Pipeline Infrastructure Mapping
Piecemeal Databases

Nature Conservancy estimates: 60,000 new PA wells (2030)
25,000 additional miles of natural gas pipelines
2014 Rail Infrastructure
Rail, Terminals, Hubs
NATURAL GAS PIPELINE INFRASTRUCTURE

WELL HEAD TO CUSTOMER

(Source: PHMSA)
Pipeline Infrastructure: Who Regulates What

**Well Pads:** 3+ acres  
Sited: by Industry and resource  
Regulated: DEP /EPA

**Roads/water impoundments/pipelines:** 5.7+ acres  
Sited: Industry and resource

**Average acreage:** 9+ acres  
(excluding transmission infrastructure)
Pipeline Infrastructure & Who Regulates What

**Gathering Lines:** Transport raw natural gas to processing plant or to transmission line

- Sited: by Well
- One gathering line *per well head*
- Class One (rural) sited and regulated by Industry
- Act 127 (12/2011): PA PUC authority to inspect/provide oversight of intrastate non-utility pipelines under federally regulated class, including **Class 2-4** gathering lines / midstreams.
- Diameter/Pressure can be equal to transmission lines
Pipeline Infrastructure & Who Regulates What

Processing Plants: Separate impurities, non-methane hydrocarbons & fluids to produce pipeline quality dry natural gas

• Sited: Industry, well locations, type of extracted fuel, market use of fuel
• Regulations: State DEP, EPA

Washington County, PA:
28 acres of 106 acres
Taken off Clean and Green (2010)
County taxes increased:
$103/yr
$8,732/yr
Pipeline Infrastructure & Who Regulates What

More murky areas

Midstream Lines
- Start at gathering system
- Upstream and Downstream
- Process
- Store
- Transport
- MAOP/PSI - vary by fuel and function

Bidirectional Lines
- Move gas upstream and/or downstream
- Direction changes with market conditions

Commonwealth Midstream
Transmission Pipelines

- Existing 30”- 42” Infrastructure
- Maximum operating pressure (MAOP)
  - Existing: built for average 1,000 psi
  - Marcellus Shale: 900-1300 psi
- Coated to inhibit corrosion
- Buried: Minimum requirement: 30” average: 3 - 6 feet
Pipeline Infrastructure & Who Regulates What

Transmission lines

**Intrastate**: do not cross state boundaries

- Sited by Industry: No FERC application
- Act 127: PA PUC established a registry of all pipeline operations and provides authority to enforce Federal pipeline safety standards and regulations *based on registry*
- PUC may enforce pipeline safety standards and regulations

**Interstate**: cross state or national boundaries

- Natural Gas siting: Federal Energy Regulation Commission (FERC)
- Hazardous Liquids: No siting authority
- US Department of Transportation, Pipeline Hazardous Materials Safety Administration (PHMSA) oversees safety
Compressor Stations / Pump Stations

- Natural Gas - Compressor Stations
- Hazardous Liquids: Pump Stations
- Fueling turbines/engines byproducts:
  - air pollution
  - water pollution
  - soil contamination
  - noise pollution
- Located 40 to 100 miles
Valves:
- Sited: Industry: technical requirements, fuel, pipeline diameter, MAOP, distance between stations
- Usually open: allow natural gas to flow
- Closed: replacement, maintenance, or if a leak is detected
- Average placement: 5 to 20 miles
- Regulated by PHMSA safety codes

**Smart Pig & Smart Pig Launchers**

"Smart pig" hunt for corrosion inside gas lines

Sited by and Subject to PHMSA safety codes
City Gate: part of the transmission system: Feeds the distribution systems of towns, cities

**Sited:** Utility

**Regulated:** PA PUC for safety

- Pressure reduced:
  - from 200 /1,500 psi to consumer (as low as 3 psi)

- odorant (mercaptan) added
Pipeline Infrastructure & Who Regulates What

Distribution Lines or Mains

Smaller lines: 2” - 24” diameter
Steel, case iron, plastic, wood
Intermediate Pressures: 3 - 200 psi
Deliver fuel to:
residents
industry
schools
hospital

Siting: Utility
Safety: PA PUC
FACTORS IN SITING GAS PIPELINES

Siting begins with Operator “General Route Evaluation and Project Feasibility Analysis,” when Operators connect point ‘A’ to point ‘B’ and evaluate potential routes from ‘A’ to ‘B’

FERC:
Interstate Natural Gas

No FERC Siting Oversight:
Gathering Lines
Interstate Hazardous Liquids
Intrastate Natural Gas
Intrastate Hazardous Liquids
Midstreams
Distribution
Fresh/Flowback Water Pipelines
HAZARDOUS LIQUIDS

PA DEP: Issues permits for pipeline crossings of wetlands, waterways, areas of endangered species, historic value
Pipeline Safety Coalition (PSC) is a Pennsylvania Non Profit and federally recognized public charity under section 501(c)(3).

Our roots were planted by disenfranchised citizens in their search for factual information during a pipeline project affecting their homes, community, environment and watershed.

Pipeline Safety Coalition’s relationships focus on improving public, personal and environmental safety in pipeline issues by providing a high level of equal access to information, providing community mentoring and by facilitating respectful and productive conversations between citizens, environmental groups, local/state and government officials and pipeline operators.

Our Mission

“To gather and serve as a clearinghouse for factual, unbiased information; to increase public awareness and participation through education; to build partnerships with residents, safety advocates, government and industry; and to improve public, personal and environmental safety in pipeline issues.”

We welcome your questions, suggestions, support and donations.

Contact Us