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Appendix A
PIPA Participants

**PIPA Protecting Communities Task Team Participants**

- **Jack Alexander** | Kansas State City Marshal, National Association of State Fire Marshals
- **Glenn Archambault** | Pipeline Safety Trust
- **Carolyn Berndt** | National League of Cities
- **Bruce Boncke** | BME Associates, National Association of Home Builders
- **Patrick Brady** | El Paso
- **DeWitt Burdeaux** | Quicksilver Resources, Inc, Gas Processors Association
- **Bill Byrd** | Regulatory Compliance Partners (RCP) Inc
- **Bruno Carrara** | New Mexico Public Regulation Commission, National Association of Pipeline Safety Representatives
- **Galen Denio** | Southwest Gas, American Gas Association
- **Tony Fleming** | Clarke County, MS, National Association of Counties
- **Greg Ford** | Williams Gas Pipeline, Interstate Natural Gas Association of America
- **Nick Hofmann** | Atmos Energy Corporation
- **Melissa Huffman** | National Association of Industrial & Office Properties
- **John Jacobi** | Pipeline and Hazardous Materials Safety Administration
- **David Johnson** | Panhandle Energy
- **Andrew Kohout** | Federal Energy Regulatory Commission
- **Jim Krohe** | Kinder Morgan
- **Lee Leffingwell** | City of Austin, TX, National League of Cities
- **Chuck Lesniak** | City of Austin, TX
- **Joe Mataich** | Pipeline and Hazardous Materials Safety Administration
- **Andy McClymont** | Cycla Corporation
- **Nancy McNabb** | National Fire Protection Association
- **Alex Osborne** | TransCanada
- **Raymond Paul** | Association of Oil Pipelines
- **Cathy Pratt** | City of St Peters, MO
- **Bob Rackleff** | Leon County, FL
- **Ross Reineke** | Pipeline and Hazardous Materials Safety Administration
- **Nelson Rivera** | Department of Housing and Urban Development
- **Bill Sanders** | Explorer Pipeline, American Petroleum Institute
- **Steven Sandy** | Montgomery County, VA, National Association of County Planners
- **Russell Verba** | Spectra Energy, International Right-of-Way Association
PIPA Protecting Transmission Pipelines Task Team Participants

Pamela Alley Shell Pipeline Company LP
Eric Amundsen Panhandle Energy, Interstate Natural Gas Association of America
Bob Archey Pipeline Safety Trust
Thais Austin National Association of Home Builders
Darin Burk Illinois Commerce Commission, National Association of Pipeline Safety Representatives
Alex Dankanich Pipeline and Hazardous Materials Safety Administration
Reid Demman Salt Lake County, UT, National Association of Counties
Kevin Docherty Buckeye Partners
Ronnie Duncan Duncan Properties, National Association of Industrial & Office Properties
Julie Galante Cycia Corporation
Ruth Garcia Town of Buckeye, AZ, National League of Cities
John Garrison ConocoPhillips Pipe Line
Robert Hill Brookings County, SD, National Association of County Planners
Duane Hobart Explorer Pipeline
Patrick Hodgins Genesis Energy, Inc
Jeannette Jones DCP Midstream, Gas Processors Association
Neal Jones ONEOK NGL Pipeline
Benjamin Kanoy Vectren, American Gas Association
John Lupo Xcel Energy
David Lykken Washington Utilities & Transportation Commission, National Association of Pipeline Safety Representatives
Paul Maldonado Texas State Fire Marshal, National Association of State Fire Marshals
Terry Mock Colonial Pipeline, International Right-of-Way Association
Daron Moore El Paso Pipeline Group
Nate Muehl Marathon Pipe Line LLC
Steve Patton Williams Gas Pipeline
Rick Pevarski Virginia Utility Protection Services
Julia Pulidindi National League of Cities
Elizabeth Reed Columbia Gas Transmission Corp
Lindsay Sander Texas Pipeline Association
James Sanford NuStar Energy LP, American Petroleum Institute
Randy Smith Southwest Gas Corporation
Dave Swearingen Federal Energy Regulatory Commission
Alaine Watson Environmental Protection Commission of Hillsborough County, FL, National Association of Local Government Environmental Professionals
Kyle Webster Enterprise Products
Lois Wells Koch Pipeline Company LP
Harold Winnie Pipeline and Hazardous Materials Safety Administration
Monty Zimmerman American Public Works Association
## PIPA Communications Task Team Participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debbie Bassert</td>
<td>National Association of Home Builders</td>
</tr>
<tr>
<td>Terry Boss</td>
<td>Interstate Natural Gas Association of America</td>
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<tr>
<td>Karen Butler</td>
<td>Pipeline and Hazardous Materials Safety Administration</td>
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<tr>
<td>Thomas Correll</td>
<td>Northern Natural Gas</td>
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<tr>
<td>James Davenport</td>
<td>National Association of Counties</td>
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<td>Gerry Dawes</td>
<td>American Gas Association</td>
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<tr>
<td>Jim Doherty</td>
<td>Municipal Research &amp; Services Center</td>
</tr>
<tr>
<td>Patty Errico</td>
<td>ExxonMobil Pipeline Company</td>
</tr>
<tr>
<td>Neil Fuchs</td>
<td>Marathon Pipe Line LLC</td>
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<tr>
<td>Rebecca Garber</td>
<td>Association of Oil Pipelines</td>
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<tr>
<td>Danny Gibbs</td>
<td>Spectra Energy, Interstate Natural Gas Association of America</td>
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<tr>
<td>Gina Greenslate</td>
<td>Panhandle Energy</td>
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<tr>
<td>Jim Hartman</td>
<td>Tennessee Gas Pipeline</td>
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<tr>
<td>Cindy Ivey</td>
<td>Williams Gas Pipeline</td>
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<tr>
<td>David Jones</td>
<td>David Jones Group LLC</td>
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<tr>
<td>Jungus Jordan</td>
<td>Fort Worth, TX, National League of Cities</td>
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<tr>
<td>Michelle Joseph</td>
<td>Smalley Foundation</td>
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<tr>
<td>Blaine Keener</td>
<td>Pipeline and Hazardous Materials Safety Administration</td>
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<tr>
<td>Lori Keeter</td>
<td>EPCO, Inc</td>
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<tr>
<td>Jerry Kenerson</td>
<td>Pipeline and Hazardous Materials Safety Administration</td>
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<tr>
<td>Gary Kent</td>
<td>American Land Title Association</td>
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<tr>
<td>Terri Larson</td>
<td>Fleishman-Hillard</td>
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<tr>
<td>Erika Lee</td>
<td>Common Ground Alliance</td>
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<tr>
<td>Brett Lester</td>
<td>Celeritas</td>
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<tr>
<td>Ryan Martin</td>
<td>Texas Excavation Safety System</td>
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<td>Dan Maschka</td>
<td>Northern Natural Gas</td>
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<tr>
<td>David McAtee</td>
<td>DCP Midstream, Gas Processors Association</td>
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<tr>
<td>Frank McGarry</td>
<td>National Association of State Fire Marshals</td>
</tr>
<tr>
<td>Steve McNulty</td>
<td>TransCanada US Pipelines West</td>
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<tr>
<td>Gina Meehan</td>
<td>Ameren</td>
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<td>Jerry Milhorn</td>
<td>Kinder Morgan, American Petroleum Institute</td>
</tr>
<tr>
<td>Cynthia Munyon</td>
<td>Iowa Utilities Board, National Association of Pipeline Safety Representatives</td>
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<tr>
<td>Claudia Rapkoch</td>
<td>NorthWestern Energy, American Gas Association</td>
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<tr>
<td>Russell Riggs</td>
<td>National Association of Realtors</td>
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<tr>
<td>Greg Saia</td>
<td>Xcel Energy</td>
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<tr>
<td>Larry Schall</td>
<td>SKW Inc, American Public Works Association</td>
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<tr>
<td>Douglas Sipe</td>
<td>Federal Energy Regulatory Commission</td>
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<tr>
<td>Larry Springer</td>
<td>Enbridge</td>
</tr>
<tr>
<td>Jon Taylor</td>
<td>Sempra Energy Utilities, International Right-of-Way Association</td>
</tr>
<tr>
<td>Eric Tomasi</td>
<td>Federal Energy Regulatory Commission</td>
</tr>
<tr>
<td>Carl Weimer</td>
<td>Pipeline Safety Trust</td>
</tr>
<tr>
<td>Bob Weiner</td>
<td>New Castle County Council, DE, National Association of Counties</td>
</tr>
<tr>
<td>Herb Wilhite</td>
<td>Cycla Corporation</td>
</tr>
<tr>
<td>Leslie Wollack</td>
<td>National League of Cities</td>
</tr>
</tbody>
</table>
## Appendix B

### Common Consumer Products Made From Natural Gas and Petroleum

*by Consumer Goods Sector*

<table>
<thead>
<tr>
<th>Category</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appliances</strong></td>
<td>Blenders, can openers, refrigerators, microwaves</td>
</tr>
<tr>
<td><strong>Automotive</strong></td>
<td>Oil filters, tires, fan belts, car bodies, car battery cases</td>
</tr>
<tr>
<td><strong>Business Equipment</strong></td>
<td>Floor mats, computers, printers, monitors, calculators, office chairs</td>
</tr>
<tr>
<td><strong>Cleaning Products</strong></td>
<td>Ammonia, floor wax, detergents, dishwashing liquid, mops</td>
</tr>
<tr>
<td><strong>Cosmetics/Personal care</strong></td>
<td>Cold cream, lipstick, hair coloring, nail polish, shaving cream, deodorant, toothpaste, perfume, hand lotions</td>
</tr>
<tr>
<td><strong>Food and Dairy</strong></td>
<td>Food preservatives, milk jugs, food containers, baby bottles, liquid containers, ice cube trays</td>
</tr>
<tr>
<td><strong>Electronic Equipment</strong></td>
<td>Cameras, film containers, stereo speakers, radios, cassettes, cell phones, PDAs</td>
</tr>
<tr>
<td><strong>Farm Products</strong></td>
<td>Fertilizers, fence insulators, storage containers, insecticides</td>
</tr>
<tr>
<td><strong>Home Accessories</strong></td>
<td>TV cabinets, telephones, soap dishes, upholstery, roofing, carpeting, water pipes, wire insulation, shower curtains, awnings, garden hose, house paint, toilet seats, caulking, unbreakable dishes, refrigerator linings, putty, dyes, trash bags, candles, adhesives, linoleum</td>
</tr>
<tr>
<td><strong>Medical</strong></td>
<td>Artificial limbs, hearing aids, antiseptics, cortisone, anesthetics, heart valves, vaporizers, soft contact lenses, pill capsules, antihistamines</td>
</tr>
<tr>
<td><strong>Office Supplies</strong></td>
<td>Rubber cement, ink pens, ink, glue, transparent tape, trash cans</td>
</tr>
<tr>
<td><strong>Packaging/Containers</strong></td>
<td>Food containers, salad bowls, drinking cups, plates</td>
</tr>
<tr>
<td><strong>Personal Products</strong></td>
<td>Shampoo, safety glasses, credit cards, shoe polish, umbrellas, panty hose, hair curlers, luggage, eyeglasses, shoes, combs, insect repellent</td>
</tr>
<tr>
<td><strong>Recreational</strong></td>
<td>Ice chests, life jackets, tents, boats, golf carts, ATVs</td>
</tr>
<tr>
<td><strong>Rubber</strong></td>
<td>Synthetic rubber</td>
</tr>
<tr>
<td><strong>Sporting Goods</strong></td>
<td>Waders, tennis rackets, fishing rods, golf balls, fishing lures</td>
</tr>
<tr>
<td><strong>Textiles</strong></td>
<td>Sweaters, permanent press clothes, disposable diapers, dresses, pajamas, slacks</td>
</tr>
<tr>
<td><strong>Toys</strong></td>
<td>Dolls, games, model cars, beach balls, Frisbees, helmets, roller skate wheels, crayons</td>
</tr>
</tbody>
</table>
The following is a Model Ordinance that may be used by cities, or other local jurisdictions, to incorporate or promote recommended practices for protecting communities and underground utility infrastructure. This Model Ordinance is intended only as a starting point for development of an ordinance by cities or other jurisdictions with planning authority (e.g., counties, townships, villages). Although the Model Ordinance as written refers directly to transmission pipelines located in a city, it may be used by other jurisdictions (with appropriate changes). It is expected that each specific jurisdiction would change the text of the ordinance to fit the circumstances of that jurisdiction.

The ordinance is available electronically on the Pipeline and Hazardous Materials Safety Administration Pipeline Safety Communications web site.

http://primis.phmsa.dot.gov/comm/LandUsePlanning.htm
Bill No.________

ORDINANCE NO.___________

AN ORDINANCE PROVIDING FOR MINIMUM REQUIREMENTS PERTAINING TO LAND USE, CONSTRUCTION, AND PUBLIC SAFETY NEAR GAS TRANSMISSION AND/OR HAZARDOUS LIQUID TRANSMISSION PIPELINES WITHIN THE CITY

WHEREAS, the United States economy is heavily dependent on gas transmission and hazardous liquids pipelines to transport and distribute energy and raw materials; and

WHEREAS, gas transmission and/or hazardous liquid transmission pipelines extend through portions of the City of __________________________; and

WHEREAS, these pipelines, if ruptured or damaged, may pose a risk to public safety and/or the environment; and

WHEREAS, the [Board of Aldermen] [City Council] wishes to minimize risk of rupturing or damaging these pipelines; and

WHEREAS, the National Transportation Safety Board has recognized that third-party damage and pipeline right-of-way encroachment are significant threats to pipeline safety; and

WHEREAS Title 49, Code of Federal Regulations, Parts 192 & 195 provide regulations for transmission pipelines; and

WHEREAS, the City has been encouraged by the U.S. Department of Transportation to adopt policies and regulations intended to reduce the likelihood of accidental damage to gas and hazardous liquid pipelines and to reduce adverse impacts of pipeline failures located within its jurisdiction; and

WHEREAS, the City desires to amend the City Code by adopting policies and regulations intended to reduce the likelihood of accidental damage to the gas and hazardous liquid pipelines and to help reduce adverse impacts in the event of a pipeline failure; and

[WHEREAS, the City held a Public Hearing on these proposed City Code amendments; and ]

[WHEREAS, at the Public Hearing, all interested persons and citizens were given an opportunity to be heard on these proposed amendments to the City Code; and]

NOW THEREFORE, BE IT ORDAINED BY THE [BOARD OF ALDERMEN] [CITY COUNCIL] OF THE CITY OF ____________________________, AS Follows:
SECTION 1. That Section ______________ of the City Code shall be and is hereby amended by adding the following definitions:

CONSULTATION ZONE, means an area within ______ feet of a transmission pipeline. See Section 2 of this Model Ordinance.

DEVELOPMENT PERMIT, for the purposes of the Consultation Zone requirements, means any permit for activity that involves construction, grade modification, excavation, blasting, land clearing, or the deposit of earth, rocks or other materials that places an additional load upon the soil. Construction that involves work totally within an existing building footprint, such as residential remodeling projects, is specifically exempted from these Consultation Zone requirements.

EXCAVATION: Any operation in which earth, rock or other material [in or on the ground] [within 12” of grade level] is moved, removed or otherwise displaced by means of any tools, equipment or explosives and includes, without limitation, backfilling, grading, trenching, digging, ditches, drilling, pulverizing, rubblizing, well-drilling, auguring, boring, tunneling, scraping, cable or pipe plowing, plowing-in, pulling-in, ripping, driving, and demolition of structures, except that, the use of mechanized tools and equipment to break and remove pavement and masonry down only to the depth of such pavement or masonry, the use of high-velocity air to disintegrate and suction to remove earth, rock and other materials, and the tilling of soil for agricultural or seeding purposes shall not be deemed excavation. Backfilling or moving earth on the ground in connection with other excavation operations at the same site shall not be deemed separate instances of excavation.

GAS TRANSMISSION PIPELINE means a “transmission line” as defined by Title 49, Code of Federal Regulations, Section 192.3.

HAZARDOUS LIQUID PIPELINE means a pipeline designed for the transmission of a “hazardous liquid”, as defined by Title 49, Code of Federal Regulations, Section 195.2.

ONE-CALL NOTIFICATION CENTER: An statewide organization, established pursuant to (INSERT APPLICABLE SECTION NUMBER OF STATUTE MANDATING NOTIFICATION CENTER), as amended, operating twenty-four hours a day, three hundred sixty-five days a year on a not-for-profit basis, supported by its participants, or by more than one operator of underground facilities, having as its principal purpose the statewide receipt from and dissemination to participating owners and operators of underground facilities of information concerning intended excavation activities in the area where such owners and operators have underground facilities, and open to participation by any and all such owners and operators on a fair and uniform basis. Such notification center shall be governed by a board of directors elected by the membership and composed of representatives from each general membership group.

PERSON: Any individual, firm, joint venture, entity, partnership, corporation, association or cooperative;
PIPA REPORT: means a document published by the DOT Pipeline and Hazardous Materials Safety Administration with support from many government agencies, property development associations, and pipeline industry associations. The document was initially published in early 2009 and will be updated as needed and available on the PHMSA Pipeline Safety Stakeholder Communications web site.

PIPELINE means the same as is defined by Title 49, Code of Federal Regulations, Sections 195.2 and 192.3.

PIPELINE FACILITY means the same as is defined by Title 49, Code of Federal Regulations, Sections 195.2 and 192.3.

PLANNING ZONE means an area around a transmission pipeline, defined based on characteristics of the pipeline and the surrounding area. The Planning Zone is defined to determine where the requirements of Section 6 below apply. See PIPA Report, Recommended Practice BL06. [see practice “Planning Zone”].

TRANSMISSION PIPELINE means gas transmission pipeline or hazardous liquid pipeline as defined above.
SECTION 2. That Section ______________ of the City Code shall be and is hereby amended by adding Subsection thereto, which Subsection shall read as follows:

CONSULTATION ZONE

a. Consultation Zone Distance

[A Consultation Zone is hereby established for any parcels within XXX feet of the centerline of a transmission pipeline or specific distances may be established for each pipeline or each type of transmission pipeline. See PIPA Report Recommended Practice BLO5]

[The consultation zone distance may be reduced for areas near specific pipelines if an analysis based on characteristics of the pipeline and surrounding area justifies a shorter distance.]

[There must be written documentation from the transmission pipeline operator showing their agreement to any lessening of the Consultation Zone distance for certain types of development permits.]

b. Consultation Zone Notification

[At application for a development permit, staff at the permit counter shall notify the individual they are within the Consultation Zone, explain the relevant application procedures, and provide contact information for the applicable pipeline operator(s). This same procedure shall be followed whenever an individual inquires about development regulations or zoning restrictions for property within the Consultation Zone.]

c. Application Process within Consultation Zone

Complete application for development permit within designated Consultation Zone must include written verification from applicant that:

[1. Applicant has contacted the pipeline operator(s) and has provided them with documentation detailing the proposed development type and place of the activity; and]

2. The pipeline operator(s) has reviewed the documents.

3. The written verification required by this section can be in any form acceptable to the City, including electronic communications, so long as it is clear that the pipeline operator(s) has received and reviewed documentation showing the proposed information concerning any impact the activity will have upon the integrity of the transmission pipeline(s). The verification should include all comments received from the operator or a notice from the operator indicating that the operator has no comments.

4. If the operator does not respond within 30 days after being contacted and provided information by the developer pursuant to c.1 above, then the City may waive the requirement for written verification given under c.3 above.]
SECTION 3. That Section __________________of the City Code shall be and is hereby amended by adding Subsection_ thereto, which Subsection shall read as follows:

PLANNING ZONE

a. Planning Zone Distance

[Planning Zones are hereby established within the following distances of the pipeline centerlines, for the following transmission pipeline(s).

Pipeline A – YYY feet

Pipeline B – ZZZ feet

Pipeline C - Etc. See PIPA Report Recommended Practice BL06]

b. Applicability of Planning Zone

[At application for a development permit, staff at the permit counter shall notify the individual they are within the Planning Zone and explain the relevant requirements.]

[Development within the Planning Zone shall meet the requirements under Section 6 below.]

SECTION 4. That Section __________________of the City Code shall be and is hereby amended by adding Subsection_ thereto, which Subsection shall read as follows:

[The plat must provide a note that all existing gas and/or hazardous liquid pipelines or pipeline facilities through the subdivision have been shown, or that there are no known existing gas and/or hazardous liquid pipelines or pipeline facilities within the limits of the subdivision.]

[The location of all pipelines and related easements shall be shown on all preliminary plat, zoning, building, and record plat maps when proposed development is within the planning zone.]

[For proposed development within the consultation zone around pipeline(s), developer shall forward all site or subdivision plans for review comments to the Pipeline Owner/Operators by certified mail, return receipt requested, to be supplied to the City as proof of notification prior to plan approval.]
SECTION 5. That Section ________________ of the City Code shall be and is hereby amended by adding Subsection ______ thereto, which Subsection shall read as follows:

[Insert selected recommended practices for Protecting Transmission Pipelines]

[The PIPA Report included many recommended practices to reduce the risk of damage to underground facilities, including transmission pipelines. Select from the PIPA Report recommended practices listed below:]

<table>
<thead>
<tr>
<th>BL14</th>
<th>Participate in Organizations Pursuing Improved State Damage Prevention Programs</th>
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<tbody>
<tr>
<td>BL15</td>
<td>Enhanced Damage Prevention Practices for Excavation near High Priority Underground Facilities</td>
</tr>
<tr>
<td>BL16</td>
<td>Halting Dangerous Excavation Activities near High Priority Subsurface Installations</td>
</tr>
<tr>
<td>BL17</td>
<td>Mapping Abandoned Pipelines in One-call System</td>
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</tbody>
</table>
SECTION 6. That Section ________________ of the ___________ Code shall be and is hereby amended by adding Subsection_ thereto, which Subsection shall read as follows:

[Insert selected recommended practices for Protecting Communities PC-3 through PC-16, as appropriate, indicating requirements within the Planning Zone]

[The PIPA Report included many recommended practices to mitigate the consequences of a transmission pipeline failure on development within the Planning Zone. Select from the PIPA Report recommended practices listed below:

ND11 ______ Mitigate Impact of a Transmission Pipeline Release in the Design of New Parking Lots and Parking Structures

ND12 ______ Mitigate Impact of a Transmission Pipeline Release in the Design of New Roads

ND13 ______ Mitigate the Potential Impact of a Transmission Pipeline Incident in the Design of New Utilities and Related Infrastructure

ND14 ______ Mitigate the Potential Impact of Aboveground Water Management Infrastructure

ND15 ______ Mitigate Vegetation Interference with Transmission Pipeline Activities

ND16 ______ Design Water Supply and Sanitary Systems to Mitigate Contamination and Excavation Damage

ND17 ______ Mitigate Impact of a Potential Transmission Pipeline Release in New Residential, Mixed-Use, and Commercial Land Use

ND18 ______ Consider Noise and Odor Associated with Pipeline Operations in the Design of Residential, Mixed-Use, and Commercial Land Use

ND19 ______ Account for Impact of a Transmission Pipeline Incident in Design of New Industrial Land Use Development

ND20 ______ Mitigate Impact of a Transmission Pipeline Incident in the Design of New Institutional Land Use Developments

ND21 ______ Mitigate the Impact of a Transmission Pipeline Incident in the Design of New Public Safety and Enforcement Facilities

ND22 ______ Mitigate the Impact of a Transmission Pipeline Incident in the Design of New Places of Mass Public Assembly (Identified sites)

ND23 ______ Incorporate Emergency Response Plans into Land Development]
SECTION 7.  Severability. If any term, condition, or provision of this Ordinance shall, to any extent, be held to be invalid or unenforceable, the remainder hereof shall be valid in all other respects and continue to be effective and each and every remaining provision hereof shall be valid and shall be enforced to the fullest extent permitted by law, it being the intent of the Board of Aldermen (or City Council) that it would have enacted this Ordinance without the invalid or unenforceable provisions. In the event of a subsequent change in applicable law so that the provision that had been held invalid is no longer invalid, said provision shall thereupon return to full force and effect without further action by the City and shall thereafter be binding.

SECTION 8. Effective Date. This Ordinance shall be in full force and take effect from and after the date of its final passage and approval.

SECTION 9. Savings. Nothing contained herein shall in any manner be deemed or construed to alter, modify, supersede, supplant or otherwise nullify any other Ordinance of the City or the requirements thereof whether or not relating to or in any manner connected with the subject matter hereof, unless expressly set forth herein.

Read two times and passed this _____ day of __________________, 2008.

________________________________________

As Presiding Officer and as Mayor

Attest: ________________________________

City Clerk

Approved this ______ day of _________________________, 2008.

________________________________________

Mayor

Attest: ________________________________

City Clerk
Appendix D

Incorporating Transmission Pipeline Rights-Of-Way in New Rural, Suburban and Urban Developments

The following pictures are examples of successful, collaborative transmission right-of-way developments as well as some situations to avoid. Since practices vary among operators, activities that may not be acceptable to some are noted in the picture’s description. The dashed yellow line indications the location of the pipeline.

*Rural Example 1: Green Space Development*

This picture illustrates development that commonly occurs as suburbs encroach into rural areas. This transmission pipeline right-of-way is clearly defined yet blends with the surrounding area. The shed and playground are outside the right-of-way but the landowners are able to enjoy its use of the land.
Rural Example 2: Agricultural seasonal crops such as corn, soybeans and cotton may be grown in the pipeline right-of-way. The use of the pipeline right-of-way to grow crops is important for farmers to optimize use of the land. Deep tilling, certain farming practices and erosion may damage the pipeline and should be discussed with the operator.
**Rural Example 3:** Aboveground pipeline creek crossing was modified to accommodate pedestrian bridge connecting walking trails. The transmission pipeline is located between the girders under the walkway.
Rural Example 4: Soft Surface Walking Trail
This rural right-of-way has been transformed into a soft surface walking trail. The soft surface is beneficial for unimpeded access to the pipeline facilities. Trees are outside of the right-of-way and clearly define it. The bench is an example of an encroachment that may be acceptable to some operators but not to others.
Suburban Example 1: Shared utility corridor with asphalt walking path.

As development encroaches on previously rural areas, land for utilities becomes scarcer. At times, utilities share a utility corridor. In shared right-of-way space, the need for coordination increases. The additional facilities create the potential for cathodic interference and increase the potential for excavation damage to facilities. The example below illustrates a transmission pipeline right-of-way that is shared with electric and a hard surface walkway. Some operators only allow soft surface walkways. The tree is an example of landscaping that generally would not be allowed in the right-of-way.
Suburban Example 2: Green space.
This right-of-way is clearly defined, free of large vegetation and easily accessible by the operator. Fences have been placed parallel but outside of the right-of-way.
Suburban Example 3: Walking Trail –
The trees have been planted inside the right-of-way and should be removed. Lighting for the path should be located outside of the right-of-way.
Suburban Example 4: Green space.

Note the gate is large enough for ROW maintenance vehicles, is removable and does not obstruct the view of the right-of-way for patrolling by the operator.
Walking trails are a popular option for enhancing a community. Trees and lighting should be placed outside of the right-of-way.
Suburban Example 9: Formal garden with shallow rooted plantings.
The operator may need to remove some of the plantings to access the pipeline. An encroachment agreement should address restoration. The bench is free standing. A transmission pipeline marker is located in an open space near the path that traverses the right-of-way.
Suburban Example 2: Playground equipment and removable sport court.
While free standing playground equipment or removable equipment such as the sport court with removable panels are acceptable, this swing set should not be allowed because the footings may be deep enough to reach the pipeline and it is not easily movable in case of emergency. The fence along the basketball court also should not be allowed for the same reason.
Urban Example 1: Formal garden with shallow rooted plants. The pipeline marker is not visible in this picture. Some markers lie flat to the ground. The signs promote awareness of the pipelines presence.
Urban Example 2: Church

The church is situated on the opposite side of the lot, as far as possible from the transmission pipeline. The shrubbery should be cut back further around the pipeline marker.
Examples of Development of the Transmission Right-of-way that should be avoided

Trees in the right-of-way

This tree was planted between two transmission pipelines. It may impede access to the pipeline. Fortunately the pipeline was not damaged during planting.
Examples of Development of the Transmission Right-of-way that should be avoided

The next three pictures illustrate why trees should not be allowed in the right-of-way. The tree roots have impeded the operator’s ability to access and evaluate the transmission pipeline. Pipeline coatings may also be damaged by tree roots. Coatings need to remain intact to protect the pipeline from corrosion.
Examples of Development of the Transmission Right-of-way that should be avoided

New Development Built to the Edge of the Right-of-Way
Example of impact of maintenance on development built in close proximity to the edge of the pipeline right-of-way. Due to the limited amount of workspace for the large equipment, nearby structures such as the wooden fence have been damaged.
Examples of Development of the Transmission Right-of-way that should be avoided

Temporary Structures in the Right-of-Way

The following example illustrates the benefit of contacting the operator prior to changing the use of the pipeline right-of-way. A hospital was planning an event and engaged a company to set-up a large party tent. The hospital was aware of the presence of two transmission pipelines that pre-date the construction of the hospital, a 10-inch active line and an 8-inch idle line. There are several permanent pipeline markers on the lawn. The tent was set up without notification to the pipeline operator and without a One Call locate request being placed. Pipeline operator investigated the encroachment and determined one of the 42-inch long tent stakes was driven into the ground within 5-inches of one of the pipelines. Investigation revealed no damage to the pipelines, but the tent was relocated out of the pipeline right of way. The company that set up the tent was instructed to place One Call locate requests in the future and given pipeline awareness materials.
### Appendix E - Guidance in Determining if Proposed Land Use of the Right-of-Way is Acceptable

<table>
<thead>
<tr>
<th>Use/Activity</th>
<th>Acceptable Use or Activity?</th>
<th>Additional Restrictions or comments</th>
<th>Origin/ Rationale for determining acceptable Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture - (Seasonal Agricultural Crops - excludes orchards and vineyards)</td>
<td>Yes, but consent is required</td>
<td>Activities related to the growing of crops or the raising of animals need no consent; provided the activity does not involve installation of permanent structures or an increase or decrease in the cover over the pipeline. Facilities such as underground and overhead irrigation systems must be reviewed for compatibility.</td>
<td>With prior approval from operator, grass and certain types of shrubs or seasonal crops may be permitted within the right-of-way, provided that the plantings do not interfere with the maintenance, inspection and operation of the pipeline and related facilities.</td>
</tr>
<tr>
<td>Airports - Private (perpendicular crossing to pipeline)</td>
<td>Yes, but consent is required</td>
<td>Permission to use the right of way for a flight strip may be granted, provided it is for the private use of the property owner, and does not involve any increase or decrease in the cover over the pipeline or the installation of any permanent structures, including paving, on the right of way.</td>
<td>These airstrips are considered to be dirt. This use can lead to a decrease in ground cover.</td>
</tr>
<tr>
<td>Airports - Public</td>
<td>No</td>
<td></td>
<td>These runways are constructed of concrete. Therefore, access for pipeline maintenance and emergency response activities preclude this use. In addition, most airports have restricted use for security reasons.</td>
</tr>
<tr>
<td>All Terrain Vehicle (ATV) Use</td>
<td>No</td>
<td></td>
<td>This use can lead to a decrease in ground cover.</td>
</tr>
<tr>
<td>Athletic Stadium (e.g. baseball field, football field, running tracks, etc.)</td>
<td>No</td>
<td></td>
<td>This use may increase the risk for the pipeline company. Even fields with no permanent structures may define the area as a gas transmission HCA requiring additional integrity management requirements for the operator.</td>
</tr>
<tr>
<td>Automobile Wrecking Yards</td>
<td>No</td>
<td></td>
<td>Access for pipeline maintenance and emergency response activities preclude this use.</td>
</tr>
<tr>
<td>Biorention Cell</td>
<td>No</td>
<td></td>
<td>Access for pipeline maintenance activities preclude this use.</td>
</tr>
<tr>
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<tr>
<td>Blasting</td>
<td>No</td>
<td>Not allowed on easements or fee land where any facilities are installed. Exceptions are for construction of another approved activity, subject to engineering review for technique, size of holes, spacing, etc.</td>
<td>Blasting activities may cause stresses on nearby pipelines which may lead to leaks.</td>
</tr>
<tr>
<td>Buildings</td>
<td>No</td>
<td>No type of permanent structure permitted. See also “Structures”.</td>
<td>No structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the risk for operators.</td>
</tr>
<tr>
<td>Campsites</td>
<td>No</td>
<td></td>
<td>This use may define the area as a gas transmission HCA requiring additional integrity management requirements for the operator. In addition, no fires would be allowed for safety reasons.</td>
</tr>
<tr>
<td>Canals (For irrigation purposes)</td>
<td>Yes, but consent is required</td>
<td>Canals or ditches may be built across Company easements provided: 1) Adequate precautions are taken to protect company facilities. Plans must be approved by engineering or operations. 2) Party building the canal will pay the cost of protecting or relocating company facilities.</td>
<td>This use is categorized for irrigational purposes only. Canals must be constructed to allow for maintenance, inspection, and emergency response activities to occur.</td>
</tr>
<tr>
<td>Canopies / temporary (Categorized as party tents, canvas awnings, or portable coverings for group gatherings)</td>
<td>No</td>
<td></td>
<td>This use could involve driving large stakes into the ground near the pipeline exposing it to potential damage and future leaks.</td>
</tr>
<tr>
<td>Canopies / permanent (Weather and environmental shelters over gas stations, emergency room/hospital entrances, bank, pharmacy, fast food drive throughs, etc.)</td>
<td>No</td>
<td></td>
<td>No structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Canopies may entrap gases and vapors that could find ignition sources from vehicle or pedestrian activities. Concrete under canopies could cause gas to migrate to building in the event of a failure.</td>
</tr>
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<tr>
<td>Carports, permanent</td>
<td>No</td>
<td>No type of permanent structure permitted. See also “Structures”.</td>
<td>Access for pipeline maintenance, inspection, and repair activities preclude this use.</td>
</tr>
<tr>
<td>Catch Basins</td>
<td>No</td>
<td></td>
<td>Access for pipeline maintenance, inspection, and repair activities preclude this use.</td>
</tr>
<tr>
<td>Cathodic Protection Devices</td>
<td>Yes, but consent is required</td>
<td>Cathodic protection facilities may be installed provided they are coordinated with other utilities and all interference problems are eliminated. Must be approved by the Company’s cathodic protection department.</td>
<td>To ensure adequate cathodic protection for all pipelines, routine testing must be scheduled and performed by qualified personnel to prevent interference issues.</td>
</tr>
<tr>
<td>Cemetery</td>
<td>No</td>
<td></td>
<td>Access for pipeline maintenance, inspection, and repair activities preclude this use.</td>
</tr>
<tr>
<td>Concrete Slabs (Categorized as for foundation typically poured for permanent structure, equipment, or storage location)</td>
<td>No</td>
<td>Not allowed except where they may be installed to provide for pipeline protection from third party damage (submit plans for review) or for easement across Rights of way (such as for driveways or roads). (See also Roads, Driveways, Road Crossing, and Structures)</td>
<td>Access for pipeline maintenance, inspection, and repair activities preclude this use.</td>
</tr>
<tr>
<td>Construction Equipment</td>
<td>Yes, but consent is required</td>
<td>Hand dig trenches within 5’ of pipeline. Provide for Company supervision while work is in progress. Give 48 hours prior notice before performing work. Call One-Call number for utility locating.</td>
<td>Operator will perform an engineering evaluation to determine the effects of any proposed equipment use. Additional dirt cover and/or mats, timber bridges or other protective materials deemed necessary by operator shall be placed over operator facilities for the duration of any loading to ensure the pipeline does not incur damage.</td>
</tr>
<tr>
<td>Culverts</td>
<td>Yes, but consent is required</td>
<td>Provided 1 foot minimum separation is maintained between pipeline and culvert, with culvert above pipeline. Plans must be approved by Operations or Engineering.</td>
<td>Operator will require additional safety measures to protect pipeline during culvert installation including hand digging when in pipeline vicinity.</td>
</tr>
<tr>
<td>Cuts and Fills</td>
<td>Yes, but consent is required</td>
<td>Some cutting and filling may be permitted over pipeline provided: 1) Cover is not reduced below 36” or depth required by pipeline regulations. 2) Cover is not increased to the point where pipe exceeds acceptable stress levels. Review with Operations or</td>
<td>This cut and fill material must not interfere with maintenance, inspection, or repair activities. Cut and fill material must not lead to erosion issues.</td>
</tr>
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<td></td>
<td></td>
<td>Engineering as applicable.</td>
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<tr>
<td>Dams</td>
<td>No</td>
<td></td>
<td>Access for pipeline maintenance, inspection, and repair activities preclude this use.</td>
</tr>
<tr>
<td>Driveways</td>
<td>Yes, but consent is required</td>
<td>A driveway may be built across Company easements, provided: 1) It is for use of property owner only, and does not provide access for another parcel of property. 2) Clearances are maintained as in Cuts and Fills. 3) Written permission is obtained.</td>
<td>Operator engineering review required for all proposed streets, roads and driveways to ensure pipeline cover is adequate to support the load from the road crossing. Additional cover, concrete, or other forms of mechanical protection may be required to ensure the pipeline does not incur damage as a result of this use and traffic loads.</td>
</tr>
<tr>
<td>Dumps</td>
<td>No</td>
<td></td>
<td>This use would not allow Operator easy access for pipeline maintenance, inspection, and repair activities</td>
</tr>
<tr>
<td>Erosion Control</td>
<td>Yes, but consent is required</td>
<td>Structures or materials to prevent soil erosion due to wind or water may be located on the pipeline right of way provided: 1) They do not interfere with the installation, operation or maintenance of the pipeline. 2) The design has been approved by the engineering and environmental departments. 3) The facilities have taken into account the effect of the environment of the area.</td>
<td>Placement of structures and material must allow for maintenance, inspection, and repair activities to be conducted as well as to allow for emergency response access.</td>
</tr>
<tr>
<td>Exploration - Geologic and Geophysical</td>
<td>Yes, but consent is required</td>
<td>Subject to proper indemnification and site cleanup. Must be approved by Operations or Engineering. Also see Blasting, Construction Equipment, and Wells.</td>
<td>3D seismic studies, depth of cover, pipeline operating stress levels, and other factors must be considered. The vibrations used to create the sound waves for these exploration activities are quite intense and may compromise the integrity of the pipeline leading to leaks if not properly evaluated.</td>
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<tr>
<td>Fences - parallel to rights of way</td>
<td>Yes, but consent is required</td>
<td>(general) No masonry or brick fences are allowed. In addition, fences and pipeline should be separated by adequate distance to allow for potential future repairs. Adequate access to and around facilities must be maintained.</td>
<td>Fences must not interfere with access for pipeline maintenance, inspection, and repair activities.</td>
</tr>
<tr>
<td>Fences - perpendicular to rights of way</td>
<td>Yes, but consent is required</td>
<td>(general) No masonry or brick fences are allowed. Adequate access to and around facilities must be maintained. Company retains the right to require the installation of a gate in the fence with a corporation lock where necessary to maintain such access. Gates should be wide enough to allow pipeline operators equipment to gain access for repairs and emergencies. Fence posts must not be installed directly over pipeline. Fences should be installed to allow for easy removal during emergency response. One-call notification required for fence construction.</td>
<td>Fences must not interfere with access for pipeline maintenance, inspection, and repair activities. Additional requirements may be imposed to protect pipeline from damage during construction.</td>
</tr>
<tr>
<td>Flammable Material</td>
<td>No</td>
<td>Managed burns for controlling vegetation may be performed by organizations such as BLM or DNR or by farmers, but this activity must be coordinated with pipeline operator to ensure public safety. No combustible material is to be stored on the easement.</td>
<td>For safety reasons no flame or fire associated with an incineration process or with flammable material storage is allowed due to the combustible material transported in the pipelines.</td>
</tr>
<tr>
<td>Flood Control</td>
<td>Yes, but consent is required</td>
<td></td>
<td>Engineering review can be made to consider buoyancy and ensure pipeline is adequately protected.</td>
</tr>
<tr>
<td>Flooding</td>
<td>No</td>
<td>If there is a possibility of periodic flooding, buoyancy of pipeline must be considered.</td>
<td>Intentional flooding is prohibited because it can cause stresses on the pipeline leading to integrity issues; buoyancy must be considered.</td>
</tr>
<tr>
<td>Golf Courses</td>
<td>Yes, but consent is required</td>
<td>May be allowed if no permanent structures are placed on right of way.</td>
<td>Cover must be adequate and must allow for maintenance, inspection, and repair activities.</td>
</tr>
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<tr>
<td>Highways</td>
<td>Yes, but consent is required</td>
<td>Easements will be granted for highway construction provided Company is reimbursed for cost of protecting, uprating or relocating pipeline so that it complies with all applicable regulations and requirements. Where a highway is widened to take in an area in which the Company has a prior right of way, the Company shall be reimbursed for that portion of the work that falls in the area where Company has prior rights. Pipeline cover must be adequate to support the load from the highway to ensure the pipeline does not incur damage. Review by Operator's engineering group required for all proposed streets, roads, and driveways to ensure pipeline cover is adequate to support the load from the road crossing. Additional cover, concrete, or other forms of mechanical protection may be required to ensure the pipeline does not incur damage as a result of this use and traffic loads.</td>
<td></td>
</tr>
<tr>
<td>Hiking Trails</td>
<td>Yes</td>
<td>Provided reasonable access to facilities is maintained. See also Landscaping and Cuts and Fills. Trails must be placed to allow maintenance, inspection and repair activities to be conducted.</td>
<td></td>
</tr>
<tr>
<td>Horseback Riding Trails</td>
<td>Yes</td>
<td>Provided adequate access to facilities is maintained. See also Landscaping and Cuts and Fills. Trails must be placed to allow maintenance, inspection and repair activities to be conducted.</td>
<td></td>
</tr>
<tr>
<td>Incinerators</td>
<td>No</td>
<td>For safety reasons, no flame, fire, or flammable material is allowed.</td>
<td></td>
</tr>
<tr>
<td>Junk Yards</td>
<td>No</td>
<td>This use would not allow Operator easy access for pipeline maintenance, inspection, and repair activities</td>
<td></td>
</tr>
<tr>
<td>Landscaping</td>
<td>Yes, but consent is required</td>
<td>Provided reasonable access to facilities is maintained. See Cuts and Fills for earthwork requirements. In addition, shrubs should not interfere with patrolling or inspection activities. See Tree Farms for tree limitations. With prior approval from operator, flower beds, lawns, and gardens may be permitted within the right-of-way, provided that the plantings do not interfere with the maintenance, inspection and operation of the pipeline and related facilities.</td>
<td></td>
</tr>
<tr>
<td>Leach Fields</td>
<td>No</td>
<td>(General) Piping leading to leach field may cross Company pipeline (see Pipelines). Entire leach field must be outside of right of way. Before granting permit for piping, owner must show proof of permit that installation will meet all State and local water quality requirements. Leach field would be subject to damage by passage of heavy equipment. Therefore, repair activities preclude this use. Also, there are integrity concerns that water can cause corrosion and lead to failures.</td>
<td></td>
</tr>
<tr>
<td>Loading Ramps</td>
<td>No</td>
<td>See also Concrete Slabs Stresses on pipeline can lead to integrity issues and this use does not allow for maintenance and inspection activities.</td>
<td></td>
</tr>
<tr>
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<tr>
<td>Marinas</td>
<td>No</td>
<td>Marinas may not be installed on Company right of way at river crossing.</td>
<td>This use would not allow Operator access for pipeline maintenance, inspection, and repair activities.</td>
</tr>
<tr>
<td>Masonry Work</td>
<td>No</td>
<td></td>
<td>This use does not allow for access for emergency response and maintenance.</td>
</tr>
<tr>
<td>Mini Golf Courses (putt-putt courses)</td>
<td>No</td>
<td>May be allowed if no permanent structures are placed on right of way and green space for pipeline easement is included.</td>
<td>Use must not interfere with maintenance and inspection activities. This use may define the area as a gas transmission HCA requiring additional integrity management requirements for the operator. In addition, no permanent structures are to be placed on the ROW.</td>
</tr>
<tr>
<td>Mobile Home Parks</td>
<td>No</td>
<td>No mobile home park facilities may be installed on Company right of way. The area over pipeline right of way must provide that: 1) Streets or roads are laid out to cross pipeline at a right angle. Parallel encroachments are not acceptable. 2) Must meet requirements for Road Crossings, either private or public. 3) Right of way is not used for utility corridor. 4) Mobile home park developer shall submit approved plans. 5) Necessary consents are issued by the Company. Permission to construct facilities (roads, utilities, etc.) across right of way to service mobile home park on land adjacent to Company right of way will be granted only if owner will pay cost of upgrading and/or protecting Company facilities.</td>
<td>No structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the risk for operators.</td>
</tr>
<tr>
<td>Mobile Home</td>
<td>No</td>
<td>No permanent structure may be installed on right of way.</td>
<td>No structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the risk for operators.</td>
</tr>
<tr>
<td>Model Airplanes</td>
<td>Yes</td>
<td>Model airplanes may be flown over Company right of way but no permanent facilities may be located on right of way.</td>
<td>Operator must know of this activity to ensure there is no interference or danger when performing aerial leak patrols.</td>
</tr>
<tr>
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<tr>
<td>Orchards</td>
<td>No</td>
<td></td>
<td>Tree root structures may be deep and extend beyond tree canopies. These roots can be severe and damage coating leading to corrosion and leaks.</td>
</tr>
<tr>
<td>Parking</td>
<td>Yes, but consent is required</td>
<td>A private property owner may park vehicles used in his work (such as farm equipment) on the right of way. However, equipment shall not be parked over pipelines. Use of the easement as a commercial or other publicly used parking lot, whether paved or unpaved, should be discouraged, and shall not be allowed without review. The Company shall not accept liability for damages to the parking facility caused by the exercise of its rights under the easement, and shall reserve the right to prohibit vehicular parking on its easement at any time. Company conducts maintenance activities on a frequent basis. Parking vehicles on the ROW may interfere with some of these maintenance practices.</td>
<td></td>
</tr>
<tr>
<td>Parks</td>
<td>Yes, but consent is required</td>
<td>Right of way may be used as part of park area, but permanent structures may not be located on right of way. Specific plan review required. Use must allow for maintenance, inspection, and emergency response activities.</td>
<td></td>
</tr>
<tr>
<td>Patios</td>
<td>No</td>
<td></td>
<td>No structures are allowed because they interfere with emergency response and repair activities and increase risk for operators.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Yes, but consent is required</td>
<td>Permits will be granted for foreign pipelines to cross the right of way, provided: 1) Crossing is as close to a right angle as possible. 2) Pipeline maintains at least one-foot clearance above, or two feet below, existing pipelines. Crossings above should be strongly discouraged. 3) Provisions for future use of right of way. 4) Precautions are taken to protect both facilities from interference problems due to cathodic protection. 5) Pipeline meets all government requirements with respect to safety and environment. 6) Parallel encroachments are not allowed. (See &quot;Utilities Parallel&quot;) Significant design, construction, and maintenance code activities are performed to ensure the safety of the public and employees near the pipelines. These design, construction, and maintenance activities also ensure the integrity of the pipelines. Additional construction requirements may be imposed to protect the pipeline and allow future maintenance activities to be performed.</td>
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<tr>
<td>Play Equipment</td>
<td>Yes, but consent is required</td>
<td>No permanent structure may be installed on right of way. Play equipment without embedded footings or foundations is allowed.</td>
<td>Play equipment that has a foundation or embedded footings could damage the pipeline coating leading to integrity and corrosion issues. No structures are allowed because they interfere with emergency response and repair activities and increase risk for operators.</td>
</tr>
<tr>
<td>Ponds</td>
<td>No</td>
<td></td>
<td>This use would not allow Operator access for pipeline maintenance, inspection, and repair activities</td>
</tr>
<tr>
<td>Porches</td>
<td>No</td>
<td></td>
<td>No structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the risk for operators.</td>
</tr>
<tr>
<td>Power Lines</td>
<td>Yes, but consent is required</td>
<td>Power lines may be installed across Company right of way provided: 1) Poles or towers are not located on Company right of way. 2) Wires have adequate clearance to permit working on pipeline. 3) Parallel encroachments of above or below ground power lines are not allowed (See &quot;Utilities – Parallel&quot;). 4) Power lines are not located within 200 feet of a blow-down stack. 5) Buried power lines meet Company standards.</td>
<td>Engineering review and field monitoring can be performed to ensure no corrosion issues develop and lead to failures.</td>
</tr>
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<tr>
<td>Private Landowner Crossing of Pipeline</td>
<td>Yes, but consent is required</td>
<td>Consent Letter required for private landowner buried facility crossing the right-of-way. Conditions for the Consent Letter 1) Crossing is as close to a right angle as possible. 2) Facility maintains at least one foot clearance above, or two feet below, existing pipelines. Crossings above the pipeline should be strongly discouraged. 3) Provisions for future use of right of way. 4) Precautions to protect both facilities from interference problems due to cathodic protection. 5) Buried facility meets all government requirements for safety and environment. 6) Parallel encroachments are not allowed. (See &quot;Utilities Parallel&quot;).</td>
<td>Additional construction requirements may be imposed to protect the pipeline and allow future maintenance activities to be performed.</td>
</tr>
<tr>
<td>Pumps</td>
<td>No</td>
<td></td>
<td>Failure of equipment could elevate risks; permanent structures do not allow for easy access for emergency response.</td>
</tr>
<tr>
<td>Pump Islands (Categorized as fuel pumps for automobile service stations - general transportation refueling stations)</td>
<td>No</td>
<td>No structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the potential consequences if a failure occurs.</td>
<td>No structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the potential consequences if a failure occurs.</td>
</tr>
<tr>
<td>Quarries</td>
<td>No</td>
<td>Off right of way quarrying activities in proximity to the right of way should be brought to the attention of Pipeline Company for assessment of potential impacts to the integrity of the right of way and Company facilities. (See blasting)</td>
<td>This activity limits access for emergency response.</td>
</tr>
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<tr>
<td>Railroads</td>
<td>Yes, but consent is required</td>
<td>Railroad crossings are permitted, provided railroad agrees to pay the cost to upgrade or protect pipeline. Clearances shall be provided as required in Cuts and Fills.</td>
<td>Pipeline cover must be adequate to support the load from the railroad crossing to ensure the pipeline does not incur damage; vibrations shall be properly evaluated for cyclic fatigue to ensure the integrity of the pipeline is not compromised and leads to leaks. Review by Operator's engineering group required for all proposed railroad crossings to ensure pipeline cover is adequate to support the load from the crossing. Additional cover, concrete, or other forms of mechanical protection may be required to ensure the pipeline does not incur damage as a result of this use and traffic loads.</td>
</tr>
<tr>
<td>Recreation Areas</td>
<td>Yes</td>
<td>Pipeline right of way may be used for general recreation that does not require the use of any permanent structures or facilities.</td>
<td>Pipeline cover must be maintained to protect pipeline and the use would have to allow for maintenance activities to be completed.</td>
</tr>
<tr>
<td>Retaining Walls</td>
<td>Yes, but consent is required</td>
<td>Provided adequate access to facilities is maintained and Cuts and Fills criteria is maintained. All retaining walls on Company right of way must be approved by Operations or Engineering.</td>
<td>Pipeline cover must be maintained to protect pipeline and the use would have to allow for maintenance and emergency response activities to be completed.</td>
</tr>
<tr>
<td>Rifle Ranges</td>
<td>No</td>
<td>Limited use may be made of area across Company right of way but no permanent facilities may be located on right of way.</td>
<td>Pipeline systems include above ground facilities that may incur damage from rifle range fire.</td>
</tr>
<tr>
<td>Road - Parallel</td>
<td>Yes, consent required</td>
<td>Plans must be approved by Company’s Operations or Engineering groups. Road easement is subordinate to Company’s. In addition, road and pipeline should be separated by adequate distance to allow for potential future repairs.</td>
<td>Use must allow for maintenance, inspection, and emergency response activities.</td>
</tr>
<tr>
<td>Use/Activity</td>
<td>Acceptable Use or Activity?</td>
<td>Additional Restrictions or comments</td>
<td>Origin/ Rationale for determining acceptable Activity</td>
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</tr>
<tr>
<td>Road Crossings - Private</td>
<td>Yes, but consent is required</td>
<td>Consent will be granted for private roads across Company right of way provided: 1) Assurance is given road will remain a private road. It must be so marked and signs must be maintained. 2) Road must not be given a hard surface. 3) Cut and Fill requirements must be maintained. 4) Owner must agree to pay cost of protecting or upgrading pipeline if road should be paved or status is changed to a public road.</td>
<td>Review by Operator's engineering group required for all proposed streets, roads, and driveways to ensure pipeline cover is adequate to support the load from the road crossing. Additional cover, concrete, or other forms of mechanical protection may be required to ensure the pipeline does not incur damage as a result of this use and traffic loads.</td>
</tr>
<tr>
<td>Road Crossings - Public</td>
<td>Yes, but consent is required</td>
<td>Consent will be granted for a public road or street across Company right of way provided: 1) Developer pays for cost of protecting, upgrading or relocating pipeline. 2) Company retains prior rights on roads dedicated to the state, county or city.</td>
<td>Review by Operator's engineering group required for all proposed streets, roads, and driveways to ensure pipeline cover is adequate to support the load from the road crossing. Additional cover, concrete, or other forms of mechanical protection may be required to ensure the pipeline does not incur damage as a result of this use and traffic loads.</td>
</tr>
<tr>
<td>Septic Tanks</td>
<td>No</td>
<td>Access for pipeline repair activities preclude this use</td>
<td></td>
</tr>
<tr>
<td>Service Stations</td>
<td>No</td>
<td>No structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the risk for operators.</td>
<td></td>
</tr>
<tr>
<td>Signs</td>
<td>No</td>
<td>Foundation or embedded footings could damage the pipeline coating leading to integrity and corrosion issues.</td>
<td></td>
</tr>
<tr>
<td>Sprinkler Systems (underground)</td>
<td>Yes, but consent is required</td>
<td>Crossings of pipeline shall be kept to a minimum. Sprinkler heads should be set outside of right of way. Due consideration must be given to cathodic protection interference.</td>
<td>Concern that water can cause corrosion and lead to failures (Engineering review and field monitoring will ensure no corrosion issues are identified). Concern that third party damage will result and sprinkler systems will interfere with maintenance and vegetation management activities.</td>
</tr>
<tr>
<td>Stock Piles</td>
<td>Yes, but consent is required</td>
<td>(means storage of earth) See Cuts and Fills.</td>
<td>This material storage can't interfere with maintenance, inspection, repair, or emergency response activities. In addition, stock piles must not lead to erosion issues.</td>
</tr>
<tr>
<td>Use/Activity</td>
<td>Acceptable Use or Activity?</td>
<td>Additional Restrictions or comments</td>
<td>Origin/ Rationale for determining acceptable Activity</td>
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</tr>
<tr>
<td>Storage</td>
<td>No</td>
<td>The pipeline right of way shall not be designated as storage area. However, small amounts of non-combustible materials or equipment may be stored on the right of way by the property owner provided it does not interfere with access to the pipeline.</td>
<td>This material storage can't interfere with maintenance, inspection, repair, or emergency response activities. In addition, storage must not lead to erosion issues.</td>
</tr>
<tr>
<td>Structures</td>
<td>No</td>
<td>Permanent structures (i.e. any facility or structure, the foundation or any other portion of which lies below the ground surface, or is otherwise not readily moveable) are not allowed. Small outbuildings (e.g. sheds, playhouses) on blocks or without foundations may be permitted on a case by case basis.</td>
<td>No structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the risk for operators.</td>
</tr>
<tr>
<td>Subdivisions</td>
<td>Yes</td>
<td>The area over the pipeline right of way may be subdivided, provided: 1) No permanent structures may be located on pipeline right of way. 2) Streets or roads are laid out to cross pipeline at a right angle. Parallel encroachments are not acceptable. 3) Subdivider must meet requirements for Road Crossings, either private or public. 4) Right of way is not used for utility corridor. 5) Subdivider shall submit approved subdivision plans. 6) Necessary consents are issued by the Pipeline operator.</td>
<td>Operators can work with planners and developers to minimize risks to pipelines and communities within green spaces; early communication between all stakeholders is critical to ensure all factors are considered.</td>
</tr>
<tr>
<td>Swimming Pools (built-in and above ground)</td>
<td>No</td>
<td>Small, plastic &quot;kiddie&quot; pools would be allowed. These types of portable pools are considered temporary and can be easily moved for pipeline activities if necessary.</td>
<td>No permanent structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the risk for operators.</td>
</tr>
<tr>
<td>Tanks</td>
<td>No</td>
<td>Above or underground.</td>
<td>Access for pipeline maintenance, inspection, emergency response, and repair activities preclude this use</td>
</tr>
<tr>
<td>Temporary material storage</td>
<td>Yes, but consent is required</td>
<td></td>
<td>This material storage can't interfere with maintenance, inspection, emergency response, or repair activities. In addition, storage must not lead to erosion issues.</td>
</tr>
<tr>
<td>Tennis Courts</td>
<td>No</td>
<td></td>
<td>Access for pipeline maintenance, inspection, and repair activities preclude this use</td>
</tr>
<tr>
<td>Use/Activity</td>
<td>Acceptable Use or Activity?</td>
<td>Additional Restrictions or comments</td>
<td>Origin/ Rationale for determining acceptable Activity</td>
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</tr>
<tr>
<td>Trails</td>
<td>Yes, but consent is required</td>
<td>Provided trails are not hard surface and adequate precautions are taken to prevent erosion. See Cuts and Fills.</td>
<td>Trails must be placed to allow maintenance, inspection and repair activities to be conducted.</td>
</tr>
<tr>
<td>Trash Burners</td>
<td>No</td>
<td></td>
<td>For safety reasons, no flame, fire, or flammable material is allowed.</td>
</tr>
<tr>
<td>Tree Farms</td>
<td>No</td>
<td>Must provide access to pipeline and structures. In addition, shrubs should not interfere with patrolling or inspection activities.</td>
<td>Trees have root structure that may damage pipeline coating or pipeline integrity; tree canopy may interfere with aerial leak patrol activities.</td>
</tr>
<tr>
<td>Underground Structure</td>
<td>No</td>
<td>Other than pipelines and related facilities.</td>
<td>Access for pipeline repair activities preclude this use</td>
</tr>
<tr>
<td>Utilities - Crossing</td>
<td>Yes, but consent is required</td>
<td>Consent Letter needed for overhead or underground utility crossings. Conditions for the Consent Letter: 1) Overhead lines must provide adequate clearance. Poles, anchors or supports may not be located on right of way. 2) Buried utilities must be installed minimum one foot above, or two feet below, existing pipeline. Crossings above pipelines are strongly discouraged. Buried utilities must maintain constant depth across the right-of-way. Electric lines less than 600 V and telephone lines must be encased in plastic conduit across the entire right of way. Electric lines over 600 V must be encased in rigid steel pipe across the entire right of way. 3) Utility requesting permission must pay for any protection or upgrading of Company facilities and a temporary relocation clause may be inserted in the Consent Letter to allow pipeline construction or maintenance. 4) Utility crossings must be designed to meet all government requirements for safety and environment.</td>
<td>Adequate separation and interference protection with other utility activities and pipeline must be performed. If interference protection is not effective, this will lead to corrosion and integrity issues. Activity must allow maintenance, inspection, emergency response, and repair activities to be conducted.</td>
</tr>
<tr>
<td>Use/Activity</td>
<td>Acceptable Use or Activity?</td>
<td>Additional Restrictions or comments</td>
<td>Origin/ Rationale for determining acceptable Activity</td>
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</tr>
<tr>
<td>Utilities - Parallel</td>
<td>No</td>
<td>Parallel encroachment of any utilities, either overhead or underground may be allowed in some cases for short distances. In general, parallel encroachments are to be strongly discouraged. It should be noted, however, that standard Company easements may not allow us to absolutely prohibit such encroachments.</td>
<td>If interference protection is not effective, this will lead to corrosion and integrity issues.</td>
</tr>
<tr>
<td>Utilities Crossing Company Land</td>
<td>Yes, but consent is required</td>
<td>Company will grant rights of way for utilities across lands provided: 1) Easement will not interfere with present or future use of land by Company. 2) Company retains right to have utility relocate at its own expense at a future date, if such relocation becomes necessary to permit utilization of land by Company. 3) Utilities must be installed and maintained in accordance with all applicable codes and requirements. 4) Adequate consideration must have been given to effect of utility on the environment of the area.</td>
<td>Adequate separation and interference protection with other utility activities and pipeline must be performed. If interference protection is not effective, this will lead to corrosion and integrity issues. Activity must allow maintenance, inspection, emergency response, and repair activities to be conducted.</td>
</tr>
<tr>
<td>Utility Crossings on Public Roads</td>
<td>Yes, but consent is required</td>
<td>Where a utility facility crosses the Company pipeline on a public road, the utility normally has equal rights with the Company facility. However, every effort shall be made to work with the Company installing the facility to provide a minimum of one foot of clearance between the utility and the pipeline, if the utility crosses above the Company line or two feet if the utility crosses below the pipeline, and that the same depth be maintained completely across what would normally be the Company right of way. Two feet below is preferred. The same criteria for underground electric lines as set forth in &quot;Utilities – Crossing&quot; should also be requested. Engineering review is required even if no Consent is issued.</td>
<td>Adequate separation and interference protection with other utility activities and pipeline must be performed. If interference protection is not effective, this will lead to corrosion and integrity issues. Activity must allow maintenance, inspection, emergency response, and repair activities to be conducted.</td>
</tr>
<tr>
<td>Use/Activity</td>
<td>Acceptable Use or Activity?</td>
<td>Additional Restrictions or comments</td>
<td>Origin/ Rationale for determining acceptable Activity</td>
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</tr>
<tr>
<td>Vaults</td>
<td>No</td>
<td>No structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the risk for operators.</td>
<td>no</td>
</tr>
<tr>
<td>Wading Pools</td>
<td>No</td>
<td>Small, plastic &quot;kiddie&quot; pools would be allowed. These types of portable pools are considered temporary and can be easily moved for pipeline activities if necessary.</td>
<td>No permanent structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the risk for operators.</td>
</tr>
<tr>
<td>Weighing Stations</td>
<td>No</td>
<td>No structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the risk for operators.</td>
<td>No</td>
</tr>
<tr>
<td>Wells</td>
<td>No</td>
<td>Drilling activity could damage pipeline and lead to integrity issues.</td>
<td></td>
</tr>
<tr>
<td>Wrecking Yards</td>
<td>No</td>
<td>No structures are allowed because they interfere with emergency response, maintenance, inspection, and repair activities. Also, they increase the risk for operators.</td>
<td>No</td>
</tr>
</tbody>
</table>
INTRODUCTION

Typical pipeline to stakeholder communications regarding rights-of-way (ROW) activities occur for one of three reasons: 1) Information exchange; 2) Education opportunity; 3) Cause a change in behavior. However, in reality most communications regarding ROW activities or uses are performed with the intention of causing certain behaviors to happen. Consider the following examples for various stakeholder audiences and the associated behavior expectation.

- **Landowners:** When letters regarding anticipated ROW clearing are sent to the landowner, the purpose of the communication is to inform the landowner ahead of the actual event occurring. This in turn should:
  
  - prevent the landowner from being surprised by the presence of individuals on their property;
  - provide appropriate contact information;
  - prompt landowners to think about fencing or gates that may have to be accessed;
  - help the landowner think about children or planned family activities; and
  - allow the landowner to prepare appropriately for domestic and farm animals that could be impacted by the event.

- **Excavators:** When we educate excavators on 811 or Call Before You Dig, this communication is done with the intention that the excavators will call for a locate before digging.

- **Real Estate Agents/Brokers:** Educating real estate agents and brokers about pipeline facilities identified by pipeline markers is an effort to promote information about pipeline location early so that potential buyers can receive appropriate information. Potential buyers should then make more informed decisions including contacting the pipeline company for more information.

- **Planning and Zoning** (including permitting, public works, emergency officials, elected officials, etc.): Information or education events for these audiences are meant to allow them to factor the relevant pipeline information into their activities and cause them to change their behavior accordingly or as necessary.

Education can help to lay a foundation for heightened awareness and increased knowledge. However, better training, media or advertising efforts will only go so far in many cases. While
persuasive communication campaigns can prompt action and should be utilized, these efforts may not sustain desired actions. It is important to understand that information can lead to awareness, but awareness may not lead to a behavior change. According to subject matter experts, if you are communicating for a change in behavior, a concept called social marketing should be used. Social marketing utilizes various research components:

- Formative research
- Pretest research
- Monitoring research
- Evaluation research

Social marketing provides a few more strategies to overcome or reduce barriers to behavior change, is used to change perceptions and to help build a new social norm. Social Marketing is:

1. Using product-marketing strategies to promote ideas like safety, health and conservation
2. Influencing a target audience to voluntarily accept, reject, or modify an action
3. For the benefit of individuals, groups, or society as a whole

Understanding what behavior is expected and currently exists is important to changing the behavior. In order to maximize the opportunity created with each communication, considerable thought should be given to what behavior needs to change on the ROW, what behavior is desired, or what behavior on the ROW should be maintained by the specific stakeholder.

The PIPA Task Team 2, Protecting Transmission Pipelines, was to address acceptable landowner uses and activities on a pipeline ROW. Therefore, the PIPA Communications Task Team Goal 2 Subcommittee focused on researching the art and science of effective communication techniques. As various techniques were considered for communicating a particular message, it became apparent that each required a basic understanding of why the message is necessary, who will receive it, and what will be communicated, in concert with other considerations.

The Goal 2 Subcommittee developed a model, or process for communicating acceptable uses and activities on pipeline rights-of-way to stakeholders. This model is applicable in any pipeline circumstance, including a new or existing pipeline being constructed in a developed area, or a new or existing pipeline operating near rural areas. The seven step model is for use when communicating acceptable ROW uses and activities to land owners and other stakeholders. The model can be used by any stakeholder. Generally throughout this discussion, examples are given from the perspective of a pipeline company. However, the same tools and guiding principles of the model can be used by others, for example:
Fire Marshals may use it as they communicate to other fire marshals or emergency responders;

AGC or NUCA members may use it as they communicate to other excavators;

Trade associations may use it to communicate more effectively within their organization;

Planning and Zoning boards may use to communicate with developers; and

PHMSA or others may use it when communicating to the affected public.

The seven steps of an effective communications model include:

1. Identify the problem (or need) the communication will solve (or address).
2. Determine which stakeholder/s receives the communication.
3. Identify draft message to be communicated.
4. Develop final message and delivery system based on marketing strategy best suited for the desired outcome.
5. Implement communications.
6. Measure effectiveness.
7. Identify and implement changes if necessary.
Seven Step Communication Model

STEP 1 – WHY?

1.00 Identify the problem (or need) the communication will address

Step 1 in the PIPA seven step communication process specifically addresses “why” the communication is needed. Before effective communication can occur, one must identify the problem the communication will solve, or identify the need the communication will address. This “begin with the end in mind” approach lays the foundation for an effective communication effort and defines why stakeholder communication is necessary.

Pipeline companies utilize many types of communication in an effort to protect the public, the pipeline, the environment, and their assets. These communication methods include such things as direct mailers, radio and television spots, personal contact, and group meetings. While all of these methods can be effective, without careful design and delivery, they typically will not cause the desired change in behavior. Facilitating behavior change requires a socially-engineered message that targets a specific audience over an extended period of time. For example, it is not unusual for direct mailers to be discarded without being read. Pipeline mailers may satisfy regulatory guidelines or mandates, but they do not necessarily serve the intended purpose of increasing pipeline awareness and safety, which is why they were distributed in the first place.

During the Subcommittee’s research, best practices in communication techniques were sought from various authors and consultants.

- Gary Melling (President & CEO; EPIC Software Corporation) and Sarah McCaffrey (USDA Forest Service) spoke to the importance of understanding the audience and defining the purpose of the communication program, answering the stakeholders’ frequently asked question, “What’s in it for me?”

- Greg Winter (Cornerstone Strategies, Inc.) defined “social marketing” steps which include describing the background, purpose, and focus of the communication program.

- Martha Monroe (University of Florida – Communications Research) echoed many of the points already noted and added that in order to communicate more effectively, barriers to behavior change must be identified. Once initially identified, messages and communication strategies can be crafted to promote the ideal behavior, which gives all stakeholders a role in pipeline protection.
• Ms. McCaffrey also suggested a central depository to ensure easy access to information, consistent message and information exchange, and to promote a sharing of effectiveness lessons (lessons learned center).

There are many other professional and technical publications that provide insight into best communication practices. The “Damage Prevention Best Practices”, published by the Common Ground Alliance, states that an effective damage prevention program must include a comprehensive strategic marketing and advertising plan. Without a plan, and the budget to support it, the intended message will likely be lost in today’s information overload. Stephen Covey’s, “7 Habits for Highly Effective People” suggests that we begin with the end in mind. By doing so we satisfy the first communication element of “why” the communication is necessary in the first place. Pipeline companies want to effectively communicate acceptable right-of-way activities and uses, to help ensure pipeline reliability, and engage all stakeholders in that effort. Right-of-way communication promotes safety and reduces risks to people and the environment.
STEP 2 – WHO?

2.01 Determine Which Stakeholders Receive the Communications

The second step of the seven step communication model is defining who should receive each type of communication. Who is the audience? There’s no such thing as the “general public.” Each group of stakeholders has different concerns, belief systems, perceptions and misconceptions. The priorities of each group will affect and help determine the most effective message.

2.02. Compile Information

Knowledge about your audience is very important. Begin by compiling all the information available about your stakeholders. This information can help identify behavioral clues and barriers to communicating with them. Review your stakeholders’ behaviors to ensure that your information about them remains accurate. Priorities change, economies rise and fall and new personalities come into the mix. The right message delivered to the wrong person will not be effective.

Stakeholders are motivated by different factors and may be motivated by multiple issues. For example, a landowner may be concerned about the loss of trees on his property. Another may be concerned about the quality of the restoration activities following ROW maintenance. Others may be concerned about financial impacts on property values, lost crops and the security of their livestock. Emergency responders are concerned about adequate training and appropriate emergency response information.

Be sure to look at all the factors before categorizing stakeholders by a single issue. If your stakeholder audience is too broad, it can impact your effectiveness. Narrowing your stakeholder audience may be required to improve your chance of success. This may be why El Paso, Northern, Marathon and Williams report initial success with specifically designed publications for specific audiences such as handbooks for developers. Knowing the concerns of your audience and specifically identifying the barriers that may prevent your audience from understanding your message can be time well spent.

If individual stakeholder contact is possible, using information resources readily available can enhance your success. For example, researching the following:

- Has the specific stakeholder attended meetings before?
- Has the stakeholder raised specific issues in other meetings? If so, what are those issues?
- Are there financial or other topical issues specific to this individual?
• Is the stakeholder a community leader, law enforcement officer or emergency responder? If the stakeholder is a community leader, could they be impacted socially by their response to the communication?

• Has the stakeholder received media attention regarding ROW issues in the past?

• What methods of communication delivery have been used for this stakeholder before?
STEP 3 – WHAT?

3.00 Identify draft message to be communicated.

Start to formulate your draft message. Think about the end result. Do you want a behavior change or do you want to provide information? Ask yourself, what is the purpose of the message? What is the goal? What do we want to accomplish?

Create several messages. Review and refine the messages. Pick the one that works best for you. Try the message on several associates. Value their opinion and feedback. This is only a draft. It is a place to start. There will be more refinement through the process.

Remember, the objective of the message needs to be identified and then related to the audience. Philip Kotler calls this the “Positioning Statement”. He defines it as “the act of designing the organizations actual and perceived offering in such a way that it lands on and occupies a distinctive place in the mind of the target market – where you want to be.”

1 Greg Winter, SME, Social Marketing, Cornerstone Strategies, Handout entitled “Quick Reference Guide” by Nancy Lee and Philip Kotler
STEP 4 – STRATEGY

4.00 Develop final message and delivery system based on marketing strategy best suited for the desired outcome

Once the need (the why), the audience (the who), and the basic message (the what) have been identified, then it is time to get into the details of designing a strategy to refine the message and deliver it in a way that the audience will understand and pay attention to it. This is the critical step that can either make or break any communication effort. For relatively simple efforts, such as notifying a property owner that work will be done on the right-of-way on their property on a certain date, developing a communication strategy may be easy and straightforward. For more complex efforts it may be necessary to hire outside consultants to help design this strategy. For example, outside consultants may be needed to ensure that municipalities know the location of pipelines that run through their jurisdictions and how this could impact future planning decisions.

Below are some of the basic parts of a strategy that should be considered. As with the design of any good strategy, each piece can potentially affect all the other pieces, so a process to revisit each decision should be in place.

4.01 Identify budget needed compared to budget allocated

In a perfect world a communication strategy would be designed to ensure the best possible outcome, then the money necessary to implement that strategy would be allocated. In the real world, however, budget constraints often require decisions to be made about how to implement the best possible strategy with the money that is available. The difference between the basic budget needed to communicate successfully and the budget available needs to be kept in mind so more money can be sought if necessary, or so that the communication can be cancelled if a basic successful strategy cannot be afforded.

4.02 Identification of audience barriers and benefits

It is very important to understand the targeted audience. Knowing barriers and misconceptions that can affect your specific stakeholder audience is essential. Understanding how the stakeholder may perceive risk can also provide insight to assist with more effective communication messages. Asking whether or not there are barriers that make it difficult for the audience to receive the message, impact the understanding of the message, prevent trust in the person delivering the message, or affect whether or not the stakeholder will do what the message asks are significant questions that should be answered. Identifying whether or not there are benefits that the audience may receive through this communication that they may not realize or
understand could be helpful. Knowing whether or not incentives be built into the effort to help overcome the barriers, or increase the benefits could add value to the communication effort.

These types of questions or barrier determination efforts need to be considered and addressed, and for more complex projects it may be necessary to undertake surveys or focus groups to make sure that the communicator’s assumptions about the audience are correct. It is important to try to bring forward any hidden issues.

An example of project benefits being relayed to stakeholders in an effort to help overcome misconceptions or barriers is included below. This example is provided by the Plantation Pipeline Company.

**KEY PROJECT BENEFITS**

The proposed replacement pipeline will:

- Support regional economic development by expanding the energy supply needed to serve the growing economies of East Tennessee and North Georgia.
- Offer the safest and most environmentally sound method of delivery. Safety experts have determined that moving petroleum products by pipeline is 300 times safer than delivery by truck and 40 times safer than delivery by train.
- Initially double Plantation’s flow of petroleum products, such as gasoline, diesel and jet fuel, from 1.9 million gallons per day to 3.8 million gallons per day.
- Minimize new disruption in congested areas and sensitive environmental areas by generally following Plantation’s existing rights-of-way and other existing utility corridors.
- Reduce traffic congestion and improve regional air quality and highway safety. The replacement pipeline will initially eliminate the need for an estimated 200 tanker truck trips per day, or nearly 75,000 trips per year, which is the number of trips it would take to transport the increased capacity from the new pipeline on the region’s roads and highways. Less truck traffic means reduced emissions and a reduced risk of truck accidents, spills and contamination.
- Utilize the most modern construction technologies and safety standards to ensure the new replacement pipeline meets or exceeds all government requirements for new pipeline construction.
- Work in close consultation with local jurisdictions and the public to be a good partner and a good neighbor in the region.

An example of a communication that addresses safety and possibly would help eliminate misconceptions is included below. This too is provided courtesy of the Plantation Pipeline Company.
PIPCLES ARE THE SAFEST METHOD OF TRANSPORT

National safety experts have determined that moving petroleum products by pipeline is by far the safest method of transportation – 300 times safer than delivery by truck and 40 times safer than delivery by train. (Source: U.S. Dept. of Transportation/California State Fire Marshal)

The Bremen to Knoxville replacement pipeline will be designed and constructed using the most advanced technology, construction and safety standards available to ensure the pipeline meets or exceeds all government requirements for new pipeline construction. For example:

- Every section (joint) of pipe will be hydrostatically tested to 100 percent of yield strength before it leaves the factory.
- 100 percent of all pipeline welds will be inspected by x-ray.
- A comprehensive cathodic protection system and chemical corrosion inhibitors will be used to protect the pipeline against corrosion.
- Aerial inspection of the right-of-way takes place every two weeks and regular ground-based inspections are done to prevent encroachment and third-party damage to the pipeline.
- Internal electronic detection devices called “smart pigs” are sent through the pipeline periodically to scan the walls in support of preventative maintenance.
- 24-hour per day monitoring of all pipeline operations by trained operators and advanced electronic equipment keep the pipeline running safely and efficiently.

4.03 How the message is delivered

How the message is delivered is an important consideration for the success of the program. Our research indicates that one of the most effective methods for behavior change is one-on-one interpersonal communications with a person the stakeholder trusts. The use of interactive demonstrations is a delivery method that will appeal to most adults and heighten their learning experience. The use of expert information coupled with stories and examples that relate to the audience member are also important. Receiving the message multiple times in different formats (direct mail, radio ad, news story, presentation at professional association, etc.) can help get the message noticed and understood, and reiterate its importance. This may have been one of the reasons by the Marathon pipeline radio talk show addressing ROW clearing efforts where multiple callers could ask questions from multiple people appears to have been successful. However it is important to employ media methods that the specific stakeholder audience actually uses. ²

² Sarah McCaffrey, SME, USDA, Forest Service Researcher
There are several methods of implementation that can be considered as communication to inform stakeholders regarding right-of-way (ROW) activities and uses. Some of those listed below can be used in combination.

<table>
<thead>
<tr>
<th>Written</th>
<th>Verbal</th>
<th>Graphic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter</td>
<td>Face-to-Face meetings</td>
<td>Billboard</td>
</tr>
<tr>
<td>Magazine</td>
<td>Telephone Calls</td>
<td>Bus Sign/Bus Stand</td>
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<tr>
<td>Brochure</td>
<td>TV Spots</td>
<td>Banners</td>
</tr>
<tr>
<td>Door Hangers</td>
<td>Radio</td>
<td>Pipeline ROW Markers</td>
</tr>
<tr>
<td>Email</td>
<td>Trade Show Booths</td>
<td>Signs at excavation sites</td>
</tr>
<tr>
<td>Bill stuffers/Mailers</td>
<td>Professional presentation</td>
<td>Mascots</td>
</tr>
<tr>
<td>Pipeline ROW Markers</td>
<td>Town Hall meetings</td>
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</tr>
<tr>
<td>Newspaper Notices</td>
<td>Specific stakeholder meetings</td>
<td></td>
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</tbody>
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**Give-A-Ways**

Information about methods of delivery that increases the likelihood that the information will reach a reader should be used. For example, subject matter experts indicated that great graphics should be used in documents and presentations. Recognition and Incentives can enhance the effectiveness of the communication. An example of recognition being successful is the Explorer pipeline CEO meeting on the ROW with stakeholders. Williams indicates initial success with website information through the use of incentives. Some members of the public may open mail that comes in a handwritten envelope more readily than other methods of addressing.

### 4.04 Where and when the message is delivered

The timing and setting in which a message is delivered also needs to be accounted for. Once the audience is well understood these decisions should be easier to make. For example, if audience research shows that a local community has a general lack of trust for local government, but universally supports their state champion basketball team, the decision to hold a public meeting in the City Council meeting room or the high school gymnasium may be more clear and important. Similarly, if your message is

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3 Martha Monroe, SME, University of Florida and Sarah McCaffrey, USDA
targeted at an agricultural audience you would know that a message delivered during the height of the harvest season (whether at the gymnasium or the City Council room) has little chance of success. Historical pipeline performance in the area can affect communication needs.

4.05 **Who should deliver the message**

One factor that is essential for stakeholder communications is trust. Our research shows that people trust and feel most comfortable when talking to people most like themselves, especially if those delivering the message are also recognized as leaders within their community with “expert” knowledge related to the subject\(^4\). A message from a trusted source, such as a community leader, resonates with most stakeholders. Enlisting these individuals can mean the difference between communications that succeed and those that fail. That is why when possible it makes most sense to have contractors talk to other contractors, emergency responders talk to emergency responders, planners talk to other planners, etc.

Audience research can also help decide who would be the best person to deliver the message. For example, the graph below shows the results of an actual survey question asked of people concerned with a proposed pipeline in Arizona. If you were a pipeline company trying to deliver the message, these results would help you understand that having your own employees deliver the message may be a problem or waste of valuable resources, but holding the town meeting with a mix of communicators, including your employees, may help increase the acceptance and understanding of the message. Our research indicates that few surveys have currently been performed by pipeline operators through industry trade groups that focus on determining landowner perceptions regarding ROW activities or preferred method of contact.

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\(^4\) Terri Larson, Subject Matter Expert, Fleishman-Hillard
4.06 Measuring success and selecting a measurement strategy

It is imperative for the success and continued funding of any communication strategy to measure whether the effort is being successful. An evaluation process should be incorporated and planned in advance. The definition of success (i.e., metrics) should be clear and understood. If the measure of success is real behavior change (for example – using the one call system), then the method designed as part of the strategy should measure that behavior change and not measure items that may not reflect that success (for example - attendance at a damage prevention workshop).

Awareness of what one should do may not necessarily translate into doing it. Often, people will say they support something but then turn around and behave in a totally different manner. However, research does indicate that asking for a commitment from the stakeholder audience member can elevate action to the desired behavior5.

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5 Martha Monroe, SME, University of Florida
Measurement strategies can be employed in a variety of ways. Some examples are:

- Surveys
- Focus Groups
- Feedback Cards
- Telephone Calls
- Personal Contact
- Interviewing
- Case Studies
- Conversations before/after presentations
- Exercises
- Observations

Several measurement strategies, including focus groups, provide the opportunity to test the message and explore how the message is understood by the target audience. Measured results on the quality or effectiveness of the message can then be obtained. From the measured results, message and delivery methods can be tailored, edited and adjusted to better reach and impact the intended audience.

For major efforts it is also important to make sure that the measurement can take place in a timeframe that allows the communication efforts to be changed if not successful. This will help avoid wasting time, good will and money. Whenever possible, the strategy should be test marketed on a small subset of the intended stakeholder audience to verify desired results.

4.07 **Modify draft message to final form based on marketing analysis recommended practices, specific areas of concern, or other resources**

Once all of the above considerations have been thoroughly researched and decided upon the initial draft message can be reshaped and packaged to ensure that it best fits the strategy’s who, where, when, and how.
STEP 5 – COMMUNICATIONS

5.00 Implement Communications

Up to this point the focus of the communication effort was to determine “why”, “who”, “what” and the strategy (“the how”, when, where, and who delivers) of the message. Keep in mind, the audience or stakeholder has already been identified as we drill down the steps in the communication model.

It is important to determine the most effective way to communicate the message. We have to consider what barriers have been identified, how the stakeholder will perceive risk, and how these elements will affect our implementation strategy. The decision to select one or several communication methods has been based upon our audience, the change in behavior desired, cost of the communication and what barriers will impact the manner in which our message is received. Obviously, the implementation must be effective. The message must be heard and understood for the desired action to be taken and implemented by the intended recipient. The change in behavior (whatever behavior you have identified) needs to be achieved for an effective use of resources.

The method used to communicate will depend primarily on the message to be sent. For instance, if a pipeline company has a routine excavation activity planned on your property or in your community, they will most likely send a letter or give the landowner a quick call on the telephone. If however the pipeline company has a large pipeline project planned, they may hold Town Hall Meetings, meet with local officials, allocate special websites, create special brochures and prepare news bulletins or press releases.

Remember, good communicators are trustworthy, engaging, caring of their audience and accessible. There are many different ways to communicate. The differences depend on many things, including the audience receiving the message the strategy and the purpose and goal of the message.
STEP 6 – METRICS

6.00 Measure Effectiveness

Peter Drucker (a writer, management consultant and social ecologist who explored how humans are organized across all sectors of society) stated “Efficiency is doing things right; effectiveness is doing the right things.” The practice of measuring effectiveness is all about making sure that we are doing the right things, in the right way and that we continue to do so. Mr. Drucker also indicated that “There is nothing so useless as doing efficiently that which should not be done at all”. If we are doing communications in a manner that should not be done at all, we waste both the stakeholder and our own resources.

Measurement is needed for several reasons:

1) Identify what is working well or poorly with the communication
2) Verify that the purpose of the objective is or can be met
3) Effective use of resources

Identifying what is working well or poorly with the communication will help us know the culprits (or barriers) getting in the way of the communication or the learning experience. It also determines whether or not the learning process is effective.

Too often in developing a purpose for a communication, we do not make our objectives or measurement methods “SMART”. SMART program effectiveness measurements and metrics are those that are:

S – Specific (to your target)
M – Measurable
A – Attainable or Actionable
R – Relevant
T - Timely

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When we can measure and review what may or may not need to be changed through the use of metrics, we can improve how we use our resources. For example, if feedback determines the specific message to be unclear, changes to the message can be shared with multiple users such as pipeline associations, trade agencies, or others using the message, thus assuring a more effective use of resources. In the same way, we may be able to: improve the type of consultant resources utilized for specific items; eliminate waste by sending out more effective documents including letters or calendars; share lessons learned; cause a change in behavior that lasts.

Several specialized techniques or recommended practice consensus documents have indicated the importance of measuring effectiveness. Some of these include:

- CGA Best Practice 8-9 emphasizes the need to measure public education success and Section 9.0 of the CGA Best Practices addresses Reporting and Evaluation.
- Steps 10 and 11 in API’s Recommended Practice on Public Awareness address tracking progress and program evaluation. Appendix information included with the API document also provides guidance on obtaining meaningful measurement data.
- Social Marketing to facilitate a change in behavior includes effectiveness metrics, testing of these metrics, and monitoring.
- Practical Program Evaluation includes measuring effectiveness.
Step 7 – CONTINUOUS IMPROVEMENT

7.00 IDENTIFY AND IMPLEMENT CHANGES IF NECESSARY

As Hunter Thompson, author and journalist, and creator of “Gonzo Journalism” put it: “Anything worth doing is worth doing well!” So it is with communicating. Communicating well in a formal setting requires a well thought out plan that essentially follows the first six steps of our communications document. The seventh step in our communications plan is designed to implement identified changes, if necessary, based on the result of the first six steps. If the monitored results indicate that the communication effort was effective, then there would be no need for further changes. Or in other words, if the recipients clearly heard and understood the message, then the communications model efforts are complete and no further communication may be required. But given the nature of both communicators and recipients, and the fact that all human communication activities are impacted by the weaknesses of the human condition (communication barriers), changes to the communication may be required. A complete implementation of Step 7 will need to be undertaken in all but a few cases.

The recommended practices for carrying out Step 7 of sound communications efforts are as follows:  

- Monitor all measured results. If the communication was successful, great! No need to proceed further. If it was not successful, then proceed to the following additional recommended practices:
  - Develop a feedback loop to compare measured results with assumptions on which initial decisions were based. (E.g., was the problem correctly identified? Were the correct recipients identified? Was the correct message chosen? Was the delivery system appropriate?)
  - Identify changes needed to correct initial assumptions
  - Implement the necessary revisions
  - Re-communicate the message and continue to re-measure

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7 cf. M. Monroe; S. McCaffrey; G. Winter
CONCLUSION

To communicate effectively, we should make part of our routine habits each of these 7 steps. Aristotle said “We are what we repeatedly do. Excellence, then, is not an act but a habit.” Practicing these steps repeatedly, over and over again until it becomes second nature, will help us improve our effectiveness. Our stakeholders will receive and understand information and educational messages designed to change their behavior.

While reviewing effective communications, it came to our attention that several elements need to be implemented in the PIPA effort in order to make the most of the PIPA resources. To implement these items would help ensure that all of the PIPA resources were well spent:

1) Develop and maintain a centralized repository for PIPA information that can be found through the internet easily and by any individual or stakeholder.

2) Obtain a graphics specialist to assist with the final PIPA document.

3) Obtain a marketing communications agency to serve as a consultant for writing the final PIPA report and test messages and findings.

4) Engage professional services to develop a formalized plan dedicated to educating each of the stakeholder audiences on the outcome of this PIPA initiative and to sustain future PIPA efforts. This is especially needed for the larger real estate, developers, contract ROW agents, and county government stakeholder audiences.
Appendix G

Effective Communication of Pipeline Risk and Risk Management Information

Barriers to Effective Communication

In order for communication to be effective, it must be a two-way dialogue. However, our personal experiences affect the way messages are received, making it essential that we understand barriers to effective communication and how to better communicate with key stakeholders. The following section looks at those barriers from the perspective of a pipeline company communicating with key stakeholder audiences. You may find that some, all, or none of these barriers are present in your actual situation; we encourage open communication with stakeholders around pipeline development. Following sections will provide tactics and tools to potentially address these barriers.

Real Estate Agents/Brokers (residential and commercial)
1. Disinterest or lack of priority
2. Don’t want to present reality of easements
3. Lack of knowledge
4. Information overload, clutter
5. Misinformation
6. Difficult to reach; method/manner of communication (e.g., face-to-face versus mass mailing)
7. Lack of time and/or is too busy to pay attention

Planning and Zoning (including permitting, public works, emergency officials, elected officials, etc.)
1. Disinterest or lack of care about topic
2. Lack of resources
3. Lack of authority
4. Political pressure
5. Competing interests or projects
6. Information overload, clutter
7. Inadequate information regarding pipeline safety
8. Method/manner of communication (e.g., face-to-face versus mass mailing)
9. Lack of time and/or is too busy to pay attention
10. Difficult to reach; method/manner of communication (e.g., face-to-face versus mass mailing)

Home Owners/Buyers/Sellers (including landowners and farmer owners)
1. Disinterest or lack of care about topics
2. Information overload, clutter
3. Inadequate information regarding pipeline safety
4. Misinformation (e.g., word of mouth from uninformed, biased neighbors)
5. Mistrust of government, authorities, companies, etc.
6. Method/manner of communication (e.g., face-to-face versus mass mailing)

Developers (including subcontractors/excavators, architects and designers)
1. Disinterest or lack of priority
2. Don’t want to present reality of easements
3. Lack of knowledge
4. Information overload, clutter
5. Misinformation
6. Difficult to reach; method/manner of communication (e.g., face-to-face versus mass mailing)
7. Lack of time and/or is too busy to pay attention
8. Lack of coordination with pipeline companies in planning process
Leading Practices for Engaging Stakeholders

In addition to the practices listed below, pipeline operators should create internal ambassador programs to train personnel about the importance of working with these stakeholders and other pipeline operators. Safety of pipeline, company reputation and success of project depends on a good working relationship with all key stakeholders.

Real estate Agents/Brokers (residential and commercial)

1. Target and educate real estate community through trade show booth and speaking engagement opportunities at annual association conferences, such as NAR.
2. Use regular Realtor association meetings and newsletters (local, regional and national) to educate the real estate community about the benefits of full and early disclosure of easements.
3. Invite real estate agents in a community to attend a breakfast or lunch workshop on easement disclosure. Coordinate with the national association to offer CEUs if/where possible.

Planning and Zoning

1. Offer continuing education credits to certified planners through existing association workshops, such APA. (Their certification is voluntary, so not all planners are certified; but they need CEUs to maintain certification).
2. Target and educate planners through trade show booth and speaking engagement opportunities at annual association conferences, such as American Planning Association, National Association of Counties, National League of Cities.
3. Local and state chapters of planning associations may have outreach opportunities, such as workshops, conferences, etc.
4. Consider enlisting the use of an elected official, with established credibility to reach stakeholders.
5. Inform planning and zoning officials about National Pipeline Mapping Service.

Home Owners/Buyers/Sellers

In addition to information already delivered to homeowners through public awareness programs and other stakeholder outreach, we recommend the following:

1. Target local area newspaper real estate sections with pre-written articles on how to know where easements and other encumbrances are located on the property.
2. Your community may have a centralized website for all MLS listings, such as www.har.com in Houston. Determine if there is a checklist of items for homeowners to use before buying property. If so, ask to add a new bullet item – have you checked to see if there are easements located on the property?
3. Conduct direct mail campaigns targeted to specific events or seasons. For example, in the early spring consider a campaign focused on digging, planting, etc.
4. Work with homeowner associations to include articles/information in the association newsletter.
5. Purchase ads in local newspapers; point reader to a website for more information.
6. Host emergency response drills along highly visible pipeline ROWs to increase awareness.

Developers

1. It is in the best interest of pipeline operators and developers to begin working together as early as possible. In fact, it’s never too early for a pipeline operator to approach a developer. Often times, the pipeline company is not brought into the communication loop until very late in the project. This can lead to scope changes and costly delays. Pipeline companies should get on local
planning department notification lists and contact developers as soon as projects are announced.

2. When scoping property for potential development, developers should look specifically for facilities/easements/markers on the property.

**CGA Best Practices 5.0**

Common Ground Alliance (CGA) has identified and validated existing best practices performed in connection with preventing damage to underground facilities. The collected best practices are intended to be shared among stakeholders involved with and dependent upon the safe and reliable operation, maintenance, construction and protection of underground facilities. The following best practices could potentially be applied when attempting to engage stakeholders. However, not all practices are appropriate in all situations.

**To Engage Stakeholders --**

7-2: **Incentives** - Damage prevention programs include incentives to promote compliance with laws and regulations.

8-1: **Use of a Marketing Plan** - An effective damage prevention education program includes a comprehensive, strategic marketing/advertising plan.

8-2: **Target Audiences and Needs** - An effective damage prevention education program includes identification of target audiences and their individual needs.

8-3: **The Use of Structured Education Programs** - An effective damage prevention education program is structured to accommodate the needs of individual audiences.

8-4: **Target Mailings** - An effective damage prevention education program communicates vital damage prevention, safety, and emergency response information to target audiences through periodic mailings.

8-5: **The Use of Paid Advertising** - An effective damage prevention education program includes paid advertising to increase damage prevention awareness and practices.

8-6: **The Use of Free Media** - An effective damage prevention education program utilizes all available free media.

8-7: **The Use of Giveaways** - An effective damage prevention education program uses promotional giveaway items to increase damage prevention awareness.

8-8: **Establishing Strategic Relationships** - An effective damage prevention education program establishes strategic relationships.

8-9: **Measuring Public Education Success** - An effective damage prevention education program includes structured annual or biennial (every two years) measurement(s) to gauge the success of the overall program.
Communicating Risk of Pipelines and How Risk is Managed

Everything we do involves a degree of risk ... from walking outside during a lightning storm to driving in rush-hour traffic. Risk is inherent – including in pipeline transportation. In fact, no form of energy transportation is completely without risk. However, pipelines are the safest, most reliable mode of transportation for energy products, according to the National Transportation Safety Board.

Pipeline development that impacts a stakeholder’s property can be a very personal issue that may quickly escalate feelings of anger, fear and distrust if not addressed in a timely manner by the pipeline company. The communications vehicle and messaging needs are different for each audience, as we all filter situations based on our own personal history and involvement. There is no cookie-cutter approach to communicating risk.

Risk Communications:

Peter Sandman, a nationally recognized expert in the area of risk communications, defines risk communications as Risk = Hazard + Outrage. In this equation, “hazard” refers to the actual risk, action or event, and “outrage” refers to public concerns that may or may not be related the actual risk. This difference in viewpoints illustrates the importance of both views, and stresses the value in providing information to stakeholders that they need to make informed decisions around pipeline development.

Perception equals reality for most of us. If a stakeholder perceives a risk is present, then it is present. It’s therefore important to engage in open, transparent communications with stakeholders. Do not deny or minimize the presence of risk, and do not ignore the impact that emotions can have on the perception of risk. Stakeholders are more likely to give trust when the communication lines are open and moving in both directions.

The more “outrage” factors that are present, the harder the challenge of communicating risk. Overcoming that challenge requires –

• Two-way communications
• Communicating project risk
• Anticipating public reactions and preparing accordingly
Leading Practices to Communicating Risk

Whether or not a hazard is actually dangerous, we are all likely to react and respond more strongly if the hazard is considered unfamiliar or unfair, and if the people behind it are perceived as untrustworthy or unresponsive. Following is a list of factors that may impact a stakeholder’s perception of risk.

1. **Controllability** – Almost everybody feels safer driving rather than riding in the passenger or back seat. When prevention and mitigation are in the individual’s hands, the risk (though not the hazard) is much lower than when they are in the hands of someone else.
   - Nearby neighbors can help ensure the right-of-way remains secure by keeping a watchful eye. Enlist their support by asking them to inform the pipeline company of any unusual activities.
   - Consider forming Citizens Advisory Board to help build trust between community and facility. Ideally facilitated by a third party, these forums provide operators with direct input from the community. Refer to the American Chemical Council’s Responsible Care http://www.americanchemistry.com. Guidance is provided on how to set-up a citizens advisory board.
   - Provide internal company ambassador training to land agents, given their prominent role in communicating with the community.

2. **Familiarity** – Exotic, high-tech facilities tend to provoke more outrage than familiar risks (your home, your car, the food in your kitchen).
   - Pipeline operators should participate in community events. Go to events where the people are, such as county fairs. While open houses at company facilities are helpful, you are likely to reach more people at a community event, not a pre-arranged event hosted by the pipeline operator.
   - Become a familiar sight in the community. Participate in community relations, such as sponsoring the local little league and awarding local scholarships.
   - Add name and logo to company vehicles so residents will become more accustomed to seeing your name in the community.

3. **Fairness** – People who perceive that they must endure greater risks than their neighbors, without access to greater benefits, are naturally outraged — especially if the rationale for so burdening them looks more like politics than science. Greater outrage, of course, means greater risk.
   - Not in my backyard, or NIMBY, is easier to address at a higher community level versus at a specific landowner level. Educate stakeholders on where energy products are produced and how they must traverse through many states in order to reach their community. Address the benefits of pipeline transportation and safety statistics as compared to other modes of transportation.
   - Neighbors are an important part of doing business. Pipeline companies realize they wouldn’t be able to operate pipelines without the tacit consent of communities. While pipeline companies compensate for land use, it is often times not enough to satisfy all neighbors. Pipeline companies should strive to be reasonable and endeavor to communicate verbally and with action how much they care about being good neighbors.
4. **Catastrophic potential** – Risks from activities viewed as having the potential to cause a significant number of deaths and injuries grouped in time and space (e.g., deaths and injuries resulting from an airliner crash) are judged to be greater than risks from activities that cause deaths and injuries scattered or random in time and space (e.g., automobile accidents).

- Although it may seem counter-intuitive to many, the more information a pipeline operator provides to its stakeholders – including information about the potential hazards related to a release of some pipeline products into the environment – can help promote an atmosphere conducive to a solution-oriented dialogue between a pipeline company and concerned stakeholders.
- Pipeline operators should be willing to fully outline the consequences of an incident, to discuss the likelihood and to be willing to explain in plain language all the measures the operator is taking to mitigate or eliminate those factors that could lead to a release of pipeline products into the environment. Further, stakeholders have a right to know an operator’s safety record and what that operator is doing to correct any deficiencies that may have contributed to past incidents.

5. **Understanding** – Poorly understood risks (such as the health effects of long-term exposure to low doses of toxic chemicals or radiation) are judged to be greater than risks that are well understood or self-explanatory (such as pedestrian accidents or slipping on ice).

- Often times, stakeholders are afraid of the unknown and what they don’t understand. The more you know, the more you understand. Pipeline operators should develop a communications campaign to educate stakeholders.
- Host an open house and invite stakeholders to tour company facilities.
- Use the media as an outlet to reach, communicate with and educate stakeholders.

6. **Uncertainty** – Risks from activities that are relatively unknown or that pose highly uncertain risks (e.g., risks from biotechnology and genetic engineering) are judged to be greater than risks from activities that appear to be relatively well known to science (e.g., actuarial risk data related to automobile accidents).

- Address how pipelines are operated and the steps that operators take to manage and mitigate risk. (Refer to examples below.)
- Point to National Transportation Safety Board statistics on various modes of transportation. Cite study that shows pipelines are the safest form of transportation.
- Emphasis operational history (i.e. operated safely since 1965 without incident).

7. **Effects on children** – Risks from activities that seem to pose a threat to future generations (e.g., adverse genetic effects due to exposure to toxic chemicals or radiation) are judged to be greater than risks from activities that do not (e.g., skiing accidents).

- Pipelines near schools and day care centers will attract more attention. Be prepared to talk about what you do to manage and mitigate risk.
- Implement an on-going school program to educate students about pipeline operations and safety.
- Develop working relationship with school administrators. Offer to jointly develop emergency evacuation plans.
8. Trust – Risks from activities associated with individuals, institutions or organizations lacking in trust and credibility (e.g., industries with poor environmental track records) are judged to be greater than risks from activities associated with those that are trustworthy and credible (e.g., regulatory agencies that achieve high levels of compliance among regulated groups). See figure below.

- Pipeline companies should demonstrate that they are a part of the community too. Particularly, if you have employees who live and work in the community.
- Trust has to be earned. Pipeline companies should build trust before you need it. Ideally, you should bank trust, so it’s available when you need it.
- Residents are more likely to trust their neighbors versus pipeline companies.
- Face-to-face communication is more believable than mass mailings or other impersonal communications.
- Build trust and credibility by partnering with advocacy groups and associations, such as the Smalley Foundation or the Pipeline Safety Trust.

9. Media attention – Risks from activities that receive considerable media coverage (e.g., accidents and leaks at nuclear power plants) are judged to be greater than risks from activities that receive little (e.g., on-the-job accidents).

- The media often helps set public agenda. They can also educate your stakeholders. Given its broad reach, media attention also causes others outside the project area to become an active participant.
- To balance media coverage, pipeline companies should still perform other outreach, such as speaking engagements, neighborhood newsletters, etc.
• Put a face on the story. Pipeline companies are no better than their people. Managers and field personnel who are involved in their communities and strive to put themselves in the shoes of pipeline neighbors are more likely to be treated fairly in media coverage than a company spokesperson with no connection to pipeline host communities.

• Reach out to newspaper editorial boards. They can serve as useful role and offer of statement of opinion on an issue that is beneficial.

10. Accident history – Risks from activities with a history of major accidents or frequent minor accidents (e.g., leaks at waste disposal facilities) are judged to be greater than risks from those with little or no such history (e.g., recombinant DNA experimentation).

• Good or bad -- honesty is an absolute must. Know your safety history, own it and don’t try to dismiss it.

• If you have a less than perfect safety record, explain what you’ve done to address past incidents.

11. Personal stake – Risks from activities viewed by people to place them (or their families) personally and directly at risk (e.g., living near a waste disposal site) are judged to be greater than risks from activities that appear to pose no direct or personal threat (e.g., disposal of waste in remote areas).

• Understand stakeholder viewpoints and concerns. They will vary greatly within a community. Listen to all and respect their opinions.

• Don’t marginalize near neighbors with concerns as simply NIMBYs. Address their concerns and provide information that is as free as possible of jargon and pipeline industry “shop talk.”

12. Human vs. natural origin – Risks generated by human action, failure or incompetence (e.g., industrial accidents caused by negligence, inadequate safeguards, or operator error) are judged to be greater than risks believed to be caused by nature or “Acts of God” (e.g., exposure to geological radon or cosmic rays).

• Educate stakeholder and help become familiar with pipeline operations.

• Pipeline company personnel should become a part of the community and get involved.

• Address how pipelines are operated and the steps that operators take to manage and mitigate risk. (Refer to examples below.)

• Host an open house and invite stakeholders to tour company facilities.

Adapted from (Sandman, P., August 2004. Risk communication: Evolution and Revolution; www.petersandman.com)

Additional resources for pipeline operators

Defer to the experts. Bring in skilled and trained communicators, such as skilled public relations practitioners and public relations agencies, as necessary to train company leaders and managers in effective response during a crisis situation. This training might also include field employees.

Also, there are a host of resources on the internet. Two most notable experts, include:

www.petersandman.com – Creator of the “Risk = Hazard + Outrage” formula for risk communication, Peter M. Sandman is one of the preeminent risk communication speakers and consultants in the United
States today, and has also worked extensively in Europe, Australia, and elsewhere. Dr. Sandman has helped his clients through a wide range of public controversies that threatened corporate or government reputation — from oil spills to labor-management battles; from vaccine autism scares to the siting of hazardous waste facilities.

www.centerforriskcommunication.com – The Center for Risk Communication is a pioneer in the development and use of advanced communication methods based on decades of university-level behavioral-science research and practice. Research and experience clearly prove that one of the most important keys to communication success is an organization's ability to establish, maintain, and increase trust and credibility with key stakeholders, including employees, regulatory agencies, citizen groups, the public and the media. Dr. Vincent Covello is the founder and Director of the Center for Risk Communication.

Some companies have developed software in which you can plug in assessment factors and it will help you figure out how to reduce stakeholders’ outrage. Peter Sandman has one product that is available, Outrage Prediction and Management Software. However, there are other products available and they can be found on the Internet.

Mitigating/Managing Risk: Common Ground Alliance Best Practices 5.0

Common Ground Alliance (CGA) has identified and validated existing best practices performed in connection with preventing damage to underground facilities. The following best practices could potentially be applied when attempting to effectively communicate risk. However, not all practices are appropriate in all situations.

To Effectively Communicate Risk --

8-1: Use of a Marketing Plan - An effective damage prevention education program includes a comprehensive, strategic marketing/advertising plan.

8-2: Target Audiences and Needs - An effective damage prevention education program includes identification of target audiences and their individual needs.

8-3: The Use of Structured Education Programs - An effective damage prevention education program is structured to accommodate the needs of individual audiences.

8-4: Target Mailings - An effective damage prevention education program communicates vital damage prevention, safety, and emergency response information to target audiences through periodic mailings.

8-5: The Use of Paid Advertising - An effective damage prevention education program includes paid advertising to increase damage prevention awareness and practices.

8-6: The Use of Free Media - An effective damage prevention education program utilizes all available free media.

8-7: The Use of Giveaways - An effective damage prevention education program uses promotional giveaway items to increase damage prevention awareness.

8-8: Establishing Strategic Relationships - An effective damage prevention education program establishes strategic relationships.

8-9: Measuring Public Education Success - An effective damage prevention education program includes structured annual or biennial (every two years) measurement(s) to gauge the success of the overall program.
Guidance for Developers, Real Estate Agents and Public Officials in Communicating with Pipeline Companies

Some stakeholders have reported challenges in communicating with pipeline companies. Whether they are real or perceived, they are valid concerns and should be addressed. As an example, some developers don’t know where to start if they need information from a pipeline operator. And they may get different responses from each operator.

This guidance was developed primarily for developers, real estate agents and public officials (i.e. professional staff rather than elected officials) to use when communicating with pipeline companies. However, other audiences could possibly benefit from this information as well.

1. It’s important to recognize that pipeline companies are structured and organized differently. There are small pipeline companies and large pipeline companies. Some large companies may own multiple pipeline systems in many different states.

There are independent pipeline companies, as well as publicly-owned companies. There are intrastate pipelines (within the state) and interstate pipelines (traverse state boundaries), both are regulated by different entities and have different regulations and requirements.

Different department names and titles can add to some confusion. While one operator may refer to a department as “the land department” another pipeline company may refer to the same function as “the right-of-way group.” A pipeline company may have a company headquarters, with regional division offices and many field compressor or pump station locations.

Frequently, pipeline ownership changes as pipelines systems are sold from one company to another. As a rule of thumb, although the pipeline marker might have outdated information with regards to the company name, the emergency phone number should always work.

2. Don’t know who to contact? Your best bet is to start by calling the land or right-of-way department. If they are difficult to reach, an alternative is to contact the local area operations office. You should ask for a supervisor or operations manager. If that person cannot address your question, he/she can direct you to the appropriate office and provide contact information.

If you can’t locate the main company phone number, look on the pipeline marker for the emergency contact number. This phone number is answered around the clock, and while the operations control personnel won’t be able to answer your specific questions, they should be able to provide the main company phone number.

3. If you’re considering developing property that has a pipeline on it, you should ask for a copy of the construction and property guidelines. Most pipeline companies will provide a brochure on construction and property guidelines and in some cases, it may be found on the company’s website. Generally, the brochure addresses the requirements for crossing a pipeline easement and your legal and professional responsibilities with respect to underground facilities. A pipeline company land or right-of-way agent can provide this information.

4. Often times, you may receive different information from different pipeline operators. Please remember that pipeline companies are willing to work with developers and public officials; however, they may not be obligated to disclose private, sensitive or confidential business information.

5. Lastly, and most importantly, pipelines companies are dependent on developers to make the initial contact when they are pursuing property with a pipeline easement. Pipeline companies ask that you call at the earliest possible opportunity. (It’s never too early to contact a pipeline company.) To avoid costly project delays, a developer should contact the pipeline company before bidding/selling a project.
Communicating Risk Overarching Recommendations

1. There isn’t a one-size-fits-all communications campaign that will work for all situations. As the situation changes, the communications program will need to change as well. For instance, if the project is controversial, you will likely need to change your communications strategy to acknowledge and address stakeholder concerns before you can delve too deeply into details about the actual project.

2. In our 15-second attention span world, messages must communicate clearly, concisely and quickly to each unique audience. Given the message is designed to respond to existing perceptions; it must be believable, persuasive and compelling. Communication materials should be:
   a. Simple yet memorable
   b. Professionally designed
   c. Highly-visual and engaging

3. It generally takes about seven exposures before someone actually “receives” a message. Repetition of a consistent message is an effective way to influence and change behavior. While the message remains consistent, it should be conveyed in a variety of ways to help ensure the receiver doesn’t tune you out.
   a. Instead of developing another brochure, consider using untraditional/new forms of communications, such as digital media. You can create blog conversations to reach specific stakeholders.
   b. Broaden the variety of communications tactics you use. Rely on various forms of communications; don’t just use one form of communication. Select the best communication method based on the audience you are trying to reach. The following are examples of communications tactics that may be used for each audience:

**Real Estate Agents/Brokers**

- Monthly Realtor association meetings, especially in smaller communities.
- Present information on upcoming projects and on recommendations.
- Visit major local real estate offices, answer questions and provide communications materials.
- Work with national, regional and local realty association to include articles.
- Presence at national, regional and local real estate association trade shows.
- Targeted mail.

**Developers**

- We realize it is difficult to identify developers who might impact pipeline facilities; however, visit the places where you know they must visit for information (planning office). Have communications materials on display and accessible.
- Work with city/county planning departments to intersect with developers when project documents (e.g., plats) are filed.
- Face-to-face communications may initially be difficult if developer is not located locally; however, it highly recommended tactic for this audience.
- Targeted mail.
- Approach national associations, such as NAHB, SIOR, and NAIOP, for conference/trade show opportunities, speaking engagements and including articles in trade publications.
Home Owners/Buyers/Sellers

- Face-to-face is preferred.
- Place key messages in homeowner association (HOA) newsletters. Attend HOA monthly meetings and pursue speaking opportunities.
- Open houses.
- Local media.
- Local community events (e.g., community fairs); need to pick event to match community (e.g., county fair in large county is probably not appropriate), i.e., pick right tool to reach audience. Go to their community events, where the people are, instead of hosting pipeline event.
- Need to recognize audience characteristics and situations (e.g., existing development, recent incidents, etc.).
- RP 1162 outreach/targeted mail.

Planning and Zoning

- Have right-of-way agents conduct face-to-face visits with planning and zoning departments or other local government contacts (e.g., county clerk in smaller counties). In smaller communities/counties, may be contractor or volunteer positions.
- Identify state chapter of national associations, such as of National Association County Offices (NACO) and American Planning Association (APA). Participate in annual meetings, host hospitality suites or secure booth space.
- Reach members in these associations through electronic publications, websites and e-mail blasts.
- RP 1162 outreach/targeted mail.

4. In order to ensure a successful outcome, some form of an organized entity should be appointed, or created, to lead the PIPA effort beyond the final report. Developing and printing a report is only the first step. The momentum must be continued in order to truly affect change. We view this as a long-term project, with on-going outreach and education. It will take time to influence opinions and shift outcomes.

5. Ensure partnerships and collaborative spirit continues. The pipeline industry should continue to collaborate and partner with various organizations, such as developers and real estate. Together, we are better positioned to achieve more effective results than would otherwise be possible. Establishing one unified entity will ensure all parties are focused on the pursuit of common goals.

6. Allocate resources to mind the store. Having one entity will ensure that someone is managing the initiative. It will also provide a centralized location depository, primary point of contact and ensure that we’re all speaking the same language. Messages must be consistent to reinforce positioning.
Appendix H
Acronyms

AGA  American Gas Association
AOPL  Association of Oil Pipe Lines
APA  American Planning Association
APGA  American Public Gas Association
API  American Petroleum Institute
APWA  American Public Works Association
ASME  American Society of Mechanical Engineers
CGA  Common Ground Alliance
GIS  Geographic Information System
GPS  Global Positioning System
FERC  Federal Energy Regulatory Commission
HCA  High Consequence Area
HUD  Department of Housing and Urban Development
ICC  International Code Council
ICSC  International Council of Shopping Centers
IMLA  International Municipal Lawyers Association
INGAA  Interstate Natural Gas Association of America
IRWA  International Right of Way Association
MAOP  Maximum Allowable Operating Pressure
NACo  National Association of Counties
NAHB  National Association of Home Builders
NAIOP  National Association of Industrial and Office Properties
NALGEP  National Association of Local Government Environmental Professionals
NAPSR  National Association of Pipeline Safety Representatives
NAR  National Association of Realtors
NARUC  National Association of Regulatory Utility Commissioners
NASFM  National Association of State Fire Marshals
NFPA  National Fire Protection Association
NGA  National Governors Association
NLC  National League of Cities
NPMS  National Pipeline Mapping System
OPS  Office of Pipeline Safety, PHMSA
PHMSA  Pipeline and Hazardous Materials Safety Administration
PST  Pipeline Safety Trust
ROW  Right-of-Way
Appendix I

Glossary

Terms in the PIPA Report that may be unfamiliar to the reader are included in this Glossary. Some, such as “right-of-way,” may be legal terms that normally have a specific meaning differing from their lay usage. Other terms may be defined strictly in accordance with their usage in the context of the PIPA Report.

Sources for the terms in this glossary include:

- Common Ground Alliance Best Practices, v5.0
- Washington Utilities and Transportation Commission (WUTC), Report: “Land Use Planning In Proximity to Natural Gas and Hazardous Liquid Transmission Pipelines in Washington State; Appendix E: Pipeline Typology and Glossary”

Abandoned Facility  Any underground or submerged pipeline or facility no longer in use.

As-built Drawing  A detailed drawing or set of drawings that depict the actual configuration of installed or constructed facilities.

Backfill  To fill the void in a utility ditch that was created by excavating, usually by replacing the soils that were removed.

Building Setback  See “Setback”

Cathodic Protection  The process of arresting corrosion on a buried or submerged structure by electrically reversing the natural chemical reaction. This includes, but is not limited to, installation of a sacrificial anode bed, use of a rectifier based system, or any combination of these or other similar systems. Wiring is installed between the buried or submerged structure and all anodes and rectifiers. Wiring is also installed to test stations which are used to measure the effectiveness of the cathodic protection system.

Consultation Zone  see PIPA Report recommended practices BL04 and BL05

Corridor (Pipeline)  A pipeline corridor is a linear area where two or more pipelines (either part of the same or different pipeline systems) are closely grouped in a single right-of-way.

Damage  Any impact or exposure that results in the need to repair an underground facility due to a weakening or the partial or complete destruction of the facility, including, but not limited to, the protective coating, lateral support, cathodic protection or the housing for the line, device or facility.

Demolition Work  The partial or complete destruction by any means of a structure served by, or adjacent, to an underground line or facility.

Designer  Any architect, engineer or other person who prepares or issues a drawing or blueprint for a construction or other project that requires excavation or demolition work.
Developer  An individual or group of individuals who apply for permits to alter, construct and install buildings or improvements or change the grade on a specific piece of property.

Digital mapping data: Geospatial data that is in a digital format useful for computer software.

Distribution Pipeline  A distribution line is a pipeline used to supply natural gas to the consumer. A distribution line is located in a network of piping located downstream of a natural gas transmission line. As defined in natural gas pipeline safety regulations, a distribution line is a pipeline other than a gathering or transmission line.

Easement  (1) A legal instrument giving a pipeline operator a temporary or permanent right to use a right-of-way for the construction, operation, and maintenance of a pipeline. It may also include temporary permits, licenses, and other agreements allowing the use of one’s property. (2) An easement is an acquired privilege or right, such as a right-of-way, afforded a person or company to make limited use of another person or company’s real property. For example, the municipal water company may have an easement across your property for the purpose of installing and maintaining a water line. Similarly, oil and natural gas pipeline companies acquire easements from property owners to establish rights-of-way for construction, maintenance and operation of their pipelines. 3) A legal right, acquired from a property owner, to use a strip of land for installation, operation and maintenance of a pipeline.

Encroachment  (1) A human activity, structure, facility, or other physical improvement that intrudes onto a pipeline right-of-way. (2) Encroachment refers to the unauthorized use of a right-of-way in violation of the easement terms.

Excavation  Any operation using non-mechanical or mechanical equipment or explosives used in the movement of earth, rock or other material below existing grade. This includes, but is not limited to, augering, blasting, boring, digging, ditching, dredging, drilling, driving-in, grading, plowing-in, pulling-in, ripping, scraping, trenching, and tunneling.

Excavator  Any person proposing to, or engaging in, excavation or demolition work for himself or for another person.

Facility Owner/Operator  Any person, utility, municipality, authority, political subdivision or other person or entity who owns, operates or controls the operation of an underground line/facility.

Facility  A buried or aboveground conductor, pipe, or structure used to provide utility services, such as electricity, natural gas, liquids refined from oil, oil, telecommunications, water, sewerage, or storm water.

Fee Simple  The maximum ownership interest one can hold in real estate. As used in this report, it connotes the permanent, underlying interest in the land across which a right-of-way runs and to which an easement applies.

Gas  As used in pipeline safety regulations gas is considered to be natural gas, flammable gas, or gas which is toxic or corrosive. Gases are normally compared to air in terms of its density. Since the specific gravity of air is 1.0, any gas with a specific gravity less than 1.0 will rise and usually disperse. Gas having a specific gravity greater than 1.0 will fall and collect near the
ground or in low-lying areas such as trenches, vaults, ditches, and bell holes. Such occurrences can be hazardous to human health and safety.

**Gathering Pipeline**  A pipeline that transports natural gas from a current production facility to a transmission line or main. Also, a pipeline that transports petroleum from a production facility to a hazardous liquid transmission pipeline.

**Geospatial Data**  Data that identifies the geographic location and characteristics of natural or constructed features and boundaries on the earth.

**Geographic Information System**  An organized collection of computer hardware, software, and geographic data used to capture, store, update, maintain, analyze, and display all forms of geographically referenced information.

**Global Positioning System**  A system consisting of 25 satellites used to provide precise position, velocity and time information to users anywhere on earth. Location information can be received using a GPS receiver. The GPS receiver helps determine locations on the earth’s surface by collecting signals from three or more satellites through a process called triangulation.

**Hazardous Liquid**  Pipeline safety regulations (49 CFR 195.2) identify hazardous liquids as petroleum, petroleum products, anhydrous ammonia, and carbon dioxide.

**Hazardous Liquid Pipeline**  All parts of a pipeline facility through which a hazardous liquids move in transportation, including, but not limited to, line pipe, valves, and other appurtenances connected to line pipe, pumping units, fabricated assemblies associated with pumping units, metering and delivery stations and fabricated assemblies therein, and breakout tanks.

**High Consequence Area**  A high consequence area is a location that is specially defined in pipeline safety regulations as an area where pipeline releases could have greater consequences to health and safety or the environment. Regulations require a pipeline operator to take specific steps to ensure the integrity of a pipeline for which a release could affect an HCA and, thereby, the protection of the HCA.

**High Population Area**  As defined by federal pipeline safety regulations, a high population area is an urbanized area, as defined and delineated by the U.S. Census Bureau, which contains 50,000 or more people and has a population density of at least 1,000 people per square mile. High population areas are considered high consequence areas.

**High-Priority Subsurface Facility**  Includes natural gas transmission lines operating at a pressure that creates a hoop stress of 20% or more of the steel specified minimum yield strength, hazardous liquid pipelines, high voltage electric supply lines, fiber optic lines, pressurized sewage pipelines, and other hazardous underground installations.

**Incident**  An unintentional release of product from a pipeline that may or may not result in death, injury, or damage to property or the environment.

**Locate**  (1) Locate refers to the process of determining the existence and location of an underground facility, such as an oil or gas pipeline, and indicating that location by marking the surface above it through the use of stakes, flags, paint or some other customary manner. Such
markings identify the location of the underground facility so that excavators can avoid damage to the facility when digging.

**Locate Request**  A communication between an excavator and one-call center personnel in which a notice of proposed excavation and request for locating underground facilities is processed. The One-Call Center subsequently passes this information to underground facility owners based on the location of the proposed excavation and underground facility data.

**Mark**  To indicate the existence and location of a line or facility by establishing a mark through the use of stakes, paint or some other customary manner.

**Mitigation**  Actions taken to alleviate, reduce the severity of, or moderate the consequences of failure.

**Gas Pipeline**  All parts of those physical facilities through which gas moves in transportation, including pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies.

**Gas Transmission Pipeline**  (1) A gas pipeline, other than a gathering pipeline, that transports gas from producing areas to refineries and processing facilities and then to consumer areas and local distribution systems.  (2) A pipeline that transports gas within a storage field, or transports gas from an interstate pipeline or storage facility to a distribution main or a large volume gas user, or operates at a hoop stress of twenty percent or more of the specified minimum yield strength.

**Nonconforming Use or Structure**  A use or structure that is impermissible under current zoning restrictions but that is allowed because the use or structure existed lawfully before the restrictions took effect.

**One-Call Center**  An entity that administers a one-call system through which a person can notify owners/operators of lines or facilities of proposed excavations.

**One-Call System**  A system that enables an excavator to communicate through a one-call center to underground facility operators to provide notification of an intent to excavate. The one-call center will gather information about the intended excavation and then issue tickets to notify affected member facility operators. The facility operators can then clear the tickets or locate and mark the facilities before the excavation begins.  Excavators can then take care when excavating around the existing facilities to avoid damaging the facilities. All 50 states within the U.S. are covered by one-call systems. Most states have laws requiring the use of the one-call system at least 48 hours before beginning an excavation.

**Person**  Any individual or legal entity, public or private.

**Petroleum Products**  Flammable, toxic, or corrosive products obtained from distilling and processing of crude oil, unfinished oils, natural gas liquids, blend stocks and other miscellaneous hydrocarbon compounds.

**Pipeline**  *(See also Hazardous Liquid Pipeline and Natural Gas Pipeline.)* Used broadly, pipeline includes all parts of those physical facilities through which gas, hazardous liquid, or carbon dioxide moves in transportation.
Pipeline Easement  See “Easement”

Pipeline Operator  A company or person responsible for the operation, maintenance and management of the pipeline.

Planning  An activity at the beginning of a project where information is gathered and decisions are made regarding the route or location of a proposed excavation based on constraints including the locations of existing facilities, anticipated conflicts and the relative costs of relocating existing facilities or more expensive construction for the proposed facility.

Planning Zone  see PIPA Report recommended practice BL06

Plat  A map or representation on paper of a piece of land subdivided into lots, with streets, alleys, etc., usually drawn to a scale.

Right-of-Way  (1) A piece of property, usually consisting of a narrow, unobstructed strip or corridor of land of a specific width, which a pipeline company and the fee simple landowner both have legal rights to use and occupy. (2) A defined strip of land on which an operator has the right to construct, operate, and maintain a pipeline. The operator may own a right-of-way outright or an easement may be acquired for specific use of the right-of-way.

Right-of-Way Agreement  See “Easement”

Setback  The minimum distance between a pipeline, or the edge of a pipeline easement, and a building or other structure.

Temporary Work Space  An area of land within which certain activities are authorized for a specified purpose and period of time, typically of short duration.

Third-party Damage  Third-party damage includes outside force damage to underground facilities (e.g., pipelines) that can occur during excavation activities and caused by someone other than the facility operator or its contractors.

Transmission Pipeline  As used in the PIPA Report, includes both Gas Transmission Pipeline and Hazardous Liquid Pipeline. Transmission pipelines carry oil, petroleum products, natural gas, natural gas liquids, anhydrous ammonia and carbon dioxide from producing regions of the country to markets.