



July 31, 2019

US Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

Submitted via email to Lawrence Slavitter: lawrence.m.slavitter@usace.army.mil

**Re: CENAP-OP-R-2016-0181-39 -- Gibbstown Logistics Center Port Expansion,
Supplemental Public Notice.**

To Whom It May Concern,

Delaware Riverkeeper Network (DRN) submits this comment in opposition to the approval of **CENAP-OP-R-2016-0181-39** on behalf of our approximately 20,000 members throughout the Delaware River Watershed including residents in the closest Gloucester County communities. The Delaware Riverkeeper Network (DRN) is a private non-profit membership organization, championing the rights of our communities to a Delaware River and tributary streams that are free flowing, clean, healthy, and abundant with a diversity of life.

Delaware River Partners (DRP), for New Fortress Energy, has applied for permits to build a second dock with two additional ship berths at the Gibbstown Logistics Center (Logistics Center). Originally billed as a warehouse-type terminal with one dock and one berth, the Logistics Center was going to handle automobiles, dry and refrigerated cargo and natural gas liquids (NGL). The current project proposes to store and export bulk liquids such as natural gas liquids (NGL) like propane and butane on site, utilizing above ground tanks and the old cavern built by DuPont for the manufacture of explosives decades ago. The new proposal by DRP is for an additional dock and berths intended to handle Liquefied Natural Gas (LNG) for export.

The Delaware Riverkeeper Network appreciates that in response to the comments we have submitted, as well as a meeting with staff, that the US Army Corps of Engineers has provided this additional public notice with additional details and time for public comment.

The Army Corps must Secure Complete and Final Information Regarding the Scope, Size, Capacity, Feasibility, and Design of the Project in order to Meaningfully Assess its Impacts and to be able to Fulfill its NEPA and Legal Review Obligations.

It is notable that this most recent Army Corps notice:

- confirms that Dock 2 is to be constructed for purposes of serving LNG exports from the site;
- LNG will be transported to the site via truck and rail;
- that the level of truck traffic generated by this new primary use is “approximately 13 trucks per hour ... 24/7” and 15 trucks per hour for both LNG and Liquefied Hazardous Gas (LHG)
- that each truck will carry approximately 12,000 gallons of product;
- That ship loading time will be approximately 2 weeks;
- That a new access road is proposed for construction to the site at some point in the undetermined future. The current access road is located approximately 110 feet from the nearest township residential community with loading and unloading operations taking place a minimum of a mile from residential communities. Future transloading of LNG from trucks to ships will be located about 1 mile from the residential community, which includes a day care center, the Greenwich Township Broad Street Public School, Little League athletic fields, public buildings and other community locations.

It is important to note that the supplemental Public Notice for the Logistics Center port expansion is only examining Dock 2 with two new berths and the activities and operations related to Dock 2. Dock 1 has been approved and will result in impacts that must be considered in concert with Dock 2. The precise activities and volume of operations on the water, at the Docks and on the land for Dock 1 are unknown at this time as the facility operations are being revised by the applicant. A new site plan application is expected to be submitted but has not yet been submitted to Greenwich Township Planning and Zoning Board according to Gibbstown Township municipal government staff. There is also an approval required from Gloucester County. Details about the operations related to Dock 1 may be clearer after the local government processes are complete. Additionally, the draft NJDEP Waterfront Development Permit has been proposed and a public comment period has been completed but any changes to the Logistics Center based on the state permitting agency are also unknown at this time.

The Army Corps must be sure to Consider the Following Items while Conducting its Public Interest Review.

Under 33 CFR 320.40 (a)(1), Public interest review,

“The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest. Evaluation of the probable impact which the proposed activity may have on the public interest requires a careful weighing of all those factors which become relevant in each particular case. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so, the conditions under which it will be

allowed to occur, are therefore determined by the outcome of this general balancing process. That decision should reflect the national concern for both protection and utilization of important resources. All factors which may be relevant to the proposal must be considered including the cumulative effects thereof: among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people. For activities involving 404 discharges, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(1) guidelines. Subject to the preceding sentence and any other applicable guidelines and criteria (see §§ 320.2 and 320.3), a permit will be granted unless the district engineer determines that it would be contrary to the public interest.”

As identified in the supplemental notice, the Army Corps must review the following Public Review Interest Factors when evaluating the permit application.

- Conservation
- Economics
- Aesthetics
- General Environmental Concerns
- Wetlands
- Historic Properties
- Fish and Wildlife Values
- Flood Hazards
- Floodplain Values
- Land Use
- Navigation
- Shore Erosion and Accretion
- Recreation
- Water Supply and Conservation
- Water Quality
- Energy Needs
- Safety
- Food and Fiber Protection
- Mineral Needs
- Consideration of Property Ownership
- Needs and Welfare of the People

A. The Army Corps must Evaluate the Project’s Potential Impacts to Water Quality.

The Army Corps must consider impacts to water quality during its review as required by 33 CFR 320.4(d):

(d) Water Quality. Applications for permits for activities which may adversely affect the quality of waters of the United States will be evaluated for compliance with applicable effluent limitations and water quality standards, during the construction and subsequent operation of the proposed activity. The evaluation should include the consideration of both point and non-point sources of pollution. It should be noted, however, that the Clean Water Act assigns responsibility for control of non-point sources of pollution to the states. Certification of compliance with applicable effluent limitations and water quality standards required under provisions of section 401 of the Clean Water Act will be considered conclusive with respect to water quality considerations unless the Regional Administrator, Environmental Protection Agency (EPA), advises of other water quality aspects to be taken into consideration.

This review also requires that the Army Corps look to applicable federal and state laws and regulations. 33 CFR 320.4(j)(1) requires:

(j) Other Federal, state, or local requirements.

(1) Processing of an application for a DA permit normally will proceed concurrently with the processing of other required Federal, state, and/or local authorizations or certifications. Final action on the DA permit will normally not be delayed pending action by another Federal, state or local agency (See 33 CFR 325.2 (d)(4)). However, where the required Federal, state and/or local authorization and/or certification has been denied for activities which also require a Department of the Army permit before final action has been taken on the Army permit application, the district engineer will, after considering the likelihood of subsequent approval of the other authorization and/or certification and the time and effort remaining to complete processing the Army permit application, either immediately deny the Army permit without prejudice or continue processing the application to a conclusion. If the district engineer continues processing the application, he will conclude by either denying the permit as contrary to the public interest or denying it without prejudice indicating that except for the other Federal, state or local denial the Army permit could, under appropriate conditions, be issued.

As it stands, the Logistics Center does not meet the requirements of the Coastal Zone Management Rules (CZM NJAC 7:7), the NJ Department of Environmental Protection Flood Hazard Area Control Act Rules (FHACA Rules NJAC 7:13), and does not satisfy the provisions of the NJ State Individual Water Quality Certificate and NJ Tidelands License. Nor has the project complied with the NJ Toxic Catastrophe Prevention Act (TCPA NJAC 7:31).

i. The Projects Ability to Comply with the Coastal Zone Management Act as well as Other State and Federal Laws that Impact Water Quality Compliance Must be Evaluated.

For the Public Interest Review, Army Corps is required to consider impacts to coastal zones, 33 CFR 320.4:

(h) Activities affecting coastal zones. Applications for DA permits for activities affecting the coastal zones of those states having a coastal zone management program approved by

the Secretary of Commerce will be evaluated with respect to compliance with that program. No permit will be issued to a non-federal applicant until certification has been provided that the proposed activity complies with the coastal zone management program and the appropriate state agency has concurred with the certification or has waived its right to do so. However, a permit may be issued to a non-federal applicant if the Secretary of Commerce, on his own initiative or upon appeal by the applicant, finds that the proposed activity is consistent with the objectives of the Coastal Zone Management Act of 1972 or is otherwise necessary in the interest of national security. Federal agency and Indian tribe applicants for DA permits are responsible for complying with the Coastal Zone Management Act's directives for assuring that their activities directly affecting the coastal zone are consistent, to the maximum extent practicable, with approved state coastal zone management programs.

Under New Jersey Law, LNG Specific issues must be analyzed according to the mandates in 7:7-15.4(s), which states:

(s) Standards relevant to liquefied natural gas (LNG) facilities are as follows:

1. New marine terminals and associated facilities that receive, store, and vaporize liquefied natural gas for transmission by pipeline are discouraged in the coastal zone unless a clear and precise justification for such facilities exists in the national interest; the proposed facility is located and constructed so as to neither unduly endanger human life and property, nor otherwise impair the public health, safety and welfare, as required by N.J.S.A. 13:1910f; and such facilities comply with the Coastal Zone Management rules.

i. LNG facilities shall be sited and operated in accordance with the standards set forth in the Natural Gas Act of 1938, 15 U.S.C. §§ 717-717z, the Natural Gas Policy Act of 1978, 15 U.S.C. §§ 3301-3432, the Outer Continental Shelf Lands Act, 43 U.S.C. §§ 1331 et seq., the Energy Policy Act of 1992, P.L. 102-486, 106 Stat. 2776, October 24, 1992, and the National Environmental Policy Act, 42 U.S.C. §§ 4321 et seq., which set forth standards for siting, design, installation, inspection, testing, construction, operation, transportation of gas, replacement, and maintenance of facilities.(Emphasis added)

ii. In determining the acceptability of proposed LNG facilities the Department will consider siting criteria including, but not limited to:

- (1) The risks inherent in tankering LNG along New Jersey's waterways;*
- (2) The risks inherent in transferring LNG onshore; and*
- (3) The compatibility of the facility with surrounding land uses, population densities, and concentrations of commercial or industrial activity.*
(Emphasis added)

iii. New LNG facilities that liquefy, store and vaporize LNG to serve demand during peak periods shall be located in generally remote, rural, and low-density areas where land use controls and/or buffer zones are likely to be maintained.

2. Rationale: The Pipeline Safety Act of 1979, P.L. 96-129, amended the Natural Gas Pipeline Safety Act of 1968 and sets forth requirements for the safe operation of pipelines transporting natural gas and liquefied petroleum gases, and provides standards with respect to the siting, construction, and operation of liquefied natural gas facilities. The State recognizes the responsibilities of various federal agencies, including the U.S. Coast Guard and Office of Pipeline Safety Operations in the U.S. Department of Transportation, the Economic Regulatory Administration in the U.S. Department of Energy (US DOE), and the independent Federal Energy Regulatory Commission within USDOE, for management of various aspects of the siting and operations of LNG facilities.

Importation facilities for LNG are discouraged in view of the present sources of LNG from politically unstable countries. The use of natural gas for base load electric generation purposes is consistent with the Power Plant and Industrial Fuel Use Act of 1978, P.L. 95-620. The availability of domestic sources of LNG and a demonstrated need that such importation facilities are in the national interest dictate the consideration of applications for such facilities on a case-by-case basis.

The tankering, transfer, and storage of LNG pose significant risks to public health, safety and welfare and may cause serious adverse environmental impacts which may not be restricted to one state, given the likely potential locations of LNG terminals along interstate waterway. New Jersey therefore recommends that the siting of LNG facilities be treated as a regional issue on an interstate basis.¹(Emphasis added)

The newly proposed Logistics Center LNG export terminal, including pipelines that will take the gas from tanker trucks to vessels, for the purpose of receiving, storing for 15 days on the vessel during loading operations, for export raises serious and significant concerns for the environment, human life, the public safety and welfare, and for property. Given that the gas may be bound for foreign nations it cannot be argued to be in the national interest, rather it is being proposed and advanced solely for corporate gain. The construction of the proposed Logistics Center LNG export facility is a clear danger to safety in our region, including those communities and shippers that will be passed along its route.

ii. The Negative Impacts from the Expansion of Tanker Terminals must be Adequately Assessed.

The Dock 2 expansion of the terminal triples the number of the berths available for ships and ship traffic to and from the deepwater port – while the previously approved Dock 1 project included 1 shipping berth, Dock 2 adds 2 more, thereby increasing dramatically the capacity of the site. The New Jersey Waterfront Development (NJWFD) permit application states that the expected volume of “new” liquid cargo ships to Dock 2 is 37 vessels per year with 370 total dock days for Dock 2.² This is in addition to 100 vessels of other cargo from Dock 1, which includes

¹ 7:7-15.4(s).

² Application For Waterfront Development Individual Permit, Project: DRP Gibbstown Logistics Center (Dock 2), Applicant: Delaware River Partners LLC, 200 North Repauno Avenue, Block 8, Lot 4, Greenwich Township,

some additional bulk liquids, with 290 total dock days for Dock 1 according to Table 1.³ In the application at Section 4.4, it is stated that the shipping vessels will be “new vessels on the Delaware River”. Clearly, these “new vessels” must be carefully considered and the potential impacts to shipping and the Delaware River must be assessed in order to satisfy the implementing rule. This subsection is clearly applicable to the Logistics Center.

The relevant subsection 7:7-15.4(q) states:

(q) Standards relevant to tanker terminals are as follows:

1. New or expanded tanker facilities are acceptable only in existing ports and harbors where the required channel depths exist to accommodate tankers. (Emphasis added)

i. Multi-company use of existing and new tanker terminals is encouraged in the Port of New York and New Jersey and the Port of Camden and Philadelphia, where adequate infrastructure exists to accommodate the secondary impacts which may be generated by such terminals, such as processing and storage facilities.

2. New tanker terminals are discouraged in areas not identified in (q)1 above. (Emphasis added)

3. Offshore tanker terminals and deepwater ports are discouraged.

4. Rationale: Onshore tanker facilities pose potential adverse environmental impacts and could encourage secondary development activity that is not necessarily coastal dependent. Also, even medium sized tankers require minimum channel depths of 30 feet, which excludes locations within the CAFRA area. New or expanded tanker terminals are therefore directed toward New Jersey's established port areas. Deepwater ports appear attractive to industry due to increasingly larger tankers, limitations on dredging and the scarcity of waterfront land. However, a deepwater port may, depending on its location, cause severe adverse primary and secondary impacts on the built, natural, and social environment. (Emphasis added)

We note that the information being provided to the various agencies differs, and so neither the public nor the Army Corps can properly assess this project based on the information provided to date. For example, as discussed above, while the NJWFD permit application states that the expected volume of “new” liquid cargo ships to Dock 2 is 37 vessels per year with 370 total dock days for Dock 2 suggesting 10 days loading time for each vessel, materials provided to the Coast Guard are clear that loading time will require a period of **at least** 15 days thereby requiring at least 555 dock days. Given that the LNG is going to be stored on the ships during the 15+ days of loading, the length of time at the dock is material and important, particularly from a public safety perspective.

Gloucester County, New Jersey, Alternatives Analysis, Dock 2, DRP Gibbstown Logistics Center, Gibbstown, Gloucester County, New Jersey, 2.2.4 Berth Demand At Gibbstown Logistics Center, Table 1, Pdf Page 218.

³ Ibid.

iii. The Storage of Crude Oil, Gases and Other Potentially Hazardous Liquid Substances, Presents Unique Dangers that must be accounted for.

The planned storage of Liquefied Hazardous Gas (LHG) in the on-site cavern, in tanks, sphere tanks, rail cars, trucks, and ships in the berths while they are being loaded for 10 to 15 days clearly requires the applicant to address the issues of the storage of gases and other hazardous bulk liquids under this subsection. While the terminal at the deepwater port is water-dependent, the amount and scope of storage, including the volumes that would be contained in all storage vessels at one time on the site (including the cavern, tanks, rail cars, trucks, ships and other containers on the site) must be fully disclosed, assessed in terms of management, handling, emissions and environmental impacts and must be justified due to proximity to the residential community of Gibbstown, the day care center, playground, school, athletic fields, churches, and public buildings adjacent to the Logistics Center property. In a Letter of Inquiry submitted by the applicant to the U.S. Coast Guard in November 2017, the description of the LHG project, which includes butane and other natural gas liquids, states that the LHG will arrive by rail cars and be transloaded to storage from a 20-rail car unloading rack with as many as 24 shipping vessels each year.⁴ It is important to note that the Letter of Inquiry was written when only one berth was planned; the additional two berths will increase the shipping traffic and the transport to the site, the storage in mobile containers and the activity on the site. As previously stated, the NJWFD permit application states that the expected volume of “new” liquid cargo ships to Dock 2 is 37 vessels per year with 370 total dock days for Dock 2. The volume of LHG, the full scope of the LHG project, the operations in light of other operations on the site, the management and the potential impacts of the LHG must be analyzed and considered. This subsection of the CZM rules may also be considered to apply to the LNG project operations.

The relevant subsection 7:7-15.4(p) states:

(p) Standards relevant to storage of crude oil, gases and other potentially hazardous liquid substances are as follows:

1. The storage of crude oil, gases and other potentially hazardous liquid substances as defined in N.J.A.C. 7:1E-1.1 under the Spill Compensation and Control Act (N.J.S.A. 58:10-23.11 et seq.) is prohibited on barrier islands and discouraged elsewhere in the CAFRA area.

2. *The storage of crude oil, gases and other potentially hazardous liquid substances is conditionally acceptable in the Urban Area, Northern Waterfront and Delaware River regions if it is compatible with or adequately buffered from surrounding uses. (Emphasis added)*

3. The storage of crude oil, gases and other potentially hazardous liquid substances is not acceptable where it would limit or conflict with a potential recreational use.

⁴ Letter to Captain Scott Anderson, Captain of the Port, USCG Sector Delaware Bay, from AcutTech, November 16, 2017.

4. The storage of crude oil, gases and other potentially hazardous liquid substances is not acceptable along the water's edge unless the storage facility is supplied by ship, in which case it is acceptable on the filled water's edge provided the storage facility complies with (p)1, 2 and 3 above.

5. Rationale: Major storage facilities for potentially hazardous substances are not entirely coastal-dependent and will not be permitted where storage might limit or conflict with recreational or open space uses of the coast.

iv. Changes in Construction and Operation Plans at the Site Are Yet to be Factored into the Applicant's Numerous Permit Applications.

Finally, DRN points out that the project, by the applicant's own admission, has substantially changed from when the plans were designed for one dock with one berth. These changes include but are not limited to:

- the addition of LNG
- the substantial expansion of ship traffic up to at least 37 shipping events per year from 24 for the bulk liquids originally
- the increase in the number of ships that can be accommodated at the 3 berths and increased shipping traffic
- the mixing of different operations such as LHG, LNG, and other cargo at the Gibbstown Logistics Center
- the increased activity at the site with additional transloading operations occurring simultaneously and the additional truck and rail deliveries into the site
- the additional equipment and facilities to be located on site due to bulk liquid handling
- the considerable increase in truck and rail traffic to carry in bulk liquids including LNG, LHG and other liquids such as crude oil and refined products that would be exported by ship
- the potential for increased storage capacity on the site, as yet undisclosed
- the question of how much shipping of other non-liquid RO/RO type cargoes will be done at Dock 1, considering that Dock 1 will also ship bulk liquids according to the application
- the internal traffic patterns that will change due to different cargos and different delivery and transloading systems
- the re-thinking of whether warehouse and other planned facilities for non-liquid cargo at the site are necessary

There are also questions regarding the need for other permitting and/or approvals by the project including, naming a few, approvals from the U.S. Coast Guard, the Federal Energy Regulatory Commission, the Pipeline and Hazardous Materials Safety Administration (PHMSA), U.S. Department of Transportation, and the Federal Railroad Administration. It is not disclosed whether any pipelines will be used, constructed, renovated, repurposed, or accessed through the project or for the project, which is important information that must be provided. A Department of Energy permit is listed as a needed permit in the Delaware River Basin Commission Docket for Dock 2 but it is not discussed in any documents that DRN has reviewed, demonstrating a lack

of transparency on the part of the applicants about the veiled plan to export LNG from the Logistics Center.

v. The Proposed Project Will Adversely Impact the Surrounding Environment Due to the Construction of Ports.

Ports are expected to be placed where other ports are or adjacent to other ports. The applicant maps regional port facilities but does not give full information about the ability of those ports to include the planned uses for Dock 2. In addition, buffering and compatibility with surrounding uses is of importance under this subsection. The subsection NJAC 7:7-15.9 states, in relevant part:

“(c) New port uses outside of existing ports as defined at N.J.A.C. 7:7-9.11(a) are acceptable only when there is a clear demonstration of need, and when suitable land and water area is not available in or adjacent to an existing port.

(d) New or expanded ports must be compatible with surrounding land uses and provide for maximum open space and physical and visual access to the waterfront, if this access does not interfere with port operations or endanger public health and safety. New or expanded ports must also not interfere with national, State, county or municipal parks, recreational areas, or wildlife refuges.

(e) New, expanded or redeveloped port facilities must have direct access to navigation channels of sufficient depth for anticipated vessel access, with minimal dredge and fill requirements, adequate access to road, rail transportation, and adjacent land with sufficient load bearing capacity for structures.”

The need for the activities related to LNG has not been addressed at all. LNG export has not been justified as a beneficial activity that would warrant the environmental, health and safety impacts of an LNG project at this location. This location has great benefit for natural resource reasons and, in a natural condition, has compatibility with surrounding land uses in this area. The residential nature of Gibbstown, located right up against the Logistics Center, homes, a day care center, playground, the Broad Street Public School, Little League athletic fields, the local VFW Post, Greenwich Township Municipal Building and Police Department, and the U.S. Post Office, and other community assets and attributes that make up the municipal setting of this community are not compatible with the industrial uses related to Dock 2 that are proposed at the site. In fact, the projected enormous increase of new truck traffic, the new and increased railroad operations into and from the site, the industrial transformation of the site from a now largely natural condition at the site and on the rest of the Repauno property, the lights, noise, odors, air emission, water quality degradation, and the health and safety threats from LNG as well as the additional LHG and other bulk liquids that are planned to be handled related to the approval of the project by the Army Corps, is a liability for the local community and will work against the protection, quality of life and community values of Gibbstown. Many people who live in Gibbstown and the surrounding area have never experienced industrial activity at this site due to at least one generation of the local population only knowing the site as a natural resource.

The applicant also does not explore what the property value impacts will be for people who own homes and property adjacent to the property and in the surrounding area. Those people and businesses that were required to be notified of the project were not given the full story and do not know about the LNG Project at the Logistics Center, making those notifications invalid. Notifications to the public and adjacent properties must be reissued with full and comprehensive information about the LNG Project included.

Residents of the area opposed LNG at the site when it was first proposed in 2016, which led to it being dropped by the applicant. It has now become clear that the applicant continued to secretly move ahead with LNG export at Gibbstown without disclosing this, leaving people who live in the area in the dark about the plans for the site. Of course, the public and, in some cases, agencies were also kept ignorant of the behind-the-scenes LNG Project that Delaware River Partners and New Fortress Energy was stealthily progressing. A news article about local concerns related to LNG at the Logistics Center site from 2016 was sent in a June 14, 2019 letter from DRN to the US Army Corps of Engineers Philadelphia District regarding this project.

vi. The Proposed Project Will Adversely Impact Marine Fish and Fisheries.

Activity that would adversely impact marine fish is discouraged. The unacceptable and unjustified harm to the Atlantic sturgeon, the shortnose sturgeon, and other fish and fisheries has the potential to have devastating, even catastrophic effects on these species that live in these marine waters. The subsection NJAC 7:7-16.2 states, in part:

7:7-16.2 – Marine fish and fisheries

(a) Marine fish are marine and estuarine animals other than marine mammals and birds.

Marine fisheries means:

1. One or more stocks of marine fish which can be treated as a unit for the purposes of conservation and management and which are identified on the basis of geographical, scientific, technical, recreational and economic characteristics; and
2. The catching, taking or harvesting of marine fish.

(b) *Any activity that would adversely impact the natural functioning of marine fish, including the reproductive, spawning and migratory patterns or species abundance or diversity of marine fish, is discouraged.* In addition, any activity that would adversely impact any New Jersey based marine fisheries or access thereto is discouraged, unless it complies with (c) below.” (Emphasis added)

These fish species will be adversely impacted and the critical habitat for the Atlantic sturgeon will be degraded through the Dock 2 activities. The applicant has not provided the protections that would prevent the harms that this subsection discourages in any materials provided to agencies thus far.

vii. The Proposed Project's Stormwater Management must be Evaluated to Ensure Adequate Protection of Groundwater.

7:7-16.6 – Stormwater Management

The project is required to comply with the NJ Stormwater regulations to prevent runoff, encourage infiltration of precipitation, and reduce flooding and adverse water quality and receiving stream impacts from increased volume and rate of stormwater and polluted runoff. The project has a general permit covering stormwater management but does not have a permit covering the industrial stormwater generated by the site. A NJ Pollution Discharge Elimination System (NJPDES) permit is required for the property, as confirmed by the Delaware River Basin Commission (DRBC) in its docketing of the Docket 1 original project in 2017 and the Dock 2 expansion in June 2019. The increase in volume and rate of flow of stormwater, the potential for pollutants to be carried in stormwater from the activities at the site, and the reduction of groundwater infiltration of precipitation are all impacts that are to be expected with the new impervious surfaces and the handling of dangerous materials at the Logistics Center. The day to day introduction of new hazardous materials such as NGLs and other liquid and dry cargo that may contain contaminants, the activities on the site that employ fuels such as diesel fuels, the deposition on land of polluting air emissions such as volatile organic compounds and hydrocarbons, the handling of chemicals, and the transloading of LNG and NGLs, all are potential sources of pollution that can deposit on the land and be carried into tributaries and the Delaware river in stormwater runoff. In addition to other pollutants known to already be present on this Superfund site that could be discharged in stormwater, PCBs are a documented ongoing pollutant of concern. It is essential that the release of PCBs from the Repauno property, including the Logistics Center site, be controlled to enable the cleanup of PCB contamination in the Delaware Estuary and Bay under the current PCB TMDL.

The control of the release of other contaminants that are in the groundwater and may be in soils and sediments at this site through effective stormwater management is also essential to provide the needed environmental protection and prevention of the migration and release of hazardous pollution. The planned handling, transfer, and storage of LHG, crude oil, other bulk liquids, and the presence and transloading of LNG at Logistics Center require effective stormwater management to prevent pollution and increased runoff resulting from the large increase in impervious surfaces and the handling and storage of hazardous materials on the site; expansive, mandatory monitoring of stormwater for contaminants is essential throughout the life of the project. The need for comprehensive and beneficial stormwater management at this site is discussed further in the Delaware Riverkeeper Network's June 7, 2019 comment to the DRBC regarding DOCKET NO. D-2017-009-2 , DELAWARE RIVER BASIN COMMISSION , Delaware River Partners LLC, Gibbstown Logistics Center, Dock 2 , Greenwich Township, Gloucester County, New Jersey. A copy of the comment is enclosed with this comment. The subsection NJAC 7:7-16.3 states, in part:

(a) If a project or activity meets the definition of “major development” at N.J.A.C. 7:8-1.2, then the project or activity shall comply with the Stormwater Management rules at N.J.A.C. 7:8.⁵

(b) Rationale: The Stormwater Management Rules (N.J.A.C. 7:8) specify standards for State, municipal and regional stormwater management. These rules provide minimum statewide runoff techniques, as well as special protection measures for environmentally sensitive water and land areas. Because development and land use activities contribute greatly to the types and amount of pollutants that are found in stormwater runoff, it is appropriate for major development projects in the coastal zone to comply with the Stormwater Management Rules’ standards.

viii. Project does not meet New Dredging Requirements under New Jersey State Law.

New dredging is considered acceptable if certain conditions are met, NJAC 7:7-12.7. Particularly important for this site is the condition that requires a demonstrated need that cannot be satisfied by existing facilities (NJAC 7:7-12.7(c)1) and also that special water areas not be significantly disturbed. The applicant does not satisfy these conditions through its NJWFD application. Instead, the NJWFD application Alternatives Analysis (Appendix E) relies heavily on the former use of the DuPont Repauno property and other industrial activities in the region to justify the Dock 2 additional activities and development. The proximity to Monds Island, Little Tinicum Island, the John Heinz National Wildlife Refuge at Tinicum and the naturally restored contiguous habitat on the Repauno property and some other fallow properties in the surrounding area is an important context not recognized or assessed in terms of impact of the activities that would be approved and enabled if this project is allowed to continue. This important setting must be considered under this subsection to assess the impacts of new dredging on these natural resources and features.

B. Army Corps must ensure the Public Interest Review Accounts for All Threats to Fish and Wildlife.

As part of its Public Interest Review, the Army Corps must consider the impacts on fish and wildlife from the project. As 33 CFR § 320.4(c), Fish and Wildlife, states:

“In accordance with the Fish and Wildlife Coordination Act (paragraph 320.3(e) of this section) district engineers will consult with the Regional Director, U.S. Fish and Wildlife Service, the Regional Director, National Marine Fisheries Service, and the head of the agency responsible for fish and wildlife for the state in which work is to be performed, with a view to the conservation of wildlife resources by prevention of their direct and indirect loss and damage due to the activity proposed in a permit application. The Army will give full consideration to the views of those agencies on fish and wildlife matters in deciding on the issuance, denial, or conditioning of individual or general permits.”

⁵ The referenced definition is: ““Major development” means any “development” that provides for ultimately disturbing one or more acres of land or increasing impervious surface by one-quarter acre or more. Disturbance for the purpose of this rule is the placement of impervious surface or exposure and/or movement of soil or bedrock or clearing, cutting, or removing of vegetation. Projects undertaken by any government agency which otherwise meet the definition of “major development” but which do not require approval under the Municipal Land Use Law, [N.J.S.A. 40:55D-1 et seq.](#), are also considered “major development.”” N.J.A.C. 7:8-1.2

The following are some of the reasons that the proposed project threatens fish and wildlife.

i. The Project Threatens Finfish Migratory Pathways.

Under New Jersey Law, The Coastal Zone Management Act identifies migratory pathways that are protected for finfish, these pathways are threatened by this project. The CZM states:

(c) Development which lowers water quality to such an extent as to interfere with the movement of fish along finfish migratory pathways or to violate State and Delaware River Basin Commission water quality standards is prohibited.

1. Mitigating measures are required for any development, which would result in lowering dissolved oxygen levels, releasing toxic chemicals, raising ambient water temperature, impinging or suffocating fish, entrainment of fish eggs, larvae or juveniles, causing siltation, or raising turbidity levels during migration periods.

In all materials DRN has seen related to the Logistics Center's proposal, there is no demonstration of the level to which the adverse impacts to the water quality in the active project area will be "minor" and "temporary" resulting from in-water dredging due to "potential increase in suspended solids". The Best Management Practices (BMPs) that would be employed do not address the ongoing stirring up of sediments with the operation and travel of ships to and from the berths and the potential for ship traffic and operations during transloading to interfere with fish migration and the habitat of the Atlantic sturgeon, shortnose sturgeon and anadromous fish species that are known to migrate through the region. The dredge equipment that would be employed to dredge the 665,000 cubic yards of sediment over 45 acres is described as an "environmental clam shell" and the barge design is said to minimize spillage and the release of turbid water. DRP has stated that the operation will be performed in a manner that limits dragging on the bottom of the river during dredging. However, it has also stated that adverse water quality impacts will nonetheless occur, demonstrating the lack of a fully environmentally safe dredging operation. It seems, based on the materials DRN has seen, that these environmental measures will be employed for contaminated sediments – will they be employed for all dredged sediments? The materials also state that the silt and sand sediments will be amended for truck transport but it is not stated what the amending agent would be. There are significant negative environmental and water quality impacts from certain amending agents. The use of amending agents must be fully disclosed to meet this subsection of the rule.

Further, the potential for the suspended solids to contain contaminants that are in the dredged materials, or are carried to the 45-acre area to be dredged with the stormwater and runoff pollutants or the groundwater base flow to the river and shallows from the Repauno Superfund site is not examined or discussed in any materials DRN has reviewed. Considering the long history of industrial use of the DuPont Repauno site and the use of the property for other industrial operations as well, there is a risk of stirring up and re-suspending contaminants through dredging and day-to-day operation at the berths and landside facilities that can in turn effect migrating finfish. This needs consideration and analysis prior to any approval from the Army Corps.

ii. The Project Threatens Submerged Vegetation Habitats and Fish that Depend on them.

Submerged Vegetation Habitat or Submerged Aquatic Vegetation (SAV) is protected under NJAC 7:7-9.6. SAV habitat is prohibited from being developed to protect these special habitats. A bed of submerged aquatic vegetation (American eelgrass) is located in the active project area but the applicant states it is being avoided. DRP's NJWFD Application Appendix C shows the extensive bed within the project area. A survey of the SAV bed immediately prior to the planned dredge operations must be done to accurately identify the SAV's location during the spring growing season. The applicant's consultant (Matrix) performed the survey in September 2018. Accurate location of the SAV bed is essential. The potential for damage to the SAV from shading from the trestle structure and ships is not explored in any materials DRN has seen concerning the proposed project thus far and must be.

iii. The Project Will Impact Endangered and Threatened Wildlife or Plant Species Habitats.

Under New Jersey Law, The Coastal Zone Management Act provides specific protections for endangered and threatened species under NJAC 7:7-9.36.

Development of endangered and threatened species (wildlife or plant) is prohibited unless an Impact Assessment demonstrates that there will be no direct or secondary adverse impacts *on the site or the surrounding area*. (Emphasis added) The materials reviewed by the DRN thus far does not demonstrate adequately that the Atlantic Sturgeon habitat will not be adversely impacted. Potential takes of the Atlantic Sturgeon and shortnose sturgeon is projected and can be expected.

The Delaware River Atlantic Sturgeon are currently being severely impacted by ship strikes along the Delaware River with the current level of shipping; any increase will have an adverse impact for both the Atlantic sturgeon and the shortnose sturgeon. The ramifications of increased ship traffic and ship strikes is serious and potentially catastrophic. The Delaware River population of Atlantic Sturgeon is genetically unique with a surviving population that includes less than 300 spawning adults.⁶ With numbers this precariously low, the responsibility for vigilant protection by our federal agencies could not be greater. The Delaware River population of Atlantic Sturgeon, along with the entire NY Bight Distinct Population Segment (DPS), of which the Delaware River population is a part, are designated as endangered pursuant to the Endangered Species Act. In addition, the Delaware River's population of Shortnose Sturgeon is listed as federally endangered and suffers low population figures. The endangered Atlantic and Shortnose Sturgeon and the designated Atlantic Sturgeon Critical Habitat will be impacted.

A study of mortality rates on Atlantic sturgeon in the Delaware River between 2005 and 2008 found that 50% of the mortalities were the result of vessel strikes. The remaining 50% were too

⁶ ASSRT (Atlantic Sturgeon Status Review Team) 2007. Status Review of Atlantic Sturgeon (*Acipenser oxyrinchus*). Report to National Marine Fisheries Service, Northeast Regional Office. February 23, 2007. 174 pp.

decomposed to determine if they were caused by vessel strikes but it is likely most were.⁷ According to a 2010 research article on vessel strikes, the majority (71%) of mortalities reported in spring during the months of May and June. The majority of vessel strikes appeared to result from interactions with large vessels, such as tankers, with a lower percentage likely resulting from interactions with small recreational or commercial fishing vessels equipped with outboard or inboard/outboard (stern drive) engines.

Atlantic sturgeon are demersal fishes and thus if the sturgeon are spending most of their time at the bottom of the water column, then they are most likely being impacted by larger vessels. Large vessels that transit the shipping channel typically draft close to the bottom of the channel, thereby posing a threat to sturgeon positioned close to the bottom of the channel.⁸ For small remnant populations of Atlantic sturgeon, such as that in the Delaware River, the loss of just a few individuals per year due to anthropogenic sources of mortality, such as vessel strikes, may continue to hamper restoration efforts.⁹

The report states, “Both the dredging to deepen the channel and the subsequent increase in large vessel traffic may further hamper the recovery of the Delaware River Atlantic sturgeon population.”¹⁰ Of critical importance, this study is concerned about the size of the vessels resulting from deepening as opposed to any increase in the volume of vessels. The larger size of the vessels from the deepened channel will likely increase the number of vessel strikes for both sturgeon species.¹¹ Between 2005 and 2008, there were 28 reported mortalities of sturgeon in the estuary. Half of those (14) were clearly from vessel strikes. If that is a constant trend, then around four or five sturgeon die every year in the estuary from vessel strikes. The potential for an increase in vessel strikes and Atlantic Sturgeon deaths is a critically important aspect of the Environmental Impact Statement that the Corps must conduct.

The continued dredging of new deep-water areas will further impact Atlantic sturgeon spawning by accelerating the intrusion of brackish water into the hard-bottom spawning grounds, and thus forcing Atlantic sturgeon to spawn further upstream in the zone of depressed dissolved oxygen. This shift then exposes the eggs and larvae of newly spawned Atlantic sturgeon to low oxygen conditions from which they may not survive. This “squeeze” between increased salt intrusion in the estuary downstream (exacerbated by channel deepening, new deep-dredged berthing areas, and rising sea levels) and the near-lethal dissolved oxygen levels upstream limits the ability of Atlantic sturgeon to successfully reproduce, and increases the likelihood of extinction. This project makes a significant contribution to such salt-intrusion by adding 45 acres of new deep-water channel and berthing to an estuary under siege.¹²

⁷ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁸ Brown, J.J., & Murphy, G.W. (2010). Atlantic Sturgeon Vessel-Strike Mortalities in the Delaware Estuary. *Fisheries*, Vol. 5, No. 2.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

¹² Moberg and DeLucia. 2016. Potential Impacts of Dissolved Oxygen, Salinity and Flow on the Successful Recruitment of Atlantic Sturgeon in the Delaware River. The Nature Conservancy. Harrisburg, PA. 69 pp.

The remobilization (and dewatering of dredged sediments) will create higher exposure to PCBs and other contaminants, and the Atlantic Sturgeon spawning and rearing that begins in June and extends the early-life-stages through July and August, with increasing evidence for high aggregations of young-of-year in the Proposed Project vicinity, means that elevated exposure will occur for larval and juvenile stages of this endangered species in the Delaware River. DRP's currently proposed BMPs methods such as avoidance, minimization, and mitigation and timing are insufficient to protect this endangered species habitat and the surrounding area, and further evidence and analysis is required regarding protection of the Atlantic Sturgeon and the shortnose sturgeon.

A report dated August 26, 2016 that was submitted to the New Jersey Department of Environmental Protection prepared by James Schmid and Company stated that bald eagles and ospreys nest on site.¹³ Further analysis is needed to ensure that the nearest bald eagle nest is on Monds Island, as DRP has stated in its materials thus far, and that the osprey nest on the relic piling at the Repauno site will not be disturbed by any environmental changes including noise, air emissions, construction, site activities and storage, shipping and related activities at Gibbstown Logistics Center. Additionally, other wildlife species and plant species have been identified over recent years at the Repauno site and further analysis is needed to accurately map all relevant habitat and the surrounding area that may be impacted by the Dock 2 activities and operations.

iv. The Project Will Impact State and Federally Protected Critical Wildlife Habitats.

The Coastal Zone Management Act provides specific protections for critical wildlife habitats under NJAC 7:7-9.37. Development that would negatively affect critical wildlife habitats is discouraged. In materials DRN has reviewed from the application, the applicant states that the NJ Natural Heritage Database and the NJ Landscape Project identified foraging habitat for the great blue heron. The applicant additionally states that a breeding colony of heron is located on Monds Island, one mile from the project site. Is this mile measured to the dock? Is the measurement from the Federal Navigation Channel where the ships would travel? It should be to accurately assess the impacts to these birds. The many species that may visit the site include the 26 bird species in the list provided by the applicant including the federally threatened Red Knot (*Calidris canutus rufa*), and Cooper's Hawk. Also identified for the site is the federally threatened bog turtle and a vernal pool habitat. It is stated that no critical habitat has been designated for Red Knot or the bog turtle. There must be field surveys to accurately identify habitat and individual species that are located on the site.

The applicant's NJWFD application Appendix B does not provide a comprehensive picture of the natural conditions on the larger property and the development site, to give context to the project area. The large contiguous acreage of the Repauno site and the area used by species has developed over approximately 30 years, as the former industrial Repauno site remained largely fallow. It is a 1,856-acre site located along the Delaware River in Gloucester County, NJ. The site is bounded to the north by the Delaware River, to the east by a former Hercules Chemical

¹³ Report to Delaware Riverkeeper Network from James A. Schmid, PhD. of Schmid and Company, Consulting Ecologists dated August 25, 2016.

manufacturing plant, to the south by the city of Gibbstown, and to the west by wetlands and Repauno Creek. The western half of the site consists almost entirely of surface water bodies and wetlands. The eastern half of the site also consists of some upland and wetland ecological communities.¹⁴ Altogether, the site contains approximately 1,500 acres of wetlands.¹⁵ The Logistics Center is planned to use 218 acres on the northeastern portion of the site. The largely natural area that had grown up on this property is ripe for the many species that could live here and must be fully investigated before the applicant can be considered in compliance.

C. The Project's Development Involves Special Hazards that must be Thoroughly Evaluated to Ensure Protection of Public Health and Safety.

During Army Corps' review of the project specific consideration must be given to these impacts as New Jersey Law provides specific protections for special hazard areas under NJAC 7:7-9.39. This subsection discourages development within or proximate to areas that pose special hazards. This subsection requires evaluation based on the LNG activities, including transloading, transporting into the site and shipping and the potential for hazards related to the transport into, loading, handling and storage of LHG, crude oil, and refined bulk liquids at the Gibbstown Logistics Center. Additionally, LNG poses many special hazards on its own discussed later in this comment. Finally, the former use of the site for munitions, the possible presence of hazardous residues or contaminants in the soil, sediment, materials on site, groundwater or surface water of the site must be evaluated for potential hazards.

This superfund site may pose a hazard. DuPont operated the site as an explosive manufacturing facility from 1880 to about 1950. In 1917, DuPont expanded operations to include the manufacturing of organic compounds, which continued until 1986. All explosive manufacturing and ammonia production were discontinued during the 1960s. Repauno is a Superfund site undergoing remediation.¹⁶ The area previously used by DuPont as a terminal location for anhydrous ammonia began being cleaned for reuse in 2002, according to the 2002 Annual Groundwater Progress report. One of the dangerous contaminants on the site is nitrobenzene, a highly toxic chemical classified by the Centers for Disease Control as "Immediately Dangerous to Life or Health" if people are exposed at specific concentrations. Nitrobenzene is a likely human carcinogen according to the US Environmental Protection Agency (EPA) and is linked to several carcinomas and cancers as well as other dangerous human health effects. The area where the logistics center would operate is the area most likely exposed to aniline, a toxic chemical with adverse health effects; aniline is involved with the processing of benzene to make nitrobenzene. The area where acids were used is also at least partly included in the logistics center active project area. Whether they are located in the areas adjacent to or effected by the Dock 2 activities needs to be evaluated through onsite sampling and mapping. These acids were most likely "mixed acids" associated with the nitrobenzene manufacturing process and are toxic.

¹⁴ EPA (2003). RCRA Corrective Action – DuPont Repauno Facility. *Documentation of Environmental Indicator Determination*. Retrieved from https://www3.epa.gov/region02/waste/dup_r750.pdf

¹⁵ Fichera, A. (2015). Land sale raises hopes for new South Jersey port. *Philly.com*, March 22, 2015. Retrieved from http://articles.philly.com/2015-03-22/news/60349872_1_port-facility-chemical-plant-gibbstown

¹⁶ See <https://cumulis.epa.gov/supercpad/CurSites/csinfo.cfm?id=0200783>.

In 1990, 8,500 tons of sediments were removed from the ditches in the former nitrobenzene and PMDA/DMT production areas.¹⁷ In the three rounds of site wide investigation completed in 1993, 1996, and 2000 respectively, DuPont screened all Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) for their investigation/remediation priorities and focused on the migration/flow of groundwater and the soils in former production areas. The currently ongoing fourth round of investigation is to complete the investigation of the remaining two SWMUs/AOCs and to conduct an ecological risk assessment for the wetlands, streams, and the ditch system.¹⁸

In 1985, DuPont installed a system to pump contaminated groundwater and to treat it. The groundwater interceptor system has been in operation since, in conjunction with a groundwater monitoring program, owned and operated by Chemours, DuPont's spinoff company, since 2015. Chemours is required to continue the groundwater interceptor system together with the site wide groundwater monitoring program to confirm that contaminated groundwater is under control. The current plans show that some monitoring wells that are located in areas planned for Logistics Center parking will be paved over, jeopardizing the continued use of these wells for monitoring the cleanup. This disruption of the sampling record must be avoided.

In addition, several different companies have leased areas at the Repauno facility. In 1998, Repauno Products LLC purchased the manufacturing operation that produced sodium nitrite and nitrosylsulfuric acid. In 1999, Spring AG purchased the industrial diamond refining operation, which ceased in late 2002. Industrial diamond processing may have used chemical vapor deposition or other dangerous processes that are used to manufacture industrial and synthetic diamonds, contributing additional contaminants to the site's environment that require investigation prior to use of the property. Furthermore, from reviewing numerous applications and materials concerning the project, DRN has seen claims that fill was placed on the property at some point. What was this fill and has it been fully tested and characterized? Has it been accurately mapped so sampling and analysis can be done? Additionally, there is fill being placed on the site currently. Contaminants in fill placed on the site from somewhere else, whether dredge spoils, imported material, or other fill, must be found, sampled for, and identified in order to fully answer the question of whether existing programs or plans for the site for Dock 2 will not pose a risk to public health and safety.

D. The Project Will Impact Local Historic, Cultural, Scenic and Recreational Values.

Army Corps must consider the projects impact to the local historic cultural and recreational values in its evaluation, 33 CFR 320.4(e):

(e) Historic, cultural, scenic, and recreational values:

Applications for DA permits may involve areas which possess recognized historic, cultural, scenic, conservation, recreational or similar values. Full evaluation of the general public interest requires that due consideration be given to the effect which the

¹⁷ EPA (2005). DuPont Company – Repauno Plant. *Region 2 RCRA Cleanup Fact Sheet*. Retrieved from <https://www3.epa.gov/region02/waste/fsdupont.htm>

¹⁸ Ibid.

proposed structure or activity may have on values such as those associated with wild and scenic rivers, historic properties and National Landmarks, National Rivers, National Wilderness Areas, National Seashores, National Recreation Areas, National Lakeshores, National Parks, National Monuments, estuarine and marine sanctuaries, archeological resources, including Indian religious or cultural sites, and such other areas as may be established under federal or state law for similar and related purposes. Recognition of those values is often reflected by state, regional, or local land use classifications, or by similar federal controls or policies. Action on permit applications should, insofar as possible, be consistent with, and avoid significant adverse effects on the values or purposes for which those classifications, controls, or policies were established.

The materials provided by the applicant to the various agencies so far fail to consider the important naturally restored condition of the Repauno property and adjacent, local and regional natural resources that would greatly benefit from preservation and protection. The loss of the natural condition, habitats, scenic values and quality of the Logistics Center site and the fragmentation of the natural systems in the surrounding area will be great. Fishing in the river is a popular recreational activity that may be negatively impacted or impinged upon. However, the applicant does not discuss, measure, or assess these impacts. The applicant simply relies on the 100-year historic use of the Repauno property prior to its abandonment as an industrial location. It has been decades since heavy industrial use of the property has occurred, and the natural environment has taken over the location and should be considered as a natural asset of great value. Fishing in the Delaware River and tributaries must be considered as a current recreational use of cultural importance. The current site and the river area is an amenity to the region, providing natural capital that contributes to the quality of life in the region. These assets and the impacts that would occur must be assessed.

The applicant's NJDEP Waterfront Development Application, Alternatives Analysis (Appendix E) does not consider the natural assets at the site. In fact, in the analysis, the applicant states in the Alternatives Analysis a circular justification for the project at this location stating that because the site is undergoing redevelopment as a marine terminal with Dock 1 and the associated landside development, it is "the most feasible alternative for the proposed project". Simply because the Gibbstown Logistics Center is being constructed does not provide justification or rationale for further impacting natural resources and assets for Dock 2.

i. Impacts to Archeological Resources Must Be Properly Accounted for.

Numerous documents DRN has reviewed including the NJWFD application, Appendix G Phase IA Historical & Archeological Resource Impact Survey and reports including the Phase I Underwater Archeological Investigations, Thompson Point, Repauno Site, Delaware River, Greenwich Township, Gloucester County, New Jersey and the Phase I Underwater Archeological Investigations, Thompson Point, Repauno Site, Delaware River, Greenwich Township, Gloucester County, New Jersey document historic and prehistoric resources at Thompson's Point which could be impacted by the proposed project. It is stated that there was a Native American archaeological site previously documented within the project site at Thompson Point, but that this location is not likely to yield significant Native American archaeological remains due to the changes in the environment over the years. One of the changes was the

potential location of an early historic site dating from the late 17th through the 19th century. Both of these archeological sites are expected to be too disturbed to be significant. However, only a Phase 1 survey has been done. The potential for finding important archeological resources at Thompson Point is great, due to previous findings. Sonar did yield some potential finds that are documented in these reports. DRN disagrees that further investigation under a Phase 2 study is not warranted. The cultural importance of prehistoric history is too great to be glossed over based on a guess that subsequent uses have destroyed the value of Thompson Point, which is famous in local lore as an important Native American site.

E. The Army Corps Must Evaluate the Project to Ensure Adequate Floodplain Management.

33 CFR 320.4 (l) Floodplain management.

(1) Floodplains possess significant natural values and carry out numerous functions important to the public interest. These include:

(i) Water resources values (natural moderation of floods, water quality maintenance, and groundwater recharge);

(ii) Living resource values (fish, wildlife, and plant resources);

(iii) Cultural resource values (open space, natural beauty, scientific study, outdoor education, and recreation); and

(iv) Cultivated resource values (agriculture, aquaculture, and forestry).

(2) Although a particular alteration to a floodplain may constitute a minor change, the cumulative impact of such changes may result in a significant degradation of floodplain values and functions and in increased potential for harm to upstream and downstream activities. In accordance with the requirements of Executive Order 11988, district engineers, as part of their public interest review, should avoid to the extent practicable, long and short term significant adverse impacts associated with the occupancy and modification of floodplains, as well as the direct and indirect support of floodplain development whenever there is a practicable alternative. For those activities which in the public interest must occur in or impact upon floodplains, the district engineer shall ensure, to the maximum extent practicable, that the impacts of potential flooding on human health, safety, and welfare are minimized, the risks of flood losses are minimized, and, whenever practicable the natural and beneficial values served by floodplains are restored and preserved.

(3) In accordance with Executive Order 11988, the district engineer should avoid authorizing floodplain developments whenever practicable alternatives exist outside the floodplain. If there are no such practicable alternatives, the district engineer shall consider, as a means of mitigation, alternatives within the floodplain which will lessen any significant adverse impact to the floodplain.

The entire Logistics Center is located within the Flood Hazard Area, as defined by New Jersey regulations. The infrastructure for the Dock and berths is located in the Delaware River and the dredging between the riverbank and Dock 2 will connect the Dock 2 to the federal navigation channel. The Department only approves activity in a channel under certain conditions. One key requirement of New Jersey Regulations pertaining to floodplain management, NJAC 7:13-11.1(b)4, is that there is enhancement of aquatic habitat where prevention is not possible. In materials DRN has seen from the application so far, the applicant addresses this requirement in a cavalier fashion, without any enhancements provided. The applicant simply states that some natural features were avoided and does not address the needed to replace the value of what is negatively impacted. One example is throughout the NJWFD application; the applicant is denying harm and promising avoidance and best management without fully assessing the natural resources, without on-the-ground analysis of natural conditions in the surrounding area and on the site, without acknowledging the natural resources and species in the region, and only choosing to examine the project as they envision it.

F. Public Review Process Must Account for All the Project's Environmental, Health and Safety Impacts.

Under 33 CFR 320.4(p) Army Corps must consider the environmental benefits and detriments of the project during its Public Interest Review, 33 CFR 320.4(p) states:

(p)Environmental benefits, states:. “Some activities that require Department of the Army permits result in beneficial effects to the quality of the environment. The district engineer will weigh these benefits as well as environmental detriments along with other factors of the public interest.”

The construction and operations of the Logistics Center have significant ramifications environmentally, for public safety, and for shipping on the Delaware River system. This comment has identified numerous environmental health and safety issues throughout it. Including but not limited to:

- Analysis of the unique risks and dangers presented by LNG transport, storage and handling;
- Accounting for the risks associated with increase truck traffic;
- Accounting for the risks associated with increase vessel traffic;
- Potential for leaks and accidents with the LNG materials;
- Threat of PCBs release; and
- Threats associated with construction and operation on a superfund site.

The National Environmental Policy Act Review Mandates that the Army Corps Create an Environmental Impact Statement for the Project.

Given the numerous issues with the project DRN is outlining in this comment, the US Army Corps of Engineers (Army Corps) must fulfill its legal obligations pursuant to the National Environmental Policy Act (NEPA) by undertaking the necessary review required by NEPA – issuing an Environmental Impact Statement (EIS). Issuing an Army Corps approval for the

Gibbstown Logistics Center (CENAP-OP-R-2016-0181-39), which now undeniably includes an LNG export operation, without a proper EIS would be a violation of federal law that will be subject to legal challenge.

NEPA is our “basic national charter for protection of the environment.”¹⁹ NEPA makes environmental protection a part of the mandate of every federal agency²⁰ by requiring that federal agencies take environmental considerations into account in their decision-making “to the fullest extent possible.”²¹ Pursuant to NEPA, federal agencies must consider environmental harms and the means of preventing them in a “detailed statement” before approving any “major federal action significantly affecting the quality of the human environment.”²² This required analysis serves to ensure that “the agency will not act on incomplete information, only to regret its decision after it is too late to correct.”²³ Approval of the LNG export facility proposed definitely meets the standard of requiring NEPA review.

A proper NEPA assessment must fully assess and disclose the complete range of environmental consequences of the proposed action, including “ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, [and] cultural” impacts, “whether direct, indirect, or cumulative.”²⁴ Direct effects are “caused by the action and occur at the same time and place.”²⁵ Indirect effects are those impacts that are caused by the action, but occur “later in time or farther removed in distance, but are still reasonably foreseeable,” and may include “growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.”²⁶ Cumulative impacts are “impact[s] on the environment which result[] from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”²⁷ NEPA also prohibits segmentation in order to avoid full and fair review of the implications and impacts of a project or action.

LNG has significant ramifications environmentally, for public safety, and for shipping on the Delaware River system.

¹⁹ 40 C.F.R. § 1500.1(a)

²⁰ See 42 U.S.C. § 4332(1).

²¹ 42 U.S.C. § 4332.

²² Id. § 4332(2)(C).

²³ *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 371 (1979).

²⁴ 40 C.F.R. §§ 1502.16(a), (b); 1508.8.

²⁵ 40 C.F.R. § 1508.8(a).

²⁶ 40 C.F.R. § 1508.8.

²⁷ 40 C.F.R. § 1508.7 (emphasis added).

Many of these ramifications have been included in this comment. However, we illustrate here some of the issues that must be addressed in an EIS pursuant to NEPA. The Army Corps must conduct a full analysis of a wide array of issues including but not limited to:

- the safety, pollution and health implications of trucking;
- the ramifications of storing LNG on a ship while it is slowly loaded over a period of at least 15 days; what LNG exports from Gibbstown means for shipping, ship traffic and the business operations of other shippers operating through Delaware River ports;
- the climate change and other environmental impacts of exporting LNG from this site including the onsite impacts, but also the ramifications from the gas extraction activities and greenhouse gas emissions that will be induced/supported by this operation and the downstream impacts from the use of the gas;
- the safety ramifications of having an LNG operation of this kind on the Delaware River including for the surrounding community;
- the implications for other shippers and port operations (there is anticipated to be at least 2 LNG export operations a month – 24 a year – from this site and additional LHG shipping events);
- the impacts on the endangered Atlantic and Shortnose Sturgeon or the designated Atlantic Sturgeon Critical Habitat in the Delaware River;
- the water quality and invasive species ramifications due to the release of ballast water from LNG ships;
- the air and other ramifications of flaring off of gas and/or the construction and operation of a small capacity liquefier on site;

It is notable that in a November 16, 2017 letter to the US Coast Guard (when only one Dock and berth was proposed), DRP states that there are limitations caused by having just a single-berth at this site while also accommodating an LNG operation there – i.e. that “LNG, LHG, or other hazardous or non-hazardous cargo operations will not run concurrently, as the single-berth wharf only permits one vessel to dock at a given time for a single commodity.” Clearly, the applicant and the agencies knew that LNG was an intended goal of this project whether it was a single-berth or two-berth design and so there is no excuse not to have considered the impacts that constructing and operating an LNG export facility at this site at the time of review of Stage 1 for Dock 1 (including the delivery of LNG by rail and truck) as well as during the current Stage 2 of this project and there is no excuse for not having notified the public of this intended use in the Army Corps’ April 4, 2019 Public Notice.

In addition, there must be full EIS consideration of the proposed Liquefied Hazardous Gas (LHG) handling facility proposed for the site. According to the November 2017 letter to the Coast Guard the LHG operation at that time was anticipated to include 24 vessels a year (2 a month) from Dock 1 creating additional potential pressures for Delaware River port traffic, particularly when considered along with the currently anticipated 24 vessels a year of LNG. In addition, there will be constructed ~100,000 BBL of onsite storage, the use of the underground cavern, and the additional employment of the shipping vessels for storage in order to increase the onsite storage capacity. LHG will be brought to the site via rail car and/or truck, the environmental and safety ramifications of which have not been analyzed. Furthermore, the environmental and safety ramifications of the volume of LHG to be delivered, stored, and

exported for sale; the frequency of deliveries; the details of off-loading and on-loading operations; and the full scope of the rail delivery system have not been analyzed in any documents reviewed by DRN. The project includes at least ~3 acres of storage tanks, including at least one sphere tank, a subsurface cavern and associated equipment as additional project elements that essentially turns the site into a storage facility or “tank farm”, which is discouraged by state regulations on riverfront lands. Mentioned in the 2017 Letter of Inquiry to the Coast Guard is a “small capacity” liquefier that consists of a “cold box”, compressor, N2 tank and a cold storage bullet tank (1430 BBL capacity), a flare, a gas separator, and a Thermal Oxidizer.²⁸ The placement, management, and operation of all of these facilities on the site must be fully analyzed in combination with the LNG/LHG activities at the site.

It is important to consider that the November 2017 letter to the Coast Guard was for only Dock 1; the expanded LHG activities related to Dock 2 are not divulged in any documents that DRN has reviewed. The LHG information requires a full analysis by the Army Corps, particularly the ramifications of the extensive storage of LHG at the site, the proximity of LHG storage to site operations, including the rail yard, and other ramifications of having both the proposed LNG and LHG at the same location.

Below DRN highlights the most pressing issues that must be addressed in the Environmental Impact Statement for the Project. In addition to the issues identified below, Army Corps should include the pressing issues identified in the previous section addressing Army Corps’ Public Interest Review.

A. Army Corps’ NEPA Review Must Include a Thorough Cumulative Impacts Analysis, Including the Impacts Associated with Climate Change.

As explained in an article about LNG-powered ships in Washington State, natural gas is composed mostly of methane, which is one of the four major greenhouse gases and a culprit in the global warming of our atmosphere, exacerbating climate change. Moreover, methane leaks throughout the entire gas development process, from fracking at the extraction well, through pipeline and compressor delivery systems, during storage and in end use such as power plants and gas processing and petrochemical facilities, including when it is used for fuel in shipping. The article states “The International Coalition for Clean Transportation estimates 2.2-4.6% of methane on ships escapes into the atmosphere after passing through the engine without combusting. This is known as methane slip and its rate depends on the type of engine.”²⁹ It explains further, that “Again, LNG is composed chiefly of methane, which is itself a nasty greenhouse gas – 86 times worse than CO2 over a 20 year span and 36 times worse over a 100 year span. New research actually suggests that those numbers may be underestimated by as much as 14%. This means that we don’t want to be adding any more methane to the atmosphere and, in fact, scientists point out that we can have more immediate impacts on lessening climate change by reducing methane since it doesn’t last as long in the atmosphere as CO2. Alarming,

²⁸ Letter to Captain Scott Anderson, Captain of the Port, USCG Sector Delaware Bay, from AcutTech, November 16, 2017.

²⁹ Villa, Daniel, *The Origins of LNG as a Maritime Fuel*, 350 Tacoma, June 21, 2018. Available at <https://www.350tacoma.org/the-origins-of-lng-as-a-maritime-fuel/>.

US methane emissions have risen 30% in the past decade thanks mostly to the central US, a hotbed of fracking.’’³⁰

The impacts of greenhouse gas emissions that will be released by this project are substantial and can be minimized if gas products – LNG and NGL – are eliminated as cargo that will be handled at the Logistics Center. Methane and carbon are leaked, released or burned through the full life cycle of the hydraulically fractured (fracked) gas produced for this project – from extraction by fracking through delivery systems such as pipelines and compressors to the liquefaction plant, the processing at the LNG liquefaction plant, the transport by truck, rail, or pipeline to the export terminal, any interim storage, transloading of the material the storage in the ocean-going vessel and then the final re-gasification of the LNG and its end use.

This uncontrollable and inefficient process is also deadly in its effects on atmospheric warming and the climate crisis we are facing globally. It is irresponsible and shortsighted to support the further development of fracked gas projects. A climate change impact analysis must be done for this project to measure and then assess the potential effects of the **full life cycle** of LNG and NGL greenhouse gas emissions and climate change effects that would be produced for the Logistics Center.

B. The Public Safety Analysis Must Include and Account for all of the Known and Potential Threats to Environmental, Health and Safety Implicated by The Project.

i. The EIS Must Be Sure to Evaluate All Risks Associated with the Handling of LNG at this Site.

It is essential that the Army Corps’ review process include all relevant details about the LNG project. LNG has significant ramifications environmentally, for public safety, and for shipping on the Delaware River system.

DRN provides the following information about the unique dangers of LNG and its transport, storage, and handling, illustrating that LNG is a special product that needs specific conditions that DRN does not consider to be available at this site or within the Delaware River Watershed:

It is known that, upon release in a liquid state, LNG expands to a gas cloud that is 600 times larger than the amount of liquid. The gas cloud then moves across the surface, can travel many miles quickly and can also become trapped under spaces that confine the gas, providing the conditions that cause explosion and, if there is a point of ignition such as a spark or flame, fire will result.

New information has shown that LNG can cause a catastrophic BLEVE or Boiling Liquid Expanding Vapor Explosion if the vessel is exposed to high temperatures or a fire. The expansion of the liquid LNG in a vessel causes the pressurized liquid to boil, and the gas takes up more room than the liquid, stressing the container as pressure builds. Relief valves are only designed to release pressure slowly to keep equilibrium in the pressurized container. Exposed to high heat, the valve will fail to keep up and the metal will weaken, cracks will result in the

³⁰ Ibid.

container, causing LNG to be released with an explosion. The result is a BLEVE, a catastrophic failure of the container. There are many incidents over the years of BLEVE catastrophes, some as recent as 2019, but the fact that a BLEVE can occur with LNG has only recently been established.

When the gas or vapor cloud in the container is released, because it is flammable it is likely to ignite after the BLEVE, typically causing a fireball that burns fast, hot and wide. A fuel air explosion can also occur, known as a “vapor cloud explosion”. A vapor cloud explosion is the mechanism used in a thermobaric weapon that uses air to generate a high-temperature explosion, producing a long duration blast wave. These weapons are also termed a fuel-air bomb. This is the threat that LNG storage and transport brings to the Gibbstown region and to every traffic route used to carry the LNG to the Delaware River and on the river during export.

On dry land such as a terminal where LNG is stored or is contained in tankers on trucks or rail cars, a BLEVE where there is no liquid in the local environment to absorb the heat, can rupture even faster than a vessel on water. Truck transport regulations are being closely examined due to an increase in accidents involving truck transport of LNG. While it used to be assumed that truck transport had a low potential for explosion or fire, an accident in Spain changed that:

In 2002, an LNG truck in Spain flipped over, burned, then exploded into a 500-foot fireball that killed the driver and burned two others. ‘The severity of this kind of explosion is something people haven't usually considered applicable to LNG trucks,’ says Jerry Havens, former director of the Chemical Hazards Research Center at the University of Arkansas. ‘But what happened in Spain changes that picture. It shows you've got the potential for a massive explosion’.

In the accident in Spain, a BLEVE occurred, which resulted in death to the driver and burns to two people approximately 650 feet away, and threw large flaming debris, including the truck’s diesel engine, for 853 feet. A similar LNG truck accident with a catastrophic fire occurred in Spain in 2011, killing the driver. It was pointed out by an analyst in Savannah Georgia during debate over LNG truck transport that a pool fire and and/or explosion involving an LNG truck may have a low probability, but it has a high consequence with instant injuries or death for those within several hundred feet. The chances, according to the analyst, of an LNG truck accident are 200 to 1. This is a great risk for populated areas and truck routes through urban centers. The potential impacts of the transit of trucks to the site and the parking, movements, unloading and exit of the trucks must be fully examined for risk of accidents and resulting damage to people and the environment.

In the event of a release of LNG, the LNG must gas off naturally, as the container cannot be capped or interacted with, the area must be immediately evacuated and secured, ignition sources must be eliminated, and water cannot be used, as the release is cryogenic. Water can plug the valves of the container with ice and any cold air release can freeze skin in seconds and can even turn air to liquid or solid form, removing oxygen, an obvious disaster for anyone in the area.

These handling procedures apply to any container of LNG under pressure, including those used in transportation such as truck or rail containers or storage vessels at a terminal, ships, or at a

liquefaction facility.³¹ The dangers of an LNG release and fire from a tank accident are unique to LNG and require special handling due to the highly dangerous properties of the LNG and its gases. This is well illustrated in a report of an LNG tank truck accident in Belgium, which has been used as a “lessons learned” example by first response trainers.³²

When a fire erupts around or under a LNG container, it can cause a BLEVE quickly, in as little as 15 minutes for a large tank (2 ½ minutes for a small tank). Once a fire ignites around the container, the 2000 Department of Transportation (DOT) Emergency Response Guidebook (ERG) states that a 1,600-meter perimeter must be isolated around the container, as explained in the relevant text at Guide #112, the same as for explosives such as bombs and artillery. Since water cannot be used to cool the container or extinguish the fire, and the evacuation area is so large, the fire response is, especially if there are no lives at risk, for firefighters and first responders to evacuate the 1,600-meter area and let the fire burn out, similar to the response to crude oil derailments that risk explosion.

In fact, even removing the damaged container can be risky. An example of how firefighters in Utah decided to handle a train derailment with damaged propane tanks illustrates the risks – it was less dangerous to detonate the cars in place than move them.³³ Of course, this is not possible in a populated area, begging the question of how much risk for communities is involved with flammable liquid in rail cars.

This makes the transport of LNG in containers and the storage of containers of LNG inherently dangerous and inappropriate for populated areas. The proposed Logistics Center is located next to a residential area in Gibbstown. There is a day care center, public school and Little League athletic fields, public buildings, the U.S. Post Office, a Methodist Church, the local VFW Post, and housing in Gibbstown adjacent to the Block and Lot of this site. These residential and community uses are not compatible with the proposed activity, especially if the activity includes handling of hazardous substances such as LNG or LHG or other bulk liquids (crude oil is another liquid mentioned as a possible cargo). Prevention of exposure to toxics and hazardous materials is the only way to provide protection to the especially vulnerable population of children at a daycare center, school or out on an athletic field and to the workers, residents and families who are located adjacent to or who use the public buildings and government centers in the area around this the site.

The transport routes, not yet identified by New Fortress Energy, are through communities across Pennsylvania and New Jersey, from a proposed LNG processing plant that the parent company, New Fortress Energy, wants to build in Bradford County, PA (approximately 175 miles away by roadway). Has the proximity of the LNG activities to structures, receptors, and residences been

³¹ PHMSA, “Safe Transport of Energy Products”, <https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/research-and-development/hazmat/58176/day-1-pm-2.pdf>

³² Vollmacher, Kurt and Tom Van Esbroeck, “Accident Involving LNG Truck”, CTIF Commission for Extrication & New Technology, October 16, 2017, available at: <https://www.ctif.org/sites/default/files/2018-09/Retex%20LNG%202018%2006%2006%20ENG-reduced%20size.pdf>.

³³ Mikaulka, Justin, “Trump Order to Allow LNG by Rail Would Expand ‘Bomb Train’ Risks”, DeSmog Blog, April 17, 2019, available at <https://www.desmogblog.com/2019/04/17/trump-executive-order-lng-rail-bomb-train-risks>.

calculated and are there sufficient separation distances as required by U.S.DOT? US DOT has requirements for thermal radiation and vapor dispersion hazard-based exclusion distances around land based, fixed LNG terminals.³⁴ This is an essential analysis for the protection of Gibbstown, the transportation routes, and the region.

Another important consideration is the use of trucks to carry the LNG product will increase emissions of natural gas constituents, including methane, into the air and will emit hazardous air pollutants due to diesel exhaust. The emission of air pollutants to communities along the transport route unjustly exposes people to health hazards that they may be unaware of due to the transient nature of the vehicles. There should be an analysis of the truck route impacts on communities, environmental justice areas, and areas such as the Delaware River valley where the federal government has already declared a non-attainment area for ground level ozone under clean air regulations, causing smog and the resulting respiratory and other adverse health effects that accompany air pollution and the deposition of air pollutants on water, such as the Delaware River, the water supply for millions in the region. The venting of the trucks (or railcars) en route to avoid over-pressurization must be assessed.

Finally, there is not enough information to assure that LNG handling and transport can be done safely. It is important to err on the side of precaution and prevention of hazards by avoiding populated areas and areas with sensitive environments. The advice under current regulations that govern LNG activities is to avoid substantial risks by locating LNG activities in sparsely populated areas and areas without vulnerable environmental resources. These are not the conditions at the Logistics Center on the Repauno site.

The Pipeline and Hazardous Materials Safety Administration (PHMSA) has been researching LNG handling but their research is far from complete. Gas Technology Institute (GTI), the agency's chief consultant firm on risk analysis, outlined PHMSA's LNG facility "release-risk" research in two recent presentations. The GTI reports suggest what PHMSA should be doing to assess LNG transportation risks and regulatory standards. The GTI 2018 research program report summary shows a vigorous and worldwide search of the most relevant LNG facility failure data. Some of these, GTI noted, were "quite dated and not reflective of modern design practices."³⁵ The reports show how outdated many of the US LNG facility regulatory standards are and underscores the need for consistent national industry/agency approaches to the most basic standards concerning LNG facility Design Basis Accidents. GTI 2018 mentions no LNG or other refrigerated liquids transportation-related data except for potential failures of onsite LNG truck loading transfer line operations. The Corps should obtain and assess this data for the EIS for the Logistics Center.

GTI recommends a new updated US LNG facility survey of equipment failure every 5 years, given technological facility and operational changes, adding "but no industry or federal funding was made available for this purpose."³⁶ Without up to date and comprehensive data on fixed

³⁴ 49 CFR Part 193.

³⁵ Khalid Farrag, Ph.D., P.E., PMP, Senior Institute Engineer, R&D Manager, Gas Technology Inst., *PHMSA-Supported GTI LNG Research Program*, September 11-12, 2018.
<https://primis.phmsa.dot.gov/rd/mtgs/091118/GTI%20-%20Khalid%20Farrag.pdf>

³⁶ Gas Technology Institute, GTI PROJECT NUMBER 21873, *Statistical Review and Gap Analysis of LNG Failure Rate Table*, Jan. 11, 2017.

LNG facilities, how can transportation and transloading of LNG be accurately assessed in terms of setback distances from transportation and terminal activities, or safety and health issues? The Army Corps must assess setback distances and equipment safety in the EIS.

ii. The EIS Must Evaluate All Risks Associated with the Increase of Trucking and Traffic Due to the Project.

A proper EIS analysis includes but is not limited to the safety, pollution and health implications of trucking. The anticipated truck traffic created by the LNG facility for the local community has the likely potential of being quite massive. In the initial Letter of Intent to the Coast Guard in 2017, the applicant stated the truck rack that would directly transfer, or “transload”, the LNG from the trucks to the ships was being designed to handle 200 to 220 trucks per day with the potential for raiing in the significant volumes of LNG. This would presumably equal 400 to 440 truck trips per day (truck trip = in and out of the facility). The estimate for the annual volume of LNG that would be shipped out of the port was 1.5 million metric tons per year in the initial Letter of Intent to Coast Guard, which is now potentially tripled for LNG and LHG due to two additional berths. Neither the Army Corps Public Notice dated July 13, 2019 nor the Public Notice dated April 4, 2019 provide any estimate of the volume of LNG to be exported from the facility on a daily, monthly or annual basis.

There are varying estimates of truck and vehicle traffic that will be generated by the facility included in several documents DRN has reviewed. In the Army Corps of Engineers’ Public Notice dated July 13, 2019 the total number of truck trips is estimated to be 360, or 15 truck trips per hour, 13 of those exclusively for LNG. The Army Corps of Engineers’ Public Notice also states that a new access road will be built for the facility so that trucks will bypass the residential areas of Gibbstown and limit truck traffic impacts on the local community. The Corps states that it will review this component of the project due to “the single and complete/reasonable related nature of this component” even though this will not require any approvals from the Corps. The Public Notice states that the Truck Bypass (the “Route 44 Bypass”) will be built by Gloucester County.

The number of trucks estimated in the February 2019 McCormick Taylor Drainage and Storm Water Management Report for the Route 44 Truck Bypass³⁷ for the Logistics Center is starkly different and much greater than the number estimated in the Army Corps’ Public Notice. According to the stormwater report, the current average number of trucks on Route 44 is 143 trucks per day on the eastern end and 92 trucks per day on the western end. After the Logistics Center is completed, the facility will generate approximately 1,650 truck trips per day, according to the report. The report continues, “These land uses are expected to generate approximately 8,450 daily trips to-from the DuPont Repauno site, including nearly 1,650 truck trips.”³⁸

In a Technical Memo submitted to Greenwich Township by Langan Engineers in July 2019, it is stated that the approved Redevelopment Plan for the property limits traffic prior to the

³⁷ McCormick Taylor, “Drainage and Storm Water Management Report for the Route 44 Truck Bypass and DuPont Port Access”, Township of Greenwich, Gloucester County, February 13, 2019.

³⁸ Ibid. page 2.

completion of the Route 44 Bypass to 550 vehicle trips per day. The Memo gives estimates for various stages of construction related to Phase 1 of the project at startup of construction before the Route 44 Bypass. It covers construction and administrative traffic and operational traffic for cavern filling and sales of butane, the only current operational activity at the site. The total during the “Fill Import Phase”, which will be the placement of fill to raise the site, is estimated at 426 truck trips per day. The total during rail rack construction phase is estimated at 186 trips per day and the total after rail rack construction is estimated to be 94 trips per day. This is all prior to shipping from either Dock 1 or Dock 2 and prior to the use of the proposed Route 44 Bypass.³⁹

In its application to the New Jersey Department of Environmental Protection for a Waterfront Development Permit, the applicant states that there will be secondary impacts due to increases in truck traffic but that the Gloucester County Improvement Authority is going to construct a bypass road for traffic to be routed around downtown Gibbstown.⁴⁰ No details are provided about the “secondary” impacts.

In the Greenwich Township Zoning and Hearing Board meeting minutes of June 2019 the mayor stated that it would be 1 to 1.5 years before the Bypass would be completed. It was also stated in the minutes under “Kernan: His review letter dated 5/6/19”. that “The hope is that the Bypass will be completed before there is a traffic snarl. Time (*sic.*) asked that a trip generation would be a condition of approval for future applications”.⁴¹ (That trip generation memo has been produced by Langan Engineers as discussed above). Traffic, including truck traffic, is clearly a concern for the municipality, the County, and the region but it does not seem to be required that the Bypass be completed prior to use of the site. In fact, DRN understands that truck traffic for NGL operations is already traveling in and out of the site, delivering NGL, using local roads in the residential area. Of course, because Stage 1 of the project and Dock 1 are under construction now, construction traffic is using the local roads, including Rt. 44 and residential streets through Gibbstown’s residential and business areas. Timing of the Bypass and the use of local roads for the enormous increase of truck and vehicular traffic generated by the Logistics Center is a critical part of the analysis of the impacts of the activities and operations at the Logistics Center on the area.

The issue of conflicting and incomplete or partial estimates of truck traffic and other traffic in and out of the site remains an issue that must be accurately assessed. The Logistics Center is expected to generate extremely large increases in truck traffic and other motor vehicle traffic. The Corps has deferred assessing the impacts of rail traffic at this time due to the lack of approval by the federal government for the use of rail cars for the transport of LNG. However, rail is expected to be used for LHG (natural gas liquids) and rail track improvements are reportedly already underway at the site. The accompanying air, noise, and light pollution and health and safety threats are important aspects of the Corps’ EIS examining the truck and vehicle traffic. DRN considers it essential that potential rail impacts be considered at this time as well so

³⁹ Langan Engineers, *Technical Memorandum re. Trip Generation DR Partners, Repauno Port and Rail Terminal, LPG Transloading Facility Site Plan Application*, Greenwich Township, July 12, 2019.

⁴⁰ Ramboll, “Compliance Statement in Support of WFD Individual Permit Application Dock 2 – DRP Gibbstown Logistics Center, 1690000609-001”, February 2019, page 26.

⁴¹ Greenwich Township Planning & Zoning Board, June 3, 2019 MINUTES, page 3.

the environmental analysis does not to avoid the cumulative assessment needed for all modes of transportation.

iii. **The EIS Must Evaluate the Potential for Accidents and Other Risks Associated with LNG Leaks.**

The risks of handling LNG are discussed earlier in this comment. Leaks in containers can cause cracks that expand to allow leakage of LNG, which vaporizes on release and, as discussed, can cause explosion and/or fire with catastrophic consequences. In a technical paper presented at the Probabilistic Safety Assessment and Management PSAM 12 Conference, June 2014, the authors use a methodology for risk analysis of LNG carriers operations aiming at defining the most critical pieces of equipment for avoiding LNG leakage during loading and unloading operations.⁴² This is an important analysis because it examines the ways that the unloading and loading operations of LNG pose specific risks and require certain safety measures. It is critical that an assessment be performed by experts of the safety measures and equipment to be employed at the Gibbstown Logistics Center, especially considering that the transloading of LNG is dangerous and can result in significant damage and injury, depending on the part of the equipment that fails. The consequence categories that are examined in Table 4 show categories of harm from negligible, to Marginal, to Critical and to Catastrophic. In the Critical category, lesions of moderate severity in employees, contractors, and/or people from outside the facility and minor lesions in “third parts” are projected to occur. In the catastrophic category, death or serious injuries to one or more people are projected. These scenarios will also severely damage or irreparably damage equipment or in the facilities. The probability of these and other less damaging categories of consequences is based on the equipment that fails and the failure rate. The paper concludes that the method used to assess risk helps to determine the critical components of transloading operations and equipment and the importance of gas detection; low temperature monitoring, heat, and fire detection; and emergency shutdown systems. The paper shows that improving operational safety can be achieved through understanding reliability of equipment more fully and developing specific maintenance procedures for that equipment.

A paper examining what can occur during the transloading of LNG to a carrier employs a risk-based analysis method, applied to a LNG shipping operation terminal. The possible causes of leakage are identified and the consequences classified. Among other findings is that the “probability of accidents is greater during cargo loading and unloading operations due to the great number of systems and pieces of equipment involved in those operations.”⁴³

It is crucial that the transloading of LNG from trucks or rail to the ship is fully and comprehensively assessed in terms of safety and operations of equipment considering the inherent dangers and higher risk factors that come with loading the ships 24 hours per day, continuously filling the shipping vessel day in and day out. It is also essential that all containers

⁴² Arthur Henrique de Andrade Melania, Dennis Wilfredo, Roldán Silvaa, Gilberto Francisco, Martha Souza, “Use of Bayesian Network to Support Risk-Based Analysis of LNG Carrier Loading Operation”, University of São Paulo, São Paulo, Brazil, 2014, downloaded 7.2019 at http://meetingsandconferences.com/psam12/proceedings/paper/paper_112_1.pdf

⁴³ G. F. M. Souza, D. W. R. Silva “Risk-Based Analysis of LNG Carriers Loading and Unloading Operations”, Proceedings of the 22th International Offshore and Polar Engineering Conference, ISOPE, 2005, Rhodes, Greece.

including trucks containing LNG that are on the site for transloading be evaluated for the potential for leaks, cracks, and container failures. Setback distances based on “blast zone” probabilities must be set to prevent public health harms. The location of Dock 2 on the Delaware River near sensitive ecological resources, within 1 mile of residential neighborhoods in Gibbstown and the employment of workers at the Logistics Center must be assessed in light of the potential for accidents associated with LNG leaks.

iv. The EIS Must Evaluate the Safety Issues of Simultaneous Handling of LNG And Other Cargo.

Another question that must be answered is whether simultaneous handling of LNG and other cargoes, including dangerous NGLs, can be done safely. If the transloading to the ship from truck or railcar is considered similar to “truck to ship bunkering” when assessed by the U.S. Coast Guard, there are Coast Guard regulations that apply to these activities when there are SIMOPS or “simultaneous operations” planned in the same vicinity. The usual procedure is for a Policy Letter to be issued by the Coast Guard after the specific logistics are evaluated.⁴⁴ Similar to SIMOPS considerations, it is additionally important to evaluate the activities and storage planned for export of other products such as NGL from the terminal for compatibility with LNG activities. An informed decision needs to be made about timing, location, and proximity to the LNG facilities and activities. It may be that other activities planned for the terminal cannot occur under any circumstances at the same site that is handling LNG.

C. Impacts to Water Resources, Including Surface Water and Groundwater Impacts Must be Fully Considered.

The former use of the site for munitions, the possible presence of hazardous residues or contaminants in the soil, sediment, materials on site, groundwater or surface water of the site must be evaluated for potential hazards.

i. An EIS Must Evaluate the Threats to Groundwater from the Project.

This superfund site may pose a hazard to groundwater. As discussed in more detail earlier in this comment under D., groundwater has been contaminated by industrial activities at the property for more than 100 years, primarily by DuPont. The potential for changing the movement of pollutants through groundwater and disrupting environmental conditions that could result in the release of dangerous contaminants further into the environment through existing and new pathways is great due to the extensive construction and the operations associated with the Logistics Center. The Army Corps’ EIS must fully assess this complex issue.

The groundwater pumping remediation program initiated by DuPont in 1985 is operated since 2015 by Chemours, a spin-off company from DuPont. The groundwater interceptor system continuously pumps to attempt to keep the migration of pollutants in the groundwater in check. As mentioned previously in this comment, the monitoring wells that have been tracking the pollution are in jeopardy of being moved for the Logistics Center use of the site. This would

⁴⁴ CG-OES Policy Letter, No.01-17, JUN - 8 2017, Guidance for Evaluating Simultaneous Operations (SIMOPS) During Liquefied Natural Gas (LNG) Fuel Transfer Operations, Ref: (a) CG-OES Policy Letter No, 01-15.

disrupt the critical continuous sampling data collection that is so important to accurate and effective cleanup of the site. This mistake cannot be allowed to occur.

ii. Environmental Impacts of the Proposed Dredging Activities Must be Fully Evaluated.

The dredging of 665,000 cubic yards of sediment from the Delaware River to provide a channel to the Federal Navigation Channel would go to a depth of 43 feet below mean water lower low water over a 45-acre area. Allowed is a two-foot overdraft. This almost doubles the amount of material that will be dredged for the entire Logistics Center project, increasing greatly the adverse environmental footprint of the dredging from the originally proposed Dock 1. The sediment to be dredged is silt, fine sand, and trace gravel, according to the draft docket. DRN is very concerned about the impacts of the dredging on water quality, fish, and aquatic life. We do not agree that the prevention measures included in DRPs application materials so far for controlling the sediment will provide adequate protection to species in the area of the Center. DRN has commented in the past on the significant environmental impacts that dredging causes in this section of the Delaware River. First, deepening 45 acres of river area to a depth of -40 feet mean lower low water with a 2-foot overdraft will open this newly deepened area to the potential for an increased risk of harm if there is a catastrophic spill event. With a deepened area, ships will access the proposed deepwater port and, when filled for export will be heavily laden with LNG, natural gas liquids or other chemicals. Using the catastrophic experience of the Athos I oil spill of November 26, 2004, the volume of carried material available to leak and wreak havoc on the environment and our communities will be greater and therefore more dangerous with the added capacity of the proposed port's dredging of 45 acres.⁴⁵

The Athos I catastrophe exposed 115 miles of River, 280 miles of shoreline, 16,500 birds, as well as many species of fish, shellfish, and wildlife and a variety of important habitats to the heavy crude it dumped into the Delaware River.⁴⁶ Habitats, wildlife, water quality, air quality, industry, recreation, and communities were all significantly harmed by the spill. Any project that will increase the magnitude of such a tremendous level of damages in the event of a future catastrophe is a danger to all of these natural and human resources.

Adding LNG transport to the dangers of shipping on the river exponentially increases the potential for a far-reaching catastrophe. Considering that the zone of blast around a container release and/or fire is at least one mile and could be miles larger depending on how quickly the gas cloud created by the vaporizing LNG spreads, communities along the river, including metropolitan areas such as Philadelphia, Camden, Chester and other high density population centers), passing ships, bridges, facilities such as airports (the Logistics Center is across the river from the Philadelphia Airport), motor vehicle traffic and workers would all be exposed to potential life-threatening injury if an LNG marine vessel were to have an accident and release LNG. There is no discussion in the Docket about the shipping dangers that the dredging would

⁴⁵ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁴⁶ Final Restoration Plan and Environmental Assessment; for the November 26, 2004 M/T Athos I Oil Spill on the Delaware River Near the Citgo Refinery in Paulsboro, New Jersey, September 2009, http://www.darrp.noaa.gov/northeast/athos/pdf/Athos_Final_RP.pdf

enable. This is one reason why a comprehensive environmental analysis of this LNG project is required.

Dredge spoils significantly increase the amount of heavy metals and toxins that would be released into waterways and the environment,⁴⁷ especially with the amount of material that appears to be contaminated at this site. The impacts of the spoil disposal plans and potential pollution impacts could have significant community and environmental effects. The threat posed by dredged spoils is known to be a source of water pollution after on-land disposal.⁴⁸ In addition to polluting the water and land, there are likely to be air quality impacts including NOx emissions associated with the construction and associated traffic from this additional dock and dredging project that should be considered as well. This needs to be fully evaluated.

Maintenance dredging will be required once the project is in operation. The environmental impacts of future dredging for the operation of the project must be evaluated.

iii. The Threat of the Release of PCBs From the Site Must Be Accounted For.

DRN is very concerned about the release of PCBs from the site. EPA identified the Repauno site in 2003 as one of the largest PCB point sources in the Delaware Estuary (among the top 10). A TMDL was established for the Estuary to remediate the contamination. Dredging; construction in the water, riverbank and on uplands; and site disturbance and stormwater systems will disturb PCBs, which have been found in near-shore sediments and in runoff from the site. There is a zone of highly contaminated sediments immediately adjacent to the shore and port facility. DRBC's dedicated role in reducing PCBs in the Estuary and its role to ensure that PCB Pollution Minimization Plans (PMP) are effectively implemented is compromised by the plan to disturb, construct on, and dredge this site.

Past projects have seen regulatory agencies take a lax approach to this issue. The 2017 DRBC docket approved dredging and other disturbances that could significantly increase PCB loading to the already-impaired Delaware Estuary. DRBC did require in the current docket a PCB sampling program to be conducted by Delaware River Partners and stated that fill and capping to raise the site to a higher elevation would help to minimize PCB release. DRN has not seen any analysis that proves that statement. A NPDES permit was supposed to be required to assess PCB migration from the site and to possibly require a separate pollutant minimization plan to be conducted by Delaware River Partners. However, the project is currently under construction while no NPDES permit is in place that requires sampling and monitoring of the release of PCBs during this critical disturbance phase of the project.

There are several unaddressed questions regarding this PCB issue. First, the sampling and the controls should have gone into operation prior to dredging and land disturbance that could release PCBs but this apparently is not the case unless the NPDES permit has been issued without public disclosure. Second, Chemours claims that the site is "substantially remediated"

⁴⁷ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁴⁸ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

for PCBs yet there is no evidence that PCBs are remediated and the sampling as recently as 2018 shows otherwise. Third, Chemours currently operates the site remediation program, including a groundwater pumping system which is supposed to continue during the operation of the facility. It is important that an analysis is done about how these cleanup operations will reliably and safely operate while Dock 2 is being constructed, the river is being dredged, and while the Docks and on-land activities at the site are in operation.

iv. Impacts of Additional Traffic on the River Need to Be Evaluated and Accounted For.

As discussed earlier in more detail in this comment, the additional deepened 45 acres of river area that would provide access to the proposed deepwater port Dock 2 would result in larger and deeper draft vessels coming up the River. DRP's draft docket with the DRBC states ocean-going vessels up to 966 feet long with a draft of 39.7 feet will be accommodated at the two deep water berths. This triples the amount of vessel traffic that was originally planned for the facility. This additional traffic being layered on to the facility needs to be properly analyzed in the environmental assessment, particularly in terms of the amount of truck traffic, parking areas, turning radius areas and other related knock-on logistical needs that are available on this site, which had some non-specified areas but without an analysis showing that the additional traffic can be handled at the Center, it is unknown if the site is too small for this additional vessel traffic. The additional ship traffic and the specific types of ships required for LNG and NGL overseas transport will significantly increase.

v. Impacts from the Certain Increase of Ballast Water Must be Accounted For.

More shipping vessels mean more ballast water needs, discharges, and impacts. Impingement and entrainment of the variety of species discussed in this comment and beyond due to the intake and discharge of ballast water could be significant. The increased intake of ballast water from the River as a result of the commercial vessels coming into the River due to this project would entrain early life stages of commercially and recreationally important fish including American shad, alewife, blueback herring and striped bass.⁴⁹ The cumulative effects of this impingement and entrainment need to be considered in conjunction with the impingement and entrainment that already occurs at existing cooling water intakes operating in the Delaware Estuary and River, including the nearby Paulsboro and West Deptford Township facilities.

In addition, the concerns about invasive exotic species that may result from larger discharges of ballast water from larger vessels cannot be overstated in terms of either ecological or economic impacts. The invasion of such species into major ports and waterways of the U.S. have cost billions of dollars in control efforts and lost economic value from damage to important fish and wildlife species as well as the habitats that support them.⁵⁰ For more information see http://water.epa.gov/polwaste/vwd/ballastwater/invasive_species_index.cfm http://water.epa.gov/polwaste/vwd/ballastwater/invasive_species_bal_links.cfm

⁴⁹ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁵⁰ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

<http://www.invasivespecies.gov/index.html>

D. A Proper NEPA Analysis Must Include an Examination of All Potential Air Quality Issues and Consequences of Them.

The additional emissions of the truck traffic, impacts of rail traffic for the LHG deliveries, additional stormwater runoff (in terms of quantity and also quality due to the additional traffic and additional types of cargo, including LNG) and other related infrastructure need to handle and service the new shipping traffic, as discussed in more detail earlier in this comment. The transloading area needs to also be analyzed to be certain the potential air emissions that could come from the cargo, especially if it is hazardous material such as NGL or LNG or other bulk liquids that possess toxic properties are accounted for.

E. Impacts to Aquatic and Wildlife, Including Endangered and Threatened Animal and Plant Species Must be Thoroughly Catalogued and Considered.

i. Impacts to Atlantic Sturgeon Must be Thoroughly Evaluated.

As discussed earlier in this comment, Atlantic sturgeon will be directly negatively impacted by the development and operation of this site. The revised wharf design is under review by NMFS regarding two threatened and endangered sturgeon species, and the critical habitat for the Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*). However, the applicant and agencies thus far have failed to acknowledge that the federal government established the Delaware Estuary as Critical Habitat for the New York Bight DPS of Atlantic Sturgeon in August 2017.

So far, DRN has witnessed one agency neglect this fact in their review of the project. DRBC's Water Quality Regulations at §4.30.5-B.1 acknowledge that the Commission must evaluate Critical Habitat, and that this evaluation must follow its Rules of Practice and Procedure. Despite the federal ruling, DRBC has yet to initiate its procedures for verifying the Critical Habitat established by the federal government, and the role that Critical Habitat will play in docket decisions. DRBC should not have approved any project that could directly and indirectly affect this Critical Habitat until it completed all necessary procedures in the Critical Habitat evaluation. DRN contends that to approve such activity was premature, undermined the required process for DRBC review and approvals, was unfair in terms of just application of its regulations, and jeopardizes the Critical Habitat of the Atlantic Sturgeon.

Both direct take and incidental take of sturgeon are a distinct possibility with a project of this nature. Both the Atlantic sturgeon and shortnose sturgeon are threatened and adversely affected by dredging and effects to water quality including dissolved oxygen (DO) levels, water temperature, and contaminants.⁵¹ The proposed project will entail significant levels of dredging as well as significant water quality effects and dramatic changes in important habitats including juvenile habitat and spawning grounds.

⁵¹ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

The dredging of river systems significantly impacts aquatic ecosystems in a number of ways that will harm both sturgeon species. Among the effects that the project will have on the Delaware River populations of both sturgeon species are:

- Deep-draft vessel traffic in the Delaware River has been cited as the biggest threat to the survival of the Delaware River population Atlantic sturgeon; the increased vessel traffic and increased area for deep-draft vessels to strike Atlantic sturgeon directly resulting from this project will significantly increase sturgeon vessel strikes and could accelerate the extinction of this endangered species population.⁵²
- Dredging activities remove, disturb, dispose of and re-suspend river sediments, modifying the river bottom substrate and impacting the community of benthic macrofauna;
- Dredging operations can remove or bury organisms and destroy benthic feeding areas;
- Dredging operations can create noise and disturbance, and can disrupt spawning migrations;
- Dredging activities can re-suspend contaminants, affect turbidity and siltation, and deposit fine sediments in spawning habitats; and
- Dredging activities alter the hydrodynamic regime, alter physical habitats, and create the loss of riparian habitat.⁵³

The act of dredging can entrain sturgeon, taking them up into the dredge drag-arms and impeller pumps and resulting in death.⁵⁴ New data from tagged Atlantic sturgeon continue to show their presence in or near the main navigation channel, making them vulnerable to direct take by dredging operations, as well as direct take from the larger vessels that will be using the channel.⁵⁵ These lethal takes are significant for a species that is at such low levels (fewer than 300, maybe even fewer than 100), and as genetically unique as the Atlantic sturgeon of the Delaware River are.⁵⁶

Dredging in the portions of the River near Philadelphia is likely to be detrimental to the successful spawning of sturgeon in the Delaware – not just because of the act of dredging but also because of the degradation of spawning habitat.⁵⁷ Dredging increases the level of suspended sediments and contaminants in the water. An increase in suspended sediments could be detrimental to egg survival of sturgeon – increasing the probability that eggs adhere to suspended

⁵² Brown and Murphy. 2010. Atlantic Sturgeon Vessel-Strike Mortalities in the Delaware Estuary. *Fisheries* 35(2): 72-83.

⁵³ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁵⁴ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁵⁵ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁵⁶ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁵⁷ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

solids and suffocate, increasing contaminant loads can alter growth and reproductive performance in sturgeon.⁵⁸

Dredging is a factor in the destruction, modification, or curtailment of the Atlantic sturgeon's habitat and range.⁵⁹ The environmental impacts of dredging include direct removal or burial of organisms, elevated turbidity or siltation, contaminant re-suspension, noise or disturbance, alterations to hydrodynamic regime and physical habitat, and loss of riparian habitat.⁶⁰ Furthermore, an increase in vessel traffic on the Delaware River resulting from the project would increase the likelihood of vessel strikes to sturgeon.²

A study of mortality rates on Atlantic sturgeon in the Delaware River between 2005 and 2008 found that 50% of the mortalities were the result of vessel strikes. The remaining 50% were too decomposed to determine if they were caused by vessel strikes but it is likely most were.² For small remnant populations of Atlantic sturgeon, such as that in the Delaware River, the loss of just a few individuals per year due to anthropogenic sources of mortality, such as vessel strikes, may continue to hamper restoration efforts.² According to a 2010 research article on vessel strikes, "Both the dredging to deepen the channel and the subsequent increase in large vessel traffic may further hamper the recovery of the Delaware River Atlantic sturgeon population."² Of critical importance, this study is concerned about the size of the vessels resulting from deepening as opposed to any increase in the volume of vessels. The larger size of the vessels from the deepened channel will likely increase the number of vessel strikes for both sturgeon species.²

The continued dredging of new deep-water areas will further impact Atlantic sturgeon spawning by accelerating the intrusion of brackish water into the hard-bottom spawning grounds, and thus forcing Atlantic sturgeon to spawn further upstream in the zone of depressed dissolved oxygen. This shift then exposes the eggs and larvae of newly spawned Atlantic sturgeon to low oxygen conditions from which they may not survive. This "squeeze" between increased salt intrusion in the estuary downstream (exacerbated by channel deepening, new deep-dredged berthing areas, and rising sea levels) and the near-lethal dissolved oxygen levels upstream limits the ability of Atlantic sturgeon to successfully reproduce and increases the likelihood of extinction. This project makes a significant contribution to such salt-intrusion by adding 45 acres of new deep-water channel and berthing to an estuary under siege.⁶¹

The remobilization (and dewatering of dredged sediments) will create higher exposure to PCBs and other contaminants, and the Atlantic Sturgeon spawning and rearing that begins in June and extends the early-life-stages through July and August, with increasing evidence for high aggregations of young-of-year in the Proposed Project vicinity, means that elevated exposure will occur for larval and juvenile stages of this endangered species in the Delaware River. The currently proposed methods and timing are insufficient to protect this endangered species, and

⁵⁸ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁵⁹ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁶⁰ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁶¹ Moberg and DeLucia. 2016. Potential Impacts of Dissolved Oxygen, Salinity and Flow on the Successful Recruitment of Atlantic Sturgeon in the Delaware River. The Nature Conservancy. Harrisburg, PA. 69 pp.

more evidence and analysis would be required in order to claim that the project does not impair NOAA Trust Resources, fish and wildlife, and the water resources of the Basin.

ii. Threats to Fresh Water Mussels Must be Accounted For.

In November of 2010, researchers discovered beds of freshwater mussels in the Delaware River between Chester, PA and Trenton, NJ.⁶² The species found included the alewife floater (*Anodonta implicata*) and the tidewater mucket (*Leptodea ochracea*), only found in New Jersey in the tidal Delaware River; the pond mussel (*Ligumia nasuta*) and the yellow lampmussel (*Lampsilis cariosa*), both considered critically-imperiled; and the creeper (*Strophitus undulatus*) and the eastern floater (*Pyganodon cataracta*) both considered vulnerable; as well as the eastern elliptio (*Elliptio complanata*), the only mussel known to be native to our Delaware River that is not considered to be in jeopardy.⁶³ Mussels are not mentioned in the application or in the applicant's Compliance Statement. Particularly because some of these estuarine species are state-listed and/or critically imperiled, the extent and composition of these mussel beds needs to be accurately surveyed prior to any in-water work at the site. Once the locations, abundance, and identify of these species are documented, a relocation plan would be needed to move individual mussels out of areas where direct mortality might occur.

Freshwater mussels can live 80 to 100 years old, and most species do not begin reproducing until they are 8 to 10 years old.⁶⁴ Because they are so slow growing and don't begin to reproduce until this older age, they are not able to quickly recover from disturbances and the population cannot recover quickly from impacts that result in death to individuals.⁶⁵ Freshwater mussels require a fish host, a specific species depending on the mussel, to complete their life cycle. Activities that damage the needed fish hosts in turn do direct harm to the freshwater mussel species they help serve in the life cycle.⁶⁶

Mussels are vital for filtering pollution and filling important habitat niches. Experts believe that revitalizing freshwater mussels in the Delaware River could improve water quality downstream and thereby benefit estuarine species.⁶⁷ All of the freshwater mussels in the Delaware River system, except for one (the Eastern elliptio, *Elliptio complanata*), are identified by one or more of the states as endangered, threatened, imperiled, vulnerable, critically impaired, very rare, extremely rare or extirpated.²

Freshwater mussels are very sensitive to water quality. Exposure to contaminants either directly via dissolved compounds or contaminants that are particle-mediated can have adverse

⁶² Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁶³ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁶⁴ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁶⁵ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁶⁶ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁶⁷ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

consequences.² Freshwater mussels are highly exposed to changes in water quality because of their filtering activities and the passage of large volumes of water across many thin tissue layers. Dissolved toxins, such as heavy metals, are rapidly taken up by direct absorption and indirectly via food.⁶⁸ Because this project will likely result in pollution both directly and through contaminants from spoil disposal, the implications of this pollution for the mussels in this area must be examined.

Stressed mussels require more oxygen. The dredging described for this project is a threat to any submerged aquatic vegetation in the area that is critical for providing oxygen in the Estuary, including the Philadelphia reach of the River, which includes the location of the proposed project. Although dissolved oxygen levels can become excessively low in this area even today, they have improved significantly compared to decades past. In fact, the DRBC is considering elevating their “Aquatic Life Designated Use” rule in this section of the Delaware River to maintain and protect dissolved oxygen levels.⁶⁴ Increased sedimentation from dredging activity inhibits mussels and their host fish species from taking in oxygen.⁶⁹ Additionally, invasive or exotic species resulting from interbasin transfers of water can be a very direct threat to freshwater mussels as well as many other species. Increased ballast water from deeper ships, and increased ship traffic, brought up the River by a deeper channel could heighten this risk.⁷⁰ The issue of invasive and exotic species and ballast water and their ecological and economic implications for freshwater mussels and other River fish and wildlife species must also be considered.

Identification of host fish needed for freshwater mussels is one of the least studied aspects of freshwater mussel life history. American eel are known to be hosts for *Elliptio complanata*; some believe they are in fact the preferred host.⁷¹ Some species of trout and yellow perch too can serve as hosts and data shows that some of the species found in the tidal estuary, *Strophitus undulatus*, can use pumpkinseed and yellow perch.⁷² Shad too are considered by some as possible host species.⁷³ The potential impacts to these host species are additional factors to consider when assessing the threats to mussels.

iii. Impacts to Wildlife from the Construction and Operation Must be Addressed.

There is evidence that the acoustic impacts from construction activities, such as those described for this project, can significantly harm fish.⁷⁴ The effects of underwater sounds created by pile

⁶⁸ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁶⁹ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁷⁰ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁷¹ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁷² Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁷³ Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁷⁴ Delaware Riverkeeper Network (2011). Supplemental Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

driving on fish may range from a brief acoustic annoyance to instantaneous lethal injury depending on many factors.⁷⁵ Even at non-lethal levels, low levels of acoustic damage may result in the fish not being able to swim normally, detect predators, stay oriented relative to other fish in the school, or feed or breed successfully.⁷⁶ This is a potential threat to all fish, including both sturgeon species as well as all the fish that serve as host species to mussels.

There are bald eagle (*Haliaeetus leucocephalus*) nests and osprey (*Pandion haliaetus*) nests near or within the project site.⁷⁷ Even with the best mitigation plan in place, there would inevitably be some level of disturbance to these nests versus the no-action alternative, which would leave the nests as they currently are. The nests are not even mentioned in the public notice and this is an issue that the public should be aware of. While formerly a highly-degraded site when DuPont owned and operated the property, the wetland and upland portions of the site have reverted to a natural state with a diverse ecosystem suitable as nesting habitat for these two imperiled bird species. Any disturbances or alterations to these nesting areas could be detrimental to the breeding success of these birds and therefore the future viability of their populations in this area.

F. Army Corps Must Require A Proper Alternative Analysis Section and Account For The Destruction To The Natural Restored Condition Of The Repauno Property, Including A No Action Alternative.

This analysis should include, but not be limited to, examining differences in impacts to wildlife species, wetlands and waterbodies, steep slope topography, land disturbance, forest reduction, re-vegetation potential, and health and safety risks from the impacts of different alternative actions.

In its application materials so far, DRP has failed to consider the important naturally restored condition of the Repauno property and adjacent, local and regional natural resources that would greatly benefit from preservation and protection. The loss of the natural condition, habitats and quality of the Gibbstown Logistics Center site and the fragmentation of the natural systems in the surrounding area will be great. However, the applicant does not discuss, measure, or assess this impact. The applicant simply relies on the 100-year historic use of the Repauno property prior to its abandonment as an industrial location. It has been decades since heavy industrial use of the property has occurred, and the natural environment has subsumed the location and should be considered as a natural asset of great value.

The natural assets at the site must be accounted for in determining the value of this project. In the materials DRN has reviewed so far the applicant has used a circular justification for the project at this location stating that because the site is undergoing redevelopment as a marine terminal with Dock 1 and the associated landside development, it is “the most feasible alternative for the proposed project”. Simply because the Gibbstown Logistics Center is being constructed does not provide justification or rationale for further impacting natural resources and assets for Dock 2.

⁷⁵ Delaware River Basin Commission (2017) Draft Resolution, February 23, 2017. Retrieved from http://www.nj.gov/drbc/library/documents/Res_EstuaryAquaticLifeUses_draft022317.pdf

⁷⁶ Delaware River Basin Commission (2017) Draft Resolution, February 23, 2017. Retrieved from http://www.nj.gov/drbc/library/documents/Res_EstuaryAquaticLifeUses_draft022317.pdf

⁷⁷ Ramboll Environ (2016). Compliance Statement in Support of Multiple Individual Permit Applications. Appendix E, Habitat Impact Assessment Report, July 2016.

G. The Army Corps Must Thoroughly Examine DRP’s Claims of Public Need for the Project.

NEPA requires that an environmental assessment “[s]hall include brief discussion of the need for the proposal, of alternatives as required by section 102(2)(E), of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.” 40 CFR 1508.9(b). This requires the Army Corps to consider energy needs on both local and national scales. As well as energy production, uses, and conservation.

Additionally, under New Jersey regulations, new dredging is considered acceptable only if certain conditions are met. Particularly important for this site is the condition that requires a demonstrated need that cannot be satisfied by existing facilities. DRP’s claims of public need must be assessed to ensure it is both valid and not self-serving.

H. The Current Proposal is a Clear Case of Illegal Segmentation - the Army Corps Must Remedy This Defect In Its EIS NEPA Review.

NEPA prohibits segmentation of projects for purposes of NEPA review. As stated by the DC Circuit in *Delaware Riverkeeper Network, et al. v. Federal Energy Regulatory Commission*, 753 F.3d 1304, 1307 (D.C. Cir. 2014):

“An agency impermissibly “segments” NEPA review when it divides connected, cumulative, or similar federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration. The justification for the rule against segmentation is obvious: it “prevent[s] agencies from dividing one project into multiple individual actions each of which individually has an insignificant environmental impact, but which collectively have a substantial impact.” *NRDC v. Hodel*, 865 F.2d 288, 297 (D.C. Cir. 1988)” The rule against segmentation requires the federal agency, in this case, to consider all connected and cumulative actions.”

It is clear to DRN that the prohibition against segmentation has in fact been violated. Not only was the expansion of the facility reasonably foreseeable, but it now appears that this expansion was planned all along and that expansion was documented by the company.

- In a July 24, 2016 Philadelphia Inquirer news article, the company admits that it had envisioned LNG for this site: “Although a company prospectus last year envisioned a liquefied natural gas (LNG) facility at Repauno - disconcerting some residents and environmental groups such as the Sierra Club and the Delaware Riverkeeper – ‘that is no longer in our designs,’ Lewis said.” As a result, having an LNG operation at this site was clearly considered and therefore it was reasonably foreseeable that LNG would become a serious component of this operation at some point. It now seems obvious that while Delaware River Partners removed the LNG prospect from its application materials in 2016, it had every intention to restore that component of the project at a future date, and simply removed it to lighten the level of agency and public scrutiny and review that

would be given to the project during the reviews that were taking place for stage 1 of the Gibbstown Logistics Center.

- A November 16, 2017 Letter of Intent was submitted to the US Coast Guard specifically describing the project as being an LNG facility. This letter was sent to the US Coast Guard before the Army Corps issued its approval for stage 1 of this project on December 21, 2017. And so, it is clear that Delaware River Partners knew, and the Army Corps should have known, that the ultimate goal of the project was to build an LNG facility at this site. The letter to the Coast Guard has significant detail, including the anticipated export capacity of the site (1.5 million metric tonnes). The failure to consider the full project, including the LNG component, is a clear case of segmentation in violation of federal law. It is clear, should have been clear to the Army Corps, and would have been clear to the Army Corps had it done its NEPA due diligence, that the two stages of the project were and are interdependent and are clearly two parts of the same whole. There is a clear violation of the prohibition against segmentation that has taken place/is taking place at this site.
- There is clearly a foreseeable expansion of the facility to accommodate additional LNG capacity in the future (i.e. a state 3 of the project) given that the November letter to the Coast Guard describes the current project as “proposing an LNG facility with an initial capacity of up to approximately 1.5 million MTPA of LNG (roughly 1,670,000 BBL per month).” The descriptive language of “initial capacity” makes clear that more LNG exports are to come, that there will be additional expansions, and that such expansions need consideration as part of this current project in order to avoid additional segmentation violations.

Further, NEPA requires consideration of all reasonably foreseeable impacts resulting from a proposed action, activity or project. The facts above make clear that the LNG component has always been reasonably foreseeable.

I. A Full Environmental Impact Statement Is Clearly Mandated.

Authorizing the Logistics Center to export LNG and to construct and operate LNG export facilities demands an Environmental Impact Statement (EIS) pursuant to NEPA because this project will clearly have significant effects on the human environment. Unquestionably, construction and operation of the export facilities, including the transportation of the liquefied natural gas (LNG) to the site via truck and rail will have significant effects that trigger the mandate for a full NEPA EIS. In addition, there will be upstream and downstream impacts with respect to the extraction and use of the source fracked gas that are related and reasonably foreseeable actions which must be considered. Export of LNG will induce additional shale gas extraction/production in upstream regions, result in increased downstream uses, increased domestic gas prices, and increased greenhouse gas emissions and global warming. Each of these effects has direct importance to the Army Corps’ consideration of the Gibbstown Logistics port expansion proposal which includes LNG export as a significant, if not primary, goal of the project.

LNG operations pose specific and adverse risks to surrounding neighborhoods as well as the local, regional and national environment. The inclusion of LNG operations is a significant

aspect of the Gibbstown Logistics Center expansion that must receive full NEPA EIS review. Further, the Applicant has already segmented its operations at Gibbstown into different projects, even though they all support each other. Continuing to permit such segmentation masks the environmental and health harms of Delaware River Partners' operations as a whole. The proposal to truck/rail in the LNG along with long offloading times resulting in at least 15 days of storage on vessels raises additional impacts that need to be assessed and addressed, in addition to the environmental (including climate change) and health consequences at the point of gas extraction and as the result of downstream use. There are also implications for port traffic along the Delaware River in need of meaningful consideration and review.

As noted throughout this letter, there are a wealth of environmental and public impacts that need to be fully assessed pursuant to NEPA. Issues that need to be considered in a NEPA EIS include, but are not limited to:

- The safety, pollution and health implications of truck and rail traffic necessary to support the LNG (and LHG) operations proposed for the site. It is anticipated that truck traffic will at least triple over current levels as a result of the LNG export portion of the proposal. Truck racks that will be used to transfer the LNG from truck to ship will be designed to accommodate 200 to 220 trucks per day; a clear indication of the massive volume of truck traffic that will be created by the proposed LNG operations at the site. This will result in tremendous air pollution, noise pollution, property value, quality of life, traffic impact and traffic safety concerns that must be assessed. LNG volumes anticipated for the site were 1.5 million metric tonnes per year when initially calculated; the volume currently planned is unknown. It is anticipated that offloading from truck to rail will take 15 days, using pipelines that connect directly to the ships. As discussed earlier in this comment, 1,650 trucks per day are expected for the Logistics Center and all vehicle trips to/from the Logistics Center are expected to total 8,450, a massive increase in truck and vehicle traffic.
- The ramifications, particularly safety ramifications, of storing LNG on a ship while it is slowly loaded over a period of at least 15 days.
- The ramifications of the proposed LNG exports for shipping, ship traffic and the business operations of other shippers operating through Delaware River ports, especially if certain other operations must be shut down or bridges must be closed while ships are passing.
- The onsite environmental impacts of exporting LNG from this site.
- The upstream climate and environmental ramifications of the gas extraction activities that will be induced/supported by this operation. Increased shale gas extraction, including drilling and fracking, is a related, connected and foreseeable outcome of the proposed Gibbstown LNG facility given that the facility is intended to secure and support increased shale gas development in order to supply the facility with shale gas for export. As such, NEPA requires consideration of the environmental and community impacts of shale gas development that will result in order to supply the Gibbstown LNG facility. Shale gas development is an extraordinarily land and water-intensive process that converts agricultural, forest, and range lands to industrial uses, consumes millions of gallons of water per well, and generates huge quantities of hazardous wastes, and results in

tremendous and harmful volumes of climate changing emissions as well as the release of other hazardous air pollutants.⁷⁸

- The downstream environmental and climate impacts from the use of the gas to be exported.
- The safety ramifications of having an LNG operation of this kind on the Delaware River including for the surrounding community.
- The implications for other shippers and port operations that will result from the LNG export use of the site at a rate of 2 LNG export vessels a month / 24 a year with additional shipping events for LHG, numbering 37 in total according to the NJWFD application.
- The impacts on the endangered Atlantic and Shortnose Sturgeon and the designated Atlantic Sturgeon Critical Habitat that will be impacted. The Delaware River population of Atlantic Sturgeon is genetically unique with a surviving population that includes less than 300 spawning adults.⁷⁹ With numbers this precariously low, the responsibility for vigilant protection by our federal agencies could not be greater. The Delaware River population of Atlantic Sturgeon, along with the entire NY Bight Distinct Population Segment (DPS), of which the Delaware River population is a part, are designated as endangered pursuant to the Endangered Species Act. The Delaware River Atlantic Sturgeon are being severely impacted by ship strikes along the Delaware. In addition, the Delaware River's population of Shortnose Sturgeon is also listed as federally endangered and suffers low population figures. The ramifications of increased ship traffic and ship strikes is serious and potentially catastrophic.
- The water quality ramifications due to the release of ballast water from LNG ships. The "... discharge of ballast water and sediment from ships during LNG terminal loading operations may result in the introduction of invasive aquatic species."⁸⁰
- The water quality ramifications due to dredging and the potential resuspension/reintroduction from CDF discharges of contaminants to the Delaware River, including PCBs. CDFs holding dredged sediments from Delaware River dredging projects have been a demonstrated source of toxic contamination to the River, inflicting serious water quality impacts.
- The air and other ramifications of flaring off of gas and/or the construction and operation of a small capacity liquefier on site as discussed in a letter sent on November 16, 2017 to the US Coast Guard.

⁷⁸ Shale gas extraction is also a significant source of hazardous air pollution, including methane, volatile organic chemicals (VOCs), and air toxics such as benzene and ethylbenzene. In July 2011, EPA proposed a suite of draft regulations under the Clean Air Act to set new source performance standards for VOCs and sulfur dioxide, an air toxics standard for oil and natural gas production, and an air toxics standard for natural gas transmission and storage. Final regulations are due by April 3, 2012. See <http://www.epa.gov/airquality/oilandgas/>The Department of Energy's advisory panel on shale gas has urged EPA to extend these rules to existing shale gas production sources and to adopt regulations addressing methane explicitly. Bridget DiCosmo, "DOE Panel Urges EPA to Strengthen Proposed Air Rules for 'Fracking,'" Nov. 10, 2010, <http://insideepa.com/201111102381935/EPA-Daily-News/Daily-News/doe-panel-urges-epa-to-strengthen-proposed-air-rules-for-fracking/menu-id-95.html>. Methane is twenty times more potent a greenhouse gas than carbon dioxide. See <http://www.climate-science.gov/infosheets/highlight1/default.htm>. The oil and gas industry is the single largest source of methane emissions in the US, accounting for nearly 40% of national methane emissions. See <http://epa.gov/airquality/oilandgas/pdfs/20110728factsheet.pdf>.

⁷⁹ ASSRT (Atlantic Sturgeon Status Review Team) 2007. Status Review of Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*). Report to National Marine Fisheries Service, Northeast Regional Office. February 23, 2007. 174 pp.

⁸⁰ IFC, Environmental, Health, and Safety Guidelines for Liquefied Natural Gas (LNG) Facilities, April 30, 2007.

- Releases, spills or leaks during storage, transfer and/or transport of LNG.⁸¹
- Risk of accidents, incidents, fire or explosion during transport storage and/or transfer of LNG.⁸² While it is asserted there will be no onsite storage of LNG, the process of loading each ship will take on the order of 15 days—this translates into 15 days of storage on the vessel while loading operations are taking place. The potential safety implications need to be examined and disclosed. “Natural gas is combustible, so an uncontrolled release of LNG poses a serious hazard of explosion or fire.”⁸³ The greatest LNG hazards include pool fires, flammable vapor clouds and flameless explosion.⁸⁴
 - A pool fire occurs if LNG spills near an ignition source and in fact ignites, “the evaporating gas in a combustible gas-air concentration” burns above the LNG pool, and then proceeds to spread as the LNG pool expands away from its source and continues evaporating.⁸⁵ Pool fires are intense and will burn more hotly and rapidly than oil or gasoline.⁸⁶ Pool fires cannot be extinguished – “all the LNG must be consumed before they go out.”⁸⁷
 - Flammable vapor clouds happen if there is an LNG spill that does not immediately ignite and instead evaporates forming a vapor cloud.⁸⁸ Vapor clouds can drift a distance from the site of the spill.⁸⁹ If the vapor cloud encounters an ignition source then “those portions of the cloud with a combustible gas-air concentration will burn.”⁹⁰ While a vapor cloud is not toxic, it can displace breathable air and as a result cause asphyxiation.⁹¹ Extremely cold LNG can injure through direct contact.⁹² It has been said that “environmental damage associated with an LNG spill would be confined to fire and freezing impacts near the spill since LNG dissipates completely and leaves no residue.”⁹³
 - “LNG spilled directly onto a warm surface (such as water) could result in a sudden phase change known as a Rapid Phase Transition (RPT).”⁹⁴ “If LNG spills

⁸¹ IFC, Environmental, Health, and Safety Guidelines for Liquefied Natural Gas (LNG) Facilities, April 30, 2007.

⁸² IFC, Environmental, Health, and Safety Guidelines for Liquefied Natural Gas (LNG) Facilities, April 30, 2007.

⁸³ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁸⁴ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁸⁵ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁸⁶ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁸⁷ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁸⁸ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁸⁹ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁹⁰ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁹¹ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁹² CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁹³ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁹⁴ IFC, Environmental, Health, and Safety Guidelines for Liquefied Natural Gas (LNG) Facilities, April 30, 2007.

on water, it could theoretically heat up and regasify almost instantly in a 'flameless explosion'."⁹⁵

- Given the site's history of industrial operations, the known contamination that has and still does exist on the site, and its superfund status, there is a need to consider the potential synergy of harm that could occur if there was a catastrophic release at the site. Known contaminants of concern at the site include: nitrobenzene, aniline and mixed acids, sodium nitrite and nitrosylsulfuric acid.
- The entire site is in the flood hazard area. What are the implications of a flood for the LNG operations and LHG operations if there were a flood during transfer operations or storage onsite? With climate changing increasing the frequency, duration and magnitude of floods, this is an obvious and serious consideration. The ramifications of catastrophic flooding due to climate change is compounded by the known flood and safety ramifications of storm surge in the Delaware Estuary.
- The Gibbstown Logistics Center is located next to a residential area. There is a day care center and housing in Gibbstown adjacent to the Block and Lot of this site. These residential and day care uses are not compatible with an LNG export operation. The safety issues of the trucking, rail transport, storage, and transfer of LNG is dangerous if there is an accident or incident, and is in need of careful consideration.
- The economic ramifications of the proposed LNG export. By causing an increase in shale gas prices here in the U.S., there is widespread concern that the export of shale gas to foreign countries will adversely impact a number of other industries and the economic benefits and jobs they provide.⁹⁶
- LNG infrastructure can be vulnerable to terrorist attack.⁹⁷ This threat needs serious consideration. While, according to a report prepared for Congress in 2003, it was reported that "No LNG tanker or land-based LNG facility has been attacked by terrorists ... similar natural gas and oil facilities have been favored terror targets internationally."⁹⁸ Among the catastrophic events that can result from an accident or attack at an LNG facility are pool or vapor cloud fires.⁹⁹
- EPA identified the Repauno site in 2003 as one of the largest PCB point sources in the Delaware Estuary (among the top 10). Additional dredging, site disturbance and stormwater systems will disturb PCBs, which have been found in near-shore sediments and in runoff from the site. There is a zone of highly contaminated sediments immediately adjacent to the shore and port facility. The remobilization (and dewatering of dredged sediments) will create re-release of PCBs into the estuary, including in Atlantic Sturgeon spawning habitats. The ramifications for the reintroduction of PCBs into the environment needs careful assessment. Given that there is a reasonably foreseeable future expansion at this site to accommodate increased LNG operations, there

⁹⁵ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁹⁶ Unanswered Questions about the Economic Impact of Shale Gas Exports: Don't Jump to Conclusions, Comments on NERA Study, prepared by Jannette M. Barth, Ph.D., Economist, Pepecton Institute LLC, Dec 11, 2012.

⁹⁷ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁹⁸ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

⁹⁹ CRS Report for Congress, Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress, Sept 9, 2003.

needs to be consideration of this expansion for issues such as PCBs and other environmental effects.

- The job impacts of the proposal are in need of consideration and public disclosure. LNG exports, while creating some jobs in the gas industry, many temporary, creates a net job loss effect for the country. In fact, LNG exports could result in the net loss of as many as 270,000 jobs per year in our country.¹⁰⁰ The job implications must be assessed

In closing, we urge and request that the Army Corps begin by providing to the public more complete information about the full breadth of this project, undertake the completion of a full environmental impact statement review of all stages and phases of the Logistics Center without segmentation of the build-out as required under NEPA, and provide for abundant and broad public comment.

Given the numerous issues with the project DRN has outlined in this comment, the Army Corps must fulfill its legal obligations pursuant to NEP by undertaking the necessary review required by NEPA – issuing an Environmental Impact Statement (EIS). Issuing an Army Corps approval for the Gibbstown Logistics Center (CENAP-OP-R-2016-0181-39), which now undeniably includes an LNG export operation, without a proper EIS would be a violation of federal law that will be subject to legal challenge.

Respectfully & Urgently,



Maya K. van Rossum
the Delaware Riverkeeper
Delaware Riverkeeper Network

Tracy Carluccio
Deputy Director
Delaware Riverkeeper Network

Attachments:

Delaware Riverkeeper Network comment to Delaware River Basin Commission re. Delaware River Partners LLC, Gibbstown Logistics Center, Dock 2 , Greenwich Township, Gloucester County, New Jersey, June 7, 2019.

McCormick Taylor, “Drainage and Storm Water Management Report for the Route 44 Truck Bypass and DuPont Port Access”, Township of Greenwich, Gloucester County, February 13, 2019.

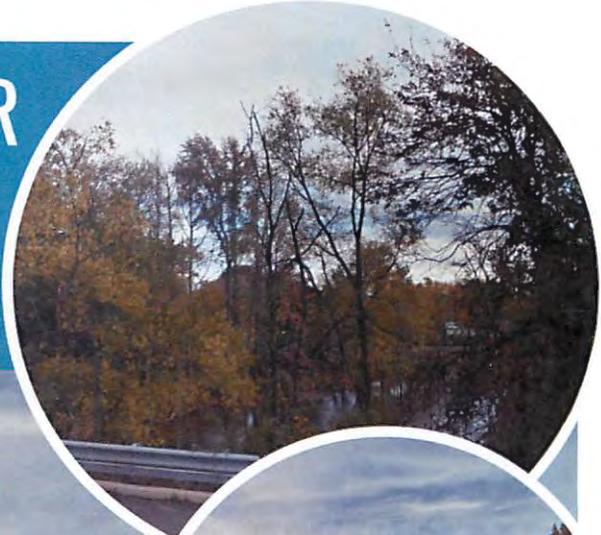
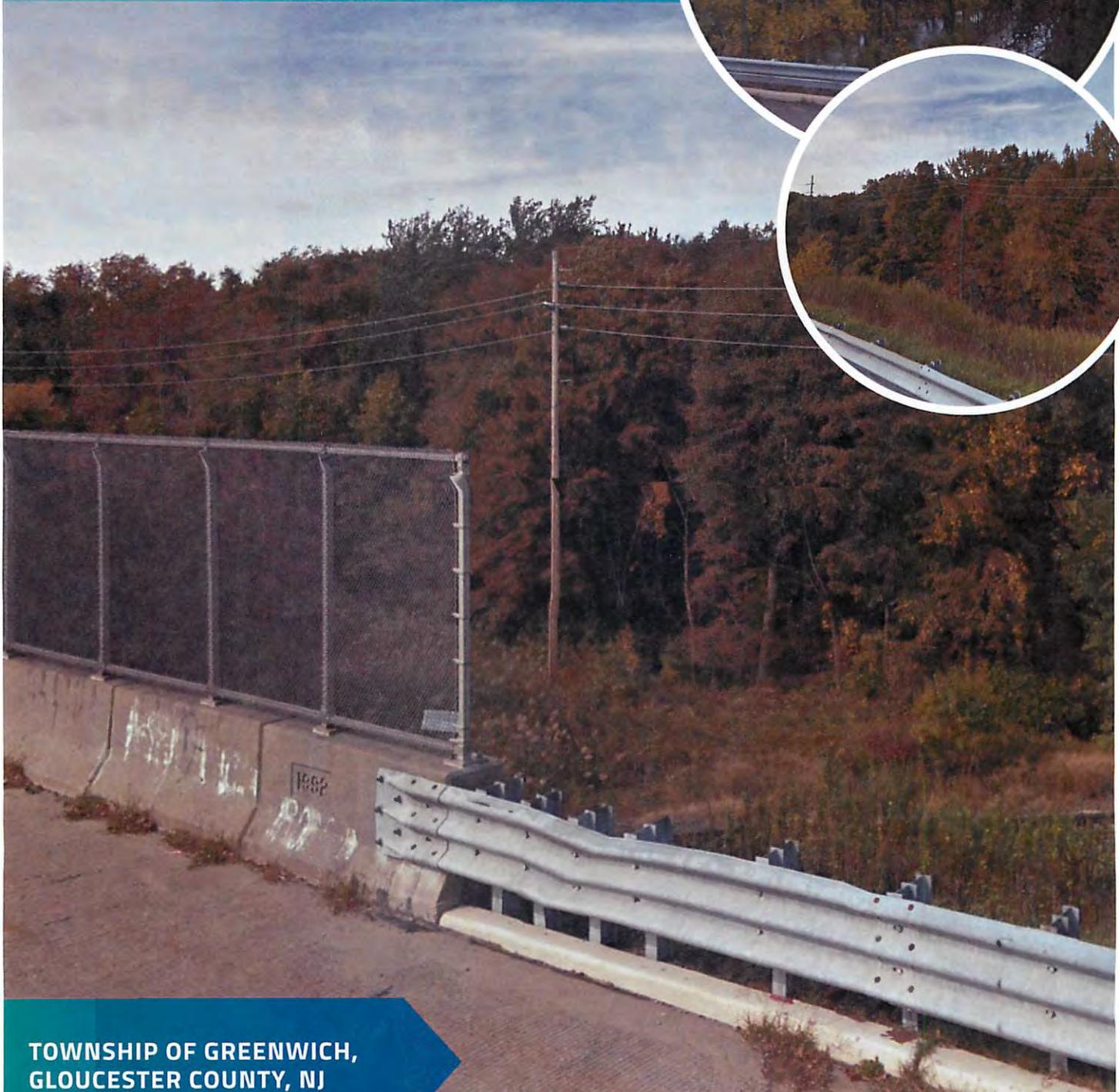
Langan Engineers, *Technical Memorandum re. Trip Generation DR Partners, Repauno Port and Rail Terminal, LPG Transloading Facility Site Plan Application*, Greenwich Township, July 12, 2019.

¹⁰⁰ Will LNG Exports Benefit the United States Economy, Synapse Energy Economics Inc., January 23, 2013



DRAINAGE & STORM WATER MANAGEMENT REPORT

FOR ROUTE 44 TRUCK BYPASS AND
DUPONT PORT ACCESS



TOWNSHIP OF GREENWICH,
GLOUCESTER COUNTY, NJ

GCIA & COUNTY OF GLOUCESTER

***DRAINAGE
&
STORM WATER MANAGEMENT
REPORT***

For

**ROUTE 44 TRUCK BYPASS
AND DUPONT PORT ACCESS
TOWNSHIP OF GREENWICH
GLOUCESTER COUNTY, NJ**

Prepared for:

**Gloucester County Improvement Authority
109 Budd Blvd.
Woodbury, NJ 08096**

Prepared by:

**McCormick Taylor, Inc.
700 East Gate Drive, Suite 201
Mt. Laurel, NJ 08054**

February 2019

**Route 44 Truck Bypass and DuPont Port Access
Greenwich Township (Gibbstown),
Gloucester County, New Jersey**

Drainage and Storm Water Management Report

Certification Page

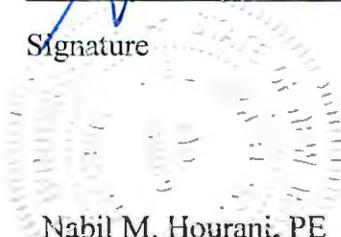
In accordance with N.J.A.C. 7:13-18.2 (j), I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining and preparing the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment.



Signature

02-13-19

Date



Nabil M. Hourani, PE
Printed Name

No. 24GE03888900

Professional License #

**DRAINAGE & SWM REPORT
FOR
ROUTE 44 TRUCK BYPASS
AND DUPONT PORT ACCESS**

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SPREADSHEET**

I. PROJECT DESCRIPTION

A. INTRODUCTION

Through the small community of Gibbstown section of Greenwich Township, Route 44 services various residential, institutional, commercial and governmental land uses which create less than ideal conditions for truck traffic. A large planned redevelopment project at the Repauno site, located adjacent to Gibbstown, is projected to add significant truck activity to Route 44 and local roadways to provide access to/from higher order, limited access highways.

Route 44 was originally constructed in 1929, extending from Logan Township northward to I-295 in West Deptford. In 1969, Route 44 was widened to provide shoulders in both directions. The Route 44 Bridge over Conrail railroad tracks was replaced in 1991. Route 44 through the project area was resurfaced in 2001.

B. PROJECT LOCATION

Route 44 is a north-south corridor located entirely within Gloucester County. The southern limit of the study corridor crosses the White Sluice Race Creek at MP 2.42. The northern limit of the corridor crosses the Swedesboro Road (County Route 653) at MP 5.18. Route 44 (W. Broad Street) through Gibbstown contains a mixture of residential, commercial, institutional and governmental land uses. The Broad Street School and Greenwich Township Little League fields are both located within the project limits in the vicinity of N. School Street. Additionally, there is a local VFW Post, a Methodist Church, the Greenwich Township Municipal Building/Police Department and US Post Office all located along Route 44 within Gibbstown. The project limits have been identified on the attached Project Location Map illustrated as *Figure 1*.

C. PROJECT PURPOSE AND NEED

The purpose of this project is to provide a truck bypass of Route 44 within Gibbstown to reduce the negative impacts of trucks to this residential community and to facilitate access to the DuPont Repauno site.

Route 44 through the community of Gibbstown is a mixture of residential, commercial, institutional, and governmental land uses, which results in less than ideal conditions for truck traffic. The Broad Street School, Greenwich Township Little League fields, Municipal Building and US Post Office are all located along Route 44 between Repauno Avenue and Harmony Road. Average daily traffic (ADT) volumes on Route 44 range from 1,765 vehicles per day (vpd) near Veterans Drive to 5,850 vpd near Harmony Road. Average daily truck percentages range from 2% near Harmony Road to 5% near Veterans Drive. This translates to approximately 143 trucks per day along Route 44 at the eastern end and 92 trucks per day traveling along Route 44 at the western end of the project limits.

Gloucester County is considering restricting truck movements on Tomlin Station Road (CR 607) and Democrat Road (CR 673) between Route 44 and I-295 to help eliminate truck traffic through

Gibbstown. These potential restrictions would divert more than 310 trucks per day onto alternate county roadways such as Swedesboro Road (CR 653) and Harmony Road (CR 680). Additionally, proposed development at the DuPont Repauno site, located adjacent to Repauno Avenue north of Route 44, is expected to be completed by Year 2020 and includes warehousing, liquid storage, an auto storage terminal and a marine terminal. These land uses are expected to generate approximately 8,450 daily trips to/from the DuPont Repauno site, including nearly 1,650 truck trips. Conceptual development plans for other industrial sites are also being considered for redevelopment along the outskirts of Gibbstown, which could generate several hundred additional truck trips to the area. A bypass roadway would be required to accommodate traffic affected by the truck restrictions and allow truck traffic to enter/exit the DuPont Repauno site from Route 44 without traveling through Gibbstown.

D. GOALS AND OBJECTIVES

The goals and objectives of the project are identified below:

- Provide a bypass roadway to accommodate truck traffic that currently uses Route 44 through Gibbstown as well as future truck traffic that will be generated by redevelopment of the DuPont Repauno site.
- Eliminate/reduce truck traffic through residential neighborhoods and school zones along Route 44 in Gibbstown, thereby improving safety for drivers, pedestrians, bicyclists and school buses.
- Provide a bypass roadway that meets AASHTO and NJDOT geometric standards and provides safe connectivity to/from Route 44 for both cars and trucks.
- Provide a bypass roadway that can accommodate the forecasted travel demand at the DuPont Repauno site.
- Utilize existing infrastructure to the extent feasible to minimize the environmental impacts of the bypass roadway.
- Avoid impacts to the White Sluice Conservation Easement and Wiggin's Pond.
- Minimize social, noise, and economic impacts to the community of Gibbstown.
- Provide a bypass roadway that minimizes impacts to the redevelopment plans of the DuPont Repauno site and does not impede future development.



Base Mapping Source: U.S.G.S.
Topo Quadrangles - Bridgeport, NJ



Project Location Map (USGS)

Route 44 Truck Bypass and DuPont Port Access
Greenwich Township, Gloucester County
New Jersey

Legend

- Project Location
- Municipality Boundaries

0 600 1,200 2,400
Feet

**MCCORMICK
TAYLOR**

Figure 1

E. PROPOSED PROJECT

The Preliminary Preferred Alternative (PPA) was chosen after consideration and receiving input from GCIA and the Gloucester County Engineering Department, as this concept meets the Project Purpose and Need as well as many of the goals and objectives. This alternative consists of the construction of a two-lane truck bypass roadway extending from Route 44, just east of Sand Ditch, to 'A' Line Road. On- and off-ramps connect the bypass roadway to Route 44 just north of Sand Ditch, and acceleration and deceleration lanes are provided between the ramps and Route 44. The existing Route 44 Bridge over Conrail will be modified to accommodate the Route 44 off-ramp. This alternative does not require construction of a new crossing of Sand Ditch, although it will require minor modification of the existing Route 44 culvert headwall at Sand Ditch to accommodate widening of Route 44.

This alternative was favorably received as a result of having lesser environmental impacts than the other alternatives and a minimal impact to the existing residential community.

F. EXISTING DRAINAGE CONDITIONS

There is no existing drainage systems for this project

II. PROPOSED DRAINAGE CONDITIONS

The proposed drainage conditions are as follow:

- 1- System proposed on Route 44 that has 7 inlets, one Manhole, 18" RCPs, one MTD and 14" DIPs to connect to the MTD. This system outfalls at Sta.534+9.5(RT), RT 44 existing baseline.
- 2- System proposed on Route 44, NB Ramp and on SB Ramp, this system has 23 inlets, 1 manhole, 18" RCPs, 18" DIPs, two MTDs and 14" DIPs to connect to the MTD. This system outfalls at Sta.200+00(RT), SB Ramp baseline.
- 3- System proposed on RT 44 Bypass, it has 9 inlets, 18" RCPs and DIPs, one MTD and 14" DIPs to connect to the MTD. It outfalls at Sta.304+35.1(LT), RT 44 Bypass baseline.
- 4- System proposed on RT 44 Bypass, it has 7 inlets, 18" RCPs and DIPs, one MTD and 14" DIPs to connect to the MTD. It outfalls at Sta.310+72 (LT), RT 44 Bypass baseline.
- 5- An 18" DIP with zero slope crosses under NB and SB ramps to feed and connect the two sides of the wetland areas, two inlets are connected to this pipe. Another 18" DIP with zero slope crosses under RT 44 Bypass also to feed and connect the two sides of the wetland areas.
- 6- An additional MTD, two new inlets and 16" DIPs will be proposed on Route 44, 118' south of Veterans Dr. within the same HUC-14 watershed to provide the required water quality treatment.

A. PIPES AND INLETS DESIGN CRITERIA

The proposed storm drainage systems were designed to limit stormwater spread in the 10-year storm event to the shoulder on Route 44 and Route 44 Bypass, to the third of the lane on NB and SB Ramps and to the half of the acceleration and deceleration lanes. Inlets will be installed to collect stormwater runoff from the roadway wherever possible without a major utility conflict. The systems will have capacity to convey stormwater runoff in a 10-year storm event at Free Outfall Boundary Conditions.

B. MODELING METHODS

The Bentley StormCAD computer program was used to perform spread and hydraulic grade line calculations. StormCAD uses the Rational Method ($Q=CIA$) to calculate flow to each inlet or structure within the conveyance system. A minimum time of concentration (T_c) of ten (10) minutes was used for inlet entrance times. Input to the computer program was based on observed field conditions, field survey, and proposed roadway profiles and cross sections.

The Bentley PondPack computer program was used to perform calculations for the rating curves of the diverted flows to the Manufactured Treatment Devices and the by-pass flows. *Please See Appendix A – 1-Storm Sewer Systems – Proposed Conditions. See also Appendix B – Drainage Areas Maps.*

III. STORMWATER MANAGEMENT

The project area is located within one HUC-14 watershed #: 02040202140010. *Please See Figure 3 – HUC-14 Map.* Proposed improvements for the project will disturb approximately 5.60 acres of existing land and existing roadway, increase 3.48 acres of new impervious area and include 0.74 acre of full depth pavement reconstruction. Since the project disturbance is more than one acre, and the increase of impervious area is more than 0.25 acre, the project triggers the NJDEP Stormwater Management Rules (NJAC 7:8-1.2) as “major development”. The project will comply with N.J.A.C. 7:8-Subchapter 5 (Design and Performance Standards for Stormwater Management Measures) as follows:

A. NON-STRUCTURAL STORMWATER STRATEGIES EVALUATION

The SWM Rules require that nine non-structural SWM strategies (NJAC 7:8-5.3) be evaluated and maximized before designing structural SWM measures to achieve the standards below:

- 1. Protection of areas that provide water quality benefits or are susceptible to erosion and sediment loss.* The most significant natural features providing water quality benefits are the areas containing freshwater wetlands. As discussed in detail in the Freshwater Wetland Permit Application, the proposed project has been designed to avoid and minimize the impact of the project on freshwater wetlands, State open waters, and wetland transition areas. Riparian zones adjacent to watercourses also provide some water quality benefits, and these areas (near stream vegetation) been avoided and minimized in accordance with

Flood Hazard Area Control Act Rules at N.J.A.C. 7:13, as described in detail in the submitted Environmental Project.

2. *Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.* The proposed roadway improvements have been designed to meet minimum New Jersey Department of Transportation (NJDOT) and AASHTO roadway design standards. Lane and shoulder widths are the minimum permitted, and these widths are dictated by the needs for motorist safety and other geometric requirements. The non-vegetated surface provided under guiderail to prevent the growth of vegetation is typically constructed with asphalt.
3. *Maximize the protection of natural drainage features and vegetation.* Measures have been proposed to minimize disturbance to areas beyond the project limits during construction. Limits of disturbance will be minimized by the use of steel sheet piling walls on both sides of the proposed bypass which will minimize wetland/floodplain disturbance and the clearing of trees. Side slopes and berms will be topsoiled and seeded. Silt fence will be used at limits of disturbance and inlet filters will be used at all existing and proposed inlets within the project limits. Where appropriate, culverts will be installed to connect the wetland hydrology on both sides of the proposed bypass.
4. *Minimize the decrease in the time of concentration from pre-construction to post-construction.* The proposed project will not result in a decrease in the time of concentration for the watersheds in which the project is located. Such decreases are typically the result of changes in land cover, drainage patterns, or shortening of drainage flow paths. The proposed project will do none of these. However, in some areas, longitudinal drainage systems have been provided to direct runoff to MTDs for water quality treatment.
5. *Minimize land disturbance including clearing and the proposed.* All proposed land disturbance activity will occur within right-of-way (ROW). Since the proposed project involves new construction of roadway, the primary strategy used to minimize the need for ROW and easements is to locate all disturbance activities within and immediately adjacent to proposed ROW to the maximum extent practicable. Impacts to existing, adjacent vegetation will be prevented through the use of silt fence and orange snow fence to limit construction access only to the necessary work areas.
6. *Minimize soil compaction.* Soil compaction will be limited to the footprint of the proposed Route 44 bypass within the proposed steel sheet piling. Areas to be disturbed temporarily during construction will be scarified, topsoiled and seeded.
7. *Provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.* Due to the limited ROW, the project does not involve the creation of wide berm areas along the roadway that might be landscaped. However, landscaping with native, non-invasive vegetation will be performed within the project ROW wherever feasible. Non-vegetated surfaces will be provided under guiderail so that applications of herbicides will not be required for maintenance.

8. *Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas.* For this project, providing vegetated open channels are not practical mainly due to the use of steel sheet piling walls to limit the roadway disturbance area. However, two vegetated open channels were designed between Route 44 and the north and southbound ramps.
9. *Provide source controls to prevent or minimize the use or exposure of pollutants at the site.* Many of the roadway drainage systems will discharge into proposed stabilized outfalls. In addition, all curb-opening inlets will comply with the New Jersey Pollutant Discharge Elimination System (NJPDES) standards regarding maximum opening size to trap debris and large floatable, and will also provide storm drain labeling to discourage dumping of pollutants into the drainage system. Most of the inlets along the roadway will be located in median areas, and these inlets do not have curb openings at all; only grates which meet “bicycle-safe” standards and are, therefore, in compliance with the NJPDES standards. All roadway drainage systems will be connected to manufactured treatment devices (MTDs) before discharging into stable pre-formed scour holes that will be designed to minimize the outfall flow velocity to a non-erosive velocity.

B. STORMWATER RUNOFF QUANTITY

The installation of stormwater management basins would not be a prudent stormwater management solution since it would require the removal of substantial additional forested areas, including wetlands, in the tidal floodplain of the Delaware River. Providing stormwater discharges to stable forested areas adjacent to the retaining walls would be more ecologically beneficial than cutting trees to install stormwater basins. Therefore, stormwater management basins are not considered a prudent stormwater management solution for the proposed project. The use of wider preformed scour hole at the drainage system outfalls will reduce the velocity and will not erode the stable and vegetated area. The increase in volume and discharge due to the construction of the Route 44 bypass will not have any adverse impact below point of discharges.

Table 1 and *Table 2* summarize the peak flows and volumes at POI (O-1 in PondPack Calculations) in the existing and proposed conditions for the project watershed.

Table 1 - Existing vs Proposed Peak Flows for Project Watershed

Storm Event	Existing Peak Flow (cfs)	Proposed Peak Flow (cfs)	Flow Increase (cfs)
1-yr	14.97	16.91	1.94
2-yr	22.64	24.62	1.98
5-yr	38.26	40.01	1.75
10-yr	53.37	54.90	1.53
25-yr	77.39	78.55	1.16
50-yr	100.28	101.08	0.80

Table 2- Existing vs Proposed Volumes for Project Watershed

Storm Event	Existing Volume (ac-ft)	Proposed Volume (ac-ft)	Volume Increase (ac-ft)
1-yr	2.345	2.891	0.546
2-yr	3.367	3.97	0.603
5-yr	5.441	6.128	0.687
10-yr	7.469	8.215	0.746
25-yr	10.736	11.553	0.817
50-yr	13.898	14.765	0.867

Notes: The existing levee protect the project area up to 50-year tide elevation, 100-yr storm event is not included because it is tidal.

The increase in volume and peak flow will have no adverse impact below the point of discharges. FlowMaster software was used to calculate the water surface elevations (WSE) and the results are shown in **Table 3**:

Table 3 - Existing vs Proposed Water Surface Elevations

Storm Event	Existing WSE (ft)	Proposed WSE (ft)	WSE Increase (ft)
1-yr	-0.82	-0.80	0.02
2-yr	-0.76	-0.75	0.01
5-yr	-0.67	-0.66	0.01
10-yr	-0.60	-0.60	0
25-yr	-0.51	-0.51	0
50-yr	-0.43	-0.42	0.01

Please refer to **Appendix A** for calculations.

C. SOIL CHARACTERISTICS AND GROUNDWATER RECHARGE

The project is located on two types of soil: **Udorthents (UddcB)**, and **Fallsington (FamA)**:

1- Uddcb: Udorthents, dredged coarse materials, 0 to 8 percent slopes

2- FamA: Fallsington sandy loams, 0 to 2 percent slopes, Northern Coastal Plain

The Annual Groundwater Recharge Analysis Spreadsheet (AGRAS) shows that the Post-Development Annual Recharge Deficit is 0 cubic-feet. So, Groundwater Recharge is not required for this project.

*Please See **Figure 2 – Soil Map** and **Appendix C - RT 44-Soil Details and AGRAS**.*

989 Lenox Drive, Suite 124 Lawrenceville, NJ 08648 T: 609.282.8000 F: 609.282.8001

To: Greenwich Township Planning Board
Greenwich Township Police Department

From: Kevin J. Webb, PE

Date: July 12, 2019

Re: Trip Generation
Delaware River Partners, LLC
Repauno Port & Rail Terminal, LPG Transloading Facility Site Plan Application
Part of Block 8, Lots 3 and 4, Township of Greenwich, Gloucester County, NJ
Langan Project No.: 130088803

PB2019-08

In accordance with Item 4.4 of the Redevelopment Plan, we have prepared this assessment of anticipated site-wide traffic at the Repauno facility during the construction and operation of the proposed LPG Transloading Facility.

Item 4.4.1 of the Redevelopment Plan states that the site-wide trip generation shall be limited to a maximum of 550 vehicle trips per day prior to the construction of Phase 1 of the proposed Route 44 Bypass. Furthermore, the trip generation is clarified to include both vehicles and trucks used by site employees and visitors, but excludes traffic related to the ongoing site remediation by Chemours and construction traffic related to the proposed bypass road.

The number of trips generated by the operational and construction-related activities at the site will vary due to the seasonality of the existing butane cavern operations and phasing of construction. The component parts of the overall site-wide traffic are described and tallied below.

ADMINISTRATIVE SERVICES TRAFFIC

This category includes traffic associated with DRP's employees and visitors. The total number of DRP administrative and support staff employees is estimated at 14, including employees, 2 maintenance contractors, and 3 security contractors. Visitors, consultants, and delivery trucks historically account for 3 additional vehicles per day.

Each of these 17 vehicles would be expected to account for 2 trips: 1 entering and 1 exiting. Approximately 8 employees would be expected to leave the site and return during the workday for outside meetings or meals, thereby generating additional trips.

In summary, the administrative services traffic is estimated at 50 trips per day:

$$17 \text{ vehicles} \times 2 \text{ trips/day} + 8 \text{ vehicles} \times 2 \text{ additional trips/day} = 50 \text{ trips/day}$$

Technical Memorandum

Trip Generation
Repauno Port & Rail Terminal, LPG Transloading Facility Site Plan Application
Part of Block 8, Lots 3 and 4, Township of Greenwich, Gloucester County, NJ
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OPERATIONAL TRAFFIC – EXISTING BUTANE CAVERN

The butane cavern operation is seasonal. During April through October, the cavern typically receives butane via railcar delivery or is idle, thereby generating no vehicle trips. During November through March, the cavern generally ships butane off-site by truck. The truck rack at the butane cavern can accommodate up to 2 trucks at one time or a theoretical maximum of 48 trucks in a 24-hour period. To date, no more than 16 trucks per day have served the cavern at peak operation during the shipping season, with a typical average of 8 trucks per day.

All trucks generate 2 trips: 1 entering and 1 exiting. Two operators support the butane cavern, thereby generating 4 trips/day. In summary, based on historical operations the existing butane cavern operation is estimated to generate 36 trips per day:

$$2 \text{ vehicles} \times 2 \text{ trips/day} + 16 \text{ trucks} \times 2 \text{ trips/day} = 36 \text{ trips/day}$$

OPERATIONAL TRAFFIC – FUTURE RAIL RACK

The only vehicle trips generated by the proposed rail rack operation are those associated with its operators. DRP estimates 4 operators will support the rail rack operation, thereby generating 8 trips/day.

$$4 \text{ vehicles} \times 2 \text{ trips/day} = 8 \text{ trips/day}$$

CONSTRUCTION TRAFFIC – FUTURE RAIL RACK

Construction traffic will be comprised of construction vehicles used by construction employees to arrive at the site, those supporting the on-site construction, and those used to import fill from off-site sources. The construction will be phased such that the fill import activities will precede the construction of the rail rack and its supporting infrastructure.

Fill Import Phase

The site-wide trip generation will peak during the fill import phase, as a portion of the fill will be imported via truck from an off-site source as coordinated with Gloucester County. It is expected that a maximum of 150 trucks per day will deliver fill to the site, thereby generating 300 total trips daily. *In addition*, we estimate a total of 20 construction vehicles will support this work, including 10 vehicles *used at the* construction site and 10 additional personal vehicles for employees who are transported to the work area using vans that do not otherwise leave the site. In total, we estimate 340 trips/day will be generated during the fill import phase.

$$150 \text{ trucks} \times 2 \text{ trips/day} + 20 \text{ vehicles} \times 2 \text{ trips/day} = 340 \text{ trips/day}$$

Technical Memorandum

Trip Generation
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Rail Rack Construction Phase

Once the fill has been imported, additional construction vehicles will be expected for the construction of the rail rack. We estimate a total of 50 construction vehicles will support this work, including 25 vehicles used at the construction site and 25 additional personal vehicles for employees who are transported to the work area using vans that do not otherwise leave the site. In total, we estimate 100 trips/day will be generated during the fill import phase.

$$50 \text{ vehicles} \times 2 \text{ trips/day} = 100 \text{ trips/day}$$

ANALYSIS

Using the figures calculated above, the current baseline administrative and operational activities generate 50 trips/day for the majority of the year and a total of 86 trips/day during the limited period when butane is being shipped off-site via truck. When the rail rack becomes operational, those figures will increase to 58 trips/day and 94 trips/day respectively.

During construction of the rail rack, the site-wide trip generation will increase above those baseline levels. During the fill import phase, the site-wide trip generation will peak at an estimated 426 trips/day. After completion of the fill import activities and during the construction of the rail rack, the site-wide trip generation is estimated to be 186 trips/day.

See Table A on page 4 for a summary of all calculations.

CONCLUSION

Even during peak trip generation conditions of the rail rack construction, the site-wide trip generation will be less than the maximum 550 trips/day specified in the Redevelopment Plan.

As specified during prior applications, operational and construction-related truck traffic shall use the entrance and exit routes shown on the attached Truck Traffic Routes plan, dated November 16, 2018, prepared by Langan.

Technical Memorandum

TABLE A - TRIP GENERATION CALCULATIONS

ADMINISTRATIVE SERVICES TRAFFIC

DRP employees	9 vehicles		
DRP maintenance contractors	2 vehicles		
DRP security contractors	3 vehicles		
Visitors	3 vehicles		
Additional workday trips	8 vehicles		
<hr/>			
Subtotal	25 vehicles	x 2 trips/day	= 50 trips/day

OPERATIONAL TRAFFIC - EXISTING BUTANE CAVERN

DRP cavern operators	2 vehicles		
Butane trucks	16 vehicles		
<hr/>			
Subtotal	18 vehicles	x 2 trips/day	= 36 trips/day

OPERATIONAL TRAFFIC - FUTURE RAIL RACK

DRP rail rack operators	4 vehicles		
<hr/>			
Subtotal	4 vehicles	x 2 trips/day	= 8 trips/day

CONSTRUCTION TRAFFIC - RAIL RACK

Fill Import Phase

Fill import trucks	150 vehicles		
Construction support vehicles	10 vehicles		
Construction employees	10 vehicles		
<hr/>			
Subtotal	170 vehicles	x 2 trips/day	= 340 trips/day

Rail Rack Construction Phase

Construction support vehicles	25 vehicles		
Construction employees	25 vehicles		
<hr/>			
Subtotal	50 vehicles	x 2 trips/day	= 100 trips/day

TOTAL DURING FILL IMPORT PHASE **426 trips/day**

TOTAL DURING RAIL RACK CONSTRUCTION PHASE **186 trips/day**

TOTAL AFTER RAIL RACK CONSTRUCTION **94 trips/day**



June 7, 2019

Delaware River Basin Commission
West Trenton, New Jersey

Re: DOCKET NO. D-2017-009-2 , DELAWARE RIVER BASIN COMMISSION , Delaware River Partners LLC, Gibbstown Logistics Center, Dock 2 , Greenwich Township, Gloucester County, New Jersey

Delaware Riverkeeper Network (DRN) submits this comment in opposition to the approval of Docket D-2017-009-2 on behalf of our approximately 20,000 members throughout the Delaware River Watershed including residents in the closest Gloucester County communities. The Delaware Riverkeeper Network (DRN) is a private non-profit membership organization, championing the rights of our communities to a Delaware River and tributary streams that are free flowing, clean, healthy, and abundant with a diversity of life.

DRN submits that, based on review of the materials submitted to Delaware River Basin Commission (DRBC) by the applicant, this project will have substantial negative impacts on the Delaware River, its water quality, its habitats, and the species that live, forage, shelter, migrate through and reproduce in the River, Estuary and Bay. DRN also submits that the application is substantially lacking in critical information for and assessment of described and yet-to-be described or assessed aspects of the proposed project. DRN requests that Docket approval be denied or, in the alternative, the Docket be withdrawn and specific reviews and analyses are conducted before further consideration of the project.

DRN points out that we commented on the last docket proposed and approved by DRBC in November 2017 for the Gibbstown Logistics Center (D-2017-009-1). Concerns we expressed about the incompleteness of the application materials, unfortunately, remain. We point out DRBC did not heed these concerns in 2017 and since it appears now that New Fortress Energy may have been planning LNG export from this site at that time but did not disclose that information, our concerns were well-founded and should have led to DRBC insisting that the missing information be provided before the first docket was approved. If that had been done, the public and the agencies may have learned of the planned export of LNG from the Center and a comprehensive analysis of the project would have been required.

As stated by DRN in our comment letter dated November 17, 2017:

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DRBC states its draft Docket is to approve dredging and the construction of a deepwater berth for the proposed Delaware River Partners (DRP) Gibbstown Logistics Center (“the Proposed Project”). However, the current draft docket, despite claiming to approve only the dredging and deep-water berth construction project, approves stormwater outfalls and land disturbances. Furthermore, the docket states that DRP “...is required to submit detailed site plans to the DRBC for the remainder of the Logistics Center, including the proposed: Automobile import area/parking lot; processing facilities; perishables, bulk-liquids and gases, and bulk cargo handling areas; warehouses and associated buildings; stormwater management system (including stormwater outfalls); and the associated infrastructure”.¹

Based on this lack of essential information, until all plans are completed, submitted to and assessed by DRBC, the draft docket for the Proposed Project should be put on hold. It is unreasonable to move ahead with an application that is so obviously incomplete and lacking in adequate assessment and review. It is impossible to accurately assess the potential impacts on the water resources of the Basin with the information made available for only a portion of the Proposed Project.

We point out that the condition (C.I.(c)) of the 2017 DRBC Docket, which requires the missing information to be provided, seems not to have been met by Delaware River Partners because in subsequent file reviews conducted by DRN through FOIA, we have not seen any written material in the files disclosing the plans of the applicant to include LNG as a cargo. This is despite repeated public statements by New Fortress Energy that LNG would be processed from Marcellus Shale gas in Bradford County, Pennsylvania, trucked to the Delaware River and exported out of the country through the Delaware River ports. The U.S. Army Corps of Engineers (ACE) Public Notice of April 4, 2019, listed various cargo to be transloaded at the Gibbstown Logistics Center. Included in the list was liquefied natural gas (LNG) and yet this was not added to this new draft docket for Dock 2. Obviously, the follow up information – site plans for handling of all cargo - that was to be provided by the applicant was either not supplied to DRBC or DRBC decided not to include LNG in the list of cargo published in the new draft docket. Either way, the public was deprived of this information and the missing information regarding the products to be handled at the Center, makes the application deficient based on incompleteness.

DRN points out that the exclusion of LNG from the cargo list is additionally important because of the dangers of handling and transloading LNG. LNG is arguably the most consequential and dangerous product to be handled at the Center, making it a glaring omission. We are including information regarding the potential impacts of LNG release and the special circumstances LNG requires at the end of this comment.

The additional dredging and deep-water berth construction project, named Dock 2, poses several unacceptable environmental hazards and potential pollution sources for the Delaware River and the region.

Environmental Impacts of the Proposed Activities Contained in the Draft Docket

Dredging: The dredging of 665,000 cubic yards of sediment from the Delaware River to provide a channel to the Federal Navigation Channel would go to a depth of 43 feet below mean water lower low water over a 45-acre area. Allowed is a two-foot overdraft. This almost doubles the amount of material that will be dredged for the entire Gibbstown Logistics Center project, increasing greatly the adverse environmental

¹ Docket No. D-2017-009-1, p. 3.

footprint of the dredging from the originally proposed Dock 1. The sediment to be dredged is silt, fine sand, and trace gravel, according to the draft docket. DRN is very concerned about the impacts of the dredging on water quality, fish, and aquatic life. We do not agree that the prevention measures included in the draft docket for controlling the sediment will provide adequate protection to species in the area of the Center.

The Delaware Riverkeeper Network has commented in the past on the significant environmental impacts that dredging causes in this section of the Delaware River. First, deepening 45 acres of river area to a depth of -40 feet mean lower low water with a 2-foot overdraft will open this newly deepened area to the potential for an increased risk of harm if there is a catastrophic spill event. With a deepened area, ships will access the proposed deepwater port and, when filled for export will be heavily laden with LNG, natural gas liquids or other chemicals. Using the catastrophic experience of the Athos I oil spill of November 26, 2004, the volume of carried material available to leak and wreak havoc on the environment and our communities will be greater and therefore more dangerous with the added capacity of the proposed port's dredging of 45 acres.²

The Athos I catastrophe exposed 115 miles of River, 280 miles of shoreline, 16,500 birds, as well as many species of fish, shellfish, and wildlife and a variety of important habitats to the heavy crude it dumped into the Delaware River.² Habitats, wildlife, water quality, air quality, industry, recreation, and communities were all significantly harmed by the spill. Any project that will increase the magnitude of such a tremendous level of damages in the event of a future catastrophe is a danger to all of these natural and human resources.

Adding LNG transport to the dangers of shipping on the river exponentially increases the potential for a far-reaching catastrophe. Considering that the zone of blast around a container release and/or fire is at least one mile and could be miles larger depending on how quickly the gas cloud created by the vaporizing LNG spreads, communities along the river, including metropolitan areas such as Philadelphia, Camden, Chester and other high density population centers), passing ships, bridges, facilities such as airports (the Gibbstown Logistics Center is across the river from the Philadelphia Airport), motor vehicle traffic and workers would all be exposed to potential life-threatening injury if an LNG marine vessel were to have an accident and release LNG. There is no discussion in the Docket about the shipping dangers that the dredging would enable. This is one reason why a comprehensive environmental analysis of this LNG project is required.

Dredge spoils significantly increase the amount of heavy metals and toxins that would be released into waterways and the environment², especially with the amount of material that appears to be contaminated at this site. The impacts of the spoil disposal plans and potential pollution impacts could have significant community and environmental effects. The threat posed by dredged spoils is known to be a source of water pollution after on-land disposal.² In addition to polluting the water and land, there are likely to be air quality impacts including NOx emissions associated with the construction and associated traffic from this additional dock and dredging project that should be considered as well. Yet there is no analysis of air pollution in the draft docket.

Atlantic sturgeon will be directly negatively impacted by the development and operation of this site. The draft docket states that the revised wharf design is under review currently by USACE in consultation with

² Delaware Riverkeeper Network (2011). Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

NMFS regarding two threatened and endangered sturgeon species, and the critical habitat for the Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*). However, the docket fails to acknowledge that the federal government established the Delaware Estuary as Critical Habitat for the New York Bight DPS of Atlantic Sturgeon in August 2017. DRBC's Water Quality Regulations at §4.30.5-B.1 acknowledge that the Commission must evaluate Critical Habitat, and that this evaluation must follow its Rules of Practice and Procedure. Despite the federal ruling, DRBC has yet to initiate its procedures for verifying the Critical Habitat established by the federal government, and the role that Critical Habitat will play in docket decisions. DRBC should not approve any project that could directly and indirectly affect this Critical Habitat until it has completed all necessary procedures in the Critical Habitat evaluation. To do so would be premature, would undermine the required process for DRBC review and approvals, would be unfair in terms of just application of its regulations, and jeopardizes the Critical Habitat of the Atlantic Sturgeon. The DRBC is not ready to grant approval to any project that involves the Critical Habitat of the Delaware Estuary for the New York Bight DPS of Atlantic Sturgeon.

Both direct take and incidental take of sturgeon are a distinct possibility with a project of this nature. Both the Atlantic sturgeon and shortnose sturgeon are threatened and adversely affected by dredging and effects to water quality including dissolved oxygen (DO) levels, water temperature, and contaminants.² The proposed project will entail significant levels of dredging as well as significant water quality effects and dramatic changes in important habitats including juvenile habitat and spawning grounds.

The dredging of river systems significantly impacts aquatic ecosystems in a number of ways that will harm both sturgeon species. Among the effects that the project will have on the Delaware River populations of both sturgeon species are:

- ✓ Deep-draft vessel traffic in the Delaware River has been cited as the biggest threat to the survival of the Delaware River population Atlantic sturgeon; the increased vessel traffic and increased area for deep-draft vessels to strike Atlantic sturgeon directly resulting from this project will significantly increase sturgeon vessel strikes and could accelerate the extinction of this endangered species population.³
- ✓ Dredging activities remove, disturb, dispose of and re-suspend river sediments, modifying the river bottom substrate and impacting the community of benthic macrofauna;
- ✓ Dredging operations can remove or bury organisms and destroy benthic feeding areas;
- ✓ Dredging operations can create noise and disturbance, and can disrupt spawning migrations;
- ✓ Dredging activities can re-suspend contaminants, affect turbidity and siltation, and deposit fine sediments in spawning habitats; and
- ✓ Dredging activities alter the hydrodynamic regime, alter physical habitats, and create the loss of riparian habitat.²

The act of dredging can entrain sturgeon, taking them up into the dredge drag-arms and impeller pumps and resulting in death.² New data from tagged Atlantic sturgeon continue to show their presence in or near the main navigation channel, making them vulnerable to direct take by dredging operations, as well as direct take from the larger vessels that will be using the channel.² These lethal takes are significant for a species

³ Brown and Murphy. 2010. Atlantic Sturgeon Vessel-Strike Mortalities in the Delaware Estuary. Fisheries 35(2): 72-83.

that is at such low levels (fewer than 300, maybe even fewer than 100), and as genetically unique as the Atlantic sturgeon of the Delaware River are.²

Dredging in the portions of the River near Philadelphia is likely to be detrimental to the successful spawning of sturgeon in the Delaware – not just because of the act of dredging but also because of the degradation of spawning habitat.² Dredging increases the level of suspended sediments and contaminants in the water. An increase in suspended sediments could be detrimental to egg survival of sturgeon – increasing the probability that eggs adhere to suspended solids and suffocate.² increasing contaminant loads can alter growth and reproductive performance in sturgeon.²

Dredging is a factor in the destruction, modification, or curtailment of the Atlantic sturgeon’s habitat and range.² The environmental impacts of dredging include direct removal or burial of organisms, elevated turbidity or siltation, contaminant re-suspension, noise or disturbance, alterations to hydrodynamic regime and physical habitat, and loss of riparian habitat.² Furthermore, an increase in vessel traffic on the Delaware River resulting from the project would increase the likelihood of vessel strikes to sturgeon.²

A study of mortality rates on Atlantic sturgeon in the Delaware River between 2005 and 2008 found that 50% of the mortalities were the result of vessel strikes. The remaining 50% were too decomposed to determine if they were caused by vessel strikes but it is likely most were.² For small remnant populations of Atlantic sturgeon, such as that in the Delaware River, the loss of just a few individuals per year due to anthropogenic sources of mortality, such as vessel strikes, may continue to hamper restoration efforts.² According to a 2010 research article on vessel strikes, “Both the dredging to deepen the channel and the subsequent increase in large vessel traffic may further hamper the recovery of the Delaware River Atlantic sturgeon population.”² Of critical importance, this study is concerned about the size of the vessels resulting from deepening as opposed to any increase in the volume of vessels. The larger size of the vessels from the deepened channel will likely increase the number of vessel strikes for both sturgeon species.²

The continued dredging of new deep-water areas will further impact Atlantic sturgeon spawning by accelerating the intrusion of brackish water into the hard-bottom spawning grounds, and thus forcing Atlantic sturgeon to spawn further upstream in the zone of depressed dissolved oxygen. This shift then exposes the eggs and larvae of newly spawned Atlantic sturgeon to low oxygen conditions from which they may not survive. This “squeeze” between increased salt intrusion in the estuary downstream (exacerbated by channel deepening, new deep-dredged berthing areas, and rising sea levels) and the near-lethal dissolved oxygen levels upstream limits the ability of Atlantic sturgeon to successfully reproduce, and increases the likelihood of extinction. This project makes a significant contribution to such salt-intrusion by adding 45 acres of new deep-water channel and berthing to an estuary under siege.⁴

The remobilization (and dewatering of dredged sediments) will create higher exposure to PCBs and other contaminants, and the Atlantic Sturgeon spawning and rearing that begins in June and extends the early-life-stages through July and August, with increasing evidence for high aggregations of young-of-year in the Proposed Project vicinity, means that elevated exposure will occur for larval and juvenile stages of this endangered species in the Delaware River. The currently proposed methods and timing are insufficient to

⁴ Moberg and DeLucia. 2016. Potential Impacts of Dissolved Oxygen, Salinity and Flow on the Successful Recruitment of Atlantic Sturgeon in the Delaware River. The Nature Conservancy. Harrisburg, PA. 69 pp.

protect this endangered species, and more evidence and analysis would be required in order to claim that the project does not impair NOAA Trust Resources, fish and wildlife, and the water resources of the Basin.

In November of 2010, researchers discovered beds of freshwater mussels in the Delaware River between Chester, PA and Trenton, NJ.² The species found included the alewife floater (*Anodonta implicata*) and the tidewater mucket (*Leptodea ochracea*), only found in New Jersey in the tidal Delaware River; the pond mussel (*Ligumia nasuta*) and the yellow lampmussel (*Lampsilis cariosa*), both considered critically-imperiled; and the creeper (*Strophitus undulatus*) and the eastern floater (*Pyganodon cataracta*) both considered vulnerable; as well as the eastern elliptio (*Elliptio complanata*), the only mussel known to be native to our Delaware River that is not considered to be in jeopardy.² Mussels are not mentioned in the application or in the applicant's Compliance Statement. Particularly because some of these estuarine species are state-listed and/or critically imperiled, the extent and composition of these mussel beds needs to be accurately surveyed prior to any in-water work at the site. Once the locations, abundance, and identify of these species are documented, a relocation plan would be needed to move individual mussels out of areas where direct mortality might occur.

Freshwater mussels can live 80 to 100 years old, and most species do not begin reproducing until they are 8 to 10 years old.² Because they are so slow growing and don't begin to reproduce until this older age, they are not able to quickly recover from disturbances and the population cannot recover quickly from impacts that result in death to individuals.² Freshwater mussels require a fish host, a specific species depending on the mussel, to complete their life cycle. Activities that damage the needed fish hosts in turn do direct harm to the freshwater mussel species they help serve in the life cycle.²

Mussels are vital for filtering pollution and filling important habitat niches. Experts believe that revitalizing freshwater mussels in the Delaware River could improve water quality downstream and thereby benefit estuarine species.² All of the freshwater mussels in the Delaware River system, except for one (the Eastern elliptio, *Elliptio complanata*), are identified by one or more of the states as endangered, threatened, imperiled, vulnerable, critically impaired, very rare, extremely rare or extirpated.²

Freshwater mussels are very sensitive to water quality. Exposure to contaminants either directly via dissolved compounds or contaminants that are particle-mediated can have adverse consequences.² Freshwater mussels are highly exposed to changes in water quality because of their filtering activities and the passage of large volumes of water across many thin tissue layers. Dissolved toxins, such as heavy metals, are rapidly taken up by direct absorption and indirectly via food.² Because this project will likely result in pollution both directly and through contaminants from spoil disposal, the implications of this pollution for the mussels in this area must be examined.

Stressed mussels require more oxygen. The dredging described for this project is a threat to any submerged aquatic vegetation in the area that is critical for providing oxygen in the Estuary, including the Philadelphia reach of the River, which includes the location of the proposed project. Although dissolved oxygen levels can become excessively low in this area even today, they have improved significantly compared to decades past. In fact, the DRBC is considering elevating their "Aquatic Life Designated Use" rule in this section of the Delaware River to maintain and protect dissolved oxygen levels.⁵ Increased sedimentation from

⁵ Delaware River Basin Commission (2017) Draft Resolution, February 23, 2017. Retrieved from http://www.nj.gov/drbc/library/documents/Res_EstuaryAquaticLifeUses_draft022317.pdf

dredging activity inhibits mussels and their host fish species from taking in oxygen.² Additionally, invasive or exotic species resulting from interbasin transfers of water can be a very direct threat to freshwater mussels as well as many other species. Increased ballast water from deeper ships, and increased ship traffic, brought up the River by a deeper channel could heighten this risk.² The issue of invasive and exotic species and ballast water and their ecological and economic implications for freshwater mussels and other River fish and wildlife species must also be considered.

Identification of host fish needed for freshwater mussels is one of the least studied aspects of freshwater mussel life history. American eel are known to be hosts for *Elliptio complanata*; some believe they are in fact the preferred host.² Some species of trout and yellow perch too can serve as hosts and data shows that some of the species found in the tidal estuary, *Strophitus undulatus*, can use pumpkinseed and yellow perch.² Shad too are considered by some as possible host species.² The potential impacts to these host species are additional factors to consider when assessing the threats to mussels.

There is evidence that the acoustic impacts from construction activities, such as those described for this project, can significantly harm fish.⁶ The effects of underwater sounds created by pile driving on fish may range from a brief acoustic annoyance to instantaneous lethal injury depending on many factors.⁵ Even at non-lethal levels, low levels of acoustic damage may result in the fish not being able to swim normally, detect predators, stay oriented relative to other fish in the school, or feed or breed successfully.⁵ This is a potential threat to all fish, including both sturgeon species as well as all the fish that serve as host species to mussels.

There are bald eagle (*Haliaeetus leucocephalus*) nests and osprey (*Pandion haliaetus*) nests near or within the project site.⁷ Even with the best mitigation plan in place, there would inevitably be some level of disturbance to these nests versus the no-action alternative, which would leave the nests as they currently are. The nests are not even mentioned in the public notice and this is an issue that the public should be aware of. While formerly a highly-degraded site when DuPont owned and operated the property, the wetland and upland portions of the site have reverted to a natural state with a diverse ecosystem suitable as nesting habitat for these two imperiled bird species. Any disturbances or alterations to these nesting areas could be detrimental to the breeding success of these birds and therefore the future viability of their populations in this area.

The additional deepened 45 acres of river area that would provide access to the proposed deepwater port Dock 2 would result in larger and deeper draft vessels coming up the River. The draft docket states ocean-going vessels up to 966 feet long with a draft of 39.7 feet will be accommodated at the two deep after berths. This triples the amount of vessel traffic that was originally planned for the facility. This additional traffic being layered on to the facility is not being analyzed in the draft docket in terms of the amount of truck traffic, parking areas, turning radius areas and other related knock-on logistical needs that are available on this site, which had some non-specified areas but without an analysis showing that the additional traffic can be handled at the Center, it is unknown if the site is too small for this additional vessel

⁶ Delaware Riverkeeper Network (2011). Supplemental Comment Re: 2011 Draft EA for Delaware River Main Channel Deepening Project Philadelphia. Submitted to U.S. Army Corps of Engineers on July 6, 2011.

⁷ Ramboll Environ (2016). Compliance Statement in Support of Multiple Individual Permit Applications. Appendix E, Habitat Impact Assessment Report, July 2016.

traffic. The additional ship traffic and the specific types of ships required for LNG and NGL overseas transport will significantly increase. There is no discussion of this in the draft docket.

Additionally, the additional emissions of the truck traffic, impacts of rail traffic, and other related environmental impacts are not discussed in the docket, nor is any additional stormwater runoff (in terms of quantity and also quality due to the additional traffic and additional types of cargo, including LNG) and other related infrastructure need to handle and service the new shipping traffic. The transloading area needs to also be analyzed to be certain the additional cargo that will be transloaded, especially if it is hazardous material such as NGL or LNG or other bulk liquids that possess toxic properties can be safely handled with adequate environmental protections and that stormwater produced will not pollute receiving waterways?

Again, this is an example of partial review of the proposed Dock 2 that represents segmentation of the project since DRBC had included stormwater outfalls and systems on land in the 2017 docket but does not here address that infrastructure that now may need to be changed due to the additional activities Dock 2 will enable. When will these aspects of the expanded project be assessed and will DRBC consider these aspects as they have in the last docket? How can DRBC conclude that water resources will not be adversely impacted without this analysis? Furthermore, if LNG is the cargo that is being added with Dock 2, or is among the cargo being added, what special considerations and conditions will be required to assure the handling and transloading of the LNG can be safely accomplished? This is not discussed in the draft docket.

Another question that must be answered is whether simultaneous handling of LNG and other cargoes, including dangerous NGLs, can be done safely. If the transloading to the ship from truck or railcar is considered similar to “truck to ship bunkering” when assessed by the U.S. Coast Guard, there are Coast Guard regulations that apply to these activities when there are SIMOPS or “simultaneous operations” planned in the same vicinity. The usual procedure is for a Policy Letter to be issued by the Coast Guard after the specific logistics are evaluated.⁸ Similar to SIMOPS considerations, it is additionally important to evaluate the activities and storage planned for export of other products such as NGL from the terminal for compatibility with LNG activities. An informed decision needs to be made about timing, location, and proximity to the LNG facilities and activities. It may be that other activities planned for the terminal cannot occur at the same site that is handling LNG. This issue must be resolved prior to any further permitting for the Gibbstown Logistics Center facility.

More shipping vessels mean more ballast water needs, discharges, and impacts. Impingement and entrainment of the variety of species discussed in this comment and beyond due to the intake and discharge of ballast water could be significant. The increased intake of ballast water from the River as a result of the commercial vessels coming into the River due to this project would entrain early life stages of commercially and recreationally important fish including American shad, alewife, blueback herring and striped bass.² The cumulative effects of this impingement and entrainment need to be considered in conjunction with the impingement and entrainment that already occurs at existing cooling water intakes operating in the Delaware Estuary and River, including the nearby Paulsboro and West Deptford Township facilities.

⁸ CG-OES Policy Letter, No.01-17, JUN - 8 2017, GUIDANCE FOR EVALUATING SIMULTANEOUS OPERATIONS (SIMOPS) DURING LIQUEFIED NATURAL GAS (LNG) FUEL TRANSFER OPERATIONS, Ref: (a) CG-OES Policy Letter No, 01-15.

In addition, the concerns about invasive exotic species that may result from larger discharges of ballast water from larger vessels cannot be overstated in terms of either ecological or economic impacts. The invasion of such species into major ports and waterways of the U.S. have cost billions of dollars in control efforts and lost economic value from damage to important fish and wildlife species as well as the habitats that support them.² For more information see

http://water.epa.gov/polwaste/vwd/ballastwater/invasive_species_index.cfm

http://water.epa.gov/polwaste/vwd/ballastwater/invasive_species_bal_links.cfm

<http://www.invasivespecies.gov/index.html>

DRN is very concerned about the release of PCBs from the site. EPA identified the Repauno site in 2003 as one of the largest PCB point sources in the Delaware Estuary (among the top 10). A TMDL was established for the Estuary to remediate the contamination. Dredging; construction in the water, riverbank and on uplands; and site disturbance and stormwater systems will disturb PCBs, which have been found in near-shore sediments and in runoff from the site. There is a zone of highly contaminated sediments immediately adjacent to the shore and port facility. DRBC's dedicated role in reducing PCBs in the Estuary and its role to ensure that PCB Pollution Minimization Plans (PMP) are effectively implemented is compromised by the plan to disturb, construct on, and dredge this site.

The 2017 DRBC docket approved dredging and other disturbances that could significantly increase PCB loading to the already-impaired Delaware Estuary. DRBC did require in the current docket a PCB sampling program to be conducted by Delaware River Partners and stated that capping to raise the site to a higher elevation would help to minimize PCB release. We did not see any analysis that proves that statement. A NPDES permit was supposed to be required to assess PCB migration from the site and to possibly require a separate pollutant minimization plan to be conducted by Delaware River Partners. However, the project is currently under construction while no NPDES permit is in place that requires sampling and monitoring of the release of PCBs during this critical disturbance phase of the project.

There are several unaddressed questions regarding this PCB issue. First, the sampling and the controls should have gone into operation prior to dredging and land disturbance that could release PCBs but this apparently is not the case unless the NPDES permit has been issued without public disclosure. Second, Chemours claims that the site is "substantially remediated" for PCBs yet there is no evidence that PCBs are remediated and the sampling as recently as 2018 shows otherwise. Third, Chemours currently operates the site remediation program, including a groundwater pumping system which is supposed to continue during the operation of the facility. If the 2017 DRBC Docket condition is carried out, how will the Delaware River Partners operation of a separate PCB plan, possibly connected to the stormwater infrastructure, be coordinated physically, managerially, and legally in concert with the cleanup of the groundwater by Chemours?

DEP had informed DRBC during the last docket review that there would be a stormwater permit issued for the facility that would address the PCB issues through a DEP-issued NPDES permit. However, there was no stormwater permit issued after the DRBC Docket was approved. Instead, after a year of phone calls and file reviews, DRN finally got a copy of the stormwater permit in 2019 for the site – a permit DEP claimed did not exist since the time DRN filed an OPRA for the project. It was issued in 2017 but had no mention of PCBs. This permit was not even contained in the DRBC's files.

More perplexing is that the 2017 DRBC docket at C.(I)l. requires that when the DEP NPDES permit is issued “the docket holder shall perform an investigation of the site to assess the disposition of stormwater and the flow paths for the individual stormwater outfalls either directly or indirectly to the Delaware River in order to develop and implement a PCB stormwater sampling plan. Upon evaluation of the sampling results by the NJDEP in consultation with the DRBC, DRP may be required to develop and implement a separate PMP for PCBs in accordance with Section 4.30.9 of the Commission’s Water Code and Water Quality Regulations (18 CFR Part 410).”⁹

The draft docket has no mention of a NPDES permit and records obtained by DRN from DRBC through FOIA, show that the applicant stated that a NJPDES permit is pending in an email dated May 14, 2019. However, a week later an email from the applicant dated May 21, 2019 states, without any explanation, that the NJPDES permit is “not required”. The NPDES permit is not listed in Table B-1 in the draft docket. DRN asks why the NPDES permit was, suddenly, not required, who made that determination and why and how is a condition of the current (2017) docket summarily violated? How will the PCB sampling program be carried out, how will PCB be controlled from the site for the current development of the site and what precautionary measures are being taken by DRBC to ensure that the PCBs released from the activities required for Dock 2 do not contribute to PCB contamination of the Delaware River Estuary?

The Gibbstown Logistics Center is wholly compromised by its location on a highly contaminated property. Construction and operation of the Center can be expected to disturb and mobilize soil, sediment, surface water and groundwater pollution that is present on this Superfund site. This is a former industrial site that is under remediation known as the Repauno Plant. It is a 1,856-acre site located along the Delaware River in Gloucester County, NJ. The site is bounded to the north by the Delaware River, to the east by a former Hercules Chemical manufacturing plant, to the south by the city of Gibbstown, and to the west by wetlands and Repauno Creek. The western half of the site consists almost entirely of surface water bodies and wetlands. Former and current production operations are located in the northeastern part of the site. Several production areas have discontinued operations and structures have been razed. The eastern half of the site also consists of some upland and wetland ecological communities (EPA, 2003). Altogether, the site contains approximately 1,500 acres of wetlands (Fichera, 2015). The Gibbstown Logistics Center is planned to use 218 acres.

DuPont operated the site as an explosive manufacturing facility since 1880. In 1917, DuPont expanded operations to include the manufacturing of organic compounds, which continued until 1986. All explosive manufacturing and ammonia production were discontinued during the 1960s. Repauno is a CERCLA site undergoing remediation (<https://cumulis.epa.gov/supercpad/CurSites/calinfo.cfm?id=0200783>). The area previously used by DuPont as a terminal location for anhydrous ammonia began being cleaned for reuse in 2002, according to the 2002 Annual Groundwater Progress report (EPA, 2003).

One of the dangerous contaminants on the site is nitrobenzene, a highly toxic chemical classified by the Centers for Disease Control as “Immediately Dangerous to Life or Health” if people are exposed at specific concentrations. Nitrobenzene is a likely human carcinogen according to the United States EPA and is linked to several carcinomas and cancers as well as other dangerous human health effects. The area where the logistics center would operate is the area is most likely exposed to aniline, a toxic chemical with adverse health effects; aniline is involved with the processing of benzene to make nitrobenzene. The area where

⁹ Docket No. D-2017-009-1, p. 9.

acids were used is also at least partly included in the proposed site. These acids were most likely “mixed acids” associated with the nitrobenzene manufacturing process and are toxic. Redevelopment can disturb and distribute in unforeseen ways contaminants that remain on the property. DRN advocates that no disturbance of the contaminated site be allowed until all contaminants are removed from the soil, sediment, groundwater, surface water, wetlands and other related natural systems.

In addition, several different companies have leased areas at the Repauno facility. In 1998, Repauno Products LLC purchased the manufacturing operation that produced sodium nitrite and nitrosylsulfuric acid. In 1999, Spring AG purchased the industrial diamond refining operation, which ceased in late 2002. Industrial diamond processing may have used chemical vapor deposition or other dangerous processes that are used to manufacture industrial and synthetic diamonds, contributing additional contaminants to the site’s environment that require investigation prior to use of the property.

In 1990, 8,500 tons of sediments were removed from the ditches in the former Nitrobenzene and PMDA/DMT production areas (EPA, 2005). In the three rounds of sitewide investigation completed in 1993, 1996, and 2000 respectively, DuPont screened all Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) for their investigation/remediation priorities and focused on the migration/flow of groundwater and the soils in former production areas. The currently ongoing fourth round of investigation is to complete the investigation of the remaining two SWMUs/AOCs and to conduct an ecological risk assessment for the wetlands, streams, and the ditch system (EPA, 2005). In 1985, DuPont installed a system to pump contaminated groundwater and to treat it. The groundwater interceptor system has been in operation since, in conjunction with a groundwater-monitoring program, owned and operated by Chemours, DuPont’s spinoff company since 2015. Chemours is required to continue the groundwater interceptor system together with the sitewide groundwater monitoring program to confirm that contaminated groundwater is under control. How the operation of the Center and the remediation program will compatibly operate is difficult to understand and needs further analysis by EPA, DEP and other relevant agencies, including DRBC, due to the potential for negative impacts from pollution to the water resources of the Delaware River Basin.

DEP is supposed to impose restrictions on the use of groundwater for as long as it remains contaminated (EPA, 2005). The draft docket states that water and sewer for the Center will be provided by the local municipal facilities, which is important for public health and safety. Has there been an analysis that shows the local facilities have the capacity to add the Center? EPA claimed in 2005 that the site was no longer a risk for human exposure and groundwater contamination (Romalino, 2015). These new uses at the site should require a re-analysis of that conclusion. The site plans call for one or more of the monitoring wells being used to track remediation to be paved over for a parking lot. Baseline and years of data will be compromised if consistent sampling is lost. It is essential that the current monitoring wells remain.

Permits

As stated in the letter dated June 3, 2019 submitted by DRN to DRBC, there are several permits that have not been identified by the applicant that are needed for this project. Some permits that are still needed are listed in the letter but we also point out that other permits should have also been identified in the draft docket but were not. These include approvals from the United States Coast Guard under 18 CFR Parts 153 and 157? Has Delaware River Partners filed a Letter of Intent (LOI), which is due one year in advance? Has a Water Suitability Assessment been filed with the LOI as required at 33CFR 127.007 (f) and (g)? Has

the Coast Guard issued a Letter of Recommendation? These analyses are essential to the decisionmaking about this facility, which may not proceed without the Coast Guard reviews. There has been no determination that the Delaware River at this location is suitable for LNG marine traffic. Until there is a Coast Guard determination for the transport from this terminal, it is premature to consider other approvals. The application is deficient for not including this important permit, in addition to the other federal and state permits DRN has listed in our letter.

Environmental and Health and Safety Impacts Regarding LNG

DRN provides the following information about the unique dangers of LNG and its transport, storage, and handling, illustrating that LNG is a special product that needs specific conditions that DRN does not consider to be available at this site or within the Delaware River Watershed:

It is known that, upon release in a liquid state, LNG expands to a gas cloud that is 600 times larger than the amount of liquid. The gas cloud then moves across the surface, can travel many miles quickly and can also become trapped under spaces that confine the gas, providing the conditions that cause explosion and, if there is a point of ignition such as a spark or flame, fire will result.

New information has shown that LNG can cause a catastrophic BLEVE or Boiling Liquid Expanding Vapor Explosion if the vessel is exposed to high temperatures or a fire. The expansion of the liquid LNG in a vessel causes the pressurized liquid to boil, and the gas takes up more room than the liquid, stressing the container as pressure builds. Relief valves are only designed to release pressure slowly to keep equilibrium in the pressurized container. Exposed to high heat, the valve will fail to keep up and the metal will weaken, cracks will result in the container, causing LNG to be released with an explosion.¹⁰ The result is a BLEVE, a catastrophic failure of the container. There are many incidents over the years of BLEVE catastrophes¹¹, some as recent as 2019, but the fact that a BLEVE can occur with LNG has only recently been established.

When the gas or vapor cloud in the container is released because it is flammable, it is likely to ignite after the BLEVE, typically causing a fireball that burns fast, hot and wide. A fuel air explosion can also occur, known as a “vapor cloud explosion”. A vapor cloud explosion is the mechanism used in a thermobaric weapon that uses air to generate a high-temperature explosion, producing a long duration blast wave. These weapons are also termed a fuel-air bomb.¹² This is the threat that LNG storage and transport brings to the Gibbstown region and to every traffic route used to carry the LNG to the Delaware River and on the river during export.

On dry land such as a terminal where LNG is stored or is contained in tankers on trucks or rail cars, a BLEVE where there is no liquid in the local environment to absorb the heat, can rupture even faster than a vessel on water. Truck transport regulations are being closely examined due to an increase in accidents involving truck transport of LNG. While it used to be assumed that truck transport had a low potential for explosion or fire, an accident in Spain changed that:

“In 2002, an LNG truck in Spain flipped over, burned, then exploded into a 500-foot fireball that killed the driver and burned two others. ‘The severity of this kind of explosion is something people haven’t usually considered applicable to LNG trucks,” says Jerry Havens, former director of the

¹⁰ https://en.m.wikipedia.org/wiki/Boiling_liquid_expanding_vapor_explosion

¹¹ Ibid.

¹² https://en.m.wikipedia.org/wiki/Thermobaric_weapon

Chemical Hazards Research Center at the University of Arkansas. ‘But what happened in Spain changes that picture. It shows you've got the potential for a massive explosion.’”¹³

In the accident in Spain, a BLEVE occurred, which resulted in death to the driver and burns to two people approximately 650 feet away, and threw large flaming debris, including the truck’s diesel engine, for 853 feet. A similar LNG truck accident with a catastrophic fire occurred in Spain in 2011, killing the driver.¹⁴ It was pointed out by an analyst in Savannah Georgia during debate over LNG truck transport that a pool fire and and/or explosion involving an LNG truck may have a low probability but it has a high consequence with instant injuries or death for those within several hundred feet.¹⁵ The chances, according to the analyst, of an LNG truck accident are 200 to 1.¹⁶ This is a great risk for populated areas and truck routes through urban centers.

Regarding rail use, the U.S. Department of Transportation’s Federal Highway Administration (FRA) nor the Pipeline and Hazardous Materials Safety Administration (PHMSA) have not approved rail car regulations for the transport of LNG yet. There has been very limited use of rail so far, with only one approval in Alaska by the Obama Administration, local small use in Florida, and some use in Canada. Statistics that claim few accidents mean that trucking of LNG is safe are misleading because, similar to crude oil transported in unsafe train cars a few years ago before the Bakken crude phenomena, it has been rarely done. For Bakken oil trains, accidents increased 400% in one year once volume of traffic increased, creating the biggest jump in deadly and/or catastrophic train accidents in years.

The Trump Administration has provided a big push for the use of rail for LNG transport in April 2019 with President Donald Trump issuing an executive order directing federal regulators to create new rules allowing rail companies to transport LNG by rail in the next 13 months, or less.¹⁷ Considering the length of time it customarily takes PHMSA and the Federal Railroad Administration to develop new car specifications and use regulations, one year is a truncated period that fast-tracks the approval the President is seeking. The priority, according to LNG promoters, is a quick approval to meet the need for the industry to serve new markets. This does not inspire confidence in the results.

In the event of a release of LNG, the LNG must gas off naturally, as the container cannot be capped or interacted with, the area must be immediately evacuated and secured, ignition sources must be eliminated, and water cannot be used, as the release is cryogenic. Water can plug the valves of the container with ice and any cold air release can freeze skin in seconds and can even turn air to liquid or solid form, removing oxygen, an obvious disaster for anyone in the area. These handling procedures apply to any container of LNG under pressure, including those used in transportation such as truck or rail containers or storage vessels at a terminal, ships, or at a liquefaction facility.¹⁸ The dangers of an LNG release and fire from a tank accident are unique to LNG and require special handling due to the highly dangerous properties of the

¹³ <https://www.csmonitor.com/2006/0707/p02s01-usgn.html>

¹⁴ https://www.researchgate.net/publication/235976022_Explosion_of_a_road_tanker_containing_liquified_natural_gas

¹⁵ <https://www.savannahnow.com/article/20101006/NEWS/310069738>

¹⁶ Ibid.

¹⁷ <https://www.govinfo.gov/content/pkg/FR-2019-04-15/pdf/2019-07656.pdf>

¹⁸ PHMSA, “Safe Transport of Energy Products”, <https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/research-and-development/hazmat/58176/day-1-pm-2.pdf>

LNG and its gases. This is well illustrated in a report of an LNG tank truck accident in Belgium, which has been used as a “lessons learned” example by first response trainers ¹⁹

When a fire erupts around or under a LNG container, it can cause a BLEVE quickly, in as little as 15 minutes for a large tank (2 ½ minutes for a small tank). Once a fire ignites around the container, the 2000 Department of Transportation (DOT) Emergency Response Guidebook (ERG) states that a 1,600-meter perimeter must be isolated around the container, as explained in the relevant text at Guide #112, the same as for explosives such as bombs and artillery. Since water cannot be used to cool the container or extinguish the fire, and the evacuation area is so large, the fire response is, especially if there are no lives at risk, for firefighters and first responders to evacuate the 1,600-meter area and let the fire burn out, similar to the response to crude oil derailments that risk explosion. In fact, even removing the damaged container can be risky. An example of how firefighters in Utah decided to handle a train derailment with damaged propane tanks illustrates the risks – it was less dangerous to detonate the cars in place than move them.²⁰ Of course, this is not possible in a populated area, begging the question of how much risk for communities is involved with flammable liquid in rail cars.

This makes the transport of LNG in containers and the storage of containers of LNG inherently dangerous and inappropriate for populated areas. The proposed Logistics Center is located next to a residential area in Gibbstown. There is a day care center and housing in Gibbstown adjacent to the Block and Lot of this site. These residential and day care uses are not compatible with the proposed activity, especially if the activity includes handling of hazardous substances such as LNG or NGL or other bulk liquids. Prevention of exposure to toxics and hazardous materials is the only way to provide protection to the especially vulnerable population of children at a day care center and to the workers, residents and families who are located adjacent to the site.

The transport routes, not yet identified by New Fortress, are through communities across Pennsylvania and New Jersey. Has the proximity of the LNG activities to structures, receptors, and residences been calculated and are there sufficient separation distances as required by U.S.DOT? US DOT has requirements (in 49 CFR Part 193) for thermal radiation and vapor dispersion hazard-based exclusion distances around land based, fixed LNG terminals. This is an essential analysis for the protection of Gibbstown and the region.

Transportation safety issues, while previously not a large concern when truck and rail transport was rare, are emerging as an important concern across the nation as transport by truck increases and rail is expected to be used as a major means of transport for an expanding industry in the near future. The Marcellus Shale has made Pennsylvania the second largest producer of natural gas in the nation, and the industry is looking for new markets and new means of delivering gas products. So, transport is ramping up to substantially increase. However, the current anti-regulation climate at the federal level means that the safety measures required for safe transport are not likely to be enacted under the current Trump Administration. The US Department of Transportation’s upper management and policymakers are heavily influenced by or transferred directly into their positions from industry and have been actively carrying out a roll back of transportation regulations. According to an Associated Press investigative report, the rolling back of transportation regulations and the elimination of regulations that were in progress, has been and is increasingly a hallmark of the Trump Administration.

¹⁹ <https://www.ctif.org/sites/default/files/2018-09/Retex%20LNG%202018%2006%2006%20ENG-reduced%20size.pdf>

²⁰ <https://www.desmogblog.com/2019/04/17/trump-executive-order-lng-rail-bomb-train-risks>

“Industry’s influence on regulations generally “is probably more powerful than it has ever been,” said Neil Eisner, who was the DOT assistant general counsel in charge of overseeing the issuing of regulations for more than three decades. DOT says having industry insiders in leadership positions provides deep practical experience in how the transportation industry works.”²¹

The AP article goes on to use as an example the statement by USDOT DOT of its intention to repeal “a 2015 rule opposed by freight railroads requiring trains that haul highly flammable crude oil be fitted with advanced braking systems that stop all rail cars simultaneously instead of conventional brakes that stop cars one after the other”.²² Delaware Riverkeeper Network and many other organizations and safety groups when proposed by USDOT after the deadly Lac-Mégantic rail disaster in Canada where 47 people died and a town was destroyed, supported this rule.

“Trump has made reducing regulations a priority, seeing many rules as an unnecessary burden on industry. Last month he tweeted that his administration “has terminated more UNNECESSARY Regulations, in just 12 months, than any other Administration has terminated during their full term in office...”

The good news is,” he wrote, ‘THERE IS MUCH MORE TO COME!’²³

However, not every effected sector is supportive of the relaxation of regulations. Reflecting the concerns of workers:

“These rules have been written in blood,” said John Risch, national legislative director for the International Association of Sheet Metal, Air, Rail and Transportation Workers. “But we’re in a new era now of little-to-no new regulations no matter how beneficial they might be. The focus is what can we repeal and rescind.”²⁴

Additionally, it is unknown how the truck or rail-delivered LNG will be transloaded and what transfer systems will be employed. There is a cavern on the site that was presumably going to be used for natural gas liquids (NGL), although it was stated at the DRBC Hearing that there would be no storage on site of bulk liquids. Funds have been invested by the owner of the property in renovation of the cavern but whether it is expected to be enlarged and what is to be stored in it, is unknown but should be publicly disclosed and disclosed to all agencies, including DRBC. Storage conditions, even if kept in idling or parked trucks, are critical to avoid releases of the super-cooled LNG for safety as well as climate impact considerations. DRN asks why the site plans show a bulk liquid tank area, a sphere tank area and the on-site cavern for bulk liquids storage if, as stated by DRBC staff at the public hearing, there will be no bulk liquid storage on site and only truck or rail transloading directly to ships?

Another important consideration is the use of trucks to carry the LNG product will increase emissions of natural gas constituents, including methane, into the air and will emit hazardous air pollutants due to diesel exhaust. The emission of air pollutants to communities along the transport route unjustly exposes people to health hazards that they may be unaware of due to the transient nature of the vehicles. There should be an

²¹ <https://www.apnews.com/1936e77a11924c909880f1ef014c7ca7>

²² Ibid.

²³ Ibid.

²⁴ Ibid.

analysis of the truck route impacts on communities, environmental justice areas, and areas such as the Delaware River valley where there is already a non-attainment area for ozone, resulting in smog and the resulting respiratory and other adverse health effects that accompany air pollution and the deposition of air pollutants on water, such as the Delaware River, the water supply for millions in the region. The venting of the trucks (or railcars) is necessary en route to avoid over-pressurization, so those emissions are unavoidable but nonetheless, unacceptable.

As explained in an article about LNG-powered ships in Washington state, natural gas is composed mostly of methane, which is one of the four major greenhouse gases and a culprit in the the global warming of our atmosphere, exacerbating climate change. Moreover, methane leaks throughout the entire gas development process, from fracking at the extraction well, through pipeline and compressor delivery systems, during storage and in end use such as power plants and gas processing and petrochemical facilities, including when it is used for fuel in shipping. The article states “The International Coalition for Clean Transportation estimates [2.2-4.6% of methane on ships](#) escapes into the atmosphere after passing through the engine without combusting. This is known as methane slip and its rate depends on the type of engine.”²⁵

It explains further, that “Again, LNG is composed chiefly of methane, which is itself a nasty greenhouse gas – 86 times worse than CO₂ over a 20 year span and 36 times worse over a 100 year span. New research actually suggests that those numbers may be [underestimated by as much as 14%](#). This means that we don’t want to be adding any more methane to the atmosphere and, in fact, scientists point out that we can have [more immediate impacts on lessening climate change by reducing methane](#) since it doesn’t last as long in the atmosphere as CO₂. Alarming, US methane emissions [have risen 30%](#) in the past decade thanks mostly to the central US, a hotbed of fracking.”²⁶

The impacts of greenhouse gas emissions that will be released by this project are substantial and can be minimized if gas products – LNG and NGL -- are eliminated as cargo that will be handled at the Gibbstown Logistics Center. Methane and carbon are leaked, released or burned through the full life cycle of the hydraulically fractured (fracked) gas produced for this project – from extraction by fracking through delivery systems such as pipelines and compressors to the liquefaction plant, the processing at the LNG liquefaction plant, the transport by truck, rail, or pipeline to the export terminal, any interim storage, transloading of the material the storage in the ocean-going vessel and then the final re-gasification of the LNG and its end use. This uncontrollable and inefficient process is also deadly in its effects on atmospheric warming and the climate crisis we are facing globally. It is irresponsible and shortsighted to support the further development of fracked gas projects. At the very least, a climate change impact analysis must be done for this project to measure and then assess the potential effects of the full life cycle of LNG and NGL greenhouse gas emissions and climate change effects that would be produced for the Gibbstown Logistics Center.

This comment is submitted in addition to the two letters submitted by Delaware Riverkeeper Network to DRBC dated June 3, 2019 and May 28, 2019, and the verbal testimony of Tracy Carluccio at the public hearing of June 6, 2019.

Conclusion

²⁵ <https://www.350tacoma.org/the-origins-of-lng-as-a-maritime-fuel/>

²⁶ Ibid.

The draft docket is deficient and misleading. It lacks essential information and continues to obfuscate the major intended use of the facility, LNG export. DRN requests that the draft docket be held back from the DRBC's business meeting based on its incompleteness. We point out the lack of adequate time for the Commissioners to review the project to be a major obstacle for a full and fair review (only 2 days before the meeting when the usual review period for the Commissioners is 30 days).

If the docket is included on the agenda at the business meeting, we request the Commissioners either disapprove the draft docket based on the evidence presented showing substantial harm to Delaware River water resources or withdraw the draft docket from consideration until a comprehensive analysis by all relevant agencies is complete and permits have been subject to public review and input. If the DRBC considers this docket in the future, DRN requests that after all other permitting and exhaustive environmental reviews are complete, DRBC provide at least a 60 day comment period for the draft docket so the public can be afforded the time and information needed to assess and provide input into the decisionmaking.

Respectfully submitted,

Handwritten signatures in blue ink. The signature on the left is 'Maya van Rossum' and the signature on the right is 'Tracy Carluccio'.

Maya van Rossum
the Delaware Riverkeeper

Tracy Carluccio
Deputy Director