

Pipelines and Water Resources *Protection*

This fact sheet is intended as a brief reference guide on issues related to natural gas and petroleum pipelines, water resources protection, and municipal regulatory authority and current case concerning pipeline activities.

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Pipeline Facts

TYPES OF PIPELINES

Hazardous Liquid pipelines, which carry crude oil and refined fuels such as gasoline, diesel and jet fuel (as well as highly volatile liquids such as butane, ethane, and propane, among others)

Natural Gas pipelines, which are categorized into several types (depending on where in the transportation process they exist):

- *Gathering pipelines* transport gas away from the point of production (well pad) to another facility for further refinement or to transmission pipelines. Currently in PA, there is little to no regulation of gathering lines.
- *Transmission pipelines* are the large lines (typically 6-48 inches in diameter) that move gas long distances around the country, often at high pressures (typically 200-1500 psi).
- *Distribution pipelines* are smaller lines (mains and service lines) that deliver natural gas to our individual homes and businesses at relatively low pressure.

PIPELINE JURISDICTION

Jurisdiction depends largely on the classification of pipelines, as follows:

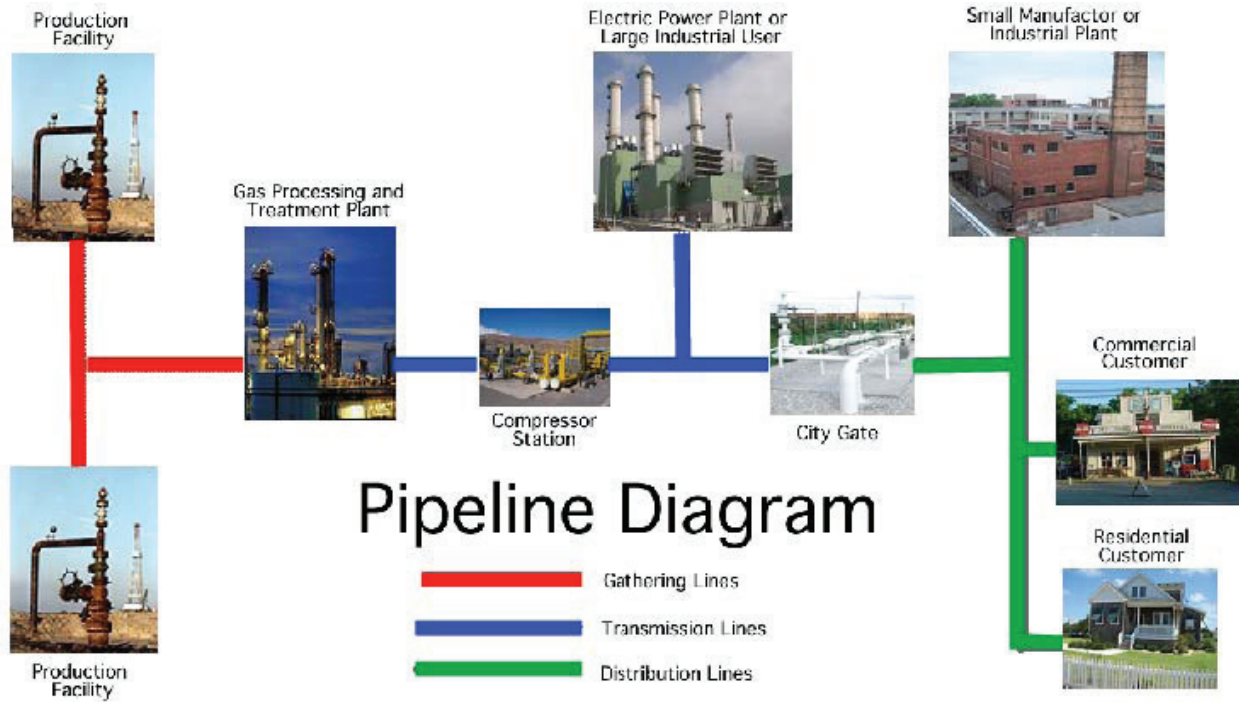
- *Interstate pipelines*, in which case the lines cross state boundaries, or
- *Intrastate pipelines*, in which case the lines operate entirely within one state. What complicates matters is that some transmission pipelines may be interstate in one state and intrastate in another state (depending on pipeline ownership).

The U.S. Department of Transportation through the Federal Energy Regulatory Agency (FERC) is the primary agency responsible for siting and permitting interstate pipelines. Another federal agency, the Pipeline and Hazardous Materials Safety Administration (PHMSA) is the primary agency responsible for issuing

and enforcing minimum pipeline safety regulations for the country. The federal pipeline safety laws do allow for states to accept the responsibility to regulate, inspect, and enforce safety rules over intrastate pipelines within their borders under an annual certification from PHMSA. Both the Pennsylvania Department of Environmental Protection (DEP) and the Pennsylvania Public Utilities Commission (PUC) play roles here, with DEP taking the lead on the technical components of drilling and transporting and the PUC taking the lead on siting and safety. Under Section 27 of the Pennsylvania Constitution and the Municipalities Planning Code (Act 247, as amended), municipal government also has a role to play in regulating and monitoring pipeline “land uses.”

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PIPELINE CASE LAW

Current case law regarding pipelines can be found in recent PA Supreme Court and PA Commonwealth Court decisions. In December of 2013, a plurality of three Supreme Court Justices decreed that the state does not have absolute power over municipalities in terms of environmental protection and Act 13 (enacted in 2012 to consolidate oil and gas regulations and recognize hydraulic fracturing) puts municipalities in direct conflict with their constitutional authority to protect the environment under the “Environmental Rights Amendment”, Section 27 of the Pennsylvania Constitution. As part of its decision, the Pennsylvania Supreme Court also remanded certain arguments back to the Commonwealth Court for further consideration, e.g., the role of the PUC in reviewing local ordinances (a provision of the original act). In July of 2014, the Commonwealth Court ruled that challenges to local ordinances must come before municipal zoning boards (zoning hearing boards) per the requirements of the Municipalities Planning Code (MPC). However, the PUC retains the power to issue “Certificates of Public Convenience” that essentially exempt certain pipelines from local zoning laws.

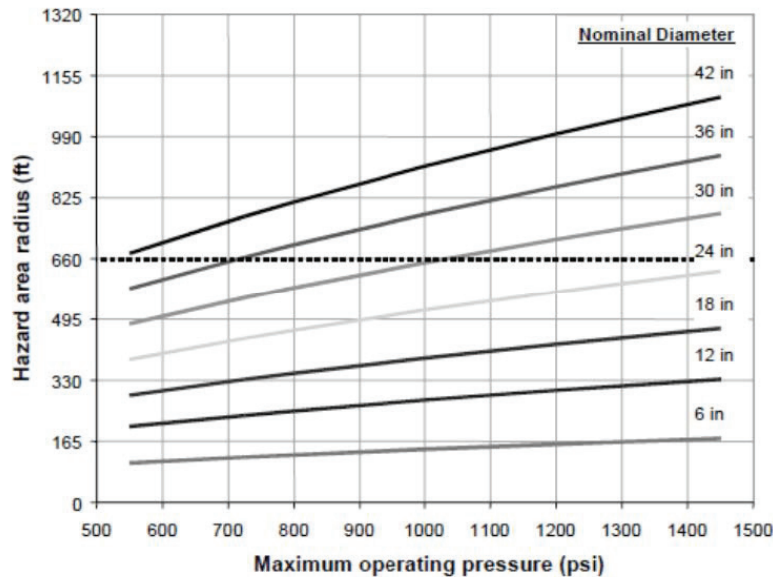
Since municipalities are obligated under Act 247 to plan for land use and are empowered to play a local role in protecting the environment under the Pennsylvania Constitution, many municipalities are considering planning for “surface land uses” not otherwise permitted in their zoning ordinances (such as compressor stations or pump stations), planning for new development in proximity to extraction and piping, and coordinating land uses under local long range comprehensive plans. The comprehensive plan is a particularly important document to update regarding pipelines as it provides municipalities the rational nexus between the comprehensive plan and municipal ordinances (pursuant to Section 105 of the Pennsylvania Municipalities Planning Code, Act 247 of 1968, as amended). The purpose of such language is to acknowledge existing and proposed pipelines, recognize the benefits and risks of pipelines, acknowledge the need to monitor existing and proposed activity, enact regulations complimentary to state and federal law, encourage increased communication with pipeline operators, reference related county and statewide planning goals, and coordinate with county and state agencies on new pipeline projects.

Pipelines and Water Resource Protection

ACT 247, THE PA CONSTITUTION, AND PLANNING TO PROTECT WATER RESOURCES

Both the PA Constitution and Act 247 place obligations on municipalities to protect their natural resources, in particular those land and water resources that are considered the common property of all the people. To quote Article 1, Section 27 (Natural Resources and the Public Estate) directly: “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 preserve and maintain them for the benefit of all the people.” Of interest is that the recent Supreme Court decision regarding Act 13

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referenced above (Robinson Township v. Commonwealth, 83 A.3d 901 (Pa. 2013), stated:

“In Pennsylvania, terrain and natural conditions frequently differ throughout a municipality, and from municipality to municipality. As a result, the impact on the quality, quantity, and well-being of our natural resources cannot reasonably be assessed on the basis of a statewide average. Protection of environmental values, in this respect, is a quintessential local issue that must be tailored to local conditions.”

As such, municipalities are empowered (and arguably, mandated) under state law to address the impacts of pipelines, in particular surface land uses affiliated with transmission pipelines and other surface pipeline appurtenances, safeguard new development from the potential impacts of existing or proposed pipelines, and adequately address pipelines in their comprehensive planning (such planning providing the rational nexus between the comprehensive plan and code of ordinances).

Under Act 247, municipalities have the authority and obligation to plan for pipelines and water resources protection, as follows:

Preamble and Sec. 105 – To empower “municipalities” to plan their development and govern the same by **zoning, subdivision and land development ordinances...** to **protect and promote safety, health and morals**; to accomplish coordinated development; to provide for the **general welfare**; to guide uses of **land and structures, type and location of streets, public grounds and other facilities**; to promote the preservation of this Commonwealth’s natural and historic resource; **to ensure municipalities adopt zoning ordinances...consistent with the municipality’s comprehensive plan.**

Section 604(1) – empowers municipalities to promote, protect and facilitate any or all of the following: the public health, safety, morals, and the general welfare; coordinated and practical community development and proper density of population; emergency management preparedness and operations, airports, and national defense facilities, the provisions of adequate light and air, access to incident solar energy, police protection,

vehicle parking and loading space, transportation, water, sewerage, schools, recreational facilities, public grounds, the provision of a safe, reliable and adequate water supply for domestic, commercial, agricultural or industrial use, and other public requirements; as well as preservation of the natural, scenic and historic values in the environment and preservation of forests, wetlands, aquifers and floodplains.

Section 604(2) - empowers municipalities to prevent one or more of the following: overcrowding of **land, blight, danger and congestion in travel and transportation, loss of health, life or property from fire, flood, panic or other dangers.** (emphasis added)

Section 605 – Identifies that **where zoning districts are created, all provisions shall be uniform for each class of uses or structures, within each district, except that additional classifications may be made within any district:**

- (1) *For the purpose of making transitional provisions at and near the boundaries of districts.*
- (2) *For the regulation, restriction or prohibition of uses and structures at, along or near:...(vii) flood plain areas, agricultural areas, sanitary landfills, and other places having a special character or use affecting and affected by their surroundings.* (emphasis added)

Given the authority granted to municipalities in both the Pennsylvania Constitution and the Municipalities Planning Code, it seems logical that municipalities consider their water resources when confronted with pipeline activity.

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COORDINATING RESOURCE PROTECTION AND INFRASTRUCTURE DEVELOPMENT

In general terms, municipalities should consider the wealth of natural, scenic, historic, and archeological resources they possess in reviewing any proposal for earth disturbance or land use development. To that end, many municipalities currently regulate development with an eye towards environmental protection and historic resource designation and protection. The use of comprehensive planning, including resource inventories and mapping, has provided many options for protection. Among one of the most critical protection strategies for water resources that supplements the water quality standards of the PA Department of Environmental Protection (Title 25, Chapters 92 and 102, the Safe Drinking Water Act, among others) is the local designation of Source Water Protection Areas (SWPA), e.g., those local water resources that are used as a significant source of local potable water (including surface supplies, wellhead areas, recharge areas, or other special/sensitive geologic formations such as the karst or cockeysville formations). Additional water resource areas of interest include first order streams, wetlands, and high quality/ exceptional values streams. Those municipalities

that identify, map, and regulate impacts to such areas have a legitimate concern for their ground and surface waters that should be taken into consideration when new pipeline activity is proposed.

In most instances, and depending on the resource to be protected, municipalities should communicate with pipeline companies about the existence of SWPAs and the desire to adequately protect such resources from pipeline disturbance and rupture. While disturbance activities should be coordinated with erosion and sedimentation laws and permits, impacts to water resources from pipeline ruptures or spills must be carefully considered, particularly in instances where SWPAs exist; contamination of such resources could potentially impact public drinking water supplies. Approximately 75% of Pennsylvania residents population of 12.7 million depend on public water supply for drinking water and a vast majority of public water supply systems are small (and grapple with the most compliance issues). Pennsylvania has over 2,100 community water systems and 80% of those systems rely on surface water sources (rivers, stream and lakes).

Given the above, communication between municipalities and pipeline companies is a key first step in protecting the important water

resources of a community. In some instances, rerouting of a pipeline may be feasible to avoid the most sensitive SWPAs. However, in cases where rerouting is not an option, and construction is underway, municipalities can work with pipeline companies to ensure that no refueling of machinery takes place in SWPAs (and that spill equipment is available onsite at all times). Where pipelines are proposed to cross a critical drinking water aquifer (such as those in karst geology), ensure there is a provision in the easements and FERC permit that makes it clear that the pipeline will never be allowed to repurpose from natural gas to any form of hazardous liquid pipeline (natural gas does not present immediate risks to surface or groundwater from leaks). Where natural gas pipelines are put in place, municipalities should consider setbacks to protect critical public infrastructure uses such as water treatment plants (or insist pipelines be set back from such uses) consistent with the Potential Impact Radius (PIR) of the pipeline. The PIR is a regulatory term used to determine the blast zone of a pipeline (the basis for which is contained in “A Model for Sizing High Consequence Areas Associated With Natural Gas Pipelines”, Gas Research Institute and C-FER Technologies, 2000). The PIR is based on the diameter of the pipeline and the

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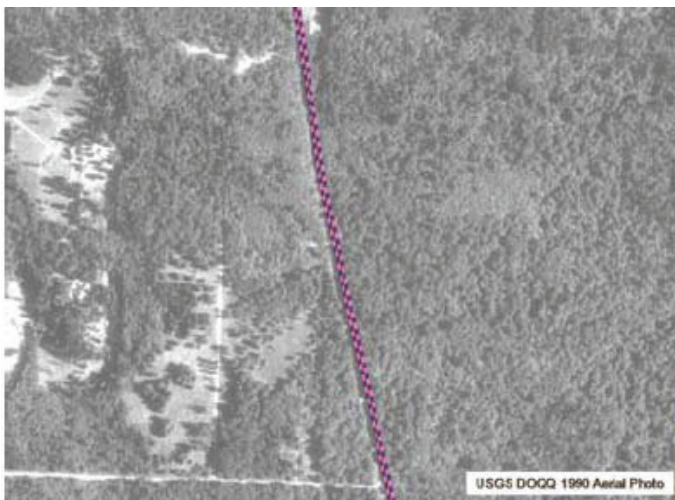


Figure 1 - 1990



Figure 2 - 2002

pressure of the gas being transported in the pipeline. The importance of setbacks cannot be underestimated. For example, small water supply systems in rural areas predominately use disinfection to treat potable water supplies; however, such facilities do not monitor for hydrocarbons, heavy metals, or other constituents found in natural gas or oil.

For those municipalities interested in being more proactive, the following approach could be utilized to protect SWPAs, as well as other important resources (such as historic resources). The key to protecting SWPAs is to clearly delineate their location and tailor protection strategies accordingly.

The approach described below involves a four prong strategy first developed as part of a U.S. DOT Technical Assistance Grant in 2010. The goal under that grant was to review existing ordinances and compare them to the “Best Practices” standards prepared by the Pipelines and Informed Planning Alliance (PIPA), a national alliance convened by the Pipelines and Hazardous Materials and Safety Administration (PHMSA).

The four prong municipal regulatory approach addresses the following:

- 1) Surface land uses affiliated with pipelines (providing for uses not otherwise permitted in most ordinances),
- 2) Street opening standards (providing for the regulation of street openings, installations and driveways),
- 3) Standards for new development in proximity to pipelines, and
- 4) Revisions to municipal comprehensive plans (providing the rational nexus between the comprehensive plan and code of ordinances).

Surface land uses affiliated with pipelines include, but are not limited to compressor stations, pumping stations, regulator stations, launcher/receiver

stations, and other surface pipeline appurtenances. The purpose of such standards is to accommodate these uses consistent with the desire to protect the health, safety and welfare of the citizens of the municipality; minimize aesthetic, nuisance and visual impacts through design, siting and screening; ensure the location of such uses complies with industry standards; and preserve community character adjacent to such uses.

Street opening standards are intended to provide for the opening, cutting, excavating, grading, boring, crossing, installation or disturbance upon, in, under, or across a Township road or road right of way. Such standards are intended for any street openings on Township roads (not necessarily pipeline projects) and provide municipalities with appropriate tools to regulate and manage such occurrences.

Standards for new development in proximity to pipelines address the need for development proposals to incorporate existing or proposed pipelines into their site planning activities. The purpose of such standards is to help prevent or minimize unnecessary risk to the public health, safety and welfare due to transmission pipelines; minimize the likelihood of accidental damage to transmission pipelines due to external forces, such as construction activity and equipment; avoid exposing land uses with high on-site populations that are difficult to evacuate; and help reduce adverse impacts in the event of a pipeline failure. Standards include additional requirements for plan submission, buffers, setbacks, signage and landscaping provisions.

Suggested municipal comprehensive plan language, as stated above, is intended to provide a rational nexus between the comprehensive plan and municipal ordinances (pursuant to Section 105 of the Pennsylvania Municipalities Planning Code, Act 247 of 1968, as amended). The purpose of such language is to acknowledge existing and proposed pipelines, recognize the benefits and risks of

pipelines, acknowledge the need to monitor existing and proposed activity, enact regulations complimentary to state and federal law, encourage increased communication with pipeline operators, reference related county and statewide planning goals, and coordinate with county and state agencies on new pipeline projects.

These four items combine to provide an effective approach towards proactively addressing pipelines within the legislative and regulatory climate currently in existence in Pennsylvania. Nevertheless, each municipality should review the standards offered in these guidelines (for example, width of setbacks or landscaping provisions), in relation to their existing ordinances, placement within their codes, and resources to be protected (in this case SWPAs). ♦

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Sources:

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