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Centre County Natural Gas Task Force
Meeting Notes

September 8, 2014 at 4:00 p.m.
Location: Central PA Institute of Science and Technology
540 North Harrison Road, Pleasant Gap, PA 16823

Present: John Ferguson, Tim Ziegler, Dan Fisher and Ken Hall

Absent: Susan Benedict, Bob McDaniel, Greg Myers, Jeff Kern, Mike Savage, Steve Greer and Stan LaFuria

Sub-Committee Members Present: Art Dangel, John Rodgers, Todd Taylor and Lynn Herman

Sub-Committee Members Absent: Mike Schaul, John Spychalski, Joe Urbanick, , Dean Lawrence, Steve Lyncha, Matt Blymire, Jack Mulfinger, Mary Carol Frier, Bruce Snyder, Colleen Williams, Mike Welch, Joe Hart, Andrew Sicree, Dick Mulfinger, Jamie Walker, Alison Amaismeirer, Emily Gette-Doyle, Louis Glantz, and Rob Balsamo.

Liaison Members Present: Doug D'Amore

Liaison Members Absent: Dan Vilello, Paula Ballaron and Rick Lamkie

Ex Officio Members Present: None

Ex Officio Members Absent: Mitzi Gallagher for Rep. Hanna, Matt Wise for Senator Corman, and Sue Mascolo for Rep. Conklin

County Resource Persons: Bob Jacobs and Sue Hannegan

Centre County Commissioners: None Present

Guests: Matt Lock – Anadarko, John Maitland – Health and Safety Manager at Graymont (PA), Inc., Melody Fleck – Moshannon Valley Sierra Group, Jon Eich – interested citizen, Ken Johnson – US EPA water sampling, Julie Kollar – WREN, Mark Stephens – DEP, Perry Babb – Fleet Energy American, Inc., David Lehmann – G2Partners, Hung Nguyen – Office of Pipeline Safety, US Department of Transportation, and Mike Crimmel – Austin James Associates

Total Number Present: 22

As a result of the excused absence of Chairman Susan Benedict, the meeting was opened by Vice Chairman John Ferguson at 4:00 p.m. No quorum was present.

Welcome and Introductions: All meeting attendees provided a short introduction of themselves.

Declarations of Conflict of Interest and Ex Parte Communication: In order to remove any doubt of impropriety, the following task force and/or sub-committee members have declared interests. Bob McDaniel – now retired Business Development Coordinator, G.O. Hawbaker, Inc. supplying contract work for drilling companies; Susan Shoemaker Benedict -- property owner with natural gas lease; Steve Greer – Senior Project Manager with Arm Group, Inc., sub-contractor/consultant to various companies involved with the gas drilling industry; Ken Hall – actively involved with property lease management; Greg Myers -- providing services to the oil and gas industry; Joe Hart – employed by HRT, Inc. & PA Brine, who serve as sub-contractors to the natural gas industry; John Ferguson – employed by Columbia Gas of PA; Dean Lawrence – realtor with commercial real estate activity of interest to the natural gas companies; John Rodgers – banker with S&T Bank providing financial services to the gas industry; Steve Lyncha –

engineer with HRG providing consulting and engineering services to the industry; and Colleen Williams working for Environmental Service Laboratories, Inc. resulting in frequent consultations with the industry.. No additional declarations were provided.

Approval of Prior Meeting Notes: July 14, 2014

With no quorum present, approval of these meeting minutes was postponed until the next regularly scheduled meeting to be held November 10th.

Announcements: None shared.

Citizen Comment Period: None offered.

Presentation: ***"Using Smart Land Use Strategies for Pipeline Siting"*. Panel Moderator -- Julie Kollar, Director, Water Resources Education Network (WREN). Speakers: David Lehmann, Senior Program Manager with G2 Partners and Hung Nguyen, Senior Program Manager with the Office of Pipeline Safety, US Department of Transportation (PHMSA)**

Introduction by Julie Kollar (**attached**): Passive forest areas protect water resources. As pipelines cross waterways and forested areas, water supplies can be impacted. The Pipelines and Informed Planning Alliance (PIPA) has developed a "Recommended Practice Evaluation Worksheet for Local Governments". PIPA is a stakeholder initiative led and supported by the US Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA). PIPA's goal is to reduce risks and improve the safety of affected communities and transmission pipelines through the implementation of recommended practices. A copy of the *"Recommended Practice Evaluation Worksheet for Local Governments"* is **attached** to these minutes. Copies may be downloaded from the National Association of Counties website (below) as well as a *"Summary Report for Elected and Appointed County Officials".* http://www.naco.org/newsroom/pubs/Documents/Infastructure%20and%20Sustainability/Pipelines-Report-June2011.pdf

Julie also distributed a two-page handout prepared by the League of Women Voters of PA Citizen Education Fund titled "*Pipeline Planning Resources"* (**attached**).

David Lehmann: Having formerly served as faculty and chairman of the Environmental Science and Studies Department at Juniata College and now working as a consultant to pipeline clients, his presentation (**attached**) focused on environmental and safety risk management and included data specific to Centre County's natural gas industry activities. It is important to assess all features of land prior to locating a pipeline. Understand the risk and protect against risk. It is very important that acid soils are not exposed. In addition acid soils can be corrosive to underground pipelines. Typically, pipelines are placed at depths less than 6 feet and lie above corrosive soils which are much deeper.

Hung Nguyen: This presentation focused on the PIPA initiative and the *"Recommended Practice Evaluation Worksheet for Local Governments"*. This document offers recommended practices for local communities, developers, and pipeline operators to reduce the safety risks than can result from the growth of communities near transmission pipelines. These are not enforceable practices but are recommendations. Links to the PIPA Worksheet and the Summary Report are provided above and his presentation is **attached**.

- As a follow up to a question pertaining to the need to locate gathering lines in order to reduce risk to the public and new natural gas activity, Hung Nguyen announced that technical assistance grants are available from PHMSA, ranging from $50,000 to $100,000. Gathering line documentation could be an eligible project.

- PA ACT 127 was questioned as a tool to locate gathering lines. Act 127 created a statewide registry for non-public utility gas and hazardous liquids pipeline equipment and facilities within the Commonwealth. Julie will research this further and respond. Information subsequently provided is **attached**.

Committee Reports:

Economic Development: No Report.

Education: No Report.

Environment / Infrastructure: No Report.

Public Policy, Planning and Legal Issues: No Report.

Old Business: None.

New Business: None.

Meeting Schedule:

- CCNGTF: November 10th at 4 p.m. – CPI, 540 North Harrison Rd, Pleasant Gap, PA
- Economic Development Sub-Committee: October 9th at 8:00 a.m. – Willowbank Bldg. 3rd Floor
- Environmental Sub-Committee: October 21st at 9:00 a.m. – Willowbank Bldg. 3rd Floor

Meeting Adjourned: With no further business, the September meeting of the Centre County Natural Gas Task Force was adjourned at 6:00 p.m. on a motion made by Dan Fisher and seconded by Tim Ziegler.

Pipelines and Informed Planning Alliance (PIPA) Recommended Practice Evaluation Worksheet For Local Governments

Pipelines and Informed Planning Alliance

pipa-info.com

Version 2/6/2012

Checklist for Local Government To Evaluate Land Use and Development Practices Near Transmission Pipelines

Pipelines and Informed Planning Alliance (PIPA)

PIPA is a stakeholder initiative led and supported by the US Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA). PIPA's goal is to reduce risks and improve the safety of affected communities and transmission pipelines through implementation of recommended practices related to risk-informed land use and development near transmission pipelines. The PIPA recommended practices are not mandated by any public or private entity. However, they were developed by task teams of representative stakeholders using a consensus agreement process and the PIPA participants recommend that all stakeholders become aware of and implement the PIPA recommended practices where appropriate.

The PIPA recommended practices describe actions for key stakeholders, including local government, transmission pipeline operators, property developers/owners, and real estate commissions, to improve pipeline safety. Local governments are encouraged to become familiar with each of the recommended practices. Even though the local government tor may not be taking action under a practice, the local government may be affected by other stakeholders implementing the practice. This document is to assist local governments in evaluating their own current practices in comparison with PIPA recommended practices.

Within the PIPA Report, each recommended practice includes the practice title, a brief practice statement, the stakeholder audience intended to take action to implement the practice, practice details, and references if applicable. The recommended practices are grouped into one of two scenarios:

- Baseline (BL) Recommended Practices – These practices should be implemented by stakeholders in preparation for future land use and development.
- New Development (ND) Recommended Practices – These practices should be implemented by stakeholders when specific new land use and development projects are proposed.

The following table shows each PIPA recommended practice statement, actions a local government might consider to implement the practice, and a column for use in describing the local government's current relevant practices and the actions needed or that are being considered to address the recommended practice. The practices are grouped in functional categories which include: Land Planning and Development, Pipeline Maintenance & Damage Prevention, Maps & Records, and Communication. Practices for which local governments have a primary action are presented first. Practices for which other stakeholders have the primary action are shaded and follow those for local governments.

Beginning, an example is provided of how a local government might evaluate how it currently addresses PIPA Recommended Practice BL01.

Checklist for Local Government To Evaluate Land Use and Development Practices Near Transmission Pipelines

PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice Action(s) Needed or Considered
BL01	**Obtain Transmission Pipeline Mapping Data** Local government agencies responsible for land use and development planning or the issuance of development permits should obtain mapping data for all transmission pipelines within their areas of jurisdiction from PHMSA's National Pipeline Mapping System or from the transmission pipeline operators and show these pipelines on maps used for development planning. *Primary Action: Local Government*	Agencies responsible for land use and development planning or the issuance of development permits should obtain mapping data for all transmission pipelines within their areas of jurisdiction from PHMSA's National Pipeline Mapping System or from the transmission pipeline operators and show these pipelines on maps used for development planning.	N/A –Transmission pipelines not mapped in county GIS. They are currently not required to be shown on site plans, development maps, or plat maps. The Planning and Zoning Department should work with NPMS and identified pipeline operators to obtain mapping data for all transmission pipelines within the county. Mapping overlays should be developed to show pipelines located on plat maps. A process should be implemented for periodic review to ensure mapping data is current.

For more information, local governments can contact the PHMSA Community Assistance and Technical Services (CATS) representatives. Email: Christie.Murray@dot.gov.

Checklist for Local Government To Evaluate Land Use and Development Practices Near Transmission Pipelines

PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice	
				Action(s) Needed or Considered
Recommended Practices: Primary Action for Local Government				
Land Planning and Development				
BL03	**Utilize Information Regarding Development around Transmission Pipelines** Transmission pipeline operators should provide information about their pipelines to local governments and property developers/owners who are planning development around their pipelines. Local government authorities regulating development should use this information to establish requirements regarding land use and development around transmission pipelines. *Primary Action: Local Government, Pipeline Operator*	Local government authorities regulating development should solicit, gather, and use information provided by pipeline operators to establish requirements regarding land use and development around transmission pipelines.		
BL04	**Adopt Transmission Pipeline Consultation Zone Ordinance** Local governments should adopt land development procedures requiring property developers/owners to consult with transmission pipeline operators early in the development process, so that development designs minimize risks to the populace living or working nearby and are consistent with the needs and legal rights of the operators. *Primary Action: Local Government*	Adopt procedures requiring property developers/owners to consult with affected transmission pipeline operators early in the development process, so that development designs minimize risks to populations living or working nearby and are consistent with the needs and legal rights of the pipeline operators. Approval of development plans should include a check-off to confirm consultation has occurred. A check-off should also be included to remind property developer/owner that calling 811 before digging is required.		

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PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice	
				Action(s) Needed or Considered
BL05	**Define Transmission Pipeline Consultation Zone** Local governments should define a "consultation zone" to provide a mechanism for communication between property developers/owners and operators of nearby transmission pipelines when new land uses and property developments are being planned. *Primary Action: Local Government*	Define a "consultation zone" wherein proposed land use changes and development occurring within the zone must be communicated to affected transmission pipeline operators by the property developer/owner. Approval of development plans should require pipeline locations be included in site plans and maps and a check-off that the property developer/owner has contacted pipeline operators regarding development plans within the consultation zone. A check-off should also be included to remind property developer/owner that calling 811 is required before digging.		
BL06	**Implement New Development Planning Areas around Transmission Pipelines** Local governments should consider implementing "planning areas" to enhance safety when new land use and property development is planned near transmission pipelines. *Primary Action: Local Government*	Define and implement "planning areas" to enhance safety when new land use and property development is planned near transmission pipelines. A planning area can provide for the application of additional development regulations, standards, or guidelines to ensure safety. Reference PIPA Recommended Practices ND11 through ND23 which describe additional considerations for use within a planning area. Local governments should discuss the development of planning areas with affected pipeline operators.		

Checklist for Local Government To Evaluate Land Use and Development Practices Near Transmission Pipelines

PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice Action(s) Needed or Considered
ND06	**Require Consideration of Transmission Pipeline Facilities in Land Development Design** Whenever development is proposed on property containing transmission pipeline facilities, local governments should require that the submitted land development plans address in detail the steps necessary to safely integrate the transmission pipeline into the design of the project. *Primary Action: Local Government , Property Developer/Owner*	Require that land development plans submitted for approval address in detail the steps necessary to safely integrate affected transmission pipelines into the design of the project. This should be included along with other issues that must be addressed as part of the land development process, such as the availability of potable water, sewer, adequate roads, environmental constraints, etc. Require documented consideration of PIPA Recommended Practices ND11 through ND23, as applicable, for new land development located within a transmission pipeline planning area, to reduce the potential safety impacts of transmission pipeline incidents and to avoid interference with pipeline operations when development is adjacent to or crosses a pipeline right-of-way.	
ND08	**Collaborate on Alternate Use and Development of Transmission Pipeline Right-of-Way** Property developers/owners, local governments and transmission pipeline operators may collaborate on alternative use of the transmission pipeline right-of-way and related maintenance. *Primary Action: Local Government , Property Developer/Owner, Pipeline Operators*	Collaborate with operators and affected property developers/owners to identify alternative uses of transmission pipeline rights-of-way and define who would maintain the rights-of-way under specific circumstances.	

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PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice Action(s) Needed or Considered
ND09	**Provide Flexibility for Developing Open Space along Transmission Pipeline Rights-of-Way** Local governments should consider allowing site planning flexibility in the development of commercial, industrial or residential property whenever a transmission pipeline is located in, or in close proximity to, the proposed development. *Primary Action: Local Government*	Adopt regulations that allow creative designs that address both public and transmission pipeline safety concerns by allowing site planning flexibility in property development. This can enable development when there are specific constraints, such as nearby pipelines or environmentally sensitive areas. Such flexibility can allow, for example, clustered, higher-density development to be located within broader swaths of open space, thereby creating buffers to the constraining areas. The goal is to allow the same overall density of development within a given area while providing more space between the transmission pipeline and the development.	
ND11	**Reduce Transmission Pipeline Risk through Design and Location of New Parking Lots and Parking Structures** Parking lots and parking structures should be preferentially located and designed to reduce the consequences that could result from a transmission pipeline incident and to reduce potential interference with transmission pipeline maintenance and inspections. *Primary Action: Local Government, Property Developer/Owner*	Require that permitting reviews for commercial developments such as parking lots and parking structures consider location and design elements to reduce the potential safety impacts of transmission pipeline incidents and to avoid interference with pipeline operations when development is adjacent to a pipeline right-of-way.	
ND12	**Reduce Transmission Pipeline Risk through Design and Location of New**	Require that permitting reviews for road developments consider	

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	Roads Roads and associated appurtenances should be preferentially located and designed to reduce the consequences that could result from a transmission pipeline incident and reduce the potential of interference with pipeline operations and maintenance. *Primary Action: Local Government , Property Developer/Owner*	location and design elements to reduce the potential safety impacts of transmission pipeline incidents and to avoid interference with pipeline operations when development is adjacent to or crosses a pipeline right-of-way. Require that state and local government road development be subject to the same considerations.	
ND13	**Reduce Transmission Pipeline Risk through Design and Location of New Utilities and Related Infrastructure** Utilities (both above and below ground) and related infrastructure should be preferentially located and designed to reduce the consequences that could result from a transmission pipeline incident and to reduce the potential of interference with transmission pipeline maintenance and inspections. *Primary Action: Local Government , Property Developer/Owner*	Require that permitting reviews for new utilities and related infrastructure developments consider location and design elements to reduce the potential safety impacts of transmission pipeline incidents and to avoid interference with pipeline operations when development is adjacent to or crosses a pipeline right-of-way. Require that all municipally-owned and operated utilities be subject to the same considerations.	
ND14	**Reduce Transmission Pipeline Risk through Design and Location of Aboveground Water Management Infrastructure** Storm water and irrigation water management facilities, retention ponds, and other above-ground water management infrastructure should be preferentially located and designed to reduce the consequences that could result from a transmission pipeline incident and to reduce the potential of interference with transmission pipeline	Require that permitting reviews for new aboveground water management infrastructure developments consider location and design elements to reduce the potential safety impacts of transmission pipeline incidents and to avoid interference with pipeline operations when development is adjacent to or crosses a pipeline right-of-way. Require that all such developments to be owned and operated by the local government be subject to the same	

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PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice Action(s) Needed or Considered
	operations and maintenance. *Primary Action: Local Government , Property Developer/Owner*	considerations.	
ND15	**Plan and Locate Vegetation to Prevent Interference with Transmission Pipeline Activities** Trees and other vegetation should be planned and located to reduce the potential of interference with transmission pipeline operations, maintenance, and inspections. *Primary Action: Local Government , Property Developer/Owner*	When possible, facilitate effective communications for the proper planning and location of vegetation to reduce the potential of interference with transmission pipeline operations, maintenance, and inspections.	
ND16	**Locate and Design Water Supply and Sanitary Systems to Prevent Contamination and Excavation Damage** Individual water supplies (water wells), small public/private water systems and sanitary disposal systems (septic tanks, leach or drain fields) should be designed and located to prevent excavation damage to transmission pipelines, interference with transmission pipeline maintenance and inspections, and environmental contamination in the event of a transmission pipeline incident. *Primary Action: Local Government , Property Developer/Owner*	Require that permitting reviews for the development of new water supplies (wells), water supply systems, and sanitary disposal systems consider location and design elements to reduce the potential of environmental contamination in the event of a pipeline incident, prevent excavation damage to the pipeline, and avoid interference with pipeline operations when development is adjacent to or crosses a pipeline right-of-way. Require that all such developments to be owned and operated by the local government be subject to the same considerations.	
ND17	**Reduce Transmission Pipeline Risk in New Development for Residential, Mixed-Use, and Commercial Land Use**	Require that permitting reviews for the development check to ensure appropriate life safety codes and enhanced fire protection have	

Checklist for Local Government To Evaluate Land Use and Development Practices Near Transmission Pipelines

PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice Action(s) Needed or Considered
	New development within a transmission pipeline planning area (see PIPA Recommended Practice BL06) should be designed and buildings located to reduce the consequences that could result from a transmission pipeline incident and to provide adequate access to the pipeline for operations and maintenance. *Primary Action: Local Government, Property Developer/Owner*	been considered where needed. Consider modeling of fire, explosion, or toxic release impacts that could occur during a transmission pipeline incident for the specific land use under consideration. Also consider egress models for such incidents.	
ND18	**Consider Transmission Pipeline Operation Noise and Odor in Design and Location of Residential, Mixed-Use, and Commercial Land Use Development** Consider noise, odor and other issues when planning and locating developments near above-ground transmission pipeline facilities, such as compressor stations, pumping stations, odorant equipment, regulator stations and other pipeline appurtenances. *Primary Action: Local Government, Property Developer/Owner, Pipeline Operators*	Use information provided by pipeline operators regarding aboveground pipeline facilities to understand the impact of such facilities on proposed land use and development. Establish requirements for land use and development around the particular aboveground sites based upon the guidance on specific land uses provided in the PIPA recommended practices.	
ND19	**Reduce Transmission Pipeline Risk through Design and Location of New Industrial Land Use Development** New industrial land use development within a transmission pipeline planning area (see PIPA Recommended Practice BL06) should be designed and buildings located to reduce the consequences that could result from a transmission pipeline incident and reduce the potential of interference with transmission pipeline operations and	Require that permitting reviews for new developments check to ensure appropriate life safety codes and enhanced fire protection have been considered where needed. Consider modeling of fire, explosion, or toxic release impacts that could occur during a transmission pipeline incident for the specific land use under consideration. Also consider egress models for such incidents.	

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	maintenance. *Primary Action: Local Government , Property Developer/Owner*	If appropriate, land use and development design should take this modeling into account to minimize potential impacts. The models should be fit-for-purpose and the model user should have appropriate expertise.	
ND20	**Reduce Transmission Pipeline Risk through Location, Design, and Construction of New Institutional Land Use Developments** New development of institutional facilities that may be difficult to evacuate within a transmission pipeline planning area (see PIPA Recommended Practice BL06) should be designed and the facilities located and constructed to reduce the consequences that could result from a transmission pipeline incident. Such facilities should also be located to reduce the potential of interference with transmission pipeline operations and maintenance activities. Emergency plans for these facilities should consider potential transmission pipeline incidents. *Primary Action: Local Government , Property Developer/Owner*	Require that permitting reviews for new developments check to ensure appropriate life safety codes and enhanced fire protection have been considered where needed. Consider modeling of fire, explosion, or toxic release impacts that could occur during a transmission pipeline incident for the specific land use under consideration. Also consider egress models for such incidents. If appropriate, land use and development design should take this modeling into account to minimize potential impacts. The models should be fit-for-purpose and the model user should have appropriate expertise.	
ND21	**Reduce Transmission Pipeline Risk through Design and Location of New Public Safety and Enforcement Facilities** New development of emergency responder facilities within a transmission pipeline planning area (see PIPA Recommended Practice BL06) should be designed and the facilities located and constructed to reduce the consequences that could	Require that permitting reviews for new developments check to ensure appropriate life safety codes and enhanced fire protection have been considered where needed. Consider modeling of fire, explosion, or toxic release impacts that could occur during a transmission pipeline incident for the specific land use under consideration. Also consider egress	

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	result from a transmission pipeline incident. Such facilities should also be designed and located to avoid the potential of interference with pipeline operations and maintenance. Planning for these facilities should include emergency plans that consider the effects of a transmission pipeline incident. *Primary Action: Local Government, Property Developer/Owner*	models for such incidents. If appropriate, land use and development design should take this modeling into account to minimize potential impacts. The models should be fit-for-purpose and the model user should have appropriate expertise.	
ND22	**Reduce Transmission Pipeline Risk through Design and Location of New Places of Mass Public Assembly (Future Identified Sites)** New development of places of potential mass public assembly within a transmission pipeline planning area (see PIPA Recommended Practice BL06) should be designed and the facilities located and constructed to reduce the consequences of a potential transmission pipeline incident, the risk of excavation damage to the pipeline, and the potential of interference with transmission pipeline operations and maintenance. Planning for these facilities should include emergency plans that consider the effects of a potential pipeline incident. *Primary Action: Local Government, Property Developer/Owner*	Require that permitting reviews for new developments check to ensure appropriate life safety codes and enhanced fire protection have been considered where needed. Consider modeling of fire, explosion, or toxic release impacts that could occur during a transmission pipeline incident for the specific land use under consideration. Also consider egress models for such incidents. The models should be fit-for-purpose and the model user should have appropriate expertise. Note that transmission pipeline operators are required by existing pipeline safety regulations to provide emergency liaison and consultations and must maintain, modify as appropriate, and follow their plans, procedures and programs they are required under Title 49 Code of Federal Regulations, Parts 192 and 195, respectively.	

Checklist for Local Government To Evaluate Land Use and Development Practices Near Transmission Pipelines

PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice Action(s) Needed or Considered
ND23	**Consider Site Emergency Response Plans in Land Use Development** Emergency response plan requirements should be considered in new land use development within a planning area (see PIPA Recommended Practice BL06) to reduce the risks of a transmission pipeline incident. *Primary Action: Local Government, Property Developer/Owner*	Be receptive to coordination with pipeline operators regarding emergency planning. Note that transmission pipeline operators are required by existing pipeline safety regulations to provide emergency liaison and consultations and must maintain, modify as appropriate, and follow their emergency plans, procedures and programs they are required under Title 49 Code of Federal Regulations, Parts 192 and 195, respectively. Require that permitting reviews for new developments check to ensure appropriate life safety codes and enhanced fire protection have been considered where needed. Consider modeling of fire, explosion, or toxic release impacts that could occur during a transmission pipeline incident for the specific land use under consideration. Also consider egress models for such incidents. If appropriate, land use and development design should take this modeling into account to minimize potential impacts. The models should be fit-for-purpose and the model user should have appropriate expertise.	
Pipeline Maintenance and Damage Prevention			
BL14	**Participate to Improve State Excavation Damage Prevention**	Take steps to eliminate exemptions from one-call requirements that can result in	

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	Programs All pipeline safety stakeholders should participate in the work of organizations seeking to make improvements to state excavation damage prevention programs, especially efforts to reduce exemptions from participation in one-call systems. *Primary Action: Local Government , Property Developer/Owner, Pipeline Operators*	damage to pipelines and other underground facilities. This includes eliminating exemptions for: 1. Facility owners, including municipalities, that enable them to avoid participation in the one-call system. Excavators may not be informed of such exemptions and may fail to get facilities marked before digging. 2. Certain excavators and/or types of excavators, such as municipal, county and state departments of transportation, that enable them to begin digging without getting underground facilities located and marked. 3. Certain types of excavation, such as road grading, which can and do damage pipelines and other underground facilities just as any other types of excavation do.	
BL16	**Halt Dangerous Excavation Activities near Transmission Pipelines** Transmission pipeline operators should have procedures and established contacts with local enforcement personnel in order to act appropriately to halt dangerous excavation activities that may damage their pipelines and potentially cause an immediate threat	Local government enforcement agencies and personnel should be prepared to respond appropriately when notified by pipeline operators to stop unsafe excavation practices near pipelines. Local enforcement personnel play a critical role due to their authority to legally halt unsafe excavation. Local	

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	to life or property. *Primary Action: Local Government , Pipeline Operators*	government agencies with the authority to halt dangerous excavations may vary, with titles such as Public Safety Office, Police, Fire Department, Fire Marshal, Utility Coordinator, or Code Enforcement. The responsible agency should recognize the outreach from the transmission pipeline operator and work cooperatively to build understanding and relationships in advance to facilitate timely responses actions when needed.	
ND24	**Install Temporary Markers on Edge of Transmission Pipeline Right-of-Way Prior to Construction Adjacent to Right-of-Way** The property developer/owner should install temporary right-of-way (ROW) survey markers or fencing on the edge of the transmission pipeline ROW or buffer zone, as determined by the transmission pipeline operator, prior to construction to provide a clearly defined boundary. The property developer/owner should ensure that the temporary markers or fencing are maintained throughout the course of construction. *Primary Action: Local Government , Property Developer/Owner*	Require as a condition of the excavation permit the installation of temporary right-of-way (ROW) survey markers or fencing on the edge of any transmission pipeline ROW or buffer zone, as determined by the transmission pipeline operator, prior to construction to provide a clearly defined boundary. The markers should be installed before work begins and remain in place until construction is complete. The local government or other entity responsible for construction inspections should verify that the fencing is properly installed and maintained.	
ND25	**Contact Transmission Pipeline Operator Prior to Excavating or Blasting**	Require developers, excavators, and property owners to notify affected transmission pipeline operators prior to excavating	

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	Anyone planning to conduct excavating, blasting and/or seismic activities should consult with affected transmission pipeline operators well in advance of commencing these activities. Excavating and blasting have the potential to affect soil stability or lead to movement or settling of the soil surrounding the transmission pipeline. *Primary Action: Local Government, Property Developer/Owner, Pipeline Operators*	and/or blasting operations as part of the permitting or licensing process. Appropriate local government agencies should be engaged in the permitting or licensing process for blasting, well in advance of the actual blasting operation, when transmission lines may be impacted.	
		Maps and Records	
BL01	**Obtain Transmission Pipeline Mapping Data** Local government agencies responsible for land use and development planning or the issuance of development permits should obtain mapping data for all transmission pipelines within their areas of jurisdiction from PHMSA's National Pipeline Mapping System or from the transmission pipeline operators and show these pipelines on maps used for development planning. *Primary Action: Local Government*	Agencies responsible for land use and development planning or the issuance of development permits should obtain mapping data for all transmission pipelines within their areas of jurisdiction from PHMSA's National Pipeline Mapping System or from the transmission pipeline operators and show these pipelines on maps used for development planning.	
BL08	**Manage Land Records** Land use agreements between pipeline operators and property owners should be documented and managed and, when necessary, recorded. *Primary Action: Local Government, Pipeline Operator*	Local governments (appropriate statutory offices) should facilitate the recording of land documents and provide public access to the records and public notice (i.e. constructive notice) of encumbrances on affected properties. Land documents may include easement agreements, encroachment agreements, letters	

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PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice	Action(s) Needed or Considered
		of no objection, partial releases, and easement amendments.		
ND07	**Define Blanket Easement Agreements When Necessary** Upon request by the landowner, a transmission pipeline easement agreement may be defined to an acceptable, reasonable, and safe width and explicit location. State statutes or local government regulations may require easements to be defined prior to the approval of rezoning, subdivision plats and development permits. *Primary Action: Local Government, Property Developer/Owner, Pipeline Operators*	Require transmission pipeline easements to be defined prior to the approval of rezoning, subdivision plats and development permits. Blanket easements should be defined to a specific location to avoid confusion regarding which lands are burdened by the easement rights of the transmission pipeline operator. Require easements to be recorded at the appropriate statutory office (e.g., county recorder, parish clerk)		
ND10	**Record Transmission Pipeline Easements on Development Plans and Final Plats** Local governments should require all recorded development plans and final plats to clearly show the location of transmission pipeline easements and identify the pipeline operators. *Primary Action: Local Government, Property Developer/Owner*	Adopt requirements that all recorded development plans and final plats must clearly show the location of transmission pipeline easements and identify the pipeline operators.		
ND26	**Use, Document, Record and Retain Encroachment Agreements or Permits** Encroachment agreements should be used, documented, recorded and retained when a transmission pipeline operator agrees to allow a property developer/owner or local government to encroach on the pipeline right-of-way for a long or perpetual duration in a manner that conflicts with the activities allowed on the easement.	Contact the transmission pipeline operator and provide information about the proposed encroachment when local government desires to encroach on a transmission pipeline right-of-way (ROW) for a long or perpetual duration in a manner that conflicts with the activities allowed by the easement agreement. Documented in an encroachment agreement by the landowner and the easement		

Checklist for Local Government To Evaluate Land Use and Development Practices Near Transmission Pipelines

PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice	Action(s) Needed or Considered
	Primary Action: Local Government, Property Developer/Owner, Pipeline Operators	owner after the encroachments and acceptable uses of the right-of-way are agreed upon.		
ND27	**Use, Document and Retain Letters of No Objection and Conditional Approval Letters** Transmission pipeline operators may use, document and retain "letters of no objection" in agreeing to land use activities on or near a transmission pipeline right-of-way. Such land uses may or may not be temporary. *Primary Action: Local Government, Property Developer/Owner, Pipeline Operators*	Determine if letters of no objection should be included as a requirement in local government development regulations when transmission pipeline operators agree to land use activities on or near a transmission pipeline right-of-way.		
Recommended Practices: Primary Action for Stakeholder Other Than Local Government				
Land Planning and Development				
ND02	**Gather Information for Design of Property Development near Transmission Pipelines** In designing a proposed property development the property developer/owner should use all reasonable means to obtain information about transmission pipeline facilities in the area of the proposed development. *Primary Action: Property Developer/Owner, Pipeline Operators*	When possible, facilitate effective communications among pipeline safety stakeholders regarding land use planning and development near transmission pipelines to help assure public and pipeline safety.		
ND03	**Review Acceptability of Proposed Land Use of Transmission Pipeline Right-of-Way Prior to Design** The property developer/owner should review preliminary information about	When possible, facilitate effective communications among pipeline safety stakeholders regarding land use planning and development near transmission pipelines to help		

PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice	Action(s) Needed or Considered
	acceptable land uses on a transmission pipeline right-of-way prior to the design of a property development. *Primary Action: Property Developer/Owner*	assure public and pipeline safety. Understanding encroachment issues can help to facilitate their resolution. (Reference PIPA Recommended Practice BL13.)		
ND04	**Coordinate Property Development Design and Construction with Transmission Pipeline Operator** When property development is planned within the consultation zone (reference PIPA Recommended Practice BL05), the property developer/owner and the transmission pipeline operator should communicate to ensure possible impacts of pipeline incidents and maintenance needs are considered during development design and construction. *Primary Action: Property Developer/Owner, Pipeline Operators*	When possible, facilitate effective communications among pipeline safety stakeholders.		
	Pipeline Maintenance and Damage Prevention			
BL12	**Notify Stakeholders of Right-of-Way Maintenance Activities** Transmission pipeline operators should notify affected stakeholders of right-of-way maintenance activities, including vegetation management. *Primary Action: Pipeline Operators*	When possible, facilitate effective communications among pipeline safety stakeholders regarding land use planning and development near transmission pipelines to help assure public and pipeline safety.		
BL13	**Prevent and Manage Right-of-Way Encroachment** Transmission pipeline operators should	When possible, facilitate effective communications among pipeline safety stakeholders regarding land		

Checklist for Local Government To Evaluate Land Use and Development Practices Near Transmission Pipelines

PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice Action(s) Needed or Considered
	communicate in a documented and timely manner with property developers/owners to prevent or rectify unacceptable encroachments or inappropriate human activity within the transmission pipeline right-of-way. *Primary Action: Pipeline Operators*	use planning and development near transmission pipelines to help assure public and pipeline safety. Understanding encroachment issues can help to facilitate their resolution.	
BL15	**Enhance Damage Prevention Practices near High-Priority Subsurface Facilities** Transmission pipeline operators should implement enhanced damage prevention practices within the transmission pipeline right-of-way to ensure that pipeline operators and excavators meet on-site prior to excavation activity near high-priority subsurface facilities. *Primary Action: Pipeline Operators*	Take steps to eliminate exemptions from one-call requirements that can result in damage to pipelines and other underground facilities, as noted above. Local governments should ensure their own departmental personnel responsible for excavating are aware of the need to communicate with pipeline operators before digging near pipelines and require confirmation that such communication occurs. When possible, local governments should facilitate effective communications among pipeline safety stakeholders regarding land use planning and development near transmission pipelines to help assure public and pipeline safety.	
	Maps and Records		
BL07	**Understand the Elements of a Transmission Pipeline Easement** Property developers/owners should	Affected local government agencies, such as records departments, should be familiar with the issues, elements of and	

Checklist for Local Government To Evaluate Land Use and Development Practices Near Transmission Pipelines

PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice	Action(s) Needed or Considered
	have an understanding of the elements of and rights conveyed in a transmission pipeline easement. *Primary Action: Property Developer/Owner*	rights conveyed in transmission pipeline easements and be able to assist property developers/owners in identifying and understanding same. Local government should facilitate access to easement agreements and survey documents where possible. Local government should work with the property developer/owner and pipeline operators to ensure that land use and development plans do not interfere with the current or potential future locations of such pipeline facilities or the operation and maintenance of the pipeline and related facilities.		
BL09	**Document and Record Easement Amendments** Easement amendments should be documented, managed and recorded. *Primary Action: Property Developer/Owner, Pipeline Operators*	Local governments (appropriate statutory offices) should facilitate the recording of land documents and provide public access to the records and public notice (i.e. constructive notice) of encumbrances on affected properties. Land documents may include easement agreements, encroachment agreements, letters of no objection, partial releases, and easement amendments.		
BL17	**Map Abandoned Pipelines** When a transmission pipeline operator abandons a transmission pipeline, information regarding the abandoned pipeline should be maintained and included in the information provided to the one-call center. *Primary Action: Pipeline Operators*			

Checklist for Local Government To Evaluate Land Use and Development Practices Near Transmission Pipelines

PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice	Action(s) Needed or Considered
BL18	**Disclose Transmission Pipeline Easements in Real Estate Transactions** As part of all real estate sales contracts, each state should require the disclosure of known transmission pipeline easements on the property. *Primary Action: Real Estate Commission*			
ND28	**Document, Record and Retain Partial Releases** Partial releases may be used to allow some part of the transmission pipeline right-of-way to be released from certain easement conditions, and should be documented, recorded and retained. *Primary Action: Property Developer/Owner, Pipeline Operators*	Facilitate the recordation at the appropriate statutory office (i.e. county recorder, parish clerk) of partial releases that allow some part of the transmission pipeline right-of-way to be released from certain easement conditions. Establish procedures for retention of those releases for the life of the easement.		
	Communication			
BL10	**Implement Communications Plan** Transmission pipeline operators should develop and implement effective communications plans when communicating acceptable transmission pipeline right-of-way uses and activities to property developers/owners and other stakeholders. *Primary Action: Property Developer/Owner, Pipeline Operators*	When possible, facilitate effective communications among pipeline safety stakeholders regarding land use planning and development near transmission pipelines, to help assure public and pipeline safety.		
BL11	**Effectively Communicate Pipeline Risk and Risk Management Information** Transmission pipeline operators should identify barriers to effectively	When possible, facilitate effective communications among pipeline safety stakeholders regarding land use planning and development near transmission pipelines to help		

PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice Action(s) Needed or Considered
	communicating with stakeholders and use communication techniques designed to overcome those barriers and effectively engage stakeholders to communicate with them regarding pipeline risks and how the operator manages such risks. *Primary Action: Pipeline Operators*	assure public and pipeline safety.	

LEAGUE OF WOMEN VOTERS*
PENNSYLVANIA—Citizen Education Fund
226 Forster Street • Harrisburg, PA 17102-3220 www.palwv.org
Ph: 717-234-1576 Fax: 717-234-8341 info@palwv.org

PIPELINE PLANNING RESOURCES*

** Prepared by the League of Women Voters of Pennsylvania Citizen Education Fund with funding from a U.S. Department of Transportation Technical Assistance Grant*

General Overview

Pipelines in Pennsylvania: A Case Study of Lycoming County and its *Technical Appendix* http://www.palwv.org/files/429_TAGFinalCopySmall.pdf and at http://www.palwv.org/files/453_Technical-Appendix-Lycoming_Gas_24Jan2013.pdf

PA LWV 2011 Pipeline Studies (Transmission, Regulation, Legislation and Ordinances, Inspection and Enforcement) http://www.palwv.org/Issues/Natural-Resources/Pipelines.asp

"Midstream Development in Pennsylvania" from *Shale Gas Roundtable* (August 2013) U. of Pittsburgh http://www.iop.pitt.edu/shalegas/PDF/midstream_f.pdf

Guidelines on Pipeline Regulation

An Interstate Natural Gas Facility on My Land? What Do I need to Know?, by Federal Energy Regulatory Commission (FERC):
http://www.ferc.gov/for-citizens/citizen-guides/citz-guide-gas.pdf

Knowing and Protecting Your Rights When an Interstate Pipeline Comes to Your Community, by Carolyn Elefant http://www.scribd.com/doc/33801163/Knowing-and-Protecting-Your-Rights-When-an-Interstate-Gas-Pipeline-Comes-to-Your-Community

"Natural Gas Pipeline Right-of-Ways: Understanding Landowner Rights and Options", Penn State at http://extension.psu.edu/naturalgas/news/2010/04/pipelineinfo

"Understand the Elements of a Transmission Pipeline Easement," Pipeline Informed Planning Alliance at http://primis.phmsa.dot.gov/comm/pipa/pipa_practice_BL07.htm?nocache=3891

Landowners Guide to Pipelines, Pipeline Safety Trust, http://www.pstrust.org/docs/landownersguide.pdf

Community Planning

National Association of Counties (NACO) Fact Sheet (Feb 2014): *"Creating Consultation Zones for Pipeline Safety"* at http://www.naco.org/programs/CSI/Lists/Posts/Post.aspx?ID=81

Webinar May 1, 2012 *"Land Planning Near Transmission Pipelines in Pennsylvania"* http://primis.phmsa.dot.gov/meetings/MtgHome.mtg?mtg=86&nocache=8730&nocache=6157

"Land Use Planning and Transmission Pipelines," Pipeline Informed Planning Alliance http://primis.phmsa.dot.gov/comm/pipa/landuseplanning.htm

Community Planning - continued

Online Pipeline Notification Protocol - Apr 2014. Developed by Pipeline Safety Coalition with support from the Chester County government and East Brandywine Township. The Pipeline Notification Protocol was funded by a Technical Assistance Grant from the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration. Go to: www.chescopagreen.org and click on the Pipeline Information Center link.

Pipeline Safety Trust (Excellent Website!)

http://www.pstrust.org and http://www.pstrust.org/initiatives_programs/planningnearpipes.htm

Pipeline Safety Coalition www.pscoalition.org (Pennsylvania Focus)

On-line Environmental Impact Resources

Energy Zones Mapper Tool, hosted by Argonne National Lab, at https://eispctools.anl.gov

IPaC, hosted by US Fish and Wildlife Service, at https://ecos.fws.gov/ipac

The Nature Conservancy – Pennsylvania Chapter
"Natural Gas Pipelines - Excerpt from Report 2 of the Pennsylvania Energy Impacts Assessment"
December 16, 2011, 9 pgs. Authors: Nels Johnson, Tamara Gagnolet, Rachel Ralls, and Jessica Stevens
http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/pennsylvania/ng-pipelines.pdf

Negotiating Rights of Way

Penn State Extension website on pipelines and Fact Sheet on negotiating rights of way:
http://extension.psu.edu/natural-resources/natural-gas/publications/negotiating-pipeline-rights-of-way-in-pennsylvania

Green Infrastructure work of NiSource

http://www.conservationfund.org/projects/mitigation-profile-nisource-strategic-planning-to-offset-pipeline-impacts/

Pipeline Area Restoration Post-installation

"Seeding Mixtures For Areas Disturbed by Natural Gas Activities" Brochure and *"Conservation Practices For Pipelines"* Fact Sheet by USDA/NRCS - available at www.pa.nrcs.usda.gov

"Be Prepared" Initiative
Facilitating Pipeline Education for
Communities and Water Systems

September 8, 2014

Thank you, Centre County Natural Gas Task Force

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Funded by a Technical Assistance Grant to the League of Women Voters of Pennsylvania - Citizen Education Fund by the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA)

Speakers

- **Julie Kollar - Director, Water Resources Education Network** 267-468-0555 email: juliekwren@verizon.net Websites: www.waterwisepa.org & www.sourcewaterpa.org
- **David Lehmann, Ph.D., PG, Senior Program Manager, G2 Partners**, Houston, TX 713-260-4073 email: david.lehmann@g2partnersllc.com Website: www.g2partnersllc.com
- **Hung Nguyen– Senior Program Manager, US DOT Pipeline & Hazardous Materials Safety Administration (PHMSA),** Wash. D.C. Office (202) 366-0568 email: hung.nguyen@dot.gov Website: http://www.phmsa.dot.gov/

Agenda *"Using Smart Land Use Strategies for Pipeline Siting"*

- **Julie Kollar - Introduction**
- **David Lehmann – *"Managing Perceived and Real Environmental Risks during Pipeline Installations, Central Pennsylvania"***
- **Hung Nguyen– *"Reducing Risks & Improving Safety of Affected Communities & Transmission Pipelines Through Risk-Informed Land Use & Development near Transmission Pipelines"***

2010 San Bruno CA Pipeline Explosion

- PG&E Faces $1.4 Billion Penalties for Deadly 2010 San Bruno California Pipeline Blast
- Explosion occurred at 6:11 pm PDT on September 9, 2010, in San Bruno, California, a suburb of San Francisco, when a 30-inch (76 cm) diameter steel natural gas pipeline owned by Pacific Gas & Electric exploded in flames in the Crestmoor residential neighborhood
- Killed 8, injured dozens

Allentown – Feb 11, 2011

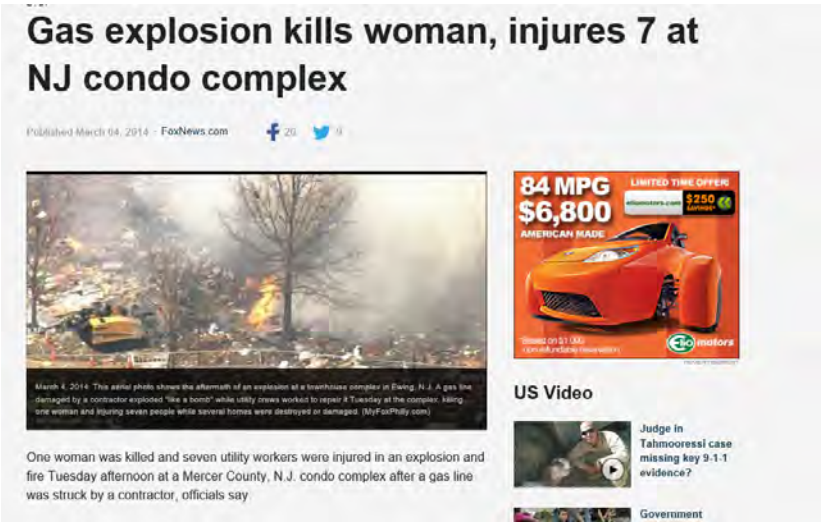
The New York Times February 11, 2011

Chris Post/Easton Express Times, via Associated Press

An explosion and fire on Wednesday night leveled homes on a block of North 13th Street in Allentown, Pa. The authorities were investigating the cause.

Harlem, NY Gas Explosion March 2014
3 dead, 69 hurt

Ewing, NJ Condo Complex March 2014



Gas explosion kills woman, injures 7 at NJ condo complex

Published March 04, 2014 · FoxNews.com

March 4, 2014: This aerial photo shows the aftermath of an explosion at a townhouse complex in Ewing, N.J. A gas line damaged by a contractor exploded "like a bomb" while utility crews worked to repair it Tuesday at the complex, killing one woman and injuring seven people while several homes were destroyed or damaged. (MyFoxPhilly.com)

One woman was killed and seven utility workers were injured in an explosion and fire Tuesday afternoon at a Mercer County, N.J. condo complex after a gas line was struck by a contractor, officials say.

84 MPG
$6,800
LIMITED TIME OFFER
$250
AMERICAN MADE
motors

US Video

Judge in Tahmooressi case missing key 9-1-1 evidence?

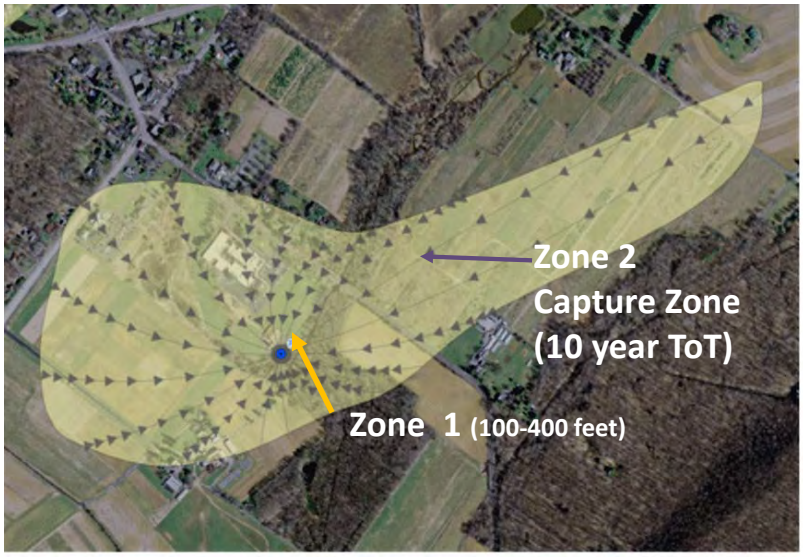
Government

Possible Changes in Water Supply Areas

One study says Pennsylvania can expect anywhere from **10,000 to 25,000 miles** of new natural gas pipelines

Possible clearing of as much as 150,000 acres of forest, dozens or hundreds of new compressor stations, which will add to noise and air pollution.
"The scale of it, I don't think a lot of people really grasp yet," said Nels Johnson, deputy state director of the Nature Conservancy and the study's author.

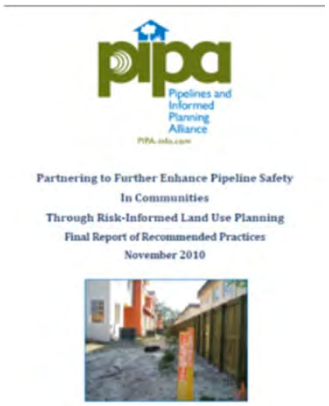
Your Source Water Protection Program can help Groundwater Protection Zones



Each Arrow head = 1 year Time of Travel

Pipeline Crossing - Bentonite blowout into creek in PA

PIPA (Pipeline and Informed Planning Alliance):


Pipelines and Informed Planning Alliance

PIPA-info.com

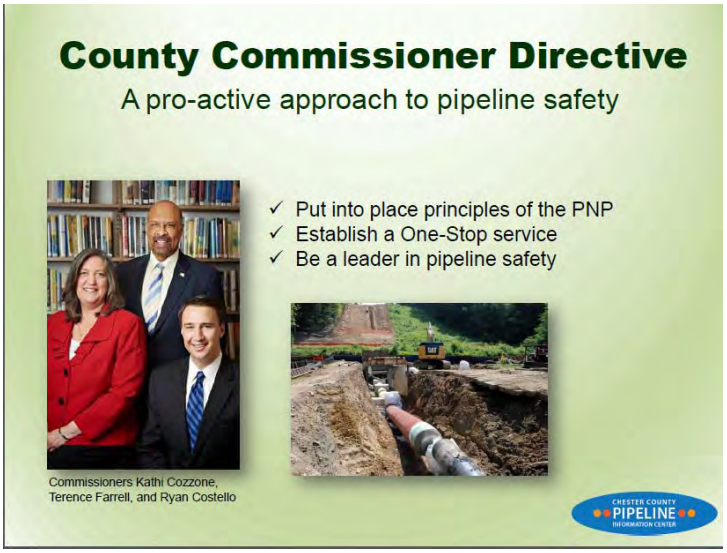
Partnering to Further Enhance Pipeline Safety
In Communities
Through Risk-Informed Land Use Planning
Final Report of Recommended Practices
November 2010

- "The PIPA recommended practices describe actions for key stakeholders, including local government, transmission pipeline operators, property developers/owners, and real estate commissions, to improve pipeline safety.
- Local governments are encouraged to become familiar with each of the recommended practices. Even though the local government tor may not be taking action under a practice, the local government may be affected by other stakeholders implementing the practice.
- This document is to assist local governments in evaluating their own current practices in comparison with PIPA recommended practices."

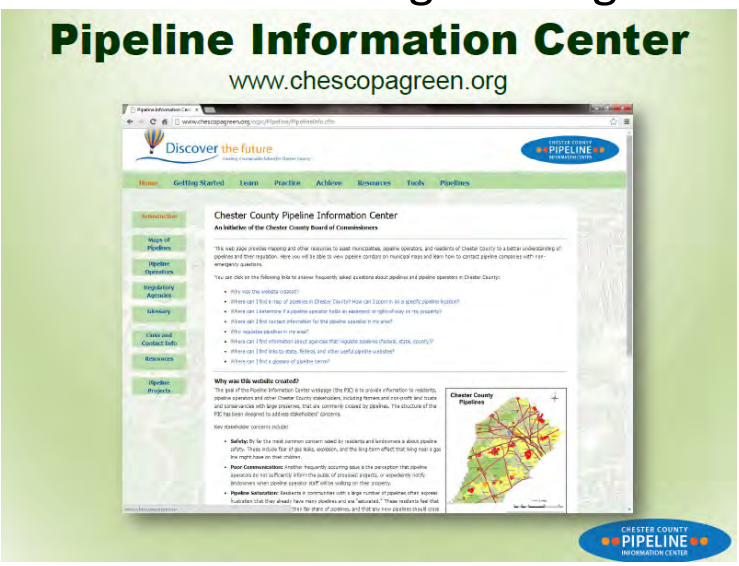
Pipeline Safety Trust
http://pstrust.org/

Pipeline Safety Coalition - based in PA
http://www.pscoalition.org/

Chester County Pipeline Notification Protocol (PNP) Developed



Chester County PNP www.chescogreen.org



NACO Fact Sheet Consultation Zones - Feb 2014

Creating Consultation Zones for Pipeline Safety fact sheet to introduce pipeline consultation zones and overview how counties can use them as a pipeline safety strategy.

Consultation zones are local ordinances that require communication and review among property developers, property owners and pipeline operators when new land uses and property developments are being planned within a designated distance of a pipeline.

This fact sheet provides answers to frequently asked questions (FAQs) about consultation zones, including their purpose, recommended distance, model ordinances and additional resources.

http://www.naco.org/programs/CSI/Lists/Posts/Post.aspx?List=9ca622f9-5581-4376-93e0-edd198e1b8c7&ID=81&Web=6e398872-21fb-41d1-b6c1-cb4b50751509

Managing Perceived and Real Natural Environmental Risks During Pipeline Installations

G2 PARTNERS

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Hamood Rehman

David Lehmann, P.G., Ph.D.
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Special Thanks to the Following:

2

Julie Kollar, WREN and League of Women Voters

Stuart Reese, P.G. Pennsylvania Geological Survey

Joe Adams, Oil and Gas Management, PA DEP

Mark Stephens, P.G., PA DEP

Bill Kiger, PA One Call

Jim Stuby, P.G., Earth Resources Technology, Inc.

Matt Hoffer, Coeur Mining

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Overview

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Pipelines

What They Carry

From Well to Neighborhood

Gas Pipelines in Centre County

Gathering

Transmission

Distribution

Natural Risk Factors and Best Management Practices During Pipeline Installation

Acid Rock/Soil

What and Where

Assessing

Mitigating

I-99 vs Pipeline Installation

Shallow Groundwater and Surface Water

Groundwater Systems in Central PA

Mitigating

Other: Seismicity

Karst

What and Where

Assessing/Mitigating

Habitat Fragmentation

Local Patterns

Landslide and Erosion

What and Where

Mitigating

Conclusion

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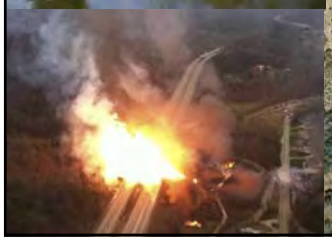
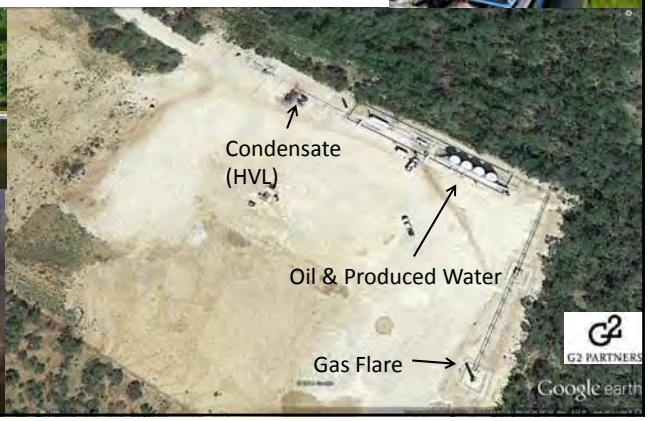
Pipelines: What they carry

4

Petroleum Pipelines

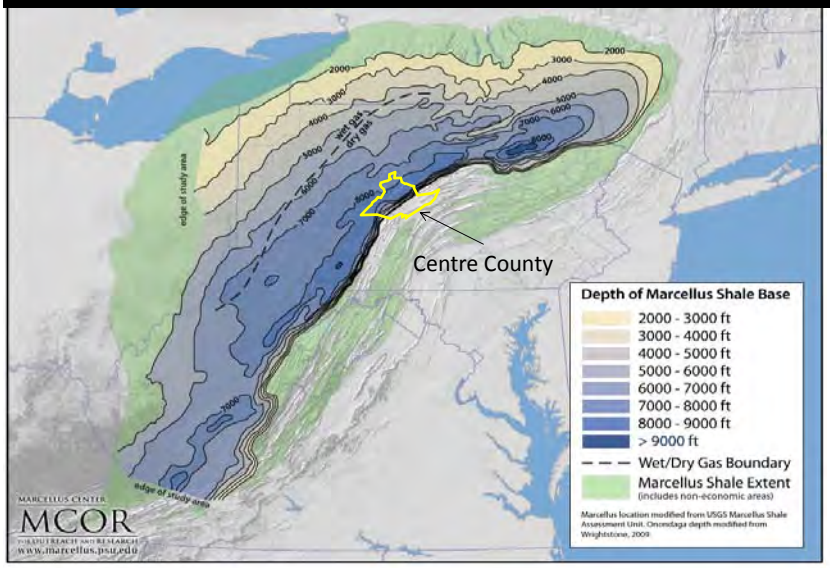
- Crude Oil,
- High Volatile Liquids (HVL), including natural gas liquids, and
- Natural gas (thermogenic).





Pipelines: What they carry in Centre County

5



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Pipelines: From well to neighborhood

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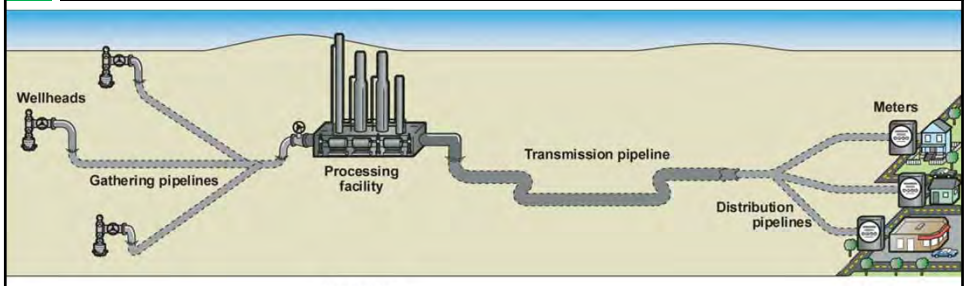

Source: PHMSA.

Petroleum Pipeline Mileages, U.S., 2013 (PHMSA)

Gathering	17,429		
Transmission		302,753	
Distribution (total)		2,141,817	Gas
Mains	*1,253,350*		
Service	*888,406*		
HVL		62,742	
Crude Oil		60,160	Other
Refined Product		63,518	

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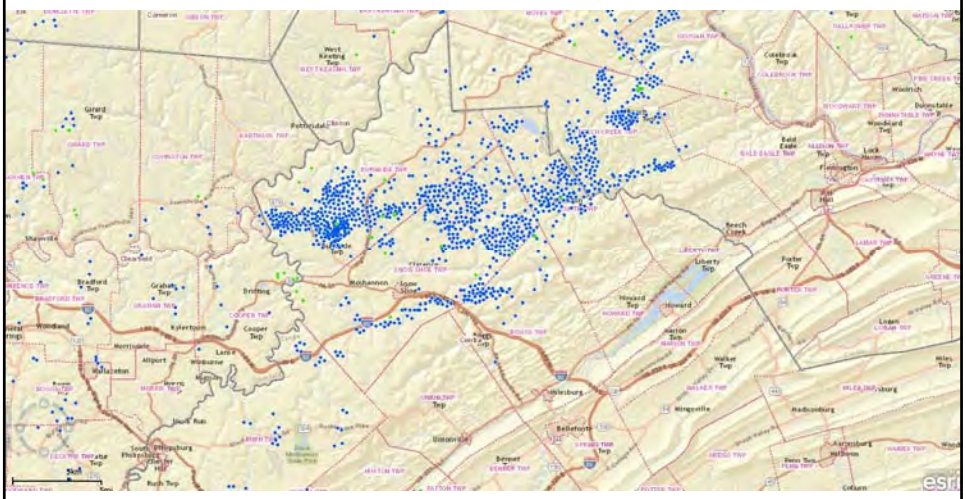
Centre County Gathering Line Trends

7



Gas Wells: ● Conventional ● Unconventional

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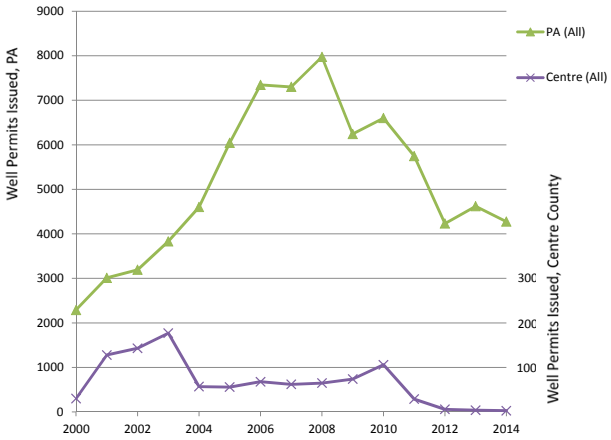
Centre County Gathering Line Trends

8



Oil and Gas Well Permits Issued

Notes:

- Data from PA DEP, Office of Oil and Gas Management, Reporting Services.
- 2014 totals are projected based upon reported January through August of 2014 data.

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Centre County Gathering Line Trends

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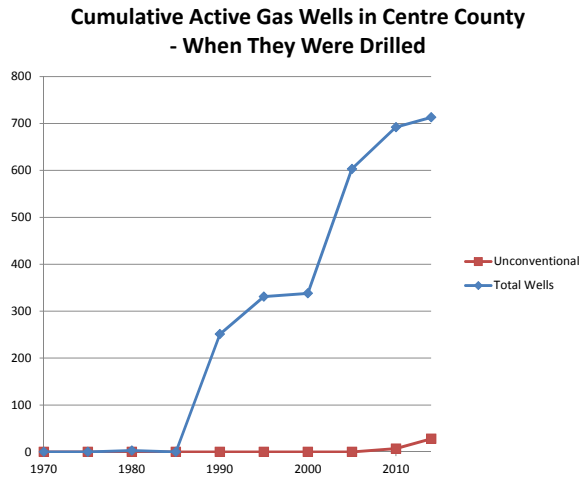

Date	Conv.	Unconv.	Total
1970-75	0	0	0
1976-79	3	0	3
1980-84	48	0	48
1985-89	200	0	200
1990-94	80	0	80
1995-99	7	0	7
2000-04	265	0	265
2005-09	82	7	89
2010-14	0	21	21

2010	13
2011	6
2012	2
2013	0
2014	0

Notes:

- Data from PA DEP, Office of Oil and Gas Management, Reporting Services.
- 2014 totals are projected based upon reported January through August of 2014 data.

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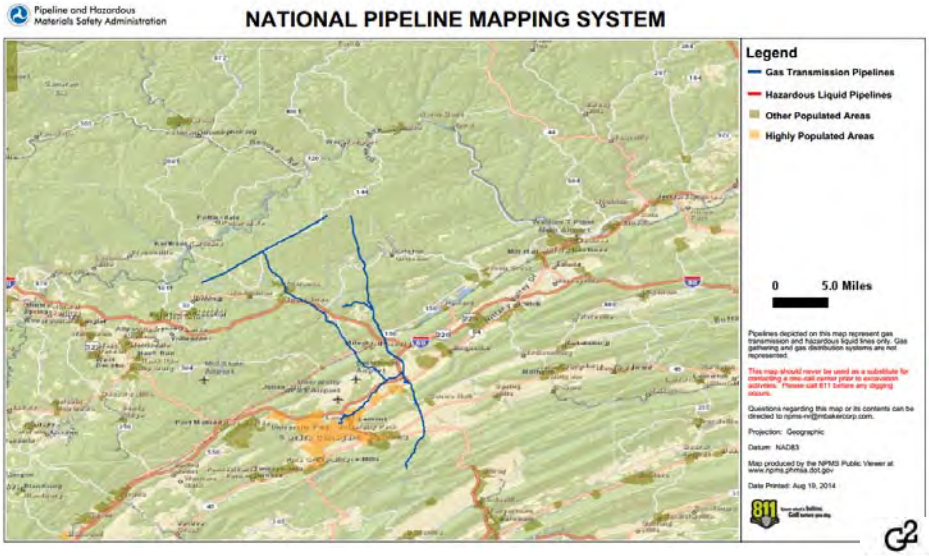
Centre County Transmission Lines

10



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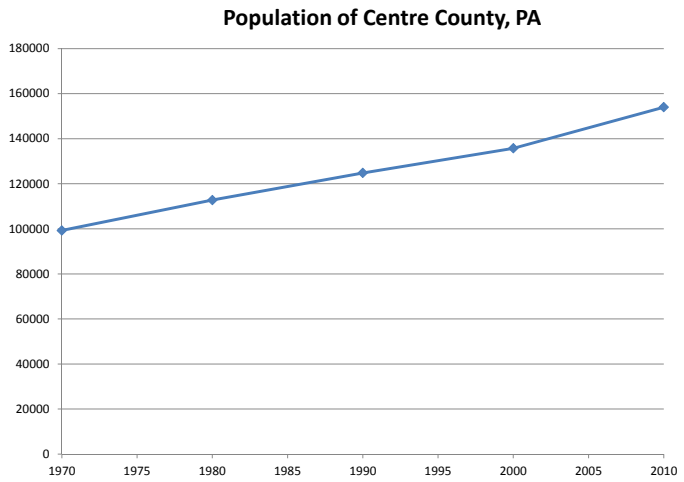
Centre County Distribution Line Trends

11



Year	Pop.	Annual Growth
1970	99267	
1980	112760	1.36%
1990	124812	1.07%
2000	135758	0.88%
2010	153985	1.34%

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Centre County Environmental Risks

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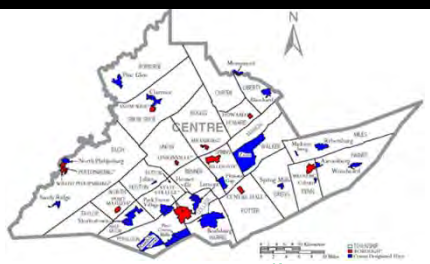

Acid Rock/Soil

What and Where
Assessing
Mitigating
I-99 vs Pipeline Installation

Shallow Groundwater and Surface Water

Groundwater Systems in Central PA
Mitigating

Other: Seismicity

Karst

What and Where
Assessing/Mitigating

Habitat Fragmentation

Local Patterns

Landslide and Erosion

What and Where
Mitigating

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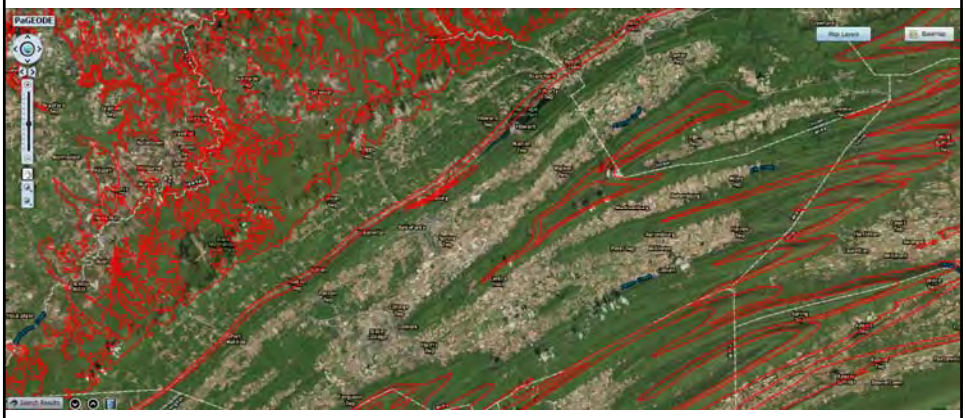
"Acid" Rock & Soils

13



What and Where?

Cross-hatched, red-outlined areas are underlain by bedrock that is known to contain potentially significant acid-producing sulfide minerals. However, these minerals occur in discrete zones in a very, small proportion of these rock units. These minerals are unstable at earth surface conditions.

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"Acid" Rock & Soils

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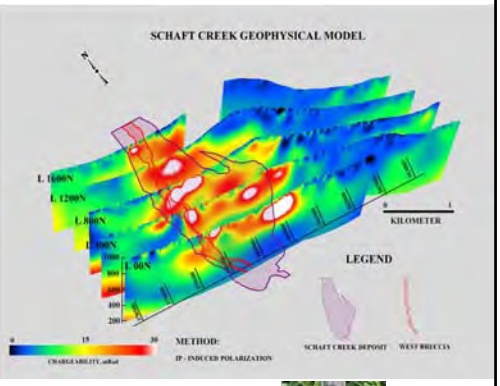

Assessing

- Public data: detailed soil data (USDA) and more general bedrock data (PGS),
- Geophysical investigation if possible acid-producing material may be within depth of excavation, and
- Sampling: soil or bedrock.

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"Acid" Rock & Soils

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Cathodic protection

Material selection

Coatings

Mitigation

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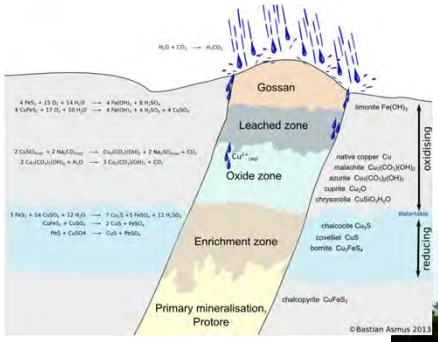
"Acid" Rock & Soils

16



I-99 vs Pipeline Installation

- I-99 construction included removing a portion of a mountain, including >30' of gossan.
- Pipeline trenches are typically <6' deep.

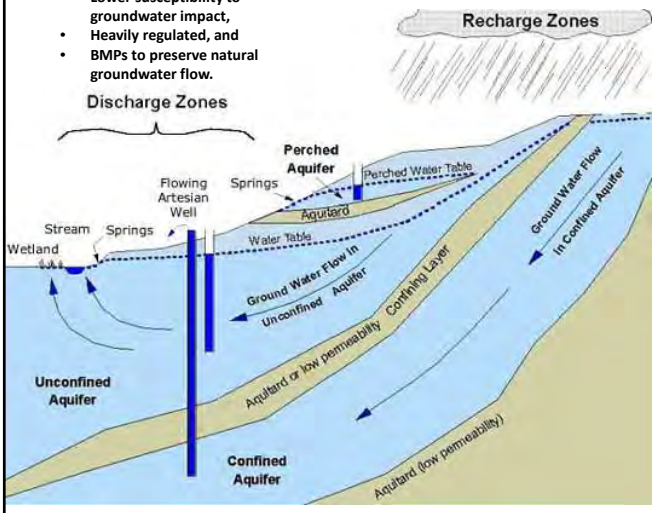
Skytop map and photos from Hammarstrom and other, 2005, USGS Open-File Report 2005-1148

G2 PARTNERS

Shallow Groundwater and Streams

17

- Lower susceptibility to groundwater impact,
- Heavily regulated, and
- BMPs to preserve natural groundwater flow.



Shallow Groundwater

- Perched zones,
- Shallow artesian, and
- Springs.

Other Sensitive Areas

- Streams, and
- Recharge.

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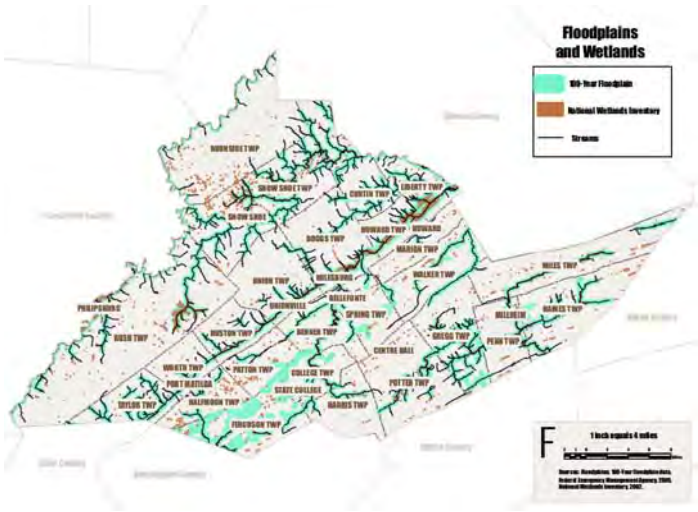
Shallow Groundwater and Streams

18



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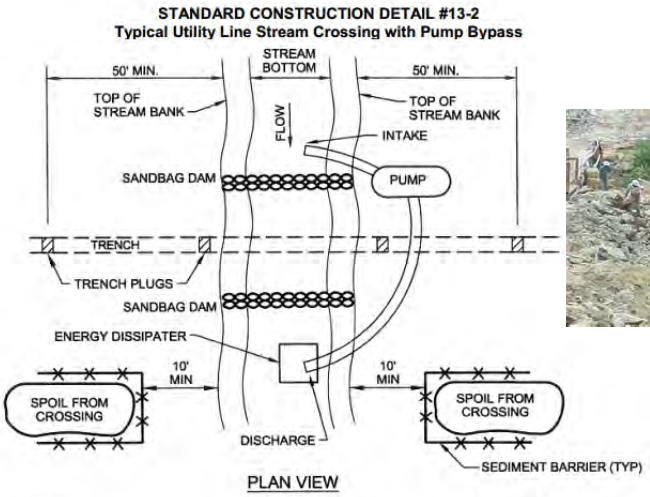
Shallow Groundwater and Streams

19



From: *Erosion and Sediment Pollution Control Program Manual, Technical Guidance 363-2134-008*, March, 2012

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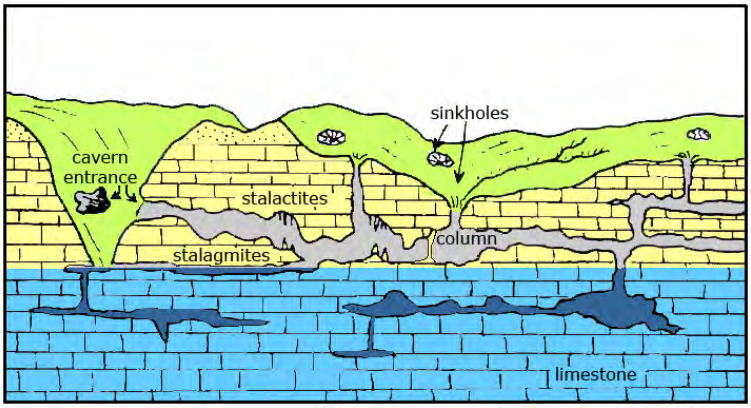
Karst

20



Topographic and subsurface features characterized by voids (caves, caverns, sinkholes) developed over limestone and dolostone bedrock.

Note: Underground mining-related subsidence can mimic effects of karst on pipelines.

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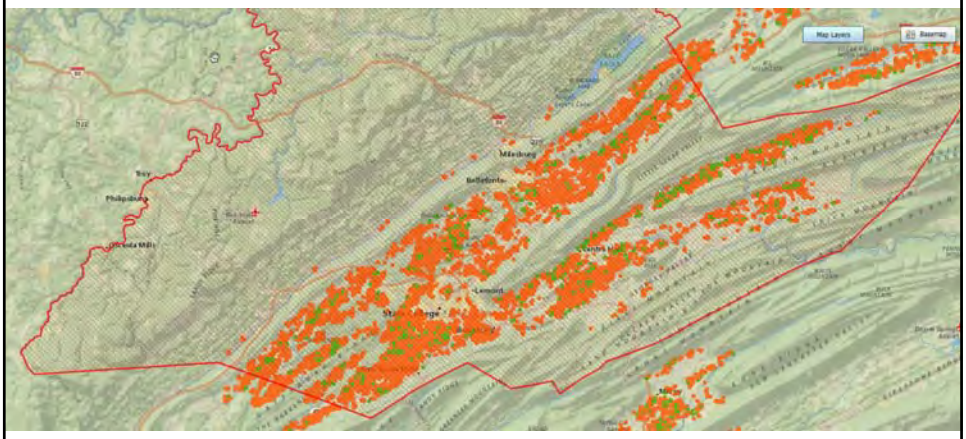
Karst

21



- Surface Depression
- Sinkhole

Karst Features in Centre County

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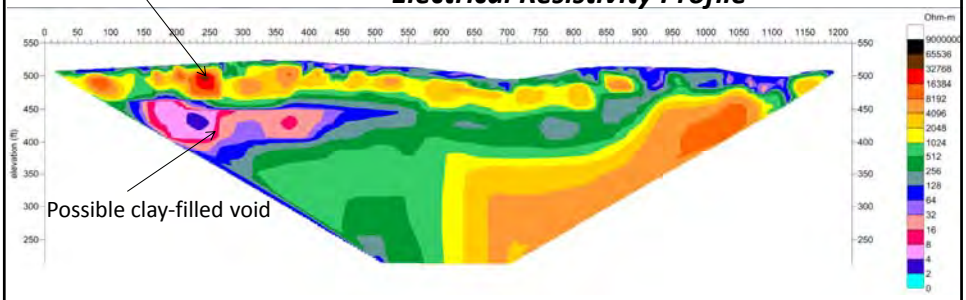
Karst

22

Likely void

Electrical Resistivity Profile



Assessing

- Public data: Geologic maps and studies (Pennsylvania Geological Survey),
- Geophysical investigation if karst is mapped in the right-of-way, and
- Subsurface investigation.

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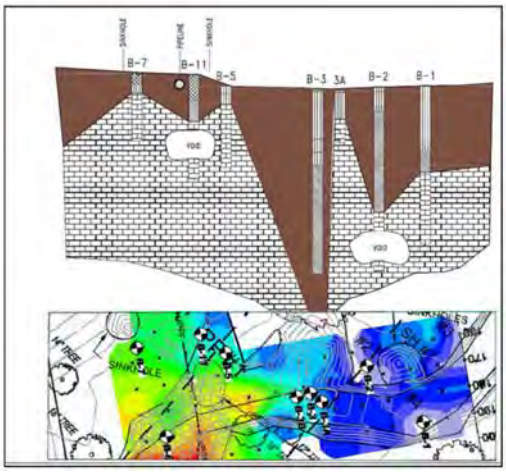
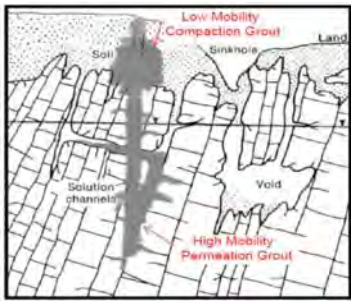
Karst

23





Mitigation

- Avoidance/rerouting,
- Structural support with deep foundation system, and
- Grouting in right-of-way.

From *Pusey and Caccese, 2013*

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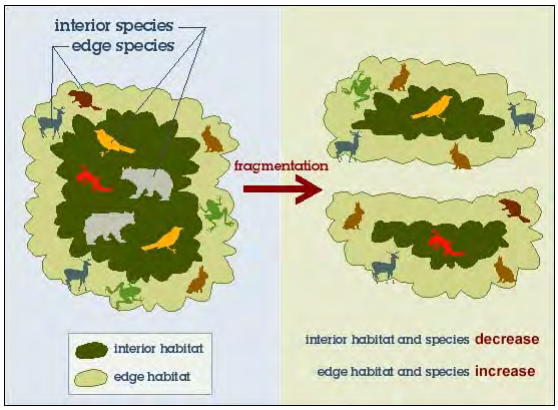
Habitat Fragmentation

24



Habitat Fragmentation

- Decrease in interior habitat, and
- Development of physical barriers that inhibit requisite migration.

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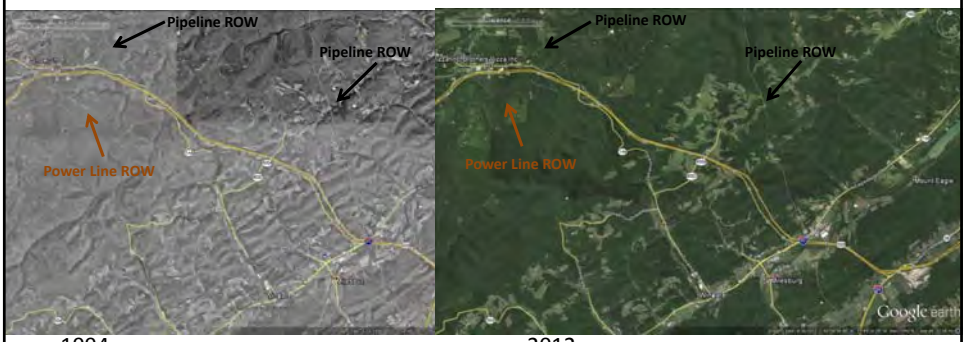
Habitat Fragmentation

25



1994 2012

Centre County

Milesburg

Transmission pipeline right-of-ways

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Habitat Fragmentation

26

1994 2012

Centre County

Pine Grove Mills

Housing expansion

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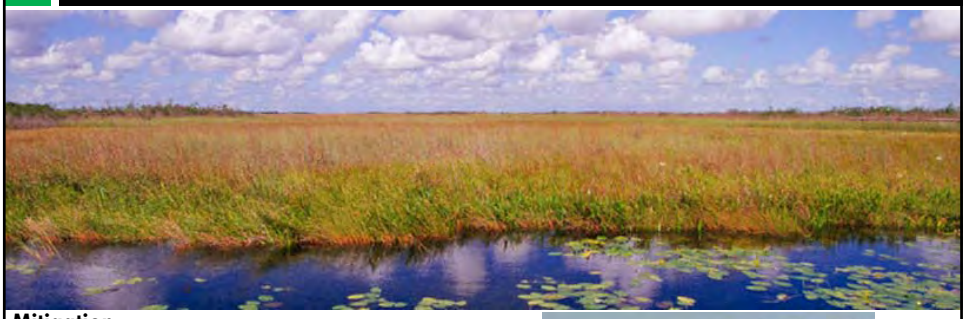
Habitat Fragmentation

27



Mitigation

- Beneficial reuse of developed property, when possible, to avoid encroaching upon green fields is good mitigation to habitat fragmentation. For pipelines, taking advantage of existing right-of-ways would be an example of beneficial reuse. It can also be an efficient development strategy.
- Additionally, mitigation banking and onsite mitigation can be utilized to help offset expected adverse impacts to wetlands, streams, and other critical habitats.

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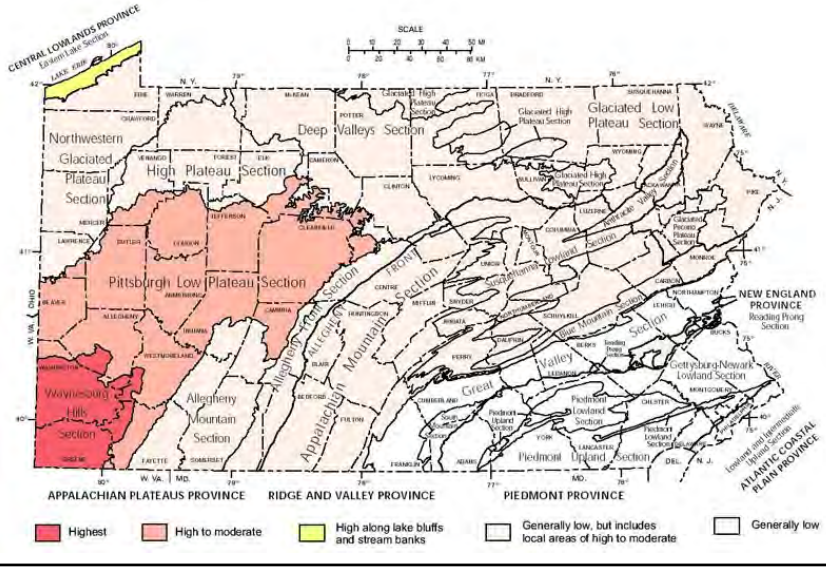
Landslides and Erosion

28



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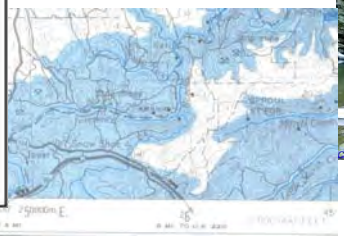
Landslides and Erosion

29



- Overall risk of landslides in Centre County is low, but there are locally area of moderate risk, where assessment is prudent and engineered mitigation may be appropriate.
- Risk of erosion can be managed through pipeline pathway selection, proper installation, and right-of-way restoration techniques.

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Landslides and Erosion

30

Mitigation

- Avoid landslide-prone areas and areas of excessive erosion (scarps, gullies, etc.) when planning pipeline pathways,
- Utilize ditch breakers in pipeline trenches to prevent groundwater channeling during storm events and spring melts, and
- Install oblique berms over right-of-ways to prevent gullying and control runoff.
- Segregate and replace topsoil appropriately ("double ditching") to preserve viability of the soil.

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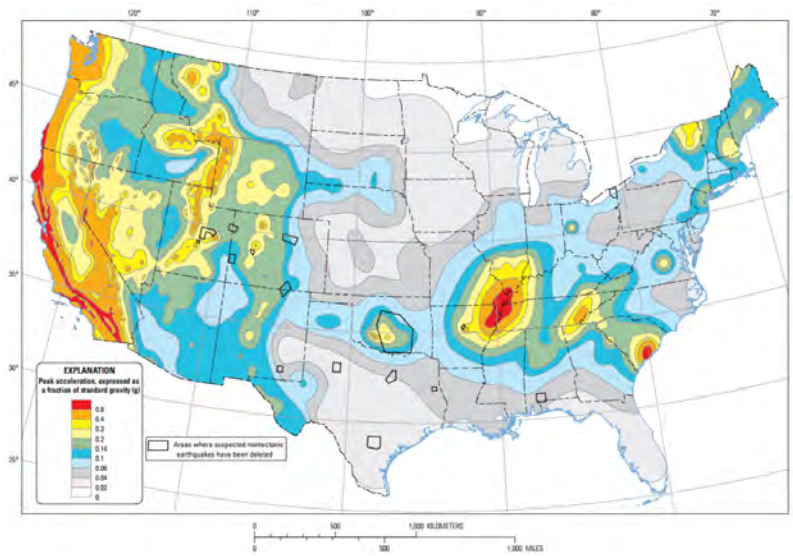
Other Concerns: Seismicity

31



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Conclusions

32

- Pipeline expansions are the result of a complex mix of oil and gas development patterns, economic conditions, and population patterns.
- In Central PA, gathering line expansion occurred primarily in the late 1980s to early 1990s and early 2000s. Distribution line expansion seems the most likely to occur in the future due to population growth.
- Pipeline installations are unlikely to result in exposing new acid-producing rock or soil to the environment. However, existing corrosive environments require BMP.
- Karst features can present a real risk to pipelines and should be considered during pipeline installations.

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Conclusions, continued

33

- State DEP guidance sets forth appropriate BMPs to avoid disrupting stream or shallow groundwater flow during pipeline installations.
- Sometimes pipeline routes require protective management of sensitive environments. There are BMPs to minimize ecological disruptions. For example, impacted marshlands can be addressed by utilizing comparable "banked" wetlands to mitigate impacts and/or onsite mitigation.
- Local, moderate landslide risks can be managed by avoiding slide areas and scarps, installing ditch breakers, and controlling storm water runoff. Topsoil can be segregated during trench excavations and replaced appropriately to preserve soil viability.
- The keystone BMP to avoid environmental impacts and to eliminate damage to a pipeline from naturally occurring conditions is to conduct a thorough assessment of the pipeline route.

G2 PARTNERS

Thank you for joining this presentation

G2 PARTNERS

John Jacobi, P.E.
Marc Ferries, PE
Hamood Rehman

David Lehmann, P.G., Ph.D.
David.Lehmann@g2partnersllc.com
(713) 260 - 4073

U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

Presentation to the Centre County Natural Gas Task Force

Hung Nguyen
PHMSA/Office of Pipeline Safety

September 8, 2014

- 1 -

Pipeline Safety – Getting to Zero

So how do we get there?

What is PIPA?

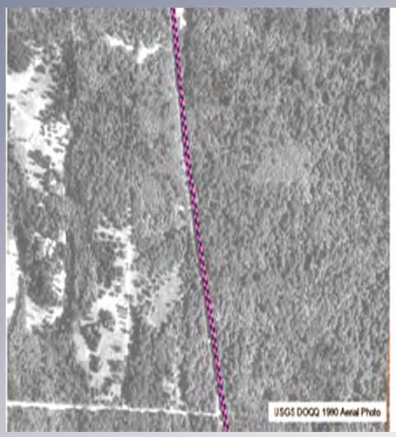
Pipelines and Informed Planning Alliance

PIPA-info.com

"Reducing Risks and Improving Safety of Affected Communities and Transmission Pipelines Through Risk-Informed Land Use and Development near Transmission Pipelines"

Improving Pipeline Safety Across Generations

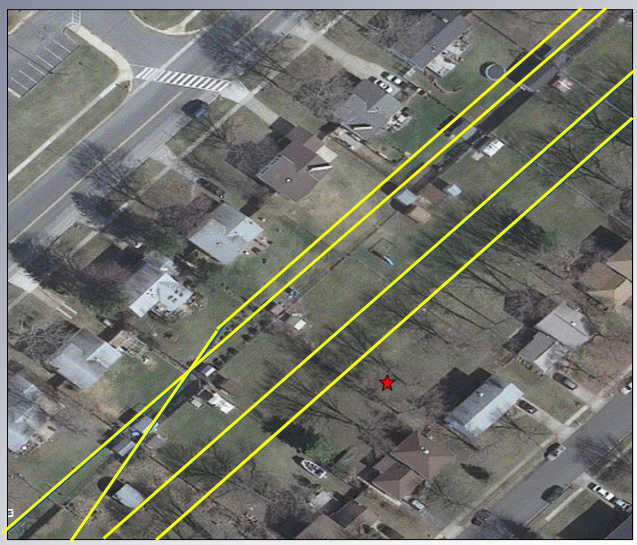
1990



2002

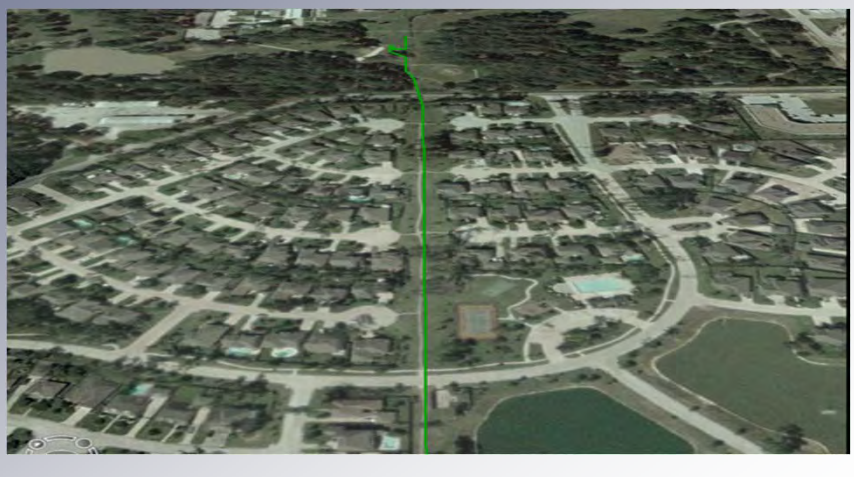
Effects of Land Development in Close Proximity to Pipeline ROW

Greater Likelihood of Damage to the Pipeline

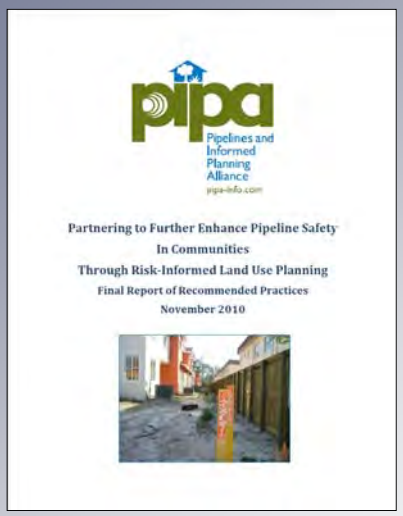


Higher Potential Consequences of Failure

PIPA Promotes Risk-Informed Land Use Planning and Communication



PIPA Report


Pipelines and Informed Planning Alliance
pipa-info.com

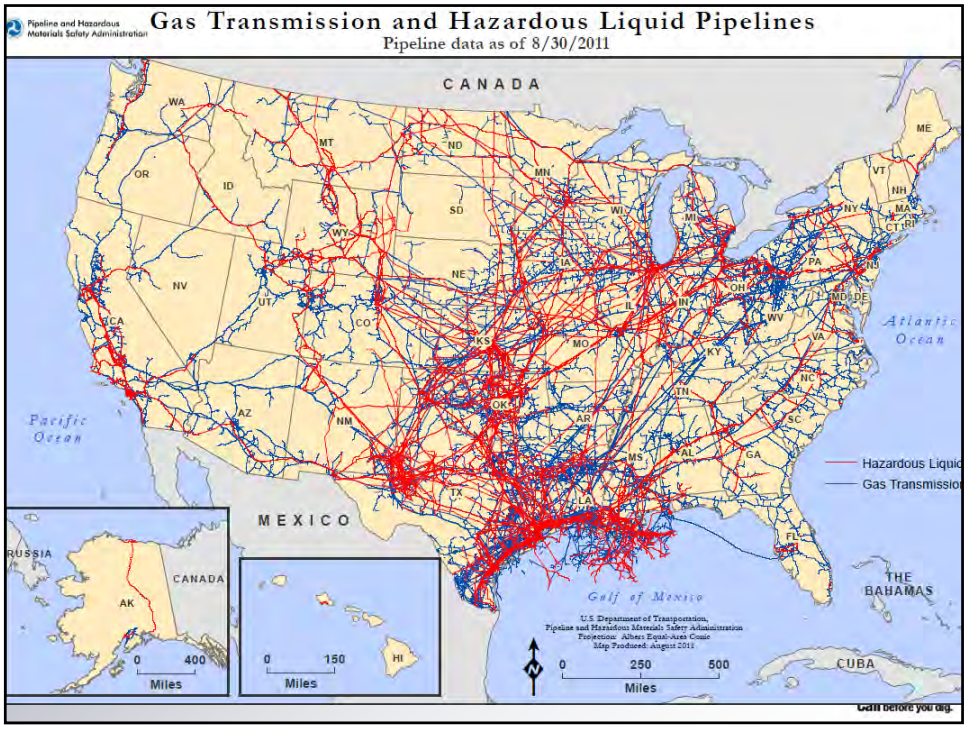
Partnering to Further Enhance Pipeline Safety
In Communities
Through Risk-Informed Land Use Planning
Final Report of Recommended Practices
November 2010

- Published Dec. 2010 as a web-based document
- Printable

www.PIPA-Info.com

PIPA Report in a nutshell…

- Stakeholders
- Benefits and Risks
- Recommended Practices (BL & ND)
- Appendices:
  - Model ordinance
  - Matrix
  - Technical information



Local Governments
BL01 - Obtain Transmission Pipeline Mapping Data

National Pipeline Mapping System (NPMS)

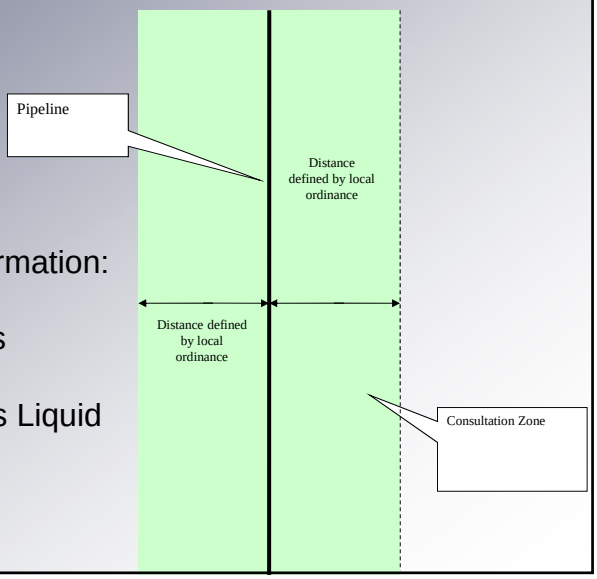
www.npms.phmsa.dot.gov

BL05 - Define Transmission Pipeline Consultation Zone

Local governments should define a "consultation zone"

Absent site-specific information:

- 660'-1000' Natural Gas Pipelines
- 1000'-1500' Hazardous Liquid Pipelines

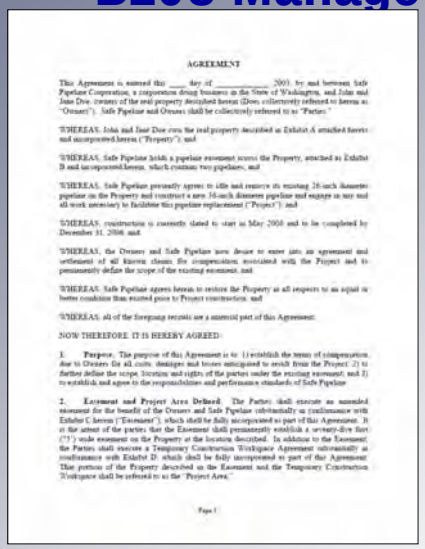


ND23 - Consider Site Emergency Response Plans in Land Use Development

Consider:

- Access to shutoff valves
- Access for emergency response personnel/equipment
- Location/capacity of fire hydrants
- Potential ICS, triage, and staging areas

Operators – BL08 Manage Land Records



AGREEMENT

This Agreement is entered this ____ day of _____, 2003, by and between Safe Pipeline Corporation, a corporation doing business in the State of Washington, and John and Jane Doe, owners of the real property described herein (Does, collectively referred to herein as "Owner"). Safe Pipeline and Owner shall be collectively referred to as "Parties."

WHEREAS, John and Jane Doe own the real property described in Exhibit A attached hereto and incorporated herein ("Property"); and

WHEREAS, Safe Pipeline holds a pipeline easement across the Property, attached as Exhibit B and incorporated herein, which contains two pipelines; and

WHEREAS, Safe Pipeline presently agrees to idle and remove its existing 26-inch diameter pipeline on the Property and construct a new 36-inch diameter pipeline and engage in any and all work necessary to facilitate this pipeline replacement ("Project"); and

WHEREAS, construction is currently slated to start in May 2004 and to be completed by December 31, 2006; and

WHEREAS, the Owners and Safe Pipeline now desire to enter into an agreement and settlement of all known claims for compensation associated with the Project and to permanently define the scope of the existing easement; and

WHEREAS, Safe Pipeline agrees herein to restore the Property in all respects to an equal to better condition than existed prior to Project construction; and

WHEREAS, all of the foregoing recitals are a material part of this Agreement;

NOW THEREFORE, IT IS HEREBY AGREED:

1. **Purpose.** The purpose of this Agreement is to: 1) establish the terms of compensation due to Owners for all costs, damages and losses anticipated to result from the Project; 2) to further define the scope, location and rights of the parties under the existing easement; and 3) to establish and agree to the responsibilities and performance standards of Safe Pipeline.

2. **Easement and Project Area Defined.** The Parties shall execute an amended easement for the benefit of the Owners and Safe Pipeline substantially in conformance with Exhibit C herein ("Easement"), which shall be fully incorporated as part of this Agreement. It is the intent of the parties that the Easement shall permanently establish a seventy-five feet ("75") wide easement on the Property at the location described. In addition to the Easement, the Parties shall execute a Temporary Construction Workspace Agreement substantially in conformance with Exhibit D, which shall be fully incorporated as part of this Agreement. That portion of the Property described in the Easement and the Temporary Construction Workspace shall be referred to as the "Project Area."

Page 1

- Easement
- Easement Amendment
- Encroachment Agreement
- Letter of No Objection
- Partial Release

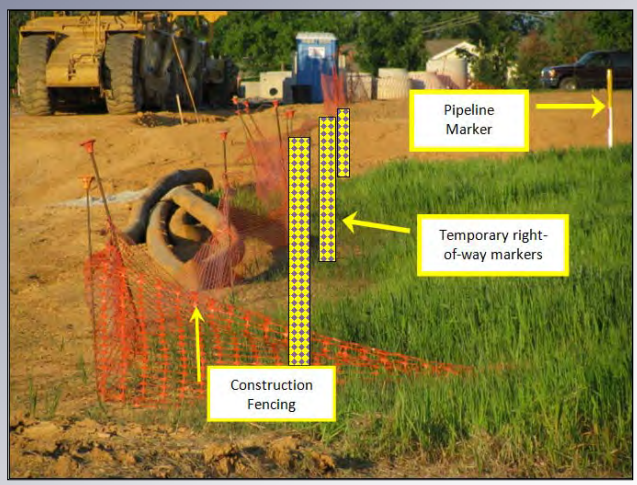
BL15 - Enhance Damage Prevention Practices near High-Priority Subsurface Facilities

Examples:

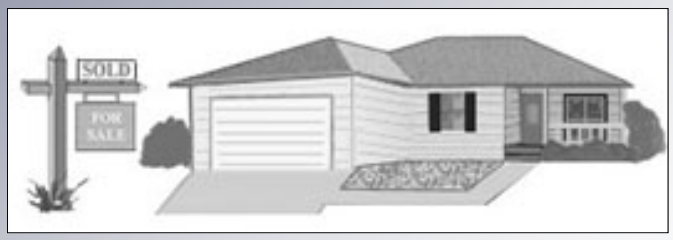
- Pre-excavation meeting on site with the operator and contractor
- "Pot hole" to verify utility locates or mark-outs.
- Operator onsite during all excavation.

Developer / Public – ND11 - Reduce Transmission Pipeline Risk through Design and Location of New Parking Lots and Parking Structures

ND24 - Install Temporary Markers on Edge of Transmission Pipeline Right-of-Way Prior to Construction Adjacent to Right-of-Way



Real Estate Commissions- BL18 - Disclose Transmission Pipeline Easements in Real Estate Transactions

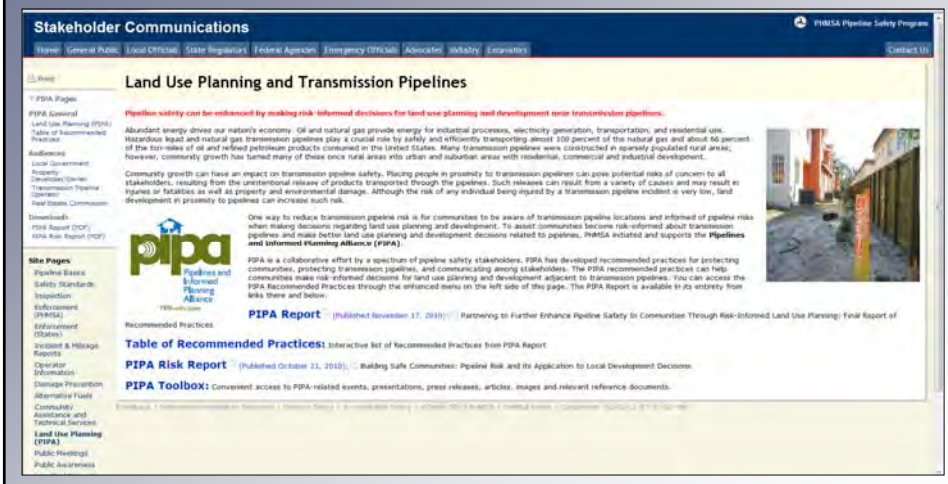


PIPA Tools & Resources

Checklist for Local Government To Evaluate Land Use and Development Practices Near Transmission Pipelines

PIPA RP #	Practice Title and Description	Local Government Practice	Current Practice Action(s) Needed or Considered
ND06	**Require Consideration of Transmission Pipeline Facilities in Land Development Design** Whenever development is proposed on property containing transmission pipeline facilities, local governments should require that the submitted land development plans address in detail the steps necessary to safely integrate the transmission pipeline into the design of the project. *Primary Action: Local Government, Property Developer/Owner*	Require that land development plans submitted for approval address in detail the steps necessary to safely integrate affected transmission pipelines into the design of the project. This should be included along with other issues that must be addressed as part of the land development process, such as the availability of potable water, sewer, adequate roads, environmental constraints, etc. Require documented consideration of PIPA Recommended Practices ND11 through ND23, as applicable, for new land development located	

PIPA Website



www.PIPA-Info.com

Thank you for your time and interest in pipeline safety!

Questions?

www.PIPA-Info.com

ACT 127 INFORMAT'N

Sue Hannegan

From: Julie Kollar <juliekwren@verizon.net>
Sent: Wednesday, September 10, 2014 1:01 PM
To: Sue Hannegan
Cc: Robert B. Jacobs; Roberta Winters; Bonita Hoke
Subject: Thank you - CCNGTF Meeting Sept 8

Hello Sue,
Thank you for inviting us to present at the Sept. 8 meeting of the Centre County Natural Gas Task Force. We appreciated the opportunity to share information about environmental considerations for pipeline safety, and resources available through PIPA (Pipeline and Informed Planning Alliance) designed to help communities improve public safety through improved land use planning in the vicinity of existing or new pipelines. There are materials tailored to different audiences (government officials, property owners, pipeline operators) available at the link.

Here is a link to the NACO Fact Sheet I mentioned called Creating Consultation Zones for Public Safety.

Feel free to share our presentations (Dave Lehmann of G2 Partners, Hung Nyugen of PHMSA, or me) with the group. As I outlined, the new Pipeline Notification Information Center developed by Pipeline Safety Coalition (Lynda Farrell) working with Chester County Planning can be viewed at www.chescogreen.org. This was developed as part of a PHMSA Tag Grant. You may want to consider a TAG at some point to obtain resources and expertise needed. PHMSA's Pipeline Safety Grants page is here.

If you would like to see sample pipeline ordinances that have been developed in PA, I can send those to you.

Lastly, on the question that arose about identification and regulations for Class 1 gathering lines and Act 127 which went into effect in PA Feb 20, 2012, here is information from the PA PUC. Please refer to PUC Act 127 page for more information.

ACT 127 JANUARY 24, 2012, TELECONFERENCE

QUESTIONS & ANSWERS

Q: Gathering Operators with only Class 1 pipelines are not subject to 49 CFR 192 at this time, and thus subsequently do not have Operator IDs with the Federal Government. However, it appears that the registry will require the registering of Class 1 unconventional lines with the PUC. Will these operators be subject to PUC jurisdiction, and if so, how shall they register without a Federal OPID?
A: Yes. Registration (and fee) is required of Class 1 pipelines transporting gas from unconventional wells. Class 1 mileage must be reported and such operators should report zero miles for class 2, 3 and 4. When the operator does not have a DOT ID number, leave that space blank.

Q: If a pipeline operator only operates non PHMSA jurisdictional pipelines (i.e. Production lines or class 1 Gathering lines) are there any PUC requirements that they should be aware of? Specifically, is there any registration required of non DOT jurisdictional pipeline operators.
A: Entities which are completely exempt from PHMSA jurisdiction are not required to register as pipeline operators. The Commission is seeking comment on the issue of registration of production and class 1 pipelines which have distribution service such as farm taps. Staff's present understanding is that PHMSA considers farm taps as regulated distribution service regardless of class location.

Jurisdiction in General

Q: Class 1 pipelines are not subject to Part 192. Why are you collecting Class 1 locations and miles?
A: Simply for informational purposes.

Q: Companies that engage in well production certainly know which of their wells are conventional or unconventional. However other separate companies that gather gas are not provided that information and gas from different well types may be commingled. If a company cannot confirm that its class 1 facilities carry only unconventional well gas, is that a basis on which to not report the location and mileage for facilities that may carry some class 1 unconventional well gas?
A: We want pipeline operators to make a reasonable, good faith effort to determine the source of gas transported over its pipelines such ask asking the suppliers or estimating the source of gas by factors such as pressure or BTU content. To the extent mixed conventional and unconventional gas is carried on the same pipeline, your comments should address what thresholds the Commission should adopt to trigger registration and country of manufacture reporting.

The PA 811 Once Call System Regional Liaison that covers Centre County is Jim Larkin; they also conduct educational presentations. He can be reached at 570-212- 2938.
If you need anything further, please let me know. Please extend our sincere thanks to the CCNGTF, and thank you again, Sue, for your kind assistance.
Regards,
Julie

Julie Kollar
Director
Water Resources Education Network (WREN) a project of the
League of Women Voters of Pennsylvania Citizen Education Fund
267-468-0555 Email: juliekwren@verizon.net
Please visit the WREN websites: www.sourcewaterpa.org and www.waterwisepa.org
With funding, resources, and networking opportunities, the WREN Project supports community-based efforts across Pennsylvania to build an informed citizenry who will protect local water resources with water friendly public policies and hands on work.