Impacts of Natural Gas Pipelines in the Northeast

Giving Area Residents an Opportunity to Speak Out About What Can and Can’t Be Done in the Area in Which they Live

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Summary:
Natural gas pipelines travel across state lines and eventually feed into our homes and businesses; the places where we feel are the most safe. Unfortunately, these pipelines, both aging and newly installed, are fraught with problems, such as leaks, ruptures and eventual explosions causing death and injury. Gas companies, in their mission to deliver the increased supply of natural gas to the tri-state area and overseas, are looking to ravage swathes of land in the Delaware River Basin for a new pipeline. The PennEast Pipeline is currently proposed to cross through many open space and preserved areas purposely set aside by the counties to remain untouched. Currently, the project plans to begin construction along the environmentally sensitive path they have drawn out, unless we do our part and speak against the detrimental effects that they are trying to bring to this area’s pristine environments.

Video Link: https://youtu.be/2pZa6DWyS0k

The Issue: Pipeline Dangers Brought Home: The PennEast Pipeline

We use natural gas everyday as an energy source, often without consideration of how it gets into our homes and businesses. Natural gas is pumped through millions of miles of pipeline from source to consumer for our use, but the cost of this resource goes unseen by the average consumer. Pipelines travel across the country, inter and intrastate, cutting through lands both public and private and devastating the environment and animal habitats. Along with this devastation comes great danger of breakages that cause fatal accidents each year. Much of this goes unseen through underground pumping, but now these problems are being brought into sight. The newly proposed PennEast pipeline is to be built through the NorthEast tri-state area through private lands, public parks, protected waterways and preserved areas. The PennEast will bring all these pipeline problems along with it, right to our own backyards.

The Reach of Pipelines
The United States has become extremely dependent on non-renewable energy sources such as natural gas. Throughout our country, there stretches over 210 natural gas pipeline systems, scaling 305,000 miles of terrain, both above and below ground (1). The two main types are large interstate high pressure transmission lines and smaller lower pressure distribution lines that feed into counties, cities and towns. Distribution pipelines service 67 million homes and 5 million businesses, schools and other buildings (2), crisscrossing silently beneath our feet. Between the United States and Canada, pipeline transport is used for more crude oil, petroleum, and natural gas than any other mode of transportation, summing to 70% of total transportation (3), and more
of these pipelines are being built every day. With an exponentially increasing population, our energy needs are increasing as well, creating a higher demand for crude oil produced energy.

**Pipeline Authority and Regulations**

Many agencies and governmental bodies oversee the development and regulations of pipelines in attempt to assure their compliance to laws and overall safety. The Department of Transportation’s Pipeline and Hazardous Safety Administration, (PHMSA), is the main federal agency responsible for the oversight of all US pipeline regulations. Their federal regulation is the minimum standard but leaves individual states primacy for implementation, giving them the opportunity to implement more stringent regulations (4). PHMSA is assisted by the Federal Energy Regulatory Commission (FERC) who authorizes the siting, construction and operations of interstate pipelines and natural gas storage and facilities (1). FERC determines rate-setting methods for companies and rules for business practices (1), but has no jurisdiction over safety and security, only the ability to consult other agencies with those responsibilities (5). With assistance from the EPA, these agencies determine the environmental aspects of pipeline construction and lead in the required National Environmental Policy Act (NEPA) filing and review process for the project, abiding by all other applicable laws such as the Endangered Species Act, National Historic Preservation Act and the Magnuson-Stevens Act (1). If a pipeline is under FERC jurisdiction, they may pre-file a NEPA review in the early stages of project design (1), which leaves large opportunity for sections of the project to evade environmental inspection and public comment. Like many governmental agencies, the agencies responsible for the most vital aspects of pipeline regulation and inspection are limited by severe underfunding and understaffing. To regulate all 2.2 million miles of natural gas pipelines, 400,000 miles of oil pipelines, and 3,000 companies, PHMSA has merely 145 inspectors (6), consequently leaving much of the inspection to the oil companies themselves.

**Pipeline Safety and Inspection**

Pipelines undergo only moderate inspection processes, if inspected at all, which is shocking for transporting such a dangerous resource. PHMSA requires only 7% of natural gas pipelines to be inspected regularly, leaving 93% of existing pipelines to be inspected infrequently or left uninspected (7). The laxity of inspections is a result of newer pipeline legislation grandfathering existing pipelines into less inspection and testing, and lets pipelines connected to process facilities and other larger lines evade inspections and standards entirely (7). Pipeline inspections are heavily dictated by the amount of risk associated with the pipeline, determined by a pipelines proximity to a “high consequence” area such as high population areas, near drinking water sources, or the pipelines that would cause the most harm if they were to break or explode. Part of the issue is the inconsistency in pipeline company standards and methods of construction. Each company uses different parts, construction techniques, and materials in different areas and oversees that with their own specific criteria (7). The variety of pipelines increases the difficulty of inspections and complicates a one type fits all approach to inspections.

Companies also differ the amount and pressure of natural gas flowing through pipelines to accommodate changes in demand. Pipelines are usually run close to maximum capacity to optimize function and profits, but can temporarily exceed certified capacity through extra compression (8). It is claimed that exceeding capacity is still within the capability limits of the system, but higher volumes at higher pressures leave more opportunity for accidents and
breakages. Many pipelines are only given certain tests after initial construction and not after many years of increased pipeline deterioration. High pressure water (Hydrostatic testing) and baseload gas volume testing are only applied to new pipelines or pipeline expansions (1). Even if pipelines are inspected throughout their lifetime, the process is especially flawed. PHMSA lacks many of the resources it would need to have the manpower to properly inspect millions of miles of pipelines. The agency is constantly in competition with pipeline companies for licensed inspectors, many of who prefer to leave the governmental sector and join the private sector to inspect for companies who pay higher wages (7). In the absence of proper PHMSA inspection, the industry and companies are left to inspect their own operations, a serious flaw in the process. Many PHMSA safety standards are written by the natural gas companies as well, proving manipulation in the pipeline industry in both the inspection and legislative processes.

Pipeline Accidents
The pipeline company involvement in the inspection and regulation leaves the opportunity for many accidents and dangers to occur through pipeline usage. The American Gas Association advises the public to be aware of the warning signs of natural gas leakages to protect themselves within their homes. They advise about the smell sight and sounds of a gas leak; the scent of mercaptan which smells like rotten eggs, the sight of dirt blowing into air: bubbling in standing water systems or dead vegetation around the pipeline, and sounds of hissing or roaring from the pipeline that can all signify a leak (9). But it should not be up to the people themselves to detect an issue with a dangerous pipeline system that companies construct near their homes and highly populated areas. The continuous lack of inspection and regulation all too frequently leads to leaks and explosions, and the continuation of occurrences does nothing to change the inspection processes or urges companies to change their practices. Since 1986, there have been 8,000 pipeline accidents (10), about 280 per year (3), which have caused 500 deaths, injury to over 4,000 people, and have cost 7 billion dollars in damages (7), spilling an average of 76,000 barrels per year- over 3 million gallons total- equivalent to 200 barrels spilling per day (10). Accidents are grouped into the categories of excavation damage, outside force damage, material or welds, equipment, incorrect operation, corrosion, natural forces, and other (4). Both through human instigation and natural processes such as corrosion, spills and explosions occur every year, but only those deemed “significant” are reported, leaving up to our imaginations the amount that remain unreported.

Tens of thousands of miles of bare metal pipelines are exposed to natural processes, and as they age they are susceptible to rusting and corrosion. About half of existing pipelines are at least 50 years old (7) and are constantly corroded by external natural forces and internally from the gas products themselves. The deterioration of these pipelines makes them an explosion waiting to happen. PHMSA encourages companies to use more resilient materials such as plastics and has replaced many miles of pipeline already, but does not legally require the companies to make a switch (3). Much of the cost of replacing the pipeline not absorbed by the company, but is passed on to the customers, although it is the company who should be viewing more resilient pipelines as an investment to prevent future accidents.

The lack of care from companies leads to many accidental leakages, spills and catastrophic explosions which are ignored by the companies who should be held responsible. Pipelines are required to be marked with signs indicating the general location of the pipeline and its course,
but cannot be relied upon as an exact number, depth or location (11) which is especially misleading. In Texas an explosion occurred from auger drilling in a pipeline area to install electrical poles; the man operating the drill followed proper procedure and called 7 days prior to drilling to allow time for companies to inform him of pipeline locations (12). One out of the three companies neglected to reply or mark the pipeline prior to the call, with the nearest markings placed a quarter mile away and covered in overgrown plants (12). This single company, Enterprise Energy, has a history of neglecting proper safety and documentation procedures, causing seven accidents in the past three years for striking of unlabeled or mislabeled pipelines (12). In New Jersey the inspections are more stringent than the federal guidelines, but there are still occurrences of accidental leakages and explosions (6). In Teaneck an explosion destroyed a resident’s home and damaged five of the surrounding houses despite the residents warning the utility company of smelling gas days before the explosion; PSE&G neglected to act on the warning and was fined (6). Again under the watch of PSE&G, when moving an underground storage tank, a distribution pipeline was ruptured and destroyed an entire apartment building and killed three people (6). PSE&G and the contractor were merely fined (6), a sum of money a large company as that has no issue to bear. In Edison, an excavation ruptured a gas line and was left unacknowledged for many years; the pipeline exploded and destroyed eight apartment buildings injuring over 100 people (6). There are many tragic incidences of leakages and explosions, and with lax regulation from unconcerned companies in charge of such dangerous materials, there will be no cease to the deaths occurring from these pipelines.

**The Issues Brought Home - The PennEast Pipeline**

Although many of the accidents which occur take place in the states with the most pipeline mileage such as Texas, California and Louisiana (7), these problems are increasingly arriving to our own home state of New Jersey and the surrounding tri state area. The newly proposed PennEast pipeline crosses 108 miles of land with a 36 inch, 1480 psi pipeline stretching from Luzerne County, PA to Mercer County, NJ (13). A 125 foot wide right of way must be cleared along the entire path and will devastate open space and preserved areas targeted by the company due to the cheapness of obtaining the land and the ease of crossing (13). The pipeline is estimated to provide 12,000 jobs, 1 billion cubic feet of gas per day and will service 4.7 million homes (14) and claims that it will help to keep gas prices low and maintain supplies during high demand (15). But it is currently disputed if we truly need this pipeline at all. Last year’s record low temperatures placed no demand pressure on the existing pipeline systems and all the problems the pipeline claims to fix, have already been remedied (15). The Northeast is completely supplied with its current pipeline infrastructure and estimates show that our natural gas demand will plateau for the next 20 years (15). Due to the federal nature of the project and its funding, the towns and counties have little say to completely eliminate the pipeline but still have the opportunity dispute the proposed route (13) to make it the least harmful to their local environment and preservations.

**PennEast Land Issues**

The currently proposed route requires a 100 ft wide right of way with a 50 foot easement along all 108 miles of route, affecting 1,308 acres of land (16). Construction requires additional land use for access roads, wetland crossing, topsoil storage, and pipe storage yards (16). The line is to cross through many preserved areas and parks, which are previously untouched and unexcavated land. Loosening the soil in any of these areas, especially the protected areas, severely increases
erosion. In addition to affecting the land, the eroded soil gets washed away into nearby water bodies affecting the marine habitat. Extra sedimentation lowers the light penetration in the water, lowering the photosynthesis of algae and changing the water temperature, a vital aspect to marine reproduction. The pipeline will directly pass through 88 waterways and 44 wetlands, with 85% of the pipeline passing through the Delaware watershed (13) which provides water to 17 million people (17). The pipeline is to cross through 60 Category One waters, those with exceptional ecological or recreational uses, functions as a water supply or has general aesthetic purpose (18). Crossing through the wetlands will affect their basic functions as filters to pollutants, reservoirs for storm water runoff, and will alter habitat for wildlife and plant species (18). The effects are hoped to be minimized by using methods of horizontal directional drilling which temporarily dams or diverts the water to allow for pipe to be laid along the bottom or to dig pipe channels (17). This method has only been used recently and its effects on the water ways and surrounding environment are still unknown. Despite the clear evidence for erosion to occur, in 2005, oil and gas companies were exempt from federal permits to control erosion and sedimentation (17) and are absolved of responsibility.

Many species will be directly affected from the clearing of land for the pipeline and the disturbance of waterways. Endangered species such as the bog turtle, Indiana bat, dwarf wedge mussel, northern long ear bat (18), bald eagles, bobolinks, harrier hawks, ospreys, cormorants, wood turtles, great blue herons, bobcats, long tailed salamander and many more (13). The clearing of the right of way will fragment many animal habitats. The cleared area is too large for animals to cross without fear of predation, and many will cease to cross at all. This eliminates cross breeding between local animal populations and without assistance from other populations may lead to local extinctions for the already endangered species and others not yet on the endangered list.

Eminent Domain
For pipeline construction, many land owners’ property is taken for public use, with or without their consent. With a Certificate of Convenience and Necessity from FERC, companies many seize property through eminent domain (19), a law allowing the government to take any land if the benefits to the public outweigh the adverse effects. This is ordinarily enacted solely by the government, but since the oil companies are private entities, this governmental power intended to benefit the public is being abused for private corporate use (19). Landowners are initially offered a sum of $3,000 for their land, and if that is denied, eminent domain may be used (20). Initially denying FERC access to your land for surveying can show strong opposition to the project (21) and greatly inconveniences the company. 68% of landowners along the route of the PennEast have denied surveyors permission to access their land (17). The county, state, and landowners need to intervene extensively to avoid eminent domain, the last resort being federal court to solve the dispute (20). Although landowners can do little to avoid their land being taken, some may be eligible for tax reimbursements for damaged timber, crops or crop land (8), but this is in no way equivalent reparation to a violation of one’s property rights.

Penneast Opposition
The Route for the PennEast is not yet finalized, but is expected to complete FERC filing by the end of the year and begin construction in 2017 (8). In public meetings with FERC about the PennEast pipeline, just about every person who spoke said they are against the pipeline or its current route (22). The public along with elected officials from the federal, state, county and
municipal level have spoken in opposition to the PennEast (22). The pipeline’s route has been continuously adjusted and will be further adjusted during the survey process to minimize impact on the environment and communities (23). More than 30 towns have introduced ordinances to oppose the pipeline (17), which is almost every township along the pipeline’s route. The public opposition has been working to lessen the pipeline’s effects on the public and the environment. In Bath, Pennsylvania, it was agreed to move the pipeline further from an elementary school and in Hunterdon County, New Jersey it was agreed upon to move the pipeline closer to existing power lines to use the already open space and leave more trees standing (17). But the fight against the PennEast pipeline continues, and needs our voices to help. The PennEast pipeline is attempting to silence and override public interests by increased involvement in the legislative process during discussions that should be solely about environmental concerns. To preserve our lands and keep our waters clean, we need meetings about the environment to be uninfluenced by a pipeline company with clear conflicts of interest. The public should be allowed to speak freely about their concerns to an entity who will listen, rather than one who is sizing up the opponents. The PennEast pipeline is going to affect everyone’s Earth and we must speak up to minimize its harm and tell PennEast to respect the integrity of our preserved land, waterways, and communities.

Community Action: Opposing the PennEast Pipeline: Speaking out against regulatory entity involvement in hearings about environmental issues

A letter to the Delaware River Basin Commission was sent to urge them to not hold combined meetings of The Federal Energy Resource Commission (FERC) and The Delaware River Basin Commission (DRBC) about their concerns for the PennEast.

The authors attended the DRBC meeting in Washington Crossing, PA on June 9, 2015 that reviewed the proposal to hold combined FERC and DRBC meetings.

Holding separate meetings for both FERC and DRBC will allow focused discussions among the commission members and allow more time for public comment to take place. If the combined meetings are held, the public will have to split their given time to speak, merely 3 minutes, to separately address each entity, shortening their input to each. Combining the meetings will conflict the goals of each regulatory entity and will lose sight of the goals of each during the discussions. There are two separate issues at hand here--FERC’s concern with the speediness of the project’s completion and DRBC’s concern for protecting the environment and water sources and whether or not to permit the project at all. These separate goals are not necessarily aligned with each other and need completely separate discussions to have enough time to encompass all that needs to be heard.

Letter to DRBC:

I would like to address the issues that will arise from hosting combined meetings of the regulatory agency The Federal Energy Resource Commission (FERC) and The Delaware River Basin Commission when discussing the proposed route of the PennEast pipeline. I do not feel that an agency mostly concerned with getting the pipeline constructed and functioning as soon as possible has similar wholehearted concerns about the environment and waterways as does the
Delaware River Basin Commission. Hosting combined meetings for the two entities is sure to pose conflicting issues of interest and will drown out the concerns of each party, losing sight of the goals of each. At such early stages of decision making with no finalized route for the pipeline, I feel it would be most beneficial to let the Delaware River Basin Commission to decide amongst itself, uninfluenced by FERC, to determine the most environmentally safe and proper route for the path which will leave the most undisturbed land, habitat, and waterways and maintain our preserved plots of land. FERC has too strong an opinion about speediness of the project and its general completion to truly have these environmental concerns in heart and in mind.

Hosting the combined meetings will also limit the amount of time the public has to raise their concerns to each of the commissions. By giving only three minutes to each person to address both commissions, you are only allowing half that time for each of the issues and are forcing people to omit the vital information they came here to express.

In order to have the most powerful effect on the proposed route of the pipeline and to ensure the safety of the environment, we must leave the energy industry out of the meeting that will environmentally criticize their work. To preserve the integrity of the meetings for both FERC and The Delaware River Basin Commission, separate meetings must be held.

Thank you,

Rachel Tarzia

References:


Appendices:

The Delaware River Basin Commission is proposing a combined DRBC/FERC hearing on the PennEast pipeline!

That’ll give you two minutes to make your case to both DRBC AND FERC!

The DRBC says it’s for your convenience.

Tell DRBC that you want separate hearings for DRBC and FERC and you want DRBC to schedule hearings in at least 7 towns along the pipeline route.

Tell them...

**Come To Me, DRBC!!**

SIGN and SHARE our petition at bit.ly/ComeToMeDRBC

Letter to the Editor sent to the Bucks County Herald on June 8, 2015 to:
Environmental Destruction from the PennEast Pipeline

Natural gas pipelines stretch across 2 million miles of the United States and connect to 5 million businesses and 67 million homes. Pipeline regulatory agencies such as The Federal Energy and Resource Commission (FERC) and The Pipeline and Hazardous Materials Safety Administration (PHMSA) are seriously underfunded and understaffed, rendering them unable to properly oversee all pipelines. Accidents occur year after year from faulty pipelines leaking or rupturing, causing possibly fatal explosions. But pipeline concerns do not stop at just humans; the damage extends to both land and aquatic wildlife and brings detrimental effects upon the populations. The Right of Way for pipelines can be cleared up to 100 feet wide, significantly fragmenting animal habitats. This causes the animals to abstain from crossing the open corridor because of full exposure to predators, which limits the rescue effect between populations; the migration of neighboring populations to rescue a dwindling population from extinction. The fragmentation also changes the environment at the edges of the remaining forest; exposing the vegetation and wildlife to more wind disturbance, more sunlight which damages plants and dries the soil, and alters the amount of rain that reaches the area, all situations that the forest was not previously adapted to and may not be able to properly adapt to. These detrimental edge effects are exacerbated by humans, who now have better access to the area through the clearing and can easily further disturb the habitat. The movement of soil to install the pipeline in the ground also alters habitat and loosens the soil, contributing to erosion and sedimentation into water ways. The extra sediment decreases the amount of sunlight that can penetrate the water, altering the temperature which is a vital aspect of many aquatic species’ reproductive behaviors, and altering the photosynthetic primary production of algae species that are at the bottom of the aquatic food chain.

For a long time natural gas pipelines were an out of sight out of mind situation, constructed in Texas, California, and other oil rich states, never coming to the attention of those in the Northeast. But now these problems have followed us home and plague our pristine environment with the many concerns that surround the transport of natural gas. The PennEast pipeline, a 108 mile pipeline proposed to stretch from Luzerne County, Pennsylvania to Mercer County, New Jersey is soon to begin construction, and ultimate destruction of our environment. The current proposed route of the pipeline crosses 88 waterways, 44 wetlands, 30 parks and is targeting open space and preserved land due to the ease of obtaining and cheap price. The regulatory entities such as FERC who desire to get the pipeline in the ground as soon as possible do not have the welfare of our environment in mind when considering the placement and methods of construction. In order to preserve our environment and protect our native species we must speak out against the PennEast pipeline and urge them to use an alternate route. For the wildlife which cannot speak for itself, we must be their voice. Tell the PennEast to respect our environment.

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