landowner's guide to pipelines

- safety
- responsibilities
- your rights

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September 2011

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Contents

Preface

This Guide is intended to provide a landowner basic information about the pipeline system, how pipelines are operated and regulated, what rights and responsibilities you may have as a current or future landowner with a pipeline on your property, and where to find more information. We describe all the different types of pipelines in this guide, but much of the discussion about property rights, easements, and eminent domain is more pertinent to the large transmission and gathering pipelines, than to the small distribution lines that deliver gas to our homes and businesses.

These are complex issues in a very complicated regulatory system. If you have specific questions about your legal rights and responsibilities, please contact a qualified, experienced attorney in your state who is familiar with the issues involved. If you already have a pipeline on your property, please familiarize yourself with the terms of the easement allowing the pipeline's presence. Understand what limitations the easement may impose on your use of the property and what obligations it may impose on the pipeline company during construction and operation and after abandonment of the line.

While we hope this guide provides you with enough information to better understand pipelines so you can protect yourself, your family and your property, in many ways we are only scratching the surface in this guide. If you find that you want to know more, below are some great places to start.

- The Pipeline Safety Trust website - *www.pipelinesafetytrust.org*
- The Pipeline and Hazardous Materials Safety Administration's stakeholder communication website - *www.primis.phmsa.dot.gov/comm/*
- Or to join the discussion regarding pipeline safety nationwide, and learn about news regarding pipelines from across the country, go to the following website to join the Safepipelines news and discussion group - *www.tech.groups.yahoo.com/group/safepipelines/*

This Landowner's Guide was made possible in part by a Community Technical Assistance Grant from the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration. This grant program provides local governments and community groups with up to $50,000 "for technical assistance in the form of engineering or other scientific analysis of pipeline safety issues and to help promote public participation in official proceedings." You can learn more about this grant program and what other communities have done with this grant money by visiting *www.primis.phmsa.dot.gov/tag/.*

Introduction to Pipelines

There are over 2.5 million miles of pipelines in the United States. Who regulates pipelines and under what set of regulations depends on what the pipeline carries, how much it carries, and where it goes. Pipelines are categorized into several types:

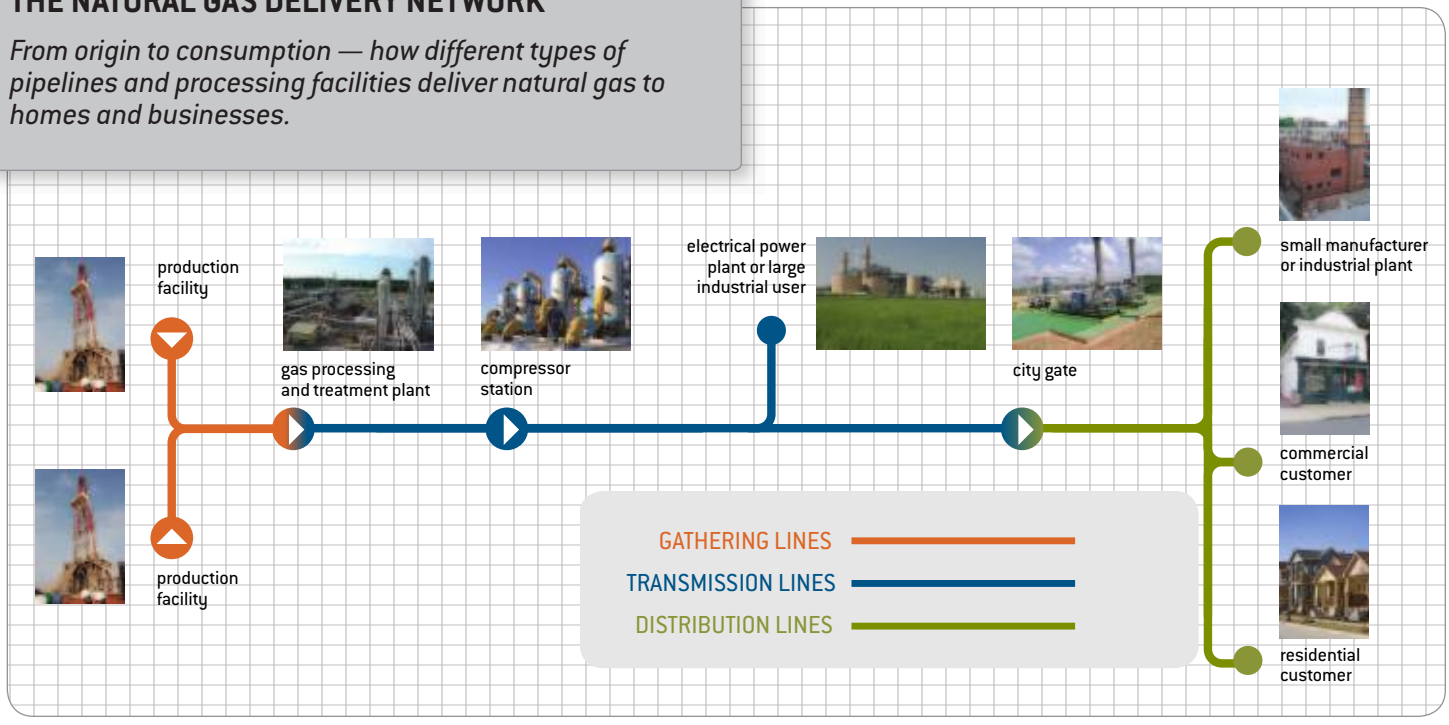
- **Hazardous Liquid pipelines** carry crude oil and refined fuels such as gasoline, diesel and jet fuel.
- **Natural Gas pipelines** carry natural gas.
- **Transmission pipelines** are the large lines that move gas and liquids long distances around the country, often at high pressures.
- **Distribution pipelines** are smaller lines that deliver natural gas to our individual homes and businesses.
- **Gathering pipelines** transport gas and crude oil away from the point of production (wellhead) to another facility for further refinement or to transmission pipelines.
- **Interstate pipelines** are lines that cross state boundaries.
- **Intrastate pipelines** are those that operate entirely within one state. Some large pipelines that cross state boundaries are classified as intrastate if the pipeline ownership changes at the state line.

THE CURRENT U.S. PIPELINE SYSTEM

- 175,000 miles of onshore and offshore Hazardous Liquid pipelines;
- 321,000 miles of onshore and offshore Gas Transmission and Gathering pipelines;
- 2,066,000 miles of Natural Gas Distribution mains and service pipelines

THE NATURAL GAS DELIVERY NETWORK

From origin to consumption — how different types of pipelines and processing facilities deliver natural gas to homes and businesses.



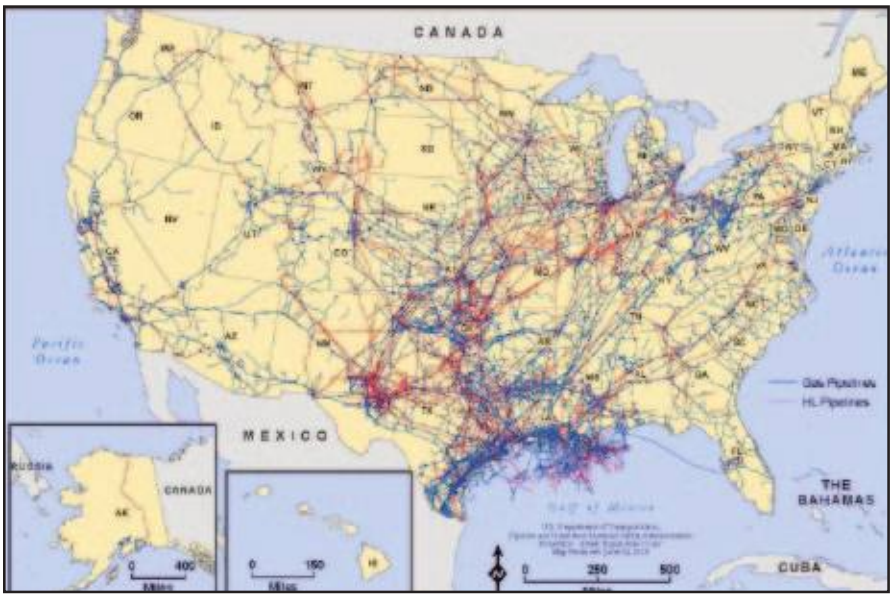
How Do Pipelines Work?

Natural Gas Pipelines

Natural gas is moved through transmission pipelines as a result of a series of compressors creating pressure differentials – the gas flows from an area of high pressure to an area of relatively lower pressure. Compressors are powered by electric or natural gas fired engines that compress or squeeze incoming gas and push it out at a higher pressure. Natural gas is compressed in transmission pipelines to pressures typically ranging from 500 to 1400 pounds of pressure per square inch. Compressor stations are generally built every 50 to 100 miles along the length of a transmission pipeline, allowing pressure to be increased as needed to keep the gas moving. The "city gate" is where a transmission system feeds into a lower pressure distribution system that brings natural gas directly to homes and businesses. The city gate is typically the location where odorant is added to the gas, giving it the characteristic smell of rotten eggs.

Hazardous Liquid Pipelines

Gathering lines bring crude oil out of production areas and to larger transmission lines that often take the crude oil to refineries. Once the crude oil has been refined, transmission lines carry the refined products to end-users or to storage and distribution facilities for transportation to consumers. The product is pushed through the pipeline by large pump stations situated every 20-100 miles along the line depending on the product, terrain and pressure the pipeline is operating at. Most liquid fuels move through the pipeline at between 3 to 8 miles per hour. It is estimated that the cost of transporting the crude oil and then the refined products through the pipeline network adds about two and a half cents to the cost of a gallon of gas at the pump.



HAZARDOUS LIQUID AND GAS TRANSMISSION PIPELINES

A national network of transmission pipelines moves fuel to millions of people every day.

Who is Responsible for Regulating Pipeline Safety?

Regulating the Construction, Operation, Inspection and Maintenance

Ultimately the U.S. Congress has responsibility for setting the framework under which pipeline safety regulations operate in the country. The U.S. Department of Transportation through the Pipeline and Hazardous Materials Safety Administration (PHMSA) is then primarily responsible for issuing and enforcing the minimum pipeline safety regulations for the country. The federal pipeline safety laws do allow for states to accept the responsibility to regulate, inspect, and enforce safety rules over intrastate pipelines within their borders under an annual certification from PHMSA. If a state receives such intrastate authority they can set regulations that are more stringent than what PHMSA sets as long as the state rules do not conflict with the federal regulations. PHMSA also can enter into an agreement with the state pipeline regulator to carry out the federal inspection regulations on portions of interstate pipelines as well. Local governments are not allowed to create regulations regarding the operations of pipelines.

Regulating Development Near Pipelines

State and local governments can regulate development near pipelines with their land use authority. When pipelines need to cross government lands, state and local governments can negotiate terms of the easement or franchise relating to pipeline locations, availability of information and maintenance of the right-of-way. They can also enact regulations governing the types of structures that can be built near existing pipelines, requiring consultation with the pipeline operator, establishing setbacks or a variety of other land use permit requirements. Very few local governments have used their planning, permitting and zoning authorities to try to increase safety around pipelines, but as more and more neighborhoods grow up around pipelines this authority will become increasingly more important. In 2010, the Pipelines and Informed Planning Alliance released a national report providing local government with recommended practices for considering the use of their land use authorities. That report can be found at: *www.pstrust.org/planningnearpipes.htm.*

Pipeline Inspections

Pipeline inspections are done by both the pipeline company and by the pipeline regulators. The majority of physical inspections are done by the pipeline companies. The requirements governing such pipeline inspections vary depending on the pipeline's contents, location and other factors. Inspections by pipeline companies take many forms, each

THE REGULATIONS

The overarching pipeline safety statutes that Congress has passed can be found in:
U.S. Code, Title 49, Subtitle VIII, Chapter 601

The minimum federal regulations adopted by PHMSA can be found in: Title 49 of the Code of Federal Regulations (CFR), Parts 190-199

WANT TO KNOW WHAT AGENCY IN YOUR STATE REGULATES PIPELINES, AND WHAT AUTHORITY THEY HAVE?

Go to pstrust.org/resources/regs/state_pol.htm to find out

MARKERS IN A RESIDENTIAL SETTING

Easily identifiable markers help homeowners know where major pipelines are placed, and where pipeline operator permission may be needed to do almost any type of construction, excavation, or landscaping.

with a different purpose. Some of those inspection techniques include:

- aerial fly-overs looking for leaks and activities that might damage the pipeline
- trucks driving the right-of way or an inspector on foot with leak detection equipment
- internal inspections performed by a "smart pig" (see photo below) – a machine that travels through the pipeline, loaded with a variety of sensors that can detect corrosion, dents, scratches or other weaknesses in the pipes
- physically digging up the pipeline and inspecting it

State and federal regulators also perform inspections, but these regulatory inspections mainly involve review of the company's paperwork to see if they are following the regulations, as well as some spot-checking of facilities and construction work. For more information about the types of inspections undertaken by regulators, visit: *www.primis.phmsa.dot.gov/comm/reports/operator/OperatorInspGlossary.html*

Emergency Response and Spill Response Planning

Federal regulations require emergency response plans for both liquid and gas pipelines, and also require that operators share those plans with local first responders. These emergency response plans contain information about what the pipelines contain, and how pipeline company personnel and emergency response agencies such as fire and police departments will implement pre-planned response in case of an emergency.

Hazardous liquid pipeline operators are also required to have spill response plans that detail how they will respond to clean up a spill if one should happen. The Oil Pollution Act of 1990 expressly allows states to institute additional spill response planning requirements for oil pipelines and facilities, but only a few have done so.

KENTUCKY SPILL

In the past five years, an average of over four and a half million gallons of hazardous liquids have spilled from pipelines each year, and more than sixty percent of that is never recovered. This picture shows the result of one such spill into the Kentucky River.

Who is Responsible for Siting New Pipelines?

For nearly all new pipeline siting, the pipeline company decides on a general route they prefer for their proposed pipeline, and possibly some alternative routes. Once they feel fairly confident with the feasibility of their chosen route, the more formal process with various government agencies begins. That process is not consistent for all types of pipelines, but varies greatly based on the type of pipeline and where it is to run. Pipelines that will cross international or state boundaries (interstate lines) have different siting processes than those that will stay within just one state (intrastate lines).

Siting of new interstate natural gas pipelines: For new interstate gas lines, once the pipeline company has a pipeline proposal and route in mind they must apply to the Federal Energy Regulatory Commission (FERC) for approval. That approval comes in the form of a Certificate of Public Convenience and Necessity from FERC. Before that approval is granted, FERC undertakes a complete environmental review that normally includes development of an environmental impact statement. The process is quite extensive and includes many opportunities for landowners to become involved. Many who have been through the FERC process question whether FERC's mission to provide energy to consumers across the nation sometimes trumps individual property owners' concerns and protection of the environment. There is a citizen's guide to the FERC process on its website: *www.ferc.gov/for-citizens/citizen-guides.asp.*

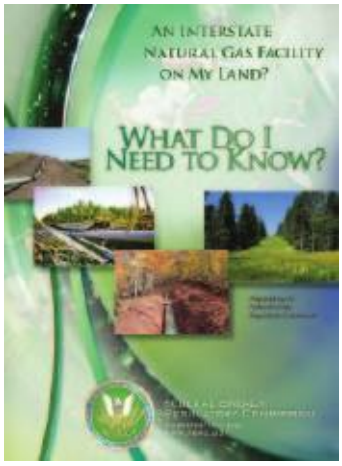
Siting of New Interstate Hazardous Liquid Pipelines

There is no complete federal permitting process for the routing of interstate hazardous liquids pipelines. If a pipeline crosses an international border (Canada or Mexico), then the U.S. State Department takes the lead on the proposal in a process similar to the one described for FERC above. If the pipeline does not cross an international border then the responsibility for approval of the pipeline route falls on the individual states, and if the state has no agency in charge of pipeline siting then the responsibility falls to the regular land use authority of local governments along the proposed route.

Siting of Intrastate Natural Gas and Hazardous Liquid Pipelines

The federal government plays no role in the siting of pipelines that are entirely within the borders of a single state. Several states have agencies charged with siting various energy facilities; in some instances that includes intrastate pipelines. If the state has no agency in charge of pipeline siting then the responsibility falls to the regular land use authority of local governments along the proposed route. Check with your state's pipeline regulator to find out if your state has an energy facility siting agency, and whether it has authority over pipeline siting decisions.

The construction phase of pipeline installation is a critically important time to ensure the long-term integrity of the pipeline. The following pages discuss a few of the issues dealt with during the construction phase that affect pipeline safety. These various safety precautions pertain mainly to gas transmission and regulated gathering pipelines. Some gathering and production lines are not required to follow these standards.



ONE SOURCE OF INFORMATION

The Federal Energy Regulatory Commission (FERC) provides a guide to help citizens understand and become involved in the process to locate and construct new interstate natural gas pipelines.

Pipeline Safety Requirements During Design and Construction

Choosing Pipe

Pipe sections are fabricated in steel rolling mills and inspected to assure they meet government and industry safety standards. Generally between 40 and 80 feet in length, they are designed specifically for their intended location in the pipeline. A variety of soil conditions and geographic or population characteristics of the route will dictate different requirements for pipe size, strength, wall thickness and coating material. Not all pipe is steel. Some low pressure gathering, transmission and distribution pipelines use other materials such as other metals, and nonmetallic material, such as plastic or composites.

Pipe Burial

Mechanical equipment, such as wheel trenchers or backhoes, is used to dig the pipe trench. Occasionally, rock drilling and blasting is required to break rock in a controlled manner. The material that is excavated during trenching operations is temporarily stockpiled on the non-working side of the trench. This material will be used again in the backfill operation. In some limited locations, horizontal directions drilling (HDD) as well as boring is used to place pipe.

The trenches are dug deep enough to allow for an adequate amount of cover when the pipe is buried. Federal regulations require that transmission pipelines and regulated type A gathering lines be buried at least 30 inches below the surface in rural areas and deeper (36 inches) in more populated areas. In addition, the pipeline must be buried deeper in some locations, such as at road and railroad crossings (36 inches) and crossings of navigable bodies of water (48 inches), and may be less in other locations such as when it is installed in consolidated rock (18 to 24 inches). The depth of burial must be according to these regulations at the time of burial, but there is nothing that requires this depth be maintained over time.

Welding of Steel Pipelines

To carry out the welding process, the pipe sections are temporarily supported along the edge of the trench and aligned. The various pipe sections are then welded together into one continuous length, using manual, semiautomatic or automatic welding procedures.

As part of the quality-assurance process, each welder must pass qualification tests to work on a particular pipeline job, and each weld procedure must be approved for use on that job in accordance with federally adopted welding standards. Welder qualification takes place before the project begins. Each welder must complete several welds using the same type of pipe as that to be used in the project. The welds are then evaluated by placing the welded material in a machine and measuring the force required to pull the weld apart. It is interesting to note that a proper weld is actually stronger than the pipe itself.

For higher stress pipelines over 6 inches in diameter, a second level of quality-assurance ensures the quality of the ongoing welding operation. To do this, qualified technicians sample a certain number of the welds (the sample number varies based on the population near the pipeline) using radiological techniques (i.e., X-ray or ultrasonic inspection) to ensure the completed welds meet federally prescribed quality standards. The X-ray technician processes the film in a small, portable darkroom at the site. If the technician detects certain flaws, the weld is repaired or cut out, and a new weld is made. Another method of weld quality inspection employs ultrasonic technology.

Coatings

Several different types of coatings may be used to coat the pipe at the factory and the joints made in the field, with the most common at this time being fusion bond epoxy or polyethylene heat-shrink sleeves. Prior to application, the bare pipe is thoroughly cleaned to remove any dirt, mill scale or debris. The coating is then applied and allowed to dry. After field coating and before the pipe is lowered into the trench, the entire coating of the pipe is inspected to ensure that it is free from defects.

Lowering and Backfilling

Once the pipeline is welded and coated, it is lowered into the trench. Lowering is done with multiple pieces of specialized construction equipment called sidebooms. This equipment acts in tandem to lift and lower segments of the assembled pipeline into the trench in a smooth and uniform manner to prevent damaging the pipe.

Once the pipeline is lowered into the ground, the trench is backfilled, to ensure that the pipe and its coating are not damaged. This is generally accomplished with either a backhoe or padding machine depending on the soil makeup.

Care is taken to protect the pipe and coating from sharp rocks and abrasion as the backfill is returned to the trench. In areas where the ground is rocky and coarse, the backfill material is screened to remove rocks or the pipe is covered with a material to protect it from sharp rocks and abrasion. Alternatively, clean fill may be brought in to cover the pipe. Once the pipe is sufficiently covered, the coarser soil and rock can then be used to complete the backfill.

As the backfill operations begin, the excavated material is returned to the trench in reverse order, with the subsoil put back first, followed by the topsoil. This ensures the topsoil is returned to its original position.

Valves and Valve Placement

A valve is a mechanical device installed in a pipeline and used to control the flow of gas. Some valves have to be operated manually by pipeline personnel, some valves can be operated remotely from a control room, and some valves are designed to operate automatically if a certain condition occurs on the pipeline. If a pipeline should fail, how quickly the valves can be closed and the distance between the valves are some of the main determinations for how much fuel is released.

Operating Pressure

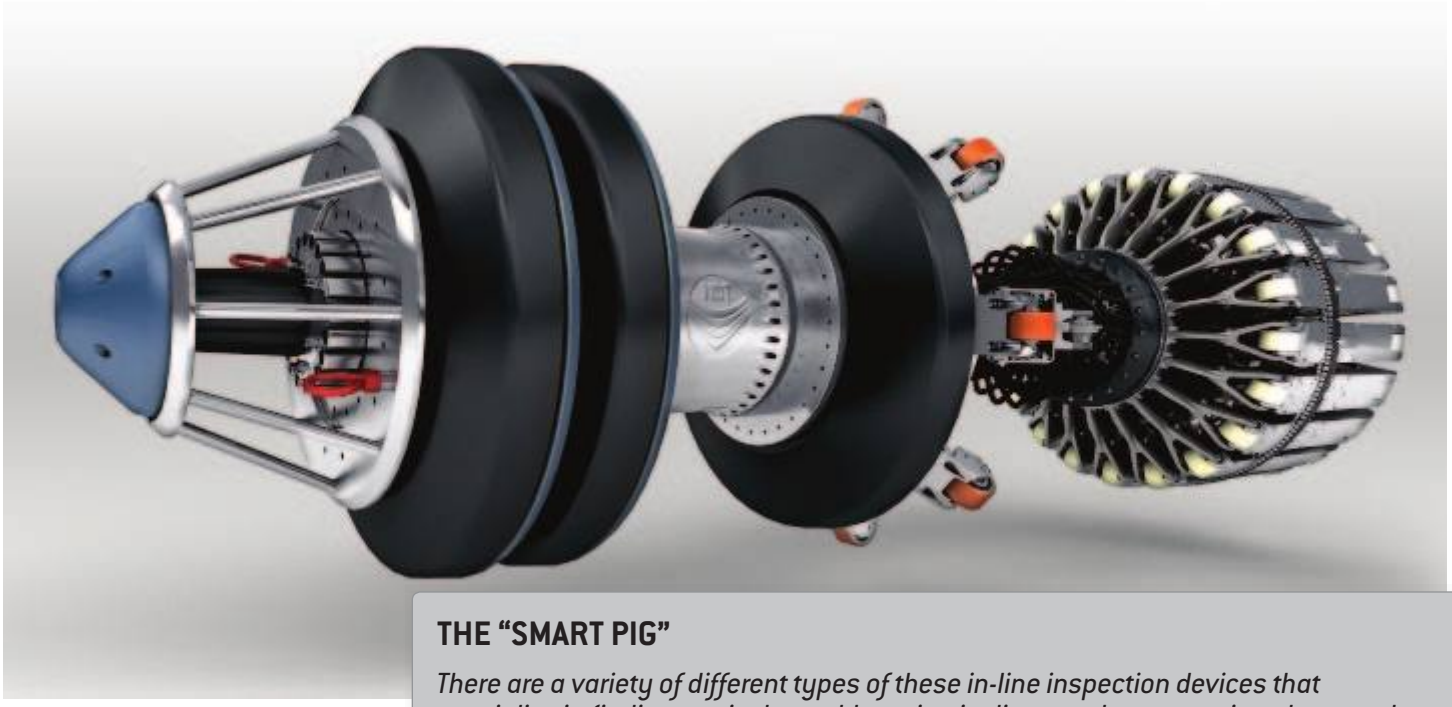
Maximum allowable operating pressure (MAOP) for natural gas pipelines, and Maximum operating pressure (MOP) for liquid pipelines, are the maximum internal pressure at which a pipeline or pipeline segment may be continuously operated. These pressures are set at levels meant to ensure safety by requiring that the pressure does not cause undue stress on the pipeline. How this pressure is determined is defined in federal regulations and is based on a number of different factors such as the location of the pipeline, pipe wall thickness, previous pressure tests, and the pressure ratings of various components.

Testing

Generally, but with certain exceptions, all newly constructed transmission pipelines must be hydrostatically tested before they can be placed into service. The purpose of a hydrostatic pressure test is to eliminate any defect that might threaten the pipeline's ability to sustain its maximum operating pressure plus an additional safety margin, at the time of the hydrostatic test. A pipeline is designed to a specified strength based on its intended operating pressure. Hydrostatic pressure testing consists of filling the pipeline with water and raising the internal pressure to a specified level above the intended operating pressure. Critical defects that cannot withstand the pressure will fail. Upon detection of such failures, the defects are repaired or the affected sec-

tion of the pipeline is replaced and the test resumed until the pipeline "passes".

Hydrostatic testing is not the only means for detecting pipe defects. For example, inline inspection (ILI) technologies are used that permit the identification of specific types of defects, such as corrosion. But because not all lines can be inspected with ILI tools and because of the need to find types of imperfections that are not currently detected by ILI technology, hydrostatic testing is an accepted method for demonstrating the fitness of a pipeline segment for service.



THE "SMART PIG"

There are a variety of different types of these in-line inspection devices that specialize in finding particular problems in pipelines such as corrosion, dents and gouges. They got named pigs because some of the early versions made a squealing noise as they moved through the pipeline.

Pipeline Safety Requirements During Operation

Corrosion Protection

Unprotected steel pipelines are susceptible to corrosion, and without proper corrosion protection every steel pipeline will eventually deteriorate. Corrosion can weaken the pipeline and make it unsafe. Luckily, technology has been developed to allow corrosion to be controlled in many cases to extend pipeline life if applied correctly and maintained consistently.

Here are the three common methods used to control corrosion on pipelines:

- Cathodic protection (CP) is a system that uses direct electrical current to counteract the normal external corrosion of a metal pipeline. CP is used where all or part of a pipeline is buried underground or submerged in water. On new pipelines, CP can help prevent corrosion from starting; on existing pipelines, CP can help stop existing corrosion from getting worse.
- Pipeline coatings and linings are principal tools for defending against corrosion by protecting the bare steel.
- Corrosion inhibitors are substances that can be added to a pipeline to decrease the rate of attack of internal corrosion on the steel since CP cannot protect against internal corrosion.

Supervisory Control and Data Acquisition System (SCADA)

A SCADA is a pipeline computer system designed to gather information such as flow rate through the pipeline, operational status, pressure, and temperature readings. Depending on the pipeline, this information allows pipeline operators to know what is happening along the pipeline, and allows quicker reactions for normal operations, and to equipment malfunctions and releases. Some SCADA systems also incorporate the ability to remotely operate certain equipment, including compressor and pump stations, valves, allowing operators in a control center to adjust flow rates in the pipeline as well as to isolate certain sections of a pipeline. Many SCADA systems also include leak detection systems based on the pressure and mass balance in the pipelines.

Right-of-way Patrols

Regulations require regular patrols of pipeline right-of-ways to check for indications of leaks and ensure that no excavation activities are taking place on or near the right-of-way that may compromise pipeline safety. For transmission pipelines, these patrols are often accomplished by aerial patrols, but federal regulations do not require them to be done by aerial inspection.

Leakage Surveys

Regulations also require regular leakage surveys for all types of natural gas pipelines along the pipeline routes. Personnel walk or drive the route using specialized equipment to determine if any gas is leaking and to then quantify the size of the leak. Very small leaks are a normal part of most gas pipeline systems.

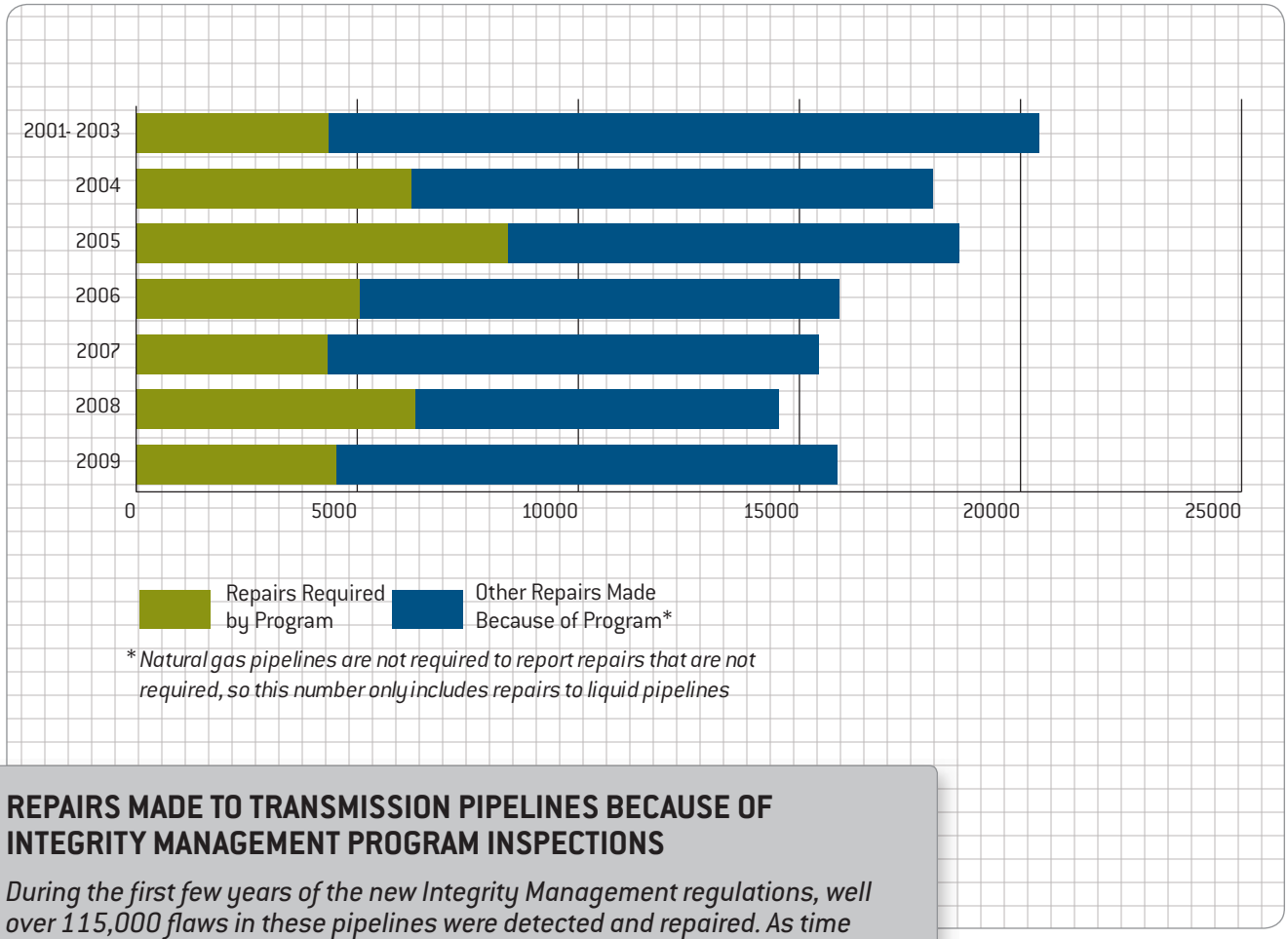
Odorization

All distribution pipelines, and some natural gas transmission and gathering lines (those mainly in highly populated areas), are required to be odorized so leaking gas is readily detectable by a person with a normal sense of smell.

Integrity Management

Integrity Management refers to a relatively new set of federal rules that specify how pipeline operators must identify, prioritize, assess, evaluate, repair and

validate - through comprehensive analyses - the integrity of their pipelines. Some form of integrity management now applies to both transmission and distribution pipelines, although gathering lines are exempt from these requirements. For gas transmission pipelines, integrity management requires that lines that could affect High Consequence Areas (mainly more populated areas) have to be re-inspected by their operators every seven years. For hazardous liquid pipelines integrity management requires that lines that could affect High Consequence Areas have to be re-inspected by their operators every five years. For natural gas transmission pipelines the re-inspection interval in High Consequence Areas (mainly more populated areas) is every seven years. This re-inspection is done mainly with internal inspection devices called smart pigs, but may also be done through pressure tests or direct assessment. Once inspected, the rules require that operators respond to certain anomalies found on their pipeline in certain ways within certain timeframes. In the first 9 years of this program, these rules required over 39,000 repairs be made to gas and liquid transmission pipelines that fall within High Consequence Areas. Unfortunately, only about 7% of the gas transmission pipelines, and 44% of hazardous liquid pipelines nationwide are required to do these important inspections.



REPAIRS MADE TO TRANSMISSION PIPELINES BECAUSE OF INTEGRITY MANAGEMENT PROGRAM INSPECTIONS

During the first few years of the new Integrity Management regulations, well over 115,000 flaws in these pipelines were detected and repaired. As time goes by and companies are required to re-inspect their pipelines there should be a decrease in the number of flaws found.

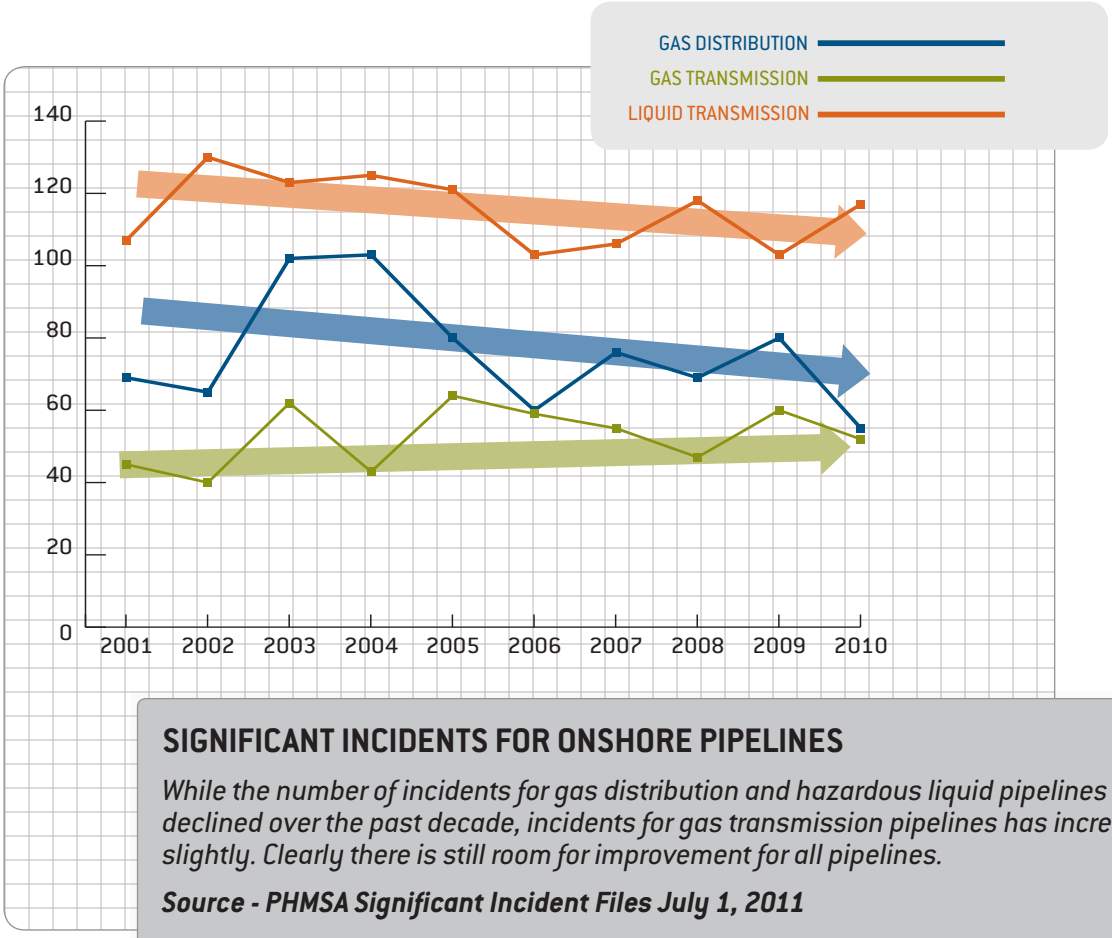
Source - PHMSA Integrity Management Performance Measure Reports

What is the Risk of Having a Pipeline Nearby?

Risk is one of those things that one person cannot really define for another, since each person thinks about risks in their own personal way. While some feel that skydiving is a risk worth taking, others won't even go up in the airplane. In other words, it is not possible for us to say whether a particular pipeline is safe enough or not. All we can do is to try to provide enough information so individuals can make that decision on their own, and then work with others in their community to set policies based on the beliefs of as many people as possible.

We believe that risk is made up of two different factors, both of which need to be carefully considered when deciding how risky an activity is. Those factors are the probability that an event will occur (chance a pipeline will rupture or leak), and the possible consequences if it does. We have already talked about the various things that pipeline operators are required to do to keep their pipelines safe and therefore reduce the probability of an event occurring.

One other measure that helps shed light on the probability of an occurrence is the past incident rates for pipelines. Past performance cannot accurately reflect future incidents since many factors could change over time, but such data can provide trend lines that point to needed changes in pipeline operation, mainte-



SIGNIFICANT INCIDENTS FOR ONSHORE PIPELINES

While the number of incidents for gas distribution and hazardous liquid pipelines has declined over the past decade, incidents for gas transmission pipelines has increased slightly. Clearly there is still room for improvement for all pipelines.

Source - PHMSA Significant Incident Files July 1, 2011

SIGNIFICANT INCIDENTS - ALL PIPELINES

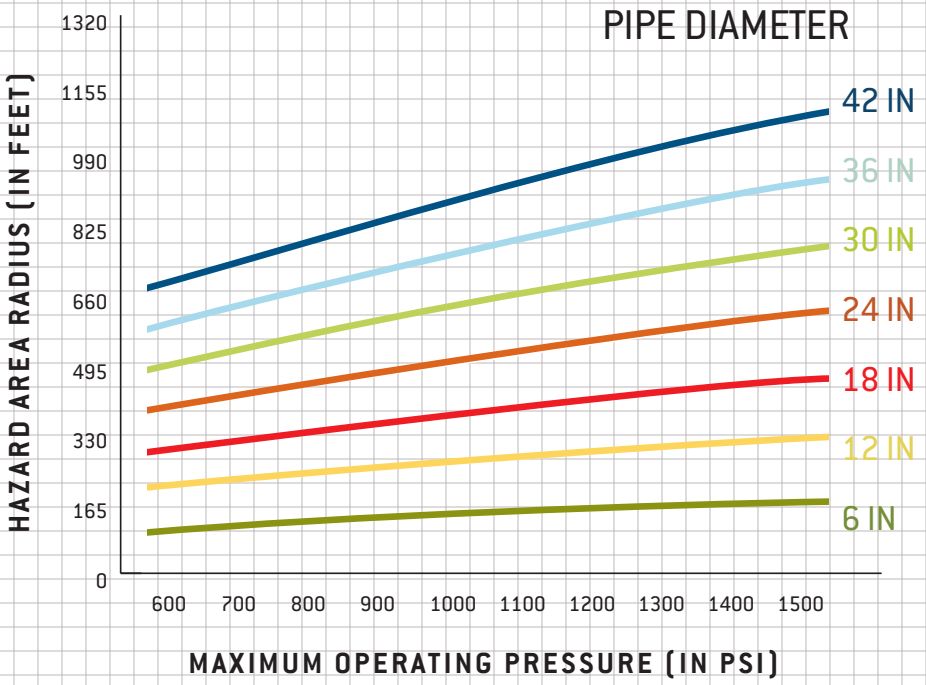
Year	Number	Fatalities	Injuries	Property Damage
2001	233	7	61	$73,474,036
2002	258	12	49	$119,785,942
2003	298	12	71	$157,792,526
2004	312	23	56	$305,016,957
2005	338	13	47	$1,424,864,671*
2006	256	19	34	$149,562,237
2007	269	15	50	$145,945,618
2008	279	9	58	$544,236,667
2009	271	13	65	$167,390,724
2010	256	22	107	$982,521,711
Totals	2770	145	598	$4,070,591,089

** $466.5 million of this figure is damage done to distribution pipelines from Hurricane Katrina*

Source - PHMSA Significant Incident Files July 1, 2011

nance, public outreach and regulations. In this section are some graphs that show the number of significant incidents occurring on the different types of pipelines in the past ten years nationwide. These graphs also indicate the trend lines for incidents during this period. We have also included graphs that show the causes of the incidents, so it is easier to tell which incidents were within the control of the pipeline operator.

The charts and graphs in this section should provide some measures of the probability of a pipeline incident happening and some of the consequences if it does. It is fairly clear from the data that the chance of a pipeline failing in any particular spot is very, very small, but of course if you ask the families of the 145 people who were killed by pipeline incidents over the past ten years they would tell you that the consequences are huge.



HOW THE POTENTIAL IMPACT AREA AROUND A GAS TRANSMISSION PIPELINE IS DETERMINED

This chart shows how a combination of operating pressure and the size of the pipe determines the most dangerous area around a pipeline if it should rupture completely.

Source: A Model For Sizing High Consequence Areas Associated With Natural Gas Pipelines by Gas Research Institute and C-FER Technologies, 2000

POTENTIAL IMPACT AREA

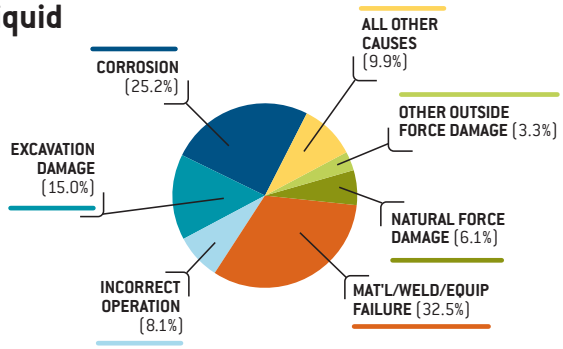
This picture shows how a neighborhood could be impacted by a "worst case scenario" from a typical gas transmission pipeline.

So what are the possible consequences of pipeline failures, and how can they be quantified?

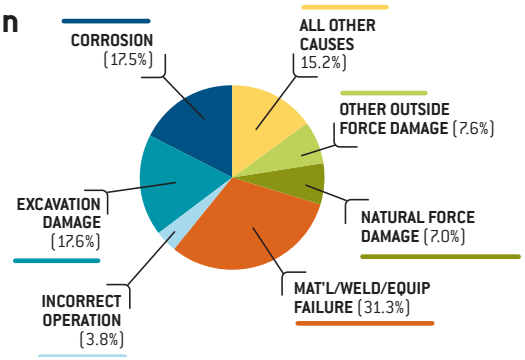
For natural gas pipelines, it is a little easier to calculate the area around a pipeline that would be impacted if there were a complete failure. In 2000, the Gas Research Institute contracted with C-FER Technologies to produce **A Model For Sizing High Consequence Areas Associated With Natural Gas Pipelines** that became instrumental in helping define potential impact zones around natural gas pipelines. While the model is complex, the basic idea is that by considering the diameter of the pipeline and the pressure at which it is operating, it is possible to predict the impact area around the pipeline that could lead to a fatal exposure in the event of a catastrophic failure. Above is the chart of the model that predicts these different zones.

Another way to consider the actual consequence of a pipeline incident is to review previous incidents. The National Transportation Safety Board investigates many of the most significant incidents and the reports of their investigations can be found at: *www.ntsb.gov/Publictn/P_Acc.htm*

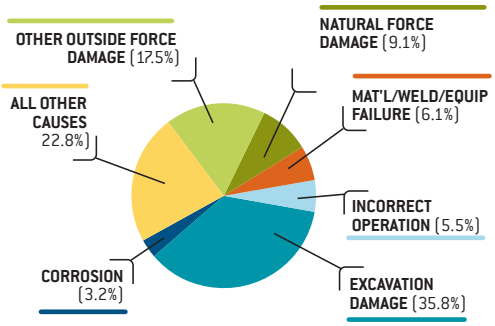
hazardous liquid onshore



gas transmission onshore



gas distribution



CAUSES OF SIGNIFICANT INCIDENTS NATIONALLY FROM 2001-2010

Material, welding and equipment failure are the leading cause of incidents for transmission lines, whereas excavation damage is the leading cause for gas distribution lines.

Source - PHMSA Significant Incident Files July 1, 2011

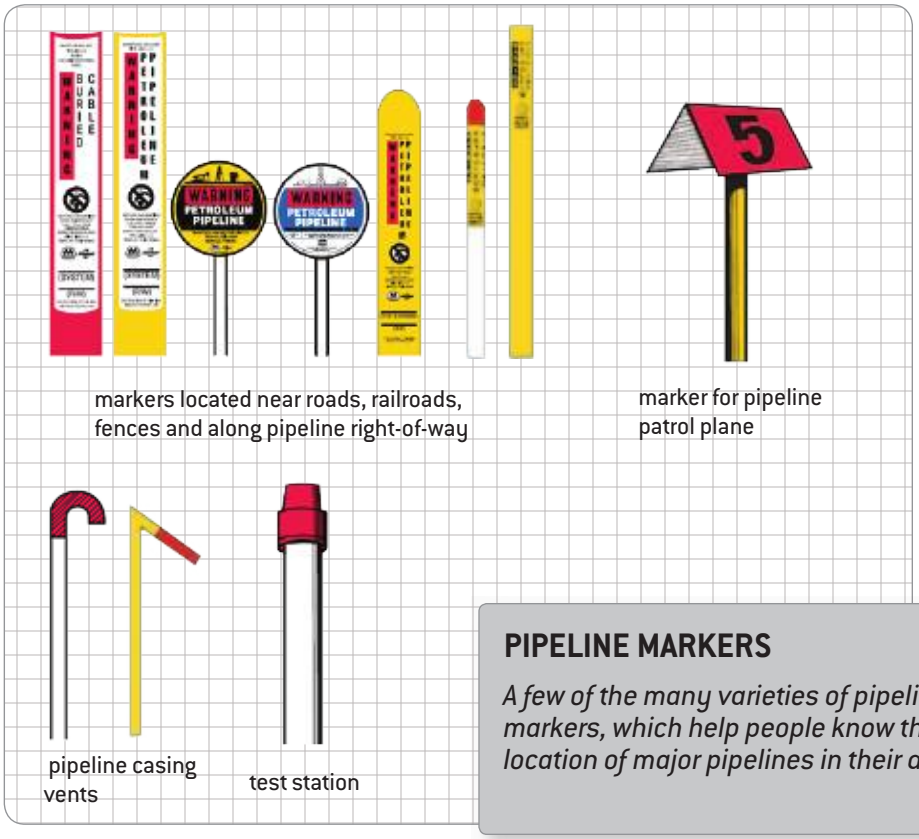
Where to Find More Information?

PHMSA makes incident, inspection and enforcement records of pipeline operators available on its website. You can find out information about the pipeline near you, or about all pipelines operated by a particular company. To find that information visit the PHMSA website at: www.*primis.phmsa.dot.gov/comm/reports/operator/Operatorlist.html*

You can also find a map of pipelines near you on the National Pipeline Mapping System at *www.npms.phmsa.dot.gov/PublicViewer/*. While the mapping system allows you to find the pipelines that may be in your neighborhood, the system is not very detailed because the exact location of many pipelines have not been mapped, and the government does not want anyone to be able to use these maps to possibly do harm to the pipelines – on purpose or accidentally.

You can also find pipelines by learning to recognize the pipeline markers that companies are required to put along their rights-of-way. Pipelines are often not in the center of the right-of-way, and pipeline markers only show the general vicinity of the pipeline location and may not be directly above the pipeline. If you are planning to dig for any reason, the only real way to know where the pipeline is located is to use the nation-wide "Call Before You Dig - 811" system for having utilities located and marked on your property. You will need to call 811 at least 2 days ahead of digging, and the call center will explain how the system works in your area.

PHMSA's CATS (Community Assistance and Technical Services) representatives are located within each of five geographic regional locations. Their assignments include responding to inquiries or complaints from landowners with pipeline concerns. To contact the CATS representative for your community please refer to the list on the following page. The links for each region lead to PHMSA's web page for each regional office.



PIPELINE MARKERS

A few of the many varieties of pipeline markers, which help people know the general location of major pipelines in their area.

PHMSA Community Assistance & Technical Services (CATS)		
Region / States Covered	**Office Location**	**CATS Contact Information**
Central Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin	Kansas City, MO	**Elizabeth Komiskey:** Elizabeth.komiskey@dot.gov Phone: (202) 288-1818 **Harold Winnie:** harold.winnie@dot.gov Phone: (816) 329-3800
Eastern Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, and West Virginia	West Trenton, NJ	**Karen Gentile:** Karen.gentile@dot.gov Phone: (609) 989-2252 **Alex Dankanich:** alex.dankanich@dot.gov Phone: (202) 550-0481
Southern Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, Puerto Rico, South Carolina, and Tennessee	Atlanta, GA	**Joe Mataich:** joseph.mataich@dot.gov Phone: (404) 832-1159 **Mike Khayata:** michael.khayata@dot.gov Phone: (404) 832-1165
Southwest Arkansas, Louisiana, New Mexico, Oklahoma, and Texas	Houston, TX	**John Jacobi:** john.jacobi@dot.gov Phone: (713) 272-2839
Western Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming	Lakewood, CO	**Bill Flanders:** bill.flanders@dot.gov Phone: (907) 271-6518 **Tom Finch:** thomas.finch@dot.gov Phone: (720) 963-3175
PHMSA Headquarters	Washington, DC	**Christie Murray:** Christie.murray@dot.gov Phone: (202) 366-4996

For the most up to date contact info go to www. http://www.phmsa.dot.gov/public/contact

Preventing Damage to the Pipeline

One of the best ways to protect yourself and your family if you live near a pipeline is to learn how to become the eyes and ears on the ground to help protect the pipeline from damage. This means not only behaving responsibly yourself on and near the pipeline easement, but also making sure that when you see something happening that might damage the pipeline, or notice anything that indicates a problem with the pipeline, you contact the pipeline operator.

Rules vary among operators and from easement to easement, so make sure you understand what activities are allowed on the pipeline easement on your property. Typically, pipeline operators restrict construction of buildings, landscaping within easements to grasses and small shrubs, and may prohibit other types of construction as well (fences, patios, pools, septic systems, new roads or driveways) that could damage the pipeline or restrict access to it in the future. More and more local governments are beginning to regulate the uses of land near pipelines, sometimes restricting uses for hard to evacuate structures (hospitals, nursing homes, schools, day care facilities and the like), establishing setbacks, and requiring consultation with the pipeline operator as a condition of issuing a development permit.

811 Know what's below. Call before you dig.

Many pipeline ruptures are the result of excavation damage. Sometimes the pipeline is damaged badly enough by the excavation to rupture immediately, and sometimes, the damage creates a flaw in the pipeline that ruptures months or years later. Many state laws require reporting of any contact with a pipeline. If you accidentally nick, ding or dent a pipeline, or see it happen, please report it to the pipeline operator or to your local 811 call center.

There is a nationwide utility locator system available for free to anyone planning any kind of excavation. By calling 811 at least 2 days before any planned digging, you can make arrangements for a utility locator to come identify and mark any buried utilities, including cables, pipelines for fuel, water, and sewer. It saves lives, prevents property damage, and in most states, it's the law. Even if you think you know where the utilities are located on your property, use the 811 call system to have them located and be sure.

If you see someone excavating near a pipeline right-of-way (ROW), look

PIPELINE WARNING SIGN

Most of these signs indicate a phone number to call in case of emergency.

around to see if the utilities have been located and marked. If there is no sign of markings, contact the pipeline operator or the call center (811) immediately. The pipeline company's contact information can be found on each of the pipeline markers, or you may receive informational materials in the mail as part of a pipeline's public awareness campaign. Keep the contact information handy, so you can use it if you need to.

When a site has had the utilities located and marked, those markings will typically be spray painted on the ground, sometimes staked and flagged, and sometimes a pipeline operator will temporarily fence both sides of a right-of-way to keep adjacent construction equipment off the pipeline.

Recognizing a Pipeline Leak

While pipeline emergencies are rare, it is important to know how to recognize signs of leak if one should occur. The best ways for you to detect a spill in your neighborhood is to use your senses of sight, smell, and sound. You may have a leak if :

- you see dead or discolored vegetation that is otherwise green along a pipeline ROW, see pools of liquid not otherwise usually present along the pipeline ROW, see a cloud of vapor or mist not otherwise usually present along the pipeline ROW, see dirt blowing up from along a pipeline ROW, or see a sheen of petroleum products in a water body near a pipeline ROW
- you smell an unusual odor or scent of petroleum along a pipeline ROW
- you hear an unusual hissing or roaring sound along a pipeline ROW

Responding if a Leak Occurs

If you have detected the signs that a leak may have occurred, you should take the following actions:

- Leave the leak area immediately. Walk into the wind away from possible hazardous fumes.
- Do not touch, breath or make contact with leaking liquids.
- Do not light a match, start an engine, use a telephone (even a cell phone), switch on/off light switches or do anything that may create a spark.
- From a safe location, call 9-1-1 or your local emergency response number and the pipeline company. Call collect, if needed, and give your name, phone number, a description of the leak and its location.
- Warn others.
- Do not drive into a leak or vapor cloud area.
- Do not attempt to operate valves.

UTILITY MARKINGS

These temporary markings locate buried utilities, including pipelines, so they can be protected during a planned excavation. Call 811 before you dig to have underground utilities marked for free.

Major Issues for Property Owners Near New Pipelines

If a new pipeline is planned for your area, and the operator wants to cross your property, you will want to learn about lots of issues you've likely never thought about before:

- What is an easement and how does the pipeline company get one?
- What is an easement worth?
- When can an operator use eminent domain to take my property, even over my objections?
- How will a pipeline restrict my future use of the property, and how will it affect my ability to resell the land?
- Is it safe? How can I make sure it stays safe?
- Why do they (and do they really) have to cut down all the trees?
- Will they restore the surface after construction?
- How long will the pipeline be there? What happens when the operator stops using the pipeline?
- What notice will I get before entry onto the property for safety inspections, repairs and maintenance?

You will likely have many more questions. While this booklet can provide some basic information, it is not comprehensive or intended to provide you with legal advice. If a pipeline company wants to come across your property, we urge you to seek out the advice of a qualified, experienced attorney in your state who is familiar with these issues. Each landowner has individual circumstances, so you should seek independent advice early in the process of negotiating a right-of-way or easement with the operator to understand what your options and rights are during negotiations and in a situation where an agreement is not reached. Pipeline operators may have eminent domain authority in some instances.

When a Pipeline is Planned to Cross Your Property:

The pipeline operator will determine the route it wants the pipeline to take, and depending on the type of pipeline and whether your state exercises any pipeline siting authority, there may be little you can do to influence that route selection. If it is an interstate natural gas line, the Federal Energy Regulatory Commission (FERC) will determine the final route. State processes govern some other types of lines, and some lines are not subject to any governmental permitting or routing processes at all. If the pipeline is early in the planning stages, you may be able to work with the operator to adjust the route, or you may participate in the routing processes with the state or FERC.

Once the route has been determined, or perhaps beforehand, the pipeline operator's right-of-way agent will contact each property owner in the path of the proposed pipeline to begin discussions aimed at obtaining an easement for the construction and operation of the pipeline.

There is no substitute for experienced legal advice early in a situation like this. Here, with very brief descriptions, are the types of issues you should be considering:

What Rights Will the Pipeline Operator Have?

The easement agreement should specify exactly what the operator may do on the easement, e.g., install, operate, test, maintain, inspect, etc. Make sure you understand, and have written into the agreement, how and where the operator will access the easement. The concerns of a rancher with miles of easement and limited access from roads will be very

different in this instance than those of an urban lot owner. You may also want to request notice of upcoming inspections or tests, and limitations on the times of day during which the easement will be accessed, except in an emergency situation. FERC rules contain some limitations and notice requirements for repairs and replacement projects of interstate gas pipelines, but they may not apply in all situations, and including specific items of importance to you in your easement will better protect you. If the FERC rules are stricter, they will apply as well.

How Will the Easement Limit Your Use of the Property?

Many perfectly functional landowner/operator relationships have soured over trees: disagreements, lack of understanding, ignorance, over-reaching, miscommunication – however the parties choose to characterize it, the arguments typically start over an operator's decision to cut trees in a right-of-way. Make sure that the easement language is clear and explicit in terms of what landscaping and agricultural activities will be permitted in the right-of-way, whether the operator will have the right to remove or trim trees and over what area, and what compensation will be paid for trees destroyed or damaged during construction, maintenance, repair and/or replacement activities.

Typically, an easement will prohibit the construction of any structures within the right-of-way. You may be able to negotiate a clause allowing the installation of a patio or other surface facilities not requiring excavation with written consent of the operator, and the understanding that they may be removed or destroyed if the operator needs access to the pipeline for repairs, inspections, or maintenance.

Temporary Construction Easement?

There may be, in addition to the permanent easement for the pipeline, a temporary construction easement wider than the permanent easement to allow the operator sufficient space to maneuver equipment and pipe sections. The size, location and duration of this temporary easement should be clear.

What Will Be Put in the Right-of-way?

The easement agreement should specify whether any surface facilities will be placed within the easement, whether more than one pipeline or other utilities may be placed in the easement, the operator's restoration plan and timetable following construction and following any future construction, maintenance or repairs that require surface disturbance within the easement. It may be in the landowner's interest to try to negotiate limits to the substances that may be carried in the pipeline, depth the pipeline is buried at and how that depth is maintained, and specifics regarding what will happen if the company in the future wants to replace the pipeline with a larger pipeline.

What About Contractors Working for the Pipeline Company?

The landowner will want to restrict the allowable activities of contractors working for the pipeline company. Common restrictions prohibit the carrying of firearms, fishing gear, and the leaving of any trash by the operator's employees or contractors.

Cleanup, Restoration and Abandonment

The easement agreement should make clear that the operator will be responsible for any damages that result from actions of its contractor, the operator or its employees, and that responsibilities of the operator for restoration of the easement also apply to restoration following activities of contractors of the operator. In agricultural areas the type of soil and how it will be replaced, and the introduction and control of noxious weeds are important things that need to be defined in the easement agreement.

Although it may not happen while you own the property, pipelines are sometimes abandoned when they are no longer useful. Make sure that your easement agreement defines what constitutes abandonment (typically non-use for two years), says whether the operator must remove the pipe and restore the surface, and most importantly, that the easement automatically terminates upon abandonment.

Damages and Liability

If the disruption of your property during construction and/or maintenance and repairs causes you economic damage, e.g. lost or delayed crops, damage to drainage infrastructure, destruction of fencing, etc., you may want to negotiate in the easement how those damage claims will be handled so that you don't have to spend money to hire an attorney to sue for later damages. In at least one state, many of these rules exist in state statute, governing everything from inspections during construction to crop deficiencies to restoration requirements. (Iowa code chapters 479 and 479B)

To protect a landowner, an easement agreement should include an indemnity agreement that the operator will indemnify the landowner in any lawsuits relating to the presence of the pipeline or other facilities on the easement.

Costs of Negotiation

Some states require pipeline operators to pay a certain amount of the landowner's costs during negotiations, for an attorney to review an agreement, surveying, appraisal, or other costs. These requirements will rarely cover the actual costs of negotiation. A landowner can seek additional reimbursement from the pipeline company. It is always better to have the advice of an attorney well before you get to the stage of reviewing a draft that is close to final. Each property is different; each owner has different interests. There are many issues that are not included in this guide that you might need to consider. An attorney's early advice can help you identify the issues important to you and negotiate terms that will protect your interests.

Value of an Easement

Operators sometimes pay landowners for an easement based on the length of the easement in a price per linear foot or rod. Sometimes, owners are paid for the area taken on a price per acre or square foot. There are innumerable variations in the value of an easement, depending on the zoning of a parcel, the development potential, whether timber or standing crops are on it, whether a home is present, etc. The rules vary slightly from state to state, but typically, an owner is entitled to compensation for the value of the land taken, and the lost value to the remainder due to the easement.

When Negotiation Fails: Eminent Domain

In some circumstances, pipeline companies have the power to take an easement or full title to your property over your objections, by using the power of eminent domain. State governments frequently treat pipeline companies like power companies and other public utilities and give them the power of eminent domain - the right to take property for a public benefit after paying just compensation. Not surprisingly, the use of eminent domain by pipeline companies is controversial, particularly where individual property owners believe that eminent domain should not be available for use by a private for-profit pipeline company, where the pipeline operator has chosen a particularly sensitive route, or is perceived as being unreasonably reluctant to shift a chosen route to avoid a home or particular feature.

See the links in the acknowledgments at the end of the guide to find more detailed information about eminent domain law in several states.

When Do Pipeline Operators Have Eminent Domain Authority?

Operators of interstate natural gas lines that have obtained a certificate of public convenience and necessity from FERC are granted the power of eminent domain by federal law. Many states also grant eminent domain authority to transmission pipeline operators, others to both transmission and gathering lines. In some cases, the authority comes from the operator's status as a regulated utility under a state utility commission or public service commission. In others, the operator must obtain designation as a public utility to acquire eminent domain authority. For example, in Pennsylvania, operators of gathering lines do not have the power of eminent domain unless they are designated as public utilities by the state.

Does the Operator Have to Negotiate With the Landowner Before Beginning an Eminent Domain Proceeding?

In most cases, an operator must at least submit an offer to the landowner before beginning a condemnation proceeding. The state law requirements vary about providing appraisals, undertaking good faith negotiations and other requirements before an eminent domain action is filed.

Many landowners have reported right-of-way agents using the threat of eminent domain to try to force people to sign agreements more quickly. While the abilities and style of right-of-way agents varies greatly it should be recognized that the right-of-way agent is representing the interest of the pipeline company, not the landowner. Landowners should insist on being given enough time to have an attorney review any proposed agreement, and then work with that attorney to decide what is in the best interest of the landowner.

How is the Compensation Owed to the Landowner Measured in Eminent Domain Proceedings?

The rules vary slightly from state to state on how to measure the amount of compensation owed, but it is typically the value of the land covered by the easement plus the lost value to the remainder from the creation of the easement. Opinions about those values, of course, may vary widely between the operator's appraiser and the landowner's. Their methodology may vary as well as the value attributed to various features and there are frequent disagreements over the

loss of value to the remaining property due to the creation of the easement.

Are There Ways to Challenge an Eminent Domain Proceeding?

There are restrictions on the use of eminent domain, but not very many of the legions of landowners dealing with pipeline operators will fall into the gray areas where it is arguable whether eminent domain is being lawfully used. The details of eminent domain law in each of the states are beyond the scope of this simple guide. If you think there is some question about whether eminent domain is being properly used to acquire an easement or full title to your property, or if you are told that eminent domain will be used unless you agree to an easement agreement you can't live with, you need to find an experienced eminent domain attorney to hear your circumstances and advise you.

What is the Process for an Eminent Domain Proceeding?

The process for eminent domain proceedings is slightly different in each state. In rough outline and in general terms, each side will prepare an appraisal of the property and an assessment of the compensation owed the landowner. That information will then go to the court hearing the case. In some states, it will be heard by a judge, in others, by a jury, and in yet others, by a panel of individuals appointed by a court. The person or group hearing the case will then decide on the compensation owed the landowner, compensation will be paid and the interest in property sought by the operator will be awarded to it.

It's important to note that (unless the eminent domain proceeding is successfully challenged) the result of an eminent domain proceeding is the determination of how much compensation an owner is due before the interest in property is awarded to the operator. It is not likely that any other issues that may be important to an owner– notice before access, timing or location of access, maintaining depth of cover, indemnification, restoration timing and standards, etc. would be dealt with in an eminent domain proceeding.

TYPICAL TRANSMISSION PIPELINE RIGHT-OF-WAY

More often than not pipeline companies keep their rights-of-way clear of trees and vegetation so they can inspect them from the air for leaks, people digging improperly, and other possible threats to their pipelines. This clearing, especially if it has not been done for a while, is often a source of conflict between the property owner and the pipeline company.

Other Financial Concerns

Although the potential effect on property values and insurance rates and availability are likely to be some of the biggest landowner concerns (following safety) relating to a new pipeline project, there is precious little publicly available information on these subjects, most of it published by or paid for by the industry.

Insurance

Since the early 2000s, FERC has relied on the same one-paragraph description of homeowner insurance rates to respond to any community concerns raised in comments to a project's EIS:

> "Homeowner insurance rates are generally set on a county-wide basis, with individual rate adjustments made to reflect the age and value of the property and the claims record of the owner; insurance rates are not based on the surrounding landscape or structures at the local level. Properties in the vicinity of an industrial facility may be older and not as well maintained, which can affect the availability of insurance coverage or the insurance rates."

Recent anecdotal evidence provided to the Pipeline Safety Trust suggests that insurance underwriters are, in fact, reacting to the presence of transmission lines, particularly gas transmission lines, near residential properties and raising rates, or in some instances, suggesting that insurance might not be available for a new buyer of a property where a transmission line was recently constructed. This is a relatively new phenomenon, and while it may be true that some underwriters do not consider the presence of a transmission line to be a rate factor, at least some do. You may want to consider this as one of the things you discuss with a pipeline company seeking an easement over your property, or discuss with your insurer if you are buying a property.

Property Values

Similarly, there are a number of paired-sale studies that suggest that there may be limited long-term loss of property value due to the presence of a transmission line. It is difficult to determine the extent to which those published studies reflect transactions involving knowing buyers who were fully aware of the presence of the pipeline. One reason that there is limited available information about changes in property values agreed to by the industry is that, in the settlement of eminent domain cases, operators typically require a confidentiality agreement from the affected landowner, promising not to disclose the amount of the payment received by the landowner for the loss in value of the property.

The circumstances of every piece of property are different: different sizes, different uses, different distances to residences from the pipeline, different effects on access, landscaping, etc. In some instances, the risk of a pipeline on the property may make very little difference. In others, it may be unacceptably high. What is important in an eminent domain case or in negotiations is whether an appraiser will provide you with evidence that the stigma of the presence of the pipeline reduces the value of the property when an easement is granted or taken.

Resale

If you have a pipeline on or near your property, you may need to disclose the presence of that pipeline to potential buyers when you sell. One California firm has advised that by receiving a letter from PG&E following the September, 2010 San Bruno explosion notifying owners that they are within 2000 feet of a natural gas transmission pipeline, an owner then has knowledge of a material fact about their property which they must disclose to subsequent purchasers. Two of the major firms providing real estate disclosure forms in California have now included reference to that PG&E notification in their forms. Check your own state's disclosure laws to determine if you need to specifically disclose the presence of a pipeline on or near your property, beyond the disclosure of an easement, which should already show up in a title search.

PIPELINE SAFETY IS LIKE A THREE LEGGED STOOL

Industry, regulators, and the public each serve a vital function in ensuring pipeline safety.

Pipeline Safety: a Shared Responsibility

If you have made it this far in this guide, then you have taken an important step to help ensure that pipelines near you will be as safe as possible by educating yourself about how they work, who's in charge, and what needs to be done to ensure the public's safety is being looked after. We believe that pipeline safety is like a three-legged stool with the industry, regulators and public each serving as one leg of the stool and each playing a crucial role. If any leg of the stool falters, pipeline safety is at risk.

The industry uses its vast resources to install, operate and maintain safe pipelines. The regulators verify through inspections and data collection that the minimum safety regulations are appropriate and are being met, and when necessary, use enforcement authority to ensure compliance. The public, including elected officials, serve as the watchdogs to push for greater regulation and enforcement when necessary, and to make sure complacency doesn't set in.

The public can only do its job if there is adequate transparency in what the industry and the regulators are doing. Adequate performance, inspection, and enforcement data needs to be easily publicly available so compliance can be verified. Adequate information about the specifications, contents, and routes of proposed pipelines also need to be easily available so people living in potentially affected neighborhoods can decide for themselves if adequate safety precautions have been taken. The information that decision makers use to make pipeline safety decisions also needs to be available to the public so they can decide whether their officials are making decisions with full knowledge of the impacts and with the public's safety and welfare in mind.

While a large amount of information is publicly available and verifiable, there is still important information missing, which may lead to mistrust of the process and the results. With the current ability to electronically post nearly unlimited materials online, industry and government could create more trust by posting information that they are already required to prepare, instead of creating barriers by expecting the public to go through a formal public information request process. The industry, in particular, provides very little information about their particular pipelines and the associated operations, maintenance and inspections. Both state and federal regulators could make that information available to the public, or the industry could do so voluntarily, and help reduce the perception that they are reluctant to provide information.

Being a landowner with what is often an unwanted pipeline on your property is difficult. People feel put out by the restrictions on the use of their property, activities of the pipeline company, lack of information, or by what may seem to be one-sided communication. Too often these things lead a property owner to distrust the pipeline company representatives or close the door on communication. Unfortunately the pipeline is not going away, so the best way to protect your interests is to learn what you can about pipelines, what your pipeline easement agreement requires, and who to call if there is a problem. We hope this guide has helped begin that process.

Acknowledgements

The Pipeline Safety Trust wishes to acknowledge the assistance of the following individuals and organizations for their assistance in developing this guide:

- Cathy Newman of the Owners Counsel of America (OCA) (*www.ownerscounsel.com*)
- These individual members of OCA who provided the following specific information about eminent domain laws in their states:

  Alabama: Casey Pipes
  www.pipelinesafetytrust.org/library/docs/alabama.pdf

  Florida: John W. Little III
  www.pipelinesafetytrust.org/library/docs/florida.pdf and *pipelinesafetytrust.org/library/docs/floridahandbook.pdf*

  Kansas: David M. Rapp
  www.pipelinesafetytrust.org/library/docs/kansas.pdf

  Michigan: Alan Ackerman and Darius Dynkowski
  www.ackerman-ackerman.com/what-we-do/frequently-asked-questions/

  Missouri: Robert Denlow
  www.denlow.com/PracticeAreas/Missouri-Condemnation-Procedures.asp

  Nebraska: William G. Blake
  www.pipelinesafetytrust.org/library/docs/nebraska.pdf

  Nevada: Kermitt Waters and Michael A. Schneider
  www.pipelinesafetytrust.org/library/docs/nevada.pdf

  New York: Michael Rikon
  www.pipelinesafetytrust.org/library/docs/newyork.pdf

  Oregon: Jill Gelineau
  www.pipelinesafetytrust.org/library/docs/oregon.pdf

  Pennsylvania: Michael F. Faherty
  www.pipelinesafetytrust.org/library/docs/pennsylvania.pdf

  South Carolina: Keith M. Babcock
  www.pipelinesafetytrust.org/library/docs/southcarolina.pdf

  Tennessee: J. Kevin Walsh
  www.pipelinesafetytrust.org/library/docs/tennessee.pdf and *pipelinesafetytrust.org/library/docs/TNArticle.pdf*

  Texas: H. Dixon Montague
  www.pipelinesafetytrust.org/library/docs/texas.pdf

  Utah: Kevin E. Anderson
  www.pipelinesafetytrust.org/library/docs/utah.pdf

  Virginia: Christi A. Cassel
  www.pipelinesafetytrust.org/library/docs/virginia.pdf

We also thank the more than 50 landowners who volunteered their time by responding to a survey asking what sorts of information they would like to see in a guide like this. We hope this guide provides you answers to some of your questions and help in finding resources for the rest.

Want More Information?

Pipeline Safety Trust homepage
http://pstrust.org/

Pipeline safety information for individual states
http://primis.phmsa.dot.gov/comm/States.htm

Information for local governments regarding planning near pipelines
http://primis.phmsa.dot.gov/comm/pipa/LandUsePlanning.htm

Glossary of pipeline terms
http://primis.phmsa.dot.gov/comm/glossary/index.htm

National pipeline incident data
http://primis.phmsa.dot.gov/comm/reports/safety/PSI.html

Information on individual pipeline operators
http://primis.phmsa.dot.gov/comm/reports/operator/Operatorlist.html

from origin to consumption

land owners with pipelines on their properties may be affected by pipelines throughout all stages of the fuel transportation system

production facility

gas processing and treatment plant

compressor station

city gate

Pipeline Safety TRUST

Credible. Independent. In the public interest.

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