastructure projects that meet the definition of a major development.

In addition, we ask that Pinelands Commission provide justification for the standard proposed at N.J.A.C. 7:50-3.39iv(3)(A) that would require additional recharge standards if there is an increase of 1,000 SF of regulated motor vehicle surfaces as defined at N.J.A.C. 7:81-2. Please provide justification as to why the Commission feels it is necessary to deviate from existing standards and how it concluded 1,000 SF is an appropriate standard. This is not explained in the proposal.

Thank you for the opportunity to comment on this proposal.

Sincerely,



Dan Kennedy, P.P., MCRP
Director, Environmental and Utility Operations

About the UTCA of NJ

The Utility and Transportation Contractors of New Jersey is a non-profit trade association headquartered in Wall Township, New Jersey. Founded in 1965, UTCA represents approximately 1,000 member firms in the public and private sectors, active in all phases of heavy, highway, utility, and marine construction, as well as site work including remediation of brownfields and contaminated sites.

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New Jersey Turnpike

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RAPHAEL SALERMO, *Commissioner*
JOHN M. KELLER, *Executive Director*

September 16, 2021

Pinelands Commission
15 Springfield Road
New Lisbon, NJ 08064
ATTN: Ms. Susan R. Grogan, Acting Executive Director

VIA EMAIL to planning@pinelands.nj.gov

RE: Proposed Regulatory Amendments
Pinelands Comprehensive Management Plan
New Jersey Turnpike Authority Comments

Dear Ms. Grogan:

The New Jersey Turnpike Authority (NJTA) has been notified of the proposed revisions to the Pinelands Comprehensive Management Plan (N.J.A.C. 7:50). A review of the proposed revisions was completed by our consultant, HNTB. The NJTA concurs with the prepared comments below.

SUBCHAPTER 6 – MANAGEMENT PROGRAMS AND MINIMUM STANDARDS

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

- 7:50-6.84(a)6iv.(6): The Pinelands will require all Major Development projects be designed to achieve a minimum of 65 percent reduction in total nitrogen loads from the developed site, including permanent lawn or turf areas specifically intended for "active human use."
    - COMMENT: The Pinelands is proposing a quantitative nitrogen removal standard for the "developed site," which will include permanent lawn or turf areas "specifically intended for active human use." This is presumably intended to address nitrogen loading produced by fertilizers, as the summary document specifically references "…permanent lawn and turf areas that are specifically intended for active human use, as nitrogen fertilizer applied to managed turf has long been identified as a significant source of nitrogen in stormwater…" The description of lawn and turf areas referenced in the proposed rules at 7:50-6.24(c)3 is vague. The Authority only applies fertilizer during initial construction activities in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey and is not a contributor to nitrogen loading in stormwater beyond the construction period. It should be recommended that the Pinelands does not classify roadway embankments, specifically limited access highways, as areas of "active human use" that would require nitrogen treatment.

- COMMENT: The Pinelands proposes to require all major development projects to achieve a minimum of 65 percent reduction of the post-construction total nitrogen load from the developed site. It is noted that none of the stormwater management structural measures included within the New Jersey Stormwater Best Management Practices (BMP) Manual have an accepted nitrogen removal rate of more than 50 percent. Based on the calculation requirements within Chapter Four of the BMP Manual, BMPs must be installed in series to achieve a nitrogen removal rate of 65 percent with one of the BMPs being an infiltration basin. It is recognized that the Pinelands continues to require pretreatment (i.e., BMPs in series) to the maximum extent practical within the CMP and infiltration basins are often needed to fulfill the recharge requirements of the CMP. However, BMPs installed in series are often difficult to implement in linear transportation projects and/or require greater amounts of disturbance to achieve. Additionally, there may be instances where the most suitable BMP is not an infiltration basin due to hydrologic conditions or other factors. It is recommended the Pinelands consider a lower nitrogen load requirement, so the limit can be met without BMPs installed in series and, if needed, without an infiltration basin.

- There is a typographic error in the text of proposed section 7:50-6.84(a)6vii.(2). The end of the statement includes an incorrect reference to the first part of the recharge standards, at (a)6iv(1), instead of the off-site mitigation requirements, at (a)6vii.(1)(A).

Please provide clarification on the items noted and consider the typographical errors identified. Should you have any questions or need additional information, please do not hesitate to contact Lamis Malak of my staff at (732) 750-5300, Ext. 8247 or malak@njta.com.

Very truly yours,

Robert J. Fischer, P.E.
Chief Engineer

RJF/LTM

cc: Lamis T. Malak, P.E., Deputy Chief Engineer – Design
File

Pinelands CMP Amendment Proposal
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Comment 13

FW: Proposed Regulatory Amendments to the Pineland Plan

Grogan, Susan [PINELANDS] <Susan.Grogan@pinelands.nj.gov>

Fri 9/17/2021 12:32 PM

To: Wengrowski, Ed [PINELANDS] <Ed.Wengrowski@pinelands.nj.gov>; Szura, Brian [PINELANDS] <Brian.Szura@pinelands.nj.gov>
Cc: Roth, Stacey [PINELANDS] <Stacey.Roth@pinelands.nj.gov>; Green, Marci [PINELANDS] <Marci.Green@pinelands.nj.gov>

1 attachments (2 MB)

Pinelands Hydrology Study.zip;

From: Hunter Birckhead <hunter.birckhead@colliersengineering.com>
Sent: Friday, September 17, 2021 12:27 PM
To: Grogan, Susan [PINELANDS] <Susan.Grogan@pinelands.nj.gov>; Horner, Charles [PINELANDS] <Charles.Horner@pinelands.nj.gov>; Berg, Gina [PINELANDS] <Gina.Berg@pinelands.nj.gov>; Lanute, Brad [PINELANDS] <Brad.Lanute@pinelands.nj.gov>; jon.bunnell@pinelands.nj.gov
Subject: [EXTERNAL] Proposed Regulatory Amendments to the Pinelands Comprehensive Management Plan

Dear members and staff of the Pinelands Commission,

We are responding to your Proposed Regulatory Amendments to the Pinelands Management Comprehensive Plan regarding storm water management.

Dr. Hawkins and I are members of the "ASCE Curve Number Hydrology Task Group." We have submitted updates to Chapter 9 NEH4 Part 630 Hydrology to USDA NRCS for their review. Among the recommended changes is the acknowledgment that the Curve Number Method IS NOT applicable in forest HSG A and B soils. We have conducted a hydrology study in McDonald's Branch within the National Pinelands Preserve which has confirmed our findings. We have enclosed two hydrology reports that have been submitted to USDA NRCS in Somerset NJ and Washington.
Many of the hydrology practitioners in Southern NJ are aware of the non-response of overland runoff from rainfall events in the forested HSG A (and perhaps B) in the Pinelands.
We would suggest an informal meeting with the Pinelands Commission Staff to discuss our findings on the proper use of the Curve Number in the Pinelands National Preserve and to address storm water management on a valid scientific basis.

Hunter Birckhead

Hunter Birckhead, P.E., CFM
Technical Manager
hunter.birckhead@colliersengineering.com
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September 17, 2021

Susan R. Grogan, P.P., AICP,
Acting Executive Director Pinelands Commission
VIA ELECTRONIC MAIL
planning@pinelands.nj.gov

RE: Pinelands Stormwater Rule Proposal,
Proposed Amendments: N.J.A.C. 7:50-2.11, 3.39 and 6.84

Dear Susan R. Grogan, P.P., AICP:

The New Jersey Builders Association (NJBA) is pleased to provide the following comments on the proposed amendments to N.J.A.C. 7:50-2.11, 3.39 and 6.84.

Comments Regarding the Nitrogen Removal Standard
NJBA is aware of the negative effects of excess nitrogen in stormwater but requests additional information as to why the removal rate has been set at 65%. Scientific evidence should be provided regarding the 65% rate and additionally, Pinelands specific studies should be conducted due to the unique nature of the Pinelands ecosystem.

NJBA believes that a water quality assessment should be performed prior to introducing a water quality standard such as nitrogen removal rates.

NJBA notes that Best Management Practices (BMP's) for vegetative areas will need to be studied and provided to address water quality standards since the stormwater regulations only require water quality treatment from motor vehicle areas. Combining the motor vehicle and vegetation runoffs into one water quality BMP will exacerbate the requirement to restrict the drainage areas to 1 and 2.5 acres.

NJBA notes that utilization of the New Jersey Department of Environmental Protection (DEP) BMP Manual, Chapter 4, Table 4.2 performance information to meet the 65% removal rate presents major issues. Table 4.2 describes typical nitrogen removal rates for BMPs as follows: Bioretention Basin 30%, Constructed Stormwater Wetland 30%, Extended Detention Basin 20%, Infiltration Basin 50%, Pervious Paving 50%, Sand Filter 35%, Vegetative Filter 30%, Wet Pond 30%. DEP regulations do not allow the use of constructed stormwater wetlands, ex-tended detention basins or wet ponds for water quality treatment. Utilizing this chart of BMPs would require a minimum of two BMPs. Following infiltration of the Water Quality Design Storm (WQDS) there is insufficient flow left to send to another BMP. Furthermore, DEP requires that

the lower % removal BMP be used first in a series. This means the only way to achieve a 65% removal rate is to use a vegetative filter strip followed by an infiltration basin. This is highly impractical for residential subdivisions in that lawn areas would have to sheet flow to an additional vegetated area, which cannot be part of the lawn, and then sheet flow to an infiltration basin. This would result in multiple vegetated filter and infiltration basin BMPs on each lot.

NJBA is concerned that applicants will be unable to prove or achieve a nitrogen removal rate of 65% and that insufficient information is available for applications to do so. The Pinelands Commission should explain how applicants can document achieving this standard. As aforementioned, DEP's BMP Manual has limited information regarding nutrient removal rates and none of the referenced BMPs provide removal rates higher than 50%. In adopting the new green infrastructure stormwater standard, DEP noted in response to comment 339:

> "Currently, the Department has only certified MTDs, including media filters, for the removal of total suspended solids. There are no media filters certified for nutrient removal in New Jersey. However, as part of the ongoing stakeholder process noted in the introduction to this adoption, the Department is currently exploring potential changes to the nutrient standard at N.J.A.C. 7:8-5.5(f). Should the Department determine that it is appropriate to amend the rules to incorporate numerical nutrient removal standards, additional information will be provided on the BMPs capable of achieving the standard as part of any future rulemaking and in amendments to the New Jersey Stormwater BMP manual."[i]

The Pinelands Commission should follow DEP's lead regarding nutrient removal rates as further study and evaluation are necessary for both the rate of removal that may be prudent and the rate at which specific BMPs achieve this result.

Miscellaneous Comments

NJBA requests clarification regarding 6.84(a)6iii(1) which proposes that "stormwater runoff shall not be directed in such a way as to increase the volume and rate of discharge into any wetland, wetlands transition area or surface water body from that which existed prior to development of the parcel." This appears to require infiltration of the increase in the 100-year storm runoff which is contrary to the Pinelands Commission's long-established position that it only requires infiltrating the increase in the 10-year storm runoff and not the 100-year storm runoff.

Regarding iv(3)(A), NJBA requests justification for the regulation of motor vehicle surfaces as small as 1,000 SF and why this number was chosen.

Regarding v(5), the proposed requirement that "methods of treating stormwater prior to entering any stormwater management measure shall be incorporated into the design of the stormwater management measure to the maximum extent practical," NJBA requests that clarification is provided regarding "other methods of treating stormwater" that are not stormwater management

measures. It is unclear how these other methods of treatment are incorporated into the design of a stormwater management measure if they are not part of the stormwater management measure.

NJBA believes viii(2)(B), the responsibility for maintenance of stormwater management measures that may be assigned or transferred to the owner or tenant of the parcel, should be restricted to measures that only collect runoff from the owner's/tenant's parcel.

NJBA appreciates the opportunity to provide comments on this rule proposal. Please feel free to contact us with any questions or requests for clarification.

Sincerely,

Grant Lucking
Chief Operating Officer
New Jersey Builders Association

CC: NJBA Environmental Counsel, Michael Gross, Esq.

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[i] 52 N.J.R. 402(a)

ENVIRONMENTAL PROTECTION

(a)

PINELANDS COMMISSION

Pinelands Comprehensive Management Plan Definitions; Standards for Certification of Municipal Master Plans and Land Use Ordinances; and Minimum Standards for Point and Non-Point Source Discharges

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

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

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

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

Proposal Number: PRN 2021-063.

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

Wednesday, September 1, 2021, at 9:30 A.M.
Richard J. Sullivan Center
15C Springfield Road
New Lisbon, New Jersey

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

Susan R. Grogan, P.P., AICP
Acting Executive Director
Pinelands Commission
PO Box 359
New Lisbon, NJ 08064
Facsimile: (609) 894-7330
Email: planning@pinelands.nj.gov or through the Commission's website at http://nj.gov/pinelands/home/contact/planning.shtml

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

The agency proposal follows:

Summary

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

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

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

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

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

To protect the resources of the Pinelands beyond what is provided for in the DEP stormwater rule and to further address the impacts of climate change on stormwater runoff, the Commission is again proposing to adopt additional, more stringent, stormwater management requirements, as discussed in detail below. These changes will strengthen and enhance stormwater management in the Pinelands Area while establishing reasonable requirements for home builders and developers.

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

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

A more detailed description of the proposed amendments follows.

Subchapter 2

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

Subchapter 3

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

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

The Commission is also proposing to remove language from N.J.A.C. 7:50-3.39(a)2viii(2) that allows a municipality to grant a variance from CMP stormwater management requirements if the municipality determines that stormwater management would more effectively be achieved through alternative measures. This language is vague and not consistent with the variance requirements in the DEP stormwater management rule at N.J.A.C. 7:8-4.6, which the Commission is proposing to adopt through incorporation.

The Commission is proposing, at N.J.A.C. 7:50-3.39(a)2viii(3), to require municipalities to specify, in their mitigation plans, that mitigation projects are to be located in the same HUC-14, as the parcel proposed for development, or the same HUC-11 within the Pinelands Area if no such projects are available. It may not always be feasible to find a mitigation site that is in both the Pinelands Area and the same HUC-14 as some HUC-14 watersheds extend beyond the boundary of the Pinelands Area and may contain very little land in the Pinelands Area. This is consistent with the Commission's proposed changes to DEP's variance standards set forth at N.J.A.C. 7:50-6.84(a)6vii(1)(A) and described in detail below.

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

Subchapter 6

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

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

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

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

The CMP defines major development as "any division of land into five or more lots; any construction or expansion of any housing development of five or more dwelling units; any construction or expansion of any commercial or industrial use or structure on a site of more than three acres; or any grading, clearing or disturbance of an area in excess of 5,000 square feet." N.J.A.C. 7:50-2.11. The DEP stormwater rule defines major development as an "individual development, as well as multiple developments, that individually or collectively result in:

1. The disturbance of one or more acres of land since February 2, 2004;
2. The creation of one-quarter acre or more of "regulated impervious surface" since February 2, 2004;
3. The creation of one-quarter acre or more of "regulated motor vehicle surface" since March 2, 2021; or
4. A combination of 2 and 3 above that total an area of one-quarter acre or more. The same surface shall not be counted twice when determining if the combination area equals one-quarter acre or more…" N.J.A.C. 7:8-1.2.

As explained in greater detail below (in the discussion of proposed changes to the "Recharge" section of the CMP), the Commission decided in 2006 to rely upon the CMP definition of major development instead of adopting the DEP definition. The Commission is not proposing to change this practice, but new N.J.A.C. 7:50-6.84(a)6i will clarify that the CMP definition of terms such as "major development" will be used when the CMP has a different definition than the DEP rule.

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

Runoff Rate and Volume, Runoff Quality, and Groundwater Recharge Methodologies (recodified N.J.A.C. 7:50-6.84(a)6ii)

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

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

Both the CMP and the DEP rule require applicants to use existing rainfall data published by the National Oceanic and Atmospheric Administration (NOAA) to calculate the volume of stormwater runoff that must be managed. The website addresses that contain this rainfall data have been changed; therefore, updated references are being included at proposed N.J.A.C. 7:50-6.84(a)6ii(2).

Runoff Requirements (recodified N.J.A.C. 7:50-6.84(a)6iii)

The Commission is proposing to remove language related to stormwater runoff requirements at recodified N.J.A.C. 7:50-6.84(a)6iii, as these requirements are already contained in the DEP rule at N.J.A.C. 7:8-5.6. The Commission is also proposing to amend the current restrictions in the CMP that prohibits the direct discharge of stormwater runoff to any wetlands, wetlands transition area, or stream, at recodified N.J.A.C. 7:50-6.84(a)6iii(1). That same provision also prohibits stormwater runoff from

being directed in such a way as to increase the volume and rate of discharge into any surface water body that existed prior to development of the parcel. The Commission has always interpreted this latter restriction to also prohibit such runoff from increasing the volume and rate of discharge into any wetland or wetlands transition area. The Commission is proposing to amend recodified N.J.A.C. 7:50-6.84(a)6iii(1), to clarify that the prohibition extends to wetlands and wetlands transition areas.

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

Recharge Standards (recodified N.J.A.C. 7:50-6.84(a)6iv)

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

When the Commission adopted portions of the DEP stormwater rule in 2006, it chose not to adopt the DEP definition of major development at N.J.A.C. 7:8-1.2. This definition establishes the scope of projects subject to the DEP's stormwater management requirements. The CMP definitions of major and minor development are the foundation for requirements throughout the CMP and the Commission concluded that adopting a set of definitions applicable only to stormwater management could cause confusion and create inconsistencies for the regulated community in the Pinelands.

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

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

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

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

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

Based on this analysis, the Commission is proposing that all minor residential development be required to retain and infiltrate stormwater runoff solely from the roof(s) of the new dwelling(s). Expanding stormwater management to minor residential development in this manner will further reduce the volume of stormwater runoff and, thereby, reduce the potential for localized flooding. Redirecting rooftop runoff to green infrastructure measures that provide infiltration and groundwater recharge will help maintain water levels in the Kirkwood-Cohansey Aquifer. The minor residential development requirements are being added to the "recharge" section of the rule at proposed N.J.A.C. 7:50-6.84(a)6iv(2) and the exemption for minor residential development is being removed from recodified N.J.A.C. 7:50-6.84(a)6vi(1).

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

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

There may be limited situations where a project could be deemed minor residential development under the CMP and major development under the DEP stormwater rule. In those situations, the CMP will prevail and the stormwater standards for minor residential development will apply. For example, a two-lot subdivision in a Pinelands Rural Development Area, with one house proposed for development on each lot, would be deemed minor development under the CMP but could be deemed major development under the DEP stormwater rule, if it resulted in disturbance of more than one acre of land. Similarly, a single-family dwelling in a Pinelands Forest Area would also qualify as minor residential development under the CMP but could be defined as major development under the DEP rule if the CMP's 200-foot scenic setback requirement necessitated the clearing of an acre of land to accommodate a driveway or other improvements. In both of these examples, the development would be defined as minor residential under the CMP and be subject to the stormwater recharge standards at proposed N.J.A.C. 7:50-6.84(a)6iv(2). In most cases, the proposed changes to the CMP will result in a much larger amount of stormwater being retained and infiltrated than the DEP stormwater rule requires.

Minor Non-Residential Development (N.J.A.C. 7:50-6.84(a)6iv(3)(A))

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

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

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

In order to understand how many applications would likely be affected by the proposed extension of stormwater management requirements to certain minor nonresidential development, a review of past application activity was conducted. The Commission found that only 455 or 36 percent of the nonresidential development applications completed with the Commission over the last 11 years were required to manage stormwater in accordance with the CMP's stormwater management standards. The remainder (800 completed applications) did not qualify as major development and, therefore, were not required to manage stormwater. These 800 minor nonresidential applications were for a broad range of development types, many of which (small building additions, building demolitions, irrigation wells, and hiking trails) would likely not be impacted by the proposed requirement to infiltrate stormwater runoff from new regulated motor vehicle surfaces. Depending on their size and extent, minor nonresidential applications for road widening or the expansion of parking lots could be affected by the new standard; however, it was not possible to identify the exact number of prior applications that fit into this category without a more detailed review of site plans and other application materials.

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

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

Application Requirements for Minor Development (new N.J.A.C. 7:50-6.84(a)6iv(4))

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

Stormwater Runoff from High Pollutant Loading Areas (HPLA) (recodified N.J.A.C. 7:50-6.84(a)6iv(5))

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

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

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

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

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

The original New Jersey Pinelands Comprehensive Management Plan, effective January 14, 1981, recognized that the ecosystem of the Pinelands cannot accept elevated concentrations of nitrogen without risk of irreparable harm. Elevated nitrogen levels in the sandy soils, surface waters, and shallow groundwater of the Pinelands can provide the opportunity for invasive plant and animal species to out-compete and displace native biota that is adapted to naturally low levels of these nutrients. Moreover, elevated nitrogen levels can reduce berry production in blueberry crops. Original New Jersey Pinelands Comprehensive Management Plan (November 1981).

Since its inception, the Commission has sought to control the release of nitrogen in the Pinelands. This fundamental concern is reflected throughout the CMP, which itself states that the CMP's water quality requirements include "provisions that are aimed at controlling the amount of nitrogen that enters the environment both because nitrogen in itself is a significant pollutant, but also because it often serves as an indicator of

changes in overall water quality." N.J.A.C. 7:50-10.21(b). An example is the CMP's onsite wastewater treatment system requirements, which are intended to reduce nitrogen loading where development densities preclude sufficient nitrogen dilution in groundwater. N.J.A.C. 7:50-6 Appendix A and 10.21.

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

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

Stormwater Management Measure Design, Siting, and Construction Standards (recodified N.J.A.C. 7:50-6.84(a)6v)

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

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

Consistent with DEP's new stormwater rule, the Commission is proposing to require stormwater management measures that are smaller in size and distributed spatially throughout a parcel, rather than a single, larger measure. The CMP currently requires applicants to achieve this goal "to the maximum extent practical" at N.J.A.C. 7:50-6.84(a)6iv(4). This requirement will become mandatory by removing the language "to the maximum extent practical" at N.J.A.C. 7:50-6.84(a)6v(4). Further, by limiting the contributory drainage area to defined maximum acreages, the new rules eliminate the subjective nature of the prior maximum extent practical standard.

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

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

As-Built Requirements (recodified N.J.A.C. 7:50-6.84(a)6vi)

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

Exceptions (recodified N.J.A.C. 7:50-6.84(a)6vii)

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

Municipal variances from stormwater management requirements for private development

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

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

The municipal variance provisions of the DEP rule were not incorporated in the CMP by the Commission in 2006. However, the DEP rule, as amended in 2020, now includes more detailed off-site mitigation requirements that, with some modifications, the Commission believes will adequately protect environmental resources in the Pinelands.

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

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

The CMP currently requires that any proposed mitigation project be consistent with the municipal stormwater management plan certified by the Commission pursuant to N.J.A.C. 7:50-3, unless that plan does not identify appropriate parcels or projects where mitigation may occur. This provision will remain unchanged but will be recodified as N.J.A.C. 7:50-6.84(a)6vii(1)(B).

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

Exceptions from stormwater requirements for public development projects

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

In addition to the DEP provisions being less stringent than the current CMP off-site mitigation requirements for stormwater management, they are also fundamentally inconsistent with the way the Commission has traditionally addressed public development in the Pinelands Area that cannot meet other standards in the CMP. Such development must either seek a Waiver of Strict Compliance to relieve an extraordinary hardship or satisfy a compelling public need or seek a Memorandum of Agreement (MOA) with the Commission that provides for a deviation from the CMP standards. N.J.A.C. 7:50-4.61 through 4.70 and 4.52(c)2. In either case, waiver or MOA, offsetting measures are required to ensure the protection of Pinelands resources. These offsetting measures often take the form of land preservation or redemption of Pinelands Development Credits.

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

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

Another public development project involved the construction of a commuter parking lot across from a train station on the site of a previous soil remediation project. Stormwater management measures could not meet the depth to seasonal high or permeability rate standards of the CMP. The Commission required the applicant to offset the increase in impervious surfaces by removing sections of existing pavement from two nearby roads that were located within the same drainage area as the commuter parking lot. The applicant also was required to install a manufactured treatment device (MTD) to treat stormwater from the parking lot prior to the stormwater entering the existing stormwater conveyance infrastructure.

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

Other Changes to "Exceptions" Provision

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

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

Maintenance Standards (recodified N.J.A.C. 7:50-6.84(a)6viii)

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

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

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

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

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

Social Impact

By continuing to incorporate key provisions of the DEP's recently amended stormwater management rule, while retaining and adding more stringent measures to further protect the resources of the Pinelands, the Commission anticipates that this rulemaking will have a positive social impact in the Pinelands Area. Protection of resources in the Pinelands benefits society within the Pinelands and in the surrounding areas.

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

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

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

The stricter conditions for off-site mitigation will also provide additional protections of Pinelands resources by ensuring that all mitigation for private or public development be required to offset the effects of stormwater runoff from the proposed development within the same watershed and that the offsets occur within the Pinelands Area.

To be granted an exception from meeting stormwater requirements on-site, a public project will have to meet the same conditions and be subject to the same standards as a private development that cannot meet the stormwater requirements onsite. This standard for granting an exception is more stringent than DEP's waiver and exemption standards for public

linear projects. This provides greater protection for the resources of the Pinelands. It is also consistent with how the Commission handles public development projects in other CMP provisions.

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

Economic Impact

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

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

Land Developers

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

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

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

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

The proposed amendments to the requirement that developers remove 90 percent of TSS from stormwater runoff in high pollutant load areas (HPLA) are intended to clarify the intent of the existing CMP rule language at N.J.A.C. 7:50-6.84(a)6iii(2)(C). The CMP currently implies that stormwater runoff from HPLA must be pretreated to achieve the 90 percent TSS removal prior to infiltration. The amendment will clarify that the requirement can be met by routing stormwater runoff through one or more stormwater management measures, which could include a bioretention system alone or an infiltration basin as the last BMP in the treatment train. Importantly, the 90 percent TSS removal would not need to be attained prior to infiltration, but can instead be met through infiltration. This will significantly reduce costs associated with installation of stormwater management measures. For example, a gas station could use an infiltration basin to help meet the 90 percent TSS removal requirement and might not need to use multiple TSS removal BMPs before the stormwater enters an infiltration basin, as the CMP currently implies.

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

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

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

Suppliers of Green Infrastructure Inputs

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

Property Owners

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

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

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

Applicants and Review Agencies

The proposed stormwater management requirements for minor development may result in increased costs for municipalities and local review agencies who will be required to review the stormwater plans associated with such development applications. However, the specific and

objective green infrastructure requirements and design details in the DEP's Stormwater BMP Manual will provide clear direction to both designers and reviewers of stormwater management design plans.

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

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

Finally, Pinelands municipalities will also incur costs because of the need to revise their stormwater management plans and stormwater control ordinances to conform with the proposed amendments, once adopted. The Commission will continue with its normal practice of drafting and providing model ordinances for municipalities to consider, thereby offsetting some of these costs. While the adoption of master plan and ordinance amendments represents a cost to municipalities, it is expected to be nominal.

Environmental Impact

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

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

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

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

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

The proposed conditions for off-site recharge of stormwater will provide stronger environmental protection of the Pinelands Area. The CMP will require off-site mitigation for both private and public projects that cannot meet the stormwater management requirements on the parcel of land to be developed. By requiring off-site mitigation for all public development projects, the CMP will continue to be more restrictive than the DEP rule and, in turn, more protective of the Pinelands environmental resources. The current prohibition against discharging stormwater runoff into wetlands will also continue to apply to offsite mitigation, offering more ecological protection of the Pinelands Area.

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

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

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

Federal Standards Statement

Section 502 of the National Parks and Recreation Act of 1978 (16 U.S.C. § 471i) called upon the State of New Jersey to develop a comprehensive management plan for the Pinelands National Reserve. The original plan adopted in 1980 was subject to the approval of the United States Secretary of the Interior, as are all amendments to the plan.

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

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

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

Jobs Impact

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

overall, the Pinelands Commission does not believe that the rulemaking will result in a significant impact on jobs.

Agriculture Industry Impact

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

Regulatory Flexibility Analysis

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

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

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

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

Housing Affordability Impact Analysis

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

Smart Growth Development Impact Analysis

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

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

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

Racial and Ethnic Community Criminal Justice and Public Safety Impact

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

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

SUBCHAPTER 2. INTERPRETATIONS AND DEFINITIONS

7:50-2.11 Definitions

When used in this Plan, the following terms shall have the meanings ascribed to them.

. . .

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

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

. . .

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

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

(a) Municipal master plans and land use ordinances, and any parts thereof, shall be certified only if:

1. (No change.)

2. They include provisions that:

i.-vii. (No change.)

viii. Establish and implement a mitigation plan as part of any municipal stormwater management plan and ordinance adopted in accordance with N.J.A.C. 7:8-4.2(c)11 that:

(1) Identifies those measures necessary to offset the granting of [exceptions to] **variances from** the standards set forth [in] **at** N.J.A.C. 7:50-6.84(a)6i through v;

(2) Specifies that [exceptions to] **variances from** the standards set forth [in] **at** N.J.A.C. 7:50-6.84(a)6i through v will be considered only in cases where an applicant is able to demonstrate **in accordance with N.J.A.C. 7:8-4.6** that such standards cannot be met on a particular parcel [or where the municipality determines that stormwater management would more effectively be achieved through alternative measures]; **and**

(3) Requires that any [off-site] mitigation measures identified pursuant to (a)2viii(1) above occur within the Pinelands Area and within the same [drainage area] **HUC-14** as the parcel proposed for development**, unless no such mitigation project is available, in which case the mitigation measures shall be located within the Pinelands Area and same HUC-11 as the parcel proposed for development**; **and**

[(4) Allows for monetary contributions to be made to the municipality in lieu of performing the off-site mitigation measures identified pursuant to (a)2viii(1) above, with the amount of any such in-lieu contribution being equivalent to the cost of implementing and maintaining the stormwater management measures for which an exception is granted; and

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

ix. (No change.)

3.-13. (No change.)

(b) (No change.)

SUBCHAPTER 6. MANAGEMENT PROGRAMS AND MINIMUM STANDARDS

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

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

1.-5. (No change.)

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

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

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

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

[(2) Stormwater runoff shall be calculated using NRCS methodology by separately calculating and then combining the runoff volumes from pervious and directly connected impervious surfaces within each drainage area within the parcel;

(3) Calculations of stormwater runoff from unconnected impervious surfaces shall be based, as applicable, upon the Two-Step Method described in the New Jersey Stormwater Best Management Practices Manual developed by the New Jersey Department of Environmental Protection, dated February 2004, incorporated herein by reference, as amended and supplemented and available at http://www.njstormwater.org/bmp-manual2.htm, or the NRCS methodology; and]

[(4)] **(2)** In calculating stormwater runoff using the NRCS methodology, the appropriate 24-hour rainfall depths as developed for the parcel by the National Oceanic and Atmospheric Administration, https://hdsc.nws.noaa.gov/hdsc/pfds/ pfds_map_cont.html?bkmrk=nj, shall be utilized. [Information regarding these rainfall data is available from the National Oceanic and Atmospheric Administration (NOAA) at http://www.hdsc.nws.noaa.gov/hdsc/pfds/index.html or DOC/NOAA/National Weather Service, Office of Hydrologic Development, Hydrometeorological Design Studies Center, Bldg. SSMC2 W/OHD13, 1325 East-West Highway, Silver Spring, Maryland 20910-3283; (301) 713-1669 extension 154.]

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

[(1) The post-development stormwater runoff hydrographs generated from the parcel by a two-year, 10-year and 100-year storm, each of a 24-hour duration, shall not exceed, at any point in time, the parcel's pre-development runoff hydrographs for the same storms; or

(2) Under post-development site conditions:

(A) There shall be no increase in pre-development stormwater runoff rates from the parcel for the two-year, 10-year and 100-year storm; and

(B) Any increased stormwater runoff volume or change in stormwater runoff timing for the two-year, 10-year and 100-year storms shall not increase flood damage at or downstream of the parcel. When performing this analysis for the pre-development site conditions, all off-site development levels shall reflect existing conditions. When performing this analysis for post-development site conditions, all off-site development levels shall reflect full development potential in accordance with those municipal land use ordinances certified by the Commission pursuant to N.J.A.C. 7:50-3; or

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

(A) Such areas have been permanently protected from future development by conservation easement, deed restriction, or other acceptable legal measures; or

(B) A deed notice has been filed stating that such areas will be subject to the standards of this section at the point in time they are proposed for development in the future;]

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

[(5)] **(2)** To the maximum extent practical, there shall be no direct discharge of stormwater runoff onto farm fields [so as] to protect farm crops from damage due to flooding, erosion, and long-term saturation of cultivated crops and cropland.

[iii.] **iv.** Recharge standards**:**

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

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

(A) Installation of one or more green infrastructure stormwater management measures designed in accordance with the New Jersey Stormwater Best Management Practices (BMP) Manual as defined at N.J.A.C. 7:8-1, incorporated herein by reference, as amended and supplemented, and available at https://www.nj.gov/dep/stormwater/bmp_manual2.htm (hereinafter referred to as "BMP Manual" or "New Jersey Stormwater Best Management Practices Manual"). Appropriate green infrastructure stormwater management measures include, but are not limited to:

I Dry wells;

II Pervious pavement systems; and

III Small scale bioretention systems, including rain gardens;

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

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

(B) If the proposed development involves the grading, clearing, or disturbance of an area in excess of 5,000 square feet within any five-year period, the standards for major development set forth at (a)6i through ix shall also apply;

(4) In order to demonstrate compliance with the requirements at (a)6iv(2) or (3) above, applications for minor development shall include at least the following information:

(A) A plan, certified by a design engineer, that includes the type and location of each green infrastructure stormwater management measure and a cross section drawing of each such measure showing the associated soil profile, soil permeability test elevation, soil

permeability rate, and the elevation of, and vertical separation to, the seasonal high water table;

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

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

(A) (No change.)

(B) The stormwater runoff originating from HPLAs and areas where stormwater runoff is exposed to source material shall be segregated and prohibited from co-mingling with stormwater runoff originating from the remainder of the parcel **unless it is first routed through one or more stormwater management measures required at (a)6iv(5)(C) below**;

(C) The stormwater runoff from HPLAs and areas where stormwater runoff is exposed to source material shall [be subject to pretreatment to achieve 90 percent removal of total suspended solids] **incorporate stormwater management measures designed to reduce the post-construction load of total suspended solids (TSS) by at least 90 percent in stormwater runoff generated** from the water quality design storm established [in] **at** N.J.A.C. 7:8-5.5[(a)](**d**) [prior to infiltration, using: one or more of the following measures, designed in accordance with the New Jersey Best Stormwater Management Practices Manual developed by the New Jersey Department of Environmental Protection, dated February 2004, incorporated herein by reference, as amended and supplemented] **using one or more of the measures identified at (a)6iv(5)(C)I and II below. In meeting this requirement, the minimum 90 percent removal of total suspended solids may be achieved by utilizing multiple stormwater management measures in series:**

[(I) Bioretention system;

(II) Sand filter;

(III) Wet ponds, which shall be hydraulically disconnected by a minimum of two feet of vertical separation from the seasonal high water table and shall be designed to achieve a minimum 80 percent removal of total suspended solids;

(IV) Constructed stormwater wetland; and]

I Any measure designed in accordance with the New Jersey Stormwater Best Management Practices Manual to remove total suspended solids. Any such measure must be constructed to ensure that the lowest point of infiltration within the measure maintains a minimum of two feet of vertical separation from the seasonal high-water table; and

[(V)] **II** (No change in text.)

(D) If the potential for contamination of stormwater runoff by petroleum products exists onsite, prior to being conveyed to the [pretreatment facility] **stormwater management measure** required [in (a)6iii(2)(C)] **at (a)6iv(5)(C)** above, the stormwater runoff from the HPLAs and areas where stormwater runoff is exposed to source material shall be conveyed through an oil/grease separator or other equivalent manufactured filtering device providing for the removal of petroleum hydrocarbons.

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

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

(1) Stormwater [infiltration facilities] **management measures designed to infiltrate stormwater** shall be designed, constructed**,** and maintained to provide a minimum separation of at least two feet between the elevation of the lowest point of [the bottom of the] infiltration [facility] and the seasonal high water table;

(2) Stormwater [infiltration facilities] **management measures designed to infiltrate stormwater** shall be sited in suitable soils verified by [field] testing to have permeability rates between one and 20 inches per hour. A factor of safety of two shall be applied to the soil's [field-tested] permeability rate in determining the infiltration [facility's] **measure's** design permeability rate. If such soils do not exist on the parcel proposed for development or if it is demonstrated that it is not practical for engineering, environmental**,** or safety reasons to site the stormwater infiltration [basin] **measure(s)** in such soils, the stormwater infiltration [basin] **measure(s)** may be sited in soils verified by [field] testing to have permeability rates in excess of 20 inches per hour, provided that stormwater is routed through a bioretention system prior to infiltration. Said bioretention system shall be designed, installed**,** and maintained in accordance with the New Jersey Stormwater Best Management Practices Manual [developed by the New Jersey Department of Environmental Protection, dated February 2004, incorporated herein by reference, as amended and supplemented];

(3) [Groundwater] **For all major development, as defined at N.J.A.C. 7:50-2.11, groundwater** mounding analysis shall be required for purposes of assessing the hydraulic impacts of mounding of the water table resulting from infiltration of stormwater runoff from the maximum storm designed for infiltration. The mounding analysis shall provide details and supporting documentation on the methodology used. Groundwater mounds shall not cause stormwater or groundwater to breakout to the land surface or cause adverse impacts to adjacent water bodies, wetlands**,** or subsurface structures, including, but not limited to**,** basements and septic systems. Where the mounding analysis identifies adverse impacts, the [infiltration facility] **stormwater management measure** shall be redesigned or relocated, as appropriate;

(4) [To the maximum extent practical, stormwater management measures on a parcel shall be designed to limit site disturbance, maximize stormwater management efficiencies, maintain or improve aesthetic conditions and incorporate pretreatment as a means of extending the functional life and increasing the pollutant removal capability of structural stormwater management facilities.] The use of stormwater management measures that are smaller in size and distributed spatially throughout a parcel, rather than the use of a single**,** larger [structural] stormwater management measure shall be required [to the maximum extent practical];

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

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

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

(B) If, for engineering, environmental**,** or safety reasons, temporary stormwater management facilities and sediment basins cannot be constructed on the parcel in accordance with [(a)6iv(5)(A)] **(a)6v(6)(A)** above, the stormwater [infiltration basin] **management measure** may be placed into operation prior to the complete stabilization of its drainage area provided that the [basin's] **measure's** bottom during this period is constructed at a depth at least two feet higher than its final design elevation. When the drainage area has been completely stabilized, all accumulated sediment shall be removed from the [infiltration basin] **stormwater management measure**, which shall then be excavated to its final design elevation; and

(C) To avoid compacting [an infiltration basin's subgrade soils,] **the soils below a stormwater management measure designed to infiltrate**

stormwater, no heavy equipment**,** such as backhoes, dump trucks**,** or bulldozers shall be permitted to operate within the footprint of the stormwater [infiltration basin] **management measure**. All excavation required to construct a stormwater [infiltration basin] **management measure that relies on infiltration** shall be performed by equipment placed outside the [basin] **footprint of the stormwater management measure**. If this is not possible, the soils within the excavated area shall be renovated and tilled after construction is completed. Earthwork associated with stormwater [infiltration basin] **management measure** construction, including excavation, grading, cutting**,** or filling, shall not be performed when soil moisture content is above the lower plastic limit; and

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

[v.] **vi.** As-built requirements **for major development, as defined at N.J.A.C. 7:50-2.11**:

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

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

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

[(1) The standards set forth in (a)6i through v above shall not apply to minor residential development, provided such development does not involve the construction of any new roads, or to minor non-residential development, provided such development does not involve the grading, clearing or disturbance of an area in excess of 5,000 square feet within any five-year period;

(2) The use of nonstructural strategies in accordance with N.J.A.C. 7:8-5.3 shall not be required for development which would create less than one acre of disturbance;

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

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

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

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

(B) The proposed mitigation project shall be consistent with the stormwater management plan certified by the Commission pursuant to N.J.A.C. 7:50-3 for the municipality in which the parcel proposed for development is located, unless said stormwater plan does not identify appropriate parcels or projects where mitigation may occur; and

(C) Any variance from the on-site recharge standards set forth at (a)6iv above shall require that the total volume of stormwater infiltrated by the mitigation project equals or exceeds the volume required at (a)6iv above.

(2) For applications submitted pursuant to N.J.A.C. 7:50-4.51 through 4.60, the Commission may grant an exception in accordance with the standards described at N.J.A.C. 7:50-4.6, as amended, from the on-site design and performance standards for green infrastructure, groundwater recharge, stormwater runoff quality, and stormwater runoff quality at N.J.A.C. 7:8-5.3, 5.4, 5.5, and 5.6 and on-site recharge standards set forth at (a)6iv above, provided the conditions set forth at (a)6iv(1) above are met.

[(5)] **(3)** Unless specifically included [in (a)6vi(1) through (4)] **at (a)6iv(1) and (2)** above, the exemptions, exceptions, applicability standards**,** and waivers of strict compliance for stormwater management described [in] **at** N.J.A.C. 7:8 shall not apply.

(4) No variances or exceptions shall be granted from (a)6iii(1) above, which prohibits the direct discharge of stormwater runoff to any wetlands, wetlands transition area, or surface waterbody and the direction of stormwater runoff in such a way as to increase in volume and rate of discharge into any wetlands, wetlands transition area, or surface water body from that which existed prior to development of the parcel.

[vii.] **viii.** Maintenance standards:

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

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

[(2)] **(B)** (No change in text.)

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

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

[(B)] **II** (No change in text)

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

(A) Maintenance plans shall be required for all stormwater management measures installed in accordance with (a)6iv(2) and (3) above. The BMP Manual may be utilized as a guide for developing maintenance plans that shall include, at a minimum:

I A copy of the certified plan required pursuant to (a)6iv(4) above;

II A description of the required maintenance activities for each stormwater management measure; and

III The frequency of each required maintenance activity; and

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

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

HIGHER EDUCATION

(a)

SECRETARY OF HIGHER EDUCATION

Rules and Procedures for Implementation of the Higher Education Capital Improvement Fund Act

Proposed Readoption with Amendments: N.J.A.C. 9A:12

Proposed New Rule: N.J.A.C. 9A:12-1.8

Authorized By: Dr. Brian K. Bridges, Secretary of Higher Education.

Authority: N.J.S.A. 18A:72A-1 et seq., and P.L. 2012, c. 42.

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

Proposal Number: PRN 2021-065.

Submit written comments by September 17, 2021, to:

Eric Taylor, Esq.
Director, Office of Licensure
Office of the Secretary of Higher Education
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The agency proposal follows:

Summary

Enacted in September 1999, the Higher Education Capital Improvement Fund Act, N.J.S.A. 18A:72A-72 et seq., and P.L. 1999, c. 217, (Act) established the $550 million Higher Education Capital Improvement Fund ("capital improvement fund" or "improvement fund") in the New Jersey Educational Facilities Authority (Authority). Grants from the capital improvement fund assist New Jersey four-year public and private colleges and universities in addressing deferred maintenance and other capital needs on their campuses.

The primary purpose of the capital improvement fund is to finance the repair of academic (that is, instructional, laboratory, communications, or research) and administrative facilities. The Act also provides for alternative uses of fund moneys under certain circumstances, such as replacing a building when to do so is less costly than repairing it, and improving, expanding, constructing, or reconstructing academic facilities or technology infrastructure if the institution's Federal grant recoveries will be maximized or if deferred maintenance is otherwise not covered. A 2002 amendment to the Act allows up to 20 percent of a grant to be used in student support facilities for deferred maintenance or for improvement, expansion, construction, or reconstruction. More recent amendments to the Act, in 2012, (Amending Act) reflect the replacement of the Commission on Higher Education with the Secretary of Higher Education (Secretary) as the State entity statutorily responsible for the coordination and planning of higher education in New Jersey. The Act provides for the issuance of bonds by the Authority with a maximum amount outstanding at any one time not to exceed $550 million. As bonds are paid off, new bonding capacity is created. The Secretary of Higher Education in consultation with the Authority, promulgates the implementing rules that specify approval processes for institutional projects supported by the capital improvement fund and ensures that the moneys are distributed consistent with the intent of the Act. Grants were approved for the allocations of the initial $550 million of bonds. Some of the bonds have now been paid off, thereby resulting in the ability to issue additional bonds to fund new projects. The issuance of additional bonds is subject to the approval of the State Treasurer.

Pursuant to N.J.S.A. 52:14B-5.1.c, the rules governing the capital improvement fund grants were scheduled to expire on May 6, 2020. Pursuant to Executive Order No. 127 (2020) and P.L. 2021, c. 104, any chapter of the New Jersey Administrative Code that would otherwise have expired during the Public Health Emergency originally declared in Executive Order No. 103 (2020) was extended through January 1, 2022. Therefore, this chapter has not yet expired and is extended 180 days from the later of the existing expiration date or the date of publication of this notice of proposed readoption, whichever is later, which date is January 15, 2022, pursuant to N.J.S.A. 52:14B-5.1.c, Executive Order No. 244 (2021), and P.L. 2021, c. 104.

The Secretary of Higher Education is proposing to readopt these rules with amendments and a new rule to provide for the allocation of moneys available if the State Treasurer authorizes new bonds as a result of the retirement of bonds previously issued by the Authority. For this rulemaking, an administrative review was conducted by the Secretary along with an extensive consultation with the Authority; this process resulted in suggested revisions to the current capital improvement fund rules.

As the Secretary has provided a 60-day comment period on this notice of the proposal, this notice is excepted from the rulemaking calendar requirements, pursuant to N.J.A.C. 1:30-3.3(a)5. The rules proposed for readoption with amendments and a new rule are organized in seven sections, as follows.

N.J.A.C. 9A:12-1.1 sets forth that the rules implement the Act and establishes that the rules have been adopted to provide the mechanism by which eligible institutions may apply for and receive grants from the capital improvement fund. It is proposed that this section be updated to incorporate a cross-reference to the most recent legislative update to the Act.

N.J.A.C. 9A:12-1.2 provides definitions for the terms used in the rules proposed for readoption with amendments and a new rule and includes a cross-reference to the definitions section of the Act and the Amending Act. The proposed amendments would edit the definition of "technology infrastructure" to reflect current terminology, inserting the word "networking" to replace "linkages." The words "transport services and network interconnections, as well as" are proposed for deletion to simplify the language.

N.J.A.C. 9A:12-1.3 sets forth the eligibility requirements for the grant program. Similarly, at N.J.A.C. 9A:12-1.3(e)4, the additions of the numerical values of "(1/3)" and "(1/2)" are proposed in the clause regarding debt service.

N.J.A.C. 9A:12-1.4 delineates the grant application process, including the required contents of applications. The Secretary proposes to add N.J.A.C. 9A:12-1.4(a)15 and 16. New paragraph (a)15 states that "any information regarding the prioritization of deferred maintenance projects, including those supported by a review done by an outside facilities data analytics and planning company" and paragraph (a)16 to state "documentation supporting the energy efficiency of the proposed project, including manufacturer information or engineer reports."

N.J.A.C. 9A:12-1.5 contains the application review and approval process, including the criteria the Secretary will use in reviewing applications for grants from the capital improvement fund. Amendments at N.J.A.C. 9A:12-1.5(b) are designed to realign the objectives of the capital improvement fund with the original intent of the statute, as well as