

# Impacts from Toxic Chemicals

## **Biocides and Unknown Contaminants in Drilling Fluids**

- Through the drilling process Williams/Transco will release over 690,000 gallons of drilling fluid into the water which will impact water quality, harming marine and aquatic life.
- Drilling fluid / muds are used in oil and gas drilling operations to carry rock cuttings to the surface and also to lubricate and cool the drill bit.
- This fluid includes biocides, such as bentonite and others, which will contaminate the water quality and impact the food chain, increasing the impairment for fishing and shellfishing in these areas.
- Drilling fluids/muds can be synthetic or oil based. It is unclear which type Williams/Transco will be using.
- Synthetic fluids can accumulate in sediment and adversely affect the benthic communities, causing decreases in species diversity.
- Williams/Transco has not even finalized what other harmful substances will be in this chemical cocktail. Common additives include toxic chemicals which impact marine life and disrupt healthy ecosystem functions.
- How can the impacts to the water quality of these already impaired waterbodies be understood when the specific chemicals discharged in them are unknown?

## **Use of Harmful Chemicals in Pipeline Testing**

- Williams plans to release water used in testing the pipeline into the environment. The wastewater will include CORRTREAT 15316.
- In the toxicity reports, it indicates that toxicity to fish, algae and daphnia as “no data available”. Yet, this product is rated as acute toxic according to the Environmental Protection Agency (EPA)
- The EPA guidelines for the chemical caution against allowing the chemical to enter groundwater or waterways undiluted in large quantities

# Impact from the Re-Suspension of Over 1 Million Tons of Toxic Sediment

## **Overall Resuspension**

- To lay this pipeline, Williams must excavate a giant trench across New York harbor. The harbor seabed is contaminated by toxins like PCBs, dioxin, lead, and arsenic. These toxins will be churned up into the water and washed ashore by the tides, contaminating marine life and the shoreline.
- The potential resuspension and redistribution of toxic substances now buried under the seafloor is one of the most serious impacts of this pipeline construction on the water quality in Raritan Bay. These toxins pose a serious danger to both human health and marine wildlife.
- Approximately 83% of the soil samples from the Raritan Bay and Lower New York Bay exceeded the standards for one or more metals. Approximately 33% of samples had excessive amounts of toxic organic pollutants. In general, the most severely polluted samples came from Raritan Bay.
- This resuspension will destroy the water quality, impact marine life, threaten human health and severely impact the fishing and shellfishing industries

## **Resuspension and Harm to Marine Life**

- The release of toxic sediments would particularly harm a number of bottom feeding (or benthic) species, who make up a large portion of the biomass within the ecosystem, and play a vital role in the local food web and the thriving of larger species. The long-term consequences of toxic exposure for these species have not been adequately studied.
- Clams, crustaceans and other benthic (bottom feeding) invertebrates and fish species creatures would be the most directly and adversely impacted by dredging up of toxic sediments. Williams estimates that it will take 1-3 years for benthic communities upon which sturgeon depends for food to recuperate
- Increased turbidity of 1,090,000 tons of sediment released from excavating a 23.5 mile trench will make it difficult for these animals to find food and to navigate. The excavation of an 8- to 15-foot deep trench for 23.5 miles will disturb hundreds of acres of sand and gravel, creating increased sediment in the water.
- The resulting increase in the turbidity of the water threatens marine life since the clarity of water is critical to the ability of many species to navigate, find food, and avoid predators.
- Horseshoe crab in the project area may be injured or killed by excavation activities and/or increased turbidity. Moreover impacts also include temporary loss of habitat and foraging areas.
- There was no comprehensive, scientific assessment of the short- and long-term impacts to benthic organism (horseshoe crabs, surf clams) habitat.

## **Resuspension and Harm to Human Health**

- The effects on human health of these substances are well-known. Some examples are the following: arsenic causes a variety of cancers in humans. Lead leads to neurological impairments, especially in children. PCBs (polychlorinated biphenyls) enter the food chain; human exposure to PCBs often comes via eating PCB-laden fish.
- The class of organic compounds called dioxins is highly toxic. Because they bind to body fat, they accumulate in the bodies of both humans and animals.

- More than 90% of human exposure to PCBs is through food, including fish and shellfish. One could point to similar evidence of harms to health for any of the metals or industrial organic compounds found under the seafloor of these waters.

### **The Pipeline will run through a Superfund Site**

- Part of the Raritan Bay Loop would go through the Raritan Bay Slag Superfund Site.
- Lead, arsenic, antimony, copper, iron and chromium, are the primary contaminants contained in slag. Other metal contaminants include manganese, vanadium and zinc.
- Areas 7 & 11 of the Raritan Bay Slag Superfund Site are part of the NESE construction workspace, and toxic levels of lead, arsenic and other heavy metals have been found by the EPA and NJDEP in soils, sediments and surface waters here.
- The complex currents, eroded slag particles and dissolved metals from the jetty have not been adequately accounted for in avoidance plans by Williams/Transco. EPA recommended continued consultation about construction here.

### **Pollution without Justification - Documented Lack of Need**

1. Failure of Williams to establish need for project
  - Williams and their partner in the Project National Grid falsely claim the project is necessary to meet energy demands in the Brooklyn Long Island area over the next decade. Williams's claims natural gas consumption will increase 10% over the next decade primarily because of a conversion from home heat oil to natural gas. However, neither Williams nor National Grid have released any evidence supporting this claim. Williams requested that the supporting market data be kept from the public record. An a recent report by 350 Brooklyn undermines the claims.
  - FERC is required to issue a certificate of Public Convenience and Necessity under the Natural Gas Act. The agency has failed to issue this certificate thus far.
2. 350 Brooklyn Report – *False Demand: The Case Against the Williams Fracked Gas Pipeline*
  - Both the New York Independent System Operator (the independent body that is in charge of controlling NY's energy grid) and the U.S Energy Information Administration both forecast flat or decrease natural gas demand in the region
  - The environmental review done by the Federal Energy Regulatory Commission did not consider alternatives such as renewable energy, energy efficiency, or energy conservation.
3. Williams Profits Regardless of the Demand for Increased Natural Gas
  - FERC regulations will allow the company to receive a 14 percent return on equity for the project regardless of the actual need.

# Impacts to Endangered, Threatened, and Species of Special Concern

## **Endangered Species Generally**

- One of the positive effects of the cleaner water off New York City shores has been the recent return of seals and whales. Gray seals, harp seals, and harbor seals now migrate into the area in the fall and take up winter residence on Swinburne Island and Hoffman Island off Staten Island, and on Sandy Hook in Raritan Bay. Whales have also returned, particularly humpback whales, with sightings increasing from only 1 between 2011-2013 to 45 between 2014-2016. Fin and right whales have been seen as well. Whales have been seen in all seasons except winter.
- The offshore segment of the project alone may impact 20 endangered/threatened species.
- The National Marine Fisheries Service has not confirmed the impact to several of these species from the pipeline
- The National Marine Fisheries Office determined that the NESE Pipeline may affect, and is likely to adversely affect the right whale, fin whale, and Atlantic Sturgeon. Therefore, formal consultation pursuant to the Endangered Species Act has been requested and has yet to be concluded.

## **General Impacts:**

- The disruptions from a construction project of this magnitude will negatively affect seals and whales who return to the area.
- The increased turbidity from excavating the 23-mile trench will make it difficult for these animals to find food and to navigate.
- The noise generated by vessel engines and construction equipment running 24/7 and, in particular, the noise from pile-driving, will be difficult for whales in particular to tolerate.
- The toxins churned up by the excavations threaten to enter the food chain with resulting vulnerabilities for these marine mammals

## **Noise Impacts**

- Acoustic impacts and harassment of marine mammals will be intensified with an increase in work activity as Transco attempts to squeeze the amount of work originally proposed to be done over 15 months into only 9 months.
- Acoustic impacts are not fully addressed for fish or turtles relative to updated timelines.
- Marine mammals are sensitive to noise, and the 24/7 noise and vibration generated by vessel engines and construction (in particular, pile-driving) will be difficult for these animals to tolerate and could alter their behaviors (travel, communication, breeding and eating).

## **Marine Mammals**

- Nine months of 24/7 construction in the bay also poses a hazard to marine life from vessel strikes and noise. To protect these animals, Williams/Transco has proposed training vessel operators and crews to recognize them in the water and then take avoidance measures like slowing a vessel down or maneuvering it away. However, this will not work at night or in bad weather. Also, the kinds of vessels used to construct an in-water pipeline are not agile or easy to maneuver. Vessel operators are unlikely to be able to prevent collisions that may injure or kill seals, whales and turtles.

- There was no comprehensive, scientific assessment of the short- and long-term impacts to marine mammal (dolphins, seals and whales) habitat.

## **Turtles**

- Five species of sea turtle are found in the region where the pipeline would be built: Loggerhead, Green, Leatherback, Atlantic hawksbill, and Kemp's ridley sea turtle. All five of these species are listed as endangered or as threatened in New York and New Jersey, the states bordering the waters through which the pipeline would run
- The intense, low frequency noise generated by excavating, pile driving, and vessel motors will threaten these sea turtles. Turtles use sound for navigation, locating prey, avoiding predators, and general environmental awareness. The 24/7 construction schedule planned for this pipeline project could disrupt turtle feeding, resting, and navigation.
- In the summer 2018 a Kemp's ridley sea turtle emerged onto a beach on the western end of the Rockaway Peninsula, built a nest, and laid her eggs. This was notable because the Kemp's ridley sea turtle is the world's most endangered species of sea turtle. While found more usually on more southern beaches, Kemp's ridley sea turtles can nest as far north as Nova Scotia. Last summer 96 hatchlings were released into local waters. The smallest of the world's sea turtles, they generally return to the same beach when they are ready to lay their own eggs.

## **Atlantic Sturgeon**

- Atlantic sturgeon, an endangered species that is protected from all fishing and, despite conservation efforts, has been slow to recover, have been documented in the New York Harbor all year-round with the highest concentrations in spring and fall.
- The 9-month construction schedule planned for this pipeline will disrupt migration of the Atlantic sturgeon, which travels from the sea to the Hudson River to spawn.
- To minimize potential impacts on the Atlantic sturgeon, construction activities will be banned from March 1 through June 30 and from October 1 through November 30. However, Williams has requested permission to continue working (excavation, dredging, pile driving) during these restricted times, including the spring and fall, peak migration periods.

## **Impacts to the Shore Economy**

### **Revitalization of the Raritan Bay**

- Coastal water has improved significantly since their low point in the 1970s. Stricter environmental laws, investments in waste treatment, and the decline of industries on the rivers that flow into the region have led to a dramatic improvement in water quality. The old toxins have become buried beneath the seabed of the Raritan Bay.
- Investment in improvements to water quality in the Raritan Bay will be lost if this project is allowed to move forward.
- Fish and shellfish populations will be polluted from the resuspended sediment.
- Marine life will be harmed, harassed and killed during construction.

### **Importance of a clean and healthy Raritan**

- Many New Jerseyans at the shore depend on clean water and access to the Raritan Bay for their livelihoods, and construction of the NESE pipeline would hurt them.
- Fishermen, recreational boaters, and whale-watching businesses would be negatively impacted since construction of the Raritan Bay Loop will go through seven separate recreational & commercial fishing grounds and hinder travel of boaters, including whale-watching vessels.

### **Failure to assess adverse economic impacts of the NESE Pipeline**

- There was no complete analysis of the economic adverse impact from NESE that will result from disturbances in/by the Raritan & Lower New York Bays on the habitat or the greater community that relies on fishing and recreation.
- There was no comprehensive assessment of potential long-term effects of toxic sediment disturbance on shorelines, beachgoers, marine life or the health of shoreline communities in terms of costs to health, safety and economics.
- The current of the Raritan Bay will bring suspended toxic-sediment, chemical drilling fluids, and chemically treated water toward the shoreline of the Bayshore communities.

### **Impacts to the Fishing and Shellfishing Industry**

- The route of the pipeline impinges on seven fishing grounds used by commercial and recreational fisheries. The decreased water quality will negatively impact fishing and shellfishing in the area.
- As the toxic sediment that will be re-suspended is mixed into the water column and eventually settles back down, it will cover seabed species, as well as fish eggs and larva.
- Winter flounder are a highly prized recreational fishing species. Winter Flounder are currently heavily Regulated cutting down drastically the ability to catch these fish due to status of the species and concentrations of PCBs in the fish through bio-accumulation.
- The pressure and strength testing of the pipeline involves sucking up over 3.5 gallons of water at an extremely fast rate (2,350 gallons per minute) and filter the water through a mesh screen. Williams intends to position the water intakes halfway in the water column. The Raritan Bay is shallow and this will impact the seafloor.

- This process will likely result in increased sediment disruption, adding to the documented disruption of 1,091,734 cubic yards already disturbed from the installation of the pipeline. This again will re-suspend toxins and harm marine life impacting fishing/shellfishing
- The fish, larva, eggs, shellfish, and others caught in the pressure testing process will be either crushed against the screen by the immense pressure or tunneled through the 23.5 mile pipeline. Any marine life caught in the process will be trapped in the pipeline for at least seven day, but possibly up to a month. Under either circumstance the marine life are certain to be killed or harmed in the process.
- There was no comprehensive, scientific assessment of the short- and long-term impacts to benthic organism (horseshoe crabs, surf clams) habitat.

# **Climate Impacts, Incompatibility with NJ and NY Energy Policy, Lack of Need**

## **Climate Change**

- Many of us remember that Superstorm Sandy destroyed or damaged over 30,000 properties, cost over \$36 billion, and resulted in 37 deaths in NJ alone. Six years after Superstorm Sandy, over 1,000 NJ families were still not back in their homes. Inland flooding from Hurricanes Floyd and Irene showed that it's not just shore towns that are threatened by hurricanes.
- Leaking and burning of natural gas adds to more frequent and more intense weather events like floods, hurricanes, heavy rains and heatwaves and these, in turn, impact our health and security while increasing the likelihood of infectious diseases and stress.

## **Natural gas is not a clean energy**

- While natural gas is often touted as less dangerous to the climate than coal and petroleum, it is in fact just as dangerous. Its primary component is methane, and methane in the first twenty years after its release is 84 times more potent a greenhouse gas than carbon dioxide. Even in the absence of accidents, the routine fracking, processing, and transportation of natural gas releases substantial amounts of methane into the atmosphere.

## **The Pipeline is Against New York and New Jersey's Clean Energy Goals**

- New York State's Energy Plan specifically calls for (1) a 40% reduction in GHG emissions from 1990 levels, (2) a reduction in total carbon emissions by 80% by 2050, and (3) 50% generation of electricity from renewable sources by 2030.<sup>77</sup> Permitting a new pipeline that will bring climate-altering natural gas to the state is clearly inconsistent with these goals.
- Governor Murphy has committed New Jersey to 50% renewable energy by 2030 and 100% by 2050. This project is against his Clean Energy Agenda

## **There is a documented lack of need for the project**

4. Failure of Williams to establish need for project
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6. Williams Profits Regardless of the Demand for Increased Natural Gas

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**The Project is likely a boot-strap for future LNG Exports**

- A real threat of this nearly \$1 billion dollar project is the potential to fast track an offshore liquefied natural gas (LNG) export facility. The pipeline would jump-start a new LNG export operation. LNG tankers pose grave risks to the metropolitan region and would dramatically increase hydro-fracking in the northeast.
- Natural Gas exports will see increase fracking in the Marcellus Shale region, threatening drinking water and further destabilizing the climate.
- In order to frack, an enormous amount of water is mixed with various toxic chemical compounds to create frack fluid. This frack fluid is further contaminated by the heavy metals and radioactive elements that exist naturally in the shale. A significant portion of the frack fluid returns to the surface, where it can spill or be dumped into rivers and streams. Underground water supplies can also be contaminated by fracking, through migration of gas and frack fluid underground.
- Companies are currently trying to bring frack-waste into New Jersey which threatens clean drinking water and the environment.

## Impacts from Construction

### Overall Construction Impacts

- An extensive portion of both the Raritan and Lower New York Bays will be impacted. The applicant intends to disturb over 14,000 acres in the construction workspace.
- Roughly 947.4 acres of seafloor would be indirectly affected by the resuspension and redeposition of sediment.
- Williams says that construction will take a full year and at points may run 24 hours/day, 7 days/week. Turbulence, vibrations, and noise will take their toll on marine life. Whales, seals, turtles and birds risk having their migratory patterns disrupted.
- Excavating the trench in which to lay the pipeline - which involves digging or disturbing the sea floor - is especially threatening to clams, oysters and other mollusks, crabs and horseshoe crabs that live and feed on the seafloor. Also, the release of sediments from the trenching can lodge under the shells of shellfish species interfering with their organs and connective tissues.
- The pipeline will be buried 6-8 feet below the seafloor in most areas, but would be required to be buried 15 feet below the navigational channels.
- Noise from pile-driving and other construction operations can not only disorient marine species but can lead to long-lasting damage, threatening their survival, and can lead to growth abnormalities in newly hatched organisms. The sheer number of marine vessels required by this project, with their diesel engines running 24/7, will be inevitably disruptive to species as varied as crabs and whales. Moreover, the drilling required for tunneling portions of the route and the disruptions of pile driving will exacerbate noise levels.
- Upstream construction will destroy important wetlands that clean and filter the tributaries of the Raritan Bay therefore increasing pollution from runoff.

### Impacts from Noise

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### Williams has a poor safety record.

- Natural gas is primarily methane, a highly flammable and explosive gas. Williams has a poor safety record in the management of its pipelines, compressor stations, and processing plants.
- In the last ten years, Williams pipelines and compressor stations have exploded and/or caught fire ten times. In addition, incidents at other Williams facilities have killed six people and injured dozens. These accidents have released methane into the atmosphere, leveled buildings, and contaminated groundwater.
- The Pipeline and Hazardous Materials Safety Administration has repeatedly levied civil penalties against Williams for neglecting safety procedures.