State of New Jersey

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September 12, 2016

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Mr. Anthony Cox
PennEast Pipeline Company, LLC
One Meridian Boulevard
Suite 2C01
Wyomissing, Pa. 19610 77056

RE: Proposed PennEast Pipeline Project
FERC Docket # CP15-558-000
Comments on Draft Environmental Impact Statement
Hunterdon and Mercer Counties

Dear Secretary Bose and Mr. Cox:

The New Jersey Department of Environmental Protection's (DEP) Office of Permit Coordination and Environmental Review (PCER) distributed, for review and comment, the Draft Environmental Impact Statement (EIS) for the proposed PennEast Pipeline Project. This draft EIS was prepared as part of the FERC National Environmental Policy Act (NEPA) requirements and posted for public comment on July 22, 2016. DEP previously provided written comments on the environmental resource reports on July 2, 2015, October 28, 2015 and November 4, 2015.

Of the total 110-mile-long, 36-inch diameter proposed interstate natural gas pipeline, approximately 36 miles are located in New Jersey. The proposed pipeline crosses the Delaware River at Durham Township, Pennsylvania to Holland Township, Hunterdon County and follows a route through Alexandria Township, Kingwood Township, Delaware Township, and West Amwell Township in Hunterdon County before terminating in Hopewell Township, Mercer County. The project also includes a 36 inch 1.3-mile lateral connection to an existing compressor station in West Amwell Township, Hunterdon County. In addition to previously submitted comments, DEP offers the following Draft EIS comments for your consideration.

General Comment

DEP's ability to provide objective comments are subject to the quality of the EIS under review. FERC does not possess enough site-specific technical information to issue a final EIS. Consistent with DEP's previous written responses to the Draft and Final Resource Reports, DEP's comments on the Draft EIS are limited because of the lack of specific, technical information for this project. At this time, PennEast possesses less than 35% of the total property access along the preferred route in New Jersey and thus are unable to ground truth the vast majority of the impacted land. DEP has not received any Land Use or Water Quality permit applications for site preparation or construction, and therefore DEP does not possess any other information detailing site-specific impacts, mitigation and restoration plans based on completed surveys for the entire proposed pipeline route.

DEP requests FERC to identify when site-specific information will be provided for the remaining New Jersey portion. It is DEP's position that FERC should only move forward issuing a final EIS when adequate information is available for review to FERC and other resource agencies, or make the issuance of any Certificate of Public Convenience and Necessity contingent on an updated EIS once site access is obtained.

DEP strongly encourages PennEast to complete all surveys prior to submitting applications to DEP for any permit or approval. To date, DEP has provided permits and approvals to allow surveying and delineations on State lands. In addition, the DEP strongly encourages PennEast to allow the DEP to review the results of completed environmental assessment surveys for the entire route when available and prior to PennEast submitting any permit application for site preparation or major construction to the DEP for review.

Finally, to ensure the least amount of impact and maximum amount of mitigation and restoration feasibly possible, DEP strongly encourages co-location of any new linear utility lines in existing right of ways, directional drilling or similar methods under any water crossing, and a full alternatives analysis including temporary and permanent impacts for the route, as well as for the various available construction methods.

Based on the limited technical information presented in the Draft EIS, the DEP is providing the following program-specific comments.

Land Use Permitting

The Division of Land Use Regulation – Bureau of Inland Regulation offers the following comments:

1. Before an applicant submits this type of large scale project application requiring a Freshwater Wetland Individual Permit and Flood Hazard Area Individual Permit, the applicant, as well as FERC, must establish the need for the project. If need is established, viable alternative routes must be explored prior to advancing the EIS and to minimize temporary and permanent disturbances;

2. Alternative analyses shall include local and county roads that either run parallel or are in the same general direction of the entire proposed route within New Jersey. The land use of this part of the State is primarily agricultural and light residential use and an alternative analysis shall consider any conflicting utilities within the existing roadways that may impede the placement or maintenance of the pipeline;

3. In order to minimize the environmental impacts, and depending on site conditions, the applicant must be prepared to use a combination of drilling methods, including direct pipe method, horizontal directional drilling (HDD), expanded conventional jack & bore drilling, or open trenching in a dry condition. Further, areas along the proposed route are some of the most environmentally sensitive, where open trenching would result in significant permanent impacts to the local population of species living in these wetland or riverine ecosystems. If PennEast cannot successfully bore under these areas, then PennEast must first avoid the resources by exploring all viable alternatives. In addition, if avoidance is not possible and PennEast demonstrates a feasible alternative exists, then PennEast must support the preferred alternative and must minimize the disturbances to these areas;

4. A comparison chart should be presented outlining temporary and permanent impacts in acres to wetlands and riparian areas for the entire proposed route, considered alternatives, as well as a comparison of each drilling method alternative;

5. For a DEP application to be administratively complete, DEP rules require an applicant to provide owner consent and access to the project area. For these types of linear utility projects, the applicant must obtain easements or rights to the land along the proposed routes prior to submittal of a permit application for construction of this project;

6. Prior to any geotechnical or resource survey work in any regulated areas, the applicant must obtain all required DEP permits and approvals;

7. The DEP strongly encourages PennEast to submit an application to the DEP for a Letter of Interpretation (LOI) at least one year prior to submittal of a Land Use permit application. An LOI is issued to establish the accurate wetland locations and resource classifications. The applicant is encouraged to also submit to the DEP a request for a Flood Hazard Area (FHA) Verification to establish the location, and associated flood fringe and riparian zones for all State open waters along the routes;

8. The applicant must identify potential environmentally sensitive areas that may have State and/or Federally listed threatened and/or endangered species habitat and complete resource surveys. Input should be solicited by the appropriate agency and these areas should be avoided whenever practicable;

9. As currently proposed, the alignment traverses regions of the State that are governed by other Commissions and regions that may require additional environmental reviews and standards. The applicant shall consult with the Delaware River Basin

Commission (DRBC), the New Jersey Highlands Commission (NJHC), the Delaware and Raritan and the Morris Canal Commissions, and any other applicable State and Federal agencies to determine any approvals or exemptions as needed;

10. To the extent consistent with New Jersey laws and regulations, the applicant shall comply with the rules governing the necessity to obtain a Highlands Commission Consistency Determination;

11. The applicant must identify any potential State Historic Preservation Area (SHPA) sites.

12. The applicant must demonstrate the project meets the standards for issuance of a Water Quality Certificate at N.J.A.C.58:10A.

If you have any additional questions, please contact Christopher Squazzo at 609-292-1258.

Land Use Mitigation

1. The DEP review of a Land Use permit is independent of the need of the applicant to complete an analysis of proposed mitigation.

2. The Freshwater Wetland and Flood Hazard Area Rules require that mitigation be conducted prior to or concurrent with the regulated activity that causes the disturbances. All mitigation proposals must be fully approved in order for the applicant to be able to provide mitigation concurrently with the regulated activities. The DEP recognizes that three sites have been identified as having the potential to provide mitigation for the proposed project; however, there is insufficient information regarding the proposed project impacts to allow the DEP to determine if these sites are potentially suitable.

3. Impacts are not clearly defined in the Draft EIS document. For example, it is unclear how temporary and permanent impacts are being defined when compared to the proposed post-project vegetative conditions as described in the document. "PennEast would maintain a 10-foot-wide-corridor centered over the pipeline in an herbaceous state and would selectively cut trees within a 30-foot-wide corridor centered over the pipeline. The remainder of forested and scrub-shrub vegetation would be allowed to return to preconstruction conditions and would not be further affected during operation" p.4-70. The previous page states that "Wetland impacts were calculated using the total proposed Project area, which includes ATWS, access roads, a construction right-of-way of 75 feet in width, and a 50-foot-wide operational permanent right-of-way." p. 4-69

4. More detailed description of how construction activities are proposed to be conducted in regulated areas is necessary to evaluate the potential impacts of the

proposed project and in turn how to properly restore all of the resource areas that are proposed to be temporarily impacted.

5. More detailed description of how post-construction maintenance activities are proposed to be conducted within regulated areas is necessary to evaluate the proposed temporary and permanent impacts and in turn appropriate restoration for proposed temporary impacts.

6. Proposed impacts should be broken down into greater detail than the Cowardin classification system for the purposes of determining what constitutes in-kind mitigation. Any ecological resources that afford a wetland or stream greater protection or a higher ecological classification should be identified for each wetland and riparian area along the length of the project. This information will be used to determine the appropriate type of mitigation that may be required if permits were to be issued.

7. Mitigation shall be in-kind. For example, if a wetland that has a 150-foot transition area due to wood turtle is impacted, the mitigation shall provide a direct ecological benefit to wood turtles. If a shale stream bed supporting long-tail salamander is impacted, the mitigation shall provide a direct ecological benefit to long-tail salamander.

8. All vernal habitat areas must be identified and mapped, including the 1000-foot dispersal area. In-kind mitigation is required for any impacts to vernal habitat areas.

9. Species surveys at the appropriate time of year may be required during mitigation site plan development.

10. The potential for hazardous material contamination must be addressed in all mitigation proposals. A sampling plan must be approved by the DEP prior to the commencement of sampling for all off-site mitigation proposals. Data shall be compared to the Ecological Screening Criteria and any exceedances identified with a proposal as to how the contamination will be addressed such that ecological receptors are not exposed to increased ecological risk.

11. Potential impacts to historic and archeological resources must also be addressed for all off-site mitigation proposals.

12. A detailed, site-specific, invasive species management plan shall be developed as part of any temporary restoration proposal.

13. Long-term and cumulative impacts have not been adequately addressed within the document which makes it difficult for the DEP to assess the mitigation that may be required if permits were to be issued.

If you have any additional questions, please contact JoDale Legg at (609) 984-0618.

Land Use Threatened and Endangered Species review

The Land Use Regulation Program offers the following comments regarding threatened and endangered species that may be impacted by the proposed pipeline and must be fully surveyed prior to a review of a land use permit application.

Species Documentation/Conditions on proposed PennEast Right-of-way

Areas along the PennEast Pipeline right-of-way that are documented for New Jersey threatened and/or endangered species by Landscape Project Mapping Version 3.1 are listed below.

Mile Number	Species Concerns
77.7	Bald Eagle Foraging
78	Bobcat
78.4-78.9	Bobcat, Bald Eagle Nest
79-79.2	Bobcat
80.8	Bald Eagle Foraging
81-81.6, 81.9-82.1	Bobcat
82.2	Bobcat, American Kestrel
82.4-82.6	American Kestrel, Bobolink
82.9-83.1	American Kestrel, Bobolink
83.2	Bald Eagle Foraging, Bobcat
83.7, 83.8	American Kestrel
85-85.1	Bobolink
85.3-85.4	Bobolink, Bald Eagle Foraging
85.6-85.8	Bald Eagle Foraging
85.9-86.3	Bald Eagle Foraging, American Kestrel
85.9	Bald Eagle Foraging
86.8	Bald Eagle Foraging
87.7	Bald Eagle Foraging, Longtail Salamander
87.8, 87.9	Bald Eagle Foraging
88-88.3	American Kestrel, Bobolink, Grasshopper Sparrow
88.4	Bald Eagle Foraging, Red-shouldered Hawk,
88.8	Osprey
89.8-90	Bobolink, Grasshopper Sparrow, Bald Eagle Foraging
90.2-90.4	Bobolink, Grasshopper Sparrow
91.5-92.3	Bobolink, Grasshopper Sparrow, Bald Eagle Foraging
92.4	Bald Eagle Foraging

93.2-93.6	Red-shouldered Hawk, Red-headed Woodpecker
93.7	Red-shouldered Hawk, Red-headed Woodpecker, Bobolink
93.8-94.3	Bobolink, Grasshopper Sparrow, Red-shouldered Hawk, Red-headed Woodpecker
94.4	Bobolink, Grasshopper Sparrow
94.5-94.9	Grasshopper Sparrow
95	Grasshopper Sparrow, Longtail Salamander,
95.1	Longtail Salamander
95.2, 95.3	Bobolink, Grasshopper Sparrow, Savannah Sparrow
95.4-96.4	Bobolink, Grasshopper Sparrow, Savannah Sparrow, American Kestrel
96.5-96.6	Bobolink, Grasshopper Sparrow, Savannah Sparrow
96.7	Bobolink, Grasshopper Sparrow, Savannah Sparrow, Bald Eagle Foraging, Longtail Salamander
96.8	Bald Eagle Foraging, Longtail Salamander
97.1	Longtail Salamander
97.2, 97.3	American Kestrel
98.4, 98.5	Barred Owl
98.6	Barred Owl, Wood Turtle
98.7	Barred Owl
98.8-99.4	Barred Owl, Wood Turtle
106-106.2	Wood Turtle
106.5-108	Wood Turtle
111-111.8	Grasshopper Sparrow
113.3, 113.4	Bald Eagle Foraging
113.5-114	Wood Turtle
114.02	Wood Turtle

PennEast must make every effort possible to minimize impacts to threatened and/or endangered species and their habitat within and adjacent to the proposed right-of-way. Conditions and survey requirements below should be utilized and all survey requirements must be completed prior to the issuance of permits from the DEP (see "Species Surveys" condition). Avoidance of areas, minimization of impacts, directional drilling and co-location must be taken into consideration. In their September 2015 resource report, PennEast indicated they will abide by a timing restriction of March 15th through September 10th to avoid impacting migratory songbirds during the breeding season. We would recommend that FERC condition any authorization granted to PennEast with specific language requiring them to adhere to this restriction during construction. Adherence to this

restriction will also avoid impacts to state listed grassland species (Bobolink, Grasshopper Sparrow etc.).

Species	Condition/Survey Requirement
American Kestrel, Bobolink, Grasshopper Sparrow, Savannah Sparrow	Breeding season timing restriction: 4/1 through 8/15
Bald Eagle Foraging	No removal of trees 8" dbh or greater within 300' of top of bank
Longtail Salamander	Directional drilling recommended. Surveys required if trenching is proposed
Red-shouldered Hawk	Surveys will be required for Landscape mapped areas and habitat between mile posts 93.1 and 94.3.
Barred Owl	No removal of trees greater than 20" dbh
Wood Turtle	Directional drilling recommended. Timing restrictions may be required
Bobcat	Any suitable den habitat must be avoided
Osprey	Potential timing restrictions
Red-headed Woodpecker	Surveys and timing restrictions if suitable trees are proposed to be removed between mile posts 93.1 and 94.3. Possible avoidance of trees/areas.

Species Surveys

Prior to the issuance of any permits from NJDEP's Division of Land Use Regulation, habitat assessments of Landscaped mapped habitats will need to be conducted and species specific surveys of un-mapped suitable habitats must be completed for the following threatened and endangered species;

Barred Owl
Bobolink
Grasshopper Sparrow
Red-headed Woodpecker
Red-shouldered Hawk
Savannah Sparrow
Bobcat
Wood Turtle
Longtail Salamander

In addition, PennEast must coordinate with the United States Fish and Wildlife Service to complete surveys requested including but not limited to; bog turtle, Indiana bat and northern long-eared bat.

Stream Crossings

There are several potential stream crossings along the proposed PennEast right-of-way that are documented for wood turtle and longtail salamander. The following areas noted below are recommended to be directionally drilled if feasible (see comments below), to avoid adverse impacts to these species. Open trenching these areas would likely result in adverse impacts to habitat for wood turtle and longtail salamanders and potentially threaten local populations of the state threatened longtail salamander. Alternative locations may need to be investigated unless site specific analysis (including appropriate habitat analysis or surveys) and construction techniques can be demonstrated to result in regulatorily acceptable impacts.

Stream Name	Crossing Location (associated mile markers)	Species Concern
Delaware River Tributary	Mile points 80.7 through 80.8	Wood Turtle
Nishisakawick Creek/Tributary	Mile points 87.7 through 87.9	Long-tailed Salamander
Wickecheoke Creek Tributary	Mile points 95 through 95.1	Long-tailed Salamander
Wickecheoke Creek Tributary	Mile points 96.1 through 96.2	Long-tailed Salamander
Wickecheoke Creek Tributary	Mile points 96.7 through 96.9	Long-tailed Salamander
Alexauken Creek Tributary	Mile points 99.1 through 99.2	Wood Turtle

As noted above, trenched crossings will likely result in adverse impacts to state listed species and subsequently result in potential permitting issues at the State level. We would strongly encourage investigating directionally drilling, if feasible (see comments below) at mile points 87.7 through 87.9 (Nishisakawick Creek/Tributary) and mile points 96.7 through 96.9 (Wickecheoke Creek Tributary). Similar but lesser concerns would apply to the crossings at mile points 95 through 95.1 (Wickecheoke Creek Tributary) and 96.1 through 96.2 (Wickecheoke Creek Tributary) based on existing information.

DEP geologists have suggested that directional drilling may be problematic at these and various other locations along the proposed ROW. We recommend that FERC require PennEast to address this concern and provide documentation that directional drilling is a practical and feasible option to avoid directly impacts these various stream corridors subject to pipeline crossings.

Vernal Pools

The areas indicated below contain potential or certified vernal pools within 1000' of the proposed PennEast right-of-way. Prior to the issuance of any permit from the DEP of Land Use Regulation, surveys of these areas must be completed. Direct impacts to documented vernal pools should be avoided, especially those that are certified.

Associated Mile Post	Vernal Pool ID	Approximate Distance to ROW
89.2-89.3	1136pied	500'

90.4-90.5	1142pied	Within 150'
90.2	1141pied	900'
98.6	1087pied	500'
102.4-102.5	928pied	Within ROW
102.5-102.6	923pied	350'
102.6-102.7	922pied	680'
102.6-102.7	924pied	915'
102.9-103	2048pied	600'
103	905pied	Within ROW
103.5-103.6	904pied	330'
108	911pied	Within ROW

Summary

Directional drilling is strongly encouraged, if feasible, at mile points 87.7 through 87.9 (Nishisakawick Creek/Tributary) and mile points 96.7 through 96.9 (Wickecheoke Creek Tributary) so as to not adversely impact the State threatened species, longtail salamander.

In their September 2015 resource report, PennEast has indicated they will abide by a timing restriction of March 15th through September 10th to avoid impacting migratory songbirds during the breeding season. We would recommend that FERC condition any authorization granted PennEast with specific language requiring them to adhere to this restriction during construction. Adherence to this restriction will also avoid impacts to state listed grassland species.

All relevant State threatened and endangered species surveys must be completed prior to submission of any state permits.

We still have concerns regarding proposed trenching of high quality C1 streams and/or trout associated waters. Alternatives and additional levels of protection of these crossings need to be detailed where directional drilling is not feasible.

Any forthcoming Division of Land Use Regulation permits are also contingent upon USFWS reviews.

Additional species may be discovered during the permitting process for this project. As a result, species documentation and habitat suitability is subject to change based on information available during the time the application is received. PennEast may be required to conduct additional surveys and/or to avoid areas of the right-of-way depending on findings.

If you have any questions, please contact Christina Albizati at (609) 292-1263.

New Jersey Geological and Water Survey

General Comment:
I. Resource Report 1.

Section 1.4.3.1 Geology and Soils

Page 1-56.

This report indicates that "Preliminary and completed studies undertaken during the Project design phase include a seismic hazard analysis, quarry blasting study, arsenic risk assessment, karst hazard study and geotechnical horizontal directional feasibility study." They further indicate "The details and results of these studies are contained in Resource Report 6 and appendices."

Comment: Examination of Resource Report 6 and appendices indicates that for most of the studies there is little to no data, or conclusions. It is not sound science to develop an EA or EIS using incomplete data, especially when the data is less than 50% complete for the entire pipeline and less than 30% for the New Jersey.

Section 1.4.3.2 Water Resources

Page 1-57.

Comment: There is no mention of the ground-water supply impacts. Most of the properties bounding the pipeline route are supplied by individual wells, at least in New Jersey. There are numerous cases of wells drilled on adjacent properties impacting a neighbor's well, especially in the rocks of the Newark Basin in Hunterdon County. Since over 90% of the pipeline in New Jersey is in these rocks PennEast should have a plan in place covering at a minimum any damage, contamination and/or lowering the water levels in the wells before the Certificate is issued.

Section 1.5.2.4 Pre-Blasting in Streams

Page 1-84.

Here the report indicates PennEast will submit a blasting plan to NJDEP prior to commencement of blasting activities.

Comment: FERC and PennEast should be aware that all blasting in New Jersey is regulated by the DEP, Labor & Workforce Development, Division of Safety and Health, Safety Compliance Unit. This Unit must be contacted prior to any blasting in the State and the regulations must be followed since they differ from and in many cases are more restrictive than what is presented in Appendix O – Section D, Blasting Plan. It is recommended that PennEast contact the Safety Compliance Unit and modify Appendix O – Section D, Blasting Plan to reflect New Jersey requirements prior to FERC's approval.

Table 1.7-2 Summary of Agency Consultation and Communications

This table lists the various Federal, State and Local that PennEast contacted.
Comment: There is no mention that PennEast or its consultants ever contacting either the Pennsylvania Geological Survey or the New Jersey Geological and Water Survey (NJG&WS). Geological surveys should be one of the first agencies contacted since the geology along the pipeline right-a-way impacts construction methods, identifies potential geologic hazard areas and ground water resources. In the past the NJG&WS would receive a request for geologic information such as bedrock and surficial geology, mines, karst and paleontology. The Survey would provide them with sources for the most recent information and current contacts. PennEast did not contact the NJGW&S and some of the references they are using are extremely outdated such as a 5 mile to inch map of iron mines in New Jersey dated 1890. If they had examined the NJG&WS website closely they would have found DGS03-2 Abandoned Mines of New Jersey (Scale 1:24,000) UPDATED (6-21-2006) which is 120 years more modern and reliable than a 5 mile to the inch map dated 1890. There is a 1910 report on iron mines on the website that is significantly more complete that than 1890 map.

Even though the report indicates as a reference the NJG&WS website "...Referenced July 8, 2015" but obviously they did not search the website very well or they would have found the above cited digital report.

II Resource Report 2

Section 2.2.1.1 Bedrock Aquifers

Page 2-2.

The last paragraph indicates the project area includes five named aquifers or related confining units as shown on Table 2.1-1 and Figure 2.2-2.

Comment: In the bedrock areas of New Jersey there are no confining units in the same sense as you would see in the Coastal Plain Province. In these rocks nearby wells may encounter enough water to supply a home at totally different depths couple hundred feet apart since the ground water flow in mainly through fractures, joints or partings not intergranular as in a sand aquifer. Even the tightest formations in the state such as the Shawangunk and Martinsburg are aquifers where people have to drill wells in them. Generally these two formations yield less water than the thick confining clays of the Coastal Plain.

Section 2.2.1.2 Principal Aquifers

Pages 2-7 and 2-8 and Table 2.2-2.

Comment: This section is meaningless when applied to a region like New Jersey. For instance, the Early Mesozoic Basin Aquifers which in the report the rock types is listed as sandstone yet actual amount of sandstone is probably less than 40% of the total rock. Most of the Mesozoic rocks in the state are the fine shale, mudstone, siltstone and argillite with over a thousand feet of diabase, not sandstone, in the project area.
Section 2.2.3 Public and Private Water Supply Wells and Springs

Page 2-11.

The second sentence, second paragraph, indicates according to NJDEP (2012) there are no private wells located within 150 feet of the right a way.

Comment: The Data Miner they used will only show wells that have a well permit. If a well was drilled before 1948 there was no permit required so those wells would not be in the system. Also, over the years thousands of wells have been drilled without a permit. A simple answer would be to locate any house, farm or business within 150 feet of the route that is outside of the area served by a public water system and consider it to be on a private well, permitted or unpermitted. Springs used as a domestic supply are extremely rare in New Jersey although there are people who will fill up bottles at a spring.

Section 2.2.5 Summary of Groundwater Effects and Mitigation

Pages 2-18 and 2-19.

Comment: On these two pages PennEast lists a number of things that could happen and what they might do to try to prevent that from occurring. Based on the examination this section and the entire groundwater portion of this document neither PennEast or its consultants understand the hydrogeology of the rocks of the Newark Basin which make up over 90% of the route in New Jersey. The aquifer map they use to indicate yields for the various aquifers is based on yields of high capacity wells geologically located to produce maximum yields, not the domestic wells. If you added all the domestic wells into the calculation estimated aquifer yields would likely be an order of magnitude lower for each aquifer.

There a number of published reports that PennEast did not review in determining the aquifer potential in New Jersey. These include the Geology and Ground Water Resources of Hunterdon County, N. J. (1966) and the Geology of the Ground Water Resources of Mercer County, New Jersey (1965). The former is available through the Rutgers Digital Library and the latter on the NJG&WS website. In addition there is a report on well failures in similar rocks in Somerset County (Houghton, 1988). Well failures and well interference are more common in the Newark Basin rocks than any other part of the state. In Hunterdon County the median domestic well yield for the Brunswick is 15 gpm, the Lockatong is 6 gpm, the Stockton is 18 gpm, baked Bruswick (hornfelds) is 6 gpm and the diabase is 5 gpm (Kasabach, 1966) and with yields that low it interference can be common.

III. Resource Report 6

Section 6.1.1 Bedrock Geology

Page 6-1.

The report states "Published information regarding geological conditions for the specific Project locations was obtained from the United States Geological Survey (USGS), Pennsylvania Department of Conservation and Natural Resources (PADCNR) and New Jersey Department of Environmental Protection (NJDEP). Also, in all the various geotechnical reports they state the "United States Geological Survey (USGS) mapping, included in Appendix D indicates..."

Comment: There are no references of any USGS geologic maps in Appendix D. It should be noted that the USGS never mapped or published any geologic mapping of many of the detailed areas shown. PennEast should cite the specific publication and properly reference any maps they use, not generalities.

PennEast is using regional geologic mapping at 1:100,000 and 1:250,000 scales for their site specific geology. Mapping at those scales is useful for an overview of the entire project, but not the individual meter stations, HDD sites. The regional geologic maps cannot show all the faults or other structures that may affect a specific site.

Section 6.1.3 Geologic investigation of Horizontal Directional Drill Crossings

Page 6-5.

The report indicates that geologic investigations at 10 HDD crossings are complete or ongoing as of September 2015.

Comment: Appendix O, Part A indicates that only 2 of 10 drill sites have geotechnical reports that are nearly complete the rest are either not started or up to waiting for site access for some or all of the borings. For the sites in New Jersey there is no hard information that can be reviewed.

Section 1.14 Geologic Investigation of Meter Station and Compressor Station Locations

Page 6-6.

The report indicates that geologic investigations at 12 locations are complete or ongoing as of September 2015.

Comment Appendix O, Part C indicates the only 3 of the 12 facilities geotechnical investigations are complete with those in New Jersey barely started and the previous comment applies here also.

Table 6.1-1 Geologic conditions Associated with the Project and Table 6.1-2 Surficial Geological Conditions Associated with the Project.

Pages 6-7 to 6-25.

Comment: They mention both bedrock and surficial geology both do not identify where the pipeline will cross from one geologic unit to another or any potentially problematic geology.

6.2.1 Active and Abandoned Mines and Quarries

Page 6-26.

In the last paragraph the report states "There are no mines or quarries are located within 0.25 miles of the Project in Hunterdon or Mercer Counties."

Comment: Note, between MP 82 and 84 the pipeline route is near at least four (4) abandoned flagstone quarries several of which are noted paleontology sites. The quarries range for as little as 500 feet to about 1,900 feet from the centerline of the route through this area.

Section 6.3 Geologic Hazards

Section 6.3.1 Seismic Risk and 6.3.2 Soil Liquefaction

Pages 6-28 to 6-31.

Comment: These two sections and the Seismic Evaluation Report in Appendix O have not been evaluated since they are outside my expertise.

Section 6.3.3 Faults

Page 6-32.

Near the top of the third paragraph the report states that Ramapo fault system (RFS) in New Jersey is largely the Ramapo fault proper.

Comment: This statement is not true, the Ramapo Fault proper extends from just southwest of Morristown, N.J. to the northeast into southern New York. From Morristown to the southwest to Pennsylvania there are a series of parallel faults that step back to the northwest known collectively as the Border Fault. These faults do not connect with the Ramapo proper, but the northeastern one is cut by the Ramapo Fault (see Drake and others, 1996).

Page 6-33.

Near the bottom of the page- The report indicates "The Monroe Boulder [sic] fault, located near the intersection of Route 611 and Lehenberg Road is greater than 4,000 feet from the Project location. Therefore, there will be no impact related to the Monroe Boulder [sic] Fault."

Comment: The Monroe Border Fault is the Border Fault in New Jersey and the pipeline does cross the fault between MP 75.6 and MP 75.7 so there is an impact on the fault. Also, between MP 74.9 and MP 80.9 there are the epicenters of four earthquakes which were as close as about 235 feet to 8,690 feet from the pipeline (Ghatge, 2004). The magnitudes ranged from 1.7 to 3.5.

Section 6.3.4 Surface Subsidence - Karst Terrain

Pages 6-33 to 6-35.

Comment: There is no information pertaining to New Jersey in either in this section or in Appendix O Section F. Karst Investigation Interim Report – Electrical Resistivity Imaging Survey.

Section 6.3.5 Surface Subsidence – Underground Mines

The last two sentences of the second paragraph references Table 6.2-1, Abandoned and Reclaimed Mines within 0.25 Miles of the Project Area and Figure 6.2-1, PennEast Pipeline Project Abandoned & Reclaim Mines. Table 6.2-1 lists no mines in New Jersey or in Northampton or Bucks Counties, Pennsylvania and Figure 6.2-1 shows no mines in those areas.

Comment: According to the most recent published database for New Jersey there are no underground mines within 0.25 miles of the January 2015 GIS pipeline route supplied to the NJDEP, but there are abandoned quarries within that corridor as stated above. PennEast should go http://njgeology.org and download DGS03-2 Abandoned Mines of New Jersey (Scale 1:24,000) UPDATED (6-21-2006) and check that against the current route.

I did not check the Pennsylvania data for distance to the pipeline route but there are definitely abandoned iron mines (such as the Durham iron mine) and quarries very close to the route in Bucks and Northampton Counties. PennEast should contact the Pennsylvania Geological Survey for further information. Since the mines in the Northampton and Bucks Counties are not coal mines they may not show up on the map PennEast is using.

Section 6.3.1 Landslides

Pages 6-35.

The first sentence in the second paragraph indicates the USGS susceptibility map indicates for the project location in New Jersey there is a low landslide incidence.

Comment: New Jersey has a landslide database, DGS06-3 Landslides in New Jersey UPDATED (7-7-2015), which PennEast should examine since there have been one or more landslides near the project route.

Section 6.3.8.1 Blasting

Page 6-38.

The last sentence of the section indicates that "PennEast will apply and receive a State of New Jersey Explosives Application Blasters Use Permit for areas along the alignment in New Jersey where blasting will occur."

Comment: PennEast must not have read the explosive act and regulations since it requires more than just applying for a permit. They cite the New Jersey regulations here as they do for the Federal and Pennsylvania blasting regulations. Also in the New Jersey there are more stringent monitoring requirements than in the Federal regulations. The additional requirements in the New Jersey explosives regulations should be added to Appendix O, Section D, Blasting Plan prior to PennEast receiving FERC approval.

Section 6.3.8.2 Arsenic

Pages 6-38 and 6-39.

This section contains numerous generalizations and concludes "Based on available information, the likelihood of elevated levels of arsenic in the groundwater is de minimis due to the proposed construction methods. The study will be complete in late 2015."

Comment: Without having the study completed it is impossible to say that the effect of construction of the pipeline will be de minimis. They have no information on concentration of arsenic bearing minerals in the rock along the pipeline route or any leachability tests of those minerals. Please see additional comment below from NJ GWS State Geologist, Jeffery Hoffman.

Section 6.4 Paleontology

Page 6-45.

The report indicates they contacted Dr. William Gallagher at Rider University who indicated there were only two significant potential fossil sites in Hunterdon County and none in Mercer County. The locations of the two, the Smith Clark Quarry in Milford and

the Nishisakawick Creek in Frenchtown are 0.62 miles and 0.85 miles respectively from the project.

Comment: Based on information at the New Jersey Geologic and Water Survey and a conversation with Dr. Paul Olsen of Lamont Doherty, an expert on geology and fossils of the Newark Basin, the Smith Clark and the Messrs. Clark quarries are approximately 500 feet and 1,900 feet from the centerline of the right-a-way respectively. Both of these quarries are extremely important paleontological sites and one is close enough to be potentially affected. It should also be noted that NJG&WS staff have located another fossil site at the intersection of Jarves Rd. and Miller Park Rd.

Figure 6.1-1

Comment: There are some colors on the map that do not match the Geologic Unit Age color in the legend especially, the Jurassic and the units in the lower extreme lower right corner. They should go back to their sources and correct the map. Also, no references are given for the regional map Figure 6.1-1.

References:

Drake, A.A., Jr., Volkert, R.A., Monteverde, D.H., Herman, G.C., Houghton, H.F., Parker, R.A., and Dalton, R.F., 1996, Geologic Map of New Jersey: Northern Bedrock Sheet: U.S. Geological Survey Miscellaneous Investigation Series Map I-2540-A, scale 1:100,000.

Ghatge, Suhas, 2004, Earthquakes epicentered in New Jersey, New Jersey Geological Survey Digital Geodata Series, DGS04-1, updated 8-24-2015.

Houghton, Hugh F., 1988, Hydrogeologic study of water well failures in argillite bedrock of Sourland Mountain, Somerset County, New Jersey: New Jersey Geological Survey TM 88-2, 28p.

Kasabach, H.K., 1966, Geology and ground water resources of Hunterdon County, N. J.: NJ Division of Water Policy and Supply, SR no. 24, 128p.

Olsen, P.E., Smoot, J.P. and Whiteside, J.H., 2005, Stop 2 Upper Member L-M and Perkase Member of the Passaic Fm. Pebble Bluff, Milford, NJ., in Newark Basin- View from the 21st Century, edited by Gates, A.E., Geological Association of New Jersey XXII Annual Meeting, p. 125-133.

Widmer, K., 1965, Geology of the ground water resources of Mercer County: Geological Survey Report GSR 7, 115p.

Jeffery Hoffman, State Geologist

The NJGWS also offers the following comments regarding domestic wells issues:

New Jersey Geological and Water Survey (NJGWS) staff reviewed the draft EIS regarding possible arsenic mobilization by pipeline construction and operation. This included a detailed review of Attachment 2-1 to the draft, "Arsenic Study Report." As a practical matter this review was also of Attachment 6-1 "Revised Well Monitoring Plan and Well Testing Data Form."

The question of potential arsenic mobilization has raised a number of public concerns. This memo does not go over those concerns but concentrates on information in the PennEast draft EIS.

The proposed pipeline route will cross over a number of geologic units with known elevated levels of arsenic. This has been well documented and studied over the past decade. Other naturally-occurring items of concern are manganese, iron, boron, and gross alpha.

Attachment 2-1 in the PennEast draft EIS contains an arsenic leaching study by Dr. Michael E. Serfes. This is a detailed lab study of arsenic leaching done on samples from selected units. This study confirms that additional arsenic will be mobilized in the aquifer as a result of the pipeline construction. However, Serfes concludes that most of this arsenic will be re-adsorbed in and near (within 365 feet) of the construction area and further diluted as it migrates away from the pipeline. Unfortunately, the Serfes study was extremely limited in quantity of bedrock tested, with only 14 samples being leach tested, compared to the vast heterogeneity that exists in the miles of bedrock aquifer along the path of the proposed pipeline. A large number of variables that are extremely difficult to predict also went into the modeling and leave much uncertainty regarding the actual risk to nearby wells.

There are numerous additional variables that could be studied by a laboratory analysis. The number of permutations is quite large. Practically the only way to actually determine if the construction and operation of the pipeline will affect nearby wells is to conduct an adequate pre- and post-construction well-monitoring plan.

The well monitoring plan is more important. It is very important that PennEast conduct an adequate monitoring of wells near the proposed pipeline path. Attachment 2-1 proposes to follow FERC's recommendation and monitor all wells within 150' of the pipeline, 500' in karst terrains. This is inadequate. NJGWS recommends that all wells within 1,000' of the pipeline path be monitored in all terrains. This recommendation is based on professional judgement, guidelines developed for New Jersey's well head protection program, potential for fracture and conduit flow, and the large amount of uncertainty regarding hydraulic properties of the aquifers.

Due to uncertainty in groundwater flow and contaminant transport rates, post-construction sampling should include three well-testing events at six months, one year, and two years post-construction.

NJGWS recommends an additional monitoring plan. This would not replace monitoring existing domestic wells. In an area where a high-arsenic unit crops out PennEast should

install several observation wells at different distances from the proposed pipeline path. These wells should be installed before pipeline construction. The wells should be monitored numerous times during and after construction for changes in water quality.

An additional concern has arisen about boron. Elevated concentrations of naturally-occurring boron have been observed in some wells in the area. DEP's Division of Science, Research and Environmental Health has recommended using EPA's longer term health advisory for children of 2 mg/l as guidance for boron in NJ drinking water. Concentrations as high as 18 mg/l have been reported in a private well in the pipeline project area. Boron should be added to all water quality tests done as part of the well monitoring plan.

If you have any additional questions, please contact Jeffrey Hoffman, State Geologist, at (609) 292-1185 or Jeffrey.L.Hoffman@dep.nj.gov .

Natural and Historic Resources

In addition to comments provided in previous DEP comments, the DEP's Division of Natural and Historic Resources (NHR), including Green Acres, Fish & Wildlife, and the Historic Preservation Office Group, has reviewed the Draft EIS and offers the following comments:

Green Acres Program:

The NJDEP Green Acres Program is responsible for the stewardship of all State, county, municipal and non-profit owned land and easements that have been purchased with Green Acres bond funds or are otherwise encumbered under Green Acres Program regulations. Any conveyance, disposal or diversion from a recreation or conservation use of Green Acres encumbered lands would require an application to the Green Acres Program. In addition, under the New Jersey Conservation Restriction and Historic Preservation Restriction Act, the Green Acres Program processes requests for the release of conservation restrictions that are not directly associated with other DEP permitting programs.

The disposal/diversion application process includes a public need/public benefit analysis, alternatives analysis and compensation and mitigation requirements. The Green Acres rules require that every effort should be made to avoid the disposal or diversion of parkland. In order for a disposal or diversion to be approved, the Green Acres Program would have to find that there were no feasible non-parkland alternatives for the proposed project, that there is a significant public need or benefit associated with the project, and that the project would not significantly interfere with the public's use of the parkland or adversely impact environmentally sensitive areas or other significant parkland attributes. These applications are scrutinized on a number of different levels within the NJDEP, by environmental groups and the public (through the requirements for public hearings) and are evaluated thoroughly.

An application for a disposal or diversion can only be submitted by or with the approval of the landowner. Governing body resolutions are required to be to be adopted by the

landowner in support of the application and compensation/mitigation package. If approved by the Commissioner, Green Acres disposal/diversion applications also require the approval of the State House Commission (a legislative commission that meets on a quarterly basis.) Conveyances of State land in an amount greater than one acre, or leases of more than 25 years, are subject to additional procedural requirements under the "Ogden Rooney" statute.

The State land conveyance and conservation easement release process includes a similar review of alternatives, public need/public benefit analysis and compensation and mitigation requirements. Easements are released through the issuance of a certificate from the NJDEP Commissioner, which is recorded in the same manner as the original easement.

Comments

The June 2016 draft Environmental Impact Statement (EIS) does not adequately describe impacts to State owned parkland or describe mitigation measures required to account for the potential diversion/disposal of Green Acres encumbered parkland. If alternate routes around encumbered parkland are determined to be not feasible or reasonable or are unavoidable, replacement land will be required pursuant to Table 1 of the Green Acres rules for county, municipal and non-profit owned parklands. Compensation for the lease of right of way on State lands will include ground rental payments, replacement land, mitigation measures and any other compensation/mitigation required by the DEP acting in its proprietary capacity as landowner.

No site-specific crossing plans for recreation and special interest areas have been supplied to date. Therefore, an analysis of impacts to these areas cannot be adequately completed. FERC has requested that these plans be supplied with details including site-specific timing restrictions, proposed closure details and notifications, specific safety measures, and other mitigation to be implemented. It is not clear if this information will be supplied as part of the draft EIS or at a later date. Upon submission of this information a more detailed analysis of impacts to recreation areas can be completed.

The Executive Summary indicates numerous times that on recreation lands disturbed areas not associated with the permanent easement will be "restored" following completion of the project. However, Section 4.7 of the draft EIS specifies that restoration activities will be conducted in conformance with the PennEast Erosion and Sediment Control Plan (E&SCP) and that plan indicates that "restored" areas will only be "vegetated with grass and plant species that are native to the area and tree growth within the temporary work space areas would be allowed to re-vegetate naturally." The noted process is generally considered vegetative stabilization and not restoration, as the term "restored" denotes returning an area to its pre-existing condition, which will not be the case as specified in the E&SCP for forested areas that are disturbed. The draft EIS should be amended to indicate that temporary construction areas will be "stabilized with herbaceous vegetation" and not "restored."

Contrary to what is indicated regarding New Jersey State Lands on page 4-143 of the draft EIS, the PennEast project will cross 8 parcels controlled by New Jersey State Park

Service as indicated in Table 1, and will impact 27 parcels associated with the Green Acres Program, not 22 as indicated.

Table 1 – NJ State Park Parcels crossed by the project

County	Township	Block	Lot
Hunterdon	Alexandria	19	27
Hunterdon	Kingwood	5.01	2
Hunterdon	West Amwell	16	p/o 3
Hunterdon	West Amwell	17	5.01
Hunterdon	West Amwell	28	7
Mercer	Hopewell	60	5
Mercer	Hopewell	60	28
Mercer	Hopewell	60	29.03

The draft EIS also indicates on Page 4-144 that "impacts associated with construction of the Project would be temporary and would not permanently impair the open space and recreational purpose of these parcels." While this statement may eventually prove accurate regarding vegetation, it is misleading and inaccurate due to the fact that the project will permanently impact recreation areas in that only limited passive recreation activities can be conducted over the pipeline easement. No recreational facilities requiring a foundation could be built over the pipeline such as recreation centers, environmental centers, roads, etc. Mature forested areas impacted by the project will also likely not return to pre-existing conditions for decades, or ever, considering the threat posed by invasive species and the limited success of any proposed invasive species control plan.

With respect to the Green Acres regulations the draft EIS notes on Page 4-144 that the compensation requirements state that "impacts of the diversion of parkland must be mitigated by securing replacement parkland acreage at a ratio of 4:1 or by providing monetary compensation at a land value ratio of 10:1." Please note that the ratios provided are a minimum requirement and are to be used as a starting point for PennEast in negotiations with landowners that are subject to the Green Acres regulations.

Visual impacts to recreation and open space areas will also be significant in that the installation of a new pipeline right of way, requiring both temporary and permanent tree clearing, will scar a landscape that was, in part, preserved for its visual attributes. This impact does not appear to be adequately considered in the draft EIS.

The draft EIS does not adequately discuss the requirement for tree replacement for either State lands (under the No-Net Loss Reforestation Act) or Green Acres encumbered land (under *N.J.A.C.* 7:36-26.) For Green Acres encumbered lands, impacts to forested areas on recreation and parkland parcels should be quantified in the draft EIS based on the number of trees to be removed and their respective size and not based on an acreage total. Since the rules require tree replacement based on basal area of trees removed, the acreage figures are not meaningful given that trees occur at various densities and age classes within those areas. The Green Acres Rules require applicants to survey the number and size of all trees greater than 6" dbh (diameter at breast height) to be removed on encumbered

parkland. It is likely that PennEast will eventually, or may already, have this information for various parcels, and should be required to provide it as part of the draft EIS.

As previously noted in comments regarding the Resource Reports we still have the following comment which was not subsequently addressed in the draft EIS:

> It should be noted that draft EIS describes in detail, potential impacts and conditions at numerous Pennsylvania State Managed Lands, State Game Lands and State Forest Lands but does not provide similar consideration to New Jersey's State Managed Lands including State Parkland, and Natural Heritage Program Lands. In fact, the draft EIS indicates that "the PennEast Project would not cross any New Jersey State Parks or State Forests" which is not the case as noted above.

When analyzing impacted parkland in the draft EIS, the following issues must be addressed:

- Replacement land and/or monetary compensation will be required for State Parkland, Conservation Easements and Green Acres encumbered county, municipal and non-profit owned parklands. Please provide details regarding proposed replacement lands.
- The potential for impacts to and fragmentation of habitat for known occurrences of endangered, threatened and species of special concern on parkland must be analyzed by the applicant and will be reviewed for all Green Acres encumbered parkland pursuant to *N.J.A.C.* 7:36-26.1(e)6.
- The potential for adverse consequences as outlined in *N.J.A.C.* 7:36-26.1(e).
- Tree replacement will be required pursuant to *N.J.A.C.* 7:36-26 and will be based on a square inch for square inch basis. Expected impacts to forested areas on parkland parcels should be noted in the draft EIS including the total number of trees to be removed.
- Alternative construction techniques such as HDD should be utilized to the extent practicable to avoid/reduce parkland impacts.
- Temporary impacts to parkland will need to be restored to preexisting conditions and forest impacts will need to be mitigated for based on the same tree replacement requirements as disposals/diversions.

Historic Preservation Office

The HPO reviews projects for their effects on historic properties when federal funding, licensing, or permitting is involved. Section 106 of the National Historic Preservation Act of 1966, as amended, (16 U.S.C. 470f) requires federal agencies to take into account the effects of their undertakings on historic properties. The HPO consults with federal agencies in identifying historic properties and avoiding or minimizing any potential adverse effects from federally funded, licensed, or permitted undertakings. Consultation pursuant to Section 106 of the National Historic Preservation Act was initiated by the Federal Energy Regulatory Commission (FERC) with the issuance of the Notice of Intent to Prepare an Environmental Impact Statement on January 13, 2015. Section 106 consultation is still ongoing at this time.

According to information included in the draft Environmental Impact Statement (EIS), a sizeable portion of the Project has not been investigated for cultural resources. Where PennEast had been granted right of entry in New Jersey, it has conducted cultural resources identification surveys on 587 acres. This accounts for archaeological survey of approximately 32 percent of the proposed pipeline's area of potential effects (APE) in New Jersey. The Phase I archaeological survey conducted in New Jersey to date has identified the presence of six archaeological sites within the surveyed portions of the APE: 28-HU-577, 28-HU-578, 28-HU-579, 28-ME-386, PE-ME27-S1, and PE-ME35-S1.

In response to the initial submission of the Phase I archaeological survey report, the HPO noted concerns with the survey methodology. After PennEast met with the HPO to discuss our comments, PennEast submitted a revised archaeological survey report addressing the HPO's comments and providing clarification of the archaeological field methods employed during the initial round of Phase I archaeological survey. The HPO accepted the revised survey report, however the HPO did not agree with the recommendations and requested additional consultation and additional studies. Consultation with the HPO regarding the identification, evaluation, and treatment of archaeological historic properties is ongoing.

Forty-one architectural historic properties were identified through reconnaissance-level architectural survey in New Jersey, where survey access was available. PennEast performed background research that indicated the presence of architectural historic properties within the APE listed on the New Jersey and National Registers of Historic Places, including Rosemont Rural Agricultural Historic District and the Pleasant Valley Historic District. In addition, the APE also includes the Bunns Valley Agricultural Historic District, the Inch Lines Linear Multistate Historic District, and the Delaware and Bound Brook Railroad Historic District, the Oldis (Smith-Mershon) Farm, the Joseph P. Blackwell Farm, and the NJ Route 31 Circle (Pennington Circle), which are recommended as eligible for listing on the New Jersey and National Registers of Historic Places.

PennEast also conducted surveys for architectural historic properties within the indirect APE in New Jersey. Architectural resources have been identified and have been evaluated for their eligibility for listing on the New Jersey and National Registers of Historic Places. The HPO has reviewed the initial reconnaissance-level architectural survey and has requested PennEast perform intensive-level architectural surveys on 18 of the resources identified. PennEast did not provide recommendations of effects to the New Jersey and National Registers of Historic Places-eligible or New Jersey and National Registers of Historic Places-listed historic properties or address potential mitigation, if and when necessary. PennEast has recommended avoiding a number of these resources and to conduct resource evaluations, where necessary. There are 141 parcels of land that still require above-ground resources surveys. Consultation with the HPO regarding the identification, evaluation, and treatment of architectural historic properties is ongoing.

According to the documentation submitted, the FERC has determined that construction and operation of the PennEast project would result in some adverse environmental impacts. The documentation states that most of these impacts would be temporary or short-term during construction and operation. However, if the project is constructed and operated in accordance with applicable laws and regulations, the mitigating measures discussed in this EIS, and the FERC's recommendations, the FERC proposes that most of the adverse

impacts would be reduced to less than significant levels. This determination is based on a review of the information provided by PennEast, and further developed from data requests; site reviews; scoping; literature research; alternatives analysis; and contacts with federal, state, and local agencies as well as Native American tribes conducted by the FERC.

As part of the FERC's review, the FERC has developed specific mitigation measures that they determined would appropriately and reasonably reduce the environmental impacts resulting from construction and operation of the project. Therefore, the FERC are recommending that the following mitigation measures be attached as conditions to any authorization issued by the Commission:

- Prior to construction, PennEast should file with the Secretary, for review and written approval by the Director of the OEP, a final vibration monitoring plan for historic properties within 150 feet of the construction workspace in consultation with the HPO;
- Prior to construction, PennEast should file with the Secretary, for review and written approval by the Director of the OEP, a revised Blasting Plan that includes a review of potential effects on cultural resources, including caves, rockshelters, and aboveground historic structures, and how those impacts would be addressed;
- PennEast should not begin construction of facilities and/or use of all staging, storage, or temporary work areas, and new or to-be-improved access roads until:
    - PennEast files with the Secretary:
        - Remaining cultural resources survey report(s);
        - Site or resource evaluation report(s) and avoidance/treatment plan(s), as required;
        - The Project's recommended effects to historic properties in New Jersey; and
        - Comments on the cultural resources reports and plans from the HPO, as appropriate.
    - The Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and
    - The FERC staff reviews and the Director of the OEP approves the cultural resources reports and plans, and notifies PennEast in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.

As stated above, consultation pursuant to Section 106 of the National Historic Preservation Act is ongoing. Although the HPO concurred with some of the recommendations regarding historic properties made by PennEast, we did not agree with all of the recommendations. To address environmental concerns, the FERC is recommending that PennEast provide documentation of the HPO's concurrence with PennEast's proposed avoidance, historic property identification and recommendations, updated documentation, avoidance plans, and evaluation reports/treatment plans, when necessary. If New Jersey and National Register of Historic Places-eligible archaeological sites cannot be protected from project impacts, PennEast would develop a treatment plan or mitigation of adverse effects.

To ensure that the FERC's responsibilities under section 106 of the National Historic Preservation Act are met, the FERC is recommending that PennEast not begin construction until any additional required surveys are completed, survey reports and treatment plans (if necessary) have been reviewed by the consulting parties, and the FERC provides written notification to proceed. According to the FERC studies and impact avoidance, minimization, and measures proposed by PennEast, and their recommendation, would ensure that any adverse effects on cultural resources would be appropriately mitigated.

Based on a review of the documentation submitted, it is clear that consultation pursuant to Section 106 of the National Historic Preservation Act, as amended, will not be completed prior to completion of the NEPA review. With approximately 68 percent of the project alignment in New Jersey still needing to be surveyed for historic properties, it is unclear what effects the project will have on cultural resources at this time. As a result, the HPO cannot evaluate which alternative will have the least impact on cultural resources at this time. While the HPO generally concurs with the spirit and intent of the assessment and conditions recommended above, it is unclear how this process will be addressed and how compliance will be monitored, once the NEPA review process has been completed. Does the FERC intend to execute a programmatic agreement to address the identification and treatment of historic properties if and when the project is approved? If so, at what point in the NEPA review process does the FERC intend to develop this document? The HPO looks forward to further consultation with the FERC, for the identification, evaluation, and treatment of historic properties within the project's area of potential effects, pursuant to 36 CFR §800.

NJ Division of Fish & Wildlife

Bureau of Freshwater Fisheries:

Executive Summery, Aquatic Resources, p. ES-7 states,

"PennEast would comply with all waterbody crossing windows established by state and federal permits in order to avoid or minimize impacts on aquatic biological resources. In accordance with the FERC Procedures, to minimize impact on fisheries resources, all in-stream work would be performed between June 1 and September 30 to protect cold water fisheries and between June 1 and November 30 to protect warm water fisheries, unless other more stringent agency timing restrictions would apply to the affected waterbody."

and NJDFW would concur with the FERC recommendation that,

"Prior to construction, PennEast should file with the Secretary documentation after consulting with appropriate local, state, and federal agencies regarding any in-water timing restrictions which are more restrictive than those required by the FERC Procedures (e.g., June 1 through September 30 to protect coldwater fisheries; and June 1 through November 30 to protect coolwater and warmwater fisheries)."

On p. 4-63 of section 4.3 Water Resources, FERC lists 5 sets of dates specific to in-stream construction in waterbodies. DFW would remove "May 15 through July 15 for wood turtle nesting", which would be for out of stream work and add, March 1 and June 30 to be

protective of anadromous species migration and spawning. DFW would agree with the others listed.

The NJDFW BFF continues to recommend the Stony Brook & tribs be crossed using the HDD method. During stream sampling, Bridle Shiner (*Notropis bifrenatus*) have been documented. Bridle Shiner are a species of regional priority (NJ Wildlife Action Plan) and are candidate species for listing as State Threatened/Endangered. Listed freshwater mussel species have also been documented in the main stem and tribs.

This information should be reflected in the Tables provided in Appendix G and Fisheries of Special Concern p. 4-60.

Also in "Fisheries of Special Concern", waters listed should include all NJ waters which have unimpeded access to the Delaware River, to include Fiddlers Creek, Lockatong Creek, Alexauken Creek, and Jacobs Creek, where runs have been confirmed or reported.

Also in Executive Summery, Threatened, Endangered, and Special Status Species, p. ES-9, NJ agrees that HDD would likely mitigate any affect the pipeline crossing of the Delaware R. might have on Atlantic and Short-nose Sturgeon, but NJ maps the extent of the Short-noses range to within appox. 13 miles of the crossing and feels it could still travel further north than this.

Endangered & Non-game Species:

Lacking the necessary information for the locations of temporary workspace versus additional temporary work space, access roads, revised Resource Reports, and confidential Resource Reports. As such, comments pertaining to or in association with the location of the pipeline/ROW are referring to the GIS files received 2016 February regarding the proposed route only.

- ENSP concerns:
  - ENSP has never received GIS files of the proposed route's associated additional work space, temporary additional work space and access roads and therefore, cannot comment at this time regarding their potential short- and long-term impacts; requests have been made to DEP (and *assuming* to PennEast) in the past.
  - ENSP provided comments in June and September 2015 regarding the publicly available April 2015 and September 2015, respectively, Resource Reports but has yet to receive any information regarding how/if the issues within our comments will be addressed and has never received the confidential reports.
- ENSP requests the following information to enable staff to conduct a more sufficient assessment of the impacts this project may have on wildlife:
  - The most current GIS files for the PennEast Pipeline proposed temporary and additional temporary workspaces, and access roads.
  - The current width of the maintained right-of-way, the width of the final permanent maintained ROW after this project, and the widths of the ROW during construction as a result of the temporary and additional temporary workspaces.

- A response to ENSP's June and September 2015 comments regarding PennEast Pipeline's April and September 2015, respectively, publicly available Resource Reports *and* (i.e., not in lieu of the aforementioned response) a copy of the most current report.
- A copy of the confidential Resource Report.

1. Timeline presented in the July 2016 EIS states that PennEast intends to clear vegetation this winter (2016-2017), begin construction of the line in spring 2017, and be in service by the end of November 2017.
   - ENSP concern: It appears PennEast has failed to complete many of the required wildlife surveys within conserved and regulated lands:
     - Only approximately 26% of vernal pool surveys have been completed.
     - Bat surveys are incomplete.
     - Bog Turtle surveys are incomplete (*some* Phase I have been done, no Phase II).
     - Northern Copperhead surveys are incomplete. Phase I (habitat assessments) have been completed; no "Phase II" – presence surveys have been conducted. Phase II snake surveys require two (2) years of survey data.
     - Raptor surveys are incomplete:
       - Red-shouldered Hawk: It is unclear if PennEast has completed surveys on accessible lands but not inaccessible lands ***or*** if surveys are incomplete altogether. Table 4.6-2 (and Appendix G, Table G-13) states suitable habitats have been identified but no presence surveys conducted for inaccessible lands.
       - Barred Owl: It is unclear if PennEast completed surveys on accessible lands but not inaccessible lands ***or*** if surveys are incomplete altogether. Table 4.6-2 (and Appendix G, Table G-13) states suitable habitats have been identified but no presence surveys conducted for inaccessible lands.
       - Cooper's Hawk: Surveys *in progress.*
       - Sharp-shinned Hawk: No surveys conducted; are assuming present given suitable habitat.
       - Broad-winged Hawk and Northern Goshawk are absent from the table, therefore ENSP assumes no effort has been made to determine their presence.
       - ENSP also required nest and cavity nest tree surveys for raptors but it is unclear if PennEast included this aspect in their habitat assessments/surveys.
     - Breeding bird surveys are incomplete on accessible lands: Surveys and/or habitat assessments for species observed in project area are *in progress.*
     - Butterfly and odonata surveys have not been conducted.
     - Cobblestone Tiger Beetle: No surveys conducted.
       - ENSP concern: EIS contains conflicting information.
         - Within main text (pg. 4-112 & 4-113, section 4.6.2.13 Cobblestone Tiger Beetle), EIS states, "The occurrence of this species within the Project area is uncertain. Because the Project could potentially impact this species (e.g., by disturbing cobblestone areas along river

edges during waterbody crossings), we recommend that PennEast continue to work with the applicable wildlife agencies to determine if specific measures would be appropriate to avoid or minimize the Project's impact on this species (see section 4.6.2.25). PennEast has however, indicated that they proposed to cross potential cobblestone tiger beetle using a HDD method in order to avoid impacts on this species." [sic]

    - Within Appendix G, Table G-13, EIS states, "Habitat is restricted to cobblestone and sand/gravel bars along river edges. Riverbank will not be impacted by pipeline through HDD installation methods, therefore no impact to this species is anticipated."
  - ENSP recommends the EIS is revised to clarify this conflicting information. Additionally, ENSP biologist believes HDD will minimize, if not avoid, any impacts to the Cobblestone Tiger Beetle and therefore, is not seeking presence surveys of this species.

- No mussel surveys have been conducted.
  - ENSP concern: EIS only addresses the federal-listed Dwarf Wedgemussel stating the *need* for surveys will be refined during the permitting process. There is no mention of State-listed mussels and/or their required surveys.
  - ENSP recommends they conduct the required surveys as informed by ENSP during previous reviews (including the reviews of both the April and September 2015 Resource Reports, whereby ENSP expressed concern over PennEast relying on HDD to avoid impacts and therefore, potentially eliminating the need to survey for mussels). ENSP does not believe Dwarf Wedgemussel is a concern but is concerned about State-listed species and the potential impacts of an accident if one occurs during drilling and/or pipe installation as State-listed species' records do exist within the project area. Understanding the species composition will help ENSP assess the potential impacts in such an event and potentially, to develop minimize harm and/or emergency response strategies.
  - ENSP recommends that DEP not wait to resolve this matter during the permit process, but instead require survey completion and review by appropriate DEP personnel before approving the permit application.

- Long-tail Salamander: EIS states habitat surveys have been conducted as part of general habitat assessments on accessible lands and found only one (1) seep where Long-tailed Salamanders may exist. EIS also states, "Habitat assessments have revealed suitable habitat present and therefore, PennEast will use HDD across suitable habitat to avoid harm/damage to habitat."
  - ENSP concerns:
    - There is no information regarding the methodology used to assess the habitat and/or the surveyors' qualifications.

- ENSP did not recommend HDD in an effort to avoid harm to this species and would like to visit/revisit this issue with DEP and PennEast.
- ENSP is privy to numerous Long-tailed Salamander observations within the proposed project area and is attempting to obtain these findings for input into the Biotics database and to provide to the Div. of Land Use Regulation. This information implies that there may be additional sites within the project area that are inhabited by this species, thus potentially requiring additional protective/minimize harm measures and concern regarding the assessment.

  - ENSP recommends PennEast be required to provide ENSP with the habitat assessment methodology, survey areas (in GIS shapefile) and their findings/assessments/descriptions, surveyors' qualifications and experience with Long-tailed Salamanders, and any other pertinent information that would assist ENSP in evaluating PennEast's determination:

- Marsh bird surveys: According to the EIS, these surveys have been completed or are unnecessary on accessible lands. EIS states that habitat assessments revealed suitable habitat for Great-blue Heron and as such, PennEast will not conduct presence surveys but instead will assume their present and implement appropriate measures (to be determined by ENSP) to minimize, if not avoid, harm to this species.
  - ENSP concern: EIS states that habitat assessments revealed no suitable habitat for secretive marsh birds and therefore, "surveys are complete" on accessible lands for these species. However, there is no information regarding the survey/habitat assessment and/or the surveyors that would allow ENSP to determine if the effort was sufficient and likely, accurate.
  - ENSP recommends PennEast be required to provide ENSP with the habitat assessment methodology, survey areas (in GIS shapefile) and their findings/assessments/descriptions, surveyors' qualifications and experience with secretive marsh birds and which species, and any other pertinent information that would assist ENSP in evaluating PennEast's determination.

- ENSP recommends during the permit process that DEP requires all wildlife (and plant) surveys are completed, reviewed, and minimize harm measures are developed *and accepted* by PennEast. PennEast should not be permitted to begin vegetation clearing or any other activities (other than surveys) until these steps have been completed.

2. In-stream work: Pg. 4-110, section 4.6.2.7 Wood Turtle- EIS states, "In order to minimize impacts on the wood turtle, NJDEP recommends completing in-stream work only between November 15 and March 15, as well as conducting pre-construction clearance surveys where during spring breeding season (i.e., in April

to May), and PennEast has committed to following these measures. PennEast would attempt to meet this timing restriction, but if this timing restriction was infeasible, PennEast would conduct pre-construction clearance surveys where for wood turtles during spring breeding season (i.e., in April to May). If any wood turtle are found in the work area, the individuals would be temporarily relocated to areas outside of potential disturbance areas. Furthermore, we recommend that PennEast continue to consult with the NJDEP as needed to finalize plans necessary to avoid or minimize impacts on the wood turtles (see section 4.6.2.25)." [sic]

- ENSP concern: The work dates are incorrect. NO in-stream work should be conducted between November 15 and March 15 (and no wood turtle-valued stream embankment work between November 1 – March 15). This paragraph appears to have a number of errors making it difficult to understand the intent. In-stream work may only be conducted during the hibernation period (i.e., Nov. 15 – Mar. 15) ***if and only if*** it is first determined that the stream section and areas adjacent, particularly downstream, are NOT suitable for overwintering. Otherwise, in-stream work must be completed during the active season when it's less likely turtles will be in the water and if they are, they can be safely removed by monitors while work is conducted.
- ENSP recommends that prior to receiving DEP approval and permits, PennEast clearly understands and agrees to implement the necessary timing/activity restrictions to protect NJ's resources (in this case, wood turtles) for all applicable life history stages regardless of PennEast's timeline; i.e., PennEast and their contractors should develop a plan and contract the necessary personnel in order to meet these requirements.

3. Pg. 4-111, section 4.6.2.8 Northern Copperhead – EIS states ENSP required surveys on county land. ENSP required surveys on State lands and Ted Stiles Preserve at Bald Mountain, and in spring 2016, presented an optional (voluntary) survey to be conducted on Lambertville Water Company land.

4. Section 4.6.2 states, with regard to woodland raptors (e.g., Red-shouldered Hawk, Barred Owl) that tree clearing would occur outside of the breeding window (March 1 – July 31).
   - ENSP concern: Is it PennEast's intention to avoid tree clearing along the entire ROW within NJ during that time; i.e., limiting their tree/vegetation clearing period to November 15 – February 28? Alternatively, do they intend to avoid the nesting areas during that time but clear elsewhere along the line?
   - ENSP recommends PennEast clarify their intention and if they intend to only avoid nesting areas during that period, they must work with NJ ENSP to establish safe buffers from the nest/cavity nest tree(s).

5. Reporting wildlife issues: When describing potential incidents involving migratory birds, PennEast has agreed to maintain a log and submit that data to the USFWS.
   - ENSP recommends they also submit that data directly to ENSP for our records.

6. Throughout the EIS, PennEast identifies outlying and unresolved issues and then recommends that "prior to construction" they…
   - ENSP concern: Does this mean they expect to get permit approval prior to resolving these issues?
   - ENSP recommends all outlying and unresolved issues have been addressed during the DEP permit process and incorporate any needed "permit conditions" to ensure all ENSP concerns are appropriately addressed.

7. "routine maintenance" of the pipeline and/or meter stations:
   - ENSP concern: This is a term the gas companies use to describe activities that *may* require additional excavation of the ROW to access existing (or soon-to-be existing) pipelines for repairs and/or assessments. ENSP does ***not*** consider these activities "routine" or negligible.
   - ENSP recommends PennEast be required to provide the DEP with minimize harm to wildlife (in particular rare and candidate species, and common ground-dwelling species) measures they will implement when accessing the ROW, when conducting activities that require heavy machinery and/or excavation, and/or when multiple areas will be under some level of work at the same time (i.e., requiring multiple vehicles traveling the ROW on a given day).

8. "…routine vegetation maintenance of the right-of-way…" and "…periodic vegetation maintenance within the entire permanent right-of-way, and a 10-foot-wide strip centered on the pipeline…":
   - ENSP concern: Vegetation management of any kind presents risks to various species depending on the activity and the time of year.
   - ENSP recommends PennEast be required to implement on State and regulated lands and requested on other lands to voluntarily implement ENSP's most current version of *Utility Right-of-Way No-Harm Best Management Practices* throughout their NJ portion of their ROW to minimize risk to NJ's wildlife (rare and common).

9. M&R Stations
   - ENSP concern: Existing NJ structures associated with meter stations and cell towers, etc. often have not had a foundation extending below the substrate for the entire perimeter of the building. As such, snakes (including venomous) use the space under the buildings as shedding stations where they will linger for approximately two weeks. This poses a safety concern to both workers and snakes.
   - ENSP recommends PennEast ensure that all above-ground structures have foundations that preclude animals from accessing the space below the structure.

10. Vegetation/tree clearing
    - ENSP concern: While tree/vegetation clearing is required to be done during winter months (Migratory Bird Treaty Act), debris piles created and left on site into spring. Such piles attract reptiles, amphibians and small rodents who are

difficult to see when tucked within the debris increasing the risk of being harmed (e.g., vehicles/machinery driving over debris piles) or removed from the site when the debris is loaded into trucks. Additionally, larger debris piles left on site may attract nesting birds, increasing the risk of harming the birds (and young) and/or destroying nests.

- ENSP recommends **all** vegetation debris be removed prior to March 31. If this is not possible as a result of delayed permit approval, ENSP recommends that all vegetation debris be placed directly into dumpsters or trucks after cut and **not** on the ground for **any** amount of time.

11. Volume I, pg. 3-3: PennEast claims that rejection of this pipeline and facilities would likely mean the future development of new pipelines/facilities (to meet increased shipping demands) that would likely have environmental impacts equal to or greater than this project.
    - How is PennEast making this determination?
    - Given increasing shipping demands within the US and the potential financial gain to ship overseas, isn't it possible that other companies will still want to come through NJ even IF the PennEast project is approved?
    - Is PennEast saying that by approving this project NJ can prevent additional pipelines from passing through the State?

12. Rock removal and blasting: PennEast should be made aware that if rare snake critical habitat is located along the ROW, there is a strong possibility that they will be required to shift the pipeline route to avoid altering the habitat/rock structure and the area within approximately 200m buffer of that structure.

13. Volume I, pg. 4-41 to 4-42; "Waters Containing…State-listed…Species":
    This section identified sturgeon and Dwarf Wedgemussel as species that will potentially be impacted by the project and directs the reader "Assessment of impact on these species are addressed in section 4.3.3."
    - Section 4.3.3 does **not** address any of these species.

14. Section 4.3.3.2, pg. 4-63 regarding in-stream timing restrictions:
    - ENSP concern: EIS states that prior to construction, they will work with the state agency regarding "any in-water timing restrictions which are more restrictive than those required by FERC Procedure…"
    - ENSP recommends that prior to receiving DEP approval and permits, PennEast clearly understands and agrees to implement the necessary timing/activity restrictions to protect NJ's resources (in this case, trout and wood turtles) for all applicable life history stages.
    - ENSP also strongly recommends DEP require timing/activity restrictions within 300ft of wood turtle streams during egress and ingress from and to the streams, respectively, to minimize harm to the higher density of wood turtles in these areas during these periods. Including this critical protective measure, in-stream and embankment work within 300ft of wood turtle-valued streams (including long-term maintenance such as mowing) will require PennEast to

implement a "no work/activity" period November 1 – March 31 within these areas.

15. Wetland crossings: There doesn't appear to be any mention of the use of wetland matts or their condition.
    - ENSP concern: PennEast contractors may install [temporary] wetland matts that are not "clean" and therefore, may transfer invasive species and/or pathogens to NJ's waters.
    - ENSP recommends:
      - Wetland matts must be clean; i.e., first time use OR at a minimum, must be rinsed of all organic matter prior to entering the project area and access roads.
      - A cleaning station away from aquatic habitats be identified and reviewed/approved by DEP.

16. ENSP agrees with PennEast's statements regarding:
    - Guidelines to minimize disturbance to nesting Bald Eagles in New Jersey.
    - Atlantic and Shortnose Sturgeon are outside of the project area and that no impact from the Delaware River Crossing is expected.
    - Commitment to implement MTBA-recommended guidelines for mowing with regard to grassland birds; i.e., not mowing between March 15 and September 10.
    - Commitment to implement necessary timing restrictions for avian species of special concern (section 4.6.2.23).

17. Depending on the final results of the wildlife surveys, ENSP may require additional timing/activity restrictions.

NJ Division of Parks & Forestry – Office of Natural Lands Management

The June 2016 draft Environmental Impact Statement (EIS) fails to address the impact of the proposed project on documented occurrences of State Endangered Plant Species and Plant Species of Concern (rare plant species). This is due, in part, to FERC's failure to acknowledge in the draft EIS that approximately 70 percent of the proposed pipeline route in New Jersey has not yet been surveyed for rare plant species based on PennEast's unprecedented lack of property access. Without meaningful information on which plant species may be vulnerable to impacts, it is difficult to understand how FERC can definitively conclude that the environmental impacts of the project can be reduced to "less-than-significant levels" as it does in the Executive Summary on page 16. It is also difficult to understand why FERC would want to proceed with a project that will require significant use of eminent domain.

The recommendations of the ONLM, Natural Heritage Program, were included in the enclosed comments provided to FERC by the NJDEP on November 4, 2015. In brief, these comments stated that the environmental impacts of the project could not be evaluated without proper surveys. The enclosed Rare Plant Species Survey Protocols were included in the November 4, 2015 comments. Such surveys must take place along the entire 400-

foot PennEast pipeline study corridor and within an additional 200 feet to each side of the study corridor (collectively referred to as the 'survey area'). The surveys must target those species that have been documented on or within one mile of the pipeline. A list of 32 target species was provided that met this criterion. An additional five species were added to this list based on a review of the rare plant species documented along the most recent alignment of the pipeline route (see enclosed February 9, 2016 Natural Heritage Database Report), bringing the total number of plant species on the survey target list to 37 (see enclosed updated Plant Species Survey Target List). As outlined in the enclosed Rare Plant Species Survey Protocols, surveys require a minimum of one survey event every two weeks from April through October for a period of two years (i.e., at least 28 total survey events over a period of two years).

As stated in the draft EIS, if FERC issues a Certificate of Public Convenience and Necessity (Certificate), PennEast will have the right to pursue eminent domain, "at which time PennEast would complete the necessary remaining field surveys." And, according to the draft EIS at p. 4-118, PennEast, "has agreed to adhere to the recommendations and requirements of the state agencies with jurisdiction over state listed and state species of concern ... in order to avoid or minimize impacts on these species, including completing all necessary surveys for state species." If FERC issues the Certificate, it must include as part of this issuance a specific requirement that PennEast use the Plant Species Survey Target List and apply the enclosed Rare Plant Species Survey Protocols within the entire study area to fully determine the environmental impacts associated with this project.

NJ Natural Lands Trust

The NJ Natural Lands Trust submitted the enclosed comments to FERC on August 12, 2016.

In addition:

Table 4.5.1-1 at 4-75 and 4-76, entitled Vegetation Communities of Concern Potentially Crossed by the Project, should be amended to include this reference to Gravel Hill in New Jersey.

Gravel Hill--Where two of the four physiographic provinces in New Jersey meet; the Highlands Province is separated from the Piedmont Province by a series of major faults crossing Holland Township and reaching the Delaware River near Church Road. Near these faults, fast flowing streams surged down the steep mountains, depositing sediments including quartzite and limestone on the valley floor which aggregated to form Gravel Hill. This unique geology is covered by thin soil which has for millennia supported an intact, mixed hardwood forest of white oak, red oak, black

birch and black cherry. This area is proposed to be crossed by the Project at approximately milepost 80.4 to 81.7. Some surveys have been conducted within this area and vegetation communities of concern could occur along the Project in this area. (Hunterdon)

NJ Division of Parks & Forestry - State Park Service:

Section 4.7, under "General Impact Minimization and Mitigation Measures on State Lands" is a requirement for "coordination with the appropriate personnel including PADCNR State

Park Managers and District Foresters to develop the construction schedule, coordinate road improvements, coordinate temporary road or trail closures, and identify special events or hunting seasons which may restrict pipeline construction activities". No corresponding requirement is mentioned in this section for land owned and managed by State of NJ and must also be included. Specifically, *"coordination with the appropriate personnel including NJDEP – Natural & Historic Resources to develop the construction schedule..."*

If you have any questions, please contact Robin Madden at (609) 292-5990.

Bureau of Dam Safety

Without sufficient technical, site specific information, the Bureau's only comment at this time is that any pipeline activity within the footprint of existing dam structures would require a Dam Safety permit from the Bureau of Dam Safety.

Bureau of Water Allocation

The DEP's Bureau of Water Allocation has reviewed the Draft Environmental Impact Statement and has the following comments.

It appears that there will be construction related dewatering, however no details were provided. Water use for pressure testing was also mentioned but no mention of use of water for dust control or re-vegetation was found (activities typically associated with large scale construction projects).

If construction related dewatering is required at rates exceeding 100,000 gallons per day of water (70 gallons per minute pumping capacity) then that activity would be regulated under a short term water use permit by rule if less than 31 days, or a dewatering permit if 31 days or longer. A dewatering permit by rule may be applicable if the dewatering occurs from within a coffer dam, or similar confined space.

In addition, the EIS mentions that excavations are expected to be above the water table based upon some soil borings that were done. As data is gathered, please provide the DEP with up dated information including the location map for any borings, the dates the samples were taken, and water elevation data generated. Boring data information to date was not included in the EIS appendix.

If you have any additional questions, please contact Jan Gheen at 609-984-3669.

Division of Water Supply and Geoscience

Based on the limited information available, the Division is concerned with the proximity of the preferred route to existing water supply lines. The Division recommends maximizing the distance between the pipeline and water supply lines to the greatest extent practicable.

NJPDES Surface Water Permitting

Any discharge to any surface water body requires a NJPDES surface water permit from the DEP's Bureau of Surface Water Permitting. Provided that the discharge is not contaminated, the appropriate discharge permit would be the B7- Short term De minimis permit (see http://www.state.nj.us/dep/dwq/pdf/b7-rfa-checklist.pdf). If, however, the discharge is contaminated, the appropriate discharge permit would be the BGR – General Remediation Cleanup permit (see http://www.state.nj.us/dep/dwq/pdf/sw-gp-chklst.pdf). An additional consideration is whether the receiving water is classified as Category 1, which may prohibit any discharge.

If you have any questions, please contact to Kelly Perez of the Bureau of Surface Water Permitting at (609) 292-4860.

NJPDES Bureau of Non-Point Pollution Control

A general permit for discharge of stormwater associated with construction activities, (5G3) is required from the DEP. This general permit authorizes stormwater discharges from construction activities which disturb areas greater than 1 acre or smaller areas that are part of a large plan of common development greater than 1 acre. The applicant must have a certified Soil Erosion and Sediment Control Plan by each applicable County Soil Conservation District in order to have the necessary information for a complete permit application. The permit application process is available online. If you have any additional questions, please contact Ronald Bannister at (609) 633-7021.

Air Permitting

An air permit is required for any emergency generators over 1 MMBtu maximum heat input. Emergency generators are exempt from many of the emission standards including NJ NOx Ract emission limits. As a result, the use of emergency generators is restricted to only during black outs or PJM posted actual voltage reductions. All other generators that operate outside of these limited emergency periods are considered regular or non-emergency generators. Non emergencies generators are required to comply with all applicable emission standards if their electric output is over 37 Kw.

If you have any additional questions, please contact Robert Kettig at (609) 633-3858.

Air Quality Planning

The Bureau of Evaluation and Planning (BEP) has reviewed the Draft Environmental Impact Statement (EIS) and has the following comments:

4.10.1.3 Regulatory Requirements for Air Quality-Federal Air Quality Requirements-General Conformity

1) The draft EIS states, "As shown in table 4.10.1-4, all construction emissions were conservatively assumed to occur in a single calendar year...Based on this assumption,

emission estimates for construction would not exceed general conformity applicability thresholds."

Comment #1

The total NOx, VOC and PM 2.5 emissions (84.9 tons), (10.15 tons) and (87 tons) respectively, in Table 4.10.1-4 (General Conformity Applicability Evaluation) do not appear to match the total NOx, VOC, and PM2.5 emissions (111 tons), (14 tons) and (609 tons) respectively, shown in Table 4.10.1-5 (Project Facility and Pipeline Construction Activity Combined Emissions.). Please explain the discrepancy between the air emissions listed in Table 4.10.1-4 and the air emissions listed in Table 4.10.1-5 and indicate which values are correct. Mercer County, New Jersey is in maintenance for PM 2.5 and the PM 2.5 emissions for the 9.6 miles of construction do not appear to be listed in Table 4.10.1-4. Please provide PM2.5 emissions for Mercer County. Please provide backup material (including methodology, sample calculations, assumptions, emission factors, activity levels, etc.) to support the air emissions in Table 4.10.1-4 (General Conformity Applicability Evaluation).

2) The EIS states, "If changes to the Project construction schedule occur that would materially impact the amount of NOx emissions generated in a calendar year, PennEast should file with the Secretary, in PennEast's weekly status report, revised construction emissions estimate prior to implementing the schedule modification demonstrating that the annual NOx emissions resulting from the revised construction schedule do not exceed general conformity applicability thresholds."

Comment #2

Section 93.157(d) (Re-evaluation of Conformity) states, "If the Federal agency originally determined through the applicability analysis that a conformity determination was not necessary because the emissions for the action were below the limits in 93.15(b) and changes to the action would result in the total emissions from the action being above the limits in 93.15(b), then the Federal agency must make a conformity determination." Please add language to reflect the requirements for re-evaluation of conformity in Section 93.157(d) of the Federal General Conformity regulation.

3) 4.10.1.4 Air Emissions Impacts and Mitigation – Construction Emissions and Mitigation

The Draft EIS states, "...the construction activities that would generate air emissions include: ...installation of pipeline and pipeline interconnection equipment..."

Comment #3

Please clarify if the air emissions associated with the transport of the pipe within the nonattainment

If you have any additional questions, please contact Angela Skowronek in the Bureau of Air Quality Planning (BAQP) at 609-984-0337.

Bureau of Mobile Sources

Diesel exhaust contributes the highest cancer risk of all air toxics in New Jersey and is a major source of NOx within the state. Therefore, the DEP recommends that construction projects involving non-road diesel construction equipment operating in a small geographic area over an extended period of time implement the following measures to minimize the impact of diesel exhaust:

1. All on-road vehicles and non-road construction equipment operating at, or visiting, the construction site shall comply with the three-minute idling limit, pursuant to N.J.A.C. 7:27-14 and N.J.A.C. 7:27-15. Anti-idling signs to be posted at the site are available for purchase from the Bureau of Mobile Sources at 609-292-7953.

2. All non-road diesel construction equipment greater than 100 horsepower used on the project for more than ten days should have engines that meet the USEPA Tier 4 non-road emission standards, or the best available emission control technology that is technologically feasible for that application and is verified by the USEPA or the CARB as a diesel emission control strategy for reducing particulate matter and/or NOx emissions.

3. All on-road diesel vehicles used to haul materials or traveling to and from the construction site should use designated truck routes that are designed to minimize impacts on residential areas and sensitive receptors such as hospitals, schools, daycare facilities, senior citizen housing, and convalescent facilities

If you have any additional questions, please contact Peg Hanna or Jeff Cantor in the Bureau of Mobile Sources at 609-292-2232.

Thank you for giving the New Jersey Department of Environmental Protection the opportunity to comment on the Final Resource Reports and FERC Certificate Application for the proposed PennEast Pipeline Project.

Sincerely,

John P. Gray, Esq.
Deputy Chief of Staff

Enclosures

cc: Medha Kochhar, FERC
Ruth Foster, NJDEP–PCER
Angela Skowronek, NJDEP-Air Quality Planning
Peg Hanna, NJDEP – Air Quality Mobile Sources
Jan Gheen, NJDEP-Water Allocation
Kelly Davis, NJDEP-Fish and Wildlife
Jesse West-Rosenthal, NJDEP- Historic Preservation
Chris Squazzo, NJDEP-LURP
Dennis Contois, NJDEP - LURP
Kevin Appelget, NJDEP - Green Acres
Diane Dow, NJDEP – LURP
Ginger Kopkash, NJDEP - LURP
JoDale Legg, NJDEP – LURP-Mitigation
Robin Madden, NJDEP – NHRG
Cari Wild, NJDEP-NHRG
Patrick Sheppard, NJDEP - LURP
Michael Palmquist, NJDEP – C&E
Christina Albizati, NJDEP-LURP T&E
Kelly Davis, NJDEP –NHRG T&E
Kris Schantz, NJDEP – NHRG ENSP
Richard Dalton, NJGS
Dan Kuti, NJDEP-BNPC
Ronald Bannister, NJDEP – BNPC
Kelly Perez, NJDEP – BSWP
Jeff England, PennEast
Sean Sparks, Tetra Tech
Bernard Holcomb, AECOM
Marilyn Lennon, PS&S

Recommended Rare Plant Species and Ecological Community Survey Protocols To Ensure Adequate Baseline Data Prior to Habitat Disturbance or Management

State Forestry Services
Office of Natural Lands Management

March 18, 2015

Overview

With few exceptions, comprehensive inventories of the flora and ecological communities are not available for most lands in New Jersey. These elements of biodiversity are the focus of the Office of Natural Lands Management (ONLM). Data is collected and maintained in the New Jersey Natural Heritage (or Biotics) Database, the Department's digital and manual file of locational information on occurrences of rare plant species and ecological communities. Most of this information is based on an extensive examination of New Jersey's rich history of botanical exploration followed by more than 30 years of targeted surveys to relocate historical records. To a lesser extent, data is collected during *de novo* surveys of suitable habitats or is based on the reports of local experts. The classification and mapping of ecological communities is a more recent development, and occurrences of rare communities are not as well represented in the Biotics Database as are those for rare plant species.

The following protocols are considered by the ONLM to be the minimum necessary in order to adequately survey sites and determine the locations and composition of the rare elements of biodiversity tracked by the Natural Heritage Program. Application of these protocols by qualified botanical and ecological professionals will create a baseline that may be used to determine the biodiversity value or importance of a site, to guide habitat management to preserve or enhance occurrences of these elements, to assess the biodiversity impact of proposals to alter or destroy the habitat supporting these resources, and/or to design mitigation in those instances where avoidance of impacts to species or ecological communities is not possible.

The following protocols are generic in nature and may need to be tailored by the ONLM to meet the specific survey requirements of individual projects and applications. Factors that may result in survey protocol modifications include but are not limited to project area acreage, community composition and topographic conditions.

Ecological Community Survey and Mapping

Ecological community characterization and mapping will follow the classification provided in *A Preliminary Natural Community Classification for New Jersey* (http://www.nj.gov/dep/

parksandforests/natural/heritage/nclass.pdf). The ONLM, Natural Heritage Program webpage (http://www.nj.gov/dep/parksandforests/natural/heritage/index.html) should be consulted regarding any changes or updates to New Jersey's ecological community classification.

New Jersey Natural Heritage Program *Ecological Community Reporting Forms* (site survey summary of plots, community element occurrence record, community plot data), provided by the ONLM, shall be used to record the existence, status, and location of occurrences of each rare ecological community encountered during the survey.

Digital photographs (with a date associated with each photo) of rare communities will be taken. GPS coordinates for locations of occurrences of rare ecological communities will be recorded and documented using a GPS receiver capable of collecting data with a horizontal accuracy of 1-5 meters. GPS coordinate data will be provided in ESRI shapefile format, or in a Microsoft Excel spreadsheet or Access file, with coordinate records labeled to reference the reporting form associated with that record. GPS data with an accuracy of 1–5 meters will include information about the coordinate system, datum used for data collection, and accuracy of each reading. GPS data collected for occurrence boundary lines or other large features will be provided in ESRI shapefile format and will include the coordinate system datum, and accuracy level used in the shapefile. Further information about GPS data collection standards is available at: http://www.nj.gov/dep/gis/GPSStandards_2011.pdf

Depending on the acreage and diversity of the project area, a single field season is the minimum needed to perform all tasks required to classify and map ecological community types. Multiple field seasons may be needed to adequately survey some sites.

An iterative process involving community ecologist(s) and botanist(s) using desktop geospatial analysis (GA), photo-interpretation (PI), and multiple field sampling events will be used to identify and verify ecological community types, resulting in a GIS ecological community map.

1. **Desktop geospatial analysis:** A desktop analysis and identification of vegetation signatures using the most up-to-date readily available aerial imagery will be performed as an initial GA and PI (although the communities will not be mapped until the locations are assessed on the ground by the project botanist(s) during subsequent tasks). Vegetation signatures shall be assessed using combinations of color value, chroma or saturation, texture, crown height or width, size, density, pattern and taxa. Areas for follow-up in the field will be identified based on vegetation signature complexes, where multiple ecological communities may be attributed to similar image signatures. The GIS analyst(s) and project botanist(s) will work together to develop a list of likely ecological community types anticipated to occur. The result will be specific spatial locations of unique and complex vegetation signatures and a list of likely mapping units for the botanist(s) and GIS analyst(s) to visit and document during the initial field assessment.

2. **Initial Field Assessment:** An initial field assessment will verify the results of the geospatial analysis and provide field maps with locations of presumed ecological community types identified and generate rapid assessment plot data. Locations of the desktop-identified unique vegetation signatures will be loaded onto a sub-meter Trimble or comparable GPS unit(s) for field location and documentation and will be plotted on hard-copy field maps. During fieldwork, the project botanist(s) will place plots in areas identified as a unique ecological community and will then collect rapid assessment vegetation data from the plots. A sufficient number of rapid assessment sample plots will be completed to adequately map and ground truth each ecological community type. Some plots may need to be sampled one additional time during the year to search for rare plants flowering in different seasons. GPS locations will be collected during this field effort for reference, calibration, and documentation of specific vegetation signatures as they occur on the ground. Additionally, the field team will delineate the boundaries of the ecological community type within which the plot is located on a geo-referenced field map.

3. **Development of draft ecological community type map:** GA and PI will continue using data collected during the initial field assessment to develop a draft ecological community type map. PI shall be based on data gathered during the initial field assessment (annotated field maps, rapid assessment plots, GPS data), as well as spatial ecology, landscape position (elevation, slope, aspect), vegetation species and community composition, vegetation signatures on imagery, and visible hydrology. This step will result in a draft ecological community type map that will then require field verification.

4. **Field assessment of draft ecological community type map and relevé plot sampling:** Relevé plots are quantitative plots of a set area delineated with measuring tapes where every species and its percent cover or cover class is recorded. Reconnaissance, or recon, plots are visually established plots of a set area where only dominant species percent cover or cover class are listed. Both types of plot samples include other vegetation structure and environmental information.

   Fieldwork shall be conducted to assess the draft ecological community type map generated, including relevé plot data collection. This field effort will provide an opportunity for field assignment of polygons potentially lacking assigned ecological community types or needing verification or refinement. An assessment of the ecological community type map will be refined through a combination of annotating geo-referenced field maps and collecting GPS coordinates. Particular emphasis will be placed on the spatial accuracy of targeted communities.

   Additional detail on plot sampling methodology and recommended references may be found in Attachment A.

5. **Revision of draft ecological community type map:** The draft ecological community type map will be revised and updated based on data collected during the field assessment to incorporate the relevé sampling data. The output of this step will be a revised ecological community type map of the entire area, with ecological community types assigned to all polygons in the GIS database.

6. **Final field assessment and final ecological community type map:** A final field assessment will be required to further refine the ecological community type map. During this task, an area-wide assessment of the ecological community type map will be performed. Areas and community types for which issues were noted throughout the mapping process will be revisited to further refine the results. Fieldwork in this effort will focus on communities of concern to ensure map accuracy for these areas. Refinements to the ecological community type map will be made in the field, and GPS data will be collected and provided to the GIS analyst for map revisions. A final ecological community type map will be produced using data collected during the final field assessment event.

Rare Plant Species Survey

Target plant species will include those species on the *List of Endangered Plant Species and Plant Species of Concern* (http://www.nj.gov/dep/parksandforests/natural/heritage/njplantlist.pdf). The ONLM, Natural Heritage Program webpage (http://www.nj.gov/dep/parksandforests/ natural/ heritage/index.html) should be consulted regarding any changes or updates to New Jersey's rare plant species lists.

A Request for Natural Heritage Data Services (http://www.nj.gov/dep/parksandforests/natural/ heritage/index.html#datarequest) will be submitted to the ONLM in advance of the survey to determine if any occurrence records for endangered plants or plant species of concern exist within and in the vicinity of the project area.

Natural Heritage Program Rare Plant Species Reporting Forms (http://www.nj.gov/dep/parksand forests/natural/heritage/textfiles/NHRPSR_Form.docx) will be completed to record the existence, status, and location of occurrences of each rare species discovered during the survey.

Plant nomenclature will follow classification from the Biota of North America Program (BONAP) Taxonomic Data Center Query Page (http://bonap.net/tdc), Traditional Classification nomenclature (accessed by selecting "Traditional Classification" from the drop-down menu in the "Families" column). Also acceptable is Gleason and Cronquist's (1991) Manual of Vascular Plants of Northeastern United States and Adjacent Canada (1991, New York Botanical Garden).

For most projects, a minimum of two field seasons will be required to perform all tasks required to survey for rare plant species occurrences. However, at the direction of the

ONLM, this may be modified depending on various factors, including the acreage and diversity of the project area and the number of qualified professional botanists employed.

Digital photographs (with a date associated with each photo) of each reported taxa will be taken. If a native or invasive taxon of questionable identification or a species that constitutes an unusual or unique find (e.g., new to the state, outside of its range, etc.) is encountered, collection of a voucher specimen will be completed in accordance with NJDEP Natural Heritage Program procedures.

GPS coordinates for locations of occurrences of rare and invasive species and negative surveys (i.e., locations of surveys for which no rare species were found) will be recorded and documented using a GPS receiver capable of collecting data with a horizontal accuracy of 1-5 meters. Data collection for invasive species should focus on those occurrences that pose a threat to populations of rare plant species. GPS coordinate data will be provided in ESRI shapefile format, or in a Microsoft Excel spreadsheet or Access file, with coordinate records labeled to reference the reporting form associated with that record. GPS data with an accuracy of 1–5 meters will include information about the coordinate system, datum used for data collection, and accuracy of each reading. GPS data collected for occurrence boundary lines or other large features will be provided in ESRI shapefile format and will include the coordinate system datum, and accuracy level used in the shapefile. Further information about GPS data collection standards is available at: http://www.nj.gov/dep/gis/GPSStandards_2011.pdf.

If ecological community mapping and relevé plot sampling preceded the plant surveys (see above), a desktop analysis and review of the mapping and relevé results will be used to first identify unique communities. This will help identify and eliminate areas with low diversity and focus the species surveys to maximize the likelihood of observing the targeted plant species.

Plant surveyors will initiate field work by conducting visual assessments along existing trails, access roads, or other rights of way and will then conduct meandering searches through each of the plant communities. In addition, focused searches will be conducted in habitats that are likely to contain rare species, such as wetlands, pond edges and talus slopes. Search activities will be modified as needed to focus on known locations of rare plants and on similar habitats that may also support rare plant populations.

The surveys will target the ideal survey windows for most groups of plants by conducting a minimum of one survey event every two weeks from April through October, for a total of at least 14 survey events annually over a period of two complete field seasons (at least 28 survey events in all over two years). The duration and extent of each survey event will be determined in consultation with the ONLM before the beginning of the field season, and will depend on the project area and survey acreage involved, the number of qualified botanists employed and their familiarity with the flora of the project area, and other factors.

For each occurrence of plant species ranked as S1.1, SH.1, SH, SX.1 or SX discovered during the course of the rare plant survey, the surveyors will contact the ONLM by email as soon as possible but no later than 72 hours after the discovery. The same requirement applies to native plants species that are believed to be additions to New Jersey's flora.

If surveyors encounter a plant of questionable identification or one that constitutes an unusual or unique find, a voucher specimen will be collected. Refer to Attachment B for New Jersey Natural Heritage Program procedures for collection of voucher specimens.

In addition to reporting on those taxa included in the *List of Endangered Plant Species and Plant Species of Concern*, a comprehensive list of the flora observed in the project area will be developed from all of the fieldwork and submitted with the other deliverables to the ONLM.

Completed Natural Heritage Program Rare Plant Species Reporting Forms and accompanying data files (GPS data, digital photographs and voucher specimens) as specified above will be submitted to the ONLM within one month of the discovery or revisit to previously documented occurrence of each occurrence of a rare plant species. The remaining data (comprehensive list of flora, negative survey data and data concerning invasive species) will be submitted within two months of the conclusion of the field season.

Attachment A

New Jersey Natural Heritage Program
Additional Guidance on Ecological Community Inventory and Mapping

At least five relevé plots and five recon plots shall be located and sampled to aid in classification of communities. The following general vegetation sampling methodology shall be used:

- Most detailed quantitative relevé plot sampling of ecological community types will be conducted within rare, exemplary or higher conservation value patches/polygons.
- Less detailed "recon plots" and "recon patch plots" (descriptive plots with percent cover or cover class of dominant species) shall be used to document common ecological community types and lower priority polygons.
- Least detailed "rapid assessment samples" shall be used to document polygons encountered during preliminary ground truthing, roughly estimated as the minimum number needed to adequately map and ground truth all ecological community types. Community type and dominant species are recorded.
- Relevé and recon samples will include documenting percent-cover estimates of all or most plant species within a 100 to 400-square meter (m2) circular, square, or rectangular plot (determined by community type, size and orientation on the landscape), and sampling methods appropriate for the particular community type, vegetation structure, patch size, and shape will also be considered. Most closed canopy forest types will require up to 400-square meter (m2) sample plots. Examples of minimal sample area for other community types are as follows (Mueller-Dombois and Ellenberg, 1974):

Community Type	Minimal Sample Area
Forests	200-500m^2
Shrublands	50-100 m^2
Dwarf-shrub heath	10-25 m^2
Grasslands	50-100 m^2
Herbaceous communities	10-25 m^2
Moss communities	1-4 m^2
Lichen communities	0.1-1.0 m^2

- The center point of relevé plots will be marked with a wire stake flag and locational data collected with 1-5 meter GPS accuracy as indicated above.
- Relevé plots will be digitally photographed at high resolution from the plot's northern, southern, eastern and western edges facing the marked center point. Photographs file names should include cardinal direction.

Relevé Plot: Percent-cover values for all species by stratum will be measured to the nearest 1-percent within a defined relevé plot (e.g., 100 to 400 m^2 [328 ft^2 to 1312 ft^2]). For some species in the plot that are impractical to measure to the nearest 1-percent cover, percent-cover class estimates (as described for recon plots) will be used.

Recon Plot: Percent-cover values for dominant and diagnostic species by stratum will be divided into cover classes within a defined or visually estimated recon plot (e.g., 100 to 400 m^2 [328 ft^2 to 1312 ft^2]), using the following species cover classes: 75 to 100 percent, 50 to 75 percent, 25 to 50 percent, 5 to 25 percent, 1 to 5 percent, less than 1 percent, and P=present cover unknown. Cover classes for each stratum and species should be written out on the field forms; number codes representing each cover class should not be used. Either Braun-Blanquet or Domin Cover Class can be used, but one must be chosen and used consistently.

Braun-Blanquet Cover Scale Values	**Domin Cover Scale Values**
5 = 76 - 100% 4 = 51 - 75% 3 = 26 - 50% 2 = 6 - 25% 1 = 1 - 5% + = <1%	10 = 91 - 100% 9 = 76 - 90% 8 = 51 - 75% 7 = 34 - 50% 6 = 26 - 33% 5 = 11 - 25% 4 = 4 - 10% 3 = 1 - 4% 2 = <1% Several individuals but less than 1% cover 1 = 1 - 2 individuals. No measurable cover. Individuals with normal vigor. + = a single individual. No measurable cover.

Recon Patch Plots: Percent-cover values for dominant and diagnostic species by stratum will be divided into cover classes, using the natural bounds of a small patch occurrence to define the sampling area and using the same following species cover classes: 75 to 100 percent, 50 to 75 percent, 25 to 50 percent, 5 to 25 percent, 1 to 5 percent, less than 1 percent, and P=present cover unknown.

The following references are recommended to aid in ecological community inventory and mapping, including relevé plot sampling:

- ***National Park Service – Vegetation Mapping Inventory (VMI)*** protocol at https://science.nature.nps.gov/im/inventory/veg/
- ***USDA United States Forest Service - Existing Vegetation Classification and Mapping Technical Guide Version 1.1*** at: http://www.fs.fed.us/emc/rig/documents/protocols/vegClassMapInv/EV_TechGuideV1-1-2.pdf
- ***NatureServe Biodiversity Inventory of Natural Lands*** (Cutko, 2009) report and appendices (use Google Chrome) at: http://www.natureserve.org/sites/default/files/publications/biodiversityinventorymanual_main.pdf and: http://www.natureserve.org/sites/default/files/publications/biodiversityinventorymanual_appendices.pdf
- FGDC. 2008. ***National Vegetation Classification Standard, Version 2 FGDC-STD-005-2008 (version 2).*** Vegetation Subcommittee, Federal Geographic Data Committee, FGDC Secretariat, U.S. Geological Survey. Reston, VA. 55 pp. + Appendices. https://www.fgdc.gov/standards/projects/FGDC-standards-projects/vegetation
- ***A Flexible, Multipurpose Method for Recording Vegetation Composition and Structure.*** Peet, R.K., T.R. Wentworth, and P.S. White. 1998. A flexible, multipurpose method for recording vegetation composition and structure. Castanea 63:262-274. http://cvs.bio.unc.edu/pubs/castanea63;262.pdf
- ***Handbook for Collecting Releve Data*** (Minnesota Natural Heritage Program, 2012) at: http://files.dnr.state.mn.us/eco/mcbs/releve/releve_singlepage.pdf
- ***Virginia Natural Heritage Program (VANHP) standard plot data collection field form and instructions*** at: http://www.dcr.virginia.gov/natural_heritage/documents/nh_plotform_04062011.pdf and http://www.dcr.virginia.gov/natural_heritage/documents/nh_plotform_instructions.pdf
- ***Aims and Methods of Vegetation Ecology***. Mueller-Dombois, Dieter and Heinz Ellenberg. 1974. Aims and Methods of Vegetation Ecology, John Wiley & Sons, New York. 547 p.

Attachment B

New Jersey Natural Heritage Program
Procedures for Collection of Voucher Specimens

Collection of a voucher specimen is required if the surveyor encounters a native or invasive taxon of questionable identification, or that constitutes an unusual or unique find (e.g., new to the State, outside of its range, etc.). Exceptions are noted below.

A voucher specimen may be required as defined above for any vascular (or non-vascular, if requested) plant taxa with a Natural Heritage Program (NHP) rank of S3S4, S3, S2, S1, SH, SX, SU (or any combination of these ranks) that is documented on a project site. Specimens also should be collected for any taxa believed to be an addition to New Jersey's flora. Depending on project need (including scope, total funding, duration, etc.) voucher specimens may also be requested for native species of other state ranks or nonindigenous plant taxa.

It is the responsibility of the surveyor, upon completion of the project, to submit standard mounted and labeled herbarium specimens to the NHP or to another repository as directed by the NHP. The following links provide excellent guidelines in the collection, pressing, mounting, and labeling of herbarium specimens:

http://herbarium.desu.edu/pfk/page23/page24/files/herbariummaking.pdf

http://www.mobot.org/mobot/molib/fieldtechbook/pressing.shtml

http://www.rbg.ca/Document.Doc?id=125

The following restrictions apply to the collection of voucher specimens:

1. Plants ranked as S1.1 are not to be collected without prior authorization.

2. Underground parts of plants listed as state endangered or plants ranked as S1 are not to be collected from populations of less than 50 individuals.

3. Only above ground portions of plants may be collected for plants listed as state endangered or plants ranked as S1 which occur in populations numbering 30-49 individuals.

4. No voucher specimens will be collected for any plant species, regardless of state rank, for populations of less than 30 individuals.

5. No voucher specimens will be collected for any orchid species or for any species of *Trillium*.

6. No voucher specimens will be collected for any plants species that are federally listed or are candidates for federal listing without prior authorization.

7. No voucher specimens will be collected for any species ranked as S2 or S3 in populations of less than 30 individuals.

8. Only a single voucher specimen per plant species will be collected for any species regardless of Natural Heritage state rank unless prior authorization is granted.

9. The collection of voucher specimens are restricted to state owned or state managed lands and will be only collected by authorized individuals who have written permission from the appropriate state agency.

10. Digital photographs are to be submitted as positive documentation in all cases were a physical specimen is not collected due to any of the above restrictions.

11. All voucher specimens and photographs are the exclusive property of the State of New Jersey.

Plant Species Survey Target List within PennEast Survey Area

State Forestry Service, Office of Natural Lands Management - Natural Heritage Program
August 22, 2016

Agrimonia microcarpa, Small-fruit Grooveburr, G5 S2
Arnoglossum atriplicifolium, Pale Wild Caraway, State Endangered
Asclepias quadrifolia, Four-leaf Milkweed, G5 S3
Carex aggregata, Glomerate Sedge, G5 S2
Carex albursina, White Bear Lake Sedge, G5 S3
Carex bushii, Bush's Sedge, State Endangered
Carex hitchcockiana, Hitchcock's Sedge, G5 S3
Carex jamesii, James' Sedge, State Endangered
Carex planispicata, Narrow-leaf Sedge, State Endangered
Carex willdenowii var. willdenowii, Willdenow's Sedge, G5T5 S2
Chaerophyllum procumbens var.procumbens, Spreading Chervil, G5T5 S3
Cheilanthes lanosa, Hairy Lipfern, G5 S2
Chenopodium simplex, Maple-leaf Goosefoot, G5 S2
Chenopodium standleyanum, Stanley's Goosefoot, G5 S2
Crataegus holmesiana, Holmes' Hawthorn, State Endangered
Cuscuta cephalanthi, Buttonbush Dodder, State Endangered
Cynoglossum virginianum var. virginianum, Wild Comfrey, G5T5 S2
Dicentra canadensis, Squirrel-corn, State Endangered
Eragrostis frankii, Frank's Love Grass, G5 S2
Galium palustre, Marsh Bedstraw, G5 S3
Hybanthus concolor, Green Violet, State Endangered
Jeffersonia diphylla, Twinleaf, State Endangered
Lathyrus venosus, Veiny Vetchling, G5 SX
Liatris spicata var. spicata, Blazing-star, G5T5? S3
Linum virginianum, Woodland Flax, G4G5 S3
Monarda clinopodia, Basil Beebalm, State Endangered
Penstemon laevigatus, Smooth Beardtongue, State Endangered
Phaseolus polystachios var. polystachios, Wild Kidney Bean, G5T5? S2
Phlox divaricata var. divaricata, Wild Blue Phlox, State Endangered
Polygonum cilinode, Fringed Black-bindweed, G5 S3
Ranunculus micranthus, Rock Buttercup, G5 S2
Ribes missouriense, Missouri Gooseberry, State Endangered
Scutellaria nervosa, Veined Skullcap, G5 S2
Selaginella rupestris, Rock Spike-moss, G5 S2
Solidago speciosa var. speciosa, Showy Goldenrod, G5T5? S2
Taenidia integerrima, Yellow-pimpernel, G5 S3
Tradescantia ohiensis, Ohio Spiderwort, G5 S2

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State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF PERMIT COORDINATION AND ENVIRONMENTAL REVIEW
P.O. Box 420 Mail Code 401-07J Trenton, New Jersey 08625-0420
Telephone Number (609) 292-3600
FAX NUMBER (609) 633-2102

BOB MARTIN
Commissioner

November 04, 2015

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

FILED
SECRETARY OF THE
COMMISSION
2015 NOV 17 A 9:45
FEDERAL ENERGY
REGULATORY COMMISSION

Mr. Anthony Cox
Penn East Pipeline Company, LLC
One Meridian Boulevard
Suite 2C01
Wyomissing, Pa. 19610 77056

RE: Proposed Penn East Pipeline Project
FERC Docket # CP15-558-000
Addendum to Comments on Final Resource Reports and
FERC Certificate Application
Hunterdon and Mercer Counties

Dear Secretary Bose and Mr. Cox:

On October 28, 2015, the New Jersey Department of Environmental Protection's (Department) Office of Permit Coordination and Environmental Review (PCER) provided comment on the Final Resource Reports and Federal Energy Regulation Commission (FERC) Section 7(c) Certificate Application for the proposed Penn East Pipeline Project. The Department respectfully submits the following additional comments as an addendum to our comments of October 28, 2015.

New Jersey Natural Lands Trust

The proposed PennEast pipeline route traverses five NJNLT-managed properties within its Gravel Hill Preserve in Holland Township, Hunterdon County, NJ. The 400-foot pipeline study corridor also includes a portion of the NJNLT's Thomas F. Breden Preserve at Milford Bluffs (also within Holland Township), although PennEast has assured the NJNLT that it has no intention of using any portion of that preserve for construction or staging.

As early as March 2015 the NJNLT requested that PennEast avoid the Gravel Hill Preserve consistent with the NJNLT's statutory purpose as well as the presence of habitat for the state-endangered bobcat and a rare plant, wild comfrey. In addition to avoiding the existing preserve, the NJNLT requested that PennEast also avoid the larger Gravel

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Hill Project Area. Based on the presence of rare species habitat, the NJNLT Board designated the lands within the Project Area boundary as a high priority for acquisition and inclusion in the Gravel Hill Preserve. Enclosed is the October 21, 2015 NJNLT comment letter to FERC.

In order to avoid the Gravel Hill Preserve and Project Area, the NJNLT requested that PennEast install the pipeline within county roads that surround the preserve. The enclosed attachment depicts PennEast's current proposed route through Gravel Hill Preserve along with NJNLT's proposed alternate route as depicted in the enclosed maps. Although PennEast assured the NJNLT that it would consider the road installation alternative, as well as an alternative of co-locating its pipeline within two existing transmission line rights of way, PennEast's September 2015 certificate application to FERC continues to show the pipeline being routed through the NJNLT's Gravel Hill Preserve. Notwithstanding its FERC application, PennEast has advised the NJNLT that it is still studying alternatives including the road installation alternative. However, in recent meetings PennEast's representatives have suggested that FERC discourages the placement of pipelines within roads or that the road installation may be too costly. The NJNLT respectfully submits that property preserved in perpetuity and that supports rare species habitat should not be designated as the preferred route if viable, less environmentally damaging alternatives exist. Portions of the Gravel Hill Preserve that are targeted in the application include a mature forest with a natural understory and a general absence of invasive plant species. If this forest was subject to clearing for the installation of the pipeline, it would detrimentally impact the understory species that thrive on a closed tree canopy and increase the likelihood for the introduction of invasive plant species, thereby permanently altering the integrity of this ecological community. The NJNLT believes that pipeline installation is feasible within the county roads that surround the preserve boundary. This is a rural low traffic area. The NJNLT is not aware of any existing infrastructure within the subject roadways and there appear to be viable options for detours during construction.

Based on these factors, we respectfully request that PennEast fully investigate alternatives to the current preferred route that would impact the Gravel Hill Preserve and avoid the NJNLT's Gravel Hill Preserve if a viable, less environmentally damaging alternative is available.

State Forestry Services, Natural Heritage Program Comments

PennEast must make every effort possible to avoid and minimize impacts to rare plant species and ecological communities within and adjacent to the proposed right-of-way. By database report dated August 7, 2015, the New Jersey Natural Heritage Program (Heritage) submitted a response to a Heritage database search request. The Heritage database report provided information to PennEast regarding records for rare plants species and ecological communities along PennEast's proposed route. In order to evaluate the environmental impacts associated with PennEast's proposed route, PennEast should be required to conduct rare plant surveys within the entire 400-foot PennEast pipeline study corridor and for an additional 200 feet to each side of the study corridor (collectively referred to as the "survey area"). The surveys should target the rare plant species listed on the Heritage database report as possibly on or within one mile of the

pipeline corridor, along with additional rare plant species occurrences not covered by the Flood Hazard Area Control Act rules but documented in the vicinity of the pipeline corridor, as well as all rare plant species documented in the two Natural Heritage Priority Sites crossed by the pipeline corridor. These thirty-two species are listed below.

In addition to these species, PennEast should document and report any other rare plant species that may be found in the survey area. The list of native plant species currently tracked by the Natural Heritage Program is available at:

http://www.state.nj.us/dep/parksandforests/natural/heritage/spplant.html

The procedures for surveying, documenting and reporting rare plant species are described in the protocols developed by the Office of Natural Lands Management (attached and previously provided to PennEast). Targeted surveys of the survey area should concentrate on the following rare plant species:

Agrimonia microcarpa, Small-fruit Grooveburr, G5 S2

Arnoglossum atriplicifolium, Pale Wild Caraway, State Endangered

Asclepias quadrifolia, Four-leaf Milkweed, G5 S3

Carex albursina, White Bear Lake Sedge, G5 S3

Carex bushii, Bush's Sedge, State Endangered

Carex hitchcockiana, Hitchcock's Sedge, G5 S3

Carex jamesii, James' Sedge, State Endangered

Carex planispicata, Narrow-leaf Sedge, State Endangered

Carex willdenowii var. willdenowii, Willdenow's Sedge, G5T5 S2

Chaerophyllum procumbens var.procumbens, Spreading Chervil, G5T5 S3

Cheilanthes lanosa , Hairy Lipfern , G5 S2

Chenopodium simplex, Maple-leaf Goosefoot, G5 S2

Chenopodium standleyanum, Stanley's Goosefoot, G5 S2

Crataegus holmesiana, Holmes' Hawthorn, State Endangered

Cuscuta cephalanthi, Buttonbush Dodder, State Endangered

Cynoglossum virginianum var. virginianum, Wild Comfrey, G5T5 S2

Dicentra canadensis, Squirrel-corn, State Endangered

Eragrostis frankii, Frank's Love Grass, G5 S2

Hybanthus concolor, Green Violet, State Endangered

Jeffersonia diphylla, Twinleaf, State Endangered

Lathyrus venosus, Veiny Vetchling, G5 SX

Monarda clinopodia, Basil Beebalm, State Endangered

Penstemon laevigatus, Smooth Beardtongue, State Endangered

Phaseolus polystachios var. polystachios, Wild Kidney Bean, G5T5? S2

Phlox divaricata var. divaricata, Wild Blue Phlox, State Endangered

Polygonum cilinode, Fringed Black-bindweed, G5 S3

Ranunculus micranthus, Rock Buttercup, G5 S2

Scutellaria nervosa, Veined Skullcap, G5 S2

Selaginella rupestris, Rock Spike-moss, G5 S2

Solidago speciosa var. speciosa, Showy Goldenrod, G5T5? S2

Taenidia integerrima, Yellow-pimpernel , G5 S3

Tradescantia ohiensis, Ohio Spiderwort, G5 S2

*Codes used in Natural Heritage reports are in the attached list.

As noted above, PennEast's proposed route traverses two Natural Heritage Priority Sites (NHPS)--the Goat Hill and Milford Bluffs NHPSs. NHPSs are areas identified on the Department's geographic information systems (GIS) coverage that conserve New Jersey's biological diversity, with particular emphasis on the habitat of endangered plant species, plant species of concern and ecological communities of concern.

While PennEast has assured the Department that it has no intention of using any portion of the NJNLT's Thomas F. Breden Preserve at Milford Bluffs for construction or staging, its proposed route will impact the larger Milford Bluffs NHPS. However, if PennEast takes the proposed alternate route to avoid the NJNLT's Gravel Hill Preserve, it will have the added benefit of also avoiding the Milford Bluffs NHPS (See New Jersey Natural Lands Trust Comments and the attached map of the Milford Bluffs Natural Heritage Priority Site). Similar to the NJNLT's proposed alternate route to avoid the Gravel Hill Preserve by using surrounding county roads, PennEast should avoid the Goat Hill NHPS by installing the pipeline within Goat Hill Road/Studdiford Street, the county road that is adjacent to the Goat Hill NHPS (see attached map of Goat Hill Natural Heritage Priority Site).

The New Jersey
NATURAL LANDS TRUST

August 12, 2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

RE: Docket# CP15-558

Dear Secretary Bose:

Please accept this comment on behalf of the New Jersey Natural Lands Trust (NJNLT), an independent New Jersey state agency that is in but not of the New Jersey Department of Environmental Protection (NJDEP). This comment concerns FERC's draft Environmental Impact Statement (EIS) issued on July 22, 2016. FERC's issuance of the draft EIS is a huge step towards the issuance of a Certificate of Public Convenience and Necessity (Certificate).

In its draft EIS, FERC acknowledges that it has "received many comments during scoping questioning the pipeline routing in specific locations, and/or requesting review of route variations to avoid or minimize impacts on specific areas." FERC acknowledges that not all of these concerns have been addressed, but through its issuance of the draft EIS, FERC suggests that the fact there are route alternatives under consideration is sufficient to move the project forward. This is similar to the position taken by PennEast that a rigorous alternatives analysis will be undertaken later as part of the NJDEP permitting process.

The NJNLT maintains that FERC's approach of issuing a draft EIS subject to PennEast's future conduct of a rigorous and comprehensive analysis of route alternatives during the permitting process is fundamentally flawed. The NJNLT has consistently advocated since March 2015 that an alternate route be developed that avoids the NJNLT's Gravel Hill Preserve. As PennEast has been unwilling to provide the analysis requested by the NJNLT and FERC prior to FERC's issuance of the draft EIS, one must wonder why PennEast would be willing do so after obtaining the Certificate authorizing them to proceed with the power of condemnation, a time period when they will undoubtedly be busy applying for permits and approvals for their proposed route.

The NJNLT submits that PennEast's offer to consider a route change around the Gravel Hill Preserve amounts to a delaying tactic, not an open and honest dialogue with the NJNLT concerning potential alternatives. At an initial meeting with the NJNLT on March 29, 2015, the NJNLT first proposed an alternate route (now designated as Route Deviation #1705). PennEast summarily dismissed this alternative leading to the NJNLT's suggestion of what is now specified as Route Deviation #1817. After PennEast rejected Route Deviation #1817, based on some general findings (conclusory statements) about potential impacts, PennEast now claims to be considering proposed Route Deviation #1705. The attached email exchanges demonstrate that

Mail Code: 501-04, 501 E. State Street, Station Plaza #5, 4th Floor, PO Box 420, Trenton, NJ 08625-0420 (609) 984-1339 Fax (609) 984-1427

its latest claim to be considering an alternative route is just more of what occurred in the months following the initial March 29, 2015 meeting with PennEast. When the NJNLT has requested status updates regarding its analysis of Route Deviation #1705, PennEast has refused, responding that information will be provided as part of the permitting process after FERC issues a certificate of public convenience and necessity. PennEast's ability to move forward based on superficial conclusory statements is especially frustrating given that as of February 10, 2016, FERC seemed to agree with the NJNLT that PennEast should be required to provide a comprehensive alternatives analysis. Indeed, FERC specifically required in Request #29 (Resource Report 10 - Alternatives) that PennEast provide "an engineering and environmental analysis of the county roadway route alternative identified by the NJNLT in its December 17, 2015 letter to FERC as a potential means to avoid impacts on the Gravel Hill Preserve near MP 80.5."

While PennEast submitted a response dated February 22, 2016 to FERC, by no stretch of imagination can it be considered an "engineering and environmental analysis." PennEast merely submitted a couple of paragraphs listing the numbers of potential C1 stream crossings, preserved farmlands, wetlands, and historic districts that would be impacted by Route Deviation #1817 and a number of increased structures within 50 feet of the construction work area. This was at best a cursory "environmental analysis," and in no way an "engineering analysis." Moreover, the "environmental analysis" was disingenuous in that if the pipeline was located in the county roads as proposed by the NJNLT, the listed environmental impacts would be nonexistent. On the issue of solely or primarily using the county roads, PennEast indicates that Route Deviation #1817 is "located within roadways to the greatest extent possible. However, due to land uses located along these roadways, the route deviation is anticipated to be located adjacent to the paved portions of the roadways through certain areas." Conveniently, this statement was made without an "engineering analysis" or even a detailed description of these land uses, such as location and extent.

In addition, with respect to PennEast's concern about potential impacts to historic districts, it must be noted that PennEast's proposed route through the Gravel Hill Preserve traverses known archaeological sites of significance to the Delaware Tribe. Therefore, for either their proposed route or Route Deviation #1817, FERC and PennEast would need to go through the Section 106 process which involves consultation among all consulting and interested parties to identify historic resources within the area of potential effect (APE), evaluate their significance, and assess the impacts of the project on those historic resources. Section 106 is a consultative process where the views of consulting parties and the interested public are taken into account in the decision-making process. If there will be adverse effects to historic resources, FERC and PennEast, in consultation with consulting and interested parties, must identify ways to avoid, minimize, and/or mitigate the impacts.

On March 3, 2016, the NJNLT filed a comment noting the inadequacy of PennEast's February 22, 2016 response. Despite this, FERC now seems to have abandoned its position on the need for a robust alternatives analysis, including consideration of alternate routes to avoid the NJNLT's Gravel Hill Preserve. The position taken by PennEast, and apparently accepted by FERC, is that the alleged consideration of a different Route Deviation (#1705) should suffice in the absence of a comprehensive and rigorous analysis or justification for the rejection of Route Deviation #1817.

It is important to note that PennEast has specifically designed the route to avoid traversing lands preserved by federal easements but it is quite willing to trample upon state preserved lands because FERC's Certificate will allow them to do so. The NJDEP has asked PennEast to consider NJNLT lands as the most important state preserved lands to avoid, yet PennEast refuses to do so. This refusal is especially insulting because the NJNLT was specifically created in 1969 by the New Jersey Legislature to preserve lands that protect the state's natural diversity such as endangered species habitat, rare natural features, and significant ecosystems and to ensure the protection of such lands from condemnation. Since 1969, no lands owned or managed by the NJNLT have been condemned. If FERC issues a Certificate to PennEast with the powers of condemnation, this will be the first time in 47 years that the natural diversity of a NJNLT preserve is threatened.

It should also be observed that FERC does not seem to understand the different categories of lands that will be impacted by the PennEast pipeline, if approved. In its draft EIS on page 4-144, FERC mistakenly combines NJNLT lands with other state preserved lands (Alexauken Preserve), county preserved lands (Ted F. Stiles Preserve) and non-profit preserved lands (Wickecheoke Creek Greenway). The two NJNLT preserves located along the proposed route are the Gravel Hill Preserve and Thomas F. Breden Preserve at Milford Bluffs. Perhaps these distinctions should be better understood by FERC before it takes any future actions such as the issuance of the EIS or Certificate.

FERC has an obligation to ensure that reasonable and feasible alternatives are fully reviewed so that approved projects do not result in unnecessary environmental impacts. To date, FERC has not fulfilled this obligation.

Based on the above, we once again respectfully request that FERC require a comprehensive and rigorous analysis by PennEast regarding the environmental and engineering feasibility of Route Deviations #1817 and #1705 before taking any further actions.

Thank you for the opportunity to provide this comment.

Sincerely,

Michael Catania

Michael Catania
Chair

Enclosure

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