# **Exhibit** A

# Princeton Hydro Report

#### INTERVENORS' ADDITIONAL COMMENTS ON FERC'S MARCH 2018 DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE NORTHEAST SUPPLY ENHANCEMENT PROJECT FERC DOCKET #CP17-101-000

#### SUBMITTED ON BEHALF OF:

NY/NJ Baykeeper, Food & Water Watch, Central Jersey Safe Energy Coalition, and Princeton Manor Homeowners Association

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## **Princeton Hydro's Report on DEIS**

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#### I.0 Introduction

To comply with the requirements of the National Environmental Policy Act (NEPA), the Draft Environmental Impact Statement (DEIS) for Transco's proposed NESE Pipeline must provide an assessment of the potential adverse impacts on issues such as wetlands, surface waters (including offshore waters), and water quality related to the construction and operation of the project. FERC was required to review the project's impacts from the applicant's preferred alternative, as well as the no-action alternative, and any other reasonable alternatives to the project. FERC states on page ES-2 of the DEIS that "Construction and operation of the NESE Project would impact the environment" and subsequently indicates that "We evaluated the impacts of the Project, taking into consideration Transco's proposed impact avoidance, minimization, and mitigation measures on geology, soils, groundwater, surface water, wetlands, vegetation, wildlife, fisheries, special status species, land use, recreation, visual resources, socioeconomics, cultural resources, air quality, noise, and safety and reliability." The DEIS states in section 5.1 on page 5-1 that "With implementation of Transco's impact avoidance, minimization, and mitigation measures, as well as their adherence to our recommendations, we conclude that all Project effects would be reduced to less-thansignificant levels."

Princeton Hydro has reviewed this DEIS and found many deficiencies in FERC's analysis, which was used to assess potential impacts to the environment. As a result, these deficiencies have created incomplete and invalid evaluations of the potential impacts of the project. The DEIS, therefore, does not provide an accurate portrayal of the potential impacts that the NESE project will impose on the environment and the community. Without additional data, it is impossible to determine the health, environmental, or safety impacts of this project.

In the following sections, various deficiencies are outlined and information that is missing from the impact analyses is noted. We discuss these issues as they relate to (1) onshore water resources and (2) offshore water resources.

#### 2.0 Onshore Water Resources

In its treatment of the NESE Project's impacts to onshore water resources, FERC's analysis suggests that significant impact reduction can be accomplished not by avoiding the impacts but by relying upon mitigation to reduce them. This same idea presents a common theme throughout the onshore portions of the DEIS, as does the frequent reference to documents such as Transco's "Project-Specific Erosion Control, Revegetation, and Maintenance

Plan" to mitigate impacts rather than avoid or minimize impacts. This approach to impact mitigation is not, however, consistent with either the Clean Water Act or New Jersey's Freshwater Wetlands Protection Act. Those regulatory schemes deploy mitigation as the final option, and one which is typically only considered after an applicant performs a thorough, factbased analysis that illustrates that all impact avoidance and minimization measures have been exhausted.

The DEIS, however, relies on a dramatically different approach. The DEIS simply suggests potential adverse impacts and then relies on speculative and sometimes unspecified mitigation to circumvent designating adverse impacts to sensitive natural resources such as wetlands as "significant."<sup>1</sup>

It is important to understand that the preparation of the DEIS relies heavily on Transco's Resource Reports. In accordance with FERC's Guidance Manual for Environmental Report Preparation for Applications Filed Under the Natural Gas Act "the format and content of resource reports is based on FERC staff's needs and preferences to facilitate our preparation of a thorough, defensible NEPA document that will be useful to the Commission." In this context the FERC's reliance on Transco's resource reports is apparent and the DEIS frequently relies heavily on these reports to make its determination. As such, the basis for many of FERC's determinations resides in reports prepared by Transco. Reliance on Transco's reports in this context frequently illustrates a lack of objectivity and a failure to satisfy New Jersey's minimum regulatory requirements.

FERC's approach to impact analysis contravenes the regulatory approach set forth by the Clean Water Act (CWA) and New Jersey's Freshwater Protection Act (FWPA). As such, the DEIS could not be used as an impact assessment for permits required under either of those laws. Moreover, the DEIS's findings that any adverse environmental impacts will be reduced to less than significant levels rely on nothing more than unsupported conclusions, couched in scientific terms, but which lack any actual data or references to validate them. As such, they should be considered with a high degree of skepticism and accorded no deference. The empty rhetoric of the DEIS is especially troubling when considering the impacts to highly sensitive habitats and landscape features such as coastal wetlands, steep slopes, forested wetland and forested transition areas. Inevitable adverse impacts to these critical environmental areas from Transco's NESE preferred alternative must be carefully considered and evaluated in the context of New Jersey's regulations in order to protect the quality of these important resources and surface waters.

The following subsections provide an alternative view of how this major construction project will directly impact New Jersey's onshore water resources. In addition, a discussion of relevant areas of the Clean Water Act and Freshwater Wetlands Protection Act requirements

<sup>&</sup>lt;sup>1</sup> As discussed more fully below, there are not enough data in the record to even determine environmental baseline, much less assess what the impacts will be. A full accounting of the nature and scope of adverse impacts is a necessary precursor to any assessment of how to avoid, minimize, or mitigate, if possible, those impacts.

that NESE must meet in order for Transco to construct its preferred alternative is presented to demonstrate that the project cannot be permitted as designed.

#### 2.1 Alternatives Analysis

The source of FERC's NESE DEIS failures are found in Transco's alternatives analysis (Resource Report 10). The development of an objective alternatives analysis is an essential element of any project. However, when the alternatives analysis is flawed or lacks objectivity it can be misleading as it relates to the important information presented and the public's understanding of a federal agency's decisions. The Council on Environmental Quality's ("CEQ's") National Environmental Policy Act (NEPA) regulations state at 40 C.F.R. § 1502.1 that an Environmental Impact Statement "shall provide full and fair discussion of significant environmental impacts and shall inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." In addition, 40 C.F.R. § 1502.14 states that an agency shall "Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated."

The NESE DEIS has not satisfied the basic objectives of NEPA and we will point out the lack of a rigorous alternatives analysis and the misleading interpretations that are presented in the DEIS and the issues that they have relative to regulatory compliance and environmental impacts.

### 2.2 Alternative Analysis - Other Natural Gas Transmission Systems

One of the alternatives discussed in the DEIS is related to whether other gas providers in the region can satisfy the project's stated goal with less impact to the environment -- including both onshore and offshore water resources. In response to comments that suggested that the purpose and need of the NESE Project could be met by utilizing other existing natural gas transmission systems, six other interstate natural gas transmission systems present in the region of the NESE Project were evaluated. The six systems are owned by the Millennium Pipeline Company, LLC (Millennium); Tennessee Gas Pipeline Company, L.L.C. (TGP); Columbia Gas Transmission, LLC (CGT); Algonquin Gas Transmission, LLC (AGT); Iroquois Gas Transmission System, LP (IGT); and Texas Eastern Transmission, LP (TETCO). Transco's alternatives analysis set forth in Resource Report 10, dated March 2017, states that "in order to be a viable alternative, potential system alternatives must meet the following criteria: Capable of transporting up to 400,000 Dth/d of natural gas to the Rockaway Transfer Point, as required by National Grid, without negatively impacting service to existing customers." This alternative evaluation lacks objectivity as it places an unrealistic emphasis on Transco's Rockaway Transfer Point as the basis for assessing impacts related to other natural gas pipeline companies. FERC's approach to this issue is not unique to Transco's NESE project but once FERC agrees with Transco that a single connection point such as the Rockaway Transfer Point is the only point to which other companies can connect, it creates a self-serving result in which only the applicant's preferred route can be selected. In general, the DEIS states that the extension of any of these

systems to the Rockaway Transfer Point would require pipeline construction in the densely populated urban environment in and around New York City. But it is Transco and FERC's own insistence that <u>only</u> the Rockaway Transfer Point be considered as the connection point that leads to the failure of other pipeline companies' alternatives under both Transco and FERC's alternatives analyses. FERC's DEIS states that "[b]ased primarily on the greater socioeconomic and residential impacts associated with pipeline construction in highly urbanized areas as noted above, the expansion of any of the other existing interstate transmission systems would not provide a significant environmental advantage when compared to the Project."<sup>2</sup> As previously indicated, this decision is based on the Rockaway Transfer Point serving as the center of the universe relative to National Grid.

FERC's analysis in the DEIS is biased due not only to the selection of a connection point on Transco's pipeline from which all impacts will be assessed but also to the need to deliver gas to National Grid by Transco's requested in-service date. The DEIS states that "the expansion of any other system would result in an unreasonable delay to meet the requested in-service date of the customers of the NESE Project."<sup>3</sup> It is readily apparent that the DEIS's requirements for other pipeline companies to be considered a viable alternative to the proposed NESE project are simply unattainable due to the in-service date and the unrealistic position that the Rockaway Transfer Point is the only possible connection point to National Grid. More importantly, if one of those other companies had the chance to connect to National Grid, why would they connect to a competitor's pipeline at Transco's Rockaway Transfer Point when, as the DEIS describes, it is distant from their own pipelines and would increase impacts and cost? The alternatives analysis describing the possibility that other pipeline companies may provide gas to National Grid lacks credibility and based on the use of self-serving selection criteria fixes the result so that it can only result in Transco's NESE project being selected. As FERC likely has relationships with all the other companies used in the alternatives analysis, it would have been a more valuable and objective discussion if FERC had reached out to each of the other companies directly to see if one, if not all, of these companies truly has a more environmentally-sound alternative. The DEIS was, however, crafted in a way that biased the selection process to a conclusion that the only option was that of Transco's NESE project.

Regrettably, this is not the only example of FERC's DEIS blindly supporting various aspects of Transco's NESE project.

#### 2.3 Alternatives Analysis – Compressor Station 206

FERC's DEIS reviewed the alternatives analysis created by Transco to identify a suitable site for compressor station 206. The preliminary review identified a preferred site as well as four other parcels that could potentially host Compressor Station 206. Regrettably the alternatives analysis resulted in five finalists that would all have significant wetland impacts. Interestingly, the DEIS states that "these sites and Transco's proposed location were evaluated in more detail for impacts on forested land, wetlands, waterbodies, and proximity to

<sup>&</sup>lt;sup>2</sup> FERC DEIS 3-5.

<sup>&</sup>lt;sup>3</sup> Id.

residences, places of worship, and schools/daycare centers. In balancing the advantages and disadvantages of sites, we conclude that none of the alternatives offer a significant environmental advantage over Transco's proposed site, and do not recommend any of the alternative locations."<sup>4</sup> The DEIS concludes that "wetland impacts that could not be avoided would be mitigated in accordance with wetland compensatory mitigation plans as approved by the USACE and other applicable agencies. Therefore, construction and operation of the NESE Project would not result in significant impacts on wetland resources."<sup>5</sup>

It is apparent when reviewing the DEIS that both FERC and Transco's site selection for compressor station 206 is at odds with the FWPA and CWA regulations. The FWPA at Sections <u>N.J.A.C.</u> 7:7A-7.1 through 7.5 provide various requirements that must be addressed by an applicant, including the preparation of an alternatives analysis. The analysis of alternatives set forth in the FWPA has its genesis in Section 404 of the CWA and, as such, must follow the 404(b)(1) guidelines. New Jersey's link to the CWA is mandated through the State's assumption of Section 404 of the CWA.

The requirements to satisfy the FWPA are far more rigorous than those presented by Transco to FERC in its National Environmental Policy Act (NEPA) analysis. The analysis of alternatives required by FERC for the NEPA Environmental Impact Statement routinely lacks sufficient detail to adequately respond to the requirements of either the FWPA or the 404(b)(1) guidelines. Under a 404(b)(1) analysis, it is <u>critical</u> for the applicant to identify and choose the Least Environmentally Damaging Practicable Alternative ("LEDPA") for the project. As such, it is incumbent upon an applicant to demonstrate to the reviewing agency that its proposed project and site present the LEDPA. The U.S. Army Corps of Engineers is prohibited from issuing a permit for anything less than the LEDPA, and so too is the NJDEP. Here, Transco's alternatives analysis did not truly seek to identify the least environmentally damaging practicable alternative for the NESE project and instead, after reviewing 41 sites, selected a short list of five sites that all included significant wetland resources and will result in significant wetland impacts. According to Transco's January 1, 2018 document submitted to NJDEP -- entitled Supplemental Information to Freshwater Wetlands Individual Permit -- the total permanent wetland impacts for the five sites are summarized in the table below. The impact areas

Transco Site Nos.	Permanent Wetland Impact	Forested Wetland Impacts	State Open Water Impacts	Permanent Transition Area Impacts		
1	10.28 acres	10.22 acres	0.05 acres	11.38 acres		
2	4.98 acres	4.98 acres	0.16 acres	6.36 acres		
3	3.73 acres	2.64 acres	0 acres*	2.45 acres		
8	1.27 acres	0.34 acres	0.06 acres	11.53 acres		
27	5.75 acres	5.14 acres	0 acres	7.90 acres		

<sup>&</sup>lt;sup>4</sup> FERC DEIS page ES-10.

<sup>&</sup>lt;sup>5</sup> FERC DEIS Section 4.3.4.4, page 4-66.

identified in this more recent document provide different numbers than those presented in the DEIS.

Although the prerequisites for an Individual Permit (IP) under the FWPA have unique requirements as set forth under section 404 of the CWA, Transco initially relied heavily on the alternatives analysis developed for FERC in its March 2017 resource report No. 10. Subsequently FERC relied heavily on the results of Transco's resource report No.10 in the DEIS to base its decision to select Transco's preferred alternative.

The DEIS's selection of a site for the Compressor Station 206 is based on the alternative analysis that is inconsistent with the requirements of either the FWPA or the CWA. Contrary to the objectives of both the CWA and the FWPA, Transco selected a site with significant wetland impacts, including the permanent loss of 2.64 acres of forested wetland. Transco states in their IP in response to N.J.A.C. 7:7A-7.2(b)2 that the basis for its selection is that "Impacts to wetlands and transition area have been minimized by reducing disturbance areas to the greatest extent practicable while still allowing for activities necessitated for successful implementation of the proposed Project." This statement is inconsistent with the requirement of the FWPA and the CWA, which mandate that an applicant must first avoid impacts rather than simply indicating that they tried to minimize impacts in order to satisfy their development needs. The alternative analysis used by Transco did nothing to satisfy the requirements of the FWPA or the CWA to avoid wetland impacts. The Alternatives analysis actually states that the five parcels selected were the sites "with the least potential impact on wetlands based on a review of NJDEP mapping". Transco's approach to identifying a non-wetland site lacks sufficient sophistication to satisfy the objective of the FWPA and the CWA of avoiding impacts to wetland resources. At this juncture it is important to point out that the FERC process regarding impacts to resources such as wetlands differs from that of the CWA and FWPA in that impacts can be reduced to less than significant levels through the implementation of mitigation measures. As such, this DEIS cannot be used as an impact assessment for permits required under either of those laws.

In its discussion regarding avoidance of wetland impacts, the DEIS states that "construction and operation at new Compressor Station 206 would impact 5.1 acres of wetlands, of which 3.8 acres (75 percent) would be impacted by the access road or inlet and outlet pipes associated with the facility. As required by our Procedures, Transco sited the compressor station itself to avoid construction and operation within wetlands, but wetland impacts could not be completely avoided by the access road or inlet and outlet pipelines due to the extent of wetlands between the facility and Transco's existing pipeline system and land use limitations near the access road."<sup>6</sup> Although this approach may satisfy FERC's objectives, it does not satisfy the minimum requirements of the FWPA or CWA as Transco flawed site selection process was used to knowingly select a site with significant wetland impacts.

<sup>&</sup>lt;sup>6</sup> DEIS page 4-64.

As indicated above, Transco's Individual Freshwater Wetlands Permit application (IP) submitted to the NJDEP did not respond to the minimum requirements for an IP under the FWPA. In order to satisfy the minimum standards for an IP, an applicant must satisfy the conditions set forth at N.J.A.C. 7:7A-7.4(b) which states:

There shall be a rebuttable presumption that there is a practicable alternative to a non-water dependent activity in a freshwater wetland or in a special aquatic site, which alternative does not involve a freshwater wetland or special aquatic site, and that such an alternative would have less of an impact on the aquatic ecosystem.

#### This has not been done due to Transco's flawed alternatives analysis.

The FWPA at N.J.A.C. 7:7A-1.4 defines "practicable alternative" as:

[O]ther choices available and capable of being carried out after taking into consideration cost, existing technology, and logistics in light of overall project purposes, and may require an area not owned by the applicant which could reasonably have been or be obtained, utilized, expanded, or managed in order to fulfill the basic purpose of the proposed activity.

Outside of unsubstantiated statements and rhetoric, Transco failed to demonstrate that the proposed activity could not be accomplished at another location that would completely avoid impacts to freshwater wetlands. Importantly, as is the case with many alternative analyses, alternatives are often designed to fail and in this case the failure is based on a variety of issues including wetlands, size of property and shape of property. For example, the site screening process only looked at individual parcels rather than multiple parcels that together may have provided the opportunity for a non-wetland alternative. The DEIS states in Section 3.4.1 that FERC "typically consider[s] sites of at least 20 acres for new compressor stations to provide some buffer between the facility and adjacent properties." Transco included sites that were at least 9.6 acres while the DEIS assumed a minimum construction footprint of 9.6 acres. Moreover, the DEIS never considered in its selection process the identification of more than one property or properties that may be currently occupied or previously developed to identify a suitable non-wetland area for its compressor station. Outside of unsubstantiated statements and rhetoric derived from a poorly conceived alternatives analysis, Transco fails to demonstrate that the proposed activity could not be accomplished at another location that would completely avoid impacts to freshwater wetlands and the DEIS simply goes along with Transco's flawed approach.

The DEIS also indicates that the preliminary review process resulted in the identification of five parcels (Sites 1, 2, 3 (Transco's proposed site), 8, and 27) that could potentially host Compressor Station 206 and that each of these sites were evaluated further. As previously indicated, alternatives are often designed to fail and in this case the failure is based on a variety of issues -- including wetlands, size of property, and shape of property. As previously stated,

the screening only looked at individual parcels and did not look at combining adjacent parcels that may have provided the opportunity for a non-wetland option. As an example, parcel 5, a site adjacent to Parcels 8 and 27, was initially dismissed because it possessed too much wetland as per NJDEP mapping. Based on Transco's remote sensing approach to wetland delineation, however, it is likely that - based on a review of the most recent remote sensing maps provided by Transco in the January 2018 supplement to their NJDEP IP application (Appendix A) -- less wetland may be present on Parcel 5 (and possibly other parcels) than indicated by NJDEP mapping. In addition, Parcel 27 was dismissed as having a greater amount of wetland impact than Parcel 3. The wetlands delineated for Parcel 27 were initially based only on remote sensing data. It is, however, interesting to point out that the wetlands spanning the property boundary between Parcels 8 and 27 were not identified as a wetland in the NJDEP's Letter of Interpretation (LOI) received for Parcel 8 and were subsequently removed from the Parcel 8 wetland mapping. Although the wetland identified via remote sensing on Parcel 8 was removed, the balance of the wetland that extended onto parcel 27 remained, and thus formed the basis for the high level of wetland impact used to eliminate this site from consideration. Although the remote sensing-based interpretation of wetland was to have included topography along with other resource such as soils survey information, the results are inconsistent with the Light Detection and Ranging (LIDAR) generated topography done on Parcels 8 and 27 (Block 5.02, lot 69) by Princeton Hydro (please refer to figure in Appendix B). The area that Transco indicated to be wetland actually resides on a drainage divide (a landscape position that does not normally support a wetland determination) that extends into Parcel 5. The area is also mapped as possessing soils of the moderately well drained Keyport soil series. As such the accuracy of Transco's remote sensing identification of wetlands is at best questionable and thus casts doubt on the efficacy of their alternatives analysis.

In addition, Parcel 8 was determined to have less wetland impact than that contemplated for Parcel 3 but was eliminated from consideration due in part to the presence of "regulated open water features" (Transco, Supplemental Information to Freshwater Wetlands Individual Permit, July 17, 2017). It was further indicated that these features may present permitting challenges under the Flood Hazard Area Control Act. However, if these features are man-made drainage ditches, which is what they appear to be as two of the features connect at a 90-degree angle, they may not meet the definition of a regulated water. If that is the case, the filling of a ditch would be far less difficult than a regulated water or State Open Water under either New Jersey's Flood Hazard Area Control Act or the FWPA. Lastly, as indicated previously, the combination of adjacent parcels such as 8, 27, and 5 would also serve to reduce wetland impacts as well as move the compressor station further from residences. Transco's analysis did not contemplate the identification of adjacent parcels as a means to reduce wetland impacts and instead limited its selection criteria to individual parcels.

It is not our intent in the above discussion to identify an alternate site for Transco but to point out the problems and lack of objectivity in Transco's alternatives analysis. It is also important to understand that Transco is the owner of Parcel 3 (see section 2.3.4 of the DEIS) and it is therefore not in their best interest as it relates to FWPA compliance to find an alternative site since it would impact Transco's goal of providing gas for the 2019/2020 winter

heating season (http://northeastsupplyenhancement.com/). The timing of gas delivery also appears to be important to FERC as the DEIS uses, at least in part, Transco's requested inservice date as a way to eliminate from consideration the expansion of another pipeline system and states in section 3.2.1 that the expansion of another pipeline system "in place of NESE would result in an unreasonable delay to meet the requested in-service date of the customers of the NESE Project."

#### 2.4 Site Specific Information

An objective alternatives analysis should also include site specific data regarding various aspects of the environment to form the basis for making factual determinations as required in the 404(b)1 Guidelines. The characterization of those resources subject to proposed impacts is integral to the development of sound design and to making informed and objective permit decisions. More importantly, the use of sound science should serve to preclude or at least minimize the use of generalized, unsupported statements designed to show compliance -- such as those frequently used in the DEIS regarding Transco's mitigation approach. In this case it is important to understand that the requirements for an individual FWPA permit are onerous because the primary intent of the Act is to avoid impacts to sensitive areas including forested and coastal wetlands. Moreover, the mitigation of sensitive, rare, or complex habitats such as those associated with older forests, coastal wetlands, and steep slopes may be easy to state, as FERC does frequently throughout the DEIS, but more often than not it is impossible to successfully mitigate sensitive, unique or ecologically complex habitats.

The DEIS did not provide much site-specific detail with regard to descriptions of the areas proposed for regulated activities by which to better understand the degree or severity of the impacts that the project will have on sensitive resources. Failure to accurately understand the ecological complexity of a natural resource results in an inability to accurately define the level or severity of an impact from both a scientific basis as well as from a regulatory perspective. It is important in the development of an objective EIS to discuss ecological characteristics such as age, rarity, composition, and sensitivity to impacts in order to identify the alternative with the least significant impact. The DEIS lacked specific detail in which to assess ecological impacts and instead routinely defaulted to the implementation of Transco's various plans as a means to circumvent a meaningful understand of the project's impacts on New Jersey's natural resources.

In the case of compressor station 206 this may be an important issue and begins with the results of Transco's poorly conceived alternatives analysis. The selection of five sites -- through Transco's alternatives analysis -- that are all forested highlights yet another flaw in their analysis. Recently, another Transco project, the Chesterfield compressor station (DLUR File # 0300-15-0002.2, FWW150001) resulted in approximately 4.7 acres of mostly emergent wetland impact. The NJDEP's decision document of March 13, 2017 indicated that wetlands on the alternative site would have experienced far greater environmental impacts because they were forested. The NJDEP provided the following text to describe its rational for the decision:

Some of the forested wetlands on the alternate site have been wooded wetlands since as far back as 1930. The remainder of the trees in the forested wetlands were established by 1987 and possesses approximately 50% mature trees ("crown cover"). The quality of wetland functions served by a forested wetland are heightened due to the undisturbed vertical structure of the vegetation. Rain water storage is increased due to uptake by the various strata of vegetation, including herbaceous, shrub, saplings and mature trees. Very little sediment is released from a forested wetland during rain events as the soil is not disturbed and the canopy slows rain water. The habitat diversity of the forested wetlands is high. There are at least five vegetation strata of habitat present within the existing forested wetlands. They include ground level, herbaceous, shrub, sapling, and mature tree canopy. Together these strata form an ecosystem. Each level provides foraging, resting and breeding habitat to various species. For instance, the ground level provides foraging habitat for worm eating birds such as robins, and insectivore mammals such as opossum. The species that use each layer vary by strata and seasonal behavior. The various layers of vegetation provide food at different times of the year. Forested wetlands have a greater habitat diversity than modified agricultural wetlands. In addition to habitat and food sources available within forested wetlands, resting and perching locations are often provided for birds foraging in adjacent farm fields.<sup>7</sup>

It is apparent that Transco conveniently forgot the details of this permit decision as they selected five forested sites for the compressor station. The importance of this decision is that NJDEP's determination regarding the value of forest was not taken into consideration and the DEIS instead defaulted to mitigation to cure all negative impacts. Importantly, however, the DEIS supports the NJDEP's concerns as it states that "Impacts on forested vegetation and habitat would be long term or permanent because trees would take up to 50 years or longer to become reestablished and would not be allowed to become reestablished directly over the pipeline."<sup>8</sup> It is for this reason that Transco's selection -- and FERC's concurrence with the selection -- of a forested site for Compressor Station 206 should be revisited.

#### 2.5 Impact Minimization

The 404(b)(1) Guidelines require an alternatives analysis which addresses how impacts to waters and wetlands (Waters of the United States) have been avoided and minimized. New Jersey's Freshwater Wetlands Protection Act incorporates the same standards; through assumption of Section 404 of the CWA, New Jersey's standards cannot be less restrictive than the US Army Corps of Engineers' standards. As such, the alternatives analysis should address practicable alternatives to the discharge of dredged and fill material for <u>each</u> individual crossing

<sup>&</sup>lt;sup>7</sup> NJDEP's decision document of March 13, 2017 regarding Transco's Chesterfield compressor station, Garden State Expansion Project

<sup>&</sup>lt;sup>8</sup> FERC DEIS Section 4.12.3.6, page 4-348.

of a wetland and/or waterbody. The DEIS instead provides a rather broad-brush approach to describing avoidance and minimization.

The DEIS correctly indicates that when wetlands are involved, Federal and state agencies require that a three-step process be followed when proposing a project involving regulated activities.<sup>9</sup> The DEIS also correctly indicates that the first step in this process "is to design the project to avoid wetland impacts to the extent practicable. In the second step, for projects where wetland impacts cannot be practically avoided, wetland impacts must be minimized to the greatest extent practicable. In the third step, if permanent impacts on wetlands are unavoidable, wetland placement or compensatory mitigation is required to replace lost wetland function."<sup>10</sup> It is after this point in the DEIS that rhetoric takes over in the analysis of avoidance and minimization. The following sections provide a few examples of why the DEIS lacks objectivity as it relates to avoidance and minimization of wetland impacts.

If one can look past the rhetoric in the DEIS, which states that "Transco also located the [Additional Temporary Workspace ("ATWS")] needed to construct the Project to avoid wetlands, and would utilize the [horizontal directional drill ("HDD")] method to specifically avoid permanent impacts on wetlands and waterbodies at two locations along the Madison Loop," you will find that the project will still impact a significant amount of wetland -- 41.2 acres in New Jersey alone, including approximately 20 acres of forested wetland. In addition to the aforementioned impacts, the project would also remove 35.3 acres of upland forest and the impacts, as stated in the DEIS (Section 4.12.3.8 Land Use, Recreation, and Visual Resources), on forested uplands "would be long term or permanent because trees would take up to 50 years or longer to become reestablished and would not be allowed to become reestablished directly over the pipeline." Rather than discuss the specific ecological impacts associated with the loss of forest habitat -- especially as it relates to wetland impact -- FERC instead diminished the significance of the impacts by comparing them to the extent of similar resources on a sub watershed scale. Section 4.12.3.6 of the DEIS states that the "vegetation cover and wildlife habitat are abundant within the geographic scope and the overall magnitude of impacts relative to the total amount of vegetation and habitat within the sub-watershed is small. For this reason, we conclude that there would not be significant cumulative impacts on vegetation or wildlife." The DEIS's reliance on unsupported statements such as this allows FERC to circumvent any realistic analysis of ecological impacts. Moreover, impacts, especially those related to regulated resources, cannot be trivialized by diluting project-related habitat losses; FERC does this by simply comparing the losses to the area of similar habitats on a larger watershed scale. It is this type of rhetoric that precludes a realistic understanding of site-specific impacts.

The examples of areas that should be more carefully evaluated with regard to the avoidance and minimization impacts that are provided below are not the only areas in which we have concern but provided to highlight the inherent problems with the DEIS. .

<sup>&</sup>lt;sup>9</sup> FERC DEIS page 4-63.

<sup>&</sup>lt;sup>10</sup> Id.

- Compressor Station 206 The DEIS states that ancillary facilities were sited to avoid wetland impacts but also states that the construction and operation at new Compressor Station 206 would impact 5.1 acres of wetlands, of which 3.8 acres (75 percent) would be impacted by the access road or inlet and outlet pipes associated with the facility. However, this is exactly the type of impact that could have been avoided if Transco performed and FERC mandated the application of a more robust alternatives analysis.
- HDD Sites The HDD work area constitutes a considerable portion of the wetland impacts associated with the Madison Loop. The temporary workspace associated with the HDD at milepost 8.80A and B are associated with an access road. This workspace is much longer than most HDD related workspaces at approximately 750 feet long. The workspace terminates at its western end in a wetland and connects to an access road. This would appear to be a candidate for minimization.

Most of the HDD Temporary workspace is located in wetland, State open water, or wetland transition area. Proposed HDD workspaces should be evaluated for minimization or relocation to avoid wetland impacts. For example, the workspace at MP 9.25 crosses two streams, forested wetland, and forested wetland transition area. These are significant impacts and should be carefully vetted through the permit approval process.

All of the over 1-acre HDD entrance site at milepost 11.48 is located entirely in coastal wetland designated as being of exceptional resource value. To reduce impacts to this exceptional resource value wetland, the DEIS indicates that "Transco would implement its Project-Specific Erosion Control, Revegetation, and Maintenance Plan (Transco Plan) and Project-Specific Wetland and Waterbody Construction and Mitigation Procedures (Transco Procedures) (see appendices E and F, respectively). These are based on the mitigation measures described in the FERC's Upland Erosion Control, Revegetation, and Maintenance Plan (FERC Plan) and Wetland and Waterbody Construction and Mitigation Procedures (FERC Procedures),... but include several proposed site-specific modifications to the FERC Procedures (see tables 2.3-1 and 2.3-2)."<sup>11</sup> One of the procedures to reduce impacts is through the use of timber mats to support equipment in inundated or saturated wetlands. However, as is typical throughout the DEIS, no site-specific information regarding the character of the wetland or the efficacy of using mats in a tidal wetland as it relates to wetland impacts is provided. It is also important to acknowledge that workspace at HDD entry points is equipment intensive and according to the DEIS "typically includes the drilling rig, control cab, office, storage trailers, power generators, drill string pipe storage, water trucks, water storage, other heavy equipment, and a drill entry pit. The workspace would also include facilities and equipment to manage drilling fluid and drill cuttings."<sup>12</sup> If all this equipment is to be used on timber mats, then an understanding of compaction to the wetlands substrate

<sup>&</sup>lt;sup>11</sup> FERC DEIS Section 2.3, page 2-13

<sup>&</sup>lt;sup>12</sup> FERC DEIS, page 2-28

should be an essential component of the impact analysis as it significantly impacts the recovery of wetland vegetation. No analysis of the types of impacts or the type of vegetation present in the marsh was provided.

The DEIS also indicates that FERC requested that Transco reduce wetland impacts at this site, which -- based on review of earlier project drawings (i.e. Williams/Transco plan set entitled "Transcontinental Gas Pipe Line Company LLC, FERC Alignment Sheet, Northeast Supply Enhancement Project, Proposed 26" Madison Loop, M.P. 8.57 to M.P. 12.00, Middlesex New Jersey, attachment 11 sheet 12 of 18," dated 11/10/16) -- eliminated a small part of the proposed ATWS near Gondek Road. However, this minor modification does not satisfy the requirements of the FWPA or the CWA, which seek to avoid and then minimize impacts to wetlands. No site-specific analysis was provided in the DEIS to support the impact to estuarine wetlands at this site. Instead, FERC's default position is that implementation of Transco's plan will eliminate impacts. However, FERC's position regarding implementation of Transco's plan to minimize impacts lacks any scientific basis and thus, in the absence of any references or scientific documentation, we cannot assume that Transco's plan will work at this location.

Lastly, the DEIS states that "Workspaces required at HDD entry and exit points are locations with an increased likelihood of inadvertent releases of drilling fluids and are typically located away from the waterbodies crossed to minimize potential impacts."<sup>13</sup> At the HDD entry site located at Milepost 10.48, the entire site is located in an estuarine wetland within 30 feet of a tidal stream. The placement of an HDD entry site in an exceptional resource value wetland should also be avoided because it is not consistent with federal or New Jersey wetland regulations because of the likelihood of "inadvertent releases" as stated above.

The DEIS does not provide any substantive documentation that the impacts associated with the HDD activity at milepost 10.48 would be reduced to less-than-significant levels and simply relies on the implementation of Transco's procedures to cure impacts. Once again, this approach is inconsistent with the requirements of the FWPA and the CWA regarding avoidance and minimization and, importantly, the DEIS provides no basis outside of rhetoric to demonstrate that this area can be successfully restored.

 Steep Slopes – According to Section 2.3.1.3 ("Clearing and Grading") of the DEIS, "Grading would be conducted where necessary to provide a reasonably level work surface. More extensive grading would be required in uneven terrain and where the right-of-way crosses steep slopes and side slopes."<sup>14</sup> On page 4-7 the DEIS simply indicates that Steep slopes represent "less than 2 percent of the pipeline length." Areas, such as at Milepost 10.05, are forested wetland transition area on slopes in excess of 35%. Because these are regulated transition areas that are associated with exceptional

<sup>&</sup>lt;sup>13</sup> FERC DEIS page 4-91

<sup>&</sup>lt;sup>14</sup> FERC DEIS page 2-21

resource value wetlands, minimization is imperative since it is required in order to comply with the Freshwater Wetlands Protection Act. In this case, however, the ATWS was widened beyond the minimum allowed under the FWPA. Importantly, the severity of the impacts to this forested transition area cannot be reasonably assessed because no grading is shown on the plan sheets and the forest has not been characterized. The soils are, however, mapped as being Evesboro sand, a soil series often associated with Pine barren communities. As Cheesequake State Park is situated nearby and possesses pine barren communities, it is possible -- if not likely -- that this part of the Madison Loop possesses pine barren communities. These are rare communities in Middlesex County and will be difficult to restore. Moreover, the restoration of pine barren plant communities is difficult and to do so on steep slopes that will be subject to some unknown disturbance regime will only further complicate any restoration effort. However, the DEIS approaches the restoration of forest communities in a simplistic manner by simply stating that "Following construction, disturbed areas would be restored to current conditions to the extent possible in accordance with Transco's Plan and Procedures and any specific requirements identified by landowners or agencies with regulatory jurisdiction over or interest in private forest land."<sup>15</sup> Once again, the DEIS avoids inclusion of any level of detail or science which would inform an analysis of impacts and instead relies on rhetoric related to the implementation of Transco's plan.

 Geology – The underlying geology of the part of New Jersey in which the Madison Loop is proposed is underlain by formation that possess pyritic clays. These sulfide-bearing marine and estuarine sediments are potential acid-soil producers. The development of acid-sulfate soils occurs when sulfide minerals, such as pyrite, oxidize upon exposure to air. These materials are exposed though erosion or, anthropogenically, through earth-moving activities.



Once these acid-producing clays are exposed to the air, they are difficult to stabilize due to the inability of plants to establish in soils with a pH near 3. Review of the wetland delineation report appears to illustrate the presence of these dark gray clays at the ground surface in several photographs, such as those on pages 411, 502 and 518.<sup>16</sup> The above photograph was taken from the Williams Transco Wetland report dated June 2017 and shows an unvegetated area of a dark gray material, which we believe to be exposed acid-producing clay due to the dark gray color and total absence of vegetation. The exposure of these acid-producing clays to air as a result of project activities will

<sup>&</sup>lt;sup>15</sup> FERC DEIS at 4-191–192

<sup>&</sup>lt;sup>16</sup> Transcontinental Gas Pipeline Company, LLC, New Jersey Wetland Delineation Report

complicate restoration efforts and slope stability. We are also concerned that if HDD borings will pass through acid producing caly deposits discharges into wetlands will be far more significant as it relates to the severity of the impact. We are also concerned about the integrity of the pipe and other infrastructure elements of the pipeline that may pass through acid-producing clays. Importantly, FERC's DEIS did not even mention the presence of these problematic clays in its document.

The examples provided above are limited to those types of areas that warrant a substantially greater level of scrutiny and analysis in order to truly minimize impacts to sensitive resources. However, Transco should provide a through, factually-based analysis as set forth in the 404(b)(1) Guidelines for each impacted wetland and State open water and include a discussion as to why the impacts to each regulated area cannot be avoided or minimized. Moreover, in order to objectively make a determination of impacts, a thorough characterization of each wetland and transition area that is anticipated to be impacted by project activities must be performed.

#### 2.6 Impact Analysis

The DEIS states that "Construction of the NESE Project would directly affect wetland soils, vegetation, and habitats, and could affect hydrology characteristics. Compaction and rutting of soils during construction could alter natural hydrologic patterns of the wetlands and potentially inhibit seed germination and regeneration of vegetation species. Reduced biological productivity could also result if topsoil and subsoil become mixed or if invasive vegetative species are introduced. Construction clearing activities and disturbance of wetland vegetation could also temporarily affect the wetland's capacity to buffer flood flows and/or control erosion. Construction could also impact wetland water quality, including changes in temperature, biochemistry, or water chemistry; increased turbidity and sedimentation; release of hazardous materials (e.g., fuels, lubricants); or addition of nutrients."<sup>17</sup>

The impacts described are all likely to occur to some degree even with the proper implementation of the proposed mitigation measures referenced throughout the DEIS. Moreover, the DEIS states that "Impacts on forested wetlands would be much longer, and may include changes in the density, type, and biodiversity of vegetation. Given the species that dominate the forested wetlands crossed by the Project, recovery to preconstruction conditions may take up to 30 years or more."<sup>18</sup> It is these types of impacts that complicate the successful restoration of disturbed sites and facilitate the colonization of invasive species. This is why avoidance of forested wetlands forms the basis for decision making relative to wetland permit compliance. It is also important to understand the existing functions and services of each of the regulated areas that will be impacted in order to realistically determine the short and long-term effects of the regulated activity. The requirement to make Factual Determinations can be found at 40 CFR 230.11, (404(b)(1) guidelines. This has not been done.

<sup>&</sup>lt;sup>17</sup> FERC DEIS, Section 4.3.4.3, page 4-63

<sup>&</sup>lt;sup>18</sup> Id.

#### 2.7 Other Regulatory Compliance Issues

Stormwater management is an integral element of all development projects, and the proper design of stormwater management facilities is important to the maintenance of surface water quality. The FWPA at N.J.A.C. 7:7A-7.2(b)(8) requires that the NJDEP issue an individual freshwater wetlands permit <u>only if</u> the regulated activity "Will not cause or contribute to a significant degradation, as defined at 40 C.F.R. 230.10(c), of ground or surface waters." In addition, compliance with the Stormwater Management Rules is also important as it relates to satisfying the requirement for an Individual Freshwater Wetlands permit at N.J.A.C. 7:7A-7.2(b)15. The requirement for an Individual Freshwater Wetlands Permit states that a project that meets the definition of "major development" at N.J.A.C. 7:8-2.1 "shall comply in its entirety with the Stormwater Management Rules."<sup>19</sup>

Our analysis of the proposed Compressor Station 206 site basin indicates that it fails on many levels to satisfy the minimum design standards of the Stormwater Best Management Practices (BMP) manual for infiltration basins. This should not be a surprise to Transco as their Resource Report No. 2 (Water Use and Quality) states on page 2-10 that "The diabase that intrudes the sedimentary rocks has very low porosity that lends to the poor hydraulic connections (Trapp and Horn 1997). The diabase aquifers in Somerset County are dense, poorly fractured rocks that do not easily store or transmit water." These geologic qualities make the proposed stormwater basin site selected by Transco a poor candidate for infiltration. In addition, the DEIS indicates on page 4-14 that 58.5 acres of soil that is shallow to bedrock are located within the project area and that "all 58.5 acres are located at Compressor Station 200 or Compressor Station 206." Transco's failure to identify a site that can satisfy all of New Jersey's regulatory requirements is problematic and highlights the lack of consideration of site constraints in their site selection process.

In addition to the numerous design errors associated with the proposed stormwater basin at the compressor station 206 site, the site would be considered to be a dam in accordance with N.J.A.C. 7:20, the New Jersey Dam Safety Regulations. This oversight by Transco represents yet another design failure that will require design modifications to the proposed structure in order for it to fully comply with all of New Jersey's regulations. Although we do not expect the DEIS to identify issues at this level of detail, it is incumbent upon Transco to understand New Jersey's regulations. This is especially the case when, as here, failure to understand the requirements of New Jersey's Stormwater Management Rules would affect compliance with the Freshwater Wetlands Protection Act. Understanding the constraints associated with a particular site as it relates to development needs such as stormwater management should be an essential element of any site selection process. Transco's alternatives analysis did not identify stormwater as an issue and simply indicated in the Individual Permit Application to the NJDEP that they complied with the Stormwater Management Rules. As Transco's stormwater management design <u>does not comply</u> with New

<sup>&</sup>lt;sup>19</sup> Freshwater Wetlands Protection Act N.J.A.C. 7:7A

Jersey's requirements, this site's design issues will continue to be a problem for Transco moving forward as the site's impacts cannot be fully evaluated until the design is finalized.

The DEIS states that "The conclusions in this EIS are based on our analysis of the environmental impact [and several assumptions]"<sup>20</sup> – including that "Transco would comply with all applicable laws and regulations."<sup>21</sup> But <u>Transco has yet to satisfy this assumption</u> and – based on the design and proposed location of the stormwater facility at Compressor Station 206 – will not likely be able to do so.

Lastly, the proposed project will modify the local hydrology of the site as it relates to current runoff patterns and the proposed infiltration basin. No analysis was provided to determine whether groundwater mounding associated with the basin would modify the groundwater plumes present on the Higgins Farm Superfund site.

#### 3.0 Offshore Water Resources

#### 3.1 Offshore Water Resources - Alternatives

The presentation and filtering of alternatives in Section 3.3 ("Route Alternatives") is obviously done to single out Transco's preferred route. The Route Alternatives discussed were clearly selected in the first place because they are less than ideal. Even so, FERC fails to present sufficient reasons for its elimination of each of these Route Alternatives.

There is benthic biogeochemical data collected for points along the preferred route; however, the information presented about all other alternative routes for the pipeline includes only physical attributes, such as miles of trench, cable crossing, area within anchorage, etc. Detailed analyses, like studies of current clam population densities, sediment chemical composition (particularly of contaminants), and hydrodynamic modeling (as examples), are missing for Alternatives 1-5.

Benthic sampling clearly was done only in preferred routes (Alt. 6 and 8) and not along any other alternatives. Neglecting to collect data that may or may not indicate a difference in impact to the environment indicates that other alternatives were presented despite obviously not being viable options. Even if selecting a preferred alternative and then manufacturing obviously non-viable options was not a concern, there are no reference sites sampled for comparison. Thus, there is no context in which to evaluate the data in order to assess potential impacts.

#### 3.2 Offshore Water Resources

#### 3.2.1 Water Quality and Contaminated Sediments

<sup>&</sup>lt;sup>20</sup> FERC DEIS Section 4.0, page 4.1

<sup>&</sup>lt;sup>21</sup> FERC DEIS Section 4.0, page 4.1

Benthic sampling shows that there are sediments exceeding acceptable levels of contaminants, including metals, PAHs, PCBs, SVOCs, and dioxins/furans. "Approximately 83 percent of the sample sites had at least one exceedance of an inorganic (metal) threshold. Exceedances of upper-level effects thresholds for heavy metals (e.g., copper, lead, zinc, mercury), were detected at multiple locations. These included exceedances for mercury at one site; lead and mercury at one site; lead, zinc, and mercury at two sites; and copper, lead, and mercury at one site" (Sect. 4.5.2.8, p. 4-114).

Transco has addressed the fact that removal of these sediments will entail the use of an enclosed, environmental clamshell bucket to minimize dispersal of excavated sediments. However, the substrate surface will still be heavily disturbed by excavation with any type of clamshell bucket and no barge overflow, since there is nothing mentioned to prevent resuspension of sediments from the excavation site itself. Also, dredging without barge overflow causes water to accumulate on the barge. The application lacks information on dredge water handling methods and where the dredged material will be dewatered prior to disposal.

In addition, not all of the sampling sites that resulted in contaminated sediments will be excavated using the clamshell bucket; use of a jet trencher is indicated to occur at some sites. Milepost (MP) 25.4, specifically, is an area of jet-trenching where mercury concentrations exceed thresholds in the 3 to 6-foot layer. Since the pipeline will be installed deeper than 3 feet, installation by a jet trencher is not acceptable in this contaminated area and an alternative installation method needs to be provided.

Furthermore, there is no guarantee that sediments located outside of the sampling sites are not contaminated, and there is no clear plan for preventing resuspension of these sediments during excavation (no mention of turbidity curtain, etc.). Many of the sites where contaminated sediments were found are in relative close proximity to shore, and therefore human and wildlife interactions is greater for the sites where contaminants are found.

Hydrodynamic modeling that has occurred was not integrated with results of biological/chemical studies to assess the risk of environmental impacts resulting from offshore oil/gas developments. Also, modeling doesn't account for flocculation, likely assuming unchanging physical properties of sediments. Studies cited in the impact of re-suspended contaminants report are from 1994-- more than 20 years ago and likely no longer relevant.

There is no clear explanation of the environmental impacts of backfilling. Whether the material is being reused from side-casting that has already caused impacts on the benthos adjacent to the trench or material is being introduced from a different location, there is still unknown impact to the backfilled, trenched area and the potential negative effects outnumber the potential positive ones. Once exposed to the water column, contaminated sediments can become more reactive and be more detrimental to the environment. Hydrodynamic models are not clear on the effect of water currents on exposed trench materials. There is also no assessment of the areas being used to source the supplemental backfill when side-cast material is not of sufficient volume to fill the excavated area; this includes any testing for contaminants and impact of excavation from those areas.

There is no clear assessment of impact from dredging for backfill from 4 separate offshore sources. This includes benthic community studies, sediment modeling, chemical composition (especially regarding contaminants), etc. Without detailed evaluation of the impacts of sites sourced for backfill, complete impacts of the projects cannot be assessed.

One justification for action is that this body of water is already impaired. Further polluting and making recovery of this ecosystem more difficult is unacceptable. Further, it is unclear what the actual impact of contaminated sediments would be if re-suspended into the currents and due to additional erosion of the excavated pipeline trench. More analysis needs to be done to determine these impacts.

There is concern about what materials will be used in the HDD fluid and how it is released into the bay through drilling of the land-to-water Morgan Shore Approach as well as the HDD to cross the Ambrose Channel. There is very little explanation of the impact to the environment that these materials will have once released.

The project will impact areas containing Class C sediment, which are highly contaminated and are expected to be acutely toxic to aquatic biota. The application indicates that Class C sediment will be dredged using an environmental bucket and no barge overflow. Dredging without barge overflow causes water to accumulate on the barge. The application lacks information on dredge water handling methods and where the dredged material will be dewatered prior to disposal. Additionally, the application lacks information on where contaminated dredge material will be disposed of.

Further, these Class C sediment contaminants have not been modelled for water column concentration at the edge of the mixing zone. The model should be run to determine the predicted water column concentration of any such resuspended sediment contaminants at the edge of the mixing zone.

#### 3.2.2 Hydrostatic Testing Materials

Section 2.3.3.8 of the DEIS indicates that an oxygen scavenger, non-oxidizing biocide, and non-toxic florescent dye would be added to the hydrostatic test water in the pipeline and then discharged into the ocean following the completion of the hydrostatic testing. The discharge of hydrostatic test water may require a State Pollutant Discharge Elimination System (SPDES) permit from New York State. A SPDES application needs to be submitted to the NYSDEC.

#### 3.2.3 Harmful Algal Blooms (HABs)

Impacts of the project to influencing conditions conducive to encouraging harmful algal blooms in Raritan Bay have not been assessed at all. The occurrence of large scale blooms of phytoplankton is mentioned (4-94) but there is no further assessment of how the project impacts may influence conditions that may or may not be favorable for blooms of species, like dinoflagellates, that are known to produce toxins that are harmful to shellfish, other marine life, and humans. Without addressing this issue, the DEIS does not adequately evaluate all aspects of the environment and community that may be impacted by the NESE project. Further detail about impacts of HABs is discussed in the analysis of Essential Fish Habitat water sampling (Sect. 1.4 of this letter).

#### 3.3 Wildlife and Aquatic Resources

#### **3.3.1** Benthic Communities

Transco has also severely underestimated the benthic resources directly disturbed by the project area. Transco's analysis seems to only account for the 2-dimensional surface area of the benthic substrate relative to the entire Raritan Bay. The project is proposed to happen in the 3-dimensional real-world and the actual area of direct impact should at very least include the entire volume/space of excavated sediment, the surface of the water above it, the entire water column in between, and any part of the water column and benthic substrate affected by any sediment plume; more accurate impacted areas should also include any area/space where supplemental backfill is sourced and other sediment disposal sites, along with any water column and sediment plume areas associated with these activities as well.

#### 3.3.1.1 Benthic Resources and Mitigation Plan

Though monitoring and mitigation is mentioned in the DEIS (p4-114), no actual detailed monitoring plans have been submitted to properly assess the post-construction impact. Plans need to be in place to be properly prepared in the event that certain planned thresholds (noise, sediment disturbance, etc.) are exceeded. Monitoring is stated to be required, but not any remediation measures should the monitoring reveal that their initial mitigation has failed. Remediation and mitigation strategies that would be outlined in such plans would have to be based on detailed quantitative analysis of each impact and these are missing.

The project will unavoidably impact soft-bottom benthic habitats, including areas within the NYSDEC Special Permit Harvest Area for Hard Clams. Impacts to benthic resources, including shellfish, need to be fully assessed and mitigated for. The application provides only a draft mitigation framework for proposed compensatory mitigation. The application lacks detail on the extent of the proposed impacts to benthic resources, including shellfish; proposed compensatory mitigation measures; and performance measures for ensuring mitigation measures are successful.

#### 3.3.1.2 Clams

FERC's analysis uses outdated data, a study from 1983, to help prove that the pipeline's impact would be low. This is highly manipulative and does not reflect the urgent need to protect historic improvements (p4-116). When compared to a 2001 study by the NJDEP, FERC's analysis of potential PCB concentrations in hard clams indicates that those amounts would be three times as high as the maximum amount found in 2001.

The construction of the pipeline trench will severely compromise the clam population in many ways and further impair the ecologic services that are critical to the health of the Raritan Bay. The analysis of these species is also suspect. Hard clam densities studied by Transco show a large standard deviation for the data in the Alternative Route samples, skewing the possible interpretation of the data. Nonetheless, the number of sampling sites compared for hard clam density is relatively small (22 from preferred and 18 from alternative, from 69 total sampling sites along the preferred route) and not very divergent from the preferred route (many of the sites sampled as the alternate route are within the preferred route temporary workspace and will be impacted by construction on the preferred route anyway).

Furthermore, despite the fact that the preferred alternative routes are stated to be selected to avoid high clam density areas, this is only on the NJ side of the Bay. Information supplied by NY DEC indicates that the preferred routes go through areas of clam populations that are infected with Quahog Parasite Unknown (QPX) disease. Though this may decrease the possibility of harvesting healthy clams by recreational and commercial fishermen, it does present a serious risk to the rest of the clam populations through the rest of the bay, especially if the NESE is allowed to proceed. QPX disease is considered to be routinely present in sediment and waters throughout the range and doesn't cause disease until there is extraneous environmental stress. Heavy disturbance of sediment, particularly the release of contaminated sediments into the water column, would constitute "extraneous environmental stress." Disturbance of the sediment can also disperse infected individuals as well, creating a more likely possibility of these individuals infecting other nearby clams.

In addition to QPX disease, the waters of Richmond and Queens Counties NY in which the pipeline expansion is planned are listed as "uncertified," which means that these shellfish lands are in such unsanitary condition that the shellfish thereon shall not be taken for use as food. Similar determinations have been made for NJ Shellfish Growing Water Classifications Areas in the waters of Monmouth County where the pipeline is planned. Removing clams from these areas further depletes the ecosystem's ability to filter out the contaminants that are causing this determination to begin with, further impairing the environment's natural ability to recover from anthropogenic pollutant inputs that already exist. Of the hard clams found in the area, 76% are measured as in the "small" category; therefore, any impact will have a major effect on recruitment. Transco states that "No hard clam harvesting has occurred in the area since 2013, although NYSDEC may reinitiate the transplantation program in the future if it again becomes economically feasible for commercial harvesters (Barnes 2016)."<sup>22</sup> However, at a 100% mortality rate to impact any sedentary benthic organism, it will not return to being economically viable since the Project Area goes right through areas of high QPX incidence and QPX is known to break out when the host is compromised.

There has been no evaluation of the project's potential impact on clams' susceptibility to QPX disorder. The preferred route proceeds through areas of high incidence of QPX in hard clams along the route through NY waters off the coast of Staten Island. The clam harvesting

<sup>&</sup>lt;sup>22</sup> Williams – Transco. 2017. Northeast Supply Enhancement Project Joint Application to the United States Army Corps of Engineers, Appendix F: Coastal Zone Consistency Assessment. 170p.

industry will not recover as anticipated if further impacted by QPX. There is no analysis of these impacts or mention of this disease.

#### 3.3.1.3 Horseshoe Crabs, Limulus polyphemus

Information in the DEIS related to horseshoe crabs is from relatively old survey data (Sect. 4.5.2.4, p4-101). Potential impacts are qualitative in nature and there are no detailed studies done directly on existing populations. Potential impacts presented are minimal and not supported by current data.

Transco's DEIS overlooks any serious impact to the American horseshoe crab (*Limulus polyphemus*) populations of Raritan Bay. Larger, more notable breeding populations exist elsewhere in NJ and NY; however, several studies (including those done by the National Park Service) document small but viable breeding populations in portions of NY and along the southern coast of Raritan Bay in NJ. All of these areas would be impacted by the Transco NESE pipeline project. Due to the nature of the size of the Limulus populations that occupy Raritan Bay and nest on the surrounding shorelines, any impact to the benthic environment would have significant and potentially irreversible impacts on habitat, food resources, and recruitment.

Other studies document how the male:female ratio of breeding animals specifically in Raritan Bay ranges from 15:1 to 30:1; the average male:female ratio for horseshoe crabs is between 5:1 and 10:1. This was caused by a rapid decline in the number of females in Raritan Bay over a 5 year period and underscores how vulnerable the population is in the project area. In Cliffwood Beach, NJ, it was reported that there were 1,066 males and only 8 females in 2017, further emphasizing the species vulnerability in the area.

The species is mentioned in the DEIS but impacts are trivialized and unsubstantiated. *L. polyphemus* is listed on the International Union for Conservation of Nature (IUCN) Redlist as Vulnerable (one step below Endangered) and the top "Actions Needed" listed are "site/area protection" and "Resource & habitat protection." A moratorium was instated by the state of NJ in 2007, but no such protections currently exist in NY. This puts the crab population under severe threat in Lower NY Bay, including Raritan Bay and Sandy Hook Bay. Transco reports that there is little information on seasonal horseshoe crab abundance within workspaces and does not anticipate the project to affect the nearest spawning areas, citing Jamaica Bay as one such area. However, a group of volunteers associated with the Bayshore Regional Watershed Council have been monitoring horseshoe crab populations for 10 years at 5 sites along the southern Raritan/Sandy Hook Bay complex, including Conaskunk Point in Union Beach NJ and Cliffwood Beach in Aberdeen Township NJ. These locations are much closer to the project area and are more likely to be impacted by excavation activities.

In addition to affecting the crab populations themselves, impacts to the horseshoe crabs would also affect other commercially and recreationally important marine species. Horseshoe crab eggs and larvae are a seasonal food item of invertebrates and finfish. From May through August, striped bass (*Morone saxatilis*) and white perch (*Morone americana*) eat horseshoe crab eggs. American eel (*Anguilla rostrata*), killifish (*Fundulus spp.*), silver perch (*Bairdiella*)

chrysoura), weakfish (Cynoscion regalis), kingfish (Menticirrhus saxatilis), silversides (Menidia menidia), summer flounder (Paralichthys dentatus), and winter flounder (Pleuronectes americanus) also eat eggs and larvae. All crab species and several gastropods, including whelks, feed on horseshoe crab eggs and larvae. The construction of the pipeline would disturb habitat (including foraging sites and mating migratory sites for horseshoe crabs), decrease horseshoe crab populations, and degrade the overall aquatic food web in Raritan Bay and Lower New York Bay.

#### 3.3.2 Fisheries Resources

The DEIS lacks sufficient detail to discuss how impacts to Atlantic sturgeon (*Acipenser* oxyrinchus oxyrinchus) and winter flounder (*Pseudopleuronectes americanus*) will be avoided. Activities including pre-lay dredge, hand jetting, pile driving, and use of a vibratory hammer are proposed during aggregation, migration, and spawning periods. Additional information is needed to determine if these activities will adversely impact these species and result in an incidental take. As stated in the DEIS, "Direct impacts [of pipeline construction] would include mortality, injury, or temporary displacement of the organisms living on, in, or near the seafloor. Indirect impacts would include suspension of sediments in the water column, which could clog fish gills and obscure visual stimuli, and the redistribution of sediments that fall out of suspension, which could bury benthic and demersal species, resulting in mortality of eggs and other life stages. Benthic invertebrates and demersal (bottom-dwelling) fish species in or near the excavation area would be most affected" (4-105). These particular impacts would severely impact not only fish that are present but also impact recruitment and future fisheries either directly (by destroying eggs and spawning habitat) or indirectly (by completely deterring fish from inhabiting and spawning in the area).

Other impacts to fisheries involve noise and acoustic disturbance. FERC acknowledges but does not adequately address the fact that construction noise could cause permanent damage to fish auditory systems, affecting their survival, growth, and reproduction. FERC acknowledges but does not adequately address the fact that construction noise could disrupt not only physiological processes but also behavioral patterns of marine wildlife (such as migration, breathing, breeding, and feeding) up to 2.9 miles from the sound source. Several species of fish -- such as the striped bass -- are migratory, moving into freshwater to spawn and then back into saltwater. Being very sensitive to noise and vibration, fish migratory patterns will be disrupted by construction and this, in turn, will impact their survival and recruitment.

#### 3.3.3 Marine Mammals

There are many elements of the Transco NESE project that will impact marine mammals as they do other marine wildlife. Contaminated sediments are one of those elements. Polychlorinated biphenyls (PCBs) have been associated with toxic effects in marine mammals such as endocrine disruption, which can cause impairment of reproduction, development, and other hormone-mediated processes. FERC only analyzes the impact of PCBs on two species. Marine mammals, including whales and seals, have recently returned to NY Harbor. Humpback whale sightings have increased from only 1 between 2011-2013 to 45 between 2014-2016 and have been recorded in every season except for winter. As mentioned for fish, whales too are vulnerable to noise and vibration and have an additional risk of being hit by ships. The northwestern New York Bay is a feeding ground for juvenile humpback whales. Approximately 80-120 seals live in the waters off Sandy Hook and have been sighted in Raritan Bay and Staten Island. A reduction in prey due to increased noise levels may lead to displacement of the seals and whales.

#### 3.3.4 Essential Fish Habitat

In order to analyze potential impacts to Essential Fish Habitat (EFH), samples taken to evaluate water quality were collected during November and December of 2016. The Raritan-Sandy Hook Bay complex drain a watershed of approximately 3,630 square kilometers (1,400 square miles), not including the Hudson, Hackensack, or Passaic Rivers (of which the lower Hudson alone drains approximately 4,982 square miles of land). This is an enormous amount of land that is densely populated and contributes a significant amount of runoff and nutrient loading at different times of year. The samples reported do not reflect conditions throughout the construction period and represent a gross underestimate of what peak discharge, runoff, and nutrient loading rates would be - all of which affect water quality parameters as well as currents that would influence pipeline trench excavation site erosion potential. This is an obvious oversight and would not only affect the results of water quality parameters and the bay's flow characteristics, but also the impact of changes in water quality by construction activities throughout the rest of the year on the water column as marine habitat.

The water quality characteristics measured in November-December also include indicators of biological hazards in the water like bacteria counts, chlorophyll-a, nitrogen, TSS, and dissolved oxygen. These factors are used to predict and manage harmful algal blooms (HABs), which pose not only a stressor to the environment, but also a public health risk. As runoff increases in the spring months, the nutrient load to the bay increases, which provides better conditions for increases in phytoplankton (the organisms responsible for HABs) numbers. By reporting water quality data for November-December only, the risk of the project increasing the occurrence and frequency of HAB is significantly underestimated. This is extremely irresponsible as it puts the public unnecessarily at much greater risk of exposure to biotoxins in the water, which are less anticipated based on the reported findings. The Draft EFH claims, "While HABs can cause adverse ecological impacts such as fish kills, most observed impacts are typically aesthetic and only minor irritations have been known to occur in humans (Gastrich 2000)."<sup>23</sup> However, many studies more current than 18 years ago have shown that exposure to biotoxins can cause more severe health issues than minor irritations; recent studies have also begun to show that there are correlations between chronic exposure to HABs and their resulting biotoxins and neurodegenerative disorders.

<sup>&</sup>lt;sup>23</sup>Williams – Transco. 2017. Northeast Supply Enhancement Project Joint Application to the United States Army Corps of Engineers, Appendix L: Draft Essential Fish Habitat Assessment. 196p.

Any other data used for comparison (e.g. NJDEP Monitoring Summary Data table, 1989-2007) are broad descriptive statistics which mask any seasonal fluctuations crucial to any proper analysis of impact.

Interestingly, Transco reports that the dominant shellfish community in NY waters near the Rockaway Delivery Lateral Project Transfer Point was the Atlantic Surfclam (*Spisula solidissima*) but that post-construction surveys show that concentrations of surfclam are declining in this area. The decline has also contributed to substantial decreases in harvesting due to small surfclam sizes. If Transco's NESE project is allowed to proceed, further harm will be imposed on the already vulnerable surfclam populations of both NJ and NY.

There is no plan to avoid or minimize the impact to benthic habitat or suspension of sediment from the exposed pipeline trench. Little to no effort is made to use data to find any other means to minimize impact other than adjusting Transco's construction schedule; this is, of course, dependent on when it is practicable. Otherwise, no alternative avoidance or minimization measures are given when the presented ones are not practicable.

#### 3.3.5 Threatened & Endangered Species

FERC provides various recommendations on items that need to be filed by Transco before any construction can occur. It should be clearly stated that concurrence on impacts needs to be received by NMFS, USFWS, NJDEP, NYDES, and PADEP with their Section 7 consultation letters and impact determinations (p4-114, p4-176).

#### 3.3.5.1 Sturgeon

Impacts to sturgeon species are of particular interest due to the species' conservation status and habits as a benthic forager. The release of toxic sediments would disturb the recovery of Atlantic sturgeon, in particular, which have been making a slow comeback over the last decades. Rockaway Bay is a major habitat for Atlantic sturgeon, as FERC acknowledges (4-168). Atlantic sturgeon feed on bottom-dwelling invertebrates. FERC acknowledges that those species—clams, crustaceans, etc.—would be the most directly and adversely impacted by construction. FERC estimates that it would take 1-3 years for these species to recuperate (4-137). The impacts of the 3-12 hours per day of construction activity on the Sturgeon's habitat will not only expose them to plumes of toxic sediments (given that Sturgeon consume large amounts of mud and sand as they feed) but also reduce and poison their prey. FERC does not adequately address the long-term implications of any of this.

#### 3.3.5.2 Whales

As with other marine mammals, the construction site will disrupt and potentially harm the whales themselves. Whales are making a comeback to waters around NYC. Construction noise, activity, and pollution could reverse the recovery process while also affecting the related economic activity of whale watching cruises.

### **3.3.6 Land Use and Contaminated Sites**

#### 3.3.6.1 Sediment Disposal

It appears that the only sediment that will be tested for contaminants will be the material not side-cast by clamshell bucket or blown out by jet trencher. This shows a severe lack of evaluation of excavated material content. The DEIS does not clearly address this issue.

### 3.3.7 Socioeconomics

### 3.3.7.1 Use of Fishing Grounds

Effects to the benthic habitat, clam populations, and crab populations will further adversely impact the recreational opportunities available to people by negatively impacting fishing grounds as a result of the effects to the species mentioned above. Recreational fishing and boating in this area is a significant economic driver and the estimated impact of decreased fish populations and restricted access to fishing grounds due to construction vessel traffic in terms of income to the tourism industry and local fishery was not clearly calculated. In addition, the increased disturbance of benthic sediments can contribute to nutrients being resuspended and to HABs, which are known to cause fish-kills through anoxic conditions. Aside from disrupting the available population of fish for harvest, this situation also will deter people using the water for recreation since, as mentioned earlier, HABs and their associated biotoxins are known to affect human health and be aesthetically unappealing.

More specifically, one concern is that the preferred alternative unnecessarily goes through a fishing area known as the Tin Can grounds as well as the Ambrose Channel fishing area. No explanation is provided as to why the preferred alternative route could not be located adjacent to -- but not actually in -- those areas.

Commercial fishers would need to retrieve equipment within the project area prior to construction. This would be particularly hard on shellfish harvesters, who may have a lot of equipment in a single area. Having to reset equipment in a new area would force these harvesters to lose days of crucial income. The DEIS says it will "discourage" activity in "informal construction safety zones," yet makes no mention of how it will do this in such a high-trafficked area.<sup>24</sup>

#### 3.3.7.2 Economic Impact to Fishery

There is no clear evaluation of how the impacts to benthic and demersal marine species will also impact the economics of the local recreational and commercial fishing industry. Since the currently planned project is stated to intersect with 7 fishing grounds, it is critical to

<sup>&</sup>lt;sup>24</sup>FERC DEIS p 4-249.

understand how the environmental impacts translate into economic impacts on industries that are dependent on those marine resources as well. These economic analyses are missing and critical to a complete evaluation of impact, as economics drive human impact on particular resources -- particularly marine recreational resources.

Furthermore, the DEIS recognizes that key fisheries may be affected by the construction of this pipeline; it asks Transco to inform FERC by the end of the comment period about its plans to restrict construction to allow for key periods when selected species migrate and/or spawn (p. 4-114). Without this information in the DEIS, people with knowledge of these fisheries cannot evaluate whether Transco's plans will be adequate.

#### 3.4 General Construction Concerns

In the DEIS there is frequent use of the phrase "to the extent practicable"; in these instances, however, there is no mention of any alternative or preventative measure to be taken when protocol is <u>not</u> practicable. Continuing the project even when avoiding violation of various state and federal laws is not practicable is unacceptable.

It was not made clear what the actual demand will be for natural gas in 2019/2020, and therefore not particularly evident as to the actual need for the pipeline expansion. According to the Department of Energy's 2015 Quadrennial Energy Review, 46% of gas pipeline capacity in the United States is unused and improving the flexibility and capabilities of current infrastructure is a better investment in many parts of the country. Therefore, the offset of the negative impact of offshore pipeline expansion by the need for more utility infrastructure traversing sensitive marine ecosystems is not clear and it is questionable as to if it is even necessary.

There was an insufficient explanation of the stated amount of impact that would be created for the other alternative routes, particularly the option to follow the existing LNYBL cable. The impacts of that route are imposed on the area. There is little data to indicate that it would be unsafe to work in this area or that their work would disturb the current delivery of natural gas, given a safe working distance.

#### 4.0 Summary

Based on Princeton Hydro's review of the information in the DEIS, we have found there to be many areas that lack the necessary information, data, and analysis needed to determine the true extent of potential impacts of the Transco NESE project to the community and the environment, both in NY and NJ.

The onshore portion of the project -- including the Madison Loop and Compressor Station 206 -- has significant deficiencies regarding full compliance with New Jersey's environmental regulations. With regard to Compressor Station 206, the issues begin with FERC's reliance on Transco poorly conceived alternative analysis which resulted in the selection of a site with significant wetland impacts and site-specific constraints that complicate the development of the site. Specifically, Transco's current stormwater design fails to meet the minimum standards required by the NJDEP. It is also our position that Transco has relied on rhetoric to address regulatory requirements but has yet to show that they have truly analyzed each area of impact to regulated resources and minimized these impacts to the extent practicable. The DEIS prematurely concluded on page 5.25 that FERC has "determined that Transco's proposed Project, as modified by our recommended mitigation measures, is the preferred alternative than can meet the Project objectives".

With regard to the offshore portion of the project, the construction of the Project could have significant water quality impacts in Raritan Bay. This includes potentially significant impacts from the resuspension of sediments and other contaminants, as well as to habitats due to the disturbance of shellfish beds and other benthic resources. In addition, the construction of the Project could potentially impact Atlantic sturgeon and other protected species, depending on the timing and methodology of construction. While these and other impacts from the Project could be significant, the precise nature and magnitude of such impacts is uncertain at this time and depends on additional details regarding the construction of the Project.

Sincerely,

Jack Szczepanski, Ph.D. Senior Aquatic Ecologist

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Mark Gallagher Vice President

See attached: Appendix A, Transco Wetland Maps, and Appendix B, LIDAR Generated Topography for Transco Parcels 8 and 27.

Appendix A Transco Wetland Maps



#### TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC

#### **ATTACHMENT 5**

### REVISED NJDEP LAND USE PERMIT PLANS FOR THE NESE PROJECT – CS206 FRESHWATER WETLANDS AND FLOOD HAZARD AREA PLANS

(ATTACHED SEPARATELY)

NORTHEAST SUPPLY ENHANCEMENT PROJECT

JANUARY 2018

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Data Sources: NJDEP 2012; Williams 2017; E&E 2017; ESRI 2012, 2017.

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Data Sources: NJDEP 2012; Williams 2017; E&E 2017; ESRI 2012, 2017.

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NUMBER OF

- CS 206 Alternative 8 Workspace Permanent Workspace
- Temporary Workspace
- Parcel Boundary
- Waterbody Polygon Waterway Polygon PEM Wetland

PFO Wetland

- XX Remotely Sensed NJDEP Letter of Interpretation/ Line Verification Data

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Feet



NEW JERSEY

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#### Legend

- === Existing Transco Mainline-C
- · · County Boundary
- Permanent Workspace
  - Parcel Boundary
- -- Waterway/Waterbody Buffer Data Source - Wetland Buffer CS 206 Alternative 27 Workspace Waterbody Polygon Waterway Polygon
  - PEM Wetland PFO Wetland
- Field Surveyed
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Data Sources: NJDEP 2012; Williams 2017; E&E 2017; ESRI 2012, 2017.

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Data Sources: NJDEP 2012; Williams 2017; E&E 2017; ESRI 2012, 2017.

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# Appendix B LIDAR Generated Topography for Transco Parcels 8 and 27

