

**GAS PIPELINES
AND WILLIAMS TOWNSHIP**

George Washburn, Chairman
Vincent Foglia, Vice-Chairman
Ray Abert, Supervisor

Gentlemen:

The following document contains information regarding gas pipelines in regards to Williams Township. It includes regulatory processes, environmental impacts, and the township's determination to protect its character. Some of this information was shared at the December 10 Board of Supervisors' meeting, some was not.

The residents of Williams Township have grave concerns about the construction and presence of a 36" gas pipeline with pressure of 1480 psig in the community. We are appealing to our supervisors to raise our voices for us and sign a resolution opposing the PennEast pipeline.

Thank you for reading through this information.

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

(Section 27 of the Declaration of Rights in the Pennsylvania Constitution)

Limestone/caverns and sinkholes

Have the supervisors approached PennEast regarding the following concerns??

- As stated in Wms Twp ordinance #2005-1, “Wms Twp topography may be defined as a karst topography due to the presence of carbonate rock.”

Karst is made up of soluble rocks including limestone, dolomite and gypsum, [which dissolve more easily than other rocks]. Karst has sinkholes, caves, and underground drainage systems; think of Lost Caverns up the street.

This ordinance is written to state township regulations related to this issue, plus the enforcement and penalties for not following the regulations. Some sections:

“a substantial amount of the land in Williams Township has been found to be susceptible to the development of sinkholes”

“The Board of Supervisors believes it is in the best interest of the health, safety and welfare of the residents to take a proactive approach to minimize the risk of sinkhole occurrences”

“Storage and handling areas for hazardous materials must have impermeable surfaces designed to contain materials stored/handled”

“In addition, any person found to be in violation of this Ordinance shall be subject to any and all enforcement provisions contained within the Stormwater Management Act, Title 32 P.S. Section 680.15.”

- On **October 1, 2013**, there was an article in The Courier-Journal in Kentucky stating expert concerns about the Bluegrass natural gas pipeline, which was coming from Pennsylvania, and Kentucky’s “sinkhole and cavern-riddled geology.”

The issue was how the **pipeline construction and operations would be affected by the karst landscape**.

Even as landowners and officials battle the merits of the planned Bluegrass Pipeline, experts say that Kentucky’s sinkhole and cavern-riddled geology poses major construction and operational challenges to its developers.

One geologist said the potential problems are so significant that they need to be fully evaluated before any dirt gets turned on the plan to run about 150 miles of new 24-inch diameter pipeline through Kentucky. The pipeline would carry natural gas liquids from Pennsylvania to the Gulf Coast.

At issue is how pipeline construction and operations could be affected by karst, a landscape common in a large part of the commonwealth and is typically underlain by limestone pocked with fissures and caves.

(“Sinkhole terrain will challenge pipeline developers,” By James Bruggers, The Courier-Journal <http://www.courier-journal.com/story/money/2013/09/30/sinkhole-terrain-will-challenge-pipeline-developers/2898225/>)

Limestone/caverns and sinkholes

- On **February 17, 2014**, the Lexington Herald-Leader published an article with the following photograph



“The sinkhole that swallowed eight cars at the National Corvette Museum in Bowling Green on Wednesday and an explosion the next day of a natural gas pipeline in Adair County highlighted what opponents of the Bluegrass Pipeline have warned about for months.”

“The unstable karst topography of Central Kentucky, in which underground streams create sinkholes, and the Adair explosion that destroyed two homes are the kinds of events that Sister Claire McGowan has spoken about during public events opposing the pipeline.”

Sister Claire McGowan spoke:

“We mourn with those whose homes and property have been destroyed by these two events”

“pipelines are extremely dangerous because they eventually leak, and that laying huge, high-pressure pipelines on top of karst that often results in sinkholes”



Limestone/caverns and sinkholes

The Lehigh Valley Hazard Mitigation Update for 2013 states:

"...the ground failure hazard to which the Lehigh Valley is vulnerable includes, but is not limited to, land subsidence or sinkholes"

"Land subsidence can be defined as the sudden sinking or gradual downward settling of the earth's surface with little or no horizontal motion"

"Both natural and man-made sinkholes can occur without warning."

"When sinkholes occur in developed areas they can cause severe property damage, injury and loss of life, disruption of utilities, and damage to roadways."

(Lehigh Valley Hazard Mitigation Update for 2013, SECTION 4.3.9: RISK ASSESSMENT – SUBSIDENCE/SINKHOLE http://ncem-pa.org/pdfs/Section_4.3.9_-_Subsidence_Sinkholes_Profile_-_031313.pdf)

- "Sinkholes, along with caves, are a definitive part of Pennsylvania's landscape we call karst. The chemical and physical processes that have helped to form this unique landscape have taken place over hundreds of millions of years."

(Sinkholes in Pennsylvania, PA Department of Conservation and Natural Resources, <http://www.dcnr.state.pa.us/topogeo/hazards/sinkholes/>)

- "Karst is common to areas underlain by carbonate bedrock (limestone and dolostone). These rocks are more easily dissolved than other rocks by a weak, naturally forming acid formed by the mixture of water and carbon dioxide. This dissolving process is enhanced along the many fractures found within the bedrock and over time has created a unique subsurface plumbing network."

(Sinkholes in Pennsylvania, PA Department of Conservation and Natural Resources, <http://www.dcnr.state.pa.us/topogeo/hazards/sinkholes/>)

Safety

Explosions

- According to federal agency PHMSA (Pipeline and Hazardous Materials Safety Administration), there have been **552 incidents so far in 2014**, resulting in **15 fatalities and 90 injuries**. There were **621 incidents in 2013** resulting in **10 fatalities and 46 injuries with property damage valuing \$329,209,236**.

In 2011, Allentown had a natural gas explosion which **killed 5 people, including a 4-month old baby, leveled 8 homes and injured 60 people**. The fire raged for nearly 8 hours – there were no shut off valves. ***It was a 12" low pressure line.***

In 2011, a Millersville PA drilling contractor struck an eight-inch UGI gas distribution line, causing a leak. **The gas migrated through the ground, filling nearby storm drains and several structures**. UGI emergency response officials and contractors responded to the scene in an effort to stop the leak, and 20 homes were evacuated. ***One hour and 30 minutes after the leak was reported, a building that had filled with gas exploded.***

Six months before the Allentown explosion, there was a natural gas explosion in San Bruno, CA **that registered as a small earthquake**. It killed eight people and destroyed dozens of homes.

The National Transportation Safety Board found that **"first responders didn't know how to cut off the gas, and utility employees were stuck in traffic** as the inferno raged.



Gas explosion on I-77 in West Virginia.

Safety

- A federal report on pipeline safety found that **members of the general public are more likely to identify oil and gas spills than the pipeline companies' own leak detection systems.**

According to the report, pipeline control rooms, which help monitor whether a line is functioning properly, **identified leaks in hazardous liquid and gas transmission lines only 17 percent and 16 percent of the time.**

Is there a Williams Township hazard mitigation plan??

If yes, where can residents see it?



A grove of trees on Buttermilk Road, many of which will be cut down.



View on Raubsville Road. This is the character the Comprehensive Plan and other Williams Township ordinances have promised to maintain.

Regulations

The Federal Energy Regulatory Commission (FERC) will make the decision whether to grant PennEast a permit.

They exist to grant permits and **only refuse if the application requirements are not fulfilled. They do not make judgments based on safety and quality of life.**

- The Natural Gas Pipeline Safety Act of 1968 **authorizes the Department of Transportation to regulate pipeline transportation of natural gas. The Office of Pipeline Safety (OPS), within the U.S. Department of Transportation, has overall regulatory responsibility for hazardous gas pipelines** under its jurisdiction.
- **OPS inspects and enforces the pipeline safety regulations for interstate gas pipeline operators.** OPS is headquartered in Washington, DC, and **supported through five regional offices.**
- The **regional office that oversees Pennsylvania**, located in Trenton, has **six investigators and 2 senior investigators.** That's **eight people** to enforce regulations for 14 states (Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, and West Virginia).

According to an audit report on oversight of pipeline safety from U.S. Department of Transportation's Office of Inspector General, May 2014:

The federal PHMSA (Pipeline and Hazardous Materials Safety Administration) must **"strengthen its management and oversight of state pipeline safety programs,"** and "until such actions are taken, **the agency cannot be sure that all safety weaknesses are identified and mitigated.**"

Some of the problems listed include that the federal agency:

- **failed to ensure state inspectors weigh risk factors such as leakage or pipeline material in prioritizing inspections**
- **used an outdated system to set state staffing requirements**
- **did not set minimum qualifications for lead state inspectors.**

The audit also found that states

- were **unable to show that safety inspections were conducted on time**
- **lacked procedures** for some inspection activities
- **had not analyzed trends in gas companies' annual reports that could help identify potential risks**

Morning Call, "Feds not doing a good job overseeing natural gas pipelines, audit finds," May 10, 2014, By Scott Kraus http://articles.mcall.com/2014-05-10/news/mc-pa-federal-pipeline-regulation-20140510_1_pipeline-safety-pipeline-replacement-phmsa"

State Impact, "Your Guide to Pipelines in Pennsylvania," <http://stateimpact.npr.org/pennsylvania/tag/pipelines/>

US Department of Transportation Regulatory Fact sheet: Pennsylvania, http://primis.phmsa.dot.gov/comm/FactSheets/States/PA_State_PL_Safety_Regulatory_Fact_Sheet.htm?nocache=7919

Department of Transportation and Pipeline and Hazardous Materials Safety Administration Hazmat Organizational Chart, May 19, 2014, http://phmsa.dot.gov/pv_obj_cache/pv_obj_id_FD1EC30389C743BD7E4C7FB91644A61810320B00/filename/PHHOrgChart_5_19_14.pdf

Interstate Gas Pipeline Regulation

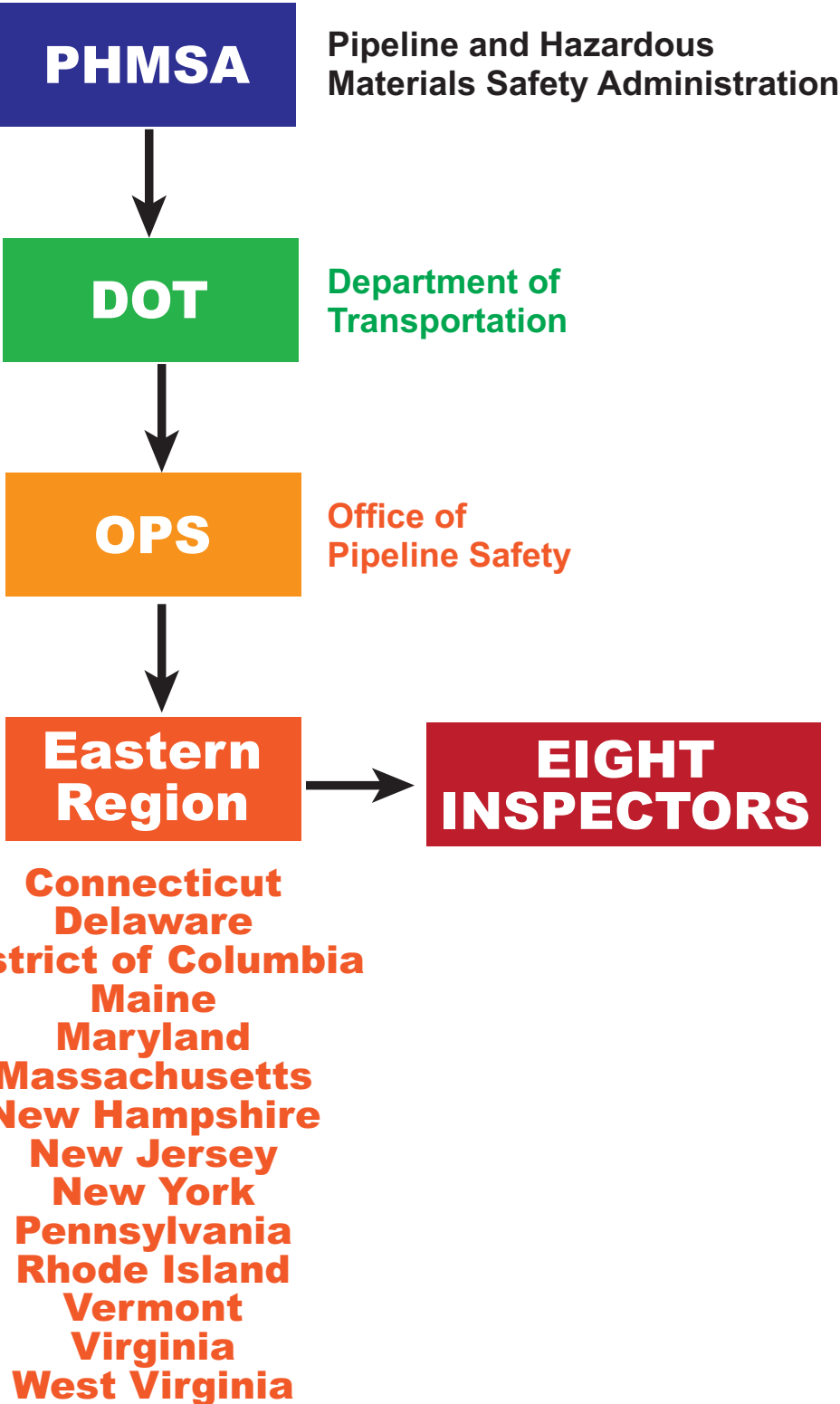




Image from PennEast powerpoint showing a right-of-way through woods.

Image taken by North Jersey Pipeline Walkers of pipeline construction sites.



Methane Emission

From a report from the Office of the Inspector General, July 25, 2014

- Methane is a **potent greenhouse gas with a global warming potential 25 times that of carbon dioxide**.
- In 2012, the EPA reported that **methane leaks from pipelines in the natural gas distribution** sector accounted for more than 13 million metric tons of carbon dioxide equivalent emissions.
- Emissions from distribution pipelines **occur due to leaks**.
- Methane emissions also worsen **ground-level ozone problems and can kill trees** and other vegetation.
- These leaks are caused by **disturbances resulting from earth movement** [among other things].

Methane Emissions From Natural Gas Distribution Pipelines are Not Currently Regulated by EPA.

- **The EPA works with natural gas industry partners to *voluntarily* reduce their methane emissions** through the Natural Gas STAR program. The emission reductions achieved by the Natural Gas STAR program for the distribution sector, as reported by partner companies, has been limited in comparison to other segments of the natural gas industry.

Radon Emission

Property protection

- **Arendt House, Isaac Stout House and Fry's Run bridge** on Durham Road, which are on the **National Registry of Historic Places**, are in the path of the proposed PennEast route.
- **Hexenkopf hill**, also in the route path, **is one of the oldest rocks in Pennsylvania and North America.**
- There are working farms in the path. PennEast says they will restore the soil, but once farmland is disrupted **seven feet deep, 100 feet across**, soil can not be fully restored.

There is also the question of **emitted heat and chemicals**, which would adversely affect crop growth.

- **Removal of large areas of trees will promote erosion and invasive plant species.**
- According to Business Insider magazine, **Pennsylvania homeowners who use local groundwater for drinking can lose up to 24% of their home value.** Even public perception can drive down home values.

If you had the choice between a house whose property has a gas pipeline and one that doesn't, which would you buy?

Conservation Development

(from Williams Township ORDINANCE NO. 2007- 4, Article XX)

"...the purposes of this Article are as follows"

1. To conserve open space and **preserve and protect natural and historic resources such as, woodlands, steep slopes, streams, floodplains and wetlands, by *minimizing development* on such resources.**
4. To **reduce erosion and sedimentation by retaining existing vegetation** and minimizing the development of steep slopes;

Prioritized list of resources to be conserved

(as stated in Williams Township ORDINANCE NO. 2007- 5)

- **"Stream channels, flood plains, wet soils, swales, springs and other lowland areas, *including adjacent buffer areas* which may be required to ensure their protection."**
- **"Moderate to steep slopes."**
- **"Woodlands."**
- **"Historic structures and sites."**
- **"Visually prominent topographic features, such as knoll, hilltops and ridges and scenic viewsheds as seen from public roads."**

Property protection

Trees

- **Produce oxygen** through photosynthesis. The Amazonian rainforest generates 20% of the world's atmospheric oxygen.
- They **sequester carbon**, but a tree **does not begin to absorb carbon until it has matured which takes 15 years!**
- They **prevent erosion**. *A tree can retain 57000 gallons of water in a 10-12 inch flash flood. It can grab that much water, prevent it from running off, then cleans it and puts it back in the aquifer.*
- Forests are the lungs and the water tanks of the planet.





Image from Morning Call article, August 2014 showing improvements that have been made to Fry's Run to prevent erosion.



Image from Delaware Riverkeeper Network video showing a wetland during construction of a Tennessee pipeline in Pike County.

Wetlands and clean water

From the Williams Township Comprehensive Plan:

- **This Comprehensive Plan must be used consistently in every decision pertaining to land use and circulation.** (page 58)
- “Particular attention needs to be paid to **protecting groundwater because of the possible solution caverns in the underlying limestone bedrock.**” (page 8)
- “Alluvial soils deposited in the past by flooding are a reliable indication that heavy runoff conditions will probably create flooding in the future. According to the Northampton County Soil Survey, **flood-prone alluvial soils are found along the Delaware and Lehigh Rivers and [Fry’s] Run.**” (page 8)
- “The I-78 interchange area receives central water from the Easton Suburban Water Authority. **All other areas of the Township are served by private wells.**” (page 17)

In the list of goals for Williams Township’s future:

- “**Preserve floodplains** in publicly or privately-owned open space.” (page 23)
- “**Surface waters (e.g., creeks and streams) are important to preserve for four major reasons:**”
 - They affect the **quantity of water resources.**
 - They affect the **quality of water resources** as a source of groundwater recharge and stream flow.
 - They are **major corridors for transporting nutrients** in the environment and **provide habitats for wildlife.**
(page 29)
- **Aquifers can be polluted** by salts, petroleum products and other dissolved chemicals which **pass relatively intact into an aquifer even after percolating through soils** and transmitting formations. (page 29)
- To protect and conserve the Township’s groundwater resources, the Plan also urges the Township to **regulate development to control the amount and rate of runoff, erosion and sedimentation and chemical and biological pollution.** (page 29)
- The **dredging, filling or development of wetlands should be discouraged** to preserve the quality of water below. (page 30)
- The Plan strongly urges the **preservation of stream valleys in the Township.** (page 42)

Information supported by the Ecological Assessment of the Fry’s Run Watershed, 2008:

- **Aquatic life depends on dissolved oxygen.** Any temporary barriers that are placed and soil or other material that passes into water bodies can **block the movement of the water, which replenishes the oxygen.**

Wetland organisms that have an inadequate oxygen supply and will become stressed and die off.

Wetlands and clean water

Pennsylvania ACT 167 STORMWATER MANAGEMENT PLAN: WATER QUALITY UPDATE

Adopted by Northampton County June 15, 2006

- **Fry's Run is designated as a Special Protection water** as defined by the DEP. Special Protection water includes Pennsylvania's highest quality surface waters and include Exceptional Value (EV) and High Quality (HQ) waters.

"In Special Protection watersheds, the Comprehensive Policy states that planners and applicants can ensure that water quality will be **protected and maintained by demonstrating that post-construction discharge will not degrade the physical, chemical or biological characteristics of the Special Protection surface water.**

"Further, the Policy states that 'infiltration Best Management Practices (BMPs) should be used to the maximum extent possible' in Special Protection watersheds. To the extent that **infiltration cannot be used due to site constraints or limitations, water quality treatment BMPs must be used to ensure the protection and maintenance of water quality.**"

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
2— Frya (Fry's) Run	Basin	Northampton	HQ-CWF, MF	None

HQ High Quality Waters

CWF Cold Water Fishes—Maintenance or propagation, or both, of fish species including the family Salmonidae and additional flora and fauna which are indigenous to a cold water habitat.

MF Migratory Fishes—Passage, maintenance and propagation of anadromous and catadromous fishes and other fishes which move to or from flowing waters to complete their life cycle in other waters.

(definitions from PA Title 25 Environmental Protection Chapter 93 Section 93.1, 93.3)



Images taken by North Jersey Pipeline Walkers of pipeline construction sites.



Taxes

PennEast will not pay any taxes in PA

In Pennsylvania, you cannot tax machinery or equipment.

“Pennsylvania’s property tax exemption... will leave municipalities here with a pipeline in their towns and no new revenue to help cover the cost of emergency preparedness or potential environmental issues such as erosion or stormwater runoff problems.”

(The Morning Call; Date: Nov 16, 2014; Section: Main; Page: A- 1)

Some PA legislators have **proposed *impact fees to be charged to gas companies***, but they would not be retroactive.

There is no benefit for Williams Township.

A TALE OF TWO TOWNSHIPS

Delaware Township, N.J.	Bethlehem Township, Pa.
■ Miles of PennEast pipeline: 6	■ Miles of PennEast pipeline: 4
■ Population: 4,563	■ Population: 23,730
■ Square miles: 37	■ Square miles: 14.7
■ Projected annual property tax revenue from pipeline: \$54,000 to township, \$329,000 to county and school district.	■ Projected annual property tax revenue from pipeline: \$0

Sources: Municipal officials and the Pennsylvania Department of Revenue

MARTHA MILLER/THE MORNING CALL