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[Electronically Submitted via: RA-EPPENNEAST@pa.gov](mailto:RA-EPPENNEAST@pa.gov)

***RE: Delaware Riverkeeper Network's Comment for PennEast Pipeline Company, LLC's, Chapter 105, Water Obstruction and Encroachment applications for Luzerne County (E40-780), Carbon County (E13-185), Northampton County (E48-435), and Bucks County (E09-998) and Chapter 102, Erosion & Sediment Control application (ESG02000160001) for Luzerne, Carbon, Monroe, Northampton, and Bucks Counties.***

Dear Mr. Rocco,

The Delaware Riverkeeper Network ("DRN") submits this comment in response to the Pennsylvania Department of Environmental Protection's ("Department" or "DEP"), February 16, 2019, PA Bulletin Notice regarding proposed permitting pursuant to Chapter 102 and Chapter 105 for the PennEast Pipeline Project ("PennEast"). The Delaware Riverkeeper Network champions the rights of our communities to a Delaware River and tributary streams that are free-flowing, clean, and healthy and abundant with a diversity of life. Clean Air Council and PennFuture join in these comments.

Based on the evidence, science, data and facts, the DEP must deny the PennEast Pipeline Chapter 105, Water Obstruction and Encroachment applications for Luzerne County (E40-780), Carbon County (E13-185), Northampton County (E48-435), and Bucks County (E09-998), as well as the PennEast Pipeline Chapter 102, Erosion & Sediment Control application (ESG02000160001) for Luzerne, Carbon, Monroe, Northampton, and Bucks Counties. It is clear that the PennEast pipeline will inflict irreparable harm on the environments and communities of the Commonwealth of Pennsylvania in violation of its statutes, regulations and constitution. At a minimum, DEP must determine that the PennEast Chapter 105 and Chapter 102 permit applications remain administratively incomplete because they continue to be plagued with misinformation, missing information, inaccuracies and false information which cannot support complete and accurate decisionmaking.

The current 30-day comment period with no scheduled public hearings is inadequate to support full and fair public participation. The purpose of the public comment period is to allow the DEP to benefit from the wealth of science, facts and information the public, and their experts, can bring forth. Given the wealth of

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information to be reviewed and the extensive impacts of the proposed PennEast pipeline, the current process is wholly inadequate. And so we respectfully request and urge the Department to:

- grant an extension of the formal public comment period to a minimum of 90 days (beginning at the point when the application is actually administratively complete);
- provide a minimum of 3 conveniently located public hearings along the proposed pipeline route;
- provide all information to the public to ensure their right to comment in a meaningful and informed way;
- deny the Chapter 102 And Chapter 105 Permit Applications because PennEast has not provided the Department with vital information and analysis as to the Pipeline Project's real impacts;
- deny PennEast's application for Chapter 105 Permits be denied as the application materials fail to meet the requirements in 25 pa. code § 105.14(b);
- consider and account for the risk of potential sinkholes during PennEast's construction;
- account for degradation to Exceptional Value Wetlands based on their existing use as defined by 25 Pa. Code § 105.17; and
- require PennEast to obtain a NPDES Permit.

According to the FERC Final EIS for PennEast, 4,169 written comments were received from federal, state, and local agencies; companies/organizations; and individuals from the public – indicating an overwhelming and very strong concern for the impacts this pipeline would cause if constructed. Additional time for public review and comment, in addition to a minimum of 3, easily accessible hearings, are warranted and essential.

Delaware Riverkeeper Network requests that the DEP consider and include in the current record DRN's previously submitted comments, expert reports, and FERC filings included on the CD provided via mail and identified in Attachment A of this comment. We are enclosing comment and expert reports by Delaware Riverkeeper Network for similar large transmission pipeline projects that include additional data that should be considered – since the pipelines' construction techniques are similar in nature to other pipeline applications being considered and the regulations and policies are largely the same. Therefore, the questions, concerns, impacts and outcomes submitted regarding, and/or experienced by, other pipelines is of direct relevance and concern to the current PennEast pipeline proposal and should be considered in the context of PennEast -- i.e. we would anticipate that PennEast will suffer the same outcomes as these other pipeline projects given the parallels in construction practices proposed and the applicable laws in place.

### **I. The Department Needs To Allow for Full and Fair Public Participation Through Granting An Extension Allowing For A Full 90-Day Comment Period And Holding Public Hearings In Impacted Communities.**

As indicated in Delaware Riverkeeper Network's February 20, 2019 request for extension, we urge the Department to provide the public at least a full 90-days for review and comment of PennEast's pipeline project that if permitted would impact a vast network of tributaries, wetlands and habitats spanning five counties of the Commonwealth as well as impacts in New Jersey and the larger Delaware River Basin. We request that this 90-day clock be reset when all information is completed by the applicant to allow the public complete and adequate time for review. Currently the application and supporting materials are clearly deficient being plagued by a wealth of misinformation, missing information, data gaps and misrepresentations of facts, data and science.

The Chapter 105, Water Obstruction and Encroachment permits alone, according to the applicant and DEP notice in the Feb 15, 2019 PA Bulletin, will impact:

- In Luzerne County, 3,563 feet of temporary impacts and 2,013 feet of permanent impacts to Trout Brook (CWF, MF), Tributary to Trout Brook (CWF, MF), Tributaries to Abrahams Creek (CWF, MF), Tributaries to Toby Creek (CWF, MF), Tributaries to Susquehanna River (CWF, MF), Susquehanna River (WWF, MF), Gardners Creek (CWF, MF), Tributaries to Mill Creek (CWF, MF), Mill Creek (CWF, MF), Deep Creek (CWF, MF), Tributary to Deep Creek (CWF, MF), Tributaries to Little Bear Creek (HQ-CWF, MF), Tributaries to Bear Creek (H-CWF, MF), Bear Creek (HQ-CWF, MF), Meadow Run (HQ-CWF, MF), Tributary to Meadow Run (HQ-CWF, MF), Tributaries to Little Shades Creek (HQ-CWF, MF), Little Shades Creek (HQ-CWF, MF), Tributaries to Stony Run (HQ-CWF, MF), Stony Run (HQ-CWF, MF); 6.5 acres of floodway impacts; 3.14 acres of temporary impacts to PEM, PSS and PFO wetlands; and 2.36 acres of permanent impacts to PEM, PSS and PFO wetlands. To compensate for the proposed permanent project impacts in Luzerne County, the applicant is proposing 3.17 acres of wetland mitigation through a combination of wetland creation and wetland enhancement.<sup>1</sup>
- In Carbon County, 1,423 feet of temporary impacts and 1,120 feet of permanent impacts to Tributary to Lime Hollow (HQ-CWF, MF), Tributaries to Black Creek (HQ-CWF, MF), Tributaries to Hawk Run (HQ-CWF, MF), tributaries to Laurel Run (HQ-CWF, MF), Tributaries to Mud Run (HQ-CWF, MF), Mud Run (HQ-CWF, MF), Tributaries to Stony Creek (EV, MF), Yellow Run (EV, MF), Tributaries to Yellow Run (EV, MF), Tributary to Wild Creek (EV, MF), Wild Creek (EV, MF), Tributaries to White Oak Run (EV, MF), White Oak Run (EV, MF), Tributaries to Pohopoco Creek (CWF, MF), Tributaries to Hunter Creek (HQ-CWF, MF), Buckwha Creek (CWF, MF), Aquashicola Creek (HQ-CWF, MF), Tributaries to Aquashicola Creek (HQ-CWF, MF), Tributary to Black Creek (HQ-CWF, MF); 7.00 acres of floodway impacts; 5.54 acres of temporary impacts to PEM, PSS and PFO wetlands; and 6.88 acres of permanent impacts to PEM, PSS and PFO wetlands. To compensate for the proposed permanent project impacts in Carbon County, the applicant is proposing 4.40 acres of wetland mitigation through wetland enhancement.
- In Northampton County, 672 feet of temporary impacts and 1,102 feet of permanent impacts to Tributaries to Indian Creek (CWF, MF), Tributaries to Hokendauqua Creek (CWF, MF), Hokendauqua Creek (CWF, MF), Tributaries to Monocacy Creek (HQ-CWF, MF), Monocacy Creek (HQ-CWF, MF), Tributaries to East Monocacy Creek (HQ-CWF, MF), Tributaries to Lehigh River (CWF, MF), Lehigh Coal & Navigation Canal (WWF, MF), Lehigh River (WWF, MF), Tributaries to Bull Run (CWF, MF), Tributaries to Frya Run (HQ-CWF, MF), Frya Run (HQ-CWF, MF), Tributaries to Cooks Creek (EV, MF), Bull Run (CWF, MF); 6.71 acres of floodway impacts; 2.14 acres of temporary impacts to PEM, PSS and PFO wetlands; and 2.11 acres of permanent impacts to PEM, PSS and PFO wetlands. To compensate for the proposed permanent project impacts in Northampton County, the applicant is proposing 2.8 acres of wetland mitigation through wetland enhancement.
- And in Bucks County, 4 feet of temporary impacts and 326 feet of permanent impacts to a Tributary to the Delaware River (WWF, MF), Delaware Canal (WWF, MF), and Delaware River (WWF, MF); 0.20 acre of floodway impacts; and 0.08 acre of permanent impacts to PFO wetlands.

Additionally, the Chapter 102, Erosion and Sediment Control Permit will impact water, wetland and natural resources along the entire length of the proposed 77.3 miles of pipeline right of way that will cut through Pennsylvania.

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<sup>1</sup> Luzerene County:  
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There is no doubt that the breadth of harm to be inflicted by the proposed PennEast pipeline on waterways, wetlands, groundwater, habitats, species, people and communities is significant and severe. In order to ensure that the public has the ability to review, understand and meaningfully comment on these 5 permits, the Department must extend the formal comment period to a full 90 days from the date when the permit is full, complete and accurate. Additionally, the Department needs to afford those who live in communities that will be impacted by this pipeline the opportunity to voice their concerns by providing a minimum of three public hearings in convenient locations along the proposed route and in downstream communities.

The Department must take steps to undo and limit these repeated harms and atrocities being inflicted on Pennsylvania communities and the environment by the current frenzy of new pipeline activity fueled by Marcellus shale natural gas exploitation and at minimum ensure the public has a meaningful and fair opportunity to participate in the pipeline permitting process. There is no other entity that will be holding hearings specific to Pennsylvania's environmental regulations and mandates and to deny the public the opportunity to meaningfully participate in this process potentially violates the public participation requirement of the Clean Water Act and the Department's duties to act in the interest of the public trust under the Environmental Rights Amendment.<sup>2</sup> DEP's own "Pipeline Taskforce" called for better and more meaningful public participation with regard to pipelines.<sup>3</sup>

## **II. The Department Must Provide All Information To The Public To Ensure Their Right To Comment In A Meaningful And Informed Way.**

The Department has failed to maintain the DEP Pipeline Portal depriving the public of valuable information. The public must be granted immediate access to the digital GIS layers and Google Earth layers of the pipeline route and habitats, and all information in DEP's possession regarding the proposed PennEast pipeline project must be posted on the DEP Pipeline Portal, which DEP still claims functions as a clearinghouse of information for large pipeline projects like PennEast. The digital GIS and Google Earth layers are needed to allow use of basic desktop tools essential for a basic review of such a large and expansive pipeline project. Further, these layers are commonly used and provided by the company and should be part of the public record, there is no legitimate reason for denying the public access to this essential information. This same request has been made by several public trust organizations, including Delaware Riverkeeper Network, for other pipelines and in some instances, DEP has in fact provided this information. Despite the importance of the information for review and analysis of impacts, and despite the fact that DEP has made this same information available on some projects, the pipeline portal for PennEast does not include access to this information. In addition, DEP fails for PennEast pipeline and other pipeline proposals, to provide consistent access to information for each and every proposed pipeline project cutting through the Commonwealth.<sup>4</sup> What information is available is limited and inhibits the public's ability to provide meaningful and thorough review of the impacts of the PennEast project.

## **III. The Chapter 102 And Chapter 105 Permit Applications Should Be Denied Because PennEast Still Has Not Provided The Department With Vital Information And Analysis As To The Pipeline Project's Real Impacts.**

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<sup>2</sup> 33 U.S.C. § 1251(e); Pa, Const. Article 1, Section 27.

<sup>3</sup> *New task force seeks to manage 'massive' buildout of pipelines*, Jon Hurdle, StateImpact Pennsylvania, July 22, 2015, available at <https://stateimpact.npr.org/pennsylvania/2015/07/22/new-task-force-seeks-to-manage-massive-buildout-of-pipelines/>.

<sup>4</sup> Atlantic Sunrise record is an example where county reports are missing while DTE/Birdsboro pipeline is not included at all, for example.

The Chapter 102 and Chapter 105 permits should be denied because PennEast has failed to provide full, complete and accurate information in its application and supporting materials. Despite many extensions and concessions by the DEP, PennEast is still missing important information in its application and continues to misrepresent essential facts, science and data. In stark contrast to the Commonwealth of Pennsylvania, New Jersey Department of Environmental Protection has not acted on its state permits due to deficiencies, inaccuracies and concerns with regards to the implications of the proposed PennEast pipeline project.<sup>5</sup> The same deficiencies that plagued the materials provided to New Jersey exist in the materials PennEast has provided Pennsylvania. In fact, the materials provided Pennsylvania have even more gaps and misrepresentations due to the latest proposed route changes.

The information we do have demonstrates this project cannot and will not comply with the environmental protection laws of Pennsylvania; given the tremendous misinformation, missing information and limitations in the information that has been provided, it is wholly unreasonable, indefensible and detrimental to the people of Pennsylvania for DEP to grant PennEast the requested approvals and permits.

Other pipeline projects that have been granted permits without full, complete and accurate information and data have inflicted known and demonstrable harm on water and natural resources of the Commonwealth. These other pipelines have proposed to use the same or similar technology, construction and management practices only to inflict significant and irreparable harm. Among the projects using similar construction practices -- and for which DEP received significant and meaningful expert and technical comments that it disregarded, just as it seems poised to disregard for PennEast -- are: Transco Leidy Line, Tennessee Gas Pipeline Expansions, Eastside Expansion, Atlantic Sunrise Pipeline, and others. Given the tremendous similarities between PennEast and these other projects we share with you the comments the Delaware Riverkeeper Network provided for these other pipelines as they are directly relevant in the context of PennEast. In addition to the advance notice of likely violations of law and anticipated environment harms, these comments highlight the continued violations and harms these pipelines are inflicting on the natural resources and communities of Pennsylvania. Most recently, the Sunoco Mariner East 2 pipeline was granted permits without proper consideration and has proven to be a costly mistake as evidenced by the countless violations and accidents.<sup>6</sup>

DEP must take into consideration the ramifications of using the same and similar construction and management practices for PennEast as were used for these other projects. DEP must consider the consequences of the harms inflicted by these other pipelines, which have been constructed pursuant to Chapter 102 and Chapter 105 approvals from DEP. Chapter 102 and Chapter 105 reviews and approvals clearly have not protected the waterbodies and wetlands of the Commonwealth; it is time for DEP to

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<sup>5</sup> *N.J. DEP denies permits needed for PennEast Pipeline*, Christine, Rojas, NJ.com, June 28, 2017, available at

[https://www.nj.com/mercer/2017/06/nj\\_dep\\_denies\\_permits\\_needed\\_for\\_penneast\\_pipeline.html](https://www.nj.com/mercer/2017/06/nj_dep_denies_permits_needed_for_penneast_pipeline.html); *New Jersey DEP rejects PennEast's Water Permit Application - again*, Cristina Tatu, The Morning Call, February 2, 2018, available at: <https://www.mcall.com/news/breaking/mc-nws-penn-east-dep-permits-20180202-story.html>.

<sup>6</sup> *Mariner East 2: Sunoco's incidents, fines and shutdowns fuel residents' safety concerns*, Jon Hurdle, StateImpact, September 15, 2018, available at:

<https://stateimpact.npr.org/pennsylvania/2018/09/25/mariner-east-2s-incidents-fines-and-shutdowns-fuel-residents-safety-concerns/>; *PA DEP halts new pipeline permits for Mariner East, cites ongoing violations with Revolution pipeline*, Susan Phillips, StateImpact, February 8, 2019, available at:

<https://stateimpact.npr.org/pennsylvania/2019/02/08/pa-dep-halts-new-pipeline-permits-for-mariner-east-cites-ongoing-violations-with-revolution-pipeline/>.

undertake an internal review of its regulatory requirements and assess the failed process it has used to review and approve pipelines under the current regulatory scheme.

As with Transco, Tennessee Gas, and Columbia Pipeline Company, PennEast has time and time again provided insufficient, inaccurate and demonstrably false information that cannot support a full, fair, complete or legally defensible review by DEP. In fact, on December 26, 2018 PennEast rerouted portions of the project rendering the application materials available to the DEP, and public, flatly false, outdated and simply wrong.

The Department issued Incompleteness Review Letters to PennEast over two years ago on December 23, 2016. PennEast has asked for extensions to address the Department's concerns three times, on June 26, 2017, December 27, 2017, and June 15, 2018. PennEast finally provided updated application materials to the Department on December 26, 2018. On January 25, 2019, the Department issued Completeness Notification Letters to PennEast. However, not only did PennEast not provide all of the information requested by the Department, but PennEast proposed four new route modifications on February 15, 2019 that are largely unexamined and add to the list of incomplete information provided to DEP.

The route changes announced by PennEast are identified as Saylor Ave Realignment (MP 8.5R3 to MP 8.9R3), I-81 Workspace Adjustment (MP 10R2 to 10.4R2), Appalachian PPL Trail Crossing Realignment (MP 48.6R2 to 53.6R3), and Freemansburg Ave Realignment (MP 69.7R3 to 70.8). While the Department has yet to acknowledge these changes, the Federal Energy Regulatory Commission has opened a new comment period and docket for them. With these changes, it is impossible that PennEast can be said to have provided complete information to the Department, especially since these route changes were announced after the Department issued its Completeness Notification Letters.

In addition, PennEast has not fully surveyed the project nor provided full survey information to DEP. The Department itself has recognized that without information on 100% of the PennEast project, it cannot be evaluated for impacts,. As DEP has stated: **“The resubmission did not include 100 percent survey of the pipeline route. Please resubmit the application when 100 percent of the impacts to wetlands, streams and floodways have been field verified.”**<sup>7</sup>

In addition, many of PennEast's surveys were done remotely and have not been field-verified. These non-verified remote-sensed resources need to be field verified by the applicant since a state cannot issue a permit based on remote-sensed data. Multiple times in the past, DRN has documented and field verified where resources or impacts on the ground do not match the pipeline companies' observations. This dissonance between claims by the pipeline and facts found by DRN shows the real need for for agencies to require complete information, heightened scrutiny and field verification for each applicant.

The PennEast pipeline, like other pipelines carrying Marcellus Shale gas and liquids, will be a direct source of methane emissions, in addition to supporting and inducing additional shale gas development and end uses, which are themselves a significant source of methane emissions. Methane is a major contributor to climate change. The September 2018 Revolution Pipeline explosion was the result of massive floods recognized to be among the recent spate of unpredicted storms caused by our changing climate.<sup>8</sup> PennEast

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<sup>7</sup> PADEP, *Incompleteness Review No.3, PennEast Pipeline Project - Bucks County*, December 23, 2016 (emphasis in original).

<sup>8</sup>*Mariner East 2: Sunoco's incidents, fines and shutdowns fuel residents' safety concerns*, Jon Hurdle, StateImpact, September 15, 2018, available at:

<https://stateimpact.npr.org/pennsylvania/2018/09/25/mariner-east-2s-incidents-fines-and-shutdowns-fuel->

has failed to consider how unpredicted and unpredictable weather events such as floods events, could impact its proposed pipeline route and what steps can and should be taken in response. Protection of waterways, natural resources and communities depend upon the construction of pipelines that will not fail and induce accidents, incidents and explosions -- proper planning must consider the impacts of climate change on proposed construction and management practices.

Construction, operation, and maintenance of the PennEast pipeline would inflict significant, irreparable and long-term effects on waterways, wetlands, groundwater, floodplains, soils, plants, animals, habitats, and people. The PennEast pipeline also is facing severe scrutiny by NJDEP, it is critical that DEP not rush or provide a rubber stamp while New Jersey simultaneously approaches its permit applications more judiciously. In addition, the Delaware River Basin Commission is still undertaking its review of PennEast. There simply is no reason for Pennsylvania to approve permits with so many defects and deficiencies.

**A. The Department Cannot Issue the Requested Permits as PennEast is Failing to Provide Full, Complete or Defensible Information, Including Failing to Address Concerns of Federal and State Agencies Seeking to Protect Communities and Resources.**

**1. Threatened and Endangered Species Surveys are Incomplete**

Although most of the route changes are within 0.25 mile of the previously certified route (with the exception of the Appalachian Trail Crossing Realignment), the action area of the construction has shifted and therefore the impacts to state and federally threatened and endangered species need to be reexamined. While PennEast states that it is in the process of having new surveys completed and is in consultation with state and federal agencies, the surveys nevertheless remain incomplete and therefore valuable information regarding the affected species are unknown. For example, there are outstanding eastern small-footed bat surveys along the Revised PA Route, which includes five small areas of potential roost habitat within the Saylor Ave Realignment workspace. In fact, Phase 2 emergence surveys are only 82.8% complete for the Revised PA Route. PennEast indicates that if mitigation is pursued in lieu of or in response to emergence survey results, it would include removing the roost habitat from the workspace (between November 15 and March 31) or excluding the bats from the potential habitat areas using impermeable covering (e.g., tarp, landscape fabric) prior to April 1 to prevent bats from using the roost.

Summer roosts for the eastern small-footed bat species include caves and mines, hollow trees and under bark, cracks and crevices in rock walls, rock ledges and ridge-top talus fields. It is assumed that “removing the roost habitat from the workspace” would involve cutting down hollow trees, removing loose bark or covering talus slopes and rock outcroppings with fabric. Removing trees and bark, even in the winter, would destroy any future summer roosting habitat and could have severe long-term detrimental effects on the natural behavior of the bats. Similarly, blocking the roosts with an impermeable tarp could confuse or disorient the bats attempting to access the crevices that they are used to utilizing. These serious and significant impacts to a bat species that is already impacted by so many threats and harms will be compounded by the proposed construction and activities of PennEast.

In addition, PennEast conducted Phase 1 eastern small-footed bat and Allegheny woodrat surveys along the Appalachian Trail PPL Crossing Realignment in 2017 and 2018. Potential habitats for both species were

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[residents-safety-concerns/](#); *PA DEP halts new pipeline permits for Mariner East, cites ongoing violations with Revolution pipeline*, Susan Phillips, StateImpact, February 8, 2019, available at: <https://stateimpact.npr.org/pennsylvania/2019/02/08/pa-dep-halts-new-pipeline-permits-for-mariner-east-cites-ongoing-violations-with-revolution-pipeline/>.

identified between MP 51.3R3 and MP 52.5R3. While these surveys did not document Allegheny woodrat occupancy at that time, PennEast was instructed to coordinate with the Pennsylvania Game Commission's (PGC) right-of-way (ROW) liaison, Nate Havens, in order to determine whether mitigation will be necessary for impacts to unoccupied suitable habitat for Allegheny woodrat on State Game Lands. This consultation is still ongoing and the final determination regarding Allegheny woodrat presence remains incomplete.

Furthermore, the PGC asked PennEast to reduce the ROW in areas of forested wetlands to less than 45 feet near MP 27.7 and MP 32.1 so northern flying squirrels can cross. However, PennEast asserted that they are unable to reduce their workspace to 45 feet in areas of forested wetland due to constructability constraints and so this important concern and requested modification remains outstanding at this time. PennEast failed to provide an adequate, defensible or otherwise meaningful explanation as to why they could not reduce their workspace to 45 feet as requested. While PennEast has co-located its proposed ROW with an existing pipeline ROW to reduce fragmentation of habitat and total tree clearing, primarily for safety reasons, it still asserts that it is not able to operate heavy construction equipment on the maintained 40-foot ROW of the existing utility. Therefore, PennEast takes the position that in order to complete its wetland crossings, the workers would be working from one side of the trench and thus would require a full 75-foot corridor to build pipeline in this area. As a result, the requested workspace reduction is being denied by PennEast and will have ramifications for the northern flying squirrel. The wider corridor PennEast is insisting upon would increase habitat fragmentation, as it would make it too wide for flying squirrels to cross as they can only glide for short distances. The wider corridor will also inflict increased harm on the surrounding environment including impacted waterways, forests and/or wetlands.

PennEast's failure to provide for protection of the northern flying squirrel as requested by the state agency and experts requires DEP to deny this proposed modification. PennEast could in fact reduce their workspace as requested or work on the existing co-located ROW, they are simply choosing not to do so – we have seen many workspace accommodations during pipeline construction in order to protect roads, buildings, and businesses as well as natural resources and species. There is no reason why PennEast cannot do the same other than they don't want to. In addition, it is unclear why trenchless crossings through this forested wetland is not being considered since increased clearing of mature trees will lead to thermal impacts, exacerbating the opening beyond the electric utility line. In other pipeline ROW's, technical advancements to work within an existing ROW have been accomplished; PennEast should be required to do the same here in order to avoid harm to the sensitive forested wetland habitat at risk. At the very least, more information and elaboration needs to be provided pertaining to the "safety reasons" PennEast currently states to justify such an expansion of the ROW in sensitive public and forested wetland areas in order to allow more informed evaluation of this unsupported and untenable position.

There are also areas newly affected by the proposed route modifications that have not been studied under previous PennEast surveys. The Appalachian Trail PPL Crossing Realignment crosses into Eldred Township, Monroe County, a township and county that were not previously affected by the Project. During wetland delineation surveys, PennEast biologists observed one dead timber rattlesnake within the Project study area in Monroe County. The rattlesnake appeared to have been killed by an all-terrain vehicle (ATV), as it was partially crushed and found within the tire tracks of a frequently utilized ATV/Jeep trail. This finding demonstrates how easily timber rattlesnakes can be crushed by vehicles such as the numerous trucks and construction equipment that would be present at this site. In addition, if PennEast is allowed to be constructed, it will create a new preferred pathway for ATV users, providing permanent and ongoing impacts to timber rattlesnake habitat and likely resulting in ongoing ATV-caused deaths to the species. In

addition, PennEast delineated two areas of potential timber rattlesnake denning habitat totaling 43 acres and 28 acres of potential gestating habitat, all of which is vulnerable to construction impacts despite the best mitigation measures. Studies indicate timber rattlesnakes are very reliant on their home ranges and den sites and any disturbance to these areas can mean subsequent harm to the species. If HDD were employed, less harm may result to this sensitive species. But HDD has not received due consideration. In the absence of consideration of this less harmful approach to construction and its ramifications for the timber rattlesnake, DEP cannot agree to these proposed modifications.

## **2. Bog Turtle Surveys Are Incomplete and Bog Turtle Occupied Wetlands should be Identified as Exceptional Value**

Phase 2 bog turtle surveys have been completed on 31 of the 33 wetlands (93.9%) where bog turtle may exist, meaning there are two wetlands that are entirely unsurveyed at the present time. The Appalachian Trail PPL Crossing Realignment crosses an occupied bog turtle habitat in Carbon County, as discussed in the 2017 USFWS Biological Opinion (BO), but the realignment does not result in avoidance of bog turtle habitat, it simply changes the location where the cut through and harm will be inflicted. Through surveys and consultation with the USFWS, PennEast identified one previously documented bog turtle population in Northampton County along the proposed Project route. In August 2018, PennEast delineated a new wetland complex within Northampton County as a result of route revisions that had physical characteristics suitable for bog turtles. Because the Phase 1 habitat assessment of this wetland complex was completed in August and surpassed the spring Phase 2 survey season, Phase 2 surveys have not been completed for bog turtle. PennEast stated that it intends to complete the Phase 2 surveys in spring 2019; if a new population is identified, or if PennEast elects to forego Phase 2 surveys and assume presence, then PennEast will adhere to the avoidance and minimization measures presented in the BO. Due to the documented presence of the federally threatened bog turtle at these sites, all of these wetlands should be considered Exceptional Value (EV) wetlands, but this is never mentioned by PennEast in its application. Furthermore, New Jersey recently proposed C1 designations (equivalent to EV designations in PA) for streams where state threatened species reside in New Jersey - this practice of better ailing state species protections would be prudent for PA DEP to include as part of its anti-degradation program to better protect the hundreds of wetlands and streams that will be cut by PennEast and other pipelines

At the Northampton County site, PennEast has proposed minor pipeline adjustments in this area that they assert would avoid wetland impacts and route the pipeline through narrower crossing points and what they consider to be marginal habitat. However, no maps or alignment sheets were provided that reflects these adjustments unlike those provided for the four route modifications. Although these adjustments in Northampton County may be, according to PennEast, minor, they still differ from the alignment that was previously approved and should be viewed as another route modification like the other four. It is possible that DEP, the public and other experts would differ regarding the potential impacts of this project change, nonetheless it must be subject to review and comment; PennEast's assertions regarding impacts cannot be blindly accepted by DEP. Alignment sheets and maps should be made available to the public and to DEP - without them, the application is deficient and incomplete. .

On May 7, 2018, PennEast bog turtle consultants met with representatives from USFWS, PFBC, and USACE to discuss the known bog turtle population at the Appalachian Trail PPL Crossing Realignment. There is a section of mucky soil at this site, which, it is asserted, makes mitigation more difficult. It is asserted that silt fencing and exclusion barriers are not a good option due to the depth of the muck and the 3-dimensional (hummocked) nature of the wetland. Constructing the fence in such deep muck would be more

challenging, and bring with it a high risk of failure. There is also a high chance of flooding due to the fact that the wetland is in a floodplain, which would destroy the silt fencing barrier. Options were discussed that would allow turtles to pass through rather than being diverted into the creek or having their travel along the wetland interrupted. Among these options was the potential to cross the core habitat and streams using aerial spans to the greatest extent possible. However, aerial spans would likely not be feasible for all the required aspects of the construction. The heavy operating equipment hoisting the aerial spans would also likely sink in the mud even with matting. During this meeting, it was explained that the old crossing location had less suitable habitat for bog turtle than the new crossing. Due to the open-ended nature of the 2017 BO issued by USFWS, PennEast's consultants believed, incorrectly, that the new activities were still covered because they do not represent a significant change in the type or amount of impacts to a federally listed species. However, USFWS has since recommended that FERC re-initiate consultation to modify the 2017 BO under the minor change process. Re-initiation will result in a consultation update letter which addresses route amendments and updated survey results. The recommendation of re-initiation was made due to the changed action area resulting from proposed route modifications. Because FERC and PennEast cannot rely on the 2017 BO and the new crossing location has more suitable bog turtle habitat than the previous location, data gaps exist that make it impossible for state and federal agencies to accept these route modifications without more detail, information, understanding, and assessment.

### **3. Impacts from New Alignments are not Fully Examined**

The route modifications present several new implications for waterways and natural resources that are not fully examined. For example, PennEast is in the process of identifying the locations of water wells and springs that were not previously crossed by the Certificated Route in Pennsylvania and New Jersey. Until these new wells and springs are identified, this application and information is incomplete. The Revised Pennsylvania Route would also cross 13 additional Wild Trout Waters compared to the Certificated Pennsylvania Route – these Wild Trout waters may also have associated wetlands that are designated EV because of their location in or along the floodplain of these Wild Trout streams - this is a significant increase in the Project's adverse impact. Cumulative impacts are also not fully understood. The Appalachian Trail PPL Crossing Realignment extends approximately 3.3 miles from the Certificated PA Route, which exceeds the Cumulative Impact Assessment Area for several types of resources. This particular realignment would also expand the existing ROW by approximately 20 feet, further increasing the negative impacts associated with the harmful footprint of this project. The Project as a whole would already affect 220.6 acres of interior forest during construction and 63.6 acres during operation. The proposed changes will expand that footprint of harm. Expert analysis demonstrates that for every cut through an interior forest, there are an additional 300 feet of impact on either side<sup>9</sup> to the adjacent forest that must be considered. Additionally, the Project would have an indirect impact (through edge effects, potentially resulting in avoidance of habitats or decreased habitat quality) on 1,725 acres of interior forest.

PennEast maintains that most of the impacts are temporary and that they will restore disturbed areas. However, PennEast admits that all impacts on forested habitats will be considered long-term because of the time required to restore woody vegetation to pre-construction conditions (i.e., more than 30 years, and possibly hundreds of years for some forested areas). Hundreds of years of lost habitat would have a permanent effect on generations of local wildlife. Compaction of sensitive forest soils and soil disturbance of "temporary work spaces and alternate temporary work spaces", scalding of adjacent forest trees from opening additional areas with clearing, thermal changes, soil changes, wind throw, invasive species, and

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<sup>9</sup> Nels Johnson, et al., Natural Gas Pipelines, The Nature Conservancy, 1 (December 2011).

other forest fragmentation impacts must be fully weighed and considered when PennEast proposes to disrupt interior forest in such a detrimental way.

#### **4. Incomplete Analysis of Loss and Mismanagement of Topsoil and Revegetation**

Melioras's expert report notes that PennEast's E&S narrative only specifies topsoil segregation during pipeline construction for residential, agricultural, or wetland land uses. This limits the reestablishment of vegetation within all other land uses as topsoil is disregarded and stockpiled with mineral subsoils. When the ROW area is reestablished following pipeline construction, plant growth is inhibited due to a lack of topsoil which contains the organic matter, nutrients, and microbial/fungal communities necessary for plant reestablishment. Limited revegetation leads to more pollution events possibly entering nearby streams in the form of sediment laden water. The attached Meliora expert report notes the Recommended Seed Mixtures for Stabilizing Disturbed Areas (Table 11.5) proposed in the PCSM and Site Restoration Plan General Notes is identical to the Recommended Seed Mixtures for Stabilizing Disturbed Areas (Table 11.5) in the E&S General Notes. While this seeding will eventually establish coverage and reduce active erosion of soils, it will not establish the hydrologic conditions of a native meadow, as required by Chapter 102.

#### **IV. Chapter 105 Permits Should be Denied As The Application Materials Fail to Meet the Requirements Outlined in 25 Pa. Code § 105.14(b).**

In order to secure a Chapter 105 Water Obstruction and Encroachment permit the Department must examine the following factors to make a determination of impact<sup>10</sup>:

- (1) Potential threats to life or property created by the dam, water obstruction or encroachment.
- (2) Potential threats to safe navigation created by the dam, water obstruction or encroachment.
- (3) The effect of the dam, water obstruction or encroachment on the property or riparian rights of owners upstream, downstream or adjacent to the project.
- (4) The effect of the dam, water obstruction or encroachment on regimen and ecology of the watercourse or other body of water, water quality, stream flow, fish and wildlife, aquatic habitat, instream and downstream uses and other significant environmental factors.
- (5) The impacts of the dam, water obstruction or encroachment on nearby natural areas, wildlife sanctuaries, public water supplies, other geographical or physical features including cultural, archaeological and historical landmarks, National wildlife refuges, National natural landmarks, National, State or local parks or recreation areas or National, State or local historical sites.
- (6) Compliance by the dam, water obstruction or encroachment with applicable laws administered by the Department, the Fish and Boat Commission and river basin commissions created by interstate compact.
- (7) The extent to which a project is water dependent and thereby requires access or proximity to or siting within water to fulfill the basic purposes of the project. The dependency must be based on the demonstrated unavailability of any alternative location, route or design and the use of location, route or design to avoid or minimize the adverse impact of the dam, water obstruction or encroachment upon the environment and protect the public natural resources of this Commonwealth.
- (8) Present conditions and the effects of reasonably foreseeable future development within the affected watershed upstream and downstream of the dam, water obstruction or encroachment .... taking into account reasonably foreseeable development within the watershed.
- (9) Consistency with State and local floodplain and stormwater management programs, the State Water Plan and the Coastal Zone Management Plan.

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<sup>10</sup> 25 Pa. Code § 105.14. (b)

- (10) Consistency with the designations of wild, scenic and recreational streams under the Wild and Scenic Rivers Act of 1968 (16 U.S.C.A. § § 1271—1287) or the Pennsylvania Scenic Rivers Act (32 P. S. § § 820.21—820.29), including identified 1-A candidates.
- (11) Consistency with State antidegradation requirements contained in Chapters 93, 95 and 102 (relating to water quality standards; wastewater treatment requirements; and erosion and sediment control) and the Clean Water Act (33 U.S.C.A. § § 1251—1376).
- (12) Secondary impacts associated with but not the direct result of the construction or substantial modification of the dam or reservoir, water obstruction or encroachment in the area of the project and in areas adjacent thereto and future impacts associated with dams, water obstructions or encroachments, the construction of which would result in the need for additional dams, water obstructions or encroachments to fulfill the project purpose.
- (13) For dams, water obstructions or encroachments in, along, across or projecting into a wetland, as defined in § 105.1 (relating to definitions), the Department will also consider the impact on the wetlands values and functions in making a determination of adverse impact.
- (14) The cumulative impact of this project and other potential or existing projects. In evaluating the cumulative impact, the Department will consider whether numerous piecemeal changes may result in a major impairment of the wetland resources. The Department will evaluate a particular wetland site for which an application is made with the recognition that it is part of a complete and interrelated wetland area.

This means that PennEast must submit the materials that will enable the Department to analyze and establish that these requirements are met and that the Department needs to ensure the analysis as to each prong is thoroughly conducted. PennEast has failed to provide adequate information to fully undertake an analysis of many of these elements. Further, pipelines using the construction techniques proposed by PennEast, have inflicted stream, wetland, water quality and groundwater degradation contrary to the above criteria that guide Chapter 105 -- clearly it is not enough for PennEast to mimic the same failed practices undertaken for pipeline construction by others in the state. While the application overall is deficient, below Delaware Riverkeeper Network has identified specific areas that cause concern with the application materials provided and reviewed for construction of the PennEast pipeline.

**A. Construction Of The Penneast Pipeline Will Bring Demonstrable Threats And Harms To Life And Property To The Residents Of Pennsylvania As Well As Property Or Riparian Rights Of Owners Upstream, Downstream, Or Adjacent To The Project.**

The “potential threats to life or property created by” the PennEast project demand that the permits not be issued as there is serious risks in locating pipelines in populated areas.<sup>11</sup>

Pipelines are a serious source of human harm and property damage. Between 1986 and 2012, “pipeline accidents have killed more than 500 people, injured over 4,000, and cost nearly seven billion dollars in property damages.”<sup>12</sup> Looking at this 28-year period, on average pipelines kill or injure 173 people a year causing over \$269 million a year (\$269,230,769) in property damage. Further, according to the Pipeline and Hazardous Materials Safety Administration<sup>13</sup>, in the most recent six years found on PHMSA’s data portal for gas transmission lines (onshore) there have been over 100 fatalities or injuries requiring hospitalization

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<sup>11</sup> 25 Pa. Code §105.14(b)(1).

<sup>12</sup> ProPublica, *Pipelines Explained: How Safe are America’s 2.5 Million Miles of Pipelines?*, available at <https://www.propublica.org/article/pipelines-explained-how-safe-are-americas-2.5-million-miles-of-pipelines>.

<sup>13</sup> <https://www.phmsa.dot.gov/data-and-statistics/pipeline/pipeline-incident-20-year-trendss>.

and over \$880 million in damage as the result of 622 pipeline incidents. When explosions happen, the harm to people, property and the environment can be severe and costly. In addition to the actual physical harm that happens when there is an accident or incident, there is the ongoing psychological burden inflicted by the fear of accident, incident or explosion for those who are forced to live next to a gas pipeline, including those who are forced to live with a pipeline because of the power of eminent domain exercised by a pipeline company. And the hazards of pipelines for human safety and property damage is increasing. According to a report by Pipeline Safety Trust, “The gas transmission lines installed in the 2010s had an annual average incident rate of 6.64 per 10,000 miles over the time frame considered, even exceeding that of the pre-1940s pipes. Those installed prior to 1940 or at unknown dates had an incident rate of 6.08 per 10,000 miles.”<sup>14</sup>

In addition, pipelines, like PennEast, that traverse through waterbodies create even more likelihood of incidents due to their location. Pipelines are known to rupture as the result of scour from high flow and flood events, and when they rupture the impacts are severe as demonstrated by the recent Revolution Pipeline explosion.<sup>15</sup> The PennEast pipeline is proposing to cross hundreds of streams and wetlands totaling over 1,500 linear feet of waterways in the Commonwealth of Pennsylvania, mostly through open cut methods. This means there will be over 1,500 linear feet of waterways with the PennEast pipeline buried in their bed bringing the real potential of scour and rupture releasing dangerous chemicals into our waterways and on nearby and downstream properties and their owners.

Meliora’s March 2019 expert report indicates 22.25 acres of PEM, PSS, and PFO wetlands impacted by the PennEast pipeline construction, PennEast has proposed 10.37 acres of wetland mitigation, about 47% of the wetland impact.<sup>16</sup> The wetlands will be addressed on a County-scale, so the wetland mitigation could occur anywhere within the county, which means that it could occur within a different watershed. As a result, the impacted habitat is degraded and the wetland function is removed from the HQ and EV watersheds.

Pipeline construction also creates additional hazards increasing the likelihood of scouring. Because open trench pipeline installations may unnaturally alter both stream bank and streambed (i.e., channel) stability, there is an increased likelihood of scouring within backfilled pipeline trenches. This is because open trenches themselves, when backfilled, may not be compacted to stable pre-trench sediment permeability conditions. Flooding rivers can scour river bottoms and expose pipelines to powerful water currents and damaging debris. Additionally, unusually heavy rains including those associated with climate change, threaten to increase overall stream degradation and channel migration – thereby exposing shallowly buried pipelines. Scour hole development proximal to pipelines is well-documented in both stream and seabed settings.<sup>17</sup> Stream-based pipe “(f)ailures [have been] caused not only by vertical scour of the streambed but also by bank erosion, lateral channel migration, avulsions, bridge scour, and secondary flows outside the main channel. ... Several of the pipelines in [a] study failed as a result of a meander migration or avulsion

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<sup>14</sup> <https://www.sn1.com/InteractiveX/Article.aspx?cdid=A-33791090-11060>

<sup>15</sup> Reid Frazier, *DEP orders ETP to fix Revolution Pipeline erosion problems*, October 30, 2018, StateImpact, available at <https://stateimpact.npr.org/pennsylvania/2018/10/30/dep-orders-etp-to-fix-revolution-pipeline-erosion-problems/>.

<sup>16</sup> *Review of PennEast Pipeline Application for Chapter 102 and 105 Permits*, Michele Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, March 2019.

<sup>17</sup> Fogg, J. and Hadley, H., 2007, *Hydraulic Considerations for Pipelines Crossing Stream Channels*. Technical Note 423. BLM/ST/ST-07/007+2880. U.S. Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, CO. 20 pp. <http://www.blm.gov/nstc/library/techno2.htm>.

of the stream into previously less active or nonexistent channels.”<sup>18</sup> Based on field observations and hydraulic modeling for the 100-year design flood, researchers documented maximum vertical scour to 26.6 feet (8.1 meters) and lateral scour to 6,274 feet (2,050 meters) at some failed pipeline crossings.

An expert at HydroQuest<sup>19</sup> has determined that, at a minimum, any pipeline installed using the open trench cut method needs to be installed at least 24 feet below the stream bed in order to prevent exposure from scour.<sup>20</sup> While bridge piers are more readily exposed to stream scouring than pipelines, it is telling that bridge failure analyses have determined that channel scour occurs to depths of up to three times that of maximum river floodwater depth (e.g., scour to 30 feet with a 10 foot floodwater depth).

In addition, a significant health, safety, property and environmental risk associated with both wet and dry trench methods of gas pipeline crossings of rivers and streams has the potential of releasing hydrocarbons or other contaminants directly into surface water and fragile downstream ecosystems, including hydrocarbon laced liquids such as benzene that are part of the gas being delivered by the pipeline.

Finally, the Department failed to consider the detrimental economic impact pipelines have on the surrounding community. One of the benefits of living next to a stream or other natural body of water is the increased property value those riparian rights bring as well as the recreational and quality of life benefits that can be enjoyed. But the cut of a pipeline diminishes all of these rights and benefits of living near a waterway. Property values are demonstrably harmed by the presence of a pipeline.<sup>21</sup> Aesthetic qualities, ecological health of a stream and instream populations such as fish are diminished due to a pipeline’s stream cuts and permanent loss of riparian vegetation essential for healthy riparian and instream habitat. Ecological and aesthetic harm translates into diminished recreational enjoyment and opportunities as well as a diminished ability to enjoy the environment and one’s property.

### **1. Stream Scour and Pollution Release Present Threats to Public Safety**

PennEast proposes to use the open cut method of crossing for the vast majority of streams it will need to cross, including the Lehigh River and the Susquehanna River. Because open cut pipeline installations unnaturally alter both stream bank and streambed (i.e., channel) stability, there is an increased likelihood of scouring within backfilled pipeline trenches. Flooding rivers can scour river bottoms and expose pipelines to powerful water currents and damaging debris. Additionally, unusually heavy rains possibly associated with climate change, threaten to increase overall stream degradation and channel migration – thereby exposing buried pipelines.

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<sup>18</sup> Doeing, B.J., Williams, D.T. and Bradley, J.B., 1997, Gas Pipeline Erosion Failures: January 1993 Floods, Gila River Basin, Arizona. In Storm - Induced Geologic Hazards, Case Histories from the 1992 - 1993 Winter in Southern California and Arizona; Geological Society of America; Reviews in Engineering Geology, Volume XI (ed. Robert A. Larson).

<sup>19</sup> HydroQuest Memorandum re: Hydrologic and Environmental Rationale to Bury Gas Pipelines using Horizontal Directional Drilling Technology at Stream and River Crossings, 6/8/2012 (Hereafter HydroQuest Report)

<sup>20</sup> HydroQuest Report.

<sup>21</sup> See e.g. Review of INGAA Foundation Report, “Pipeline Impact to Property Value and Property Insurability”, Key Log Economics 3/11/2015.

Scouring that exposes pipelines buried in streambeds is well documented.<sup>22</sup> Exposure of the pipeline raises a greater risk of pipeline damage, breakage and pollution; with pipeline breakage resulting in the catastrophic discharge of its contents into the natural stream system. Gas pipelines and man-made changes and actions have altered channel morphology and changed channel stability.<sup>23</sup> Soil erosion and channel migration reduces the soil cover over a pipeline, resulting in scour hole formation and making the pipeline vulnerable to rupture. Lateral migration of stream channels can also heighten the risk of pipeline exposure.

Given the potential for high flow events to expose or damage the pipe, a detailed hydrologic analysis of the channel is critical for determining placement of the pipe beneath a stream. These data are necessary to actually determine the proper depth to place the pipe. These data are derived from channel degradation and scour analyses. As noted by comments prepared for the Delaware Riverkeeper Network by Princeton Hydro engineering firm, “the Bureau of Land Management (Fogg and Hadley, 2007) recommends modeling of the stream using various “mobile-bed hydraulic” models such as HEC-6 (USACOE, 1993 and USACOE, 1995). To date there has been no mention that such modeling will be conducted at any of the multiple PennEast stream crossings. Even when pipelines are placed to the appropriate depth, exposure of the pipe and release of the materials therein is still a risk that has been sadly realized in communities.”<sup>24</sup>

Another significant environmental risk associated with both wet and dry trench methods of gas pipeline crossings of rivers and streams is the potential of releasing hydrocarbons or other contaminants directly into surface water and fragile downstream ecosystems, including hydro-carbon laced liquids such as benzene that are part of the gas being delivered by the pipeline. Gas, as it is extracted from a well, may be mixed with hydraulic fracturing fluids. Hydrocarbon-laced condensate or natural gas liquids (NGLs) associated with natural gas (e.g., benzene) pose an environmental risk if pipe rupture occurs (e.g., to potential bog turtle habitat and travel corridors, fisheries, wetlands, downstream drinking water supplies as well as underlying aquifers recharged by stream water). For example, a damaging flood event in Texas ruptured eight pipelines and spilled more than 35,000 barrels of oil and oil products into the San Jacinto River.<sup>25</sup> The Bureau of Land Management recognized and addressed this critical issue: “*In 2002, the U.S. Fish and Wildlife Service raised concerns about the potential for flash floods in ephemeral stream channels to rupture natural-gas pipelines and carry toxic condensates to the Green River, which would have deleterious effects on numerous special-status fish species*”.<sup>26</sup>

Finally, we reiterate, climate change is altering the severity, frequency and duration of rain events and associated flooding. A specific consideration of how PennEast proposes to address the changing weather,

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<sup>22</sup> Fogg, J. and Hadley, H., 2007, Hydraulic Considerations for Pipelines Crossing Stream Channels. Technical Note 423. BLM/ST/ST-07/007+2880. U.S. Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, CO. 20 pp. <http://www.blm.gov/nstc/library/techno2.htm>.

<sup>23</sup> Talke and Swart (2006) and De La Motte (2004).

<sup>24</sup> *The Short and Long-Term Consequences of the Construction of the PennEast Pipeline— A White Paper*, Princeton Hydro, LLC, July 2015

<sup>25</sup> Billings Gazette, July 21, 2011: [http://billingsgazette.com/news/state-and-regional/montana/article\\_c8d20d9eb391-11e0-941f-001cc4c002e0.html](http://billingsgazette.com/news/state-and-regional/montana/article_c8d20d9eb391-11e0-941f-001cc4c002e0.html).

<sup>26</sup> Fogg, J. and Hadley, H., 2007, Hydraulic Considerations for Pipelines Crossing Stream Channels. Technical Note 423.

BLM/ST/ST-07/007+2880. U.S. Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, CO. 20 pp. <http://www.blm.gov/nstc/library/techno2.htm>.

flood and flow dynamics associated with climate change is essential from both an environmental and community protection standpoint.

**B. Information on the record demonstrates that construction of the PennEast Pipeline will have significant adverse impacts on the regimen and ecology of the watercourses and waterways it cuts through and/or under; as well as adverse impacts on water quality, stream flow, fish and wildlife, aquatic habitat, instream and downstream uses as well as other significant environmental factors regardless of mitigation techniques used.**

The list of impacts to stream quality and health includes, but is not limited to: erosion and sedimentation, loss of riparian vegetation, habitat loss and fragmentation, air quality impacts, safety concerns, groundwater impacts, soil compaction, increased stormwater runoff, stream quality impacts, wetland degradation, lost groundwater recharge, and cumulative environmental impacts along the length of the project. These impacts to the environment are not limited to the time period in which the right-of-way is disturbed, but can result in long lasting consequences. To the degree PADEP has or anticipates considering these issues it does so piecemeal, stream by stream or wetland by wetland, but does not give the cumulative and/or ecological system review that the regulations envision. A cut here or there perhaps can be mitigated, but the huge multitude of cuts, mass areas of compacted soils, thousands of acres of earth disturbance and lost trees etc., cannot be remedied and will have unavoidable impacts. In the case of PennEast we are talking about a massive pipeline project with a wide geographic and physical footprint that directly and indirectly impacts a huge number of ecological systems – the cumulative impacts are significant and long lasting and yet this is largely ignored by the PennEast application and as such is not properly available for DEP review and evaluation.

### **1. Threats to Water Quality**

There are a variety of threats to water quality that will result from the PennEast pipeline, including from construction, operation, and maintenance over the lifetime of the project.

Among the deficiencies of DEP's review process and PennEast's materials for the Chapter 105 review is the failure to consider the threat of arsenic contamination from mine-impacted soils. As discussed in the attached expert report by Tom Myers, the Chapter 105 application, as well as the previously issued section 401 water quality certification, are submitted and/or released prematurely as both review processes fail to determine the threat of arsenic contamination, let alone implement a process that could. Arsenic has been an identified threat for the Bucks County area where PennEast is proposing to cut and cross. That water quality threat, discussed in the attached powerpoint slides prepared by Dr. Julia Barringer, has also been unaddressed despite its impact on the ability of the project to meet regulatory standards.

Other threats that are not properly addressed in the materials provided include a necessary review to the issue of karst geology (see section V of comment for more detail) and its implications for water quality and ability to meet state standards. As well as an analysis on the potential impacts the pipeline will have on groundwater flows, PennEast's application and DEP's review, "d[oes] not consider how pipeline construction and operations could affect recharge and shallow groundwater flow in aquifers near the proposed pipeline. Areas where the pipeline compacts soils over critical recharge areas, especially on ridge tops and valley bottoms, would increase runoff and decrease recharge. .... [R]echarge supports baseflow therefore decreasing recharge will affect baseflow in streams. Most importantly groundwater discharge would be decreased during low flow periods."<sup>27</sup> A decrease in baseflow has implications for water quality

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<sup>27</sup> See Technical Report by Tom Myers, June 2016.

as well as stream and habitat health. For a detailed discussion of this impact, see the attached expert report from Tom Myers.

Finally, The Chapter 105 application materials fail to consider the potential transport of contaminants via preferential pathways – the emphasis in this regard by PennEast and the agency has largely been on mitigation and mapping, neither of which would prevent the violation of state standards necessary to support Chapter 105 permitting. Below are some areas that DRN wants to highlight in considering the impacts of the pipeline on water quality.

## 2. Effects of Sediment Pollution on Streams

Studies documenting the effects of stream crossing construction on aquatic ecosystems identify sediment as a primary stressor for construction on river and stream ecosystems.<sup>28</sup> During the construction of pipeline stream crossings, discrete peaks of high suspended sediment concentration occur due to blasting, trench excavation, and backfilling.<sup>29</sup> Excavation of streambeds can generate persistent plumes of sediment concentration and turbidity.<sup>30</sup> This sedimentation has serious consequences for the benthic invertebrates and fish species whose vitality is crucial for healthy aquatic ecosystems. There have been documented reductions in benthic invertebrate densities, changes to the structure of aquatic communities, changes in fish foraging behavior, reductions in the availability of food, and increases in fish egg mortality rates.<sup>31</sup> In addition to the stream crossing construction activity itself, the associated new road construction increases the risk of erosion and sedimentation.<sup>32</sup>

There are numerous environmental risks associated with open trench burial of gas pipelines (wet, dry, slurry). Open trench burial involves the excavation of sediments for pipeline installation perpendicular to or across streams and their sometimes wide floodplains, along with removal of riparian vegetation and well-established ecosystems. Disruption of the stream channel and banks can cause destabilization of the stream's natural flows, causing channel migration and erosion that are harmful to the stream.<sup>33</sup> The open trench cut method of crossing streams results in sedimentation, impacts to benthic habitat, and can result in changes to stream morphology that can further affect downstream habitats.<sup>34</sup>

Sedimentation results from the actual crossing activity itself as well as the removal of vegetation and activity that takes place on the stream-adjacent (riparian) lands. While dam and pump methods, can reduce sediment loadings associated with a wet cut method, there are still sediment releases at levels of concern and impact, and the diversion of the water creates impediments to fish and flows that also have impacts on waterways. Additionally, this method of crossing takes longer, and so it results in longer-term direct impacts to the stream and sediment releases over a prolonged period. Sediment carried in the water column is

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<sup>28</sup> Scott Read, *Effects of Sediment Released During Open-cut Pipeline Water Crossings*, Canadian Water Resources Journal, 1999, 24: (3) 235-251.

<sup>29</sup> *Id.*

<sup>30</sup> *Id.*

<sup>31</sup> James Norman, et al., Utility Stream Crossing Policy, ETOWAH AQUATIC HABITAT CONSERVATION PLAN, July 13, 2008, at 9-10.

<sup>32</sup> *En Banc* Hearing of the Pennsylvania Public Utility Commission on Jurisdictional Issues Related to Marcellus Shale Gas Development, Docket No. I-2010-2163461.

<sup>33</sup> Expert Report from HydroQuest, attached.

<sup>34</sup> See *Effects of Sediments Released During Open-Cut Pipeline Water Crossings*, Canadian Water Resources Journal, Vol. 24, No. 3, 1999.

abrasive and can result in increased erosion downstream.<sup>35</sup> Deposited sediment from construction activities can fill in the interstitial spaces of the streambed, changing its porosity and composition, and thereby increasing embeddedness and reducing riffle area and habitat quality.<sup>36</sup> Furthermore, deposited sediment has the potential to fill in pool areas and reduce stream depth downstream of the construction area.<sup>37</sup>

Sediment pollution is a known and demonstrated impact that needs to be seriously considered for a project of the size and magnitude of PennEast. Increased sedimentation in streams causes well-known negative impacts to fish such as trout. In an experimental study in 1983, researchers introduced bedloads of sand sediment to a brook trout stream in Michigan over a period of five years. They found that increasing the bedload 4 to 5-fold resulted in a significant reduction of trout and trout habitat and even small sediment concentrations of 80 to 100 ppm had profound effects on the trout and their habitat.<sup>38</sup> These effects included a decrease in survival rates, particularly from the egg to fry and/or the fry to fall fingerling stage of the life cycle.<sup>13</sup> Additionally, sand deposition aggravated the streambed and eliminated most pools, and both water velocity and summer water temperature increased.

Increased turbidity impacts fish by direct mortality or by reducing their growth rate, lessening their resistance to disease, preventing successful development of eggs and larvae, modifying natural movements and migrations, and reducing the amount of food available. Turbidity also affects the growth rate of algae and other aquatic plants in streams and lakes because increased turbidity causes a decrease in the amount of sunlight for photosynthesis. Without enough sunlight, aquatic plants cannot grow properly and will eventually die. Turbidity can also increase water temperature because suspended particles absorb more heat. Increased water temperature may cause stress to fish and other aquatic benthic organisms, particularly in the summer months. These factors may lead to a decrease in dissolved oxygen, creating stagnant water conditions detrimental to aquatic life and potentially a change in structure to benthic diversity.

Finally, rain events could help transport drilling fluids into streams and other nearby waterbodies. Erosion and sediment control measures such as silt fences, compost socks, mulching, hay bales, sand bags, fiber rolls, and gravel berms frequently fail and cannot be relied upon as effective protection. The Delaware Riverkeeper Network has documented countless occasions during pipeline construction projects where sediment control structures were damaged, insufficient, overwhelmed, not functioning correctly, or where sediment was directly discharging offsite into adjacent lands, nearby streams, wetlands, or storm drains that connect to a body of water.

Meliora's March 2019 expert report notes the Construction Sequence for the PennEast pipeline is described as an "assembly line flow" where there are separate crews conducting different portions of the pipeline installation process.<sup>39</sup> This means steps in the construction are sequential and are not happening all at once. This leaves large gaps in time where one process may lag behind another in the pipeline assembly flow. This is critically important with how and when erosion and sediment control procedures are implemented. By disturbing the CWA and not immediately installing the pipeline, the construction sequence allows for long periods of earth disturbance to be exposed to weather and erosive conditions. DRN has observed this

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<sup>35</sup> Pipeline Associated Watercourse Crossings, 3<sup>rd</sup> Edition, publication prepared for CAPP, CEPA, and CGA by Tera Environmental Consultants

<sup>36</sup> Read, *supra* note 22, at 235-251.

<sup>37</sup> Norman, at 9-10.

<sup>38</sup> Alexander, G.R., & Hansen, E.A. (1983). Effects of sand bedload sediment on a brook trout population. Michigan Department of Natural Resources Fisheries Division, Fisheries Research Report No. 1906.

<sup>39</sup> *Review of PennEast Pipeline Application for Chapter 102 and 105 Permits*, Michele Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, March 2019.

phenomenon along multiple pipelines in the past first-hand. Previous experience with oil and gas pipeline construction projects has shown that as much as 6 months can pass between site clearing and grading and pipeline trenching. This allows for an excessive amount of time for the site to be left disturbed. The minimum design requirement for E&S practices is to control runoff from the 2-year 24-hour storm. It is likely that a storm that exceeds the design standards for the temporary E&S controls will occur during this time and cause practices to fail, which leads to sediment pollution leaving the CWA and entering wetlands and waterbodies. The likelihood of a storm that exceeds design standards for the temporary E&S controls is magnified by the weather instability caused by climate change. NOAA has documented the extreme weather events plaguing the U.S., including Pennsylvania, the increase in flood severity is a missing part of the PennEast analysis and data.

### **3. Pipeline Construction Impacts on Trout**

Pipelines often cite temporary and permanent work spaces near and adjacent streams and wetlands, and the same is being proposed by PennEast in their application and Final EIS, which leads to increased stormwater runoff and soil compaction which in turn can impact water quality and temperatures for trout. Trout require cold stream temperatures and pipeline cuts often denude and cut down the riparian buffer of streams they cross unless horizontal directional drilling (HDD) or another trenchless crossing method is employed. PennEast is only proposing 16 HDD crossings for its entire pipeline project. These special anti-degradation and trout designations must help implement effective and timely protection of these diverse and important diverse habitats of the Commonwealth and the project and Chapter 105 review must consider these changes as required by the Clean Water Act. Alternatives such as HDD drilling should be considered in sensitive areas and cumulative impacts of pipeline construction and maintenance on stream and stream ecosystems needs to be considered. Employing HDD can offset long-term impacts to the forest, riparian area, soils and streambed in many ways if conducted with stream and upland forest health in mind.

### **4. Impacts on Special Protection Streams**

According to Meliora's March 2019 expert report, PennEast plans do not adequately protect the sensitive environmental resources such as EV wetlands and HQ/EV streams within the CWA.<sup>40</sup> The pipeline traverses through 37.7 miles of HQ and 9.5 miles of EV watersheds in PA, which include impacts to 22.25 acres of PEM, PSS, and PFO wetlands, 86 crossings of HQ streams, and 18 crossings of EV streams. Many of these features are shown to be impacted by construction practices despite narrative and details suggesting alternative practices to minimize these impacts. This lack of coordination between the narratives, details, and plans will cause confusion in the field for the contractor and best practices will not be followed.

### **5. Groundwater Impacts**

Pipelines have been seen by experts to be conduits for diverting groundwater from its natural path. According to expert observation, pipeline trenches can divert groundwater and as a result "permanently alter the hydrologic cycle in the vicinity of the pipeline right-of-way. This alteration will decrease the water resources available to support wetland hydrology and stream base flow in the summer and fall dry season."<sup>41</sup> For example, observations of the Tennessee Gas Pipeline's 300 Line Upgrade project by a hydrologist determined that "pipeline trenches intercepted shallow groundwater in places, creating preferential paths for dewatering shallow groundwater not just in the disturbed construction areas, but also

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<sup>40</sup> *Review of PennEast Pipeline Application for Chapter 102 and 105 Permits*, Michele Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, March 2019.

<sup>41</sup> Affidavit of Peter M. Demicco, DRN v. PA DEP an TGP NEUP, 2012.

in areas surrounding the right-of-way, further negatively impacting ground water resources and wetlands.”<sup>42</sup> As a result, it was observed that the 300 Line Upgrade pipeline project had “already resulted in permanent changes to wetlands....”<sup>43</sup>

As also recognized by an expert report by Princeton Hydro:

An “often overlooked impact caused by pipelines (whether wastewater, stormwater or gas/oil) is that their construction can actually alter the movement of groundwater. Essentially, when the pipe and pipe trench intercept the shallow aquifer, groundwater flows can be prevented from flowing normally leading to changes in base flow conditions or the hydrologic properties of adjacent wetlands. The pipeline and pipeline trench can function as a subsurface diversion forcing groundwater away from vital stream and wetland resources.”

Groundwater is also impacted by soil compaction associated with pipeline construction and maintenance. The compacted soils resulting from pipeline construction increase rainfall runoff and reduce ground water infiltration. This can cause further negative impacts on wetland hydrology and stream baseflow in the area of the pipeline.<sup>44</sup> “Increased runoff as a result of compacted soils, and increased drainage of shallow ground water” around a pipeline, due to previous and proposed construction practices, can increase “surface water flow and groundwater discharge in the wet winter and spring seasons and decrease summer and fall groundwater discharge which supports wetland hydrology and stream base flow.”<sup>45</sup> The result of reduced groundwater discharge during the dry summer and fall months can be to decrease the size of supported wetlands. So the result is too much or too little depending on the time of year. Another result of the altered flows can be to decrease stream base flow that supports aquatic life and trout habitat in headwater streams in the dry summer and fall period.

“Pipeline construction will affect groundwater recharge and flow, thereby affecting surface water flow and wetlands water balances. It can affect water quality by providing transport pathways for contaminants to reach wetlands or surface water. PennEast does not analyze any of these impacts as required by 25 Pa. Code § 105.15(e)(1)(x). Specifically, proposed project could affect “water quality” by transport contaminants into streams or nearby groundwater, “stream flow” by diverting groundwater or preventing recharge, “aquatic habitat” by decreasing flow during baseflow conditions which would eliminate aquatic habitat, and “instream and downstream water use” by decreasing flow or contaminating it.”<sup>46</sup>

The attached expert report from Tom Myers discusses in detail the failure of PennEast to provide necessary information regarding geology and groundwater. This information is critical for determining whether the PennEast pipeline is able to meet the criteria necessary for the Chapter 105 Permit and associated regulated mandates. As noted in Myer’s report:

- “The PennEast application completely failed to consider how pipeline construction will affect water availability for recharge into bedrock by not considering how compaction will prevent water from accessing fracture zones.”
- PennEast’s materials “should provide a table of bedrock aquifers that includes relevant properties, including specific capacity statistics or well yields, and conductivity where available. If properties

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<sup>42</sup> Affidavit of Peter M. Demicco, DRN v. PA DEP an TGP NEUP, 2012.

<sup>43</sup> Affidavit of Peter M. Demicco, DRN v. PA DEP an TGP NEUP, 2012.

<sup>44</sup> Affidavit of Peter M. Demicco, DRN v. PA DEP an TGP NEUP, 2012.

<sup>45</sup> Affidavit of Peter M. Demicco, DRN v. PA DEP an TGP NEUP, 2012.

<sup>46</sup> See Attachment of Tom Myers Technical Report for full discussion.

for a given bedrock aquifer have not been published, it is reasonable for PennEast to complete the analyses for existing wells.”

- “The application did not consider how pipeline construction and operations could affect recharge and shallow groundwater flow in aquifers near the proposed pipeline. Areas where the pipeline compacts soils over critical recharge areas, especially on ridge tops and valley bottoms, would increase runoff and decrease recharge.”<sup>47</sup>

## **6. Impacts to Benthic Invertebrates, Fish Communities, Aquatic Ecosystems, Wildlife**

Benthic invertebrates can have higher drift rates during stream crossing construction and reduced densities following open trench cut methods of crossing. Reduced densities can be the result of both the higher drift and the increased sedimentation that affects suitability of habitat resulting from the pipeline installation.<sup>48</sup> Changes in downstream diversity and structure of benthic invertebrate communities can also result. While, in time, the benthic community generally restores, that does not diminish or negate the ecosystem effects during the time of damage including the other cascading effects to other ecosystem services otherwise provided by the invertebrates – including as food for other dependent species, the water quality benefits provided by invertebrates helping with nutrient breakdown, and the breakdown of instream detritus creating food for other species.<sup>49</sup>

Using the open trench cut method of crossing can also affect fish, including direct harm but also by reducing the suitability of habitat including for eggs, juveniles and overwintering.<sup>50</sup> Fish exposed to elevated suspended solids levels can experience reduced feeding rates, physical discomfort or damage from the abrasive materials on their gills, decreased instream visibility, reduced food supply, and increased competition as fish attempt to move to cleaner waters.<sup>51</sup> Many of the streams to be cut by the pipeline are designated Class A or wild trout streams which are an important natural and recreational resource for the state – as such many of these streams with native Class A or Wild Trout designations have EV wetlands hydrologically connected to their flow.

The filling of riffles not only can have adverse impacts for invertebrates and fish, in terms of taking important habitat, but it can also diminish the ability of the riffles to help create oxygen important for aquatic life.<sup>52</sup> Over time these impacts can depress the immune system of fish, result in lower growth rates, result in increased stress on individuals and populations, cause damage to the gills – all of which can result in a decline in fish and population health and survival rates.<sup>53</sup> This of course all gets compounded by adverse effects to the suitability of habitat for eggs and juveniles necessary to support the overall community and population.<sup>54</sup> Additionally, downstream sedimentation and also disruption of flows during

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<sup>47</sup> See Tom Myers Technical Report for full discussion.

<sup>48</sup> Pipeline Associated Watercourse Crossings, 3rd Edition, publication prepared for CAPP, CEPA, and CGA by Tera Environmental Consultants at 235 – 251.

<sup>49</sup> See e.g. Sweeney, B. W., et al. 2004. Riparian deforestation, stream narrowing, and loss of stream ecosystem services, PNAS, September 2004; 101: 14132-14137

<sup>50</sup> Id 1.

<sup>51</sup> Pipeline Associated Watercourse Crossings, 3rd Edition, publication prepared for CAPP, CEPA, and CGA by Tera Environmental Consultants.

<sup>52</sup> Ibid.

<sup>53</sup> Ibid.

<sup>54</sup> Pipeline Associated Watercourse Crossings, 3rd Edition, publication prepared for CAPP, CEPA, and CGA by Tera Environmental Consultants

crossing activities can result in areas of the stream that are shallower or dewatered, thereby taking preferred habitat.<sup>55</sup>

“Pipeline construction could affect hydrology in ways that could affect vegetation or aquatic life, in addition to the simple construction impacts. The application does not analyze how the pipeline would affect any specific area with important vegetation types or aquatic species. There are broad statements about temporary impacts during construction, but there is no analysis of the change in groundwater flow patterns as described herein.”<sup>56</sup> In addition, impacts to aquatic life and wildlife are discussed throughout the expert reports attached and are the result of the many impacts discussed in this cover comment as well.

## **7. Impacts of ROW on Local Environment**

Open cuts are long lasting since part of the pipeline ROW is required to remain clear for maintenance, according to pipeline company claims. These cuts bring with it management strategies that involve killing woody growth along the pipeline every few years – often adding herbicides to the mix of contaminants impacting these tributaries. Invasive plants often colonize along these stream corridors with pipeline cuts and studies on benthic health conducted by Stroud Water Research show that many benthics, like mayflies, do not thrive where plants like multiflora rose reside along the stream buffer. These stands of monotypic invasive plants can translate to less food variety for benthic macroinvertebrates which impacts diversity in the stream and in turn this impacts nutrient cycling conducted by these stream animals.

It is important to note in regard to required restoration, that along a Delaware County section of Sunoco pipeline/ME2 located on NLT preserved lands, a variety of native shrubs were planted throughout the entire pipeline Right of Way bordering a High Quality stream and along the entire hillside adjacent the stream. The ROW and all of the temporary work spaces were planted with container sized native trees and shrubs, mulched with fabric to control weeding naturally and preserve moisture, and protected with wire shrub shelters and planted on top of the pipes themselves. These native shrubs are shallow rooted species that could be required to be planted on other pipeline ROWs instead of the standard grass mixes often employed, especially when trees and natural shrubs are cut during pipeline construction.

## **8. Riparian Forest Impacts**

Pipeline construction results in the loss of riparian (streamside) vegetation.<sup>57</sup> For each of the pipeline construction techniques there is a resulting loss of vegetation and foliage associated with clearing the stream banks. Riparian vegetation is an important part of a healthy ecosystem and protects the land adjoining a waterway which in turn directly affects water quality, water quantity, and stream ecosystem health.

Riparian corridors protect and restore the functionality and integrity of streams. A reduction in healthy and mature streamside vegetation reduces stream shading, increases stream temperature and reduces its suitability for incubation, rearing, foraging and escape habitat.<sup>58</sup> While horizontal directional drilling may move the construction footprint further away from the stream, it too results in vegetative losses and soil

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<sup>55</sup> Ibid.

<sup>56</sup> Technical Report, Tom Myers, June 2016

<sup>57</sup> James Norman, et al., *Utility Stream Crossing Policy*, ETOWAH AQUATIC HABITAT CONSERVATION PLAN, July 13, 2008 at 8.

<sup>58</sup> Canadian Association of Petroleum Producers, Canadian Energy Pipeline Association, and Canadian Gas Association, *Pipeline Associated Water Crossings*, 1-4 (2005).

compaction that can have direct stream impacts. The body of scientific research indicates that stream buffers, particularly those dominated by woody vegetation that are a minimum 100 feet wide, are instrumental in providing numerous ecological and socioeconomic benefits.<sup>59</sup>

The loss of vegetation also makes the stream more susceptible to erosion events, exacerbating the sedimentation impacts of construction. In crossings that result in open forest canopies, increases in channel width, reduced water depth, and reduced meanders have persisted in the years after using an open cut method of installation.<sup>60</sup>

In addition, according to Princeton Hydro speaking directly to the PennEast Pipeline project and the streams targeted for crossing:

“Clearing of the forest canopy and vegetation growing adjacent to these streams alters their thermal properties and nutrient and sediment loading dynamics thereby threatening their ability to sustain a trout fishery. These changes to the adjacent stream corridors can also affect the food chain dynamics of the system by altering the composition of the benthic and aquatic insect communities and increasing the propensity for algae blooms.”<sup>61</sup>

## **9. Effects of Loss of Vegetation and Soil Compaction**

The destruction of forest, including riparian habitat, results in increased stormwater runoff to neighboring streams and wetlands. In addition, the construction of the project will result in soil compaction, which based on testing, experience and review of proposed project documents will not be properly mitigated, and as a result will result in increased stormwater runoff and prevent vegetation regrowth, both of which will have stream and groundwater impacts.

“Heavy equipment used in the construction of the pipeline will inherently compact work areas to depths deeper than conventional surface tilling will reach. These lasting impacts include increased runoff to streams and wetlands due to a reduction in infiltration capacity and difficulty in re-establishing vegetation. Infiltration capacity becomes limited when soils lose their porosity and soil structure, resulting in increased runoff volumes to streams. Excessive runoff changes stream geomorphology due to an increase in both volume and velocity. Streambanks and riparian areas are impacted by changes to the stream channel due to the increases in peak flow volume and rate. Streams with more flow also have higher energy. More energy means more in-stream erosion and sediment transport. Compaction also creates conditions where bulk densities of soils are so high that the soils inhibit the germination of plants and plant root growth. The establishment of vegetative cover within the pipeline ROW will be more difficult once surface soils are compacted. If vegetation regrowth is limited within both the temporary and permanent ROW, the likelihood of accelerated erosion will be increased.”<sup>62</sup>

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<sup>59</sup> Ibid.

<sup>60</sup> Ibid.

<sup>61</sup> Ibid.

<sup>62</sup> Memorandum from Meliora Design *re*: Proposed State Water Quality Certification – PennEast Pipeline Project, June 9, 2016 (hereafter Meliora Design Memorandum).

Additionally, when a pipeline cuts its path through a forest there are impacts in the direct footprint of the right of way (ROW) of the pipeline as well as impacts 300 feet into the forest on either side of the ROW.<sup>63</sup> Therefore, damage to the forest ecosystem for a 1 mile section of a 50 foot wide pipeline ROW will directly impact 6 acres of forest, and it will damage an additional 72 acres of adjacent forest by transforming it from interior habitat to that of forest edge habitat<sup>64</sup> (i.e. an additional 300 feet of forest on either side of the ROW is impacted). This means that when a forest cut is made, for every 1 mile of pipeline (assuming a 50 foot ROW as PennEast has asserted it will primarily rely upon) at least 78 acres of forest habitat are impacted. In areas with a construction footprint that is wider, the impacts are, of course, greater. Temporary and additional temporary work spaces used by the pipeline company also need to be included in this harm since they are so abundant throughout the area of the pipeline and are often located near sensitive habitats, streams and wetlands.

PennEast's application and materials proposes, among other things, an unnecessarily oversized set of ROWs both for construction as well as for operation and maintenance. Both during construction as well as in terms of the permanent ROW maintained for the project, ROWs significantly smaller than those proposed by PennEast are viable and available options. In addition to the oversized footprint, PennEast proposes typically invasive construction practices, such as open stream cuts, that also maximize adverse impact and minimize the opportunity for successful mitigation and/or restoration. If HDD is not employed in sensitive areas, the Department should require minimization of the ROW to the greatest extent possible to minimize fragmentation, soil compaction and other impacts. As stated earlier, PennEast asserts that it is unable to reduce the ROW to less than 45 feet for northern flying squirrels, but other pipelines have demonstrated that this is possible. Pipelines located in residential areas and highly developed and urban areas operate in minimal with ROWs; there is no reason that natural forests and communities that are more rural and less urbanized should be sacrificed when they clearly do not need to be, especially in light of the ecological value these rural landscapes provide.

For example in Morris County, NJ, a pipeline company was required to limit its ROW to 34 feet to avoid and minimize harm and to run the ROW along an existing road to decrease fragmentation. Stove piping, HDD, smaller side booms, wood chips to cushion equipment, and sod pillows can all be deployed by PennEast to greatly minimize harm and the amount of time to have the site restored on a faster timeframe, but this appears to be completely ignored by PennEast.<sup>65</sup>

The additional runoff and permanent loss of vegetation can contribute to erosion, higher damaging peak flows, habitat impacts/loss, loss of shade for protecting stream temperatures, and direct contributions of pollution particularly from pipeline rights of way where herbicides have been used to keep vegetation down. Even in temporary rights of way where, post construction conditions are supposed to restore both in terms of soil compaction and vegetation, compacted soils and denuded landscapes can and do persist.

After reviewing the impacts of the Tennessee Gas Pipeline Company's construction of the 300 line, engineering expert Michelle Adams determined

“It is my opinion, given with a reasonable degree of scientific and engineering certainty that the conditions created as a result of the completed 300 Line Upgrade construction have resulted in significant and permanent increases in stormwater runoff volumes, rates, pollutant discharges, and frequencies of discharge, and a corresponding decrease in infiltration volumes. As a result, existing

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<sup>63</sup> Cara Lee, Brad Stratton, Rebecca Shirer, Ellen Weiss, *An Assessment of the Potential Impacts of High Volume Hydraulic Fracturing (HVHF) on Forest Resources*, The Nature Conservancy, Dec. 19, 2011.

<sup>64</sup> Nels Johnson, et al., *Natural Gas Pipelines*, The Nature Conservancy, 1 (December 2011).

<sup>65</sup> *Achieving Higher Quality Restoration Along Pipeline Rights of Way*, Leslie Sauer

streams and wetlands, including exceptional value streams, have been adversely impacted by stormwater discharges and the discharge of sediment.”<sup>66</sup>

There is every reason to believe that the same impacts which resulted from the TGP 300 pipeline, using the same and similar construction practices as proposed for PennEast, will result here.

In this regard too, PennEast and PADEP have not undertaken the data collection, review or planning necessary to support Chapter 105 decision-making:

“The PennEast Pipeline Project needs to fully evaluate conditions that may increase the likelihood of compaction for the most common land uses found along the pipeline. Areas that contain specific fine textures and high water tables are highly susceptible to compaction. Without identifying these areas for both the ROW and temporary ROW and across all land use categories, no determination during project review of potential impacts can be made due to a lack of information being provided. Extensive areas being crossed by this pipeline will fall into the category of susceptible to compaction.”<sup>67</sup>

“Impacts to resources located outside of the permanent ROW are often ignored or characterized as being temporary and short-term. This conclusion is not supported by experience with soil compaction investigations performed by Meliora Design within pipeline work areas. Once a soil’s structure is disturbed with heavy equipment, compaction, and removal of surface vegetation, it is very difficult to regain structure that allows for infiltration of surface water or the regrowth of healthy vegetation following construction.”<sup>68</sup>

As noted by Princeton Hydro:

“PennEast has used post-development TR-55 runoff curve numbers in an attempt to support their contention that there will not be an increase in runoff following the completion of the pipeline. However, it is well established that following land development, especially development on steep slopes and resulting in forest clearing, peak flows and total runoff volumes will increase. In addition, the time of concentration will decrease. Undoubtedly, there will be both a greater volume of runoff and velocity as the result of pipeline construction. In addition to increasing the volume and velocity of runoff entering stream systems, these conditions will increase the mobilization and transport of pollutants (including sediments and nutrients), increase the likelihood of scour and erosion and decrease the total volume of precipitation infiltrated back into the soil leading to a decrease in the recharge of the surficial aquifer.”<sup>69</sup>

Loss of trees in a watershed, even when there exists a buffer between the tree cuts and the creek, can still have direct impacts on water quality. A seven-year long hydrological study on water quality demonstrates that cutting trees can increase turbidity in nearby water bodies even if the trees and vegetation are left in place.<sup>70</sup> Another study, also involving leaving cut trees/vegetation in place, demonstrates that even five

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<sup>66</sup> Affidavit, Michelle Adams, Meliora Design

<sup>67</sup> Meliora Design Memorandum

<sup>68</sup> Meliora Design Memorandum

<sup>69</sup> Princeton Hydro White Paper

<sup>70</sup> See Marryanna, L. et al, “Water Quality Response To Clear Felling Trees For Forest Plantation Establishment At Bukit Tarek F.R., Selangor,” Vol. 18[1] Journal of Physical Science 33-45 (2007) (experimental plot was clear cut, left in place with a 65.6 foot wide buffer next to river, and river’s turbidity increased on-average by 279%).

months after deforestation, nitrates had increased and pH was altered in a water body, adversely impacting water quality.<sup>71</sup>

As observed by Meliora Engineering in their attached report:

“Construction activities of this pipeline such as clearing, grading, trenching, and backfilling, all could adversely affect soil resources by causing accelerated erosion, compaction, and introduction of rock or fill material to the surface. Current regulations rely upon construction plans that focus on temporary erosion and sedimentation controls to protect water quality standards. While temporary erosion and sedimentation measures may help to limit the transport of eroded soils during construction activities, they cannot fully eliminate the acceleration of erosion or soil compaction caused by construction over the long-term operation of a pipeline project. Once sediment reaches a stream or wetland, changes to the habitat of plants, fish, and insects will take place. Sediment from accelerated erosion smothers fish eggs and covers spawning areas with fine sediments, thus inhibiting fish reproduction. Increased turbidity in streams and wetlands prevents light penetration into the water column and increases water temperatures. All of these impacts make meeting water quality standards and the Clean Streams Law nearly impossible. Environmental damage to surface waters does not stop when construction ends if soils are severely damaged and their function in the natural environment is destroyed by compaction.”<sup>72</sup>

### **10. DRN Field Monitoring and Documentation of the Reality of Pipeline Construction, Operation & Maintenance – Both In Compliance with the Law and In Violation of the Law – Shows These Projects Irreparably Harm Rivers, Wetlands and Streams.**

PennEast contends that the Project will be constructed in full compliance with all applicable state laws, and that in temporary workspaces and restored areas the natural landscape will return to its former, or some altered but healthy ecological status. In fact, experience shows that neither is true. The Delaware Riverkeeper Network has found that the construction methods proposed necessarily result in environmental harms and failures of mitigation/restored areas to return to ecological health.

As the result of document reviews and field investigations during construction of three sections of pipeline - the TGP 300 line upgrade, TGP Northeast Upgrade Project (NEUP), and Columbia 1278 pipeline -- in the Upper Delaware River Basin the Delaware Riverkeeper Network documented:

- over 60 instances where best management practices (BMPs) were not present, inadequate or not functioning or in need of repair, maintenance or reinforcement,
- 4 instances of fueling being conducted in wetlands or near waterbodies,
- dozens of instances of poor signage and staking and mapping errors which sometimes led to impacts off of the permitted Right of Way (ROW), loss of trees outside the ROW, and inaccurate mitigation calculations,
- thermal impacts, extreme (and unreversed) soil compaction, nutrient impacts, benthic invertebrate changes from pipeline cuts, including for streams with exceptional value, high quality and or C-1 anti-degradation classifications,

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<sup>71</sup> See Likens, G.L. et al., “Effects of Forest Cutting and Herbicide Treatment on Nutrient Budgets in the Hubbard Brook Watershed-Ecosystem” 40 Ecol. Monogr. 23-47 (1970) (study also showed large increases for all major ions, except for ammonium, bicarbonate, and sulfate).

<sup>72</sup> Meliora Design Memorandum.

- discrepancies between pipeline company monthly compliance reports and what work and activities to meet compliance and avoid pollution were actually occurring or not occurring on the ground. We also noted excessive lag time in the filing and/or public release of construction reports making for difficult follow up in the field. DRN documented too few pipeline inspectors and a lack of oversight person-power for these extensive linear projects that spanned many miles and where work was going on simultaneously along the routes with little independent oversight.

Based on first hand observations and monitoring, the Delaware Riverkeeper Network has concluded:

- Interstate natural gas pipeline projects result in a multitude of environmental impacts that inflict high levels of unnecessary ecological damage – this damage is not avoided, nor properly mitigated, despite the resource reports that are drafted or the guidance provided by FERC or other federal or state agencies;
- Violations of environmental laws are common place and an accepted part of pipeline construction – and compliance outweighs penalties and violations to the detriment of the environment and the public;
- Construction problems and potential violations are not properly responded to by the company, by FERC or by other state or federal agencies and mitigation does not undo the harms inflicted -- as a result of both, pipelines inflict enduring and/or repetitive harms on natural resources; and
- Current or proposed guidance from FERC or other regulatory agencies do not prevent, avoid, or otherwise mitigate these ecological and public harms or the multitude of bad practices used by the pipeline companies.

Attached please find: *Field Monitoring Report, Pipeline Construction & Maintenance Irreparably Harms Rivers, Wetlands and Stream., Addendum to Comment for the PennEast Pipeline*, a compilation of Delaware Riverkeeper Network generated technical documents, reports and observations compiled as the result of field monitoring which support, inform and expand upon these conclusions. Our observations in the field demonstrate and document that construction, operation and maintenance practices like those being proposed by the PennEast pipeline company, even when followed in full compliance with regulatory standards, results in unavoidable, unmitigated and irreparable harm and violations of state water quality standards and wetlands protections. In addition, DRN monitoring has documented that over and above these impacts, violations of law are commonplace during pipeline construction, operation and maintenance and as a result the violations of law, including water quality standards and wetland protections, are further exacerbated. The Department's analysis needs to build in a consideration of the inevitable impacts and implications of construction activity for the project that will necessarily involve violations of the laws governing the construction activity.

Furthermore, PennEast's applications are missing a tremendous amount of information. While the expert reports were focused on the information missing in the application for a Federal Energy Regulatory Commission certificate, the same missing data and analysis cross applies to the applications before the Department. As an example of some of the information PennEast did not include in its materials to DEP - see below:

1. Evaluation of the presence of working and abandoned mines near the proposed crossing of the Susquehanna River;
2. Evaluation of liquefaction hazards along the pipeline route and at the compressor station site;
3. Final landslide hazard inventory;
4. Necessary mitigation measures and post construction monitoring plan for liquefaction hazards and landslide hazards;
5. Evaluations to support routine/mitigation measures through geologically hazardous areas;

6. Final landslide inventory;
7. Landslide mitigation measures with locations;
8. Post construction landslide monitoring plan;
9. Final karst mitigation plan;
10. Results of all geotechnical investigations, including karst areas, necessary for HDD planning and design;
11. Final planned design of each HDD crossing;
12. A revised/final list, based on final surveys, of water wells and springs within 150 feet of any construction workspace (500 feet in areas characterized by Karst terrain);
13. Identification of the management and field environmental professionals responsible for notification for contaminated sites;
14. Documentation of the final hydrostatic test water withdrawal sources and locations;
15. Documentation of all necessary permits and approvals for each hydrostatic test water withdrawal source;
16. Identification of special construction methods for construction in extremely saturated wetlands;
17. Justification for required additional workspace to accommodate special construction methods for extremely saturated wetlands;
18. A revised/final table of impacts on vernal pools within or near the proposed workspaces based on completed surveys;
19. An Invasive Plant Species Management Plan for use during construction and operation;
20. Identification of appropriate seed mixes to be used during revegetation efforts;
21. Completed surveys identifying all potential suitable habitats for special status species in the project area;
22. Remaining site specific construction plans for all residences within 25 feet of the construction ROW and additional temporary workspaces (ATWS) including landowner approval;
23. Mitigation measures to minimize adverse impacts for the 7 residential developments,
24. 3 commercial developments, 2 municipal developments and 1 hospital expansion identified as being within 0.25 miles of the project and its facilities;
25. Update on the status of the site specific crossing plans for each of the recreational and special interest areas listed as being crossed or otherwise affected by the pipeline;

Given all of these missing pieces, coupled with the missing, inaccurate, and deficient information documented in this and other comments, it is impossible for the Department to assert that the Project will not violate any state water quality standards. In addition to the missing and deficient information identified above, Delaware Riverkeeper Network experts have identified a multitude of deficiencies, inaccuracies, and missing information discussed in the attached reports including, but not limited to, the following missing information:

1. The layout of the proposed preferred route and the Bucks County Alternative fails to show the lateral pipeline to the proposed Gilbert Interconnect which requires crossing the Delaware River;
2. Full evaluation of alternatives given their watershed protection benefits;
3. The applications fail to consider the environmental ramifications of the open trenching method of wetland crossings, including impacts to groundwater flows that are so vital to the majority of wetlands impacted by this project;
4. The applications fail to disclose sufficient details about proposed water sources for hydrostatic testing;
5. HDD crossing plans including specific crossing area, specific methods to be used, location of mud pits, pipe assembly areas, all areas to be disturbed and/or cleared for construction, containment plans for spills, contingency plans, etc.;

6. HDD water discharge details including the specific volume of anticipated discharge, discharge method and impacts on receiving streams;
7. Standards used to guide HDD water withdrawals without preventing impacts on downstream ecological or human uses and needs;
8. The applications should provide a table of bedrock aquifers that includes relevant properties, including specific capacity statistics or well yields, and conductivity where available.
9. The applications needs to include map, analysis and evaluation of the recharge, runoff, pollution, vegetation, habitat, soil and erosion impacts resulting from the combination of soil type, slope, compaction potential and depth to bedrock for each section of pipeline along the proposed preferred route as well as alternatives.
10. The applications should include a complete inventory of springs and seeps within a quarter mile of the pipeline to adequately consider the changes which could occur due to pipeline construction.
11. The applications should present the result of a final karst study for the area and present plans for mitigating problems caused by constructing through karst or caused by rapid contaminant transport within karst.
12. The applications should include data or information regarding the mineral content of the soils to be crossed by the proposed pipeline and the results of leaching tests that should be required.
13. The applications should assess the potential for pipeline construction to generate acid generation or leach metals in all areas where it crosses mine spoil.
14. The applications should present avoidance and mitigation discussions focused on preventing the leaching and transport of acid and metals from the site.
15. The applications should provide a plume map of groundwater contamination and a map showing soils contamination from the Palmerton Zinc Pile Superfund site and assess the implications of the various proposed pipeline routes for water, groundwater and drinking water contamination.
16. The applications failed to consider: how pipeline construction and operations could affect recharge and shallow groundwater flow in aquifers near the proposed pipeline; preferential flow caused by trenching in the aquifer; potential contaminant transport enhanced by the trenching; groundwater drawdown caused by the trenching.
17. The applications fail to consider how the project construction would affect recharge rates, which are highly variable with the underlying geology, soil type and thickness, and topography controlling the actual recharge location.
18. The applications fail to consider the pipeline trench as a pathway for contamination.
19. The applications fail to define and analyze a reasonable range of alternatives.
20. The applications fail to account for the public health impacts of the proposed Project.
21. The applications fail to include an analysis of ecosystem services lost due to the construction, operation and maintenance of the pipeline.
22. The applications fail to require sufficient information to determine the potential extent of blasting at each stream or wetland crossing.
23. The applications fail to consider site-specific conditions to determine whether blasting in stream channels may be required.
24. The applications fail to address that proposed pipeline construction practices and long- term maintenance of the ROW in a non-forested condition will alter land surface conditions and result in greater stormwater impacts.

Finally, DEP is currently undergoing an 8 month stakeholder process of its Chapter 105 program that convened its first meeting of stakeholders in January, 2019, largely due to gross water pollution impacts from Sunoco pipeline/Mariner East pipeline construction in the Commonwealth that were permitted under

current Department guidance and regulations.<sup>73</sup> There is an Alternatives Analysis (AA) Stakeholder Workgroup and an HDD Stakeholder Work Group meeting to determine and draft up needed changes in the guidance documents to work to ensure extreme harms to the environment do not continue to be repeated time and time again as has been the case on so many pipelines cutting across the Commonwealth to date. In the case of the AA stakeholder group, they are reviewing current practices by the DEP to ensure that if an applicant for Chapter 105 is proposing impacts to a waterbody, the applicant is actually required to conduct a thorough and complete Alternatives Analysis that demonstrates that there is no practicable alternative to the proposed activity that will not involve an aquatic resource or have less adverse impact on the resource, and would not have other significant adverse impacts on the environment. Once the groups have agreed on changes, DEP will be drafting new guidance and putting the guidance out for at least a 60-day public comment period, likely in the summer or fall of 2019. For DEP to begin review and possibly permit the PennEast pipeline before this extensive review of the Chapter 105 process is established and finalized after public input, would be premature and reckless to protection of our freshwater. These stakeholder groups and reviews are a stipulation of settlement.

**C. Construction of the PennEast Pipeline will have adverse impacts on natural areas, public water supplies, National, State or local parks or recreation areas or National, State or local historical sites, on critical species and habitats.**

As stated in the attached expert report by Princeton Hydro:

...along its path in both Pennsylvania and New Jersey, the proposed PennEast Pipeline will cross through environmentally important and critical lands. These include Pennsylvania State Game Lands (#40 and #128), Hickory Run State Park, Boulder Field Natural Area (a National Natural Landmark), Mud Swamp Natural Area, Weiser State Forest, Beltsville State Park, the Kittatinny Ridge, the Appalachian Trail Corridor, the Sourland Mountain Preserve, other State and County parklands, preserved farmland, and areas of cultural significance. Along the route the pipeline traverses steeply sloped areas characterized by erosion prone soils. Many of the affected areas provide critical habitat to a number of threatened and endangered species and species of concern including Bald Eagle, Harrier Hawk, Bobolink and other grassland bird species, Wood Turtle, Bog Turtle, Indiana Bat, Northern Long-Ear Bat, Brook Snaketail Dragonfly and Dwarf Wedge Mussel.<sup>74</sup>

Many of the streams to be cut by the pipeline are designated Class A or wild trout streams which are an important natural and recreational resource for the state. In addition, the game lands, parks and natural areas are important to Pennsylvania's recreation and ecotourism driven economy. The Delaware Riverkeeper Network's River values report, attached, provides facts and figures on the wealth of income that is generated by Pennsylvania, as the result of fishing, hunting and wildlife viewing, including in areas to be impacted by PennEast. The report also discusses costs avoided – such as water quality remediation, stream restoration, and stormwater management projects – because of healthy forests, streamside lands, wetlands, etc.<sup>75</sup>

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<sup>73</sup> Group was a result of *Clean Air Council, The Delaware Riverkeeper Network, and Mountain Watershed Association, Inc v. Commonwealth Department of Environmental Protection and Sunoco Pipeline L.P* litigation.

<sup>74</sup> *The Short and Long-Term Consequences of the Construction of the PennEast Pipeline– A White Paper*, Princeton Hydro, LLC, July 2015.

<sup>75</sup> *River Values: The Value of a Clean and Health Delaware River*, Delaware Riverkeeper Network, April 2010.

The Delaware Riverkeeper Network's dedicated group of volunteer monitors have witnessed and documented habitats and state threatened and endangered species such as vernal pools and talus slopes throughout the proposed PennEast pipeline route. In Pennsylvania, a volunteer documented an osprey nest on a telephone pole near MP 76.7. Ospreys are a state threatened species in PA. Between MP 43.5 and 44, we had reports of several vernal pools, wood frog egg masses, and springs and seeps.

It is a concern that in early April of 2016, we reviewed a report that PennEast representatives were seeking to gain access to a property to conduct bog turtle trapping. Bog turtle trapping, or Phase 3 surveys, should only be conducted between April 15th and June 15th according to the U.S. Fish and Wildlife Service. In this case, the PennEast representative was seeking to access the property prior to April 15th. In addition, the Delaware Riverkeeper Network has received reports of unmarked vehicles parking near private landowner property and unidentified men near the property claiming they were doing bog turtle surveys. It is our understanding that these men must be accompanied by at least one USFWS qualified bog turtle surveyor at all times. We have confirmed that there is a qualified bog turtle surveyor working at this site, but it is unknown if he is present at all times. When approached by landowners, the unidentified men are largely uncooperative in providing identification. PennEast representatives and their consultants should be providing identification as well as their scientific collecting permit when asked. Unmarked vehicles should also have a sign in the windshield identifying them as contractors when parked. This lack of clear communication arouses suspicion to landowners as they are unable to tell if these unidentified people are legitimate employees or trespassers. Premature granting of permits and limiting public participation in the process emboldens this kind of bad behavior and risks abuses by the pipeline company.

#### **D. A Pipeline is not Water Dependent and Should Not be Sited in Wetlands**

The extent to which a project is water dependent and thereby requires access or proximity to or siting within water to fulfill the basic purposes of the project. The dependency must be based on the demonstrated unavailability of any alternative location, route or design and the use of location, route or design to avoid or minimize the adverse impact of the dam, water obstruction or encroachment upon the environment and protect the public natural resources of this Commonwealth.<sup>76</sup> Pipeline projects are not “water dependent” activities as defined by the Code, or any other body of law. “A project is water-dependent when the project requires access or proximity to or siting within the wetland to fulfill the basic purposes of the project.”<sup>77</sup> As pipelines do not require “access or proximity to or siting within [a] wetland to fulfill [their] basic purpose”, they are not “water dependent” and cannot be sited in an EV wetland.

The purpose of a pipeline project is to “simply move product from one location to another.”<sup>78</sup> They do not require to be near a wetland in order to fulfill this purpose. Indeed, many projects have seen pipelines take steps to avoid wetlands and waterways through routing around them and drilling under them. Therefore, similarly to a residential dwelling, which the department has determined is not water-dependent as it “does not need to be built in wetlands to fulfill the purpose of a dwelling,”<sup>79</sup> a pipeline does not need to be built on wetlands to fulfill the purpose of transporting. Additionally, even if pipeline projects could in some

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<sup>76</sup> 25 Pa. Code § 105.14(7)

<sup>77</sup> 25 Pa. Code § 105.18a(a)(2).

<sup>78</sup> CAC v. DEP, Sunoco, *See* transcript of the Deposition of Ken Murin (“Murin Dep.”) at 103, lines 22-23 (“a pipeline is to generally transport some material from point A to point B”)

<sup>79</sup> CAC v DEP, Sunoco Environmental Assessment, E45-501, Murin 0305 (Exhibit 2)

instances be classified as “water dependent,” this specific Project does not require access or proximity to jurisdictional water resources, and therefore is not water dependent.<sup>80</sup>

Therefore, PennEast cannot be issued a 105 permit until they have found alternate routes for all EV wetlands crossed by the project.

### **1. PennEast and the Department have Conducted An Incomplete Alternative Analysis Assessment**

The alternative analysis fails to consider the alternative energy options for avoiding the footprint of PennEast altogether and otherwise serving the energy needs that PennEast asserts it will serve. In addition, DEP fails to fully consider the alternative construction strategies available for minimizing the footprint and impacts of the project. Attached is an expert report by Leslie Sauer<sup>81</sup> that lays out numerous construction practices that would limit the construction footprint and impact of the project, limit the permanent and temporary ROW footprints of the project, and that would remediate impacts inflicted during construction. These are available alternatives that have not been given due consideration.

Pipeline crossings like those proposed by PennEast inflict significant impact on water quality, health and habitat, and inflict impact and threats to people and property, both at the site of the crossing and downstream. Given the significant and long term effects of the water, land, vegetation and habitat transformation that will result from maintenance and construction of the project, DEP must determine prior to issuance whether such impacts prevent the ability of meeting Chapter 105 regulatory requirements.

### **E. The Penneast Pipeline Proposal Is Not Consistent With The Lower Delaware River Wild & Scenic Designation Or Management Plan.**

While PennEast has carefully selected a reach of the Delaware River that does not yet have Wild & Scenic designation, it is a reach of river that is surrounded, upstream and downstream, by designated reaches. As a result, adverse impacts to the ecological and community health of the corridor and the River inflicted by the PennEast pipeline proposal will have direct impacts on the Lower Delaware River Wild & Scenic designation, which, contrary to PennEast’s suggestion, cannot be simply ignored.<sup>82</sup>

The Lower Delaware River Wild & Scenic Management Plan specifically asserts that protection of the non-designation stretches of the Lower Delaware Wild & Scenic Corridor need the same consideration and protection as the designated reaches in order to ensure the important resources of the designated corridor are properly protected:

“To assure the protection of important resources in the corridor, the Study Task Force concluded that the Management Plan should cover a broader reach of the lower Delaware than that included in the area considered for Wild and Scenic River designation. The Task Force decided that one management plan should be developed covering (1) areas eligible for Wild and Scenic designation, (2) the area south of Washington Crossing, PA, and (3) excluded sections.”<sup>83</sup>

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<sup>80</sup> 25 Pa. Code § 105.14(7)

<sup>81</sup> Achieving Higher Quality Restoration Along Pipeline Rights of Way, Leslie Sauer.

<sup>82</sup> 25 Pa. Code 105.14(b)(10)

<sup>83</sup> Lower Delaware River Eligibility Determination for DRBC Declaration of Special Protection Waters, Delaware River Basin Commission, August 2004.

In addition, the protected area includes all area between the “prominent ridge lines on both sides of the lower Delaware River” not just the River waters and channel itself. Thus as the PennEast Pipeline crosses through the Lower Delaware Wild & Scenic River corridor between the prominent ridge lines in Pennsylvania and New Jersey, it is clear that protection of the Wild & Scenic Lower Delaware River requires that the PennEast pipeline comply with the guidance, goals and vision of the Lower Delaware River Management Plan. Given that PennEast has not provided any discussion in this regard, and that the PADEP has undertaken no review in this regard, the regulatory mandate that a Chapter 105 permit ensure “[c]onsistency with the designations of wild, scenic and recreational streams under the Wild and Scenic Rivers Act of 1968 (16 U.S.C.A. § § 1271—1287) or the Pennsylvania Scenic Rivers Act (32 P. S. § § 820.21—820.29), including identified 1-A candidates”<sup>84</sup> has not been met.

Finally, while PennEast lightly dismisses the downstream stretches that are listed on the National Rivers Inventory of the National Park Service, it fails to give the level of consideration necessary to impacts on those downstream resources or potential future designations.

#### **F. The Permit Should Be Denied Because Penneast Has Still Not Provided Adequate Information To Assess The Impacts On Wetlands Values And Functions.**

25 Pa. Code 105.14(b)(13) requires that “[f]or dams, water obstructions or encroachments in, along, across or projecting into a wetland, as defined in § 105.1 (relating to definitions), the Department will also consider the impact on the wetlands values and functions in making a determination of adverse impact.”

In recognition of the critical ecological value of wetlands, the vulnerability of such wetlands to alteration and destruction, and the inadequacy of federal laws to protect wetlands from activities such as linear infrastructure development, the Commonwealth of Pennsylvania amended Chapter 105 of the Pennsylvania Code in 1991 and adopted several stringent water quality standards for wetlands. *See, e.g.*, 25 Pa. Code § 105.18a. These regulations specifically apply to protecting wetlands from the construction and operation of large-scale industrial encroachments. *See* 25 Pa. Code § 105.18a(a). To fulfill these requirements, the applicant must “affirmatively demonstrate [] in writing” and the Department must “issue a written finding” that all of the seven specific requirements are met before the Department may grant a Chapter 105 permit for an activity in an exceptional value wetland. *See* 25 Pa. Code § 105.18a(a).

The Department’s governing regulations dictate that the Department’s policy is to “encourage activities to protect the natural condition of the wetlands.”<sup>85</sup> Additionally, as per the explicit instruction of 25 Pa. Code § 105.17, the rules under Chapter 105 “will be construed broadly” to protect Pennsylvania’s wetlands, because these wetlands are a “valuable public resource” deserving “special protection.”<sup>86</sup>

Pennsylvania’s regulations for wetland protection fall into two distinct categories based on the type of wetland being protected, other and Exceptional Value (EV). Wetlands classified as “other” wetlands are subject to the protections afforded by Section 105.18a(b), while wetlands classified as EV are subject to the more stringent provisions of Section 105.18a(a). The regulations protecting EV wetlands are significantly stricter than those protecting “other” wetlands, demonstrating a clear intent that these regulations highly prioritize the protection of EV wetlands.<sup>87</sup>

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<sup>84</sup> 25 Pa. Code 105.14(b)(10).

<sup>85</sup> *See N. Pocono Taxpayers’ Ass’n N. Pocono C.A.R.E. v. Pennsylvania*, 1994 EHB 449, 489 (Pa. Env. Hrg. Bd., April 4, 1994).

<sup>86</sup> 25 Pa. Code §§ 105.17; 105.17(1).

<sup>87</sup> *Compare* 25 Pa. Code § 105.18a(a) *with* 25 Pa. Code § 105.18a(b).

## 1. The Project Will Have an Adverse Impact to EV and Other Wetlands

The first requirement pursuant to Section 105.18a(a) requires that applicants demonstrate that the permitted activities will not have an adverse impact on the exceptional value wetlands or other wetlands “in accordance with §§ 10.14(b) and 105.15.

The PennEast Project will have an adverse impact on numerous EV wetlands and other wetlands in Pennsylvania resulting from their permanent or temporary conversion from Palustrine Forested Wetlands or Scrub-Shrub Wetlands to Emergent Wetlands, thus resulting in a significant loss to the values and functionality of those EV wetlands. Further, a wetland must first be categorized correctly before it is afforded the appropriate protections under the code. A report from Schmidt & Company in March 2019 found that:

- The classification of wetlands as “exceptional value” or “other” by PennEast is neither consistent nor credible.
- It is significant, and a testament to the sensitivity of the areas through which this pipeline is proposed, that most (69%) of the wetlands to be affected by the PennEast project in Pennsylvania are acknowledged to be “exceptional value” wetlands. It is likely that the number of exceptional value wetlands along the PennEast route actually is higher than the applicant currently acknowledges.

Additionally, the report also concluded:

- Only two wetlands identified along the entire route are classified as “exceptional value” because of criterion “iv” (located along an existing public or private drinking water supply).<sup>88</sup>
- The Pennsylvania Groundwater Information System database (PAGWIS) reportedly was relied upon for identifying private wells near the proposed PennEast pipeline routes. PAGWIS is known to be a partial and incomplete dataset. The PAGWIS database currently available from PASDA (Pennsylvania Spatial Data Access) contains about 123,000 separate features statewide, yet it is estimated that there are more than 1 million private water wells across the Commonwealth.
- Given the known inadequacies of the PAGWIS data, it is reasonable to assume that there may be many hundreds more private water wells in close proximity to wetlands along the PennEast pipeline.

The only reference in 25 Pa. Code 105.14(b) or 105.15 that specifically provides guidance to Respondents for making a determination of an “adverse impact” on wetlands is § 105.14(b)(13), which states that the Department must “consider the impact on the wetland’s values and functions.”<sup>89</sup> Wetland functions are defined in the Pennsylvania Code to include, but are not limited to, those set out in 25 Pa. Code § 105.1.

Therefore, to the extent that any project applicant seeking a Chapter 105 permit proposes a project that results in the loss of wetland functionality as defined in § 105.1 of an “Exceptional Value” wetland, the impact must be considered “adverse.”<sup>90</sup> Such an adverse impact finding dictates that the Project violates Pennsylvania’s water quality standards and the Department may not grant Chapter 105 permits for the Project. Construction and operational activity for the proposed Project will result in the permanent conversion of numerous “Exceptional Value” forested wetlands to emergent (nonforested) wetlands. Such a

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<sup>88</sup> *Impacts of the Proposed PennEast Pipeline on Exceptional Value Wetlands in Pennsylvania Supple, Supplemental Report, Prepared for the Delaware Riverkeeper Network, Schmid and Company, March 2019.*

<sup>89</sup> See 25 Pa. Code §105.14(b)(13).

<sup>90</sup> See also Pennsylvania Environmental Law and Practice, ch. 6-4.3, Permit Review (8th ed. 2015) (“From all practical perspectives, it is rare that a project in or affecting an EV wetland will be permitted. Very few projects can meet . . . these tests”).

conversion is an adverse impact and prohibited by the Pennsylvania Code. For example, certain waterfowl and other wildlife will inhabit a forested wetland but not a scrub shrub or emergent wetland. This is a protected use that cannot be degraded as PennEast proposes. Therefore, the Department may not issue Chapter 105 permits for this Project. A seven-year long hydrological study on water quality demonstrates that cutting trees can increase turbidity in nearby water bodies even if the trees and vegetation are left in place.<sup>91</sup>

Another study also involving leaving cut trees/vegetation in place, demonstrates that even five months after deforestation, nitrates had increased and pH was altered in a waterbody, adversely impacting water quality.<sup>92</sup> Additionally, the three Schmid expert reports further detail the myriad of ways in which wetlands are adversely impacted by the permanent conversion from forested wetlands to emergent or scrub shrub wetlands. Finally, a temperature study by Delaware Riverkeeper Network along the TGP pipeline route located in Delaware State Forest lands documented sustained thermal temperature increases in wetlands after pipeline construction.<sup>93</sup>

## **2. The Department Cannot Issue the Permit as PennEast is not a “Water Dependent Project” And Cannot Cross EV Wetlands**

A second requirement, specific to EV wetlands only, provides that the Department may not approve a water obstruction or encroachment into “exceptional value” wetlands where the project is not “water-dependent.”<sup>94</sup> The language of this critical provision provides the threshold test for water dependency. If this initial test cannot be met, no additional analysis of the Project is required, and the permits should be denied. In fact, the Pennsylvania Environmental Hearing Board has recognized that Chapter 105 permits are properly denied when a project is proposed to be sited in an EV wetland but is not “water dependent.”<sup>95</sup>

Pipeline projects are not “water dependent” activities as contemplated by the Code, or any other body of law. “A project is water-dependent when the project requires access or proximity to or siting within the wetland to fulfill the basic purposes of the project.”<sup>96</sup> As pipelines do not require “access or proximity to or siting within [a] wetland to fulfill [their] basic purpose”, they are not “water dependent” and cannot be sited in an EV wetland.

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<sup>91</sup> See Marryanna, L. et al, “Water Quality Response To Clear Felling Trees For Forest Plantation Establishment At Bukit Tarek F.R., Selangor,” Vol. 18[1] Journal of Physical Science 33-45 (2007) (experimental plot was clear cut, left in place with a 65.6 foot wide buffer next to river, and river’s turbidity increased on-average by 279%).

<sup>92</sup> See Likens, G.L. et al., “Effects of Forest Cutting and Herbicide Treatment on Nutrient Budgets in the Hubbard Brook Watershed-Ecosystem” 40 Ecol. Monogr. 23-47 (1970) (study also showed large increase for all major ions, except for ammonium bicarbonate, and sulfate.).

<sup>93</sup> See *Thermal Impacts to Exceptional Value Waterbodies in Pennsylvania Cut by Gas Pipeline Projects*, Delaware Riverkeeper Network, September 25, 2016, attached.

<sup>94</sup> 25 Pa. Code § 105.18a(a)(2).

<sup>95</sup> See *Eagle Environmental, L.P. v. DEP*, 1998 EHB 896, 937; see also *Hatchard v. DER*, 612 A.2d 621, fn. 2 (Pa. Commw. 1992) (finding that a “dock” would be an example of a water-dependent project).

<sup>96</sup> 25 Pa. Code § 105.18a(a)(2).

The purpose of a pipeline project is to “simply move product from one location to another.”<sup>97</sup> They do not require to be near a wetland in order to fulfill this purpose. Indeed, many projects have seen pipelines take steps to avoid wetlands and waterways through routing around them and drilling under them. Therefore, similarly to a residential dwelling, which the department has determined is not water-dependent as it “does not need to be built in wetlands to fulfill the purpose of a dwelling,”<sup>98</sup> a pipeline does not need to be built on wetlands to fulfill the purpose of transporting. Additionally, even if pipeline projects could in some instances be classified as “water dependent,” this specific Project does not require access or proximity to jurisdictional water resources, and therefore is not water dependent.<sup>99</sup>

Therefore, PennEast cannot be issued any Chapter 105 permits until they have found alternate routes for all EV wetlands crossed by the project.

### **3. The Department Cannot Issue the Permit as PennEast failed to avoid or reduce environmental impacts for other wetlands to the “maximum extent possible.”**

For other wetlands, PennEast is required to avoid or reduce adverse environmental impacts to the “maximum extent possible.”<sup>100</sup> PennEast failed to do so in their application, by putting forth mitigation measures that are minimal and do not result in making up for the destruction they are causing. Further, PennEast fails to properly acknowledge and assess the impacts the project will have on wetlands. A supplemental analysis from Schmid was able to identify areas lacking analysis, and showing a failure of PennEast to complete the analysis and measures required by law,

- The number of impacted wetlands in PA has increased to 168, including 116 EV wetlands.
- It appears that there are areas along the proposed pipeline route that are very likely to contain wetlands, based on available mapped information, but have not been so identified by the applicant.
- The under-identification and mischaracterization of wetlands are recurrent problems associated with large linear projects in Pennsylvania.

### **4. PennEast failed to Properly Evaluate the Possibility of Practicable Alternatives as Required Under Section 105.18a(a)(3) and 105.18a(b)(3).**

The next of the provisions requires the Department to show that “[t]here is no practicable alternative to the proposed project that would not involve a wetland or that would have less effect on the wetland, and not have other significant adverse effects on the environment.”<sup>101</sup> For this analysis, “An alternative is practicable if it is available and capable of being carried out after taking into consideration construction cost, existing technology and logistics. An area not presently owned by the applicant which could reasonably be obtained, utilized, expanded or managed.”<sup>102</sup>

PennEast stated that it avoided wetland and watercourse impacts by routing the pipeline around and siting the workspace outside of protected resources.” But that if “avoidance was not possible, PennEast minimized impacts by reducing the construction ROW width across wetlands and watercourses and crossing wetlands

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<sup>97</sup> CAC v. DEP, Sunoco, *See* transcript of the Deposition of Ken Murin (“Murin Dep.”) at 103, lines 22-23 (“a pipeline is to generally transport some material from point A to point B”)

<sup>98</sup> CAC v DEP, Sunoco Environmental Assessment, E45-501, Murin 0305 (Exhibit 2)

<sup>99</sup> Cite to regulation defining this

<sup>100</sup> 105.18a(b)(2).

<sup>101</sup> 25 Pa. Code § 105.18a(a)(3).

<sup>102</sup> 105.18a(a)(3),

and water courses at perpendicular angles and narrow locations.”<sup>103</sup> Yet, the Department requires that “avoidance [not be] practicable, [at which point] compensatory mitigation for permanent wetland impacts will be completed at approved off-site locations.”<sup>104</sup>

Here, PennEast fails to show why avoidance was not practicable, as the alternative analysis required by the law was not completed. Rather than find a way to minimize or altogether avoid wetlands, PennEast relies on mitigation measures and construction modifications, neither of which follows the mandate of the regulations, which is to establish “no practicable alternative.”

Finally, if there are inventory errors regarding the locations of private water supplies, (as outlined above) there likely are additional unacknowledged exceptional value wetlands and unacknowledged impacts to exceptional value wetlands, which means that the currently-proposed wetland mitigation probably is inadequate.<sup>105</sup>

**6. The DEP Cannot Issue The Permit as The Project Will Degrade The Water Resources of the Commonwealth and Result in Impairment to EV Wetlands and Other Wetlands as Prohibited by 105.18a(a)(4-6) and 105.18a(b)(4-6).**

Next, the Department is to consider whether the project will result in degradation of the states water, groundwater or surface waters as a result of the impacts to wetlands.<sup>106</sup> PennEast does little to address the issue of potential water degradation in the analysis provided. For the mitigation measures of regeneration, they do not address whether they will ensure the same protections and benefits to the streams as the ones they are crossing. Further, PennEast fails to account for what the construction impacts will mean for the stream’s designations and the potential for the work to degrade a stream.

This analysis is required by regulations, and without it the Department cannot issue PennEast’s permits as it fails to adequately protect the quality of EV wetlands and others. As Meliora’s March 18, 2019 expert report indicates 22.25 acres of PEM, PSS, and PFO wetlands impacted by the PennEast pipeline construction, PennEast has proposed 10.37 acres of wetland mitigation, about 47% of the wetland impacts.<sup>107</sup> The wetlands will be addressed on a County-scale, so the wetland mitigation could occur anywhere within the county, which means that it could occur within a different watershed. As a result, the impacted habitat is degraded and the wetland function is removed from the HQ and EV watersheds.

**7. The DEP Cannot Issues The Permits as wetlands will not be replaced in accordance with 105.18a(7), 105.18b(7), and §105.20a.**

Finally, 105.18a(7) requires “applicant shall replace affected wetlands in accordance with § 105.20a. 015.20a requires that the “wetland shall be replaced at a minimum area ratio of replacement acres to

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<sup>103</sup> PADEP Joint Permit Application Section S, Alternatives Analysis, p. 38

<sup>104</sup> PADEP Joint Permit Application Section S, Alternatives Analysis, p. 8

<sup>105</sup> *Impacts of the Proposed PennEast Pipeline on Exceptional Value Wetlands in Pennsylvania Supple, Supplemental Report, Prepared for the Delaware Riverkeeper Network*, Schmid and Company, March 2019.

<sup>106</sup> Review for Accuracy

<sup>107</sup> *Review of PennEast Pipeline Application for Chapter 102 and 105 Permits*, Michele Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, March 2019.

affected acres of 1:1”<sup>108</sup> and “functions and values that are physically and biologically the same as those that are lost shall be replaced at a minimum ratio of 1:1.”<sup>109</sup>

PennEast is proposing to mitigate wetland impacts through replacement. But it has not ensured that this replacement meets the exacting standards in 105.20a. It fails to replace area and function and value of the wetlands permanently altered at the appropriate ratio. Wetland impacts from the project will amount to 6.06 acres of Palustrine Forested (PFO) wetlands and .94 acres of Palustrine Scrub Shrub (PSS) wetlands to Palustrine Emergent (PEM) wetlands.<sup>110</sup> Additionally, the criteria does not consider what 25 Pa. Code § 105.1 factors for EV wetlands will be permanently altered and how PennEast will mitigate the taking of those functions and values.

Certified wetlands specialists have found a measurable “decrease” or “loss” in functionality as a result of the permanent conversion of forested wetlands to emergent wetlands.<sup>111</sup> For example, a functional conversion of wetlands from forested wetlands to emergent wetlands generally results in decreases to above ground biomass, structural diversity of the wetland, and local climate amelioration.<sup>112</sup> The conversion will also result in a loss of forest interior habitat, visual and aural screening from human activity, suitability of shade-loving plant species, and the production of mast (such as acorns) for wildlife.<sup>113</sup> Moreover, these conversions also result in increased wetland exposure to wind, ice and sun, as well as the localized effects of global warming on biota.<sup>114</sup>

Wetland functions involving drainage patterns, water quantity, and water quality will also be adversely impacted by a functional conversion of forested wetlands to emergent wetlands. Specifically, emergent wetlands provide decreased soil stabilization, streambank anchoring against erosion, nutrient storage, and temperature maintenance when compared to forested wetlands.<sup>115</sup> As a result, erosion and sedimentation can be expected to increase as a result of the conversion.<sup>116</sup> The function of storm damage shielding can also be expected to decrease as a result of this conversion.<sup>117</sup> For more information on these impacts, the attached wetlands reports demonstrate the ways in which permanent, or even temporary, conversions of wetlands results in adverse impacts to those wetlands.

Supplemental report by Schmid & Company found that:<sup>118</sup>

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<sup>108</sup> 25 Pa. Code § 105.20a(a)(1).

<sup>109</sup> 25 Pa. Code § 105.20a(a)(2).

<sup>110</sup> PennEast Pipeline, Compensatory Wetland Mitigation Plan, Prepared by WHM Solutions, Inc., Revised December 2018.

<sup>111</sup> See, *The Effects of Converting Forest or Scrub Wetlands into Herbaceous Wetlands in Pennsylvania: A Report to the Delaware Riverkeeper Network*, Schmid and Company, Inc., Consulting Ecologists (2014). (Hereafter Schmid Wetlands Report)

<sup>112</sup> *The Effects of the Proposed PennEast Pipeline on Exceptional Value Wetlands in Pennsylvania, Prepared for the Delaware Riverkeeper Network*, Schmid and Company, July 2016 (hereinafter “Schmid Wetlands Report”)

<sup>113</sup> Schmid Wetlands Report

<sup>114</sup> Schmid Wetlands Report

<sup>115</sup> Schmid Wetlands Report

<sup>116</sup> Schmid Wetlands Report

<sup>117</sup> Schmid Wetlands Report

<sup>118</sup> *Impacts of the Proposed PennEast Pipeline on Exceptional Value Wetlands in Pennsylvania Supple, Supplemental Report, Prepared for the Delaware Riverkeeper Network*, Schmid and Company, March 2019.

- In the current PennEast pipeline route, only 9 wetland crossings involve trenchless methods (5 HDD crossings and 4 conventional bores), and none of those necessarily is proposed primarily to avoid wetland impacts.
- While avoidance of wetlands is mentioned as a general consideration in the pipeline siting and alternatives analysis, specific areas where identified exceptional value wetlands were avoided is nowhere discussed.
- PennEast is unclear and inconsistent when calculating how much permanent conversion of PSS and PFO wetlands is proposed to occur (they fluctuate between 30 feet and 10 feet; see PennEast statements below).
  - “A 30’ wide ROW will be maintained through PFO and PSS wetlands, resulting in the conversion of PFO and PSS to PEM wetlands.”
  - “In accordance with FERC guidelines PennEast will .... maintain a 10-foot-wide corridor centered on the pipeline for operational purposes.”
  - “A permanent 10-foot wide cleared corridor will be maintained through wetland resource areas in accordance with FERC’s Plan and Procedures.”

### **8. In Mitigation Plans, PennEast Failed to Account for Any Existing Uses of EV Wetlands as Required by Chapter 93.**

Not only was PennEast required to ensure that the EV wetlands impacts were avoided or at least mitigated based on their status as an EV wetland, but also PennEast and the Department need to consider effects based on the characteristic that enables the wetland to have EV status. Pennsylvania has regulations require that the wetland have at least one of the following characteristics to be considered EV:<sup>119</sup>

- (i) Wetlands which serve as habitat for fauna or flora **listed as “threatened” or “endangered” under the Endangered Species Act of 1973** (7 U.S.C.A. § 136; 16 U.S.C.A. § § 4601-9, 460k-1, 668dd, 715i, 715a, 1362, 1371, 1372, 1402 and 1531—1543), the Wild Resource Conservation Act (32 P. S. § § 5301—5314), 30 Pa.C.S. (relating to the Fish and Boat Code) or 34 Pa.C.S. (relating to the Game and Wildlife Code).
- (ii) Wetlands that are hydrologically connected to or located within 1/2-mile of wetlands identified under subparagraph (i) and that maintain the habitat of the threatened or endangered species within the wetland identified under subparagraph (i).
- (iii) Wetlands that are located in or along the floodplain of the reach of a wild trout stream or waters listed as exceptional value under Chapter 93 (relating to water quality standards) and the floodplain of streams tributary thereto, or wetlands within the corridor of a watercourse or body of water that has been designated as a National wild or scenic river in accordance with the Wild and Scenic Rivers Act of 1968 (16 U.S.C.A. § § 1271—1287) or designated as wild or scenic under the Pennsylvania Scenic Rivers Act (32 P. S. § § 820.21—820.29).
- (iv) Wetlands located along an existing public or private drinking water supply, including both surface water and groundwater sources, that maintain the quality or quantity of the drinking water supply.
- (v) Wetlands located in areas designated by the Department as “natural” or “wild” areas within State forest or park lands, wetlands located in areas designated as Federal wilderness areas under the Wilderness Act (16 U.S.C.A. § § 1131—1136) or the Federal Eastern Wilderness Act of 1975 (16 U.S.C.A. § 1132) or wetlands located in areas designated as National natural landmarks by the Secretary of the Interior under the Historic Sites Act of 1935 (16 U.S.C.A. § § 461—467).

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<sup>119</sup> <https://www.pacode.com/secure/data/025/chapter105/s105.17.html>

The wetland mitigation put forth by PennEast failed to account for the destruction of these specific uses. This is both a failure of PennEast and the Department as the Department has no mechanism to determine if any of those wetland uses were degraded in violation of Chapter 93, and how such specific uses can be mitigated, if at all. Until the Department begins to assess impacts to EV wetlands specific to their use, past, present, and future pipeline permits will be unlawfully issued. EV wetlands are the most ecologically important wetlands in the Commonwealth, and provide irreplaceable functions improving human health and the environment.

### **9. Horizontal Directional Drilling for Streams, Wetlands, Forests, and Communities Should be Required**

Due to harm caused by open pipeline cuts, DRN believes that the Department should require use of horizontal directional drilling (HDD) or other trenchless crossing methods underneath the water resources and forests to greatly minimize harm and disturbance to the surrounding environment. The Final EIS only proposed HDD at 17 locations. The Revised Route removes one of the HDD locations so the total is now only 16. By requiring HDD or another method of trenchless crossing and limiting soil disturbance, there will ultimately be less potential for erosion and sediment violations to the surrounding waterbodies and less short and long term environmental problems including but not limited to: soil stabilization, increased stormwater runoff, hydrologic changes to wetlands, disturbed soil profiles, changes in micro-topography and micro-habitat, irreparable compaction of soils, destruction and disturbance of benthic and fish spawning habitat, thermal impacts from loss of tree cover, habitat loss, forest fragmentation, invasive species introductions, and disturbance of amphibian activity.

### **10. The Department Cannot Issue the Permit Based On The Provided Wetlands Analysis.**

The application of these water quality standards has become particularly important in PA recently as the proliferation of natural gas drilling in the state has resulted in an exponential increase in pipeline construction activity. Since 2011, there has been at least twenty intensive pipeline projects that have crisscrossed the basin and been put into service, with no indication that that the rate of construction will slow in the coming years.

The regulations require that “The Department will not grant a permit under this chapter for [a project] that has a significant adverse impact on a wetland, unless the applicant affirmatively demonstrates and the Department finds in writing that a project is necessary to abate a substantial threat to public health or safety and that the requirements of subsection (b)(2)-(7) are met.” 105.18a(c).

There are numerous gaps and deficiencies in the materials provided by the permit that show PennEast and the Department have not properly evaluated the impact the project will have on both EV and other wetlands. Further there is no indication that this pipelines is need to “abate a substantial threat to public health or safety.” In the alternate, if DEP is going to issue the permit, for the PennEast Pipeline project, it is imperative that the Army Corps field inspect and confirm the accuracy of the applicant’s proposed, but apparently incomplete, delineation of all wetlands.<sup>120</sup> EV and HQ streams and wetlands that remain in Pennsylvania should not be sacrificed for a gas pipeline project like PennEast that exacerbates climate change and causes irreparable direct harm to streams that the path would cut.

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<sup>120</sup> *The Effects of the Proposed PennEast Pipeline on Exceptional Value Wetlands in Pennsylvania, Prepared for the Delaware Riverkeeper Network, Schmid and Company, July 2016.*

According to Meliora March 2019 expert report, not all stream crossings are noted on the E&S plan, therefore no direction is given to the contractor about what approach is to be taken to cross the undocumented watercourse.<sup>121</sup> The plans were specifically developed by licensed professionals with large amounts of information at their disposal to provide planning and design to minimize impacts to natural resources. For example, stream PA-NHD-057 in Pine Run watershed (EV) at STA 2117+30 is shown to start and stop around the right-of-way even though topography would suggest it continues north to south. This crossing is also missing from the Aquatic Resources Impact Table.

### **G. The Materials Provided by PennEast Fail to Fully Evaluate the Cumulative Impacts of The Project.**

25 PA. Code § 105.14(b)(14) requires that: “cumulative impact of this project and other potential or existing projects. In evaluating the cumulative impact...consider whether numerous piecemeal changes may result in a major impairment of the wetland resources.”

Further these permits should be denied due to the irreparable harm the Project would cause to the state’s waterways and environment during construction and throughout its lifespan and beyond. This project would have significant adverse environmental impacts, safety issues, air and climate change impacts, economic ramifications, permanent impacts on scenery and rural character of the region, and threaten drinking water sources, private groundwater wells, wetlands, springs and seeps, water quality, and septic systems of the Commonwealth. The PennEast Project will consist of:

- 1,574 acres of earth disturbance,
- impacts to 15,001 linear feet of Deep Creek (CWF, MF), Mill Creek (CWF, MF), Bear Creek (HQ-CWF, MF), Little Shades Creek (HQ-CWF, MF), Shades Creek (HQ-CWF, MF), Stoney Creek (EV, MF), Wild Creek (EV, MF), Aquashicola Creek (HQ-CWF, MF), Indian Creek (CWF, MF), Hokendaqua Creek (CWF, MF), Monocacy Creek (HQ-CWF, MF), Meadow Run (HQ-CWF, MF), Stoney Run (HQ-CWF, MF), Laurel Run (HQ-CWF, MF), Mud Run (HQCWF, MF), Bull Run (CWF, MF), Frya Run (HQ-CWF, MF), Delaware River (WWF) and unnamed tributaries; Trout Brook (CWF, MF), Gardner Creek (CWF, MF), Buckwha Creek (CWF, MF), Yellow Run (EV, MF), Delaware Canal; and UNT's to Abrahams Creek (CWF, MF), Toby Creek (CWF, MF), Little Bear Creek (HQ-CWF, MF), Black Creek (HQ-CWF, MF), Pohopoco Creek (CWF, MF), Hunter Creek (HQ-CWF, MF), East Branch Monocacy Creek (HQ-CWF, MF) and Cooks Creek (EV, MF), Hawk Run (HQ-CWF, MF), and White Oak Run (EV, MF) and the Susquehanna River (CWF, MF); Wild Creek/Beltzville Lake (EV, MF), and Pohopoco Creek/Beltzville Lake (CWF, MF),
- 35.19 acre(s) of floodway,
- 43.48 acre(s) of temporary PEM/PSS/PFO wetland impacts, and
- 7.90 acre(s) of PSS/PFO conversion to PEM impacts.

Impacts which need to be considered cumulatively along the length of the PennEast Pipeline and cumulatively across the many pipelines passed, passing, or anticipated to pass through this same impacted region with future pipeline expansions and which must be considered as part of DEP’s review include, but are not limited to:

- Sediment pollution,
- Erosion,

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<sup>121</sup> *Impacts of the Proposed PennEast Pipeline on Exceptional Value Wetlands in Pennsylvania Supple, Supplemental Report, Prepared for the Delaware Riverkeeper Network, Schmid and Company, March 2019*  
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- Loss of macroinvertebrate and fish spawning habitats,
- Impacts to wildlife,
- Adverse effects to wetlands, marshes and vernal pools including alteration of vegetation and increased algae growth due to sediment disturbance,
- Permanent removal of riparian and upland vegetation,
- Loss of forest, forest fragmentation, changes in forest ecology and increased edge effect,
- Soil compaction,
- Increased surface water runoff,
- Reduced groundwater recharge,
- Reduced nutrient cycling capacity and increased algae growth,
- Release of hydrocarbons from heavy equipment leaks and re-fueling,
- Thermal impacts,
- Redirection of groundwater and surface water flows,
- Release of drilling muds,
- Creation of sinkholes,
- Air pollution resulting from methane, pipeline construction equipment, compressor stations, and other air contaminants,
- Failure of remediation/mitigation efforts including efforts to revegetate construction zones,
- Increased acidification of streams from methane pollution and construction equipment and potential decreased buffering capacity of waterbodies,
- Impacts to recreation, aesthetics, property values and property rights,
- Impacts to health, safety and the environment.

It is critical that the DEP consider the full cumulative impacts along the entire pipeline path as well as pipeline cuts that are within the same watersheds and regions with multiple companies vying for various markets and competing with one another with no concern over the multiple cuts they propose. Air pollution impacts water so all of these cumulative impacts must be considered by the DEP as part of its Chapter 105 review. Air pollution in the state is already ailing on many levels, causing harm to our waterways and the public.

### **1. PennEast Fails to Properly Analyze Impacts to Open Cuts**

Open cuts impact water bodies during construction and maintenance, demanding that the department add the consideration of their long term impacts when evaluating the cumulative impacts of the project.

It is critical that the DEP consider the full cumulative impacts along the entire pipeline path as well as pipeline cuts that are within the same watersheds and regions with multiple companies vying for various markets and competing with one another with no concern over the multiple cuts they propose. This pipeline project if approved would span five counties of the Commonwealth and parts of New Jersey and cut across 269 waterbodies (including 67 HQ/EV streams) and 235 wetland crossings (36 acres of wetlands affected during construction and 20 acres during operation). Data and increased protections and aquatic use designations by other agencies are also occurring and streams changing designations must be fully considered since these changes impact our waterways and the recreation PA is known for. Sister agencies like the PA Fish and Boat Commission have spent the last few years designating hundreds of streams as Wild Trout and Class A Wild Trout waters which would require some upgrades to HQ designation and some designations of EV wetlands. Cross verification between those designated and newly updated lists are needed to ensure no CWF streams in the pipeline path may in fact now be HQ waters, for example. The FBC regularly updates its stream assessment notifications and added 64 stream segments in 2018 - <https://www.dep.pa.gov/Business/Water/CleanWater/WaterQuality/StreamRedesignations/Pages/Stream-Assessment-Notifications.aspx>.

## **2. The Department Must Consider That This project Is Segmented and In Fact A Small Piece of A Bigger Plan**

DRN has submitted in the past various considerations to take into account about this project in regard to segmentation and related pipeline projects. It is important and critical with such a proposed build out of pipelines in the Commonwealth to move natural gas abroad and to other markets, and with FERC's track record of this improper segmentation as evidenced in successful litigation brought by Delaware Riverkeeper Network, that DEP also consider these other pipeline projects and the environmental impacts they will cause cumulatively as part of the state's permitting and certification process in order to best protect the Commonwealth from the rampant gas pipeline projects that are being considered, already built, or being built in the state.

DRN has been able to identify this issue in the past when in *Delaware Riverkeeper Network, et. al. v. Federal Energy Regulatory Commission, Tennessee Gas Pipeline Company*. There the court held that the Federal Energy Regulatory Commission violated NEPA by: "(1) segmenting its environmental review of the Northeast Upgrade Project – i.e., failing to consider the Northeast Upgrade Project in conjunction with three other connected, contemporaneous, closely related, and interdependent Tennessee Gas pipeline projects – and (2) failing to provide a meaningful analysis of the cumulative impacts of these projects to show that the impacts would be insignificant". It is critical with this lack of thorough oversight at the federal level and segmentation continuing, that DEP use all regulatory measures in its authority to consider the wetlands and stormwater impacts through, Chapter 105 and Chapter 102 regulations.

## **3. The Department Must Evaluate The Public Health Implications of PennEast and other Pipelines or Natural Gas Infrastructure Located in Proximity to One Another**

Because the Commonwealth has permitted numerous unconventional gas wells since 2015 and the scientific community has published over 400 peer reviewed papers indicating harm, it is also critical that DEP use its authority and consider these beginning of pipe and end of pipe impacts that fracking and related infrastructure is causing and will exacerbate if these additional pipelines are permitted by DEP. According to Physicians for Safe Energy, 72% of these original research studies on water quality indicate potential, positive association, or actual incidence of water contamination; and 95% of all original research studies on air quality indicate elevated concentrations of air pollutants. In addition groundwater contamination of potable water supplies are a key concern. The fifth edition of the Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking was published March 2018 and is available here: <https://concernedhealthny.org/compendium/>.

## **4. The Department Must Consider the Major Land Transformation THE Project Will Have on the Region**

The massive land clearing and alteration, including loss of vegetation as well as soil compaction, is among the very egregious elements of the proposed pipeline project. This land transformation causes immediate harms, as well as inflicting "major changes to the overall condition of the affected areas and set the stage for other acute impacts...."<sup>122</sup>

“The literature suggests at a minimum once cleared of native vegetation it will take five (5) years for recovery of pre-existing vegetation cover and diversity for grassland communities. The recovery time for shrubland forest communities is at least ten (10) years. But it must be stressed that although cover densities may approach pre-site-clearing conditions, some of the native grasses and understory vegetation may never recover due to changes in sunlight exposure, soil porosity, soil compaction and changes in soil moisture content. Also, none of the trees once growing within the ROW will ever be replanted. Thus as noted above, the acute impact of land clearing sets the stage for longer-term impacts that trigger multiple negative effects on the area’s biota and ecological functionality.”<sup>123</sup>

Given the significant and long term effects of the land, vegetation and habitat transformation that would result from construction and maintenance of the PennEast pipeline project, DEP must determine whether such impacts prevent the ability of meeting Chapter 105 regulatory requirements.

### **5. The Department Must Consider the Impacts of Forest Cuts From The Project**

As indicated in past comment and expert reports submitted by DRN, forested wetlands are especially vulnerable to thermal impacts and permanent changes with pipeline cuts. Stream science clearly indicates that when forests (and forested streams) are cut for a pipeline and soils compacted etc. - those impacts must be considered fully by the DEP for its Chapter 105 since this impact on the land impacts watershed health. The Final EIS indicates that 220.6 acres of interior forest would be affected during construction and 63.6 acres during operation. Science and reports submitted to the DEP by Delaware Riverkeeper Network shows that with these pipeline cuts through forests comes an additional 300 feet on either side of the pipeline cut that impacts that sensitive interior forested habitat. DRN does not believe these numbers are fully nor adequately reflected or included in the current application.

### **6. The Department Must Consider the Economic Impacts In Terms of Ecosystem Services Lost as Well as PennEast’s False Claims of Economic Growth**

Since this pipeline would operate for decades in the state and require continual company oversight for safety and health and the environment and wellbeing of PA waterways and wetlands, it is important that the Department consider the long term health of the operators looking to impact the state and their long term viability as businesses. An April 4, 2016 expert report enclosed here and conducted by Jannette M. Barth, Ph.D., Pepacton Institute LLC, “Review of PennEast Pipeline Project Economic Impact Analysis” cites some of the many considerations needed for these large infrastructure projects and lays out claims made by the operators that are often far from accurate on many accounts citing various pipelines considered in the recent years. The Spencer Philips, Ph.D. report (enclosed), “Economic Costs of the Atlantic Coast Pipeline,” February 2016 cites ecosystem services lost and taxpayer expenses over the life of a project from a similar pipeline project in Western and Central Virginia that is being considered by the agencies. In this report findings included:

- Lost ecosystem service value, such as for water and air purification, recreational benefits, and others accounted for: Over the two-year construction period: between \$16.9 and \$61.0 million (a one-time cost); and annually for the life of the pipeline: between \$4.9 and \$17.8 million.
- Annual loss of recreation tourism expenditures of \$41.3 million that supports 387 jobs and \$7.4 million in payroll and generates \$1.8 million in state and \$1.3 million in local taxes.

These are ecological services costs and recreational losses DEP should consider for similar pipeline projects like PennEast especially in light of the water impacts and park and public land impacts that would have irreparable and lasting impacts to so many of PA waterways and parks with the linear pattern of the project.

### **7. The Department Must be Critical of Economic Claims Put Forth by PennEast, as The Applications make numerous false and misleading economic and job claims for the project.**

As discussed in the attached expert analysis from Dr. Jannette Barth with the Pepacton Institute, the analyses upon which PennEast bases its economic and jobs claims is carefully crafted to exaggerate benefits and ignore costs. A second expert report prepared by The Goodman Group finds similar exaggerations of economic and job claims. With regards to gas prices, in fact, for many customers, the construction of PennEast may result in an increase in gas prices, thereby increasing the economic burden of this new pipeline rather than creating any sort of economic gain.<sup>124</sup>

As revealed by the expert reports included on the CD, the assertion that the PennEast pipeline is going to spur economic growth, significant and sustainable jobs, and low energy prices is false and misleading

### **H. The Materials Fail to Properly Analyze Foreseeable Cumulative Impacts of Current, Pending, and Future Pipeline Projects as Required by the Regulation**

In addition to looking at cumulative impacts across the length of the PennEast project, DEP is required to examine cumulative impacts that may stem from “other potential or existing projects”.<sup>125</sup>

“The cumulative impacts arise due to the accumulation and synergistic effects of harms across the length of the proposed project, as well as the accumulative and synergistic impact of the proposed pipeline with other past and future pipeline and power transmission projects occurring in the same general region and affecting the same environments as the PennEast Pipeline. Each of the projects has caused, or will cause, similar alterations and impacts to the upland, water, riparian and wetland resources of the Delaware River and its tributaries that have a compounding effect which magnifies the damage inflicted by any one individually.”<sup>126</sup>

These cumulative impacts have not been considered by DEP as necessary to support a Chapter 105 determination.

As Delaware Riverkeeper Network has noted in the past, it is clear that the footprint of the PennEast pipeline within Pennsylvania is larger than captured by the PennEast submittal. Spectra’s Texas Eastern Marcellus to Market project and its Greater Philadelphia Expansion project are clearly part and parcel of the PennEast pipeline footprint and the plan that must be fully evaluated under DEP’s cumulative impacts analysis. In addition, there needs to be a review to determine any associated export from Philadelphia ports that are already under discussion and associated with these pipelines.

DEP should also examine the cumulative impact of the multiple utility and other linear projects that are being proposed or constructed in the Delaware River watershed in the vicinity of the project. For example, there are significant concerns related to the cumulative impacts of the continuous water crossings and wetlands disturbance that pipeline construction activity has on the health and vitality of the Delaware River basin and its tributaries. This is particularly a concern with the PennEast Pipeline, as many of the same

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<sup>124</sup> *Analysis of Public Benefit Regarding PennEast*, Skipping Stone, March 9, 2016

<sup>125</sup> 25 Pa. Code § 105.14(b)(14).

<sup>126</sup> Princeton Hydro White Paper

subwatersheds subject to development as a result of PennEast were recently, or could be in the future, impacted by construction activity from other pipelines.

Among the pipeline projects that are, will, or have impacted the same subwatersheds as PennEast, are Transco's Leidy line system upgrade projects which include the Northeast Supply Link project, the Southeast Leidy Expansion project and the Atlantic Sunrise project. These projects all upgrade portions of Transco's Leidy line system, which parallels PennEast's proposed project. In addition to the Transco's previous and proposed pipeline projects, there are several other pipeline projects that have been concentrated in the same sub watersheds as the PennEast line, such as: Texas Eastern's TEAM 2014 Project and Columbia's East Side Expansion Project. These projects do not occur in a vacuum. Each project individually depletes the natural and scenic resources of the region, and the combined impact becomes increasingly more severe, unavoidable, unmitigatable, and irreversible. As such, DEP is required to carefully examine the cumulative impacts of these projects along with the proposed PennEast pipeline.

Furthermore, by creating an entirely new ROW for this Project PennEast is creating a new industrial corridor that will foreseeably be used in the future by the PennEast pipeline company for upgrades. A quick review of other major pipeline corridors in the region support this assertion as natural gas pipeline operators including Columbia, Tennessee Gas Pipeline, Texas Eastern, Millennium and Transcontinental have all within the last three years added looping segments to their pipelines and in some cases additional compression as well. As such, DEP's Chapter 105 reviews must account for the potential expansion of the PennEast right of way to accommodate future upgrades, including the addition of expansion loops, compressor stations and above ground apertures.

Streams, riparian native forested buffers, wetlands, soils, and forests adjacent to streams would not only be directly cut and destroyed by this pipeline, but they would also be indirectly harmed by the exacerbated climate change impacts this pipeline would cause, induce and support. At the same time, these habitats are essential, if preserved, in limiting climate harms and serving ecosystem functions that must be fully accounted for in the pipeline review process. These calculations must be part of the review of this project instead of putting resources in boxes – we live in an ecosystem – it is all connected.

## **V. Given the Issues that Have Arisen During Construction of Sunoco's Mariner East 2 Pipeline, The Department Must Consider the Potential For Sinkholes**

Sinkholes are a serious risk for pipeline construction in Pennsylvania. Sinkholes can be related to underlying karst terrain in which a pipeline is installed or mine subsidence—both of which are present along the proposed route of PennEast.

Mapping subterranean voids can be a major process, and it requires extensive on-the-ground surveying work. Starting construction without doing the proper surveying can lead to catastrophe. For example, the Department approved Sunoco's plans for horizontal directional drilling at Lisa Drive in West Whiteland Township, Chester County for the Mariner East 2 pipelines. Sunoco estimated in its risk assessment for the HDD site that the risk of drilling fluid spills was "low" and the bedrock was "silty sand."<sup>127</sup> No mention was made in any application materials of subsurface voids at the site. Nonetheless, after Sunoco began

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<sup>127</sup> See risk assessment for HDD PA-CH-0256.0000-RR at:

<http://files.dep.state.pa.us/ProgramIntegration/PA%20Pipeline%20Portal/MarinerEastII/Chester/12%20-%20E&S%20Plan/Tab%2012C%20-%20IR%20Assess%20PPC%20Plan/Appendix%20C/App%20C%20IR%20Risk%20CH/PA-CH-0256.0000-RR.pdf>.

construction at the site, multiple drilling fluid spills occurred, and eventually a series of sinkholes opened up in the suburban backyards of the site. These sinkholes rendered a house unlivable and undermined and exposed an operating highly volatile liquids pipeline. The threat this posed led the Pennsylvania Public Utility Commission to have to take the unprecedented step of shutting down the lines to prevent catastrophe.<sup>128</sup>

This was by no means the sole instance of sinkholes merely from this one construction project. At another residential HDD site in Cumberland County, for example, Sunoco's construction "caused a massive sinkhole to collapse part of" Appalachian Drive.<sup>129</sup> This was one of a series of sinkholes at the site, "eventually causing the road to be closed during the summer and into the fall." At the Appalachian Drive HDD crossing, Sunoco in fact *had* noted that the ground was limestone—therefore possibly void-bearing. It wrote in its risk assessment that "Additional inspection is recommended due to the limestone substrate."<sup>130</sup> Still, that was not enough.

Work on Mariner East 2 has also opened up the earth in areas of underground mining. The *Post-Gazette* recently did an in-depth article profiling some of those instances, which have caused massive problems in parts of Western Pennsylvania.<sup>131</sup>

The PennEast route includes what it has documented as 13.8 miles of potential karst terrain.<sup>132</sup> Though PennEast has generated a Karst Mitigation Plan, it is incomplete.<sup>133</sup> The purpose of the plan is spelled out in its introduction: "The Karst Mitigation Plan reported herein has been prepared to identify areas of karst terrain across the pipeline alignment, identify all current desktop and field surveys completed to investigate these areas, and to address potential impacts and hazards related to local karst formations crossed by the proposed Project."<sup>134</sup> However, large areas of potential karst remain uninvestigated.<sup>135</sup> As of the date of FERC's certificate issuance, only about 50% of the surveying in identified karst areas had been completed.<sup>136</sup> Without knowing whether there are voids at the sites, PennEast cannot responsibly plan to build there, and the Department cannot risk approval of those plans.

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<sup>128</sup> See Emergency Order of March 7, 2018, Pennsylvania Public Utility Commission Docket No. P-2018-3000281.

<sup>129</sup> Zack Hoopes, "Silver Spring Township road to be closed 2 months for pipeline installation," *The Sentinel*, March 4, 2019, available at [https://cumberlink.com/news/local/communities/mechanicsburg/silver-spring-township-road-to-be-closed-months-for-pipeline/article\\_fabdd8b1-1a6c-5d86-b06d-cd206159507b.html](https://cumberlink.com/news/local/communities/mechanicsburg/silver-spring-township-road-to-be-closed-months-for-pipeline/article_fabdd8b1-1a6c-5d86-b06d-cd206159507b.html).

<sup>130</sup> See risk assessment for HDD PA-CU-0136.0020-RR at: <http://files.dep.state.pa.us/ProgramIntegration/PA%20Pipeline%20Portal/MarinerEastII/Chester/12%20-%20E&S%20Plan/Tab%2012C%20-%20IR%20Assess%20PPC%20Plan/Appendix%20C/App%20C%20IR%20Risk%20CU/PA-CU-0136.0020-RR.pdf>.

<sup>131</sup> Anya Litvak, "Unstable Ground," *The Pittsburgh Post-Gazette*, October 22, 2018, available at <https://newsinteractive.post-gazette.com/mariner-east-2-pipeline-subsidence/>.

<sup>132</sup> FERC Final Environmental Impact Statement at page 4-10, available at <http://pennestpipeline.com/wp-content/uploads/2017/04/PennEast-FERC-Final-EIS.pdf>.

<sup>133</sup> See PennEast Karst Mitigation Plan, attached.

<sup>134</sup> *Id.* at page 3.

<sup>135</sup> See *id.* at Attachment 1.

<sup>136</sup> FERC Order Issuing Certificates, 162 FERC ¶ 61,053 (Jan. 19, 2018), at ¶ 106, available at <https://www.ferc.gov/CalendarFiles/20180119195524-CP15-558-000.pdf>

The PennEast route also contains significant areas of abandoned underground coal mines. As the Final EIS explains, “In the Wyoming Valley of Luzerne County, Pennsylvania, there are a number mapped [sic] underground mines and there is potential that many more small mines exist that are unmapped and unknown, as they predate accurate records kept on the subject. Other pipelines, like Transco’s Atlantic Sunrise Pipeline also experienced these problems when cutting through unmapped anthracite mining areas. Old abandoned mines are expected to be of the room and pillar type. Based on the long and extensive history of underground coal mining in the Wyoming Valley area, localized surface subsidence caused by mine collapse is a potential hazard.” Along a six-mile stretch toward the northeast end of the planned PennEast route, PennEast has identified 27 abandoned or reclaimed mines within a quarter mile of the alignment.<sup>137</sup> Two are directly under the workspace.<sup>138</sup>

The only physical investigation that PennEast has said it will do to better understand the risk from mine subsidence near identified mines is to do borings at the location of *working* mines.<sup>139</sup> Almost all of the identified mines have been retired and are not working mines. Moreover, as noted above, “there is potential that many more small mines exist that are unmapped and unknown.” PennEast’s plans to avoid mine subsidence are inadequate and present a looming pipeline integrity threat.

## **VI. PennEast’s False Claims that A Need for Fracked Gas Exists Are False and Call into Question Whether the Pipeline is Actually Needed.**

PennEast Pipeline company asserts its proposed pipeline is necessary to serve New Jersey and eastern Pennsylvania communities. In fact, there is no compelling public need for the gas. As noted in the attached expert report from Arthur Berman<sup>140</sup>:

- “Natural gas consumption for New Jersey has been relatively flat for the past four years at average rate of 1.8 billion cubic feet of gas per day (Bcf/d), somewhat below the higher levels of the late 1990s. [] Although consumption increased slightly in 2013 compared to the three previous years, New Jersey cannot be called a growth market....”
- “The proposed PennEast Pipeline would deliver an additional 1 Bcf/d of natural gas to New Jersey potentially creating a 53% supply surplus above the current level of consumption.”
- and “...Pennsylvania has no unfulfilled demand...”
- “Because of the lack of demand for Marcellus gas in Pennsylvania and adjacent New Jersey, it is possible that PennEast and its committed suppliers have an unstated intent to send gas to other markets not specified in their proposal....”

A second report done by Skipping Stone similarly finds a lack of need for the capacity of PennEast. According to this report, PennEast obtains many of its clients by commitments to switch from one pipeline to the other, which means unfilled excess capacity, not more needed gas delivered. According to Skipping Stone, similar to Labyrinth Consulting:<sup>141</sup>

“Local gas distribution companies in the Eastern Pennsylvania and New Jersey market have more than enough firm capacity to meet the needs of customers during peak winter periods. Our analysis

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<sup>137</sup> FERC Final Environmental Impact Statement at Table 4.1.4.1.

<sup>138</sup> *Id.*

<sup>139</sup> *Id.* at page 4-11.

<sup>140</sup> *Professional Opinion of Proposed PennEast Pipeline Project*, Arthur E. Berman, Petroleum Geologist, Labyrinth Consulting Services, Inc., February 26, 2015

<sup>141</sup> Analysis of Public Benefit Regarding PennEast, Skipping Stone, March 9, 2016

shows there is currently *49.9% more capacity than needed to meet even the harsh winter experienced in 2013*”

This demonstration of a lack of need is complemented by the predictions and concerns of experts that the industry is proposing an “overbuild” of pipelines from the Marcellus and Utica shales:

- “Speaking to attendees at the 21st Annual LDC Gas Forums Northeast conference in Boston Tuesday, [RBN Energy LLC President Rusty] Braziel said an evaluation of price and production scenarios through 2021 suggests the industry is planning too many pipelines to relieve the region’s current capacity constraints.”
- “What we’re really seeing is the tail end of a bubble, and what’s actually happened is that bubble attracted billions of dollars’ worth of infrastructure investment that now has to be worked off,” Braziel said.<sup>142</sup>

Given the high level of impacts that will be inflicted by the PennEast pipeline on the water resources of Pennsylvania and that the project will necessarily be inflicting unavoidable and unmitigatable harm that will result in a violation of water quality standards, this lack of need for the PennEast pipeline project is of high relevance and significance to the decisionmaking process.

### **A. There is Evidence of Pipeline Overbuild**

An expert report by Cathy Kunkel and Tom Sanzillo in April 2016, “Risks Associated with Natural Gas Pipeline Expansion in Appalachia,” is another report that shines the light on considerations and habits such as overbuilding of this industry that need to be considered as the DEP weighs more pipeline proposals bringing with it more wetland and stream cuts for this pipeline. To highlight, the report finds:

- *“Existing natural gas pipeline capacity is going underutilized, even as companies propose new pipelines. A 2015 report by the Dept of Energy found that from 1998 to 2013, existing pipelines in the US had an average capacity utilization of 54%”.*
- *“Southwestern Energy in the Fayetteville shale of Arkansas and in Appalachia, predicts overbuilt pipeline capacity by 2018. And vice president for Marketing and Midstream Operations for Range Resources, one of the largest Appalachian shale drillers, has stated that Range expects that “the Appalachian Basin’s takeaway capacity will be largely overbuilt by the 2016-2017 timeframe”.*
- *“FERC facilitates over building...there is a lack of comprehensive planning process for natural gas infrastructure which attracts more capital into pipeline development than is necessary.”*
- *“Kelcy Warren, CEO of Energy Transfer Partners (ETP), “the pipeline business will overbuild until the end of time. I mean that’s what competitive people do” In a subsequent earnings call, he provided the specific example of the Barnett shale in TX: “there is no question there are certain areas that are overbuilt. For example, we overbuilt in the Barnett shale. The production peaked and it’s now down.”*

## **VI. In Addition to the Permits Sought, PennEast Should be Required to Obtain a NPDES Permit**

There are numerous instances of unlawful sediment discharges from pipeline construction projects across the state, and neither the Chapter 102 permit, nor the Chapter 105 are designed to regulate such discharges pursuant to the Clean Water Act. Such discharges trigger then need for pipeline applicants, such as PennEast, to obtain a National Pollutant Discharge Elimination System (“NPDES”) permit. Based on PennEast’s proposed activities, such sediment discharges into waters of the United States is inevitable, as

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<sup>142</sup> *Marcellus/Utica on Pace for Pipeline Overbuild, Says Braziel*, Natural Gas Intelligence, June 8, 2016.  
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such PennEast must apply for a NPDES permit or otherwise violate the Clean Water Act. The ESCGP-2 Chapter 102 permit is a state permit issued pursuant to the Clean Streams Law that has limited purpose and scope and falls short of the protective measures found in NPDES permits. NPDES permits require specific environmental protections, stormwater volume calculations, riparian buffer protections, public participation rights, enforcement penalties, and reporting requirements.

For one, NPDES requires the permittee complete a quantitative storm water analysis, and implement the corresponding Best Management Practices (“BMPs”).<sup>143</sup> Whereas the ESCGP-2 allows permittees to mere commit to restoring a site to “meadow in good condition,”<sup>144</sup> NPDES requires the permittee to account for the offset in any net increase in storm water volume. This can offset flooding and other incidents that will result from an increase in stormwater runoff volumes where pipelines have been constructed. For example, according to the Department’s Erosion and Sediment Control Best Management Practice Manual, the runoff coefficient for forest is approximately half the runoff coefficient for meadow across all soil types and all topographies.<sup>145</sup> Therefore, a conversion from forested cover to meadow will increase stormwater runoff volumes. Through requiring NPDES permits, the Department can ensure that stormwater runoff management occurs in an effective manner, and better monitor and enforce unlawful sediment discharges into waters of the US and Commonwealth.

Another material difference between the different permits involves riparian zone buffers. A riparian buffer may consist of a combination of vegetation types including grasses, forbs, shrubs and trees. It is located along surface waters and is maintained in a natural state or sustainably managed to protect and enhance water quality, stabilize stream channels and banks, and separate land use activities from surface waters.<sup>146</sup>

NPDES applicants proposing disturbances to riparian zones within one- hundred and fifty feet of a High Quality or Exceptional Value water must demonstrate riparian buffer or riparian forest buffer equivalency post-construction.<sup>147</sup> An equivalency demonstration must show by both quantitative and qualitative measures that the BMPs implemented will be functionally equivalent to that of either a riparian buffer or a riparian forest buffer.<sup>148</sup> No waivers of the equivalency requirement are available. In addition, if an applicant proposes any earth disturbance within 100-feet of a High Quality or Exceptional Value water, the applicant must provide an offset riparian forest buffer in the same drainage list and at a ratio of one to one for the disturbed area. Unlike NPDES applicants, ESCGP-2 applicants are not required to protect, reestablish, or compensate for existing riparian buffers or riparian forest buffers cleared for oil and gas construction or operational activities. In addition, ESCGP-2 permittees proposing earth disturbance activities within 100-feet of a High Quality or Exceptional Value water are not required to provide an offset riparian forest buffer in the same drainage list and at a ratio of one to one for the disturbed area.

Additionally, there are far more robust public participation requirements for the CWA’s NPDES permits as compared to what is required by Chapter 102. When an applicant proposes discharges to special protection waters, additional public participation is necessary.<sup>149</sup> NPDES permits also subject permittees to stricter and

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<sup>143</sup> See 25 Pa. Code § 102.14.

<sup>144</sup> 25 Pa. Code § 102.8(n).

<sup>145</sup> See Erosion and Sediment Control Best Management Practice Manual)

<sup>146</sup> See 25 Pa. Code § 102.1.

<sup>147</sup> See 35 P.S. § 691.402(c)(1).

<sup>148</sup> See *id.* at § 691.402(c)(1)(ii).

<sup>149</sup> There are also specific public participation requirements codified in the CWA for NPDES permits. *See* 33 U.S.C. § 1342(a)(1); 33 U.S.C. § 1342(j), 33 U.S.C. § 1251(e). In contrast, many of these opportunities are simply non-existent under ESCGP-2. *See* 25 Pa. Code § 102.5(m)(3)(i).

more publicly accessible record keeping requirements, allowing for the public to inspect and monitor a project's compliance with the Clean Water Act. Finally, the enforcement actions and penalties allowed under NPDES permits are more severe and have a better deterrent effect than those under the Pennsylvania Chapter 102 permit.

Until and unless PennEast obtains, or otherwise fully complies with requirements of a NPDES permit, it will be in violation of the Clean Water Act.

## **VII. The Department and PennEast failed to Comply with the Antidegradation requirements of Chapter 93**

### **A. PennEast and the Department Must Ensure the AntiDegradation Analysis Examines Impacts to EV Wetlands Existing Uses**

The Department and PennEast must analyze the impacts of the project through degradation of the existing uses for EV wetlands. In issuing these permits, the Department is required to identify and ensure that all existing uses of all surface waters impacted by the Project would not be degraded.<sup>150</sup> Unless the Department requires that the cumulative impacts, mitigation, alternative analysis, and other areas that analyze project impact, identify existing uses of wetlands beyond their designation of EV or high quality waters pursuant to the criteria of Section 105.17(1), the analysis done to issue these permits will be inadequate. Further, without such an analysis, the Department cannot conclude that any such existing uses would not be degraded by the proposed construction activities.<sup>151</sup> Indeed, not only did the Department fail to identify any existing uses of EV wetlands, the Department has not even developed a test whereby degradation of an existing use of an EV wetland could be determined.

Pennsylvania's antidegradation program applies to all surface waters.<sup>152</sup> Surface waters include perennial and intermittent streams, rivers, lakes, reservoirs, ponds, springs, natural seeps, estuaries, and wetlands.<sup>153</sup> Specifically, Section 93.1 identifies that a "[s]urface water of exceptional ecological significance" is covered by the antidegradation program, which specifically includes "[w]etlands which are exceptional value wetlands under § 105.17(1)."<sup>154</sup>

Pennsylvania's antidegradation program "identifies the three tiers of anti-degradation protection that apply to surface water of the Commonwealth."<sup>155</sup> "These three antidegradation tiers or components are all part of the Department's water quality standards" and ensure Pennsylvania maintains water quality standards pursuant to the Clean Water Act (CWA).<sup>156</sup> Each tier represents a difference quality of water and dictates what types of activities and discharges are allowed in that waterbody. One component requires the "maint[enance] and protect[ion]" of the water quality of exceptional value waters ("EV").<sup>157</sup> And states that one way in which degradation may be found with regard to an EV water is when "there is any lowering of

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<sup>150</sup> See, e.g., 25 Pa. Code § 93.4a(a)-(d)

<sup>151</sup> See 25 Pa. Code 93.4c(a)(1)(iv).

<sup>152</sup> See 25 Pa. Code § 93.4a(a).

<sup>153</sup> 25 Pa. Code §§ 92.1 and 93.1.

<sup>154</sup> 25 Pa. § Code 93.1.

<sup>155</sup> *Borough of Stockertown v. Commonwealth of Pennsylvania, et al.*, 2016 WL 3884266, at \*3 (July 14, 2016).

<sup>156</sup> *Id.*

<sup>157</sup> 25 Pa. Code § 93.4a(d).

water quality.”<sup>158</sup> A second component requires the “maint[enance] and protect[ion]” of the water quality of high quality waters (“HQ”), except as provided 93.4c(b)(1)(iii).<sup>159</sup> Therefore, the requirement for EV waters to be protected from degradation is “absolute,” but for HQ waters there is some flexibility under the regulations.<sup>160</sup>

Lastly, the program specifically requires that “existing uses” shall be maintained and protected.<sup>161</sup> The existing use protection expressly applies to all surface waters, including wetlands.<sup>162</sup> Chapter 93 “clearly provide[s] the authority” for the protection of “the existing use[s] of wetlands in [] EV watershed[s].”<sup>163</sup> Section 93.6(a) requires that “[w]ater may not contain substances attributable to point or nonpoint source discharges in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life.”<sup>164</sup> The Department is required to “evaluate the effect of proposed projects that do not involve a discharge but that may nevertheless affect EV or High Quality [] surface waters to ensure that the use of the special protection waters will be maintained and protected.”<sup>165</sup>

Existing uses are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in water quality standards.<sup>166</sup> “All of the water uses listed in §93.3 are protected as existing uses.”<sup>167</sup> Aquatic life water uses include: Cold Water Fishes (“CWF”), Warm Water Fishes (“WWF”), Migratory Fishes (“MF”), and Trout Stocking Fishes (“TSF”). Water supply water uses include: potable water supply (“PWS”), industrial water supply (“IWS”), livestock water supply (“LWS”), wildlife water supply (“AWS”), and irrigation (“IRS”). Recreational and fish consumption water uses include: boating (“B”), fishing (“F”), water contact sports (“WCS”), and esthetics (“E”). Special protection water uses include: high quality waters (“HQ”), and exceptional value waters (“EV”). Other water uses are listed as navigation (“N”). As identified above, there are no less than 16 different potential existing uses recognized in Chapter 93.3.

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<sup>158</sup> *Id.* at \*16 (citing 25 Pa. Code § 93.4a(d)) (emphasis original).

<sup>159</sup> 25 Pa. Code § 93.4a(c).

<sup>160</sup> *Stockertown*, 2016 WL 3884266, at \*5.

<sup>161</sup> 25 Pa. Code § 93.4a(b); *see also* 25 Pa. Code § 96.3(a) (“Existing and designated surface water uses shall be protected”); *Consol Pennsylvania Coal Company and Eighty-Four Mining Company v. Commonwealth of Pennsylvania*, 2003 WL 22937013, at \*7 (December 1, 2003) (Chapter 93 requires “no degradation that **interferes** with existing uses”) (emphasis added).

<sup>162</sup> *See, e.g.*, 25 Pa. Code § 93.4a(a).

<sup>163</sup> *Lipton, et al. v. Commonwealth of Pennsylvania*, 2008 WL 2260029, at \*4 (May 20, 2008); *see Oley Township v. DEP*, 1996 EHB 1098 (finding that EV wetlands are protected from “any degradation which would adversely affect the existing uses of [the] water resources”); *see also Erosion and Sediment Control Program Manual*, (Technical Guidance Number 363-2134-008) (March 31, 2012), available at: <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-88925/363-2134-008.pdf>, at 343 (“The Department is legally required to protect the existing uses of all surface waters, and the existing quality of HQ and EV Waters”).

<sup>164</sup> 25 Pa. Code § 93.6(a).

<sup>165</sup> *Crum Creek Neighbors v. Commonwealth of Pennsylvania, et al.*, 2009 WL 3550279, at \*11 (October 22, 2009).

<sup>166</sup> 25 Pa. Code § 92.1.

<sup>167</sup> *See Water Quality Antidegradation Implementation Guidance*, (Technical Guidance Number 391-0300-002) (November 29, 2003), available at: <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-47704/391-0300-002.pdf>, at 6. The existing water uses identified in Section 93.3 that apply to all waterbodies broadly fall into five different categories: “aquatic life,” “water supply,” “recreational and fish consumption,” “special protection,” and “other.” 25 Pa. Code § 93.3.

The antidegradation program requires that “[e]xisting use protection shall be provided when the Department’s evaluation of information (including data gathered at the Department’s own initiative . . . , or data considered in the context of a Department permit or approval action) indicates that a surface water attains or has attained an existing use.”<sup>168</sup> The Department must then “make a final determination of existing use protection for the surface water as part of the final permit or approval action.”<sup>169</sup> This “final determination” made by the Department “of the existing use of a waterbody considers the nature of the data or information presented, the quantity and quality of the data, any existing and readily available data which DEP and others may have gathered, and DEP’s own knowledge of the subject waterbody.”<sup>170</sup> It is axiomatic that existing uses can only be maintained and protected if they are at first identified by the project applicant or Department.

Additionally, the antidegradation regulations “recognize[] the significance of the presence of [threatened and endangered] species as well as the existence of critical habitat, or a critical dependence of those species on a waterbody and offers protection of the species and its requirements, wherever they occur in Pennsylvania.”<sup>171</sup> Specifically, the regulation governing this issue states the following: “[i]f the Department has confirmed the presence, critical habitat, or critical dependence of endangered or threatened Federal or Pennsylvania species in or on a surface water, the Department will ensure protection of the species and critical habitat.”<sup>172</sup> The Department is required to ensure that any “water quality-related activities it permits or approves will protect and not impair a T&E species, its critical aquatic habitats, or any surface water upon which it critically depends.”<sup>173</sup>

Therefore, the Department and PennEast are required to identify existing uses of EV Wetlands and how the Project will avoid and/or mitigate the harms.

### **B. Impacts to EV Wetland Existing Uses Are not Properly Identified or Considered in the Existing Application Materials**

The Department and PennEast fail to identify and account for any existing uses of EV wetlands as required by Chapter 93. As a result, there is no way for the Department to make a reasonable determination that the EV wetlands’ existing uses can be “maintained and protected.”<sup>174</sup> Because all permit approvals by the Department must show compliance with antidegradation provisions of Chapter 93 prior to their issuance, the Department’s issuance of the Chapter 102 and Chapter 105 permits without these considerations will be unlawful.

It is undisputed that a number of existing uses as identified in Chapter 93 clearly apply to EV wetlands. For example, EV wetlands help maintain water quality for various fish species including cold water fishes (“CWF”), warm water fishes (“WWF”), migratory fishes (“MF”), and trout (“TSF”).<sup>175</sup> Indeed, numerous wetlands in the project area are specifically classified as EV as a result of meeting the criteria in Section 105.17(1)(iii), which includes wetlands “that are located in or along the floodplain of the reach of a **wild**

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<sup>168</sup> 25 Pa. Code 93.4c(a)(1)(i).

<sup>169</sup> 25 Pa. Code 93.4c(a)(1)(iv).

<sup>170</sup> *Water Quality Antidegradation Implementation Guidance*, at 7.

<sup>171</sup> *Water Quality Antidegradation Implementation Guidance*, at 14.

<sup>172</sup> 25 Pa. Code § 93.4c(a)(2) (emphasis added).

<sup>173</sup> *Water Quality Antidegradation Implementation Guidance*, at 17.

<sup>174</sup> See 25 Pa. Code § 93.4a(b).

<sup>175</sup> See 25 Pa. Code 93.3.

**trout stream** . . .” Identifying wetlands as EV as a result of their hydrological relationship with wild trout streams clearly demonstrates a “TSF” existing use. Existing uses of EV wetlands also clearly include the use of providing a wildlife water supply (“AWS”) for waterfowl habitat and for drinking and cleansing by wildlife.<sup>176</sup> However, PennEast never examined how project construction or operational activities might harm specific existing uses of the EV wetlands crossed.

These existing uses are important not just to identify an EV wetland, but also describe a vital function of the wetland in the surrounding ecosystem. Such a function cannot be replaced by simply “creating” new wetlands in a different and unconnected part of the water system. Indeed, to the extent the wetland is deforested either temporarily or permanently, it can change the wetland’s ability to support certain types of waterfowl, such as wood ducks. Furthermore, the existing use of esthetics (“E”) for recreational pursuits such as bird watching also obviously applies to EV wetlands.<sup>177</sup> As noted above, the EV wetlands impacted by construction activities can include areas suitable for waterfowl and other bird species such as raptors, woodpeckers, and songbirds. In addition to birding, wetlands can be used to view other mammals and reptiles whose habitat is found in these resources. Again, this existing use was not identified for any EV wetlands, nor was it determined how or whether this existing use would be degraded by construction activity. Finally, a number of EV wetlands are so classified because they are “located along an existing public or private drinking water supply, including both surface water and groundwater sources that maintain the quality or quantity of the drinking water supply.”<sup>178</sup> However, this existing use again was not identified or considered for any wetlands with regard to Pennsylvania’s antidegradation program, nor was it determined how or whether this specific existing use would be degraded by construction activity.

The Department must also “ensure protection of . . . critical habitat” of threatened and endangered species, where the Department has “confirmed [its] presence.”<sup>179</sup> The criteria for classifying wetlands as EV includes wetlands that serve as “habitat for fauna or flora listed as ‘threatened’ or endangered,”<sup>180</sup> and wetlands that are “hydrologically connected to or located within 1/2 mile of wetlands” that serve as habitat for threatened or endangered species.<sup>181</sup> Because the Bog Turtle habitat in many of these wetlands will be destroyed, at least temporarily if not permanently, as a result of trenching directly through the wetlands, this habitat is not being “protect[ed]” as required by Section 93.4c(a)(2).

The Department therefore had a wealth of information indicating that the EV wetland surface waters attained various existing uses, or likely attained existing uses, which must be identified and protected by the antidegradation provisions of Chapter 93.<sup>182</sup> As such, it is compelled to make a “final determination” in light of the existence of these existing uses.<sup>183</sup> However, none of these above-referenced existing uses were thoroughly evaluated or identified for any of the EV wetlands in the Project area. Because PennEast, and as a consequence, the Department failed to identify and examine all of the existing or designated uses for the EV wetlands crossed by the Project, the Department cannot reasonably determine whether such existing or designated uses would be degraded.

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<sup>176</sup> See 25 Pa. Code § 93.3.

<sup>177</sup> See 25 Pa. Code § 93.3.

<sup>178</sup> See 25 Pa. Code § 105.17(1)(iv).

<sup>179</sup> 25 Pa. Code § 93.4c(a)(2).

<sup>180</sup> 25 Pa. Code § 105.17(1)(i)

<sup>181</sup> 25 Pa. Code § 105.17(1)(ii).

<sup>182</sup> See 25 Pa. Code 93.4c(a)(1)(i).

<sup>183</sup> See 25 Pa. Code 93.4c(a)(1)(iv).

It is unsurprising that such an issue exists with the PennEast application, as the Department has not shown a willingness or ability to do so with regard to other projects. For example, the Department maintains and updates a publicly accessible list of surface water bodies “where data has been evaluated which indicates an existing use classification of a waterbody that is more protective than the designated use (including those segments which are HQ or EV). The list is maintained and updated by the [Bureau of Water Supply and Wastewater Management] on DEP’s website and will be used by DEP and county conservation district staff with responsibility to protect surface water quality in reviewing requests for permits and approvals.”<sup>184</sup> However, that entire list, as updated by the Department, does not include an existing or designated use for a single wetland in the entire state of Pennsylvania.<sup>185</sup> Furthermore, over the last 30 years the Department has also maintained and updated a separate list of designated uses of waterbodies in Chapter 93 itself.<sup>186</sup> Similarly, this list does not include a single example of a wetland that has attained a designated use.

Additionally, the Department’s “Test for Non-Degradation of Water Quality” expressly excludes a consideration of wetlands. See Water Quality Antidegradation Implementation Guidance, at 60. The Department states that it “uses a two-part test that evaluates all facets of the discharge’s potential effect on the receiving stream to make [its degradation analysis].” Indeed, there is not a single mention of wetlands in the entire Section of the Department’s guidance with regard to its “Test for Non-Degradation of Water Quality.”<sup>187</sup> Therefore, even if the Department intended to identify existing uses for EV wetlands impacted by the Project, the Department could not have determined that the existing use would be protected because it has not developed an applicable test to evaluate whether degradation of that EV wetland has, or is likely, to occur. Therefore, not only has the Department failed to identify any existing uses for EV wetlands, it also lacks a specifically defined methodology or test to determine whether or how those existing uses could be degraded by proposed project construction and operational activities.

### **C. This Review is Required by the Departments Constitutional Mandate Under Article 1, Section 27.**

At its very core, both the individual environmental rights clause and the public trust clauses of Article I, Section 27 of the Pennsylvania Constitution embody a non-degradation concept. If the Department, as in past cases, essentially does no pre-action analysis with regard to identifying the existing uses of EV wetlands, it will also be in violation of Article 1, Section 27 of the PA Constitution..

Section 27 is among the rights set forth in Article I of the Pennsylvania Constitution, known as the Declaration of Rights. The Declaration of Rights contains those rights that the people sought “[t]o guard against the transgressions of the high powers which we have delegated” in the other Articles of the Pennsylvania Constitution.<sup>188</sup> Everything in Article I, including Section 27, “is excepted out of the general powers of government and shall forever remain inviolate.”<sup>189</sup> In other words, the people did not delegate to government the authority to trample on their inherent rights protected by Article I and the government has no right to dictate the terms of any responsibility put upon it by Article 1.<sup>190</sup> Section 27 states:

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<sup>184</sup> Water Quality Antidegradation Implementation Guidance, at 7-8.

<sup>185</sup> See Existing Use Classification, Last Revised August 28, 2017.

<sup>186</sup> See 25 Pa. Code §§ 93.9a-93.9z.

<sup>187</sup> *Id.* at 60-67.

<sup>188</sup> *Pa. Const. Art. I, § 25; Robinson Tp., Washington County v. Com.*, 83 A.3d 901, 948-49 (Pa. 2013) (hereinafter referred to as “Robinson II”); *Pennsylvania Environmental Defense Foundation v. Commonwealth*, 161 A.3d 911, 916 (Pa. 2017) (hereinafter referred to as “PEDF”).

<sup>189</sup> *Pa. Const. Art. I, § 25.*

<sup>190</sup> *Robinson II*, 83 A.3d at 947-48 (plurality); see also *PEDF*, 161 A.3d at 916.

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.  
Pa. Const. art. I, § 27.

As the Pennsylvania Supreme Court's recent decision in *PEDF* confirms, Section 27 protects two sets of rights, one that is set forth in the first sentence of the provision, and the second that is described in the second and third sentences.<sup>191</sup> The first right is a prohibitory clause declaring the right of citizens to clean air and pure water, and to the preservation of natural, scenic, historic and esthetic values of the environment.<sup>192</sup> The second right, set forth in its second sentence, is the common ownership by the people, including future generations, of Pennsylvania's public natural resources.<sup>193</sup> Finally, the third clause of Section 27 establishes a public trust to protect that ownership and pursuant to which the natural resources are the corpus of the trust, the Commonwealth is the trustee, and the people are the named beneficiaries.<sup>194</sup>

The individual environmental rights clause, and the non-degradation concept it engenders, includes the fundamental duty to consider rights in advance of acting. In addition to Section 27's limitation on the government's authority to infringe on environmental rights, there is "a corollary responsibility . . . to consider impacts on those rights prior to a decision."<sup>195</sup> Fulfilling this duty ensures that Pennsylvanians and the PA Environmental Hearing Board are able to determine whether there is an intrusion on protected rights in the first place.<sup>196</sup>

"Clause one of Section 27 requires each branch of government to consider in advance of proceeding the environmental effect of any proposed action on the constitutionally protected features. The failure to obtain information regarding environmental effects does not excuse the constitutional obligation because the obligation exists a priori to any statute purporting to create a cause of action."<sup>197</sup>

As described by Professor John Dernbach:

[B]y requiring administrative agencies and local governments to consider these features and resources in advance, it forces them to understand what features and resources their decisions are likely to affect and gives them the opportunity to avoid making decisions that will adversely affect those features and resources. Second, it requires the development of a record that would permit a reviewing court to quickly assess whether the decision-making body even considered these impacts.

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<sup>191</sup> *PEDF*, 161 A.3d at 931 ("This constitutional provision grants two separate rights to the people of this Commonwealth."); see also *id.* at \*21 (Baer, J., concurring) ("I agree with the plurality in *Robinson Township and the Majority* in the case at bar that Section 27 contains two enforceable rights").

<sup>192</sup> *Robinson Twp.*, 83 A.3d at 951.

<sup>193</sup> *Id.* at 954.

<sup>194</sup> *Robinson Twp.*, 83 A.3d at 955–56.; *PEDF*, at 931-32; see also 940 (Baer, J., concurring).

<sup>195</sup> Dernbach, *The Potential Meanings of a Constitutional Public Trust*, 45 *Envtl. L.* at 494; *Robinson II*, 83 A.3d at 952 (plurality); *Widener Compilation*, p.66 (Q&A to Voters).

<sup>196</sup> See Dernbach, *The Potential Meanings of a Constitutional Public Trust*, 45 *Envtl. L.* at 495.

<sup>197</sup> *Robinson II*, 83 A.3d at 952 (plurality) (emphasis added); *Widener Compilation*, p.66 (Q&A to Voters). This is consistent with the popular understanding of the Amendment at the time it was enacted. *Widener Compilation*, p.66 (Q&A to Voters).

Third, it puts the burden of developing a factual record on the government, which effectively assigns government the initial burden of proof.<sup>198</sup>

The government cannot properly respect the limits placed on it by the people unless it actually analyzes what the impact of its actions will be. And it is self-evident that to know what the impacts would be, the government must first identify the resources to be impacted and what uses, functions, values, or ecological services they provide. If insufficient information exists to determine if an intrusion into protected rights will occur (i.e. degradation may occur), or if the available information is insufficient to inform about the degree of intrusion, the government must at a minimum require the information to be obtained (or obtain it itself).<sup>199</sup> Indeed, if there is one part of Article I where constitutional violations are hardest to reverse after-the-fact, it is likely harm to the local environment on which people rely, making the pre-action analysis particularly important.

The best way to know what the impact will be is to employ scientific tools and analysis, using data that is capable of identifying both the type of resources to be impacted, and also the degree of environmental impact on the potentially-affected resources. This may demand that the Department go beyond the analysis simply laid out in a regulation, as in addition to whatever statutory or regulatory authority the Department has, the Department must also comply with the Constitution. The Department cannot short-shrift the analysis, or even worse, fail to do it at all because that, in and of itself, is a violation of individuals' constitutional rights.<sup>200</sup> Ideally, if the government has done a pre-action analysis sufficient to inform about the intrusion, and it acts, there will be a basis from which to judge the government's decision. Challengers, of course, may muster their own data to rebut the government's view. But, as explained, the lack of data to support a governmental action—such as a permit approval—is itself a violation because the Department must have informed itself about whether its action may cause degradation and if so, what could be done to avoid the harm.<sup>201</sup>

As described in detail above, both the Department and PennEast failed to provide a pre-action analysis identifying the specific existing uses of EV wetlands impacted by the Project. At a minimum, a Department permitting action that is not lawful under the statutes and regulations in place to protect the waters of the Commonwealth cannot be said to meet the Department's trustee responsibility under Article I, Section 27, and is clearly a state action taken contrary to the rights of citizens to pure water.<sup>202</sup> Given the Department's violation of the pre-action analysis requirement embodied by Article I Section 27, the Board's review can end here. If the entity charged with identifying the resources and protected uses that are subject to antidegradation requirements of Chapter 93 failed to do so before acting, it necessarily blocks a full understanding of the degradation's scope, and is therefore at odds with Section 27. The Department's failure to identify existing uses of EV wetlands undermined its ability to understand whether existing uses would be "maintained and protected," and therefore the Department's decision violates Section 27.

Pennsylvania's water quality protection requirements clearly contemplate a strict level of protection for the "functions" and "values" of wetlands. Specifically, Section 25 Pa. Code § 96.3(g) states that "[f]unctions

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<sup>198</sup> Dernbach, *The Potential Meanings of a Constitutional Public Trust*, at 495.

<sup>199</sup> *Robinson II*, 83 A.3d at 952 (plurality); see also *id.* at 983 n.60 (describing trust beneficiary's rights to information necessary to enforce rights or trust limitations); see Widener Compilation, p.66 (Q&A to Voters).

<sup>200</sup> *Robinson II*, 83 A.3d at 952 (plurality); Widener Compilation, p.66 (Q&A to Voters).

<sup>201</sup> *Robinson II*, 83 A.3d at 952 (plurality); Widener Compilation, p.66 (Q&A to Voters).

<sup>202</sup> See *Center for Coalfield Justice, et al. v. DEP*, EHB Docket No. 2014-072-B, slip op. at 59 (August 15, 2017).

and values of wetlands shall be protected pursuant to Chapters 93 and 105 (relating to water quality standards; and dam safety and waterway management).”<sup>203</sup> Here, the Department failed to “protect” the functions and values of numerous wetlands by expressly authorizing their degradation and/or replacement.

Section 96.3(g) makes clear that Chapter 93’s stringent antidegradation requirements also specifically apply to the “functions” and “values” of all the wetlands impacted by the Project. *Id.* Merriam-Webster’s Dictionary definition of the term “protect” is to “cover or shield from exposure, injury, damage, or destruction.”<sup>204</sup> Section 93.6(g) therefore articulates a more exacting standard of protection from what is found in Section 105.18a(a)(1), which only prohibits an “adverse impact” to EV wetlands.<sup>205</sup> With regard to Section 96.3(g), the degree of the harm to the resource is not the locus of the inquiry; rather, this section requires the Department to ensure that wetland functions and values will be “protected” from injury, damage or being destroyed, regardless of the significance of the proposed impact.

**VIII. Construction of the PennEast Pipeline Will Inflict Significant, Unnecessary and, Avoidable Harm on Water Resources, Pennsylvania Communities, and the Environment as Trustee as the State’s Natural Resources, it is imperative that the Department Deny these Applications.**

Construction, operation and maintenance of the PennEast Pipeline will inflict significant and long-term effects on waterways, wetlands, groundwater, floodplains, soils, plants, animals, habitats, and people. These impacts are discussed in this comment as well as attached reports and documents.

In addition to the harms construction, operation, and maintenance of the PennEast pipeline will directly inflict, it will induce the drilling of an estimated 3,000 new wells in Pennsylvania (from a combination of wells that have been drilled but are not yet producing and wells not yet drilled) in Northeast Pennsylvania, in Bradford, Susquehanna, Lycoming, and Tioga counties.<sup>206</sup> And if constructed PennEast will result in additional end uses of shale gas, a dirty fossil fuel, that will affect our environment, air, and climate. The drilling and fracking, as well as end-uses that PennEast will induce and support will bring an additional set of harms to our air, water, forests, natural resources, and environments that must be and have not been, considered by DEP.

Individually and collectively each of these -- the pipeline, the gas drilling, and end uses -- will inflict harm that rises to the level of constitutional concern and violation.

At its very core, both the individual environmental rights clause and the public trust clauses of Article I, Section 27 of the Pennsylvania Constitution embody a non-degradation concept. Section 27 is among the rights set forth in Article I of the Pennsylvania Constitution, more commonly called the Declaration of Rights. The Declaration of Rights contains those rights that the people sought “[t]o guard against the transgressions of the high powers which we have delegated” in the other Articles of the Pennsylvania Constitution.<sup>207</sup> Everything in Article I, including Section 27, “is excepted out of the general powers of

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<sup>203</sup> 25 Pa. Code § 96.3(g).

<sup>204</sup> Merriam-Webster’s Online Dictionary, available at: <https://www.merriam-webster.com/dictionary/protect> (last visited October 5, 2017).

<sup>205</sup> See 25 Pa. Code § 105.18a(a)(1); see also 25 Pa Code § 105.14.

<sup>206</sup> See attached PennEast FERC comment for more detail.

<sup>207</sup> Pa. Const. Art. I, § 25; *Robinson Tp., Washington County v. Com.*, 83 A.3d 901, 948-49 (Pa. 2013) (hereinafter referred to as “Robinson II”); *Pennsylvania Environmental Defense Foundation v. Commonwealth*, 161 A.3d 911, 916 (Pa. 2017) (hereinafter referred to as “PEDF”).

government and shall forever remain inviolate.”<sup>208</sup> In other words, the people did not delegate to government the authority to trample on their inherent rights protected by Article I.<sup>209</sup> Section 27 states:

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania’s public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.  
Pa. Const. art. I, § 27.

The Pennsylvania Supreme Court has made clear that by virtue of Pennsylvania’s constitutional provision there is a duty on all government officials to engage in informed decisionmaking with regards, to the environment. To ensure that they “refrain from unduly infringing upon or violating the right” to a healthy environment, and fulfill the government’s duty as outlined in the Constitution, “to prevent and remedy the degradation, diminution, or depletion of our public natural resources.” DEP is a trustee of the State’s natural resources for the benefit of present and future generations. As trustee of our natural resources, DEP must fulfill the duties of prudence, loyalty and impartiality. Therefore, DEP must consider the science, facts, and law when evaluating permits and render a decision that will avoid degradation of our environment. An after-the-fact review by DEP or one that fails to thoroughly evaluate the impacts of a project on an individual and cumulative level cannot be justified by state law or the constitution.

As described by Professor John Dernbach:

[B]y requiring administrative agencies and local governments to consider these features and resources in advance, it forces them to understand what features and resources their decisions are likely to affect and gives them the opportunity to avoid making decisions that will adversely affect those features and resources. Second, it requires the development of a record that would permit a reviewing court to quickly assess whether the decision-making body even considered these impacts. Third, it puts the burden of developing a factual record on the government, which effectively assigns government the initial burden of proof.<sup>210</sup>

The government cannot properly respect the limits placed on it by the people unless it actually analyzes what the impact of its actions will be. And it is self-evident that to know what the impacts would be, the government must first identify the resources to be impacted and what uses, functions, values, or ecological services they provide. If insufficient information exists to determine if an intrusion into protected rights will occur (i.e. degradation may occur), or if the available information is insufficient to inform about the degree of intrusion, the government must at a minimum require the information to be obtained (or obtain it itself).<sup>211</sup> Indeed, if there is one part of Article I where constitutional violations are hardest to reverse after-the-fact, it is likely harm to the local environment on which people rely, making the pre-action analysis particularly important.

The best way to know what the impact will be is to employ scientific tools and analysis, using data that is capable of identifying both the type of resources to be impacted, and also the degree of environmental

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<sup>208</sup> Pa. Const. Art. I, § 25.

<sup>209</sup> *Robinson II*, 83 A.3d at 947-48 (plurality); see also *PEDF*, 161 A.3d at 916.

<sup>210</sup> Dernbach, *The Potential Meanings of a Constitutional Public Trust*, at 495.

<sup>211</sup> *Robinson II*, 83 A.3d at 952 (plurality); see also *id.* at 983 n.60 (describing trust beneficiary’s rights to information necessary to enforce rights or trust limitations); see *Widener Compilation*, p.66 (Q&A to Voters).

impact on the potentially-affected resources. In addition to whatever statutory or regulatory authority the Department has, the Department must also comply with the Constitution. It cannot short-shrift the analysis, or even worse, fail to do it at all because that, in and of itself, is a violation of individuals' constitutional rights.<sup>212</sup> Ideally, if the government has done a pre-action analysis sufficient to inform about the intrusion, and it acts, there will be a basis from which to judge the government's decision. Challengers, of course, may muster their own data to rebut the government's view. But, as explained, the lack of data to support a governmental action—such as a permit approval—is itself a violation because the Department must have informed itself about whether its action may cause degradation and if so, what could be done to avoid the harm.<sup>213</sup>

As this comment and supporting documentation make clear, DEP cannot constitutionally justify approval of the PennEast pipeline -- it cannot meet its constitutional obligations based on the science, facts, and data that have been provided by PennEast, the Delaware Riverkeeper Network and others. Information on the record demonstrates high level and irreparable environmental harm. But in addition, it is clear that DEP cannot fulfill its obligation to consider all of the science facts and data necessary to engage in informed decisionmaking. From the record, and this comment, it is clear that the science, facts and data have not even been fully and properly provided to the State and so DEP cannot possibly have done the rigorous analysis required by the constitution and the law. And it is clear there is no compelling state interest that supports a decision to approve PennEast -- PennEast is a private company seeking to secure private profits, it is not needed. All the way around, it is clear that the proposed PennEast Pipeline cannot meet the requirements of state statute, regulation, or the Constitution and must be denied all the approvals it currently seeks.

#### **IX. PennEast's Applications for Chapter 105 and Chapter 102 Permits Needs to Be Denied.**

The PennEast Chapter 105 and Chapter 102 permit applications filed with PADEP similarly suffer from significant missing information, misinformation, and misrepresentations, all of which have been magnified by the new route changes which have particularly significant impacts on the Pennsylvania portion of the project. As made clear by the content of DRN's comment, the deficiencies identified by the Department have not been addressed and have in fact magnified with recent project changes. In addition to the incomplete bog turtle and EV wetland information, there are incomplete surveys for other threatened and endangered species, unresolved consultations between PennEast and state and federal agencies, incomplete surveys for water wells and springs, 13 additional Wild Trout Waters crossed, a widened ROW, missing alignment sheets, and new implications for additional cumulative impacts.

This application should be denied. NJDEP rejected PennEast's permit applications due to incomplete information. Pennsylvania should not, as it has done with so many other pipelines, simply be a rubber stamp for the PennEast pipeline. The facts, law, data and science make clear that DEP cannot legally, constitutionally and/or defensibly support issuing Chapter 102 and 105 permits for the PennEast pipeline. For all of these reasons, the DEP must deny Chapter 105 and Chapter 102 permits for the PennEast Pipeline.

Sincerely,

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<sup>212</sup> Robinson II, 83 A.3d at 952 (plurality); Widener Compilation, p.66 (Q&A to Voters).

<sup>213</sup> Robinson II, 83 A.3d at 952 (plurality); Widener Compilation, p.66 (Q&A to Voters).



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## Attachments:

1. *Impacts of the Proposed PennEast Pipeline on Exceptional Value Wetlands in Pennsylvania Supplemental Report, Prepared for the Delaware Riverkeeper Network*, Schmid and Company, March 2019
2. *Review of PennEast Pipeline Application for Chapter 102 and 105 Permits*, Michele Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, March 2019.
3. *Docket No. CP15-558: Comments Regarding PennEast Pipeline Project*, Delaware Riverkeeper Network Comment to Federal Energy Regulatory Commission, February 11, 2016
4. *Comment on Proposed State Water Quality Certification by Section 401 of the PennEast Pipeline Company, LLC, PennEast Pipeline Project*, Delaware Riverkeeper Network to PA DEP, June 10, 2016
5. *Comments Regarding PennEast DEIS FERC Docket no. CP15-558*, Delaware Riverkeeper Network, September 12, 2016
6. Letter dated September 9, 2016 written by Schmid & Company, Consulting Ecologists to Maya K. van Rossum, the Delaware Riverkeeper.
7. Letter Dated November 9. 2016 written by Schmid & Company, Consulting Ecologists to Maya K. van Rossum, the Delaware Riverkeeper.
8. *Comment on Proposed PennEast Pipeline Project Proposed Route Modifications*, FERC Docket No.: CP15-558, Delaware Riverkeeper Network, December 5, 2016
9. *Docket No. PF15-1-000: Comments Regarding PennEast Pipeline Project, Scoping Period*, Delaware Riverkeeper Network to Federal Energy Regulatory Commission, February 13, 2014
10. *Delaware Riverkeeper Network Comment on PADEP 401 Water Quality Certification and Chapter 105 Permits*, Delaware Riverkeeper Network, September 26, 2016.
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19. *Delaware Riverkeeper Network v. PADEP, Tennessee Gas*, Environmental Hearing Board, Michelle Adams affidavit, December 17, 2012.
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21. *Technical Memorandum, Review of Surface water Withdrawal and Discharge Permit, Delaware River Basin Commission, Proposed PennEast Pipeline*, Dr. Tom Myers, November 30, 2016.
22. *White Paper: Pipelines A Significant Source of Harm*, Delaware Riverkeeper Network,

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24. *River Values: The Value of a Clean and Health Delaware River*, Delaware Riverkeeper Network, April 2010.
25. *Drinking Water, Arsenic, and Natural Gas Pipelines*, Julia L. Barringer, PhD.
26. *Effects of Forest Cutting and Herbicide Treatment on Nutrient Budgets in the Hubbard Brook Watershed Ecosystem*, Likens G.L., et al., 40 Ecol. Monogr. 23-47 (1970).
27. *Water Quality Changes on Highland Forest before, during, and after Timber Harvesting*, Marryanna, L. et al., International Conference on Environment, Energy, and Biotechnology IPCBEE vol. 33 (2012).
28. Delaware Riverkeeper Network comment to Federal Energy Regulatory Commission, regarding the Spectra M2M project, 6/3/2016
29. *Karst Mitigation Plan PennEast Pipeline Project*, PennEast Pipeline, Prepared by Hatch Mott MacDonald.
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31. Appendix 1: Table A-1. Active, proposed and reported natural gas wells in Pennsylvania, by county.
32. Letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.
33. *Review of INGAA Foundation Report, "Pipeline Impact to Property Value and Property Insurability"*, Key Log Economics March 11, 2015
34. *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, September 5, 2016.
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55. *Climate Change Impacts in the United States*, Radley Horton and Gary Yohe, May 2014.
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57. *Pennsylvania Energy Impacts Assessment*, Nels Johnson, the Nature Conservancy, November 15, 2010.
58. Key-Log Economics, LLC, *Economic Costs of the PennEast Pipeline*, January 2017.
59. Key-Log Economics, LLC, *Economic Costs of the Mountain Valley Pipeline*, May 2016.
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