

Resources:

U.S. Department of Transportation – Pipeline & Hazardous Materials Safety Administration (PHMSA) www.phmsa.dot.gov

The mission of the Pipeline and Hazardous Materials Safety Administration (PHMSA) is to protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives. PHMSA develops and enforces regulations for the safe operation of the nation's 2.6 million mile pipeline transportation system and the nearly 1 million daily shipments of hazardous materials by land, sea, and air.

Pipelines and Informed Planning Alliance (PIPA) www.PIPA-info.com

The Pipelines and Informed Planning Alliance (PIPA) is a stakeholder initiative led and supported by the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA). PIPA's goal is to improve safety for the communities that surround large-diameter, high-pressure transmission pipelines. PIPA works toward this goal by promoting effective communication among stakeholders, raising awareness of pipelines, and sharing recommended practices to reduce pipeline risks to the public.

Common Ground Alliance (CGA) www.commongroundalliance.com

Common Ground Alliance (CGA) is a member-driven association of 1,700 individuals, organizations and sponsors in every facet of the underground utility industry. Established in 2000, CGA is committed to saving lives and preventing damage to underground infrastructure by promoting effective damage prevention practices.

Pipeline Safety Trust (PST) www.pstrust.org

The Pipeline Safety Trust (PST) is a nonprofit public charity promoting pipeline safety through education and advocacy by increasing access to information, and by building partnerships with residents, safety advocates, government, and industry, that result in safer communities and a healthier environment.

Dig Safe System, Inc. www.digsafe.com

Dig Safe® is a member utility-funded call-center that notifies participating utilities of planned excavation in proximity to their underground equipment. Utilities, in turn, mark out the locations of their equipment to be avoided. In New Hampshire, gas, electric, telephone, cable television and public water companies whose rates are regulated by the N.H. Public Utilities Commission, are required to join. Dig Safe is a free service that can be accessed by homeowners and contractors by calling 811 at least 72 hours in advance of digging.

Nashua Regional Planning Commission (NRPC) www.nashuarpc.org

Established in 1959, the Nashua Regional Planning Commission (NRPC) is the oldest of New Hampshire's nine regional planning commissions. Formed by the City of Nashua and the Town of Hudson to address highway congestion and coordinate land use development, that same spirit of regional cooperation and problem-solving characterizes the commission's activities today.

Now serving 13 municipalities, including Nashua and Hudson as well as Amherst, Brookline, Hollis, Litchfield, Lyndeborough, Mason, Merrimack, Milford, Mont Vernon, Pelham, and Wilton, the Commission focuses on developing and implementing innovative planning strategies that preserve and improve the quality of life in Southern New Hampshire.



Managing Land Use Near a Pipeline with Best Management Practices

A Guide for Planning Boards and Municipal Staff

Land use changes and development near natural gas transmission pipelines can create risks to communities, property owners, developers, and the pipeline operator. New Hampshire allows communities to incorporate zoning regulations (RSA 674:16), subdivision and site plan development regulations (674:36 and 674:44 respectively) and building permit requirements (subject to various applicable law) that can be utilized to help insure safety and wise management of land uses when new development or construction is proposed adjacent to natural gas transmission pipelines. Even though private individual easement agreements between pipeline operators and property owners specify what can and cannot be done within the pipeline easement itself, the local community can take extra steps if it desires to further mitigate potential hazardous situations.

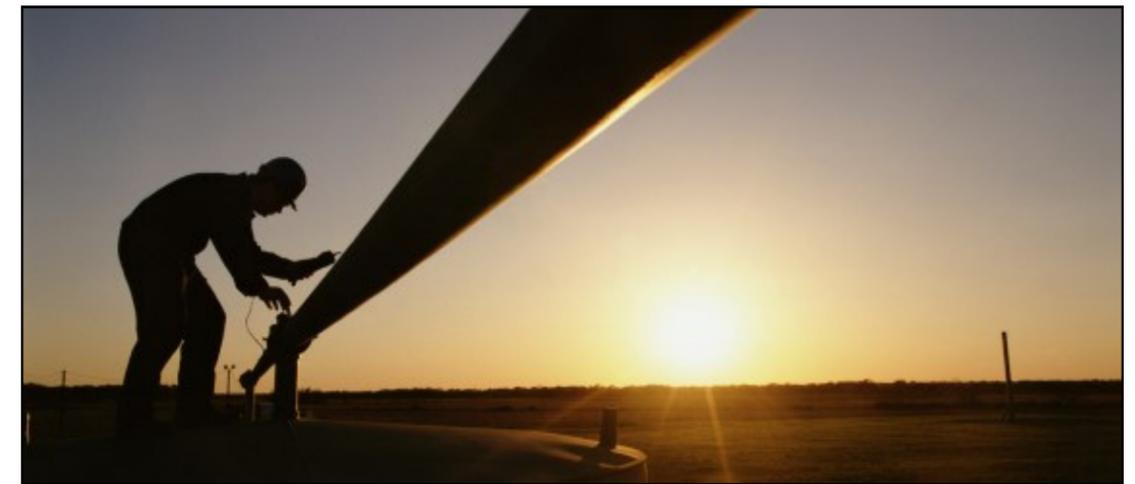


Photo taken from HUFFPOST ALBERTA (http://www.huffingtonpost.ca/2014/02/18/rocky-mountain-house-pipeline-_n_4809651.html) Accessed 8/26/16
Image by Allan Shoemaker (via Getty Images)

Based on research and a comprehensive legal review, Nashua Regional Planning Commission (NRPC) determined that following best management practices (BMPs) give your community regulatory and administrative options and tools if it wishes to adopt additional requirements associated with any natural gas transmission pipeline. These BMPs are based on national guidance from Pipelines and Informed Planning Alliance (PIPA)*, a collaborative effort initiated by the US Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) that included a wide spectrum of stakeholders, including property owners and developers, the real estate industry, local, state and federal government, fire marshals and emergency management professionals, the public, and the pipeline industry. The list of recommendations has been condensed from PIPA's comprehensive list of "Baseline" and "New Development" BMPs. Throughout the country BMPs have been adopted in partnership with pipeline operators that utilize these same strategies.

This guides and supplements NRPC's document, ***WHEN A PIPELINE COMES TO TOWN, a Readiness Checklist for Community Governing Bodies***, which provides recommended minimum actions to be taken by your local governing body to plan for pipeline safety.

*Source: Pipelines and Informed Planning Alliance. (2010, November). Partnering to Further Enhance Pipeline Safety In Communities Through Risk-Informed Land Use Planning; Final Report of Recommended Practices. Retrieved from <http://primis.phmsa.dot.gov/comm/publications/PIPA/PIPA-Report-Final-20101117.pdf>

BEST MANAGEMENT PRACTICES

Actions a PLANNING BOARD can Take:

- ⇒ **Add requirements for the identification and location of pipeline and associated easements, and easement restrictions in your community's subdivision, site plan or development regulations.**

Pipeline locations and easements should be shown on any plan to be approved by the Planning Board along with notes on the plan that may further explain any conditions or restrictions associated with the pipeline. This will also alert affected stakeholders of any potential impacts from the proposed land use change during the plan review process.

- ⇒ **If the community utilizes development application checklists, add requirements that any applicant for a land use change that includes the location of a natural gas transmission pipeline on the property must provide evidence of "consultation" with the specific pipeline operator.**

Early communication between the applicant and the pipeline operator is strongly recommended to avoid potential risk. The Planning Board needs to know that the pipeline operator is aware of the potential land use change and that the pipeline operator validates that there is no impact or that there are specific conditions that must be met and noted on any development plans to be approved.

- ⇒ **Adopt a pipeline safety overlay zoning district.**

An overlay district is an additional "layer" of zoning targeted to a particular area or use that requires specific land use considerations. NRPC has developed a model ordinance, the "Pipeline Safety Planning Area Overlay District" based on the PIPA model ordinance and other ordinances found throughout the country which can be tailored to meet your community's needs.

Actions MUNICIPAL STAFF can Take:

- ⇒ **Revise development applications and checklists and building permit applications to incorporate Planning Board adopted regulations.**

Utilize the PIPA Land Use & Development Near Transmission Pipelines Checklist for Planning, Design, Communication, Permit and Site Plan Review as a guide for local revisions.

- ⇒ **Make resources available for property owners, realtors, developers, surveyors and engineers (i.e. pipeline developer's handbooks, and information sheets).**

- ⇒ **Display maps that show properties affected by pipeline and any additional zone requirements.**

- ⇒ **Make available GIS mapping of any pipeline corridors – either by municipality and/or NRPC.**

- ⇒ **Amend the official zoning map if a corridor district is established.**

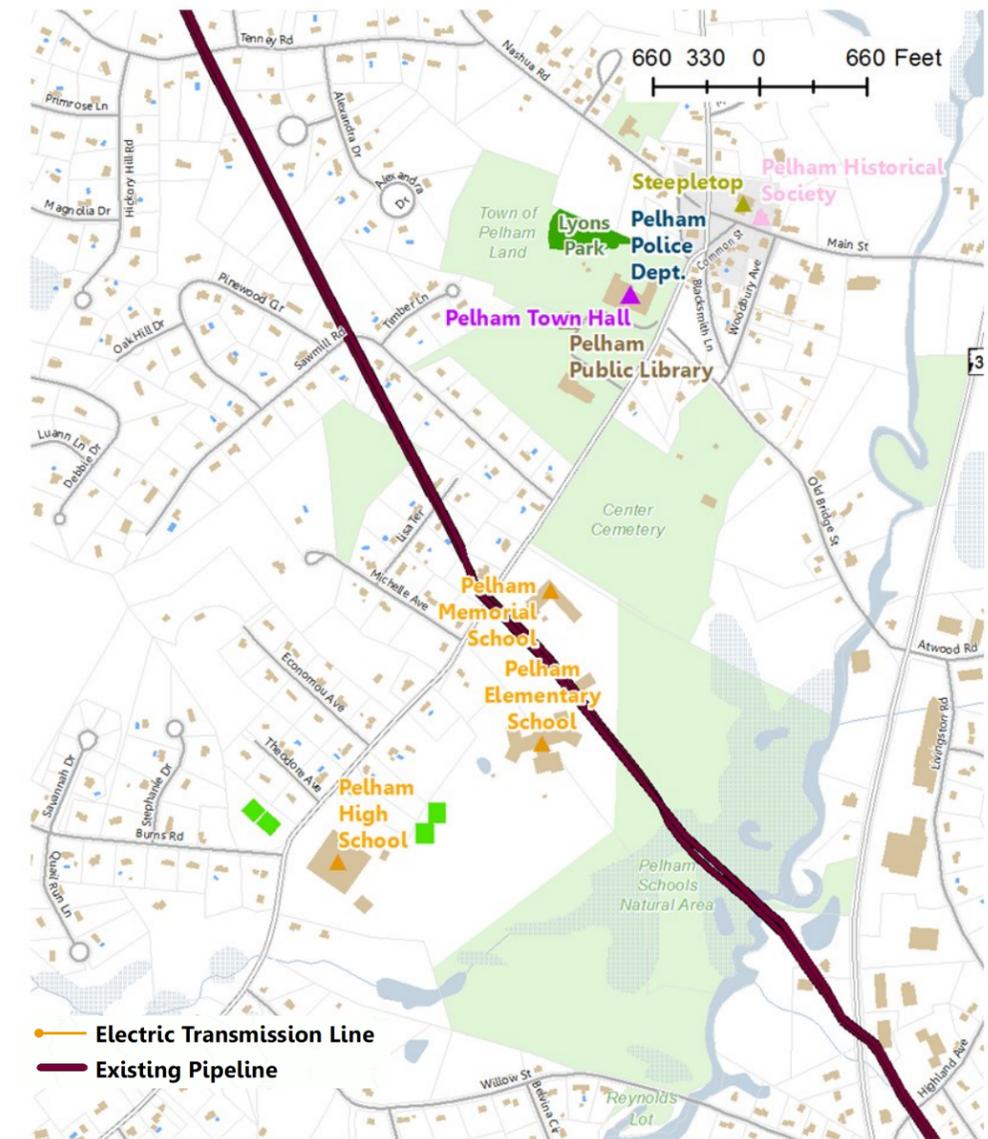
- ⇒ **Identify affected parcels and their associated property files and incorporate easement documents for reference to be available for property owners, realtors, developers, contractors, surveyors and engineers.**

- ⇒ **Establish and maintain good communication channels and protocols between appropriate emergency management personnel, first responders, municipal departments, town officials, and the pipeline operator(s).**

BEST MANAGEMENT PRACTICES

In Conclusion...

The best management practices included in this guide may or may not be appropriate for your community, or perhaps your current regulations adequately address safety and risk management associated with natural gas transmission pipelines. These practices can be utilized simply to advise and recommend or can be incorporated into your land use regulation requirements. As stated by PIPA, the key to pipeline safety is communication, education, and awareness between stakeholders (the property owner, developer, municipality, and the pipeline operator) as early in the land development and construction process as possible.



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BEST MANAGEMENT PRACTICES

BMP 11—Reduce Transmission Pipeline Risk in the Design of Any New Residential, Commercial, Industrial, Institutional, Public Facility, Mixed-Use Developments and New Places of Mass Public Assembly

The Town and developer must take into consideration many factors when new development of any kind is proposed adjacent to a transmission pipeline right-of-way, and communication and coordination with the pipeline operator is essential. New developments should be designed to reduce any potential consequences that could result from a transmission pipeline incident and must allow adequate access for operations and maintenance. Landowners and developers need to be aware of what is permitted by the pipeline right-of-way agreement with respect to right-of-way encroachments. Locating structures away from the right-of-way, incorporating more stringent building fire safety measures, ensuring safe and adequate evacuation routes (both within structures and in the site development area to ensure safe ingress and egress with no blocked routes), and requiring emergency response plans should be considered. National Fire Protection Association (NFPA) codes and International Building Codes (IBC) provide critical minimum standards for building egress, capacity, arrangement, location, and flammable and combustible material storage and these should be incorporated in any building and site design.

BMP 12—Consider Transmission Pipeline Operation Noise and Odor in the Design and Location of New Residential, Commercial, Industrial, Public Facility, Mixed-Used Developments and Places of Mass Public Assembly

Coordination between the Town, developer and pipeline operator is essential during the planning phase for new land uses and developments of any nature so that exposures and impacts from transmission pipeline operations are minimized. Noise, odor and emissions that may occur from adjacent transmission pipeline facilities may include but not be limited to compressor station machinery, start-up and shut-down activities, relief valves, and necessary repairs.

BMP 13—Include Site Emergency Response Plans in Land Use Development Planning

Effective emergency response planning can reduce the risk of a potential transmission pipeline incident by providing for timely response and situational control. When developments are in the planning stage, the developer and Town should ensure the participation of emergency responders and the pipeline operator so that emergency access routes and turnarounds, security, construction activities, triage and staging areas, and water supplies are incorporated into the final development plans.

AND...Once the Planning Process is Completed and Prior to Construction, Excavation, and Blasting: :

- ⇒ The developer should consult with the pipeline operator
- ⇒ The developer should provide the Town with copies of any documentation or agreements with the pipeline operator
- ⇒ The developer must contact 811/Digsafe, and
- ⇒ The developer should install temporary markers on the edge of the transmission pipeline.

BEST MANAGEMENT PRACTICES

“Early communication among stakeholders can help ensure that development plans minimize risks to people living or working nearby, and be consistent with the needs and legal rights of property owners, developers, and the pipeline operator.”

- Pipeline and Informed Planning Alliance

BMP 1—Gather Information for Design of Property Development Near Transmission Pipelines

Early in the planning phase of any development or construction project, the property owners or developers should seek all available information on any existing or proposed pipeline facility and contact the appropriate Town department about land use requirements, use 811 (Dig Safe) to contact the pipeline operator and set up a meeting, obtain the pipeline operator’s development handbook, and obtain easement width, easement restrictions, and what land uses are acceptable within the pipeline right-of-way or adjacent to it. Find out if the Town has ‘Planning Area’ or ‘Consultation’ requirements and what the local Zoning Ordinance allows.

Pipeline operators, through their easement agreements, may allow with restrictions, or may not allow land uses such as agriculture, storm water and erosion control, hiking trails, landscaping, and parking, and structures ranging from temporary tents and canopies, play equipment, and fences to roadway crossings and utilities.

BMP 2—Coordinate Property Development and Design With Pipeline Operator

Early in the planning phase of any development or construction project, and well in advance of the construction phase, the property owner or developer should coordinate with the pipeline operator and Dig Safe to ensure the precise location of underground facilities to preclude costly redesign and even to take advantage of opportunities to use the pipeline easement (right-of-way) in a beneficial way before any construction or excavation occurs. If the Town has ‘Planning Area’ or ‘Consultation’ requirements it may require this information prior to the start of any site work.

BMP 3—Collaborate on Alternative Uses of Pipeline Right-of-Way

Transmission pipeline rights-of-way may have the potential to be used for Town, property owner, and developer benefit to create open space, parks, trails, and other recreation uses while maintaining the safety and integrity of the pipeline required by the pipeline operator. Early communication between the stakeholders can identify whether alternative uses are feasible and practical.

BMP 4—Allow for Subdivision and Site Planning Flexibility in Developing Open Space Along Pipeline Rights-of-Way

If your Town has open space subdivision or cluster regulations that allow for flexibility in design and density flexibility to accommodate environmental constraints, consider allowing for the same flexibility to address both public and pipeline operator safety concerns.

BEST MANAGEMENT PRACTICES

BMP 5—Record Transmission Pipeline Easements on Final Subdivision and Site Plans

Delineating easements on all final subdivision and site plans is commonly required by Planning Boards in the NRPC region. If this is not a requirement in your Town, consider incorporating it in any checklist and as necessary on plans prior to final approval, as well as identification of the pipeline operator. Recorded land records are a primary source for property records research and should show transmission pipeline easements.

BMP 6—Locate New Parking Lots and Structures Adjacent to Pipeline Rights-of-Way

Parking lots and parking structures can provide both low occupant density and lower risk land use adjacent to a pipeline right-of-way, and human occupancy is short term. If designed and located adjacent to a pipeline right-of-way they serve to minimize the exposure of other occupied structures during a pipeline incident. If Town regulations or policy encourages this, then design of parking lots and structures should limit loading that could damage the pipeline, take into account methods to allow for leak detection such as landscape strips, vent pipes and sensor strips, accommodate proper storm water design to prevent excess runoff into the right-of-way, and if landscaped, the vegetation should be planned so that its root system does not damage the subsurface pipeline and the design and layout must allow access for pipeline maintenance and inspections. Any encroachment into the right-of-way would, of course, require pipeline operator approval which should be noted on any final approved plans.

BMP 7—Reduce Transmission Pipeline Risk When Designing and Locating New Roads

Design and construction of new roads and their appurtenances (such as bridges, tunnels, culverts, sound barriers, medians, signage, and signals) requires careful planning and coordination between the Towns, the developer, builder and the pipeline operator so that the pipeline is not adversely affected. Considerations include such concerns as ensuring adequate depth of cover for the pipeline, proper road sub-grade, and load carrying capacity. Risk can be avoided by not locating intersections near a transmission pipeline right-of-way (thus decreasing exposure for motorists at the intersection and not disturbing traffic when pipeline maintenance is required); locating new roads perpendicular and not parallel to the right-of-way so as to reduce loads on the pipeline and construction conflicts; identifying alternative emergency access routes; and ensuring appurtenances do not interfere with either pipeline operator access or pipeline operational integrity.



BEST MANAGEMENT PRACTICES

BMP 8—Reduce Transmission Pipeline Risk When Designing and Locating New Utilities, Water Supplies, and Septic Systems

Like with new roads, the design and location of both above and below ground utilities and related infrastructure near transmission pipeline rights-of-way should be carefully planned and coordinated between the Towns, developer, utility companies, builder, property owner and the pipeline operator to avoid costly relocation of the pipeline or potential conflict with pipeline operations and maintenance. Considerations include the existing pipeline horizontal and vertical alignment; necessary offset distances; pipeline operations and maintenance; emergency access; and 'migration paths' that could allow leaks from the pipeline to migrate to buildings.

Individual wells, small water supply systems, and septic systems must be properly located when planned in proximity to a transmission pipeline right-of-way to avoid potential excavation and drilling damage to the pipeline. Facilities should be adequately identified and located so there is no potential impact from equipment on the right-of-way.

BMP 9—Reduce Transmission Pipeline Risk When Designing and Locating Aboveground Water Management Infrastructure

Coordination between the Town, developer, builder, and pipeline operator is essential to ensure the proper design of storm water, irrigation, and other above-ground water management facilities. These can provide a separation buffer to reduce the risk between occupied structures and a transmission pipeline to reduce the risk or mitigate the impacts from a pipeline incident. Systems should be designed to not cause erosion or compromise soil stability or soil cover above the pipeline; culverts and at-grade drainage systems should not allow a potentially hazardous liquid or denser-than-air gas release from the pipeline to enter the drainage flow path; emergency responders need to be aware of potential flow path situations; and potential for environmental contamination further downstream and into sensitive areas needs to be identified. Vegetated strips and other 'soft', non-structural storm water treatment methods may indeed be compatible with pipeline operations and maintenance.

BMP 10—Plan and Locate Vegetation and Landscaping to Prevent Interference With Transmission Pipeline Activities

Trees and other vegetation should be located and controlled so as not to impede the pipeline operator's ability to access, inspect and maintain the transmission pipeline, nor should vegetation and landscaping prevent emergency access for first responders. Additionally, the root systems of trees and landscaping can physically impact the pipeline and its protective coating. Property owners, developers, the Town, and the pipeline operator should communicate and work together to make sure landscaping choices are acceptable.