

The Need For Better Planning Near Pipelines

This briefing paper acts as an introduction to a number of other reports and resources about planning near pipelines. If you want to know more, please follow the links and read the information to acquire a more complete understanding of the issues surrounding land use planning near pipelines. The Trust's [Local Government Guide to Pipelines](#) also includes more information about this important issue.



Figure 1 – 1990



Figure 2 – 2002

Aerial views of an area of a Washington county. Red line indicates pipeline location.

The majority of the large transmission pipelines in this country were put in the ground decades ago in what at the time were predominantly rural areas. As our communities have grown, more and more neighborhoods and businesses have been built near these once rural pipelines. Development near these

large pipelines increases the risk to the people living near them in the rare event of a pipeline failure. It also increases the risk that the pipelines could be damaged, putting people in harms way.

History of various planning near pipelines efforts

To better understand issues related to land use planning, PHMSA, in conjunction with the Federal Energy Regulatory Commission (FERC), sponsored a comprehensive study of land use practices, zoning ordinances, and preservation of environmental resources on transmission pipeline rights-of-way (ROW). In an [October 2004](#) report, the Transportation Research Board (TRB) recommended that PHMSA “develop risk-informed land use guidance for application by stakeholders.”

In response, PHMSA initiated and supported a collaborative effort - The Pipelines and Informed Planning Alliance – made up of land use planning and pipeline safety stakeholders to implement the recommendations from the TRB study.

The Pipelines and Informed Planning Alliance (PIPA) participants represented a wide spectrum of stakeholders, including: property developers; the real estate industry; local, state, and federal government; fire marshals; the public; and the transmission pipeline industry. Over 150 PIPA participants worked in three separate Task Teams to consider and develop recommended practices related to protecting communities, protecting transmission pipelines, and ensuring better communication among stakeholders. The PIPA initiative began in January 2008 and has resulted in several recommended practices related to risk-informed land use planning and development adjacent to transmission pipelines.

The final PIPA report including the recommended practices can be downloaded by clicking [here](#). Here is the associated report from PHMSA that helps communities understand risk - Building Safe Communities: Pipeline Risk and its Application to Local Development Decisions.

Local Government efforts

A handful of local governments around the country have used land use planning and their zoning and permitting authority to try to increase the safety for people living near pipelines.

The Municipal Research Service Center, a nonprofit that serves cities and counties in Washington State, has a valuable website collecting a variety of information about planning near pipelines. The site includes a two-part webinar, featuring Carl Weimer of the Pipeline Safety Trust and Jim Doherty of the MRSC, providing background and advice to local governments seeking ways to increase the safety of their residents living near pipelines. The MRSC website also captures many of the examples of local land use ordinances showing the variety of ways municipalities have chosen to try to improve safety around existing pipelines including mandatory consultation between a developer and a pipeline operator, and in some cases imposing setbacks from existing lines for new construction. [Planning Near Pipelines website - Municipal Research and Services Center of Washington](#).

The Trust also maintains a website on planning near pipelines here: <http://pstrust.org/trust-initiatives-programs/planning-near-pipelines>.

Some of you are familiar with a concept used when talking about natural gas pipelines – the potential impact radius, or “PIR.” This is the area within which people and buildings will be destroyed by a natural gas pipeline rupture that ignites and explodes. Some local governments use a variation of the PIR in their planning ordinances relating to pipelines. This concept of a PIR comes from a study, [A Model For Sizing High Consequence Areas Associated With Natural Gas Pipelines](#), now relied on by PHMSA in defining PIR in its regulations for use in defining high consequence areas for natural gas transmission lines. Unfortunately, the PIR does not take into account the length of time before a line’s valves can be closed and the remaining gas in the pipe is released. During that time, the pipeline will continue to act like a giant blowtorch, fueling whatever structural fires are nearby. The resulting fires can encompass an

area much larger than the original PIR. There is also concern that the PIR calculation is not accurate and underestimates the size of affected area for very large diameter pipes operating at high pressure.

The former PHMSA program manager in charge of the PIPA implementation team spoke at the Trust's mini-conference in Salt Lake City further describing the PIPA report and current implementation efforts. You can see a video of her presentation [here](#). Other related presentations and all slides of the "Planning near Pipelines" session are available [here](#) (scroll near the bottom of the link).

The Trust's annual conference in New Orleans has also featured sessions on planning near pipelines or closely associated issues. See the following for links to presentation slides (videos of the same sessions may also be available by choosing the video link at the top of the webpage):

2014 conference, breakout Session on "[New local government efforts on pipeline safety](#)"

2013 conference, breakout Session on "[Local authority – what's allowed / what's pre-empted? Why so much confusion?](#)"

Moving Forward

The PIPA report is just the beginning and there is still much more to do to make this an effort that can continue to provide local governments the tools they need to address pipeline safety within their jurisdictional limits. The two main things that need to happen next are:

- 1) 1. This information needs to continue to get into the hands of local governments, with technical assistance available to help them implement the recommendations that make sense in their areas. It is hard to get the word out to thousands of local governments about adopting a new set of ordinances, make sure they get the right information and have support as they go through the process. As planning departments often are stretched thin, few local governments have the staff time available to take on a new project that no one is requiring and no one is paying for. Just drafting and posting the report on a website is not enough! Industry and PHMSA thought PIPA was important enough to participate in while the report was being negotiated, and also need to continue by paying for and participating in its implementation.
- 2) 2. The first effort from PIPA focused on new development near existing pipelines. We now need to turn this equation around and help provide recommendations for new pipelines near existing development. While this was discussed during the first round of PIPA, the development of such ideas was put off because of concerns raised by FERC and the pipeline industry.

Following are two pictures showing pipelines through residential areas and passing schools.

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Can you tell which picture represents new development near an existing pipeline (covered by PIPA), and which is a new pipeline placed near existing development (off limits for PIPA)?



It doesn't make sense to talk about trying to avoid risks with better planning of new development near pipelines and not talk about avoiding risk by better planning of new pipelines near houses.

News articles about housing/pipeline conflicts:

Calif. pipeline explosion raises concerns in Pasco <http://www.tri-cityherald.com/2010/09/27/1185030/gas-pipeline-explosion-in-california.html#ixzz17DkykwYN>

<https://groups.yahoo.com/neo/groups/safepipelines/conversations/topics/16779>

<https://groups.yahoo.com/neo/groups/safepipelines/conversations/messages/26685>

School Closures - Two elementary schools - one in California and one in Texas - are closed by local school boards because of proximity to pipelines:

Quick closure of N. Sacramento school debated - This story describes the quick closure of this California elementary school after the school district received a risk analysis about nearby pipelines. The risk assessment can be downloaded [here](#).

School Board votes to close Pumphrey Elementary School. This link will download a document that includes all the stories regarding this closure of an elementary school in Texas near Houston. The risk analysis that was used to make this decision can be downloaded [here](#).

The Pipeline Safety Trust is a member of



And since we're on the subject, the next paper will be pipeline routing. Stay tuned.