This .pdf file only includes the Recommended Practices sections. We have shown all of the changes made to practices approved by individual PIPA Task Teams. When a single practice was modified, the changes are shown in Track Changes format. When multiple practices were combined, the practices from the Task Teams are shown first, followed by the combined practice written by PHMSA.

Practices from the Protecting Communities Task Team are shown with cyan shading.

Practices from the Protecting Transmission Pipelines Task Team are shown in yellow shading.

Practices from the Communications Task Team have gray shading.

Practices written by PHMSA to consolidate multiple Task Team practices have no shading.

We heavily edited the Practice Titles and Practice Statements to include the action to be taken by the Audience. Also, we attempted to limit the Audience for each practice to the stakeholder expected to take action to implement the practice.

The PIPA draft report, with all Track Changes accepted is composed of two files. The body of the draft final report (.doc) and the appendices (.pdf). Please use this .pdf as a reference only and provide comments on the draft final report and appendices.
BASELINE RECOMMENDED PRACTICES

PHMSA has combined Recommended Practices:

<table>
<thead>
<tr>
<th>Comm5</th>
<th>Local Governments Should Obtain Transmission Pipeline Mapping Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC-1</td>
<td>Pipeline Operator and Authority Regulating Development Communication</td>
</tr>
</tbody>
</table>

Into BL01 Transmission Pipeline Mapping Data

The combined practice follows those submitted by the Task Teams.

**Practice #: COM-05**

**Practice Title:** Local Governments Should Obtain Transmission Pipeline Mapping Data

**Audience(s):** [Local Governments/Operators]

**Practice Statement:** Local governments responsible for planning or the issuance of development permits should obtain, through the federal National Pipeline Mapping System (NPMS), maps and/or location data for all transmission pipelines within their jurisdiction. Those maps and data should be routinely updated so that they are as accurate as possible. Note that transmission pipeline operators are required to update their pipeline mapping information on the NPMS annually.

**BL01** Transmission Pipeline Mapping Data

**Audience** Local Government & Pipeline Operator

**Practice Statement** Local Governments responsible for planning or the issuance of development permits should obtain maps and/or location data for all transmission pipelines within their jurisdiction and show these pipelines on their maps. Pipeline Operators should provide information regarding their transmission pipelines to Local Government authorities having jurisdiction for regulating development.
BASELINE RECOMMENDED PRACTICES

PHMSA has combined Recommended Practices:

Comm1  Transmission Pipeline Operator Review of Local Government Land Records and Planning Maps
PTP E-6  Pipeline Operator Annual Review of Facility Locations with Planning Boards

Into BL02  Pipeline Operator Review of Local Government Land Records and Planning Maps

The combined practice follows those submitted by the Task Teams.

**Practice #:** Comm1

**Practice Title:** Transmission Pipeline Operator Review of Local Government Land Records and Planning Maps

**Audience(s):** Transmission Pipeline Operator

**Practice Statement:** Transmission pipeline operators should contact local government agencies maintaining tax parcel records, land development records, and planning maps and encourage them to indicate the existence of the transmission pipeline easements on all appropriate records and maps.

**PTP E-6: Pipeline Operator Annual Review of Facility Locations with Planning Boards**

**Audience:** Government Planning/Zoning Department, Pipeline Operators

**Practice Statement:** Transmission Pipeline operators should annually review the location of their facilities with county and municipal planning and/or zoning boards.

**BL02**  Pipeline Operator Review of Local Government Land Records and Planning Maps

**Audience**  Pipeline Operator

**Practice Statement**  Pipeline Operators should annually review the location of their transmission pipelines on the maps of Local Government agencies, such as county and municipal planning and/or zoning boards.
BASELINE RECOMMENDED PRACTICES

PHMSA has combined Recommended Practices:

- Comm3 Transmission Pipeline Operators Should Produce and Distribute Development Guidelines
- PC-1 Pipeline Operator and Authority Regulating Development Communication

Into BL03 Guidelines for Development Around Transmission Pipelines

The combined practice follows those submitted by the Task Teams.

**Practice #: COM-03**

**Practice Title:** Transmission Pipeline Operators Should Produce and Distribute Development Guidelines

**Audience(s):** [Transmission Pipeline Operator]

**Practice Statement:** Transmission pipeline operators should produce and distribute guidelines for development around transmission pipelines to land development/design planning professionals, property owners, developers, potential property purchasers, and local governments. The guidelines should be readily available through the operators’ websites, via e-mail, and also distributed to organizations that represent the various constituent groups (builders associations, engineering organizations, etc.).

**PC-1**

**Title:** Pipeline Operator and Authority Regulating Development Communication

**Statement of Practice:** The pipeline operator should provide information regarding transmission pipelines to the authority having jurisdiction for regulating development.

**Audience:** Pipeline Operator, Local Government

**BL03 Guidelines for Development Around Transmission Pipelines**

**Audience** Local Government & Pipeline Operator

**Practice Statement** Pipeline Operators should produce guidelines for development around their pipelines and distribute the guidelines to Local Governments and Property Developers/Owners. Local Government authorities regulating development should use this information to establish requirements for developing around transmission pipelines.

**BL04 Consultation Zone Ordinances Recommended**

**Old Practice #** Comm6

**Audience** Local Government

**Practice Statement** Local governments are encouraged should to adopt land development procedures that requiring developers/property developers/owners to consult with transmission pipeline operators early in the development process, so that development designs are consistent with the needs of the operators and minimize risks to the populace living or working nearby.
BASELINE RECOMMENDED PRACTICES

PHMSA has combined Recommended Practices:
- PC-18 Consultation Zone
- PTP A-4 Consultation Zone Triggers

Into BL05 Define Consultation Zone

The combined practice follows those submitted by the Task Teams.

**PC-18**

**Practice Title:** Consultation Zone

**Stakeholder Audience:** Landowner/Developer, Local Government

**Practice Statement:** Landowners/developers should initiate consultation with pipeline operators when development is planned on property within a Consultation Zone.

**PTP A-4: Consultation Zone Triggers**

**Practice Statement:** New residential, commercial, governmental, industrial and military developments, public improvement projects and rezoning proposals shall trigger appropriate government representatives and/or land owner/developers to initiate “consultation zone” discussions with pipeline operators at the first application stage.

**BL05 Define Consultation Zone**

**Audience** Local Government

**Practice Statement** Local Government should define the Consultation Zone to delineate the area where a Property Developer/Owner should initiate consultation with Pipeline Operators regarding planned property development in the vicinity of a transmission pipeline.
BASELINE RECOMMENDED PRACTICES

BL06 Local Governments Adopt a Planning Zone for Property Developers/Owners

Old Practice # PC-19

Audience Local Government & Property Developer/Owner

Practice Statement When transmission pipelines are located within the Planning Zone, Local Governments and Property Developers/Owners should consider implementing The Planning Zone is an area within a Consultation Zone centered on a transmission pipeline. The Planning Zone width should be determined by the specific characteristics of the pipeline and local land characteristics (topography, environmental conditions, etc.). recommended practices ND11 through ND 23 to protect communities near transmission pipelines, (other than consultation, see practice “Consultation Zone”), should be implemented for development within the Planning Zone around a pipeline. The Planning Zone is an area within a Consultation Zone (BL04 & BL05) centered on a transmission pipeline. The Planning Zone width should be determined by the specific characteristics of the pipeline and consider the topography and environmental conditions.

BL07 Understanding the Elements of a Pipeline Easement

Old Practice # PTP B-1

Practice Statement Property Developers/Owners should have a Basic understanding of the elements of a pipeline easement, improves the relationship among stakeholders and ultimately pipeline and public safety.

Audience Pipeline Operators, Property Developers/Owners, Governments

BL08 Land Records Management

Old Practice # PTP D-1

Practice Statement Land use agreements between Pipeline Operators and landowners property owners should be documented, and managed and recorded, when necessary, recorded.

Audience Local Government, Landowner and/or Developer, Pipeline Operator, Property Developer/Owner, Owner, Real Estate/Title/Surveying Commissions

BL09 Documenting and Recording Easement Amendments Use, Documentation, Recording and Retention

Old Practice # PTP D-5

Practice Statement Easement amendments are used to record additional rights granted to the operator to add appurtenances or additional pipeline(s) that were not included in the initial easement agreement. Easement amendments should be documented, managed and recorded.

Audience Local Government, Landowner and/or Developer, Pipeline Operator, Property Owner, Owner, Real Estate/Title/Surveying Commissions
## BASELINE RECOMMENDED PRACTICES

### BL10 Implement Communications Plan

**Old Practice # COM-16**

**Audience** Pipeline Operator

**Practice Statement** Pipeline operators should implement an effective communications plan that includes the PIPA seven-step model when communicating acceptable transmission pipeline right-of-way ROW uses and activities to Property Developers/land-Owners and other stakeholders.

### BL11 Effectively Communicate Pipeline Risk and Risk Management Information

**Old Practice # COM-17 through COM-25**

**Audience** Pipeline Operator

**Practice Statement** Transmission pipeline operators should identify barriers to effectively communicating with stakeholders and use communication techniques designed to overcome those barriers and effectively engage stakeholders to communicate with them regarding pipeline risks and how the operator manages such risks.

### BL12 Vegetation Management Notification of Right-of-Way Maintenance Activities of the Right-of-Way

**Old Practice # PTP C-1**

**Practice Statement** Pipeline Operators should notify landowners of right-of-way maintenance activities, including vegetation management, that would hinder inspection and maintenance activities.

**Audience** Pipeline Operators, Developers, Landowners

### BL13 Encroachment Prevention and Management

**Old Practice # PTP C-3**

**Practice Statement** Pipeline Operators, operators, should communicate with property developers and land/owners to prevent or rectify unacceptable encroachments or inappropriate human activity within the right-of-way in a documented and timely manner.

**Audience** Pipeline Operators, Landowners, Developers
BASELINE RECOMMENDED PRACTICES

PHMSA has combined Recommended Practices:

PTP E-1  State One-call Laws Include Mandatory Participation and Membership of All Facility Owners

PTP E-2  State One-call Laws Include Mandatory Participation of All Excavators

Into  BL14  Participate in Organizations Pursuing Improved State Damage Prevention Programs

The combined practice follows those submitted by the Task Teams.

**PTP E-1  State One-call Laws Include Mandatory Participation and Membership of All Facility Owners**

**Practice Statement**  Any entity that furnishes or transports products or services to a third party for their use or consumption by means of an underground facility or furnishes or transports products or services for its own internal use by means of an underground facility that occupies or crosses a right-of-way or utility easement should be a member of and participate in a one-call organization.

**Audience**  Facility Owners, Pipeline Operators, Governments

**PTP E-2  State One-call Laws Include Mandatory Participation of All Excavators**

**Practice Statement**  Any entity that excavates in a right-of-way or utility easement should be required to adhere to State One-Call requirements.

**Audience**  Excavators, Facility Owners, Pipeline Operators, Government

**BL14  Participate in Organizations Pursuing Improved State Damage Prevention Programs**

**Audience**  Local Government  Property Developer/Owner  Pipeline Operator

**Practice Statement**  All stakeholders should participate in the work of organizations seeking to make improvements to State Damage Prevention Programs, especially efforts to reduce exemptions from participation in the One-Call System.
BASELINE RECOMMENDED PRACTICES

PHMSA has combined Recommended Practices:

PTP C-2  Pipeline Operator Consent for 3rd-Party Excavation
PTP E-4  Excavation Near High Priority Subsurface Installations

Into BL15  Enhanced Damage Prevention Practices for High Priority Underground Facilities

The combined practice follows those submitted by the Task Teams.

PTP C-2  Pipeline Operator Consent for 3rd-Party Excavation

**Practice Statement**  Third-Parties working in the pipeline right-of-way should obtain written consent from operator before starting construction activities including use of heavy equipment, tunneling, drilling, boring, digging or excavating

**Audience**  Excavators, Land Owners, Developers, Operators

PTP E-4  Excavation Near High Priority Subsurface Installations

**Practice Statement**  Onsite meeting between operator and excavator for excavations within 10 feet of a high priority subsurface installation.

**Audience**  Excavators, Operators

BL15  Enhanced Damage Prevention Practices for Excavation near High Priority Underground Facilities

**Audience**  Pipeline Operator

**Practice Statement**  Pipeline Operators should implement enhanced damage prevention practices within the transmission pipeline right-of-way to ensure that pipeline operators and excavators meet on-site prior to excavation near high priority underground facilities.
BASELINE RECOMMENDED PRACTICES

BL16 Mapping Abandoned Pipelines in One-call System

Old Practice # PTP E-3

Practice Statement  When a transmission pipeline is abandoned, the State One-Call Center shall should be notified. Operator maps on file with the State One-Call Center System shall should reflect the location of the abandoned transmission pipelines.

Audience  Pipeline Operators  [There are audiences here that are not defined by the four PIPA audiences]

BL17 Real Estate Disclosure

Old Practice # COM-09

Practice Statement  As part of all real estate sales contracts, each State should require the disclosure of known transmission pipeline easements on the property. The disclosure should be done in the same way that the state requires disclosure of other environmental risks, such as lead paint or asbestos products. A copy of the easement document and contact information for the transmission pipeline operator should be provided to any prospective purchaser prior to the time the initial purchase documents are signed.

Audience  State Real Estate Commission or Agency
NEW PIPELINE RECOMMENDED PRACTICES

**NP01  Siting New Transmission Pipelines In, or Adjacent to, Existing Rights-of-Way**

**Old Practice # PC-17**

**Audience**  Pipeline Operator, Local Governments

**Practice Statement**  When considering Decisions on potential routes for new transmission pipelines, pipeline operators should include coordination with local governments along the routes. This coordination should include consideration of existing or adjacent transmission pipeline, or other utility, rights-of-way, and other utility rights-of-way.

**NP02  Recommended Practices for Transmission Pipeline Right-of-Way Acquisition**

**Old Practice # PTP B-2**

**Audience**  Pipeline Operator, Landowners

**Practice Statement**  Basic understanding of the pipeline right-of-way acquisition process sets a foundation for an informed and mutually respectful negotiation between a landowner and a pipeline operator. The right-of-way acquisition process is a delicate balance of individual property owner's rights and the pipeline operator’s need to transport energy through the property to meet the public’s necessity of safely delivered, affordable energy. Pipeline operators should recognize that landowners are often unfamiliar with easements, eminent domain authority, and transmission pipeline construction, operation and maintenance. These practices are intended to enable an informed and mutually respectful negotiation between transmission pipeline operators and property owners.
NEW DEVELOPMENT RECOMMENDED PRACTICES

PHMSA has combined Recommended Practices:

<table>
<thead>
<tr>
<th>Comm4</th>
<th>Provide Information to Developers</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTP A-4</td>
<td>Consultation Zone Triggers</td>
</tr>
<tr>
<td>Into</td>
<td>ND01 Pipeline Operators and Local Governments Provide Information to Property Developers/Owners</td>
</tr>
</tbody>
</table>

The combined practice follows those submitted by the Task Teams.

**Comm 4**

**Audience(s):** [Operators/Developers/Local Government]

**Title:** Transmission Pipeline Operators and Local Government Staff Need to Provide Information to Developers

**Practice Statement:** A transmission pipeline operator’s staff is familiar with the safety issues regarding development adjoining their easements, and local government staff process development applications. It is crucial that both of those stakeholder groups inform developers of the safety and environmental issues.

**PTP A-4: Consultation Zone Triggers**

**Practice Statement:** New residential, commercial, governmental, industrial and military developments, public improvement projects and rezoning proposals shall trigger appropriate government representatives and/or land owner/developers to initiate “consultation zone” discussions with pipeline operators at the first application stage.

**Audience:** Planning and Zoning Commissions, Planning and Permitting Departments, Public Works Departments, Elected Officials, Operators, Land Owners, Developers

**ND01** Pipeline Operators and Local Governments Should Provide Information to Property Developers/Owners

**Audience** Pipeline Operator & Local Government

**Practice Statement** Pipeline Operators and Local Government staff should inform property developers/owners of the safety and environmental issues related to development next to transmission pipelines.
NEW DEVELOPMENT RECOMMENDED PRACTICES

PHMSA has combined Recommended Practices:

Comm 14  Gathering Information for Design Purposes
Comm 15  Design Request through One-Call Center

Into  ND02  Gather Information for Design near Transmission Pipelines

The combined practice follows those submitted by the Task Teams.

**Comm 14**

**Practice Title:** Gathering Information for Design Purposes

**Audience(s):** [Developer]

Include, verbatim, CGA best practice 2-2 because our report is directed to developers, and this best practice deals directly with the need for early communication between the developer and the transmission pipeline operator. [Determine if this practice is already well covered in other practices. If so, remove it from this report. Cycla]

**Comm 15**

**Practice Title:** Design Request through One-Call Center

**Audience(s):** [Developers/Operators]

**Practice Statement:** Project designers or developers should call their one-call center for a design request if the one-call center has established procedures for processing such requests. A design request is a request to obtain the names and contact information for facility owners/operators with underground facilities within the project area. 811 is the national number to call to reach the one-call center.

**ND02**  Gather Information for Design near Transmission Pipelines

**Audience**  Property Developers/Owners

**Practice Statement**  The designer should use all reasonable means, including the One-Call Center, to obtain information about underground facilities in the area of the proposed development.

**ND03**  Property Developer/Owner Review of Acceptability of Proposed Land Use of the Right-of-Way Prior to Design

**Old Practice #**  PTP A-1

**Audience**  Property Developer/Owner, Pipeline Operator

**Practice Statement**  Property developer/owner should review preliminary information about acceptability of proposed land use on the right-of-way prior to design. The purpose of this table is to increase awareness and encourage early communication among key stakeholders when considering changes to an existing land use or new land use development of existing pipeline rights-of-way.
NEW DEVELOPMENT RECOMMENDED PRACTICES

PHMSA has combined Recommended Practices:

| Comm13 | Coordination of Development Design and Construction with Transmission Pipeline Operator |
| PC-2   | Land Owner/Developer and Pipeline Operator(s) Communication |
| PTP A-4 | Consultation Zone Triggers |

Into ND04 Property Developer/Owner Coordination of Development Design and Construction with Pipeline Operator

The combined practice follows those submitted by the Task Teams.

Comm 13

**Audience(s):** [Developers/Operators/Local Governments]

**Title:** Coordination of Development Design and Construction with Transmission Pipeline Operator

**Practice Statement:** Whenever a transmission pipeline is on or adjacent to land proposed for development, the developer should contact the transmission pipeline operator to discuss the development plans and openly work with the operator to minimize any impacts to the transmission pipeline while maximizing the developer’s use of the property. Developers should forward their preliminary plans to the transmission pipeline operator for review and approval as soon as they become available. Developers need to accurately show the location of the transmission pipeline on their proposed plans. The transmission pipeline operator will need to cooperate with the developer to mark their facilities in the field for proper identification. This same level of coordination should be followed when road work or utility work is done near any transmission pipeline.

PC-2

**Title:** Land Owner/Developer and Pipeline Operator(s) Communication

**Statement of Practice:** Land Owner/Developer and Pipeline Operator(s) should consult for all new development within the consultation zone around a pipeline.

**Audience:** Land Owner/Developer, Pipeline Operator

**PTP A-4: Consultation Zone Triggers**

**Practice Statement:** New residential, commercial, governmental, industrial and military developments, public improvement projects and rezoning proposals shall trigger appropriate government representatives and/or land owner/developers to initiate “consultation zone” discussions with pipeline operators at the first application stage.

**Audience:** Planning and Zoning Commissions, Planning and Permitting Departments, Public Works Departments, Elected Officials, Operators, Land Owners, Developers

**ND04** Property Developer/Owner Coordination of Development Design and Construction with Pipeline Operator

**Audience** Property Developer/Owner & Pipeline Operator

**Practice Statement** When property development occurs in the Consultation Zone, the Property Developer/Owner should communicate with the Pipeline Operator to ensure the pipeline right-of-way is considering during development design and construction.
NEW DEVELOPMENT RECOMMENDED PRACTICES

PHMSA found practice Comm8 to completely overlap with PTP E-5
The slightly revised PTP E-5 below will be included in the final report as ND05

**Old Practice #: Comm8**
**Audience(s):** [Local Governments]
**Practice Title:** Notices of Proposed Development and Proposed Zoning Changes

**Practice Statement:** Local governments should send public notices regarding proposed development, proposed zoning changes, and subdivision applications to all transmission pipeline operators who have transmission pipeline facilities located on, or in proximity to, the subject properties.

**ND05 Notification to Operators by Local Government Planning and Zoning Boards and Permitting Departments Prior to Final Plan Approval**

**Old Practice #: PTP E-5**
**Audience:** Local Government, Operators, Developers

**Practice Statement:** Local Government Planning and Zoning Boards and Permitting Departments should communicate to underground facility owners and/or transmission pipeline operators the intent of constructing permanent structures on or near high-priority subsurface installation transmission pipelines prior to granting final approval of a permit or development plans.

**ND06 Local Government Requires Site Assessment/Environmental Review Process for Development Encumbered with Transmission Facilities**

**Old Practice #: Comm 11**
**Audience:** Local Government

**Practice Statement:** Whenever development is proposed on property with transmission pipeline facilities, local governments should require that the site assessment or environmental review process address in detail the steps necessary to safely integrate the transmission pipeline into the design of the project.
NEW DEVELOPMENT RECOMMENDED PRACTICES

PHMSA has combined Recommended Practices:

<table>
<thead>
<tr>
<th>PTP D-4</th>
<th>Define Blanket/ill-defined Easement Agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm2</td>
<td>“Open” or “Blanket” Easements Must Be Defined</td>
</tr>
</tbody>
</table>

Into ND07 Pipeline Operators Define blanket/ill-defined Easement Agreements When Necessary

The combined practice follows those submitted by the Task Teams.

**Practice #: PTP D-4**

**Audience:** [Property Developer/Owner, Operator]

**Practice Title:** Define Blanket/ill-defined Easement Agreements

**Practice Statement:** Upon request by the landowner, the easement agreement may be defined to an acceptable width and location by the pipeline operator.

**Comm2**

**Audience(s):** [Operator, Property Developer/Owner, Local Government]

**Title:** “Open” or “Blanket” Easements Must Be Defined.

**Practice Statement:** “Open” or “blanket” easements should be reduced to a defined width before any development permits are issued by local governments.

**ND07** Pipeline Operators Define blanket/ill-defined Easement Agreements When Necessary

**Audience** Local Government, Property Developer/Owner, Pipeline Operator

**Practice Statement** Upon request by the landowner, the easement agreement should be defined to an acceptable width and location by the pipeline operator. Governments should require easements be defined prior to granting development permits.

**ND08** Development-Developing of the Pipeline Transmission Right-of-Way

**Old Practice # PTP A-2**

**Audience** Property Developer/Owner, Local Government, Pipeline Operators

**Practice Statement** Visual examples of successful Property developers/owners, local governments and pipeline operators may collaborate efforts as well as situations to avoid while to enhance and maintaining the pipeline right-of-way, and maintaining the safety and integrity of the pipeline facilities.

**ND09** Credit Developer for Providing Open Space In Close Proximity to the -Right-of-Way

**Old Practice # Comm 7**

**Audience** Local Government

**Practice Statement** Local governments should consider allowing site planning flexibility in the development of commercial, industrial or residential property whenever a transmission pipeline is located in, or in close proximity to, the proposed development. The goal should be to allow the same overall density of development while providing more space between the transmission pipeline and the development, if there are indications that such flexibility would provide greater safety.
### NEW DEVELOPMENT RECOMMENDED PRACTICES

<table>
<thead>
<tr>
<th>ND10</th>
<th><strong>Record Transmission Pipeline Easements on Development Plans and Final Plats Filings Should Include Transmission Pipeline Easements</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Old Practice # Comm 10</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Audience</strong></td>
<td>Local Government &amp; Property Developer/Owner</td>
</tr>
<tr>
<td><strong>Practice Statement</strong></td>
<td>Local governments should require that all development plans and final plats recorded with the appropriate statutory body filed in the official land records clearly show the location of transmission pipeline easements.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ND11</th>
<th><strong>Mitigate Impact of a Transmission Pipeline Release in the Design of New Parking Lots and Parking Structures</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Old Practice # PC-5</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Audience</strong></td>
<td>Local Governments, Property Owners/Developers</td>
</tr>
<tr>
<td><strong>Practice Statement</strong></td>
<td>Parking lots and parking structures should be located and designed to mitigate the impact of a potential transmission pipeline incident.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ND12</th>
<th><strong>Mitigate Impact of a Transmission Pipeline Release in the Design of New Roads</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Old Practice # PC-6</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Audience</strong></td>
<td>Local Governments, Property Developers/Owners, Pipeline Operator</td>
</tr>
<tr>
<td><strong>Practice Statement</strong></td>
<td>Roads and associated appurtenances should be designed to reduce the risk of a potential transmission pipeline incident and mitigate the impact of the development on the pipeline.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ND13</th>
<th><strong>Mitigate the Potential Impact of a Transmission Pipeline Incident in the Design of New Utilities and Related Infrastructure</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Old Practice # PC-14</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Audience</strong></td>
<td>Local Governments, Property Developers/Owners, Pipeline Operator</td>
</tr>
<tr>
<td><strong>Practice Statement</strong></td>
<td>Utilities (both above and below ground) and related infrastructure should be designed to reduce the potential of interference with pipeline maintenance and inspections and to reduce the risk of a pipeline incident.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ND14</th>
<th><strong>Mitigate the Potential Impact of Aboveground Water Management Infrastructure</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Old Practice # PC-15</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Audience</strong></td>
<td>Local Governments, Property Developers/Owners</td>
</tr>
<tr>
<td><strong>Practice Statement</strong></td>
<td>Storm water, irrigation water, and drinking water management facilities, retention ponds, and other above-ground water management infrastructure should be designed and located to reduce the risk of or mitigate the impact of a transmission pipeline incident.</td>
</tr>
</tbody>
</table>
## NEW DEVELOPMENT RECOMMENDED PRACTICES

<table>
<thead>
<tr>
<th>Practice #</th>
<th>Practice Title</th>
<th>Audience</th>
<th>Practice Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND15</td>
<td>Mitigate Trees/Vegetation Interference with Transmission Pipeline Activities</td>
<td>Local Governments &amp; Property Developers/Owners</td>
<td>Trees and vegetation should be located to reduce the potential of interference with transmission pipeline maintenance and inspections and to reduce the risk of a pipeline incident.</td>
</tr>
<tr>
<td>ND16</td>
<td>Design Water Supply and Sanitary Systems to Mitigate Contamination and Excavation Damage</td>
<td>Local Governments &amp; Property Developers/Owners</td>
<td>Individual water supply (water wells), small public water systems, and individual sanitary disposal systems (septic tanks and leach or drain fields) should be located to reduce the potential of interference with transmission pipeline maintenance and inspections, and to reduce the risk of excavation damage to a pipeline incident and to reduce potential contamination in the event of a pipeline release.</td>
</tr>
<tr>
<td>ND17</td>
<td>Mitigate Impact of a Potential Transmission Pipeline Release in New Residential, Mixed-Use, and Commercial Land Use</td>
<td>Local Governments Property Owners/Developers, Pipeline Operators</td>
<td>Buildings within the Planning Zone (BL06) should be designed to mitigate the impact of a potential pipeline transmission pipeline incident (see practice &quot;Definition of Planning Zone&quot;).</td>
</tr>
<tr>
<td>ND18</td>
<td>Consider Noise and Odor Associated with Pipeline Operations in the Design of Residential, Mixed-Use, and Commercial Land Use near Above-Ground Pipeline Facilities, such as Compressor Stations, Pumping Stations, and Appurtenances</td>
<td>Local Governments, Property Developers/Owners, Pipeline Operators</td>
<td>Consider noise, odor and other issues when planning developments near above-ground pipeline transmission pipeline facilities, such as compressor stations, pumping stations, odorant equipment, regulator stations and other pipeline appurtenances.</td>
</tr>
<tr>
<td>ND19</td>
<td>Account for Impact of a Transmission Pipeline Incident in Design of New Industrial Land Use Development</td>
<td>Property Developer/Owner &amp; Local Government</td>
<td>Heavy industrial and use development should be designed to reduce the risk of escalation from a potential transmission pipeline incident.</td>
</tr>
</tbody>
</table>
NEW DEVELOPMENT RECOMMENDED PRACTICES

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

Old Practice # PC-11

Audience  Property Developer/Owner, Local Government

Practice Statement  Healthcare, daycare, detention and correctional facilities, educational occupancies, and other potentially difficult to evacuate facilities should be constructed and/or located to mitigate the impact of a potential transmission pipeline incident and should have emergency plans for potential pipeline incidents.

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

Old Practice # PC-12

Audience  Local Governments, Property Developer/Owner

Practice Statement  Police stations, HAZMAT response, fire departments, fire and rescue, emergency communications facilities, and other emergency responder facilities should be constructed or located to mitigate the impact of a potential transmission pipeline incident and should have emergency plans for potential pipeline incidents.

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

Old Practice # PC-13

Audience  Local Governments, Property Developers/Owners

Practice Statement  Places of potential mass public assembly (e.g., amusement parks, stadiums, amphitheatres, highway rest stops, churches), should be constructed or located to mitigate the impact of a potential transmission pipeline incident and should have emergency plans for potential pipeline incidents.

ND23  Incorporate Emergency Response Plans into Land Development

Old Practice # PC-3

Audience  Local Governments & Property Developers/Owners

Practice Statement  Emergency response plans requirements should be incorporated into land use development within the planning zone to mitigate the impact of a potential transmission pipeline incident affecting the community.
NEW DEVELOPMENT RECOMMENDED PRACTICES

PHMSA has combined Recommended Practices:

<table>
<thead>
<tr>
<th>Practice #</th>
<th>Audience(s)</th>
<th>Title</th>
<th>Practice Statement</th>
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<tbody>
<tr>
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<td>Developers/Local Governments</td>
<td>Permit Requirement for Temporary Construction Fencing</td>
<td>When construction or excavation permits are issued for work on land crossed by or adjoining a transmission pipeline, a condition of the permit should require that temporary construction fencing be installed to keep construction equipment and materials off the transmission pipeline. No exceptions should be allowed, except as specifically permitted by the transmission pipeline operator. The fencing should be installed before work begins and remain in place until all construction is complete. The local government or other entity responsible for construction inspections should verify that the fencing is properly installed and maintained.</td>
</tr>
<tr>
<td>PTP E-8</td>
<td>Pipeline Operators, Excavators</td>
<td>Marking the Edge of Pipeline Operators’ Right-of-Way</td>
<td>Pipeline Operators temporarily installs right-of-way markers at the edge of the pipeline operators’ right-of-way to indicate the outer limits when construction abuts the right-of-way.</td>
</tr>
</tbody>
</table>

The combined practice follows those submitted by the Task Teams.

**Practice #: Comm 12**

**Audience(s):** Developers/Local Governments

**Title:** Permit Requirement for Temporary Construction Fencing

**Practice Statement:** When construction or excavation permits are issued for work on land crossed by or adjoining a transmission pipeline, a condition of the permit should require that temporary construction fencing be installed to keep construction equipment and materials off the transmission pipeline. No exceptions should be allowed, except as specifically permitted by the transmission pipeline operator. The fencing should be installed before work begins and remain in place until all construction is complete. The local government or other entity responsible for construction inspections should verify that the fencing is properly installed and maintained.

**Old Practice #: PTP E-8**

**Practice Title:** Marking the Edge of Pipeline Operators’ Right-of-Way

**Audience:** Pipeline Operators, Excavators

**Practice Statement:** Pipeline Operators temporarily installs right-of-way markers at the edge of the pipeline operators’ right-of-way to indicate the outer limits when construction abuts the right-of-way.

**Audience:** Pipeline Operators

**Practice Statement:** Pipeline Operators should install markers or fencing on the edge of the right-of-way prior to construction to provide a clearly defined boundary.

**ND25** Property Developer/Owner Contact Pipeline Operator Prior to Excavation and Blasting potentially affecting the transmission pipeline

**Old Practice # PC-8**

**Audience:** Property Developers/Owners & Pipeline Operators

**Practice Statement:** Property developers/owners should contact pipeline operators when excavations or blasting has the potential to affect the soil stability of or lead to movement or settling of the soil surrounding the transmission pipeline.
NEW DEVELOPMENT RECOMMENDED PRACTICES

ND26  Using, Documenting, Recording and Retaining Encroachment Agreements (or Encroachment Permits) to Use, Documentation, Recording and Retention

Old Practice # PTP D-2

Audience  Local Government, Property Developer/Owner, Pipeline Operator

Practice Statement  Encroachment agreements should be used, documented, recorded and retained when an operator agrees to allow a Property Developer/Owner to encroach on the pipeline right-of-way for a long or perpetual duration in a manner that conflicts with the activities allow on the easement. Potential changes of a long-term nature in the activity or use of the land within the boundaries of the easement that conflicts with activities allowed by the right-of-way agreement, should include consultation among parties having legal interests in the pipeline right-of-way easement, documentation of in an encroachment agreement, potentially recording decisions with the appropriate statutory office (i.e. county recorder, parish clerk) and retention of documented changes for the life of the encroachment.

ND27  Using, Documenting and Retaining Letters of No Objection Use, Documentation, Recording and Retention

Old Practice # PTP D-3

Audience  Property Developer/Owner Landowner and/or Developer, Pipeline Operator/Owner, Government

Practice Statement  Operators may use, document and may use Letters of No Objection for two purposes 1) to show agreement of short-term acceptable activities of land on or near the pipeline transmission pipeline rights-of-way and 2) to notify a transmittal between the developer/landowner/government and the operator to signal that the operator does not object to the proposed plans for use of the land on or near the pipeline right-of-way.

ND28  Documenting, Recording and Retaining Partial Release Use, Documentation, Recording and Retention

Old Practice # PTP D-6

Audience  Local Government, Property Developer/Owner, Pipeline Operator, Real Estate Commissions

Practice Statement  Partial Releases are used to allow some part of the right-of-way to be released from certain easement conditions, should be documented, recorded and retained.

ND29  Pipeline Operators Evaluate New Development for Identified Sites and Impacts on Unusually Sensitive Areas and HCA's for Natural Gas Transmission Operators

Old Practice # PTP A-3

Audience  Pipeline Operator

Practice Statement  Pipeline operators may review guidance for operators to assist in determining if the proposed development of the right-of-way would result in an “identified site” and the creation of an HCA or impact an Unusually Sensitive Area.
PHMSA has combined Recommended Practices:

<table>
<thead>
<tr>
<th>Practice #</th>
<th>Description</th>
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<td>Local Governments Should Obtain Transmission Pipeline Mapping Data</td>
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<tr>
<td>PC-1</td>
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<tr>
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<td>Transmission Pipeline Mapping Data</td>
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</table>

The combined practice follows those submitted by the Task Teams.

**Practice #: COM-05**

**Practice Title:** Local Governments Should Obtain Transmission Pipeline Mapping Data

**Audience(s):** Local Governments/Operators

**Practice Statement:** Local governments responsible for planning or the issuance of development permits should obtain, through the federal National Pipeline Mapping System (NPMS), maps and/or location data for all transmission pipelines within their jurisdiction. Those maps and data should be routinely updated so that they are as accurate as possible. Note that transmission pipeline operators are required to update their pipeline mapping information on the NPMS annually.

**Practice Description:** Local governments need accurate mapping data regarding the location of transmission pipelines within their jurisdiction. That data can be obtained online from the NPMS at [http://www.npms.phmsa.dot.gov](http://www.npms.phmsa.dot.gov), or from state pipeline regulators in some states. Each transmission pipeline operator should also be able to provide mapping data for their own facilities. The transmission pipeline location information should be integrated into each jurisdiction’s GIS system, if possible, and shown on all relevant planning maps. If a local government’s planning maps show the approximate location of all transmission pipelines, it is more likely that local government decisions will prudently integrate transmission pipeline into the essential infrastructure of the community.

**PC-1**

**Title:** Pipeline Operator and Authority Regulating Development Communication

**Statement of Practice:** The pipeline operator should provide information regarding transmission pipelines to the authority having jurisdiction for regulating development.

**Audience:** Pipeline Operator, Local Government

**Description of Practice:** As required by API RP- 1162, the pipeline operator should provide information regarding transmission pipelines to the authority having jurisdiction for regulating development to ensure that there is an adequate understanding of the risks posed by the pipeline and encourages land use planners to incorporate pipeline coordination in their plan approval process. The authority regulating development should use this information to establish requirements for development around the particular pipeline based upon the guidance on specific land uses herein. Information should be provided to all local governments with jurisdiction over areas within the consultation zone around the pipeline.

The pipeline operators should provide pipeline characteristics and associated hazards with pipelines to the authority regulating development for them to make an informed decision on the proposed development and/or development plans in relation to the pipeline risks. Because of potential security threats, detailed pipeline information that is provided to local governments should remain confidential and not be made available to the general public.
Pipeline characteristics that may affect the pipeline(s) risk include (but are not limited to):

- The number of pipelines in the ROW
- The nature and characteristics of the product in the pipeline(s) (natural gas, refined products, crude oils, highly volatile liquids, etc.);
- The operating conditions of the pipeline(s) (pressure, etc.);
- The design of the pipeline(s) (diameter, material, thickness, etc);
- The shutoff valve locations; and
- The operating history of the pipeline(s) (age, leaks, spills, ruptures, etc.) within the area under jurisdiction of the local authority regulating development.

Associated hazards with pipelines may include (but are not limited to):

- Potential impact of a liquid spill;
- Potential impact of a vapor cloud, including potential impact of a toxicity, deflagration or detonation;
- Potential impact of a directed fire; and
- Potential impact of a pool fire

Definition of a planning zone may be based on analysis of the potential extent of these hazards for the pipeline(s) under consideration.

The potential for future pipeline modifications to the pipeline characteristics and associated hazards should also be discussed, as appropriate.

Accurate Mapping and GIS information should also be shared at this point to better facilitate land use planning. Pipeline operators should make available to local government planners and developers pipeline location information in digital formats with a sufficient level of positional accuracy for land use planning purposes. Operators either should provide local governments these dataset directly or post them through a national and/or state clearinghouse such as the National Pipeline Mapping System. For local governments that do not have digital mapping capabilities, pipeline locations should be provided in a hard copy format with the best level of accuracy possible. Because of potential security threats, detailed information on pipeline characteristics should not be made available to the general public. The pipeline location should be included on all zoning, building and public works maps. For more information on Mapping and GIS information, see CGA Best Practices.

Periodic updates should be provided by the pipeline operator to the authority regulating development, especially if any changes to the pipeline design or characteristics are expected/anticipated that would affect the consultation or planning zone. Pipeline operators should coordinate / inform public officials and emergency responders as appropriate to ensure local governments are aware of operator activities.

The authority regulating development should ensure communication of development information or zoning change to the pipeline operator for all development within the consultation zone.

References:
Canadian Standards Association Document, Land use planning for pipelines: A guideline for local authorities, developers, and pipeline operators (PLUS 663)
Municipal Research and Services Center of Washington, Land Use Planning In Proximity to Natural Gas and Hazardous Liquid Transmission Pipelines in Washington State
City of Austin, TX, Ordinance No. 030410-12
API RP- 1162, Public Awareness Programs for Pipeline Operators, 2003, 192.616, 195.440
CGA Best Practices, 2008
BL01 Transmission Pipeline Mapping Data

**Audience** Local Government & Pipeline Operator

**Practice Statement** Local Governments responsible for planning or the issuance of development permits should obtain maps and/or location data for all transmission pipelines within their jurisdiction and show these pipelines on their maps. Pipeline Operators should provide information regarding their transmission pipelines to Local Government authorities having jurisdiction for regulating development.

**Practice Description:** Local Governments need accurate mapping data regarding the location of transmission pipelines within their jurisdiction. That data can be obtained online from the National Pipeline Mapping System (NPMS) at [http://www.npms.phmsa.dot.gov/](http://www.npms.phmsa.dot.gov/), or from state pipeline regulators in some states. Each Pipeline Operator should also be able to provide mapping data for their own transmission pipelines.

The transmission pipeline location information should be integrated into each Local Government jurisdiction’s graphic information system (GIS), if possible, and shown on all relevant planning maps. If a local government’s planning maps show the approximate location of all transmission pipelines, it is more likely that local government decisions will prudently integrate those pipelines into the essential infrastructure of the community. The transmission pipelines should be included on all relevant zoning, building, and public works maps.

Pipeline Operators should provide transmission pipeline location information in digital formats with a sufficient level of positional accuracy for land use planning purposes. Pipeline Operators should either provide Local Governments these datasets directly or post them through a national and/or state clearinghouse such as the NPMS. For Local Governments that do not have digital mapping capabilities, transmission pipeline locations should be provided in a hard copy format with the best level of accuracy possible. Local Government mapping data should be routinely updated so that they are as accurate as possible. Pipeline Operators are required to update their transmission pipeline mapping data on the NPMS annually.
PHMSA has combined Recommended Practices:

Comm1
PTP E-6
Into BLO2

Transmission Pipeline Operator Review of Local Government Land Records and Planning Maps
Pipeline Operator Annual Review of Facility Locations with Planning Boards
Pipeline Operator Review of Local Government Land Records and Planning Maps

The combined practice follows those submitted by the Task Teams.

Practice #: Comm1

Practice Title: Transmission Pipeline Operator Review of Local Government Land Records and Planning Maps

Audience(s): Transmission Pipeline Operator

Practice Statement: Transmission pipeline operators should contact local government agencies maintaining tax parcel records, land development records, and planning maps and encourage them to indicate the existence of the transmission pipeline easements on all appropriate records and maps.

Practice Description: By making contact with the local government staff and reviewing relevant planning maps that may be maintained or produced by the local government, operators can make sure that their facilities are properly noted, and can make sure that the local government has up to date contact information for the operator. Because most transmission pipelines pass through many jurisdictions, operators are encouraged to prioritize contact with jurisdictions experiencing increased development and/or jurisdictions where local government staff members are less informed regarding the need to coordinate development with transmission pipeline operators.

PTP E-6: Pipeline Operator Annual Review of Facility Locations with Planning Boards

Audience: Government Planning/Zoning Department, Pipeline Operators

Practice Statement: Transmission Pipeline operators should annually review the location of their facilities with county and municipal planning and/or zoning boards.

Practice Description: To enable Planning and Zoning boards to communicate to stakeholders proposed construction plans that may impact the operation and safety of the underground facilities. A review should include contact information and maps depicting the route of the pipeline and extent of the easement within the county or municipality. This practice will keep the contact information current for all underground operators in the jurisdiction of the planning boards and facilitate communication among parties.

Benefit/Rational: - Pipeline operators may utilize planning and zoning boards as an additional resource to gather information on proposed developments. Utility personnel experience regular changes to their operating responsibilities. Transmitting proposed construction plans to the correct person will eliminate lost or misplaced information. Timely response to these issues before plans become approved is also vital. Often these boards have questions regarding the locations, size, and or commodity within the pipeline. Having a direct link to the proper staff member will help these boards to obtain the information needed to determine if the construction plans are appropriate for the site.

References: PIPA Developer Survey, New Jersey one-call law 48:2-85, Public Awareness Rule in 49CFR.
Practice zoning

Audience development

construction

coordinate

pipelines

Practice Staffing

gather appropriate and/or operators before communication

Pipeline boards.

BL02 Pipeline Operator Review of Local Government Land Records and Planning Maps

Audience Pipeline Operator

Practice Statement Pipeline Operators should annually review the location of their transmission pipelines on the maps of Local Government agencies, such as county and municipal planning and/or zoning boards.

Practice Description: Pipeline Operators should contact Local Government agencies that maintain tax parcel records, land development records, and planning maps (e.g., county and municipal planning and/or zoning boards) annually and encourage them to review the location of transmission pipeline facilities and indicate the existence of the transmission pipeline easements on all appropriate records and maps.

By making contact with Local Government staffs and reviewing relevant planning maps that may be maintained or produced by the local government, Pipeline Operators can ensure that their transmission pipelines are properly noted and that the Local Government has up to date contact information for the operator. Because most transmission pipelines pass through many jurisdictions, operators are encouraged to prioritize contact with jurisdictions experiencing increased development and/or jurisdictions where Local Government staff members are less informed regarding the need to coordinate development with the Pipeline Operators.

This will help planning and zoning boards communicate with stakeholders regarding proposed construction plans that may impact the operation and safety of transmission pipelines. A review should include contact information and maps depicting the route of the pipelines and extent of the easement within the county or municipality. This practice will keep the contact information current for the Pipeline Operators having transmission pipelines within the jurisdictional areas of the planning boards and facilitate communication among stakeholders.

Pipeline Operators may utilize these contacts with Local Government as additional opportunities to gather information on proposed developments. Pipeline Operators routinely experience changes in staffing and staffing responsibilities. Enabling Local Governments to communicate proposed development plans to the correct contact with the Pipeline Operator’s organization will facilitate the communication process. For the Pipeline Operator to provide a timely response to these issues before development plans become approved is also vital. Often these local planning and zoning boards have questions regarding pipeline locations and operating characteristics. Having the correct contact information for the Pipeline Operator can help these boards obtain the needed information and ensure proper consideration of the transmission pipeline in site development plans.
PHMSA has combined Recommended Practices:

Comm3  Transmission Pipeline Operators Should Produce and Distribute Development Guidelines
PC-1   Pipeline Operator and Authority Regulating Development Communication
Into BL03 Guidelines for Development Around Transmission Pipelines

The combined practice follows those submitted by the Task Teams.

**Practice #: COM-03**

**Practice Title:** Transmission Pipeline Operators Should Produce and Distribute Development Guidelines

**Audience(s):** [Transmission Pipeline Operator]

**Practice Statement:** Transmission pipeline operators should produce and distribute guidelines for development around transmission pipelines to land development/design planning professionals, property owners, developers, potential property purchasers, and local governments. The guidelines should be readily available through the operators’ websites, via e-mail, and also distributed to organizations that represent the various constituent groups (builders associations, engineering organizations, etc.).

**Practice Description:** By producing and distributing clear guidelines, transmission pipeline operators can standardize their requirements and the process for coordinating development near their facilities. Educating land owners and developers regarding the rights of the transmission pipeline operator can lessen the likelihood of using construction techniques or procedures that threaten the integrity of the transmission pipeline and development of designs that fail to take into account a transmission pipeline operator’s need for access.

**References:**
- El Paso Pipeline Group “Developer Handbook”
- Northern Natural Gas Company “Developers’ Handbook”
- Williams Gas Pipeline “Developers’ Handbook”
- Marathon Pipeline “A Guideline for Property Development”

**PC-1**

**Title:** Pipeline Operator and Authority Regulating Development Communication

**Statement of Practice:** The pipeline operator should provide information regarding transmission pipelines to the authority having jurisdiction for regulating development.

**Audience:** Pipeline Operator, Local Government

**Description of Practice:** As required by API RP- 1162, the pipeline operator should provide information regarding transmission pipelines to the authority having jurisdiction for regulating development to ensure that there is an adequate understanding of the risks posed by the pipeline and encourages land use planners to incorporate pipeline coordination in their plan approval process. The authority regulating development should use this information to establish requirements for development around the particular pipeline based upon the guidance on specific land uses herein. Information should be provided to all local governments with jurisdiction over areas within the consultation zone around the pipeline.
The pipeline operators should provide pipeline characteristics and associated hazards with pipelines to the authority regulating development for them to make an informed decision on the proposed development and/or development plans in relation to the pipeline risks. Because of potential security threats, detailed pipeline information that is provided to local governments should remain confidential and not be made available to the general public.

Pipeline characteristics that may affect the pipeline(s) risk include (but are not limited to):

- The number of pipelines in the ROW
- The nature and characteristics of the product in the pipeline(s) (natural gas, refined products, crude oils, highly volatile liquids, etc.);
- The operating conditions of the pipeline(s) (pressure, etc.);
- The design of the pipeline(s) (diameter, material, thickness, etc);
- The shutoff valve locations; and
- The operating history of the pipeline(s) (age, leaks, spills, ruptures, etc.) within the area under jurisdiction of the local authority regulating development.

Associated hazards with pipelines may include (but are not limited to):

- Potential impact of a liquid spill;
- Potential impact of a vapor cloud, including potential impact of a toxicity, deflagration or detonation;
- Potential impact of a directed fire; and
- Potential impact of a pool fire

Definition of a planning zone may be based on analysis of the potential extent of these hazards for the pipeline(s) under consideration.

The potential for future pipeline modifications to the pipeline characteristics and associated hazards should also be discussed, as appropriate.

Accurate Mapping and GIS information should also be shared at this point to better facilitate land use planning. Pipeline operators should make available to local government planners and developers pipeline location information in digital formats with a sufficient level of positional accuracy for land use planning purposes. Operators either should provide local governments these dataset directly or post them through a national and/or state clearinghouse such as the National Pipeline Mapping System. For local governments that do not have digital mapping capabilities, pipeline locations should be provided in a hard copy format with the best level of accuracy possible. Because of potential security threats, detailed information on pipeline characteristics should not be made available to the general public. The pipeline location should be included on all zoning, building and public works maps. For more information on Mapping and GIS information, see CGA Best Practices.

Periodic updates should be provided by the pipeline operator to the authority regulating development, especially if any changes to the pipeline design or characteristics are expected/anticipated that would affect the consultation or planning zone. Pipeline operators should coordinate / inform public officials and emergency responders as appropriate to ensure local governments are aware of operator activities.

The authority regulating development should ensure communication of development information or zoning change to the pipeline operator for all development within the consultation zone.

References:
Canadian Standards Association Document, Land use planning for pipelines: A guideline for local authorities, developers, and pipeline operators (PLUS 663)
Municipal Research and Services Center of Washington, Land Use Planning In Proximity to Natural Gas and Hazardous Liquid Transmission Pipelines in Washington State
City of Austin, TX, Ordinance No. 030410-12
API RP- 1162, Public Awareness Programs for Pipeline Operators, 2003
192.616, 195.440
CGA Best Practices, 2008

BL03 Guidelines for Development Around Transmission Pipelines

Audience Local Government & Pipeline Operator

Practice Statement Pipeline Operators should produce guidelines for development around their pipelines and distribute the guidelines to Local Governments and Property Developers/Owners. Local Government authorities regulating development should use this information to establish requirements for developing around transmission pipelines.

Practice Description: By producing and distributing clear guidelines, Pipeline Operators can standardize their requirements and the process for coordinating development near their transmission pipelines. The guidelines should be readily available through the operators’ websites, via e-mail, and also distributed to organizations that represent the various constituent groups (builders associations, engineering organizations, etc.). Educating Property Developers/Owners regarding the rights of the Pipeline Operator can lessen the likelihood of using construction techniques or procedures that threaten the integrity of the transmission pipeline. It can also reduce the likelihood of the development of designs that fail to take into account a Pipeline Operator’s need for access.

As required by API RP 1162, transmission Pipeline Operators should provide information regarding their pipelines to Local Government authorities having jurisdiction for regulating development. Information should be provided to all Local Governments with jurisdiction over areas within the consultation zone around the pipelines. This will help to ensure that there is adequate understanding of the risks posed by transmission pipelines and encourage land use planners to incorporate pipeline coordination in their plan approval process. Local Government authorities regulating development should use this information to establish requirements for development around the particular transmission pipeline based upon the recommended practices in this report.

Pipeline Operators should also provide information related to transmission pipeline characteristics and associated hazards to Local Governments to enable informed decisions on proposed developments and/or development plans in relation to the pipeline risks.

Pipeline characteristics that may affect the pipeline(s) risk include (but are not limited to):

- The number of pipelines in the ROW
- The nature and characteristics of the product in the pipeline(s) (natural gas, refined products, crude oils, highly volatile liquids, etc.);
- The operating conditions of the pipeline(s) (pressure, etc.);
- The design of the pipeline(s) (diameter, material, thickness, etc);
- The shutoff valve locations; and
- The operating history of the pipeline(s) (age, leaks, spills, ruptures, etc.) within the area under jurisdiction of the local authority regulating development.

Hazards associated with pipeline accidents may include (but are not limited to):
- Potential impact of a liquid spill;
- Potential impact of a vapor cloud, including potential impact of a toxicity, deflagration or detonation;
- Potential impact of a directed fire; and
- Potential impact of a pool fire

Information should be provided to all local government organizations having regulatory authority for development within the consultation zones established around the pipelines. The information should be used by these organizations to establish requirements for development around pipelines and to enable them to make informed decisions relevant to pipeline risks on proposed developments and/or development plans.

Periodic updates should be provided by the pipeline operator to the authority regulating development, especially if any changes to the pipeline design or characteristics are expected/anticipated that would affect the consultation or planning zone. The definition of a “planning zone” may be based on analysis of the potential hazards for the pipelines under consideration.

Transmission pipeline operators should coordinate with and inform public officials and emergency responders as appropriate to ensure they are aware of operator activities. The potential for future pipeline modifications to the pipeline characteristics and associated hazards should also be discussed, as appropriate. Because of potential security threats, detailed pipeline information that is provided to local governments should remain confidential and not be made available to the general public.

References:
El Paso Pipeline Group “Developer Handbook”
Northern Natural Gas Company “Developers’ Handbook”
Williams Gas Pipeline “Developers’ Handbook”
Marathon Pipeline “A Guideline for Property Development”
Canadian Standards Association Document, Land use planning for pipelines: A guideline for local authorities, developers, and pipeline operators (PLUS 663)
Municipal Research and Services Center of Washington, Land Use Planning In Proximity to Natural Gas and Hazardous Liquid Transmission Pipelines in Washington State
City of Austin, TX, Ordinance No. 030410-12
API RP 1162, Public Awareness Programs for Pipeline Operators, 2003
49 CFR Parts 192.616 and 195.440
Common Ground Alliance Best Practices, 2008
BL04 Consultation Zone Ordinances Recommended

Old Practice # Comm6

Audience Local Government

Practice Statement Local governments are encouraged to adopt land development procedures that require developer/property developers/owners to consult with transmission pipeline operators early in the development process, so that development designs are consistent with the needs of the operators and minimize risks to the populace living or working nearby.

Practice Description: When any person applies for a land use permit within the Consultation Zone (defined in BL05) (note: use practice number for practice “Define Consultation Zone”), there should be a mandatory requirement that the developer/property developer/owner review their proposed project with transmission pipeline operators. Because local governments are not transmission pipeline experts, they should consult with the transmission pipeline operator to determine whether a proposed land use will impact the integrity of a nearby transmission pipeline. If transmission pipeline operators are involved early in the development process, there should be adequate time to incorporate the operator’s concerns into the design. If, however, should the transmission pipeline operator and developer/property developer/owner are not able to reach agreement on design issues, the operator can provide input to the local government decision makers regarding potential impacts of the proposed project before the project is approved and permits are issued. The goal of this recommendation recommended practice is to avoid situations where transmission pipeline operators only learn of development projects after construction begins. At that point in time it is often difficult or impossible to make cost-effective changes that enhance public safety and operator access to the facilities.

See Section 2 of the Model Ordinance in Appendix C, which includes requirements for property developers/owners to notify and provide development information to transmission pipeline operators when applying for a land use permit for property within the Consultation Zone.

References:
Model Ordinance developed by Municipal Research & Services Center, Seattle (2006) - consultation zone of 660 feet recommended
“Land use planning for pipelines: A guideline for local authorities, developers and pipeline operators” Canadian Standards Association (CSA) 2004 – consultation zone of 200 meters on either side of pipeline centerline recommended
PHMSA has combined Recommended Practices:

PC-18 Consultation Zone
PTP A-4 Consultation Zone Triggers
Into BL05 Define Consultation Zone

The combined practice follows those submitted by the Task Teams.

PC-18

Practice Title: Consultation Zone

Stakeholder Audience: Landowner/Developer, Local Government

Practice Statement: Landowners/developers should initiate consultation with pipeline operators when development is planned on property within a Consultation Zone.

Practice Description: The intent of defining the consultation zone is to delineate the area where consultation with a pipeline operator should be initiated by a developer or property owner when development is planned in the vicinity of the pipeline. The developer/landowner should initiate communication with the pipeline operator early in the development planning process. The developer/landowner should initiate consultation, communication, and information exchange for development plans over a sufficiently wide area around the pipeline(s), so that operators are aware of plans in the vicinity of the pipeline and so that landowners, developers, and local governments can obtain pipeline information allowing consideration of the potential effects of a pipeline release in land use and development decisions (see practice “Definition of Planning Zone”).

A zone extending 1,500 feet from the pipeline is proposed to define the “Consultation Zone”, encompassing the area where development should trigger consultation with a pipeline operator when a landowner or developer plans land development within the zone. This size has been proposed because it is likely to encompass the impacts of a wide range of potential pipeline incidents. A zone of this size is more likely to include areas where a pipeline incident could affect the surrounding area than a smaller zone.

Consultation Zone Graphic Retained in BL05

Local governments may enact ordinances, regulations, or procedural recommendations that require landowners/developers to consult with pipeline operators as part of the land use planning and permitting process, when development is planned within the consultation zone. If so, verification that the requirements for consultation are met should not impose an undue burden on the landowner, developer, or pipeline operator.

Local governments may prefer to define a different-sized consultation zone based on the specific characteristics of the pipeline and the area surrounding the pipeline, if the area expected to be impacted by a potential pipeline incident is significantly different than the proposed 1,500-foot size. One example of a situation in which a different consultation zone might be considered is if the pipeline in question is a smaller-diameter, lower-operating pressure natural gas pipeline (see practice “Planning Zone” and references below).

It is not intended that the 1,500-foot consultation zone defined for these recommended practices implies any change in the areas defined by operators to conduct outreach as part of public awareness programs covered under current pipeline safety regulations.
Other recommended practices besides consultation may be implemented within a risk-informed “Planning Zone” (see “Planning Zone” practice), which is likely to include a smaller area than the 1,500 consultation zone described here.

References:
References on Potential Gas Pipeline Impacts:
Gas Research Institute GRI-00/0189, A Model for Sizing High Consequence Areas Associated with Natural Gas Pipelines, 2000.
49 CFR 192.903.
Definitions: None
Priority: High
Scenario: Existing Pipeline, New Development

PTP A-4: Consultation Zone Triggers

Practice Statement: New residential, commercial, governmental, industrial and military developments, public improvement projects and rezoning proposals shall trigger appropriate government representatives and/or land owner/developers to initiate “consultation zone” discussions with pipeline operators at the first application stage.

Practice Description:
New residential, commercial, governmental, industrial and military developments, public improvement projects and rezoning proposals that are to occur within a designated consultation zone need input from pipeline operators who manage facilities near these projects. Mapping “Consultations Zones” is an important practice in identifying development that abuts or is in close proximity to a transmission pipeline. The transmission pipelines may be mapped on hardcopy maps or in a county’s geographical information systems (GIS). However, the national repository created by PHMSA for transmission pipeline locations is the National Pipeline Mapping System (NPMS) at www.npms.phmsa.dot.gov/ and is a valuable tool to initially obtain pipeline location data. This site is updated annually by operators and consists of geospatial data, attribute data, public contact information, and metadata pertaining to the interstate and intrastate gas and hazardous liquid transmission pipelines, liquefied natural gas (LNG) plants, and hazardous liquid breakout tanks jurisdictional to PHMSA. Once pipelines are identified, the “consultation zone” discussion process can provide a forum for operators to share appropriate guidance with the developer or project manager as to safe actions near pipelines. Early discussions, as soon as the first application stage, may ward off designs that would raise the risk of damage to the pipeline or the community due to its proximity to the pipeline. The closer the design is to construction, the greater the risk of costly redesigns to ensure that development near the pipeline is performed safely during construction and for the lifetime of the pipeline. Lack of awareness of the pipeline easement rights and obligations, can result in delayed projects or expensive redesigns. If parties wait to meet until the design is too far along, they may lose the opportunity for potential enhancement of the right-of-way for the benefit of the community. Lack of advance communication, may also result in construction delays. Operators may be limited as to time of year that construction can take place. If pipeline facilities need to be relocated, the work may need to be scheduled during low flow time periods. Timely communication fosters productive relationships among the stakeholders and enhanced pipeline safety.
**BL05 Define Consultation Zone**

**Audience** Local Government

**Practice Statement** Local Government should define the Consultation Zone to delineate the area where a Property Developer/Owner should initiate consultation with Pipeline Operators regarding planned property development in the vicinity of a transmission pipeline.

**Practice Description:** The Property Developer/Owner should initiate communication with the Pipeline Operator early in the development planning process. The Property Developer/Owner should initiate consultation, communication, and information exchange for development plans over a sufficiently wide area around a transmission pipeline. This information exchange ensures that Pipeline Operators are aware of development plans in the vicinity of their transmission pipeline. If Local Governments are implementing a Planning Zone (BL06), all stakeholders will need information about the transmission pipeline.

An area extending 1,500 feet from each side of a transmission pipeline is suggested as the Consultation Zone. Within this area, development proposals should trigger consultation with a pipeline operator to ensure the proposal will not create a risk to the integrity of the transmission pipeline. This size would likely encompass the impacts of a wide range of potential pipeline failures. A zone of this size is more likely to include areas where a pipeline incident could affect the surrounding area than a smaller zone.

![Pipeline Diagram](image)

Local Government may prefer to define a different sized consultation zone based on the specific characteristics of the pipeline and the area surrounding the pipeline. If the consequences of a worst-case pipeline failure are significantly less than 1,500 feet, Local Government should reduce the Consultation Zone. Most natural gas transmission pipelines operating in conjunction with large distribution systems have impact areas well below 1,500 feet. The Planning Zone practice (BL06) provides a simple formula to calculate the area affected by the consequences of a worst-case natural gas transmission pipeline failure.
Local governments may enact ordinances, regulations, or procedural requirements for Property Developers/Owners to consult with Pipeline Operators as part of the land use planning and permitting process in the Consultation Zone (BL04). Local Government should be cognizant of the following information when setting the size of the zone:

a. number of transmission pipelines within its jurisdiction  
b. diameter, operating pressure, and commodity for each pipeline  
c. accuracy of transmission pipelines within Local Government mapping systems  
d. accuracy of development proposals in Local Government mapping systems

Local Governments may map transmission pipelines on hardcopy maps or in digital mapping systems. PHMSA’s National Pipeline Mapping System (NPMS) may be a valuable source of data for computer systems. Transmission pipeline operators are required to update their submissions to NPMS annually. The NPMS consists of geospatial data, attribute data, public contact information, and metadata for interstate and intrastate natural gas and hazardous liquid transmission pipelines subject to regulation by PHMSA.

The suggestion of 1,500 feet for the Consultation Zone does not imply any change to stakeholder notification areas for Pipeline Operator Public Awareness Programs, as required by PHMSA regulations.

References:
Gas Research Institute GRI-00/0189, A Model for Sizing High Consequence Areas Associated with Natural Gas Pipelines, 2000
49 CFR 192.903
ASME B31.8-2004, Managing System Integrity of Gas Pipelines, 2005
BL06  Local Governments Adopt a Planning Zone for Property Developers/Owners

Old Practice # PC-19

Audience  Local Government & Property Developer/Owner

Practice Statement  When transmission pipelines are located within the Planning Zone, Local Governments and Property Developers/Owners should consider implementing the Planning Zone, which is an area within a Consultation Zone centered on a transmission pipeline. The Planning Zone width should be determined by the specific characteristics of the pipeline and local land characteristics (topography, environmental conditions, etc.). Recommended practices ND11 through ND 23 for protecting communities near transmission pipelines (other than consultation, see practice “Consultation Zone”), should be implemented for development within the Planning Zone around a pipeline. The Planning Zone is an area within a Consultation Zone (BL04 & BL05) centered on a transmission pipeline. The Planning Zone width should be determined by the specific characteristics of the pipeline and consider the topography and environmental conditions.

Practice Description:  Recommended practices defined here to protect communities (ND11 through ND23) and practices PC 3 through PC-16) should be considered for implementation within a Planning Zone, which is an area surrounding a transmission pipeline defined based on characteristics of the pipeline and the area surrounding the pipeline (e.g., pipeline operating pressure and diameter; potential spill volume and unrestrained flow characteristics for liquid pipelines). For most pipelines, the Planning Zone will be a smaller area than the Consultation Zone (BL05 see practice “Consultation Zone”).

The recommended practices to protect communities include measures to mitigate the potential impact from a transmission pipeline incident. The Planning Zone is an area in which the recommended practices could have potential benefits in protecting pipelines, mitigating the immediate impacts of a pipeline incident, and facilitating emergency response to a potential transmission pipeline incident. The Planning Zone should not be construed as an unsafe area or basis for a setback requirement.

The extent of the Planning Zone, measured as a distance from the transmission pipeline, may be calculated using a pipeline- and location-specific analysis based upon information supplied by the Pipeline Operator and from the Local Government (BL03 see practice PC-1). The distance should be calculated from the centerline of the pipeline.
Different approaches to defining the Planning Zone distance should be taken for gas and hazardous liquid transmission pipelines, as described in the sections below. If multiple pipelines are located in a right of way, then the characteristics of all pipelines should be considered in calculating the Planning Zone for the vicinity. The largest Planning Zone derived for these pipelines should be used for applying the recommended practices for protecting communities.

**Planning Zone: Natural Gas Pipelines**

A Planning Zone for a natural gas transmission pipeline may be defined using the *Potential Impact Radius* (PIR) used in the gas transmission pipeline integrity management regulations. The PIR calculated for a pipeline may be modified based on analysis of specific local conditions to obtain a Planning Zone distance, if appropriate.

The *Potential impact radius* (PIR) is defined as the radius of a circle within which the potential failure of a pipeline could have significant impact on people or property. The PIR is calculated by the formula:

\[
r = 0.69 \times \sqrt{(\text{p} \times \text{d}^2)}
\]

‘r’ is the radius of a circular area in feet surrounding the point on the pipeline of a potential failure
‘p’ is the pipeline’s maximum allowable operating pressure (MAOP) in the pipeline segment in pounds per square inch
‘d’ is the nominal diameter of the pipeline in inches

The 0.69 factor is appropriate for natural gas pipelines. Different factors apply for other gases, depending upon their heat of combustion (see references below).

The following table and graph give Planning Zone distances (in feet) for natural gas transmission lines, based on the PIR calculation for different combinations of pipeline diameters and MAOP. For example, a 30-inch pipeline with MAOP of 1,000 psig has a PIR of 655 feet. In this case, a Planning Zone extending 655 feet on either side of the pipeline could be defined. The table and graph below provide the PIR for commonly found pipe diameters and MAOPs; for other diameters and pressures, the PIR formula given above may be used.
### Planning Zone Distances for Different Pipe Diameters and MAOPs

<table>
<thead>
<tr>
<th>Pipeline Diameter (inches)</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>16</th>
<th>24</th>
<th>30</th>
<th>36</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAOP (psig)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>200</td>
<td>59</td>
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<td>98</td>
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<td>156</td>
<td>234</td>
<td>293</td>
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<td>703</td>
<td>820</td>
</tr>
<tr>
<td>1000</td>
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<td>175</td>
<td>218</td>
<td>262</td>
<td>349</td>
<td>524</td>
<td>655</td>
<td>786</td>
<td>916</td>
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<td>382</td>
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<td>860</td>
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<tr>
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<td>413</td>
<td>620</td>
<td>775</td>
<td>929</td>
<td>1084</td>
</tr>
</tbody>
</table>

**Planning Zone: Liquid Pipeline**

Determining the appropriate Planning Zone distance for a hazardous liquid pipeline is potentially much more complex because of the flow characteristics of released liquids and the effect of the terrain surrounding the pipeline of the path of the release. A planning distance for liquid pipelines may be defined based on a pipeline- and location-specific analysis considering the following three elements:

1. How much commodity might be spilled?
2. Where would the spilled commodity go?
3. What locations would be impacted?

The fundamental factors to be considered in an analysis to establish the planning zone distance for liquid pipelines are listed below.

- "How much commodity might be spilled?"
  - Can be derived from pipeline flowrates, spill detection time, pipeline shutdown time, and draindown volume from various locations along the pipeline.
“Where would the spilled commodity go?”

- Overland flow:
  - Soil cover type / vegetation (flow resistance)
  - Soil absorption / permeability (seepage and retention)
  - Topography / contour / digital elevation model (direction of flow, speed of flow, retention areas and volumes)
  - Drainage systems such as culverts, streams, gullies, farm tiles, roadside ditches
  - Flow barriers such as railroad and road embankments, curbs, dikes, bulkheads
  - Fluid properties such as viscosity, density, vapor pressure

- Vapor cloud extent, if any – especially for highly volatile liquid pipelines
  - Heavier than air vapors settling in low spots
  - Vapor dispersion – dangerous for how far downwind?

“What locations would be impacted?”

- Direct impact (i.e. oil / possible fire at the location, explosive overpressure, toxic effects, etc.)
- Radiant heat – how far?

Various proprietary models have been developed to support an analysis based on these elements. Each must consider a multitude of site-specific factors, which should be evaluated in their as-modified (i.e. post-development) condition.

References:
Gas Research Institute GRI-00/0189, A Model for Sizing High Consequence Areas Associated with Natural Gas Pipelines, 2000.
49 CFR 192.903.
NISTIR 6546 Thermal Radiation from Large Pool Fires http://www.fire.nist.gov/bfrlpubs/fire00/PDF/f00177.pdf
Understanding the Elements of a Pipeline Easement

Old Practice # PTP B-1

Practice Statement: Property Developers/Owners should have a basic understanding of the elements of a pipeline easement, improves the relationship among stakeholders and ultimately pipeline and public safety.

Audience: Pipeline Operators, Property Developers/Owners, Governments

Practice Description: Understanding the elements of a pipeline easement can improve the relationship among stakeholders and ultimately pipeline and public safety.

What are the elements of an easement?

The forms of right-of-way easements differ from company to company and the legal requirements of a right-of-way easement differ from state to state. Easements can range from one page with a few provisions to twenty or more pages which attempt to address every eventuality. To be enforceable, the agreement must conform to all of the requirements set out by state law. While requirements for easements provisions vary, most easements contain the following provisions:

1. Each easement must designate a grantee and a grantor. The grantor is normally the landowner or an agent of the landowner, and the grantee is normally the transmission pipeline company.

2. The granting clause is normally the first or second paragraph of an easement and describes the rights granted to the transmission pipeline company. For pipeline easements, this clause usually lists the rights granted such as “lay, construct, maintain, alter, replace, change the size of, and remove a pipeline or pipelines….”

3. Most states require that all real estate-related documents provide for a consideration. The object is to provide the landowner with just or adequate compensation in exchange for the easement.

4. The property over which the easement is granted and the locations and dimensions of the easement and of the transmission pipeline must be described in some manner. Legacy easements may exist where the location of the pipeline or the boundaries of the right-of-way were not defined. New easement should define both. In most states, the property can be described by referencing its deed of acquisition or other related documents in the chain of title, by written description, or by plat or drawing. (Note: In some states, a drawing must be attached to an easement or right-of-way grant before the document can be recorded). The easement to be granted can be described by written description, by drawing or by a defined reference such as: “Said right of way being fifty foot in width and extending twenty-five feet from each side of the centerline of the pipeline installed hereunder, together with the right to use a strip of land adjacent to the said right of way as temporary work space during construction of said pipeline, (all as generally depicted on Exhibit “A” attached hereto), on, over, under, and through the following described lands…” There may be a second, separate and fairly wide, temporary working easement. The land should be surveyed and marked before construction begins.

5. Optimally, easements should have a series of applicable provisions that further establish the rights and responsibilities of each party. Such provisions may include but are not limited to:
a. Construction related provisions, including specifications of: temporary workspace, restoration requirements, timetable or time of day for construction, temporary crossings across open trenches or ditches, backfilling and compaction of trenches, specifications.

b. Site-specific environmental issues.

c. Other transmission pipeline details, such as: depth-depth of cover requirements, number and size of pipelines, additional line rights, product transported, maximum size, maximum pressure, and above-ground facilities, such as but not limited to: test leads, markers, rectifiers, casing vents, valves and valve actuators, meter stations and pig launcher/receivers.

d. Encroachments: driveways, access roads, gates or cattle guards where easement crosses fence lines, acceptable landowner uses (see ND08).

e. Routes of ingress and egress: Maintenance of access roads, gates and/or cattle guards.

f. Inspection and maintenance: right-of-way clearing, utility company maintenance and inspection schedules.

g. Pipeline and appurtenance abandonment: Disposition of the transmission pipeline and easement after the pipeline is abandoned. Disposition of idled or out of use but not abandoned transmission pipelines.

h. Liability for certain damages or negligence.

i. Indemnification: An indemnity agreement provides that one party will save and hold harmless the other party against any legal causes of action, including environmental, levied as a result of activities both on and off the land. The indemnity could include both judgments and any legal fees incurred in defense of a suit. Typically each party considers indemnification from the other.

j. Notification of assignment to a third party: “Assignment” is the ability of a transmission pipeline operator to transfer the easement with the sale of the pipeline to another party. Landowners may want to be notified if the operator sells the pipeline to another entity.

k. State and local government requirements.

l. Payment: Payment may be specified, for example, for the easement, damages to crops, timber or other products located within or outside of the easement, division between the landowners and the surface tenant, duration, survey fees, recording fees, and taxes on payment.

6. The date of the document, signatures of the grantors and their acknowledgements are not provisions but are mandatory requirements of an easement or real estate type documents. Signatures of the grantors of the easement documents must be exactly as they appear on the previous documents confirming their capacity in which they hold title to the property. Notary Public information is below the landowner and pipeline company signatures. Easements are recorded with the appropriate statutory body and are accessible to the public.
BL08  Land Records Management

Old Practice # PTP D-1

Practice Statement  Land use agreements between Pipeline Operators and landowners property owners should be documented, and managed, when necessary, recorded.

Audience  Local Government, Landowner and/or Developer, Pipeline Operator, Property Developer/Owner/Owner, Real Estate/Title/Surveying Commissions

Practice Description: Allowable property owner landowner/developer activities and uses of the transmission pipeline right-of-way are initially created when the easement agreement is signed between the landowner property owner and the pipeline company. These agreements are normally recorded with the appropriate statutory office. Once an easement agreement is created, the property owner of the land has relinquished rights to perform certain activities within the boundaries of the easement. The landowner property owner may make any use of the right-of-way which is consistent with and will not interfere with the pipeline activities granted in the easement. The character and extent of the rights created by a grant of easement is determined by construction of the language of the grant.

A property owner landowner may desire to use the land within the boundaries of the easement in a manner that was not allowed in the original easement agreement. To do so, the property owner landowner will need to consult with the transmission pipeline operator to gain permission to perform the desired activity or use. If permission is granted, the agreement may be documented in the form of an Encroachment Agreement, a Letter of No Objection, a Partial Release or an Easement Amendment. The type of agreement document may vary, depending on the type and scope of the proposed activity or use of the right-of-way.

Some of these land documents should be recorded. Recording is necessary to provide public access to the records and public notice (i.e. constructive notice) of encumbrances among landowners, facility owners and interested parties on the affected property. In order to maintain or protect rights or meet obligations, the landowner property owner and operator must know they exist. Documented agreements between property owners and transmission pipeline operators provide for a clear, enforceable vehicle to communicate allowable activities or uses of the pipeline right-of-way, including those that are not allowed in the easement agreement. Recording is the official means by which interests in real property are made a matter of public record. Everybody is charged with “constructive notice” of all recorded documents. Unrecorded easements and other interests are subject to challenge if a subsequent purchaser of the property subject to the easement buys it with no actual notice of the easement or other interest.

Operators or property owners should record property easements and similar agreements as soon as possible after acquiring them. If easements were not recorded when acquired, they still can be recorded. This will help ensure development activities are not conducted in a manner that could be detrimental to pipeline integrity and safety. Documentation of such agreements is necessary to identify issues that may arise in planning the development and changes in use of the land. Identification of potential conflicts and issues provides the opportunity to resolve them through discussion early in the planning process. Recording land documents is necessary when public access to information related to easements, encroachment agreements, partial releases, letters of no objection, etc. is needed.
In addition to recording documents with the appropriate statutory office, Operators transmission pipeline operators should have a comprehensive record-keeping system established for land documents. Records Agreement records should be retained for the life the document, including any Encroachment Agreement, Letter of No Objection, Partial Release or Easement Amendment. Regardless of the type or duration of the agreement, landowners-property owners are subject to applicable state one-call laws prior to performing any excavation on the pipeline right-of-way.

**Briefly describe the origin/rationale behind the practice proposal:** Documented agreements between landowners and operators provide a clear, enforceable vehicle to communicate allowable activities or uses of the pipeline right-of-way that are not allowed in the easement agreement. Recording is the official means by which interests in real property are made a matter of public record. Everybody is charged with “constructive notice” of all recorded documents. Unrecorded easements and other interests are subject to challenge if a subsequent purchaser of the land subject to the easement buys it with no actual notice of the easement or other interest.

Operators or landowners should record easements and similar interests as soon as possible after acquiring them. If easements were not recorded when acquired, they still can be recorded. This will help ensure development activities are not conducted in a manner that could be detrimental to pipeline integrity and safety. Documentation of this information is necessary to identify issues that may arise in planning the development and changes in use of the land. Identification of potential conflicts and issues provides the opportunity to resolve them through discussion early in the planning process. Recording land documents is necessary when public access to information related to easements, encroachment agreements, partial releases, letters of no objection, etc. is needed.

**References:** State of Minnesota in Supreme Court CX-96-2319
Old Practice # PTP D-5

Practice Statement  Easement amendments are used to record additional rights granted to the operator to add appurtenances or additional pipeline(s) that were not included in the initial easement agreement. Easement amendments should be documented, managed and recorded.

Audience  Local Government, Landowner and/or Developer, Pipeline Operator, Property Owner/Owner, Real Estate/Title/Surveying Commissions

Practice Description: Easement amendments are used to record additional rights granted to the transmission pipeline operator to add appurtenances or additional pipeline(s) that were not included in the initial easement agreement. Utilizing an existing right-of-way for additional pipelines, for example, is an efficient use of land. The parties with legal interests to the land come to agreement on the language of the easement amendment, survey the property and record the amendment with the appropriate statutory office (i.e. county recorder, parish clerk). The easement amendment is retained for the life of the easement. There may be additional compensation provided to the landowner based on the value of the land in exchange for the new rights.

Briefly describe the origin/rationale behind the practice proposal: Easement amendments allow an operator to add facilities not originally conceived in the easement agreement. Utilizing an existing right-of-way for additional pipelines is an efficient use of land.
BL10 Implement Communications Plan

Old Practice # COM-16

Audience Pipeline Operator

Practice Statement Pipeline operators should implement an effective communications plan that includes the PIPA seven-step model when communicating acceptable transmission pipeline right-of-way ROW uses and activities to Property Developers/land Owners and other stakeholders.

Practice Description: Typical transmission pipeline operator to stakeholder communications regarding acceptable rights-of-way (ROW) uses and activities occur either to: 1) exchange information; 2) educate; or 3) cause behavior or a change in behavior. Most operator communications regarding acceptable right-of-way ROW uses and activities are intended to cause certain behaviors. Understanding what behavior is expected and what behaviors are currently exhibited is important to changing the behavior. To maximize the opportunity created with each communication, considerable thought should be given to what behavior is desired, what behavior needs to change, and what behavior should be maintained by the specific stakeholder.

A process model for communicating to stakeholders regarding acceptable uses and activities on transmission pipeline rights-of-way is applicable in any circumstance. This includes existing transmission pipelines in existing developed areas and rural areas, when a new transmission pipeline is being constructed, and when new development is occurring near an existing transmission pipeline. The following seven-step model is useful when a transmission pipeline operator is communicating acceptable right-of-way ROW uses and activities to land owners and other stakeholders. However, the model can be used by any stakeholder to make their communications more effective.

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

The PIPA seven-step model is included as Appendix F and additional resources are available on the PHMSA Pipeline Safety Stakeholder Communications website.
BL11 Effectively Communicate Pipeline Risk and Risk Management Information

Old Practice # COM-17 through COM-25

Practice Statement: Transmission pipeline operators should identify barriers to effectively communicating with stakeholders and use communication techniques designed to overcome those barriers and effectively engage stakeholders to communicate with them regarding pipeline risks and how the operator manages such risks.

Audience Pipeline Operator

Practice Description

For communication to be effective, it must be a two-way dialogue. However, personal experiences affect the way messages are received. This and other considerations make it essential that the transmission pipeline operator understands that there are barriers to effective communication and finds ways to overcome those barriers to better communicate with stakeholders.

Appendix G to this report looks at communications barriers from the perspective of a pipeline company communicating with key stakeholder audiences, and provides some suggested considerations and tools to potentially address those barriers. Some, all, or none of the barriers identified in the Appendix may be present in any actual situation. Open communication with stakeholders around pipeline development is encouraged.
BL12 Vegetation Management Notification of Right-of-Way Maintenance Activities of the Right-of-Way

Old Practice # PTP C-1

**Practice Statement** Operator Pipeline Operators should notify landowners of right-of-way maintenance activities, including vegetation management, clears pipeline right-of-way of vegetation that would hinder inspection and maintenance activities.

**Audience** Pipeline Operators, Developers, Landowners

**Practice Description** Transmission pipeline rights-of-way are initially cleared of all vegetation for installation of the pipeline. After installation, the work area is typically seeded to a mixture of grasses or shallow rooted plantings. Once a pipeline is installed, the rights-of-way ROW must be maintained by the pipeline operator to allow for inspection of surface conditions as required by federal law. The transmission pipeline operator maintains the pipeline right-of-way vegetation so that it will not hinder inspection and maintenance activities. Extensive landscaping or other obstructions can block the view of and impede operator’s access to the pipeline.

Prior to clearing, implementing these activities, the pipeline operator should contact the property owner/landowner should be contacted to explain and provide an explanation regarding the need for clearing the vegetation management activities, and This should include a discussion of the rights granted under the easement to clear maintain the right-of-way of vegetation right-of-way and the anticipated start and completion dates for the maintenance activities. Notification should provide the landowner/property owner as much lead time as possible, with notification to take place via letter, door hanger, phone call or face-to-face contact, depending on the location and situation. Re-establishing a right-of-way a right-of-way that has not been previously maintained cleared may need require additional advance communications between the landowner/property owner and the transmission pipeline operator prior to clearing initiating the activity. The operator needs the right-of-way to be clear must be maintained in order to facilitate the identify identification of surface conditions such as:

- Unauthorized activities on or near the right-of-way
- Heavy equipment on the right-of-way without authorization
- Urban encroachment
- Construction activities on or near the right-of-way
- Soil defects
- Erosion at water crossings, flooding on the right-of-way or sedimentation in streams
- Damage to company property
- Missing or moved aerial markers, pipeline line markers or identification signs
- Evidence of leaking gas or liquid

While transmission pipeline operators may choose to perform inspections more frequently, hazardous liquid transmission pipeline operators must inspect 26 times a year at an interval that does not exceed 21 days and natural gas transmission pipeline operators must inspect 1 to 4 times a year at an interval that does not exceed 4.5 to 15 months depending on the population density near the pipeline. The right-of-way needs to be cleared maintained at a frequency that allows the operator to inspect surface conditions at the minimum required inspection intervals. The maintenance frequency should also be in keeping with the surrounding environment. For example, a
greenway in a suburban development may be cleared maintained more frequently than a right-of-way through a forested park.

While clearing maintaining 25 feet on each side of the pipeline is prudent, a smaller maintenance distance may be cleared adequate depending on local conditions and method of inspection, as long as it is adequate for inspection of the right-of-way surface conditions. Often the inspection is conducted via aerial surveillance. Side trimming of the tree canopy may be necessary for aerial surveillance to be effectively performed. For aesthetic purposes, operators may “feather cut” in more urban and developed areas while they may “hard cut” in more rural areas. Whichever technique is used, the result should be a clearly defined right-of-way to help keep the public aware of the pipeline’s presence.

In addition to side trimming, operator vegetation maintenance practices should include scheduled mowing and brush hogging where necessary. Typically, pipeline operators use chemicals in a limited way to control weeds and vines near valve locations, fences and above-ground facilities. Chemicals are also used on tree stumps. Trees should not be allowed within the boundary of the right-of-way. Tree roots have the potential to interfere with damage pipeline coatings which may contribute to the loss of integrity of the pipeline. With prior approval from the transmission pipeline operator, grass and certain types of shrubs 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. Typically these would include seasonal crops that would be consistent with the area, flower beds, vegetable gardens and lawns. Rights-of-way can provide useful and functional habitat for plants, nesting birds, small animals, and migrating animals. Plants that are native to the area are desirable.

**Benefit/Rationale:** A right-of-way clear of obstructions is an important indicator of pipeline facilities for those performing construction or other work near the pipeline. Third-party incidents are a leading cause of damage to pipelines. Third-party incidents can occur when, for example, digging, excavating or other construction occurs near the pipeline and the pipe is accidentally hit. Operators need direct and immediate access to pipelines. This enables them to conduct testing on the pipeline to monitor its integrity and to perform general maintenance and repairs as needed. In the event of an emergency, a clear right-of-way is necessary for both the operator and emergency response officials. Obstructions on the right-of-way can prohibit the operator’s ability to respond. A clear right of way makes inspections, often performed via aerial patrol, more effective.

A transmission pipeline right-of-way that is adequately maintained free of obstructions is an important indicator of the existence of pipeline facilities for those performing construction or other work near the pipeline. Third-party incidents are a leading cause of damage to pipelines. Third-party incidents can occur when, for example, digging, excavating or other construction occurs near the pipeline and the pipe is accidentally hit. If a transmission pipeline is struck, the pipeline operator may need direct and immediate access to the pipeline. This enables the pipeline operator to conduct testing to verify pipeline integrity and to perform general maintenance and repairs as needed. In the event of an emergency, a clear right-of-way is necessary for both the operator and emergency response personnel. Obstructions on the right-of-way can prohibit the operator’s ability to respond. A clear right of way makes inspections, often performed via aerial patrol, more effective.

**References:** API Guidelines for Property Development; PIPA Operator survey; various operator guidelines; Transportation Research Board Special Report 281, *Transmission Pipelines and Land Use.*
BL13  Encroachment Prevention and Management

Old Practice # PTP C-3

Practice Statement  Pipeline Operators, operators, should communicate with property developers and land/owners to prevent or rectify unacceptable encroachments or inappropriate human activity within the right-of-way, in a documented and timely manner.

Audience  Pipeline Operators, Landowners, Developers

Practice Description:  When land-owners/developers place structures, trees or other facilities on the pipeline right-of-way, their encroachment may interfere with pipeline operations. The transmission pipeline operator seeks relief from the encroachment, particularly when the obstruction of an easement is of a permanent character.

To ensure consistency, transmission pipeline operators should have a written encroachment policy in place. The policy should address a process for educating, patrolling/inspecting rights-of-way for unsafe conditions and activities, documenting, communicating among stakeholders and removing unacceptable encroachments, including long-standing ones. Once an encroachment is detected, the operator should document the encroachment and contact the encroaching party of incident. If the encroachment is acceptable, an encroachment agreement should be documented and signed by the landowner and the pipeline operator in accordance with the operator’s policy, and filed with the statutory office (i.e. county recorder, parish clerk).

Encroachments-Encroachment policies should be enforced diligently, uniformly and consistently. To promote encroachment prevention, landowners, and developers should seek approval from the transmission pipeline operator for any plans that could impact the right-of-way. Operators Pipeline operators shall ensure that all pipeline markers and signs are in good condition, legible and located in the correct position. They should have clearly defined ROWs.

Benefit/Rational: The most important factor in eliminating encroachments is stopping construction or inappropriate use before large expenditures are made and before damage occurs to the pipeline. Communication among the transmission pipeline operator, the property developer and land-owner builds a partnership in pipeline safety.

References:

- PIPA Operator Survey,
- various operator developer handbooks,
- Interstate Natural Gas Association of America (INGAA) Sample Documents—Encroachment Procedure, Encroachment Report, Encroachment Reporting Procedure (INGAA Documents to be added to appendix)
PHMSA has combined Recommended Practices:

PTP E-1  State One-call Laws Include Mandatory Participation and Membership of All Facility Owners

PTP E-2  State One-call Laws Include Mandatory Participation of All Excavators

Into BL14 Participate in Organizations Pursuing Improved State Damage Prevention Programs

The combined practice follows those submitted by the Task Teams.

PTP E-1  State One-call Laws Include Mandatory Participation and Membership of All Facility Owners

**Practice Statement**  Any entity that furnishes or transports products or services to a third party for their use or consumption by means of an underground facility or furnishes or transports products or services for its own internal use by means of an underground facility that occupies or crosses a right-of-way or utility easement should be a member of and participate in a one-call organization.

**Audience**  Facility Owners, Pipeline Operators, Governments

**Practice Description:** Underground damage prevention begins with the participation by the excavator with the appropriate one-call notification center. The process of notification depends on all affected member facilities being notified of intent to excavate through the one-call notification center.

Some examples of an underground facility that would not suggest a requirement to be a one-call member follow: The internal use of owned underground facilities to provide safe operations in controlled rights-of-ways such as railroad operating corridors that facilitate the transportation of freight or passengers. An entity’s internal use of underground facilities on privately owned property, to facilitate business or living arrangements between separate buildings.

**Benefit/Rational:** Membership in the local call notification center by underground facility operators ensures that potential conflicts with existing member facilities that may be encountered during excavation activities are identified by utilizing a single regional point of contact. Those owners or operators of underground facilities described above that fail to become members of their local call notification center risk public safety, damage to their facilities and endanger excavators who may come into contact with these aforementioned underground facilities. Currently exemptions exist in some states for certain entities.

**References:** CGA Best Practice TR 2007 – 05 (Note: above ground use of one’s rights-of-way or property, such as the transportation of freight or passengers by rail, are not within the purview of the CGA Best Practices). The 2007 – 2008 One Call Systems International directory – (All states have mandatory membership except the following: Alabama, Alaska, Kentucky, Mississippi, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, and West Virginia. Many states that have mandatory membership will have exclusions for state highway departments and railroads.), *1999 Common Ground Study*

PTP E-2  State One-call Laws Include Mandatory Participation of All Excavators

**Practice Statement**  Any entity that excavates in a right-of-way or utility easement should be required to adhere to State One-Call requirements.

**Audience**  Excavators, Facility Owners, Pipeline Operators, Government
Practice Description: Underground damage prevention begins with the participation by all excavators with the appropriate one-call notification center. The process of notification depends on all excavators being notifying of intent to excavate through the call notification center.

Benefit/Rational: Participation in the local call notification center by every excavator ensures that potential conflicts with facilities that may be encountered during excavation activities are identified by utilizing a single regional point of contact. Excavators that fail to follow the state one-call process risk public safety, damage to facilities and endanger people in close proximity to the excavation site. Currently exemptions exist in some states for certain entities.

BL14 Participate in Organizations Pursuing Improved State Damage Prevention Programs

Audience Local Government Property Developer/Owner Pipeline Operator

Practice Statement All stakeholders should participate in the work of organizations seeking to make improvements to State Damage Prevention Programs, especially efforts to reduce exemptions from participation in the One-Call System.

Practice Description A State damage prevention program is comprised of a combination of State law, regulation, and procedure intended to facilitate communication between excavators and owners of underground facilities. Excavators submit notices prior to excavation, which the One-Call System passes on to facility owners in the vicinity of the proposed excavation. By providing this communication, State One-Call Systems reduce the risk of excavator injury, damage to underground facilities, and construction down-time.

However, most State laws include exemptions from One-Call System participation that detract from the goals of the system. Typical exemptions fall into three categories:

1. Facility Owners Some State laws exempt specific owners of underground facilities from participation in the One-Call System. Excavators must contact these facility owners directly to have their facilities marked. While this exemption allows certain facility owners to avoid the cost of participation, excavators may not be aware of these exemptions and damage their facilities. Types of facility owners exempted by some State laws include Municipalities, State Departments of Transportation, and small water and sewer companies.

2. Excavators Some excavators are exempted from calling before digging. If the excavator chooses to exercise this exemption, they may damage any type of infrastructure with potentially disastrous consequences. Exemption avoids the burden of calling and waiting for marks, but creates huge safety risks. Types of excavators exempted by some State laws include homeowners and State Departments of Transportation.

3. Types of Excavation Excavators do not need to call before conducting specific types of excavation. Any excavation can damage underground facilities, especially if the facilities are shallow or the type of excavation changes during the course of the project. Exemption avoids the burden of calling and waiting for marks. Types of excavations exempted by some State laws include road grading.

Many organizations across the country are actively working to improve damage prevention programs. The Common Ground Alliance (CGA) works at the international level and has recently formed partnerships with regional organizations. Many of these regional organizations existed well before the CGA as damage prevention councils or utility coordinating councils, but have welcomed the CGA’s support to broaden their membership base.

A summary of PHMSA damage prevention initiatives is available on the Pipeline Safety Stakeholder Communications web site.
PHMSA has combined Recommended Practices:

PTP C-2  
**Pipeline Operator Consent for 3rd-Party Excavation**

**Practice Statement**  
Third-Parties working in the pipeline right-of-way should obtain written consent from operator before starting construction activities including use of heavy equipment, tunneling, drilling, boring, digging or excavating.

**Audience**  
Excavators, Land Owners, Developers, Operators

**Practice Description:** A significant cause of pipeline failure is third party damage. When third parties are performing tasks that are of high risk to pipeline safety, communication clearly delineating the technical details of the operation needs to be documented. Third parties need to provide the operator with details about the type of equipment, duration, dynamic loading and other technical information in order for the operator to perform an engineering evaluation of the effects on the pipeline. The operator may require additional measures be taken to protect the pipeline from excessive loads or potential damage due to misaligned horizontal directional drills. 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. Hand digging at a minimum of two feet from the pipeline is typically required. This practice is not intended to preempt any existing state or operator requirements that currently specify a different distance. Vibration equipment is not permitted within the right-of-way. Once the required information (planned work, types of equipment, loads, etc.) is received from the third party, the operator will need sufficient time to review and develop solutions to ensure that the pipeline is adequately protected. Work should not commence until the operator has provided written notification to proceed. The operator and the one-call system need to be contacted before digging. Operator should have a representative on site to monitor construction activities within the right-of-way.

**Benefits/Rational:** The benefit to written consent from the operator is that communication about the activities is ensured. This allows the operator to fully understand the type of work that is to take place in the right-of-way and develop a plan to protect the pipeline and people involved.

- **References:** API 1102, API Guidelines for Property Development, PIPA Operator survey, Common Ground Alliance Best Practice 5-20

PTP E-4  
**Excavation Near High Priority Subsurface Installations**

**Practice Statement**  
Onsite meeting between operator and excavator for excavations within 10 feet of a high priority subsurface installation.

**Audience**  
Excavators, Operators

**Practice Description:** When the excavation is proposed within 10 feet of a high priority subsurface installation, the operator of the high priority subsurface installation shall notify the excavator of the existence of the high priority subsurface installation prior to the legal excavation start date and time, as such date and time are authorized pursuant to State one-call requirements. The excavator and
operator or its representative shall conduct an onsite meeting at a mutually-agreed-on time to determine actions or activities required to verify the location of the high priority subsurface installations prior to start time. One-call enforcement penalties should be 10 times the normal penalty for operators and/or excavators when the violation involves excavation activities performed in violation of State one-call requirements and result in damage to high priority subsurface installations.

**Benefit/Rational:** The benefit to the excavator is the identification of the location, size and type of facility. Damage to high priority subsurface installations may result in significant physical injury to the excavator and/or individuals in the vicinity of the excavation. Damage to high priority subsurface installations may result in interruption of critical services or products. Unreported or undetected damage to high priority subsurface installations poses a significant risk to life, property, and infrastructure. CGA Practice 4-9 covers positive response but the CGA Best Practice does not require a face-to-face meeting.

**References:** California Government Code 4216.2. Iowa Code Chapter 480.6 requires fines for damages to natural gas and hazardous liquid pipelines up to 10 times the normal amount or $10,000.

**Definition:** "High priority subsurface installation" means 1) natural gas transmission pipelines that operate at a hoop stress of 20 percent or more of specified minimum yield strength, and 2) hazardous liquid pipelines. Other high priority subsurface installations may include pressurized sewage pipelines, high-voltage electric supply lines, critical telecommunications lines, conductors, or cables that have a potential to ground of greater than or equal to 60kv, or hazardous materials pipelines that are potentially harmful to workers or the public if damaged.

**BL15 Enhanced Damage Prevention Practices for Excavation near High Priority Underground Facilities**

**Audience** Pipeline Operator

**Practice Statement** Pipeline Operators should implement enhanced damage prevention practices within the transmission pipeline right-of-way to ensure that pipeline operators and excavators meet on-site prior to excavation near high priority underground facilities.

**Practice Description** The Common Ground Alliance (CGA) Best Practices are internationally accepted as effective methods of reducing the risk of excavation damage to all underground facilities. However, these CGA Best Practices apply to all types of underground facilities, including cable television, water pipelines, and energy transmission pipelines. Damage to high priority subsurface installations such as transmission pipelines could result in significant physical injury to the excavator and/or individuals in the vicinity of the excavation. Damage could also result in interruption of critical services or products. Unreported or undetected damage to high priority subsurface installations poses a significant risk to life, property, and infrastructure. High priority subsurface installations warrant more stringent damage prevention practices.

CGA practice 4-9: Positive Response Is Provided To Facility Locate Requests, does not require a face-to-face meeting or an on-site meeting between the pipeline operator and excavator prior to the beginning of the excavation. Under the practice, positive response can be markings or documentation left at the job site, callback, fax, or automated response system. To ensure appropriate damage prevention when excavation is proposed within 10 feet of a high priority subsurface installation, the operator of the high priority subsurface installation should notify the excavator of the existence of the high priority subsurface installation prior to the legal excavation start date and time, as such date and time are authorized pursuant to one-call requirements. The
excavator and operator or its representative should conduct an onsite meeting at a mutually-agreed-on time to determine actions or activities required to verify the location of the high priority subsurface installations prior to start time.

When excavators are performing tasks that are of high risk to pipeline safety, communication clearly delineating the technical details of the operation needs to be documented. Pipeline operators should provide information such as the identification of the location, size and type of high priority subsurface installation to the excavator. Excavators should provide the operator with details about the type of equipment, duration, dynamic loading and other technical information in order for the operator to perform an engineering evaluation of the effects on the pipeline. The operator may require additional measures be taken to protect the pipeline from excessive loads or potential damage due to misaligned horizontal directional drills. Additional dirt cover and/or mats, timber bridges or other protective materials deemed necessary by the operator shall be placed over operator facilities for the duration of any loading. Vibration equipment is usually not permitted within the right-of-way. Hand digging at a minimum of two feet from the pipeline is typically required. This practice is not intended to preempt any existing state or operator requirements that currently specify a different distance.

Once the required information (planned work, types of equipment, loads, etc.) is received from the excavator, the operator will need sufficient time to review and develop solutions to ensure that the pipeline is adequately protected. Work should not commence until the operator has provided written notification to proceed. The operator and the one-call system need to be contacted before digging. Operator should have a representative on site to monitor construction activities within the right-of-way.

One-call enforcement penalties should be 10 times the normal penalty for operators and/or excavators when the violation involves excavation activities performed in violation of one-call requirements and result in damage to high priority subsurface installations.
BL16 Halting Dangerous Excavation Activities near High Priority Subsurface Installations

Old Practice # PTP E-7

Practice Statement: Transmission pipeline operators should have procedures and established contacts with local enforcement personnel in order to act appropriately to halt dangerous excavation activities that may damage their high-priority subsurface installations (i.e., transmission pipelines) and cause an immediate threat to life or property.

Audience: Excavators, Pipeline Operators, Local Enforcement Personnel

Practice Description: Transmission pipeline operators should have written procedures to address the need to shut down an excavator excavation when the excavation activities pose an immediate threat to the transmission pipeline facility or the general public. These procedures should include public outreach to local enforcement personnel. The outreach communications should include information describing potential dangers to public safety of unsafe excavation practices near high-priority subsurface installations to public safety. Local enforcement personnel play a critical role due to their authority to legally halt an unsafe excavation. The agency with the authority to halt a dangerous excavation may vary among governments. For example, they may include titles such as Safety Officer, Police, Fire Department, Fire Marshall, Utility Coordinator, Building and Building Code Department.

Benefit/Rational: The transmission pipeline operator should build relationships with the proper enforcement personnel in advance will to facilitate timely response and corrective action.

References: API RP 1162
BL17  Mapping Abandoned Pipelines in One-call System

Old Practice # PTP E-3

Practice Statement: When a transmission pipeline is abandoned, the State One-Call Center should be notified. Operator maps on file with the State One-Call Center System shall reflect the location of the abandoned transmission pipelines.

Audience: Pipeline Operators

Practice Description: When abandoning a transmission line, the pipeline operator should maintain the facility registration of the abandoned line within the one-call system. When receiving a notice of excavation from the one-call center, the operator should: (a) provide markings or notification to the excavator of the abandoned line, (b) advise the excavator of the abandoned line’s contents, and (c) advise the excavator of any safety precautions to take while working over or in close proximity to the abandoned line. Transmission pipeline operators should inform excavators that if an excavator encounters an apparently abandoned underground pipeline facility is encountered during excavation, the excavator shall not treat the underground pipeline facility as abandoned until the excavator has received notification from the pipeline operator that the underground pipeline facility is abandoned.

Benefit/Rational: Most one-call centers do not maintain line segment data from utility operators. Operators typically supply either polygon or grids of areas in which the operator requests notification. The one-call center would not typically differentiate between active and abandoned lines. This recommended practice is intended to allow the one-call center to identify the location of an abandoned pipeline for the excavator. This guidance practice applies to transmissions pipelines abandoned after (date of guidance)the PIPA recommendations are issued. Going forward this will allow the operator to concentrate damage prevention efforts on active pipeline facilities.

References: Arizona Statute 40-360.22
BL18 Real Estate Disclosure

Old Practice # COM-09

Practice Statement  As part of all real estate sales contracts, each State should require the disclosure of known transmission pipeline easements on the property. The disclosure should be done in the same way that the state requires disclosure of other environmental risks, such as lead paint or asbestos products. A copy of the easement document and contact information for the transmission pipeline operator should be provided to any prospective purchaser prior to the time the initial purchase documents are signed.

Audience  State Real Estate Commission or Agency

Practice Description:  The disclosure should be done in the same way that the State requires disclosure of other environmental risks, such as lead paint or asbestos products. A copy of the easement document and contact information for the Pipeline Operator should be provided to any prospective purchaser prior to the time the initial purchase documents are signed. The existence of a transmission pipeline easement on the property should be made clear to all prospective purchasers, in order that they can make an informed decision concerning the risks. Though the existence of a transmission pipeline easement is typically noted in real estate closing papers or title reports, purchasers can be unaware that the easement is for a transmission pipeline. The disclosure language should make clear that the pipeline easement is for a transmission pipeline. The rights of the property owner and easement holder are typically spelled out in the easement document; it is important that a prospective purchaser have a copy of the easement document to examine.
NP01  Siting New Transmission Pipelines In, or Adjacent to, Existing Rights-of-Way

Old Practice # PC-17

Audience  Pipeline Operator, Local Governments

Practice Statement  When considering decisions on potential routes for new transmission pipelines, pipeline operators should include coordination with local governments along the routes. This coordination should include consideration of existing or adjacent transmission pipeline, or other utility, rights-of-way, and other utility rights-of-way.

Practice Description: Many factors must be balanced when new transmission pipelines are proposed and routes for these pipelines are chosen. These factors include transmission pipeline hydraulics and the location of supply and delivery points, as well as impacts on the environment and scenic, historic, or recreational land resources. In some cases, the alternative potential routes for a new transmission pipeline include existing or adjacent pipeline, or other utility, rights-of-way or other utility right-of-way. In these cases, using the existing or adjacent rights-of-way for the new transmission pipeline routes should be strongly considered. However, the decision must also take into account the configuration and utilization of the existing or adjacent rights-of-way so that adequate safety can be maintained during construction and subsequent operations and maintenance of the new transmission pipeline.

Using existing or adjacent rights-of-way for new transmission pipelines may reduce the amount of land that needs to be acquired for new rights-of-way. In addition, landowners and residents of property in the vicinity of the existing or adjacent right-of-way and local governments with jurisdiction over development in the vicinity of the existing right-of-way may be aware of transmission pipeline(s) in the right of way. If so, they may have made decisions regarding land use and development in light of the proximity of the transmission pipeline(s), including the recommended practices found in this document, as appropriate.

Landowners, developers, and residents of property that is not near remote from existing transmission pipelines and local governments with jurisdiction over development of property not near remote from existing pipelines are less likely to have considered future transmission pipeline routes in land use and development decisions.

References:  18 CFR 380.15

Federal Energy Regulatory Commission (FERC) regulations include the consideration of existing rights-of-way when siting new natural gas transmission pipelines. Although hazardous liquid transmission pipelines are not subject to these regulations, the basic siting principles are applicable to all transmission pipelines.

Title 18: Conservation of Power and Water Resources

PART 380—REGULATIONS IMPLEMENTING THE NATIONAL ENVIRONMENTAL POLICY ACT
§380.15  Siting and maintenance requirements.
(a) **Avoidance or minimization of effects.** The siting, construction, and maintenance of facilities shall be undertaken in a way that avoids or minimizes effects on scenic, historic, wildlife, and recreational values.

(b) **Landowner consideration.** The desires of landowners should be taken into account in the planning, locating, clearing, and maintenance of rights-of-way and the construction of facilities on their property, so long as the result is consistent with applicable requirements of law, including laws relating to land-use and any requirements imposed by the Commission.

(c) **Safety regulations.** The requirements of this paragraph do not affect a project sponsor's obligations to comply with safety regulations of the U.S. Department of Transportation and recognized safe engineering practices for Natural Gas Act projects and the National Electric Safety Code for section 216 Federal Power Act projects.

(d) **Pipeline and electric transmission facilities construction.**

   (1) The use, widening, or extension of existing rights-of-way must be considered in locating proposed facilities.

   (2) In locating proposed facilities, the project sponsor shall, to the extent practicable, avoid places listed on, or eligible for listing on, the National Register of Historic Places; natural landmarks listed on the National Register of Natural Landmarks; officially designated parks; wetlands; and scenic, recreational, and wildlife lands. If rights-of-way must be routed near or through such places, attempts should be made to minimize visibility from areas of public view and to preserve the character and existing environment of the area.

   (3) Rights-of-way should avoid forested areas and steep slopes where practical.

   (4) Rights-of-way clearing should be kept to the minimum width necessary.

   (5) In selecting a method to clear rights-of-way, soil stability and protection of natural vegetation and adjacent resources should be taken into account.

   (6) Trees and vegetation cleared from rights-of-way in areas of public view should be disposed of without undue delay.

   (7) Remaining trees and shrubs should not be unnecessarily damaged.

   (8) Long foreground views of cleared rights-of-way through wooded areas that are visible from areas of public view should be avoided.

   (9) Where practical, rights-of-way should avoid crossing hills and other high points at their crests where the crossing is in a forested area and the resulting notch is clearly visible in the foreground from areas of public view.

   (10) Screen plantings should be employed where rights-of-way enter forested areas from a clearing and where the clearing is plainly visible in the foreground from areas of public view.

   (11) Temporary roads should be designed for proper drainage and built to minimize soil erosion. Upon abandonment, the road area should be restored and stabilized without undue delay.

(e) **Right-of-way maintenance.**

   (1) Vegetation covers established on a right-of-way should be properly maintained.
(2) Access and service roads should be maintained with proper cover, water bars, and the proper slope to minimize soil erosion. They should be jointly used with other utilities and land-management agencies where practical.

(3) Chemical control of vegetation should not be used unless authorized by the landowner or land-managing agency. When chemicals are used for control of vegetation, they should be approved by EPA for such use and used in conformance with all applicable regulations.

(f) Construction of aboveground facilities.

(1) Unobtrusive sites should be selected for the location of aboveground facilities.

(2) Aboveground facilities should cover the minimum area practicable.

(3) Noise potential should be considered in locating compressor stations, or other aboveground facilities.

(4) The exterior of aboveground facilities should be harmonious with the surroundings and other buildings in the area.

(5) For Natural Gas Act projects, the site of above-ground facilities which are visible from nearby residences or public areas, should be planted in trees and shrubs, or other appropriate landscaping and should be installed to enhance the appearance of the facilities, consistent with operating needs.

[Order 603, 64 FR 26619, May 14, 1999, as amended by Order 689, 71 FR 69741, Dec. 1, 2006]
NP02  Recommended Practices for Transmission Pipeline Right-of-Way Acquisition

Old Practice #  PTP B-2

Audience  Pipeline Operator, Landowners

Practice Statement  Basic understanding of the pipeline right-of-way acquisition process sets a foundation for an informed and mutually respectful negotiation between a landowner and a pipeline operator. The right-of-way acquisition process is a delicate balance of individual property owner’s rights and the pipeline operator’s need to transport energy through the property to meet the public’s necessity of safely delivered, affordable energy. Pipeline operators should recognize that landowners are often unfamiliar with easements, eminent domain authority, and transmission pipeline construction, operation and maintenance. These practices are intended to enable an informed and mutually respectful negotiation between transmission pipeline operators and property owners.

Practice Description:

**Pipeline Right-of-Way Acquisition**

Where growing energy demand and land development intersect pipeline companies and landowners meet in the right-of-way acquisition process. Often landowners are unfamiliar with the land acquisition process, easements, pipeline construction, eminent domain authority and the operations and maintenance of pipelines. The acquisition process is a delicate balance of individual property owner’s rights and the pipeline operator’s need to transport energy through the property to meet the public’s necessity of safely delivered, affordable energy. This guidance is intended to set a foundation for an informed and mutually respectful negotiation among all stakeholders.

**Operator Acquisition Practices at Various Phases of a Pipeline Project – General Route Evaluation, Operator’s Due Diligence, Negotiation, Public Relations and Construction & Restoration**

Working with property owners in the early phases of an operator’s transmission pipeline project helps to establish a positive relationship. Optimaly, affected landowners are consulted to gain an understanding of how they use, or plan to use, the land before completion of project design to assess the impact of the proposed design. Early consultation with property owners provides more information to designers to incorporate the landowner’s needs in project design decisions. This time is also critical for the operator to gain the landowner as a partner to their pipeline safety program. Use of this practice may result in more timely purchases and reduced damages to affected properties. The following summary guidance is one example of the process, but the acquisition process and practices may vary among transmission pipeline companies.

**General Route Evaluation - Project Feasibility Analysis Phase:**

In the initial phase of a transmission pipeline project, the pipeline company will gather necessary geographical, environmental, jurisdictional, and land records data to identify and evaluate potential routes. The data is mined from various different mapping systems (tax, USGS, operator, DOT, etc.), statutory agencies (land and tax records), as well as aerial and ground reconnaissance. The company will analyze the needs of end users and supply sources to determine the type, size and operating pressure of the transmission pipeline facilities to transport the product. They will also develop a
preliminary cost estimate and schedule for the project. This phase ends with an evaluation of the project’s feasibility.

A transmission pipeline project connects an energy supply to an energy market. Simply stated, they connect point “A” to point “B”. To evaluate potential routes from “A” to “B”, the company collects this data:

1. **Origination and Termination Points** – The type of facilities, the type and amount of product(s) to be transported and the pressure at which they operate are critical to determining the size and physical requirements of the transmission pipeline as well as the need for ancillary facilities such as aboveground valves, metering stations, underground storage, surge tanks and compressor stations. The product transported, the size of the line, and the type of facilities will dictate the size of right-of-way and whether if additional property needs to be purchased.

2. **Identification of Terrain** – The type of terrain can impact the type of construction equipment, the construction schedule, and the need for special permits such as environmental, waterway jurisdiction, road jurisdiction, and foreign utility crossings. The permits may place certain requirements on how and when the transmission pipeline is constructed.

3. **Preliminary Cost Estimate** – In order to evaluate the project’s feasibility, a preliminary cost estimate is created. This estimate includes the cost of the pipe, construction forces needed for installation, compressor stations or pump stations to move the product, and many other costs related to safely building the pipeline and placing it in service. The costs related to acquiring easements for various routes are also considered. The fair market value of the required property is typically used during the preliminary cost estimate, and includes expenses such as:

   a. **Easement Compensation** – Payment to landowner. More detailed information about how the compensation may be derived is provided in Appendix A.

   b. **Permits** – Multiple governing bodies may have jurisdiction over sections of the pipeline project. Examples of permits are: roadway, excavation and right-of-way permits from Federal, State, County, City and Townships; Railroad, Army Corps of Engineers

   c. **Crop Damages** – The cost of damage to crops or the inability to grow crops during construction and in the future.

   d. **Restoration** – Returning the land to the condition prior to construction.

   e. **Temporary Work Space** – Additional space needed for large construction equipment during installation.

   f. **Legal Expenses** – Typically include consultation and document preparation expenses. If an agreement cannot be reached with the landowner, there may be condemnation costs and appeal costs.

   g. **Public Relations Expenses**

   h. **Appraisal Costs**

   i. **Pipeline and ancillary facility design and construction costs**

   j. **Insurance**
4. **Scheduling** – The acquisition of right-of-way, the constructability of the route, the lead time to obtain permits, and public opposition have the greatest impact on the duration of the project. The required in service date may influence route selection.

5. **Project Feasibility** – The routes are evaluated for constructability, risk, and return on investment. The pipeline company decides whether to proceed with a transmission pipeline project.

**Operator’s Due Diligence Phase**

If the pipeline company decides to move forward with the project, they engage in a more detailed phase by validating the preliminary cost estimate on a limited number of routes. At this point, they walk the route and their Land Agent reaches out to landowners. They also perform records research, a title search, land surveys, in depth environmental evaluations, and archeological evaluations.

1. **Records Research and Development** - Right-of-way acquisition requires expert records research. The quality, format, and recording practices of land documents vary depending on when and where they were created. The development of accurate, legally binding land documents is vital since the terms and conditions of the agreement between the transmission pipeline company and landowner continues in perpetuity. Good recordation practices are key to preventing future issues.

2. **Title Research and Curative Matters** – A title search involves obtaining a legal description of the property and determining the chain of title to identify all records that may affect the title. Records that may affect the title include but are not limited to mortgage, lien, tax payments, flood zone status, property leases, copy of the deed and property zoning. When there is a lien holder with a significant financial interest or the property is at risk, there is the potential for mortgage subordination. The pipeline operator may be required to satisfy and make payments to the lien holder. The operator will obtain a limited title certificate which identifies the owner of the property and any liens against the property discovered in the search.

3. **Land Surveys** – Generally, before an easement agreement is negotiated, the land is surveyed in order for the parties to have a legal description and plat of the location and size of the desired right-of-way on the property. Optimally, the landowner provides permission to perform the survey and the operator works with the landowner to arrange mutually agreed upon timetable for survey activities. The land may need to be minimally cleared depending on the type of survey or surveys to be performed. The operator should explain what will occur during the survey and may contact neighboring landowners to inform them of the upcoming activities. The operator should record from whom and when permission was granted and keep them abreast of the survey schedule. If the operator cannot obtain permission from the landowner, the Federal government or some States may legally provide them the authority. Each State’s statutory requirements dictate when and how right of entry for survey is obtained. For most natural gas transmission pipelines, this power is granted at the Federal level. For hazardous liquid transmission pipelines, this power is granted by the State. Of the survey types listed below, here are some types of surveys that may be performed. The last three types are mainly used for transmission pipelines route selection:
a. ALTA Survey or Extended Title Insurance Coverage Survey
A survey made for the purpose of supplying a title company and lender with survey and location data necessary for the issuing of title and/or mortgage insurance. A detailed map is required to be done to American Land Title Association (ALTA) specifications. Specifications of this type of survey include (but are not limited to) determining property lines, location of improvements, identifying all easements, utilities and other conditions affecting the property. ALTA surveys are very comprehensive surveys and typically cost thousands of dollars and take weeks to complete. The ALTA Survey is most often performed on commercial properties.

b. Boundary Survey
A boundary survey establishes the true property corners and property lines of a parcel of land. Boundary surveys are typically performed to obtain building permits, to resolve property disputes, and for erecting fences. Easement lines may also be located, if requested, with this type of survey.

c. Elevation or Floodplain Survey
Elevation surveys determine the elevation of various sections of a building or land. Typically these are used to aid in building plans and to determine if a property is in a flood zone.

d. Lot Survey, (aka Site Plan Survey or Plot Plan Survey)
A combination of boundary and topographic surveys for preparation of a site plan to be used for designing improvements or developments, and obtaining government building permits.

e. Route Survey
Reconnaissance, preliminary survey, and location survey for an alignment or linear type feature; such as a road, railroad, canal, pipeline, or utility line.

f. Topographic Survey
A Land Survey locating natural and manmade features such as buildings, improvements, fences, elevations, land contours, trees, streams, etc. This type of survey may be required by a government agency, or may be used by engineers or architects for the design of improvements or developments on a site.

g. Wetlands Delineation & Location Survey
A wetlands delineation and location survey is completed when construction work is to be done on or near a site containing defined wetlands. Depending on the Local, State, or Federal regulations, wetlands are usually classified as areas that are completely inundated with water more than two weeks during the growing season.

Environmental, Archeological Studies & Endangered Species
Based on site conditions, additional environmental, archeological or endangered species studies may be required. A wetland is an example of an environmental condition that requires additional evaluation and permits. Depending on Local, State, or Federal regulations, wetlands are usually classified as areas that are completely inundated with water more than two weeks during the growing season. The site specific definition for wetlands in a given geographical region can be
obtained from the Local or State Conservation Commission or Wetlands Regulatory Commission. If the area is delineated as a wetland, a Wetlands Delineation & Location Survey is required.

The site may require an archaeological study to determine if the construction may directly or indirectly affect archeological and historic properties/structures. Geotechnical borings are taken in the areas of archaeological sensitivity for information about the soil and fill layers. The information is used to identify the archaeologically sensitive areas for the current alignment and screen out areas of prior disturbance that would have no potential for intact remains.

If the area contains species on the federally endangered or threatened species list, additional studies and permits may be required.

Permit requirements will be reviewed in depth. The operator may begin contacting permitting jurisdictions and collecting necessary information for permit applications. The permits may require the operator to access the land to acquire the data.

**Negotiations and Acquisition Phase**

Solid preparation of all stakeholders leading up to the negotiation phase creates an atmosphere of mutual understanding of the party’s current and future needs. In order to be effective, land agents training should include knowledge of:

1. **Transmission Pipelines**
2. Agriculture and ranching practices
3. Land title and condemnation laws
4. Land values
5. Documents and Instruments
6. Right-of-way easement and special provisions and clauses
7. Typical landowner concerns, reactions and responses during acquisition process
8. Negotiating with all types of people
9. Company policies
10. Company code of conduct & rules of negotiations

Recognizing the importance of building a good relationship with landowners, a pipeline association, Interstate Natural Gas Association of America (INGAA), gathered a team of member companies to develop a document describing their negotiation values that they strive to employ and which landowners can expect. The document is reprinted in Appendix B.

In addition to these principles, there are certain operator practices that may enhance the relationship between landowner and operator. The right-of-way agent(s) from the transmission pipeline company should personally contact each affected landowner along the route to discuss the project and negotiate an easement agreement. They should be familiar with the property and address the landowner’s concerns. There should be a kick-off meeting to which all landowners are invited to provide project information including examples of a typical easement agreement, common easement provisions and an explanation of acknowledgment requirements. Agents should keep good records of contact with landowners and a summary of the discussion. They should document changes to the standard agreement, communicate status, provide material for review and record final agreements in a timely manner. The process for determining fair compensation should be explained. Allowing one person to serve as appraiser and negotiator reduces the number of people contacting the property owner. A land agent may have an easement document and a means of
payment in possession during negotiations. These actions underscored the objective of providing a fair and equitable method for acquiring right-of-way.

While compensation is an important issue, concentrating on it exclusively may not be in the best long term interests of either party. In addition to compensation, the agreement covers key issues such as, but not limited to, restoration of the land, assignability, liability, future right-of-way clearing and restrictions of both parties. Details of key issues that a landowner should may wish to consider are covered as special provisions in BL07, the practice statement, “Elements of a Typical Pipeline Easement Agreement”.

While the operator should attempt to be flexible in considering landowner’s issues and transparent in their dealings, they also need to meet the timeline to deliver energy products to the market to serve the public, to meet their mandate of public convenience and necessity. If the landowner and the pipeline company cannot come to an agreement, the pipeline company may obtain the right and power of eminent domain, the taking of private property for public interest, and condemnation, the procedure by which the easement is obtained through the order of a statutory authority. Federal and State governments grant pipeline companies the right to obtain permission from private landowners to transport petroleum and natural gas products across private lands for the benefit of public use and necessity. Public necessity pertains to the amount of land that can be condemned. The pipeline operator may not legally condemn more property than is reasonably required to serve the public use. The condemnation process is expensive, resource intensive, can delay the start of the project, and can create animosity where future cooperation will be needed for pipeline and public safety. Operators consider the use of eminent domain only after negotiation attempts fail. Operators provide landowners at minimum a documented first and final offer. A land agent should never threaten condemnation but should acknowledge the right if asked by the landowner. If negotiations fail to result in an agreement, both parties should obtain legal counsel experienced in land rights matters.

Eminent domain law and legal procedures vary, sometimes significantly, between jurisdictions. Usually, the condemnation process follows steps similar to these:

- The operator attempts to negotiate the purchase of the easement property for fair value. See Appendix A.
- If the landowner rejects the offer, the operator files a court action to exercise eminent domain, and serves or publishes notice of the hearing as required by law.
- A hearing is scheduled, at which the operator must demonstrate that it engaged in good faith negotiations to purchase the easement property, but that no agreement was reached. The operator must also demonstrate that the easement is for a public interest, as defined by law. The landowner is given the opportunity to respond to the operator’s claims.
- If the operator is successful in its petition, proceedings are held to establish the fair market value of the easement property. Payment to the landowner may first be used to satisfy any mortgages, liens and encumbrances on the property, with any remaining balance paid to the landowner. The operator obtains an easement. In certain jurisdictions, right of entry may be granted prior to the landowner receiving payment. (Operator posts bond for the fair market value and fulfills any other
statutory requirements, then makes a Motion for Immediate Access. Court may grant or deny this motion.

• If the operator is not successful, or if the landowner is not satisfied with the outcome, either side may appeal the decision.

Public Relations

Public relations are an important element to successful land acquisition. Valuable public relations build a community’s understanding of the purpose and status of the transmission pipeline project. Operators are wise to know the general attitude of the landowners and the community near the pipeline. They can tailor their communications to provide information that addresses their concerns. Providing timely and focused educational pipeline safety and project information can improve an operator’s reputation and acceptance as a good neighbor. Providing material in languages identified among stakeholders may improve acceptance for the project.

Landowners often reach out to government officials for objective information and support. Government officials should be contacted as early as reasonable in the acquisition process. Depending on the scope and visibility of the project, local officials who may be contacted include:

1. Elected County Representatives
2. County Road Department Head
3. County Planning and Zoning Department Head
4. Elected City Representatives (Mayor, City Manager, City Council, etc...)
5. City Road Department Head
6. City Planning and Zoning Department Head
7. Local Elected Officials (Townships, etc...)

Construction & Restoration

Landowners should be given adequate, documented notification prior to the start of construction. Operators may want to invite landowners to attend pre-construction and construction meetings. Any construction restrictions should be documented and communicated to construction personnel.

Survey stakes delineating the right-of-way should be visible. Landowners should be provided with current operator contact information for field personnel throughout the construction and restoration phases.

After construction is complete, any damages should be assessed, reviewed with the landowner and settlement reached. Damage settlements may include items such as crop losses, damage to irrigation and drainage systems, and loss of grazing land. Tenant agreements may also be impacted by damage settlements. Operators will close the settlement by obtaining a documented clean-up release or approval from the landowner. Quality restoration and timely, fair reimbursement for damages creates lasting, favorable impressions.

Appendix A: Criteria That Has Been Used To Establish Just or Adequate Compensation for Pipeline Easements

• The price the property will bring when offered for sale by the one who desires to sell, but is not obligated to sell and is bought by one who desires to buy, but is under no necessity of buying.

• Settlements of condemnation awards may not be admissible evidence.

• Appraised value of land recently subject to inheritance taxes may be admissible.

• Sales are to be similar in terms of character, location and time (within six years).
• The highest and best use to which the land can reasonably be adapted may be consideration.

• Whether all of the property owner’s land in a certain tract is being condemned or only a portion of the tract is being taken. The value of the property may be different if it is evaluated as part of the whole property or by itself.

• Special damages vs. special benefits to the value of the land. Special damages decrease the value of the remaining land due to circumstances such as loss of frontage, loss of access to road or highway, loss of access to pastures, loss of access to a source of water, loss of natural drainage, cost of fencing certain areas, cost of restoration, cost of cleanup and other similar expenses. Special benefits are the increases in value to the remaining, uncondemned land resulting by circumstances such as leveling of rough land, draining of swamp land, overall drainage improvement, improved accessibility, adaptability of the remaining land to higher and better uses and other similar benefits. The special benefits accruing to the remaining land may be offset only against the special damages and not against compensation due for the land taken.

• Some states require that the consideration be the actual amount paid while other states allow a token consideration such as “$10.00 and other valuable consideration” to be shown on the document.

• Compensation is based on the fair market value of land at the time of the taking. The general rule for determining fair market value is the before-and-after approach that requires measuring the difference in the value of the land immediately before and immediately after the taking.

• Size and number of pipelines laid within the easement

• At times, fair value includes more than the price of an item of property or parcel of real estate. If a business is operating from the condemned real estate, the owner is ordinarily entitled to compensation for the loss or disruption of the business resulting from the condemnation. In a minority of jurisdictions, the owner may also be entitled to compensation for loss of “goodwill”, the value of the business in excess of fair market value due to such factors as its location, reputation, or good customer relations. If the business does not own the land, but leases the premises from which it operates, it would ordinarily be entitled to compensation for the value of its lease, for any fixtures it has installed in the premises, and for any loss or diminishment of value in the business.

Recognizing the importance of building a good relationship with landowners, a transmission pipeline association, Interstate Natural Gas Association of America (INGAA), gathered a team of member companies to develop a document describing the negotiation values they strive to employ and which landowners can expect. The document is reprinted in Appendix B.

Appendix B: INGAA Commitment to Landowners

The following text is from INGAA’s web site, http://www.ingaa.org/?ID=6845. Landowners can expect operators of hazardous liquid and natural gas transmission pipelines to adhere to these principles.

Given the unprecedented level of energy infrastructure development that is occurring across the United States, it now is more important than ever that pipeline companies engage with landowners in a respectful, informative and clear manner. INGAA is committed to leading an industry that builds and maintains strong positive relationships with landowners.
In order to address these landowner issues the INGAA Board of Directors endorsed a document entitled “America’s Natural Gas Transporters’ Commitment to Landowners.” In doing so, each INGAA member company embraced the following core principles:

1. **Respect and Trust** - Positive, lasting relationships are built on mutual respect and trust. We will strive to understand issues from the Landowners’ perspective and help them understand ours.

2. **Accurate and Timely Information** - Providing natural gas transportation and storage services to the nation may create concerns. We will provide Landowners with information regarding the importance of energy infrastructure, the reason and need for the proposed project, and the processes in place governing easement acquisition, certification, construction, operation and maintenance of our facilities, and the particulars of individual projects.

3. **Negotiate in Good Faith** - We will listen and strive to understand, and negotiate in good faith. We will make every attempt to reach agreement with landowners in an honest, fair and reasonable fashion.

4. **Respect the Regulatory Compact** - Final approval for a project is not a certainty and our interactions with landowners will reflect that understanding. Prior to a Federal Energy Regulatory Commission decision, actions taken to negotiate easements or options are at the company’s risk as there is no guarantee the project will be approved. We will communicate clearly that federal eminent domain cannot be exercised unless a Certificate is granted by the Federal Energy Regulatory Commission and will distinguish clearly when, and if, eminent domain is exercised pursuant to state law.

5. **Responding to Issues** - We will respond to Landowner concerns in a timely fashion. To enhance direct communications and timely responses, we will provide Landowners with a single point of contact within the company to answer any question or concern and to provide general or project-specific information.

6. **Outreach** - We will engage with and promote awareness on the part of affected stakeholders early in the planning process. In broadening our outreach, we will develop relationships with, and introduce our industry to, those who might not have otherwise known about its benefits to the community and our dedication to safely providing these services.

7. **Industry Ambassadors** - Each company employee and representative is an ambassador for the industry. We will ensure our employees and representatives interact with stakeholders in accordance with these commitments.

8. **Ongoing Commitment to Training** - We believe in continuous improvement in all aspects of our business. With the demand for natural gas increasing and many new people entering the industry, we will train our representatives to interact positively and productively with Landowners and other stakeholders.
PHMSA has combined Recommended Practices:

<table>
<thead>
<tr>
<th>Comm 4</th>
<th>Transmission Pipeline Operators and Local Government Staff Need to Provide Information to Developers</th>
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</thead>
<tbody>
<tr>
<td>PTP A-4</td>
<td>Consultation Zone Triggers</td>
</tr>
<tr>
<td>ND01</td>
<td>Pipeline Operators and Local Governments Provide Information to Property Developers/Owners</td>
</tr>
</tbody>
</table>

The combined practice follows those submitted by the Task Teams.

Comm 4

**Audience(s):** [Operators/Developers/Local Government]

**Title:** Transmission Pipeline Operators and Local Government Staff Need to Provide Information to Developers

**Practice Statement:** A transmission pipeline operator’s staff is familiar with the safety issues regarding development adjoining their easements, and local government staff process development applications. It is crucial that both of those stakeholder groups inform developers of the safety and environmental issues.

**Practice Description:** Local government staff processing development permits sometimes are more familiar with transmission pipeline issues than developers, particularly if the developer has never been involved in a project involving a transmission pipeline easement. Local government staff should alert project applicants to the existence of the easement and the attendant safety issues, and provide the applicant with current contact information for the operator. The operator can then review transmission pipeline safety issues with the developer and make sure that the development is designed and constructed in a way that safeguards the transmission pipeline and maintains adequate access to the transmission pipeline for maintenance and repair.

**PTP A-4: Consultation Zone Triggers**

**Practice Statement:** New residential, commercial, governmental, industrial and military developments, public improvement projects and rezoning proposals shall trigger appropriate government representatives and/or land owner/developers to initiate “consultation zone” discussions with pipeline operators at the first application stage.

**Audience:** Planning and Zoning Commissions, Planning and Permitting Departments, Public Works Departments, Elected Officials, Operators, Land Owners, Developers

**Practice Description:**

New residential, commercial, governmental, industrial and military developments, public improvement projects and rezoning proposals that are to occur within a designated consultation zone need input from pipeline operators who manage facilities near these projects. Mapping “Consultations Zones” is an important practice in identifying development that abuts or is in close proximity to a transmission pipeline. The transmission pipelines may be mapped on hardcopy maps or in a county’s geographical information systems (GIS). However, the national repository created by PHMSA for transmission pipeline locations is the National Pipeline Mapping System (NPMS) at [www.npms.phmsa.dot.gov/](http://www.npms.phmsa.dot.gov/) and is a valuable tool to initially obtain pipeline location data. This site is updated annually by operators and consists of geospatial data, attribute data, public contact information, and metadata pertaining to the interstate and intrastate gas and hazardous liquid.
transmission pipelines, liquefied natural gas (LNG) plants, and hazardous liquid breakout tanks jurisdictional to PHMSA. Once pipelines are identified, the “consultation zone” discussion process can provide a forum for operators to share appropriate guidance with the developer or project manager as to safe actions near pipelines. Early discussions, as soon as the first application stage, may ward off designs that would raise the risk of damage to the pipeline or the community due to its proximity to the pipeline. The closer the design is to construction, the greater the risk of costly redesigns to ensure that development near the pipeline is performed safely during construction and for the lifetime of the pipeline. Lack of awareness of the pipeline easement rights and obligations, can result in delayed projects or expensive redesigns. If parties wait to meet until the design is too far along, they may lose the opportunity for potential enhancement of the right-of-way for the benefit of the community. Lack of advance communication, may also result in construction delays. Operators may be limited as to time of year that construction can take place. If pipeline facilities need to be relocated, the work may need to be scheduled during low flow time periods. Timely communication fosters productive relationships among the stakeholders and enhanced pipeline safety.

ND01 Pipeline Operators and Local Governments Should Provide Information to Property Developers/Owners

Audience Pipeline Operator & Local Government

Practice Statement Pipeline Operators and Local Government staff should inform property developers/owners of the safety and environmental issues related to development next to transmission pipelines.

Practice Description: Transmission Pipeline Operator staffs are familiar with the safety issues regarding development adjoining their easements. Through the implementation of Pipeline Operator Public Awareness Programs and other PIPA recommended practices, Local Government staffs processing development applications should also have a basic knowledge of pipeline safety issues. If a Property Developer/Owner has never developed near a transmission pipeline, the Property Developer/Owner staff may have limited knowledge of safety issues. Local Government and Pipeline Operators should communicate with the Property Developer/Owner as early in the planning process as possible.

The Pipeline Operator can review the proposed development design to ensure the design and construction will not pose a risk to the transmission pipeline and will maintain adequate access for maintenance and repair. Early discussions may ward off designs that would raise the risk of damage to the transmission pipeline or the community due to proximity to the pipeline. As the construction start date draws nearer, the cost of redesigns can become huge. Also, the Property Developer/Owner may miss an opportunity to use the right-of-way to enhance the property development (ND08).

If a transmission pipeline must be relocated as part of the development, Pipeline Operators may need to limit the relocation to low-flow periods. Also, there may be seasonal considerations that would impact the Pipeline Operator’s ability to readily construct a pipeline.
PHMSA has combined Recommended Practices:

Comm14  Gathering Information for Design Purposes
Comm15  Design Request through One-Call Center
Into    ND02  Gather Information for Design near Transmission Pipelines

The combined practice follows those submitted by the Task Teams.

Comm 14

Practice Title: Gathering Information for Design Purposes
Audience(s): [Developer]

Include, verbatim, CGA best practice 2-2 because our report is directed to developers, and this best practice deals directly with the need for early communication between the developer and the transmission pipeline operator. [Determine if this practice is already well covered in other practices. If so, remove it from this report. Cycla]

Comm 15

Practice Title: Design Request through One-Call Center
Audience(s): [Developers/Operators]

Practice Statement: Project designers or developers should call their one-call center for a design request if the one-call center has established procedures for processing such requests. A design request is a request to obtain the names and contact information for facility owners/operators with underground facilities within the project area. 811 is the national number to call to reach the one-call center.

Practice Description: To facilitate early communication and damage prevention, project designers and developers have a need for access to facility location information from facility owners/operators. If a design request is received, the one-call center provides a listing of facility owners/operators directly to the designer/developer. Using the list, the designer/developer can contact the owners/operators and get further information regarding the underground facilities and can work on a design that meets the needs and concerns of the owners/operators. This would be an opportunity for the transmission pipeline operator to provide to the designer/developer a copy of the company’s development guidelines and procedures (if the operator has such written guidelines).

References:
- Existing operating practices from various one-call centers.
- NTSB Safety Study (NTSB/SS-97/01; PB97-917003)
- CGA Best Practices 2-2 and 3-15

ND02  Gather Information for Design near Transmission Pipelines

Audience  Property Developers/Owners

Practice Statement  The designer should use all reasonable means, including the One-Call Center, to obtain information about underground facilities in the area of the proposed development.

Practice Description: During the planning phase of the project, property developers/owners should seek available information about possible existing and future transmission pipeline facilities. If the pertinent One-Call Center offers design tickets, the project designers or developers should employ this channel. The One-Call
Center should provide a listing of operators directly to the designer or to the designer’s subsurface utility engineer. This information is available in formats that are accessible to user such as voice, fax, E-mail or website. Once identified, the designer may contact the operators directly or may use the One-Call System (dial 811, the national one-call number) to obtain information.

The Pipeline Operator may locate their underground facilities or provide locations of their underground facilities to the designer by other means, such as by marking up design drawings or providing facility records to the designer. The designer should request maps of existing, abandoned and out-of-service facilities, cathodic protection and grounding systems, as-builts of facilities in the area if the maps are not current, proposed project designs, and schedules of other work in the area. This information is gathered as part of the impact analysis when evaluating different design possibilities and to work on a design that meets the needs and concerns of the owners/operators.

Pipeline operators may use this opportunity to provide the designer/developer a copy of the company’s development guidelines and procedures if they exist. Other methods of gathering information may include contacting coordinating committees/councils, other designers, engineering societies, and governmental agencies as a means of identifying underground facility owners/operators in an excavation area. Gathering information may also include a review of the site for above ground indications of underground facilities (i.e. permanent signs or markers, manhole covers, vent pipes, pad mounted devices, riser poles, power and communication pedestals and valve covers).

References:
Wisconsin Sec. 186.0175 Stats.
Minnesota Statute 216D.
Subsurface Utility Engineering, Federal Highway Administration (FHWA), February 1999, Office of Program Administration (HIPA).
Existing operating practices from various one-call centers.
NTSB Safety Study (NTSB/SS-97/01; PB97-917003)
CGA Best Practices 2-2 and 3-15.
### Old Practice # PTP A-1

**Practice Statement**

Property developer/owner should review preliminary information about acceptability of proposed land use on the right-of-way prior to design. The purpose of this table is to increase awareness and encourage early communication among key stakeholders when considering changes to an existing land use or new land use development of existing pipeline rights-of-way.

**Practice Description:** Many operators and pipeline industry associations provide guideline material to assist the property developer/owner in assessing the acceptability of different uses of the right-of-way. The table in Appendix E is one source of guidance material intended to increase awareness and encourage early communication among key stakeholders when considering changes to an existing land use or new land use development relative to existing pipeline transmission pipelines. Managing land use activities is a challenge for all stakeholders involved. Inappropriate land use activities can contribute to the occurrence of a pipeline transmission pipeline incident and expose those working or living near a pipeline transmission pipeline to harm should an incident occur.

Appendix E lists the following land use activities. However, the list is meant as a guideline in determining whether the proposed land use may be acceptable or not. There may be variances in opinion based on site specific conditions and operator practices. Early notification to the pipeline operators is encouraged to ensure optimum use of the land and also to protect the pipeline. Encroachment agreements are encouraged to ensure appropriate communication occurs and all parties have appropriate and complete information on which to base decisions. It should be noted that most ROW agreements have a section for pipeline repairs with the understanding that the ROW may be disturbed. Although repairs are rare, this disturbance must be a considered and does factor into deciding the acceptability of a use or activity.
PHMSA has combined Recommended Practices:

- **Comm13** Coordination of Development Design and Construction with Transmission Pipeline Operator
- **PC-2** Land Owner/Developer and Pipeline Operator(s) Communication
- **PTP A-4** Consultation Zone Triggers

Into **ND04** Property Developer/Owner Coordination of Development Design and Construction with Pipeline Operator

The combined practice follows those submitted by the Task Teams.

**Comm 13**

**Audience(s):** [Developers/Operators/Local Governments]

**Title:** Coordination of Development Design and Construction with Transmission Pipeline Operator

**Practice Statement:** Whenever a transmission pipeline is on or adjacent to land proposed for development, the developer should contact the transmission pipeline operator to discuss the development plans and openly work with the operator to minimize any impacts to the transmission pipeline while maximizing the developer’s use of the property. Developers should forward their preliminary plans to the transmission pipeline operator for review and approval as soon as they become available. Developers need to accurately show the location of the transmission pipeline on their proposed plans. The transmission pipeline operator will need to cooperate with the developer to mark their facilities in the field for proper identification. This same level of coordination should be followed when road work or utility work is done near any transmission pipeline.

**Practice Description:** These recommendations outline what should be standard procedure when a developer will be excavating or constructing structures on land crossed by or near a transmission pipeline. The earlier a developer can review plans with a transmission pipeline operator, the easier it will be to modify plans in response to the operator’s concerns or recommendations. The same steps should be followed for road and utility work occurring near a transmission pipeline, whether the work is performed by a governmental agency or private contractor. This coordination should continue throughout the construction phase, in order to minimize the possibility of damage to the underground facilities. [Tabled: Check with TT2 for similar practice or overlap – related to consultation zone.]

**PC-2**

**Title:** Land Owner/Developer and Pipeline Operator(s) Communication

**Statement of Practice:** Land Owner/Developer and Pipeline Operator(s) should consult for all new development within the consultation zone around a pipeline.

**Audience:** Land Owner/Developer, Pipeline Operator

**Description of Practice:** For all development within the Consultation Zone around the pipeline (see practice “Definition of Consultation Zone”), the land owner/developer should consult with the pipeline operator, so that the developer may be made aware of the potential impacts on the pipeline of the development and take measures to avoid these impacts. Development may impact the pipeline because pipeline operators require access to the pipeline for maintenance (routine and non-routine) and emergency response. Emergency responders may also require access to the pipeline during emergency situations. Also, certain construction activity near the pipeline may compromise or adversely affect the safety of the pipeline.
Local government ordinances may require verification that consultation with pipeline operators has occurred before a developer may proceed, if the development is within the Consultation Zone.

References: None

**PTP A-4: Consultation Zone Triggers**

**Practice Statement**: New residential, commercial, governmental, industrial and military developments, public improvement projects and rezoning proposals shall trigger appropriate government representatives and/or land owner/developers to initiate “consultation zone” discussions with pipeline operators at the first application stage.

**Audience**: Planning and Zoning Commissions, Planning and Permitting Departments, Public Works Departments, Elected Officials, Operators, Land Owners, Developers

**Practice Description:**

New residential, commercial, governmental, industrial and military developments, public improvement projects and rezoning proposals that are to occur within a designated consultation zone may require input from pipeline operators who manage facilities near these projects. Mapping “Consultations Zones” is an important practice in identifying development that abuts or is in close proximity to a transmission pipeline. The transmission pipelines may be mapped on hardcopy maps or in a county’s geographical information systems (GIS). However, the national repository created by PHMSA for transmission pipeline locations is the National Pipeline Mapping System (NPMS) at [www.npms.phmsa.dot.gov/](http://www.npms.phmsa.dot.gov/) and is a valuable tool to initially obtain pipeline location data. This site is updated annually by operators and consists of geospatial data, attribute data, public contact information, and metadata pertaining to the interstate and intrastate gas and hazardous liquid transmission pipelines, liquefied natural gas (LNG) plants, and hazardous liquid breakout tanks jurisdictional to PHMSA. Once pipelines are identified, the “consultation zone” discussion process can provide a forum for operators to share appropriate guidance with the developer or project manager as to safe actions near pipelines. Early discussions, as soon as the first application stage, may ward off designs that would raise the risk of damage to the pipeline or the community due to its proximity to the pipeline. The closer the design is to construction, the greater the risk of costly redesigns to ensure that development near the pipeline is performed safely during construction and for the lifetime of the pipeline. Lack of awareness of the pipeline easement rights and obligations, can result in delayed projects or expensive redesigns. If parties wait to meet until the design is too far along, they may lose the opportunity for potential enhancement of the right-of-way for the benefit of the community. Lack of advance communication, may also result in construction delays. Operators may be limited as to time of year that construction can take place. If pipeline facilities need to be relocated, the work may need to be scheduled during low flow time periods. Timely communication fosters productive relationships among the stakeholders and enhanced pipeline safety.

ND04 Property Developer/Owner Coordination of Development Design and Construction with Pipeline Operator

**Audience** Property Developer/Owner & Pipeline Operator

**Practice Statement** When property development occurs in the Consultation Zone, the Property Developer/Owner should communicate with the Pipeline Operator to ensure the pipeline right-of-way is considering during development design and construction.

**Practice Description**: If the Consultation Zone or Planning Zone has been implemented by a Local Government, communication will already be established among the stakeholders. If the PIPA
practices for Consultation and Planning have not been implemented by the Local Government, Property Developers/Owners should initiate communication with Pipeline Operators as early in the development planning process as possible. Early discussions may ward off designs that would raise the risk of damage to the transmission pipeline or the community due to proximity to the pipeline. As the construction start date draws nearer, the cost of redesigns can become huge. Also, the Property Developer/Owner may miss an opportunity to use the right-of-way to enhance the property development (see ND08).

Regardless of when communication begins, the construction phase poses the greatest risk to the integrity of the transmission pipeline. The location of the transmission pipeline easements will be shown on the construction plans. The One-Call System will be used to ensure the precise location of all underground facilities before excavation begins. Also, the development construction should not inhibit access for Pipeline Operator or local emergency responders.

Close coordination between excavators working for the Property Developer/Owner and the Pipeline Operator are crucial throughout the construction phase. Stakeholders should ensure all excavators involved in the development have used the One-Call System and are aware of the location of all underground facilities, even if they are not working for the Property Developer/Owner. For example, a water company or government road crews may need to perform excavation that could pose a risk to the pipeline. All excavators need to make the call. Every Job Every Time
PHMSA found practice Comm8 to completely overlap with PTP E-5
The slightly revised PTP E-5 below will be included in the final report as ND05

**Old Practice #:** Comm8

**Audience(s):** [Local Governments]

**Practice Title:** Notices of Proposed Development and Proposed Zoning Changes

**Practice Statement:** Local governments should send public notices regarding proposed development, proposed zoning changes, and subdivision applications to all transmission pipeline operators who have transmission pipeline facilities located on, or in proximity to, the subject properties.

**Practice Description:** Transmission pipeline operators need to be kept informed of proposed development and zoning changes so that they have an opportunity to provide input. Transmission pipeline owners have property interests and a desire to see that land is developed in a way that does not unduly impact their operations.

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**ND05** Notification to Operators by Local Government Planning and Zoning Boards and Permitting Departments Prior to Final Plan Approval

**Old Practice #** PTP E-5

**Audience** Local Government, Operators, Developers

**Practice Statement** Local Government Planning and Zoning Boards and Permitting Departments should communicate to underground facility owners and/or transmission pipeline operators the intent of constructing permanent structures on or near high priority subsurface installations or transmission pipelines prior to granting final approval of a permit or development plans.

**Practice Description:** When the local government Planning and Zoning Boards or Permitting Departments receive requests for permits and/or approvals of new building construction the local government may board upon discovering the existence of high priority subsurface installations, including transmission pipelines. If so, local governments shall should notify those underground owners and/or operators transmission pipeline operators whose facilities or easements could be impacted by construction activity. This notice shall should be made at the early stages of the review process in order to allow for input by the underground facility owner transmission pipeline operators (see photographs below for examples).

**Benefit/Rational:** The benefit of this practice is to alert transmission pipeline operators whose facilities or easements may be impacted by proposed development in the early planning stage. Early consultation will assist in preventing potential conflicts that may develop relating to land use during initial planning stages. The risk of damages to facilities transmission pipelines rises when development occurs in close proximity to the pipelines. Damage to subsurface installation or transmission pipelines may result in significant physical injury to the excavator and/or individuals in the vicinity of the excavation. Damage to high priority subsurface installation or transmission pipelines may result in interruption of critical services or products. Unreported or undetected damage to high priority subsurface installation or transmission pipelines poses a significant risk to life, property, and infrastructure.

**References:** Land Use Planning In Proximity to Natural Gas and Hazardous Liquid Transmission Pipelines in Washington State
Photo of Trickle Creek – Example of Development Constructed over the Right-of-Way without Consultation among Property Developer/Owner, Pipeline Operator and Planning & Zoning Local Government: - Note the encroachment of the fence on the transmission pipeline right-of-way. It obstructs the pipeline operator’s ability to patrol the pipeline. With proper advance planning between the parties in the initial platting stage, perhaps the pipeline could have been platted deeper towards the rear lot lines and a greenbelt provided. This would have eliminated the potential for subsequent fence encroachments by the home purchasers. The two trucks on the right have the potential for heavy vehicular encroachment over the pipeline. The proximity of the houses to the pipeline precludes the owners from installing a patio, large landscaping or other structures in their yard.
**Plat of Trickle Creek Development - Example of Development Constructed over the Right-of-Way without Consultation among Developer, Operator and Planning & Zoning:** Note the location of the transmission pipeline right-of-way in red. This phase of the development did not include consultation among property developer/owner, pipeline operator and planning department/local government. Proper consultation between all parties may have enabled the pipeline to be platted at the rear edge of all lots with possibly a green belt (i.e. no lot lines crossing the easement) provided on the plat.
ND06  Local Government Requires Site Assessment/Environmental Review Process for Development Encumbered with Transmission Facilities

Old Practice # Comm 11

Audience  Local Government

Practice Statement  Whenever development is proposed on property with transmission pipeline facilities, local governments should require that the site assessment or environmental review process address in detail the steps necessary to safely integrate the transmission pipeline into the design of the project.

Practice Description:  Many states have a list of issues that must be addressed as part of the land development process, such as the availability of potable water, sewer, adequate roads, environmental constraints, etc. The land development process should require an analysis of how the development design can best incorporate any existing transmission pipeline facilities.
PHMSA has combined Recommended Practices:

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Into ND07  

Pipeline Operators Define blanket/ill-defined Easement Agreements When Necessary

The combined practice follows those submitted by the Task Teams.

**Practice #: PTP D-4**

**Audience:** [Property Developer/Owner, Operator]

**Practice Title:** Define Blanket/Ill-defined Easement Agreements

**Practice Statement:** Upon request by the landowner, the easement agreement may be defined to an acceptable width and location by the pipeline operator.

**Practice Description:** Some legacy pipeline easements did not define the location or size of the right-of-way or the location of the pipeline within a parcel of land. Some agreements did not describe the types of activities that could or should not occur on the right-of-way. The lack of clarity can lead to conflicts among stakeholders as to the use of the parcel of land. Blanket easements may give the operator the right to put a replacement pipeline anywhere on the property within the boundaries of the original easement grant. Mortgage companies may also require the easement be defined prior to providing a mortgage. Not all states require the easement owner of blanket or ill-defined easements to define the right-of-way to a specific description when requested by the landowner. However, most operators have a process for defining the right-of-way to a specific description when requested. The process of defining an easement is not a renegotiation of the easement. When an easement is defined, the operator may also add more specific language describing allowable activities or uses within the easement. The redefined easement shall be recorded at the appropriate statutory office (i.e. county recorder, parish clerk). Often mortgage companies and landowners need the location of the pipeline within the right-of-way and the boundaries of the pipeline right-of-way defined in order to grant or obtain a mortgage.

**References:** None Find MN State Law

**Comm2**

**Audience(s):** [Operator, Property Developer/Owner, Local Government]

**Title:** “Open” or “Blanket” Easements Must Be Defined.

**Practice Statement:** “Open” or “blanket” easements should be reduced to a defined width before any development permits are issued by local governments.

**Practice Description:** In the past, transmission pipeline operators sometimes negotiated easements that allowed construction of a transmission pipeline across parcels, but without defining the location or width of the easement. The lack of having a defined easement can result in confusion regarding the location of the transmission pipeline and the rights of the land owner and transmission pipeline operator. This is particularly true where local government regulations contain restrictions such as setbacks, which might be measured from the edge of the easement. By requiring a defined easement prior to allowing development, the local government helps avoid confusion regarding which lands are burdened by the easement rights of the transmission pipeline operator.

**ND07**  

Pipeline Operators Define blanket/ill-defined Easement Agreements When Necessary

**Audience**  

Local Government, Property Developer/Owner, Pipeline Operator
Practice Statement  Upon request by the landowner, the easement agreement should be defined to an acceptable width and location by the pipeline operator. Governments should require easements be defined prior to granting development permits.

Practice Description: Some legacy transmission pipeline easements did not define the location or size of the right-of-way or the location of the pipeline within a parcel of land. Some agreements did not describe the types of activities that could or should not occur on the right-of-way. Blanket easements may give the operator the right to put a replacement pipeline anywhere on the property within the boundaries of the original easement grant.

The lack of clarity can lead to conflicts among stakeholders as to the use of the parcel of land, the location of the transmission pipeline and the rights of the land owner and transmission pipeline operator. This is particularly true where local government regulations contain restrictions such as setbacks, which might be measured from the edge of the easement. By requiring a defined easement prior to granting a development permit, the local government helps avoid confusion regarding which lands are burdened by the easement rights of the transmission pipeline operator. Mortgage companies may also require the easement be defined prior to providing a mortgage. Some States require the easement owner of blanket or ill-defined easements define the right-of-way to a specific description when requested by the landowner. Additionally, most operators have a process for defining the right-of-way to a specific description when requested.

The process of defining an easement is not a renegotiation of the easement. When an easement is defined, the operator may also add more specific language describing allowable activities or uses within the easement. The redefined easement shall be recorded at the appropriate statutory office (i.e. county recorder, parish clerk). Often mortgage companies and landowners need the location of the pipeline within the right-of-way and the boundaries of the pipeline right-of-way defined in order to grant or obtain a mortgage.
Old Practice # PTP A-2

<ND08>Development of the Pipeline Transmission Right-of-Way</ND08>

Audience: Property Developer/Owner, Local Government, Pipeline Operators

Practice Statement: Visual examples of successful Property developers/owners, local governments and pipeline operators may collaborate efforts as well as situations to avoid while to enhance and maintaining the pipeline right-of-way, and maintaining the safety and integrity of the pipeline facilities.

Practice Description:
Transmission pipeline transmission rights-of-way have the potential to be enhanced for the benefit of the community and/or the property developer/landowner while maintaining the safety and integrity of the transmission pipeline facilities. Property developers/landowners and local governments and developers may have worked with operators to find ways to more fully enjoy the use of the property that includes the transmission pipeline easement by creating green spaces, parks, golf courses, horse trails, snow mobile trails and other recreational spaces. The stakeholders should consider who maintenances the enhanced ROW and how they maintain it. Some local governments and property developers/owners have worked together with support of the operator to mutually benefit the community and the developer by exchanging incentives such as higher building density for enhancement of the transmission right-of-way. Appendix D This guidance is intended for use by city and county planners, engineers, developers, land surveyors and anyone involved in the initial stages of land development on or near existing transmission rights-of-way. These visual examples that follow illustrate both successful collaborative efforts and situations to avoid. Working together, property developers/owners, pipeline operators and local governments planners ensure that transmission pipelines can be constructed, operated, maintained, repaired, modified, protected, removed, replaced and accessed in a safe and efficient manner and that the pipeline operator’s rights provided by the easement agreement are honored.

While there are limitless ways to safely develop a right-of-way, certain criteria should be met. The right-of-way should be a clearly defined pipeline transmission pipeline corridor that blends with the surroundings. It should not be disguised. The width, generally about 50’, varies depending on the size and number of pipelines, the product transported, site specific conditions and operator practices. Permanent structures, significant grade changes, and large landscaping will generally not be acceptable. The operator may require the right to disturb the developed use of the right-of-way in order to maintain and access the pipeline transmission pipeline. While analyzing potential development of the right-of-way, the operator will consider potential loading, corrosiveness to the pipeline, increased likelihood of third party damage and the ability to monitor and maintain the pipeline. For incident and emergency response planning, the operator will consider public escape routes, emergency responder access and situation control, site specific product spill characteristics and potential environmental impact. The operator will need to establish an effective pipeline transmission pipeline marking strategy that will help keep markings in place.

Development on or near transmission pipelines increases the probability of excavation damage. In an ideal layout, the entire easement width should be reserved as a green space or other community use. It is also desirable to have as few landowners affected by the easement as possible. A lot division on either boundary of the easement is preferable to splitting the easement between lots. If the lot division is configured on top of the pipeline transmission pipeline, there may be loss of lot because no fences should be built paralleling the pipeline within the right-of-way. Construction, maintenance and routine inspections can be disruptive to the landowner when the easement is split between lots. All stakeholders should consider ways to mitigate this risk throughout the lifetime of the use of the developed right-of-way. Additionally, local building codes will need to be reviewed for building setback requirements from a transmission pipelines.

Individual operators may have different maintenance and operations practices which could make a specific type of development acceptable to one operator but not to another. Each Pipeline operators will need enough
lead time to review site specific development plans. Generally the operator will request a scope of work, description, and plan and profile drawings of the proposed development. The operator may charge for the review if the nature of the development requires extensive preliminary engineering and/or field inspection services. A clear understanding of the owner’s and pipeline operator’s rights, restrictions and responsibilities should be legally documented. Examples of types of land use agreements commonly used are encroachment agreements, encroachment permits, easement amendments, reimbursement agreements, partial releases and letters of no objection.

Development activities near the right-of-way may affect the integrity of the pipeline transmission pipeline and the safety of the public. Property developers/owners should also consult the operator as early as possible if you are when planning development land near the right-of-way. Development activities or uses near the right-of-way that may affect the integrity of pipeline include but are not limited to blasting, contouring or terracing, clear cutting, retention ponds, drainage, walls and fences, excavations (pools, decks, roads), drilling, boring and landscaping. Early consultation can help reduce the chance for project delays and ensure that safe development activities can be implemented.
ND09 Credit Developer for Providing Open Space In Close Proximity to the -Right-of-Way

Old Practice # Comm 7

Audience Local Government

Practice Statement Local governments should consider allowing site planning flexibility in the development of commercial, industrial or residential property whenever a transmission pipeline is located ion, or in close proximity to, the proposed development. The goal should be to allow the same overall density of development while providing more space between the transmission pipeline and the development, if there are indications that such flexibility would provide greater safety.

Practice Description: Site planning flexibility has been incorporated into the development regulations of many jurisdictions, often to accommodate development when there are environmental constraints, such as wetlands. Local governments have allowed clustered, higher-density development within broader swaths of open space thereby preserving the sensitive areas and creating a buffer area from them. The goal should be to allow the same overall density of development while providing more space between the transmission pipeline and the development, if there are indications that such flexibility would provide greater safety. While solutions are site specific, there will be some parcels, due to the parcel’s topography, shape or size, where such accommodation may not be possible. But, to the extent possible, local governments are encouraged to adopt regulations that allow creative designs that meet the needs and public and pipeline safety concerns of the local government, the transmission pipeline operator and the developer or owner of the property.

References:

• Vancouver, Washington Municipal Code chapter 20.940, On-Site Density Transfers, for analogous land regulations that are used as described above when “sensitive lands and cultural resources” are located on the property.
• Richland, Washington Municipal Code 22.10.340, example of density transfer used to provide flexibility when there is a “sensitive area and associated buffer area or setback”.
### ND10  Record Transmission Pipeline Easements on Development Plans and Final Plats Filings Should Include Transmission Pipeline Easements

**Old Practice # Comm 10**

**Audience**  Local Government & Property Developer/Owner

**Practice Statement**  Local governments should require that all development plans and final plats recorded with the appropriate statutory body filed in the official land records clearly show the location of transmission pipeline easements.

**Practice Description**: Because final plats and other recorded land records are a primary source for property records research those seeking information about real estate, those records should show the location of all transmission pipeline easements.

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

**Old Practice # PC-5**

**Audience**  Local Governments, Property Owners/Developers

**Practice Statement**  Parking lots and parking structures should be located and designed to mitigate the impact of a potential transmission pipeline incident.

**Practice Description**: Parking lots and parking structures may be located between occupied structures and a transmission pipeline to mitigate the impact of a pipeline incident affecting the occupied structure.

Parking lots that encroach on the transmission pipeline easement require written permission from the pipeline operator. Medians and islands adjacent to the ROW should not contain trees that would obscure the ROW, but shrubs and other low landscaping are generally acceptable. Parking lots between a pipeline and building should have an “air gap” between the parking lot and building to reduce the potential for gas leaks migrating underneath the parking lot and into the building. The effect of water runoff affecting the pipeline cathodic protection and soil cover should be considered when designing the parking lot.

The developer should keep in mind that the parking lot might be disturbed by pipeline maintenance activities, including excavation. The pipeline operator may also need to place pipeline markers along their easement, possibly within the parking lot itself.

In addition, enhanced fire protection of parking structures and/or enhanced fire endurance may also be implemented to further mitigate the impact of a potential transmission pipeline incident.

**References**: NFPA 101, NFPA 88A (Standard for Parking Structures).
Mitigate Impact of a Transmission Pipeline Release in the Design of New Roads

Old Practice # PC-6

Audience  Local Governments, Property Developers/Owners, Pipeline Operator

Practice Statement  Roads and associated appurtenances should be designed to reduce the risk of a potential pipeline transmission pipeline incident and mitigate the impact of the development on the pipeline.

Practice Description:  Design and construction of roads near a pipeline transmission pipelines is complex and requires careful planning and coordination between operator, local authority, and the road constructor. Roads that cross the ROW should be designed such that the pipeline is not adversely affected, including provision of adequate depth of cover for the pipeline. Intersections generally should not coincide with a pipeline ROW, because this could cause increased exposure to hazards for vehicles stopped at the intersection. Also, a pipeline incident in the area of the intersection could result in closure of both roads. Roads should generally be placed perpendicular relative to the long axis of the pipeline, which generally reduces the loads on the pipeline from vehicle traffic. If the road is placed parallel to the pipeline, the road should be placed outside of the pipeline ROW. If the ROW is narrow, additional consideration should be given to designing the road to prevent adverse effects on the integrity of the pipeline. Modifications to the pipeline may also be made to preserve its integrity if a road is built nearby.

Roads with very wide medians might be able to accommodate a pipeline transmission pipeline ROW with the agreement of the pipeline owner or operator, but keeping in mind that a pipeline may requires maintenance throughout or excavation within the pipeline ROW. The presence of a pipeline within a wide median may also prevent or limit the ability to place landscaping within the median.

If a road near, or crossing, a pipeline transmission pipeline serves as the only means of emergency access or egress, then local emergency plans should identify an alternate emergency access and egress route.

Roadside appurtenances (bridges, sound barriers, etc.) should be designed so they do not adversely affect operator access to the ROW and do not interfere with cathodic protection systems.

A development may avoid costly relocation of pipeline transmission pipeline facilities if roads and appurtenances that require specific grades for drainage (such as storm drains, sewers, etc.), are designed to avoid conflicts with the pipeline.

References:


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

Old Practice # PC-14

Audience Local Governments, Property Developers/Owners, Pipeline Operator

Practice Statement Utilities (both above and below ground) and related infrastructure should be designed to reduce the potential of interference with pipeline maintenance and inspections and to reduce the risk of a pipeline incident.

Practice Description: Utilities that cross and/or parallel transmission pipelines should be developed in close cooperation with the operator of the pipeline to avoid costly relocation of the pipeline or potential conflict with pipeline operations and maintenance. Utilities crossing the transmission pipeline should be designed so they do not interfere with the pipeline, including its cathodic protection, and provide the pipeline operator access to the line.

Coordination with the pipeline operator during planning and construction is critical given the history of pipeline transmission pipeline accidents associated with utility installation and maintenance. The pipeline’s horizontal and vertical orientation must be considered, including any offset distance required by the pipeline operator.

Utility excavation is a significant third-party threat to pipelines. A large percentage of pipeline accidents are caused by installation and maintenance of underground utilities. Developers and planners should consider this risk when planning to locate utilities near pipelines.

References: CGA Best Practices, API Recommended Practice 1102, 192.467, API RP-1162

ND14 Mitigate the Potential Impact of Aboveground Water Management Infrastructure

Old Practice # PC-15

Audience Local Governments, Property Developers/Owners

Practice Statement Storm water, irrigation water, and drinking water management facilities, retention ponds, and other above-ground water management infrastructure should be designed and located to reduce the risk or mitigate the impact of a pipeline transmission pipeline incident.

Practice Description: Storm water, irrigation water, and drinking water management facilities, retention ponds, and other above-ground water management infrastructure may be located between occupied structures and a pipeline to reduce the risk or mitigate the impact of a pipeline incident affecting the structure.

Discharges from ponds and other drainage facilities should be designed such that they do not cause erosion or compromise soil stability that could result in reduction of the soil cover over the pipeline or otherwise compromise pipeline operations and maintenance. Culverts, and other enclosed or at-grade drainage systems should be designed to reduce the risk of a potential liquid and denser-than-air gas release from flowing into the drainage system. Alternatively, if the flow path to enclosed or at-grade drainage systems cannot be avoided, emergency response personnel should consider this scenario in response plans, as appropriate. The potential for environmental contamination by releases into drainage facilities and retention basins and downstream environmentally sensitive areas should also be considered.

Vegetated strips and other soft storm water treatment devices placed adjacent to the pipeline transmission pipeline ROW may be a compatible land use with pipeline operations and maintenance.

References: Federal (BLM, Army Corps of Engineers, USFWS, USFS, Bureau of Reclamation, etc.), state and local erosion and sediment control and storm water management regulations. 40 CFR 122, National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Regulations
**ND15 Mitigate Trees/Vegetation Interference with Transmission Pipeline Activities**

**Old Practice # PC-7**

**Audience**  Local Governments & Property Developers/Owners

**Practice Statement**  Trees and vegetation should be located to reduce the potential of interference with pipeline transmission pipeline maintenance and inspections and to reduce the risk of a pipeline incident.

**Practice Description:** State and Federal regulations require transmission pipeline operators to frequently visually inspect their pipeline ROW. These inspections are often done by air using helicopters or planes. For this reason, pipeline operators may keep their ROW clear of trees and tree branches that overhang and obscure the ROW. Pipeline operators may also side-cut trees if they obscure or impede the inspection and maintenance of the ROW.

Trees and vegetation should not obstruct pipeline transmission pipeline ROW, markers, or signage. Trees and vegetation adjacent to the ROW with broad canopies that overhang the ROW should also be avoided, since they may obscure the ROW.

Similarly, trees and vegetation should be located so that they do not impede the operator’s access to inspect and maintain the pipeline transmission pipeline. Trees and vegetation adjacent to the ROW should be controlled in an ongoing effort to allow maintenance and inspection of the pipeline.

Trees and vegetation adjacent to the ROW with root systems that may reach a pipeline should also be avoided, since they may impact the pipeline.

The landowner/developer and operator should work together using local land use planners and landscape and forestry professionals to make landscape choices that are acceptable.

**References:** Patrolling: 192.705, 192.613, 192.616, 195 equivalents, API RP-1162
ND16  Design Water Supply and Sanitary Systems to Mitigate Contamination and Excavation Damage  
individual Water Supply (water wells), Small Public Water Systems, and Individual Sanitary Disposal Systems  
(septic tanks and leach or drain fields)  

Old Practice # PC-9  
Audience  Local Governments & Property Developers/Owners  
Practice Statement  Individual water supplies (water wells), small public water systems and sanitary disposal  
systems (septic tanks, leach or drain fields) should be located to reduce the potential of interference with  
pipeline/transmission pipeline maintenance and inspections, and to reduce the risk of excavation damagea  
pipeline incident and to reduce potential contamination in the event of a pipeline release.  
Practice Description  Individual water supply systems and individual sanitary disposal systems that are  
required for development in rural areas and that are sometimes in suburban areas should be located so that  
they do not interfere or affect pipelines and related facilities.  Properly locating water/sanitary systems is vital  
to public and pipeline safety.  Installation, operations and maintenance activities of the pipeline and the  
water/sanitary systems should take into consideration potential excavation damage to each other’s facilities.  
issues related to pipelines that should be considered from the installation of individual or small public water  
supply systems: damage to the pipeline during installation of a water well or individual sanitary disposal  
system.  A pipeline release- has the potential to contamination of the wells due to product release from a  
pipeline.  
Pipeline Transmission pipeline and pipeline appurtenance (e.g., cathodic protection system) locations should be  
clearly identified if a well is to be installed near a pipeline.  Drill rigs should stay clear of the ROW to ensure no  
direct damage to the pipeline or appurtenances from drilling or movement of the drill rig.  
The primary concern in installing individual sanitary disposal systems (septic systems and leach or drain fields)  
involves the excavation, installation, and maintenance of the septic tank and drain field.  Consideration should  
be given to the drain field location so it is not placed in an area where heavy equipment used in pipeline  
maintenance might damage the drain field’s below-ground piping.  
Generally, the best way to reduce the risk of contaminating a water well from a liquid pipeline spill is to place  
the well up-gradient from the liquid pipeline (groundwater hydraulic gradients don’t necessarily follow surface  
topography).  Wells that cannot be placed up gradient of a liquid pipeline can reduce contamination risk by  
increasing down-gradient distance from the pipeline and by ensuring that wellheads are properly sealed.  Gas  
pipelines do not typically pose a threat for water contamination, unless liquids are present in the gas stream.  
References:  State and local health department regulations having authority for environmental and drinking  
water regulations and for conducting vulnerability assessments of drinking water wells, state rural water  
association, local well-head protection area,  
CGA Best Practices
ND17 Mitigate Impact of a Potential Transmission Pipeline Release in New Residential, Mixed-Use, and Commercial Land Use

Old Practice # PC-4

Audience Local Governments Property Owners/Developers, Pipeline Operators

Practice Statement Buildings within the Planning Zone (BL06) should be designed to mitigate the impact of a potential transmission pipeline incident (see practice “Definition of Planning Zone”).

Practice Description: While transmission pipelines have an admirable safety record, it is prudent to design buildings and related facilities in a manner that mitigates the potential impact due to a pipeline incident to people and property. Buildings within the planning zone should be designed to mitigate the impact of a potential pipeline incident within a planning zone. Locating structures away from the right-of-way, minimizing encroachments, and incorporating more stringent building fire safety measures are examples of mitigation techniques.

The residence and associated structures should not normally be allowed on the easement unless there are specific encroachment agreements from the transmission pipeline operator, not encroach on the pipeline easement.

Whenever possible roads, driveways, utilities, lot boundaries, green space, and fences, should be planned to provide adequate access and minimum interference with pipeline operations and maintenance and maximum use and enjoyment for the residents. These features should allow access for emergency response to pipeline transmission pipeline incidents (see ND23 practice PC-3).

Residential landscape should be planned for maxim value and enjoyment for the residents while maintaining a clear right of way for the pipeline(s) (see practice PC-7 Trees and Vegetation).

Residential owners should be provided with an easement agreement and a survey/accurate drawing showing the location of the pipeline transmission pipeline and extent of the right-of-way, easement and right of way agreement regarding their parcel and or planned development.

The landowner or developer should consider what is allowed under the pipeline right of way easement agreement with respect to the siting of aboveground facilities such as compressor stations, metering stations, valves, pipeline markers, and cathodic protection systems (see ND18 practice PC-16 Above-ground Pipeline Facilities). The developer or landowner and local government should work with the pipeline operator to ensure that current or potential future locations of these facilities would not create interference between the development and the operation and maintenance of the pipeline and facilities. Also, development of the property should consider the current or potential future location of these facilities.

Depending on the potential impact of a pipeline transmission pipeline incident at this location, evacuation or shelter-in-place of a building may be warranted. If evacuation is warranted, evacuation routes should be routed in such a manner to ensure that the potential incident will not compromise the evacuation. For example, buildings should have a safe means of egress, such as exits located in such a manner that they would not be affected by a pipeline incident.

High-rise buildings, such as hotels, dormitories, apartment complexes, and office buildings, may warrant particular evacuation procedures beyond the normal and may not lend themselves to a timely evacuation. Specific emergency plans addressing pipeline transmission pipeline incidents should be developed for the site and/or integrated with existing overall emergency plans for the site. The emergency plans for the site should be developed in coordination with the pipeline operator (see ND23 PC-3 Emergency Response).

NFPA 1, NFPA 101, NFPA 5000, IBC, IRC, and IFC provide minimum standards for means of egress, including capacity, quantity, arrangement, location, protection, and marking of means of egress. Minimum standards for emergency plans are also provided, where applicable.
In addition, enhanced fire protection of buildings (i.e. automatic sprinklers, water screens, exposure protection, air handling/ventilation systems, etc) and/or enhanced fire endurance (non-combustible construction, window limitation, etc) may also be implemented to further mitigate the impact of a potential pipeline transmission pipeline incident. NFPA 1, Uniform Fire Code™, provides minimum standards for separation distances for various occupancies based on fire endurance (in hours) and incorporates many other NFPA codes and standards (by reference) for fire protection. NFPA 5000 and IBC provide minimum standards for fire endurance of various buildings. Enhanced fire protection and fire endurance measures may be implemented for all categories of buildings considered under this recommended practice.

Local government agencies or developers may consider modeling of fire, explosion, or toxic release impacts that could occur during an incident for the specific land use under consideration. If appropriate, facility design should take this modeling into account to minimize potential impacts.

For high-rise buildings near flammable and toxic product pipelines, the design of the air supplies for HVAC and stair pressurization systems may want to consider automatic shutdown if flammable concentrations or toxic vapors are detected, or locating the intake to reduce the potential of flammable or toxic vapor from entering into the stairwell.

**References:**

NFPA 1, NFPA 101, NFPA 5000, IBC, IRC, IFC (see Appendix for more information).

49 Code of Federal Regulations, Parts 192 and 195

24 CFR Part 51, subpart C (Environmental Criteria and Standards for HUD projects)
ND18 Consider Noise and Odor Associated with Pipeline Operations in the Design of Residential, Mixed-Use, and Commercial Land Use near above-ground pipeline facilities, such as compressor stations, pumping stations, odorant equipment, regulator stations and other pipeline appurtenances.

Old Practice # PC-16

Audience Local Governments, Property Developers/Owners, Pipeline Operators

Practice Statement Consider noise, odor and other issues when planning developments near above-ground pipeline transmission pipeline facilities, such as compressor stations, pumping stations, odorant equipment, regulator stations and other pipeline appurtenances.

Practice Description: Above-ground pipeline transmission pipeline facilities, such as compressor stations, pumping stations, regulator stations, launcher/receiver stations and other pipeline appurtenances may generate noise and odors. These may not be initially noticed in some settings until a land use is modified or a development is placed near the pipeline facility that places people and other human activities in close proximity to the pipeline for extended periods of time. Examples of activities on above-ground sites that may have an adverse impact on adjacent land development are as follows:

• Gas compressor stations may utilize reciprocal engines and compressors, which generate “thumping” noises;
• Gas turbines may emit steady or periodic high-frequency noises;
• Start-up and shut-down may introduce intermittent purging and blow-down noises and odors;
• Heat exchangers or other equipment may have visible emissions to the air;
• Generators utilized for power back-up systems may be exercised periodically; and
• Repairs and maintenance may require heavy construction equipment.

Sound-insulating equipment, such as silencers or sound-reduction air plenums, electric compressor and pump drivers, natural foliage, distance and other sound-deadening considerations may mitigate noise concerns.

The developer may consider additional measures to further reduce noise or visible effects from these facilities.

The pipeline operator should provide information regarding the above-ground appurtenances to the authority having jurisdiction for regulating development to ensure that there is an adequate understanding of the operational requirements of the site and to encourage land use planners to incorporate pipeline coordination in their plan approval process (see BL03 practice PC-4). The authority regulating development should use this information to establish requirements for development around the particular above-ground site based upon the guidance on specific land uses herein.

Developments around gas compressor and pumping stations should avoid practices or layouts that would adversely affect normal operation and maintenance of the facility.

Equipment at regulator stations is generally designed to avoid relief valves that release gas to the atmosphere. Facilities used to odorize natural gas are designed to minimize odorant emissions. However, development adjacent to these types of facilities should consider occasional releases or spills that may cause nearby residents concern. Layout of development should minimize exposures to these types of facilities.

Power lines providing service to electric compressor/pumping stations need to be integrated into developments so that the service is not compromised.
### ND19 Account for Impact of a Transmission Pipeline Incident in Design of New Industrial Land Use Development

**Old Practice # PC-10**

**Audience**  Property Developer/Owner & Local Government

**Practice Statement**  Heavy industrial land use development should be designed to reduce the risk of escalation from a potential transmission pipeline incident.

**Practice Description:** Industrial, storage, freight, train, or marine terminals, and other industrial land uses that may have flammable liquid or gas storage, highly toxic chemicals, explosives, or other substances may escalate the hazard if ignited or compromised from a potential pipeline transmission pipeline incident. The design should consider more complex emergency response requirements and should include coordination with the pipeline operator. For example, flammable liquid or gas storage tanks may need to be located farther from the transmission pipeline or designed to reduce the risk of escalation of a potential pipeline incident. NFPA 1 provides standards on spacing of hazardous materials to minimize an escalation of a hazard, but does not specifically address pipelines.

Similarly, power plants, gas plants, water supplies, water treatment plants, and other critical infrastructure that serve the public welfare may further exacerbate the incident if compromised by a potential pipeline incident. Specific site emergency response plans should also be developed for these sites. The site emergency response plans should include coordination with the pipeline operator. Liquid or dense gas flow into water supplies, drainage channels, culverts, etc should be evaluated. For additional information on water supplies and water treatment plants, see **ND16 Land Use Considerations: Water Supply and Sanitary Disposal System**.

Local government agencies or developers may consider modeling of fire, explosion, or toxic release impacts that could occur during an incident for the specific land use under consideration. If appropriate, facility design should take this modeling into account to minimize potential impacts.

It should be noted that pipeline operators are required to provide emergency liaison and consultations by existing pipeline safety regulations. Gas and liquid pipeline operators must maintain, modify as appropriate, and follow the plans, procedures and programs they are required to establish under Title 49 Code of Federal Regulations, Parts 192 and 195, respectively.

In addition, the Pipeline and Hazardous Materials Safety Administration has formed partnerships, funded research and programs, and has published supplementary documents to assist pipeline operators, emergency response personnel, and others in developing an emergency response plan.

**References:** NFPA 1 (hazardous materials), other NFPA standards, Title 49 Code of Federal Regulations, Parts 192 and 195
Mitigate Impact of a Transmission Pipeline Incident in the Design of New Institutional Land Use Developments

Old Practice # PC-11

Audience  Property Developer/Owner, Local Government

Practice Statement  Healthcare, daycare, detention and correctional facilities, educational occupancies, and other potentially difficult to evacuate facilities should be constructed and/or located to mitigate the impact of a potential pipeline transmission pipeline incident and should have emergency plans for potential pipeline incidents.

Practice Description: Development that includes institutional land uses (e.g., health-care, day-care, detention and correctional facilities, educational occupancies, and other potentially difficult to evacuate facilities) should place these facilities in locations on the property to mitigate the impact of a potential pipeline incident. The facilities should be designed to minimize the impact of a potential pipeline incident.

Depending on the potential pipeline incident, evacuation or shelter-in-place of a building may be warranted. If evacuation is warranted, evacuation routes should be routed in such a manner to ensure that the potential incident will not compromise the evacuation. For example, buildings should have a safe means of egress, such as exits located in such a manner that they would not be affected by a pipeline incident.

Health care, day care, detention and correctional facilities, and other difficult to evacuate facilities may warrant particular evacuation procedures and may not lend themselves to a timely evacuation. Specific emergency plans addressing pipeline transmission pipeline incidents should be developed and integrated with existing overall emergency and/or relocation plans. The emergency plans should be developed in coordination with the pipeline operator, as necessary.

In addition, enhanced fire protection of buildings (i.e. automatic sprinklers, water screens, exposure protection, air handling/ventilation systems, etc) and/or enhanced fire endurance (non-combustible construction, window limitation, etc) may also be implemented to further mitigate the impact of a potential pipeline transmission pipeline incident. NFPA 1, Uniform Fire Code™, provides minimum standards for separation distances for various occupancies based on fire endurance (in hours) and incorporates many other NFPA codes and standards (by reference) for fire protection. NFPA 5000 and IBC provide minimum standards for fire endurance of various buildings.

Local government agencies or developers may consider modeling of fire, explosion, or toxic release impacts that could occur during an incident for the specific land use under consideration. If appropriate, facility design should take this modeling into account to minimize potential impacts.

NFPA 101 provides minimum standards for emergency, evacuation, and relocation plans for health care, day care, detention and correctional facilities. These plans should include a potential pipeline incident and should be planned in coordination with the pipeline operator, as necessary. NFPA 1, NFPA 101, NFPA 5000, IBC, and IFC provide minimum standards for means of egress, including capacity, quantity, arrangement, location, protection, and marking of means of egress. Minimum standards for emergency plans are also provided, where applicable.

For high-rise buildings with pressurized stairwells near flammable and toxic product pipelines, the design of the air supplies for HVAC and stair pressurization systems may want to consider automatic shutdown if flammable concentrations or toxic vapors are detected, or locating the intake to reduce the potential of flammable or toxic vapor from entering into the stairwell.

It should be noted that pipeline operators are required to provide emergency liaison and consultations by existing pipeline safety regulations. Gas and liquid pipeline operators must maintain, modify as appropriate, and follow the plans, procedures and programs they are required to establish under Title 49 Code of Federal Regulations, Parts 192 and 195, respectively.
In addition, the Pipeline and Hazardous Materials Safety Administration has formed partnerships, funded research and programs, and has published supplementary documents to assist pipeline operators, emergency response personnel, and others in developing an emergency response plan.

Information will also be available as part of ongoing public awareness efforts by pipeline operators.

References: NFPA 1, NFPA 101, NFPA 5000, IBC, IFC, NFPA 99,
49 CFR 192.616, 192.903, 192.905, Public awareness regs., API RP-1162
ND21 Mitigate the Impact of a Transmission Pipeline Incident in the Design of New Public Safety and Enforcement Facilities

Old Practice # PC-12

Audience Local Governments, Property Developer/Owner

Practice Statement Police stations, HAZMAT response, fire departments, fire and rescue, emergency communications facilities, and other emergency responder facilities should be constructed or located to mitigate the impact of a potential pipeline transmission pipeline incident and should have emergency plans for potential pipeline incidents.

Practice Description: Police stations, HAZMAT response, fire departments, fire and rescue, emergency communications facilities, and other facilities that house emergency responders serve a critical role in public welfare. Emergency response facilities and services such as police and fire structures, parking lots, offices, communications and dispatch centers, etc. should be designed and located to minimize the impact of a pipeline transmission pipeline incident affecting emergency response capabilities. Access to and egress from such facilities should be planned and implemented to avoid any impairment of the ability of emergency personnel to respond pipeline incidents in order to address public safety issues.

If such facilities are located within the planning zone, then in order to reduce the risk of a pipeline transmission pipeline incident affecting the facilities (i.e. impair/interrupt capabilities), specific emergency response plans should be developed and integrated with existing overall emergency and/or relocation plans for these sites. The emergency response plans for the site should be developed in coordination with the pipeline operator, as necessary.

In addition, enhanced fire protection of buildings (i.e. automatic sprinklers, water screens, exposure protection, air handling/ventilation systems, etc) and/or enhanced fire endurance (non-combustible construction, window limitation, etc) may also be implemented to further mitigate the impact of a potential pipeline incident. NFPA 1, Uniform Fire Code™, provides minimum standards for separation distances for various occupancies based on fire endurance (in hours) and incorporates many other NFPA codes and standards (by reference) for fire protection. NFPA 5000 and IBC provide minimum standards for fire endurance of various buildings.

Local government agencies or developers may consider modeling of fire, explosion, or toxic release impacts that could occur during an incident for the specific land use under consideration. If appropriate, facility design should take this modeling into account to minimize potential impacts.

It should be noted that pipeline operators are required to provide emergency liaison and consultations by existing pipeline safety regulations. Gas and liquid pipeline operators must maintain, modify as appropriate, and follow the plans, procedures and programs they are required to establish under Title 49 Code of Federal Regulations, Parts 192 and 195, respectively.

In addition, the Pipeline and Hazardous Materials Safety Administration has formed partnerships, funded research and programs, and has published supplementary documents to assist pipeline operators, emergency response personnel, and others in developing an emergency response plan.

References: NFPA 1, NFPA 101, NFPA 1201, NFPA 5000, IBC, IFC
40 CFR 355
49 CFR 192 and 195
Local codes, Local Emergency Planning Committees regs.
Mitigate the Impact of a Transmission Pipeline Incident in the Design of New Places of Mass Public Assembly (Identified sites)

Old Practice # PC-13

Audience  Local Governments, Property Developers/Owners

Practice Statement  Places of potential mass public assembly (e.g., amusement parks, stadiums, amphitheatres, highway rest stops, churches), should be constructed or located to mitigate the impact of a potential transmission pipeline incident and should have emergency plans for potential pipeline incidents.

Practice Description: Places of potential mass public assembly (e.g., amusement parks, stadiums, amphitheatres, and other large public assemblies (for deliberation, worship, entertainment, eating, drinking, amusement, awaiting transportation, or similar uses) should be constructed or located to mitigate the impact of a potential transmission pipeline incident and provide emergency plans for potential pipeline incidents.

Development that includes places of mass public assembly should place these facilities in locations on the property to mitigate the impact of a potential transmission pipeline incident. The facilities should be designed to minimize the impact of a potential pipeline incident.

In addition, such areas may warrant particular evacuation procedures and may not lend themselves to a timely evacuation. Specific emergency plans addressing transmission pipeline incidents should be developed and/or integrated with existing overall emergency and/or relocation plans for these sites. The emergency plans should include coordination with the pipeline operator, as necessary.

Depending on the potential transmission pipeline incident, evacuation or shelter-in-place may be warranted. If evacuation is warranted, evacuation routes should be routed in such a manner to ensure that the potential incident will not compromise the evacuation. For example, buildings should have a safe means of egress, such as exits located in such a manner that they would not be affected by a pipeline incident.

NFPA 101 provides minimum standards for emergency and evacuation plans for assembly occupancies. These plans should include a potential pipeline incident and should be planned in coordination with the pipeline operator, as necessary. NFPA 1, NFPA 101, NFPA 5000, IBC, and IFC provide minimum standards for means of egress, including capacity, quantity, arrangement, location, protection, and marking of means of egress. Minimum standards for emergency plans are also provided, where applicable.

In addition, enhanced fire protection of buildings (i.e. automatic sprinklers, water screens, exposure protection, air handling/ventilation systems, etc) and/or enhanced fire endurance (non-combustible construction, window limitation, etc) may also be implemented to further mitigate the impact of a potential transmission pipeline incident. NFPA 1, Uniform Fire Code™, provides minimum standards for separation distances for various occupancies based on fire endurance (in hours) and incorporates many other NFPA codes and standards (by reference) for fire protection. NFPA 5000 and IBC provide minimum standards for fire endurance of various buildings.

Areas covered under this practice should include “identified sites” per the gas transmission pipeline integrity management regulations (49 CFR 192.903), such as an outside area or open structure that is occupied by twenty (20) or more persons on a regular basis (50 days or more in any 12-month period) Such identified sites may include, but are not limited to, beaches, playgrounds, recreational facilities, camping grounds, outdoor theaters, stadiums, recreational areas, parks, areas outside a rural building such as a religious facility, amusement parks, stadiums, amphitheatres, agricultural gathering areas, and other large public assemblies.

It should be noted that pipeline operators are required to provide emergency liaison and consultations by existing pipeline safety regulations. Gas and liquid pipeline operators must maintain, modify as appropriate, and follow the plans, procedures and programs they are required to establish under Title 49 Code of Federal Regulations, Parts 192 and 195, respectively.
In addition, the Pipeline and Hazardous Materials Safety Administration has formed partnerships, funded research and programs, and has published supplementary documents to assist pipeline operators, emergency response personnel, and others in developing an emergency response plan.

**References:** NFPA 1, NFPA 101, NFPA 5000, IBC, IFC, NFPA 102 (Standard for Grandstands, Folding and Telescopic Seating, Tents, and Membrane Structures, 2006)

49 CFR 192.903, 195.450
ND23 Incorporate Emergency Response Plans into Land Development

Old Practice # PC-3

Audience Local Governments & Property Developers/Owners

Practice Statement Emergency response plans requirements should be incorporated into land use development within the planning zone to mitigate the impact of a potential pipeline transmission pipeline incident affecting the community.

Practice Description: Effective emergency response planning can reduce the risk of a potential transmission pipeline incident by providing for timely response and situational control. The site emergency response plans should include coordination with the pipeline operator. Current regulations address pipeline operator consultation with emergency response personnel to better facilitate emergency response; however, current regulations do not explicitly address the potential impact of the occurrence in proximity to the pipeline transmission pipeline or right-of-way that may so as not to impede emergency response to a pipeline incident. Emergency response plans should be incorporated to reduce the risk of a potential pipeline incident affecting the community. Emergency response plans are critical for the timely response and control of any incident, including pipeline incidents. Emergency response requirements plans include the following:

a) Access to shutoff valves,

Operator access to shutoff valve(s) ensures that the transmission pipeline can be shutoff to mitigate the impact (duration and volume of release) from a pipeline incident. Development plans should clearly indicate the access to shutoff valves. The access should be coordinated with the pipeline operators. Access routes should consider access to areas that may be locked or gated for security and privacy purposes (i.e., private or gated communities, secured facilities, etc).

b) Access for emergency response personnel/equipment

Development plans should include emergency access and turnabouts, as needed. The emergency response access route should be of appropriate width to accommodate the emergency response equipment and the turnabouts should be of appropriate turning radius to facilitate forward or reverse hose lays and/or exit of any emergency response equipment. Access routes should consider access to areas that may be locked or gated for security and privacy purposes (i.e., private or gated communities, secured facilities, etc). NFPA 1 and IFC provide minimum standards for the plans, construction, specifications, and maintenance of access routes for emergency responders.

c) Location/capacity of firewater hydrants (as appropriate)

Although firewater is not typically used to extinguish flammable liquid or gas fires, firewater may be used to cool exposed structures to prevent fire spread. If use of hydrants is anticipated, the location and capacity of hydrants should be evaluated to ensure that there are hydrants available, that they are accessible and reliable, and that they are of adequate capacity. NFPA 1 and IFC provide minimum standards for the location and supply of hydrants.

d) Potential ICS, triage, and staging areas (as appropriate).

It may be beneficial to identify that there is ample amount of room in the vicinity for a potential incident command systems, triage, and staging areas. These may be included in the locality's Master Plans.

Operator access to shutoff valve(s) ensures that the pipeline can be shutoff to mitigate the impact (duration and volume of release) from a pipeline incident. Development plans should clearly indicate the access to shutoff valves. The access should be coordinated with the pipeline operators. Access routes should consider access to areas that may be locked or gated for security and privacy purposes (i.e., private or gated communities, secured facilities, etc).
Development plans should include emergency access and turnabouts, as needed. The emergency response access route should be of appropriate width to accommodate the emergency response equipment and the turnabouts should be of appropriate turning radius to facilitate forward or reverse hose lays and/or exit of any emergency response equipment. Access routes should consider access to areas that may be locked or gated for security and privacy purposes (i.e., private or gated communities, secured facilities, etc). NFPA 1 and IFC provide minimum standards for the plans, construction, specifications, and maintenance of access routes for emergency responders.

Although firewater is not typically used to extinguish flammable liquid or gas fires, firewater may be used to cool exposed structures to prevent fire spread. If use of hydrants is anticipated, the location and capacity of hydrants should be evaluated to ensure that there are hydrants available, that they are accessible and reliable, and that they are of adequate capacity. NFPA 1 and IFC provide minimum standards for the location and supply of hydrants.

It may be beneficial to identify that there is ample amount of room in the vicinity for a potential incident command systems, triage, and staging areas. These may be included in the locality’s Master Plans.

It should be noted that pipeline operators are required to provide emergency liaison and consultations by existing pipeline safety regulations. Gas and liquid pipeline operators must maintain, modify as appropriate, and follow the plans, procedures and programs they are required to establish under Title 49 Code of Federal Regulations, Parts 192 and 195.

In addition, the Pipeline and Hazardous Materials Safety Administration has formed partnerships, funded research and programs, and has published supplementary documents to assist pipeline operators, emergency response personnel, and others in developing an emergency response plan.

References:
NFPA 1 and IFC (see Appendix for more information),
49 CFR Part 192.615, Emergency Plans (see 192.615(c))
www.safepipelines.org
www.pipelineemergencies.com,
NFPA 1141, 1142
PHMSA has combined Recommended Practices:

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Into ND24 Pipeline Operators Install Temporary Markers on the Edge of the Pipeline Right-of-way throughout Construction

The combined practice follows those submitted by the Task Teams.

**Practice #: Comm 12**

**Audience(s):** [Developers/Local Governments]

**Title:** Permit Requirement for Temporary Construction Fencing

**Practice Statement:** When construction or excavation permits are issued for work on land crossed by or adjoining a transmission pipeline, a condition of the permit should require that temporary construction fencing be installed to keep construction equipment and materials off the transmission pipeline. No exceptions should be allowed, except as specifically permitted by the transmission pipeline operator. The fencing should be installed before work begins and remain in place until all construction is complete. The local government or other entity responsible for construction inspections should verify that the fencing is properly installed and maintained.

**Practice Description:** The intent of this requirement is to avoid situations where heavy construction equipment is driven over the transmission pipeline, or heavy materials are stacked on the transmission pipeline, causing soil loading that can impact the integrity of the pipeline. Construction sites often have subcontractors who may not be aware of the transmission pipeline, so temporary fencing is an easy way to lessen the likelihood of inadvertent damage to existing transmission pipelines. Building inspectors visiting the construction site can be tasked with making sure the fencing is maintained during the construction process. [Tabled: check for overlap with TT2 practices before 10/10/08 – Herb Wilhite]

**Old Practice #: PTP E-8**

**Practice Title:** Marking the Edge of Pipeline Operators’ Right-of-Way

**Audience:** Pipeline Operators, Excavators

**Practice Statement:** Pipeline Operators temporarily installs right-of-way markers at the edge of the pipeline operators’ right-of-way to indicate the outer limits when construction abuts the right-of-way.

**Practice Description:** Operator installs markers at the edge of the pipeline right-of-way to provide a clearly defined boundary. The right-of-way markers shall be easily distinguishable from utility, survey and proposed excavation markers. The right-of-way markers should be removed after construction is complete.

* [Picture and caption – moved to combined practice]

**Benefit/Rational:** Placing right-of-way markers during construction near a transmission pipeline right-of-way enhances the awareness of the pipelines presence. Having a physical marker assists in visualizing the proximity of structures and landscaping to the edge of the pipeline operators’ right-of-way. Additionally, the presence of the markers in newly developed residential subdivisions allows prospective buyers to make an informed decision as to whether their building and/or landscaping plans are feasible before committing to a purchase.

**References:** Columbia Gas Transmission Company

**ND24** Pipeline Operators Install Temporary Markers on the Edge of the Pipeline Right-of-way throughout Construction

**Audience** Pipeline Operators

**Practice Statement** Pipeline Operators should install markers or fencing on the edge of the right-of-way prior to construction to provide a clearly defined boundary.
**Practice Description:** To mitigate the risk of excavation damage or overburden to the transmission pipeline due to heavy construction equipment or material storage, edge of the right-of-way markers should be installed to alert construction personnel of the extent of the right-of-way. Placing markers enhances the awareness of the pipelines presence and assists in visualizing the proximity of structures and landscaping to the edge of the pipeline operators’ right-of-way. Additionally, the presence of the markers in newly developed residential subdivisions allows prospective buyers to make an informed decision as to whether their building and/or landscaping plans are feasible before committing to a purchase.

Temporary fencing or modified pipeline markers could be used to mark the edge of the pipeline right-of-way. The right-of-way markers must be easily distinguishable from utility, survey and proposed excavation markers. Local governments may consider the installation of the markers as a condition of the excavation permit. The markers should be installed before work begins and remain in place until construction is complete. The local government or other entity responsible for construction inspections could verify that the fencing is properly installed and maintained.

**Reference:** Columbia Gas Transmission Company

*Construction site adjacent to pipeline operators’ right-of-way – Example of use of Right-or-Way Markers, Construction Fencing and Pipeline Marker – The markers along the left edge of the right-of-way are right-of-way markers. The other marker is a transmission pipeline marker which indicates the location of the transmission pipeline within the pipeline operators’ right-of-way. Notice the concrete pipe and heavy equipment located outside the right-of-way.*
ND25 Property Developer/Owner Contact Pipeline Operator Prior to Excavating and/or Blasting Potentially Affecting the Transmission Pipeline

Old Practice # PC-8

**Audience** Property Developers/Owners & Pipeline Operators

**Practice Statement** Property developers/owners should contact pipeline operators when excavations or blasting has the potential to affect the soil stability of or lead to movement or settling of the soil surrounding the transmission pipeline.

**Practice Description:** Transmission pipelines depend upon the stability of the soil surrounding the pipeline to ensure that the pipeline is adequately supported and is not over-stressed. Excavations (blasting, boring, digging, trenching, drilling, etc.), especially those that are deeper or down-gradient from the transmission pipeline, must be planned and conducted to ensure that they do not undermine the soil supporting the transmission pipeline, either at the time of the excavation, or later due to soil subsidence or settling. Property developers/owners planning excavation or blasting that may affect the transmission pipeline should coordinate with the pipeline operator and provide information about the planned activities. One-call notification is required for all excavations that could affect the pipeline. The pipeline operator should evaluate the potential effect to the pipeline. Any excavation that could reasonably be expected to affect the stability of the soil should be coordinated with the pipeline operator.

*During the excavation or blasting activities, the pipeline operator should continually evaluate any movement of the pipeline and ensure that acceptable stress levels in the pipeline are not exceeded.*

One-call notification is required for all excavations that could affect the pipeline.

Seismic testing or land uses near pipelines that involve regular blasting (e.g., quarrying, mining) may require enhanced communications and coordination between the landowner/property developer/owner and the pipeline operator.

**References:** API RP 1117, Recommended Practice for Movement in In-Service Pipelines, 3rd Edition, 2008.

49 CFR 192.614

CGA Best Practices (Appendix A defines excavation).
ND26 Using, Documenting, Recording and Retaining Encroachment Agreements (or Encroachment Permits) Use, Documentation, Recording and Retention

Old Practice # PTP D-2

Audience Local Government, Property Developer/Owner, Pipeline Operator

Practice Statement Encroachment agreements should be used, documented, recorded and retained when an operator agrees to allow a Property Developer/Owner to encroach on the pipeline right-of-way for a long or perpetual duration in a manner that conflicts with the activities allowed on the easement. Potential changes of a long-term nature in the activity or use of the land within the boundaries of the easement that conflicts with activities allowed by the right-of-way agreement, should include consultation among parties having legal interests in the pipeline right-of-way easement, documentation of in an encroachment agreement, potentially recording decisions with the appropriate statutory office (i.e. county recorder, parish clerk) and retention of documented changes for the life of the encroachment.

Practice Description: A landowner, property developer/owner, local government or other utility may desire to encroach on the pipeline right-of-way for a long or perpetual duration in a manner that conflicts with the activities allowed by the easement agreement. Examples of such encroachment activities or uses include but are not limited to street and road crossings, ornamental fencing, heavy equipment crossings, large diameter utility crossings, pipeline casing extensions, blasting or use of explosives in the vicinity of pipeline facilities, pipeline cathodic protection facilities, driveways, residential lines (water, sewer, television, electric), golf course, biking trail, fencing, and sprinkler systems. The landowner/property developer/owner, local government agency, or utility should contact the pipeline operator and provide information about the proposed encroachment. Necessary information may include a legal description of the land, a description of the desired activity or use in the right-of-way, surveys, plans and drawings. After the encroachments and acceptable uses of the right-of-way are agreed upon, they should be documented in an encroachment agreement by the landowner and the easement owner. Documenting the agreement will help ensure land use activities are not conducted in a manner that could be detrimental to pipeline integrity and public safety. The encroachment agreement may include certain terms and conditions as well as special provisions to which the landowner must adhere. Some examples of common terms and conditions that may be included in but are not limited to an encroachment agreement are 1) location of said activity or use, 2) indemnity of the operator for damage arising from the encroaching activity or use, 3) operator right to remove landowner facilities for future pipeline construction or maintenance, 4) landowner activity or use must be in compliance with all laws and regulations, 5) transferability/binding nature of agreement to future landowners, 6) landowner financial responsibility and 7) landowner abides by state one-call requirements. Examples of special provisions an operator may require involve 1) depth of cover and prohibition of heavy equipment over the pipeline, 2) hand digging and hand compaction near pipeline, 3) exposure of pipeline if boring and 4) minimum clearance of facilities from the pipeline. Operator’s recording practices vary but the agreement should be recorded if the rights and obligation of the encroachment are intended to be transferrable. Recording an encroachment agreement would also serve to make the agreement available to the public. An encroachment agreement identifies and provides notice of encumbrances attached to the property. Access to such records and information is necessary to identify issues that may arise in planning the development and changes in use of the land. Identification of acceptable land uses provides the opportunity to proactively resolve conflicts and issues. Encroachment agreements should be retained by both parties for the duration of the encroachment.

Briefly describe the origin/rationale behind the practice proposal: An encroachment agreement identifies and provides notice of encumbrances attached to the property. Access to such records and information is necessary to identify issues that may arise in planning the development and changes in use of the land. Identification of acceptable land uses provides the opportunity to proactively resolve conflicts and issues. Documenting the agreement will help ensure land use activities are not conducted in a manner that could be detrimental to pipeline integrity and public safety.
Using, Documenting and Retaining Letters of No Objection

Old Practice # PTP D-3

Audience  Property Developer/Owner, Landowner and/or Developer, Pipeline Operator/Owner, Government

Practice Statement  Operators may use, document and may use Letters of Retain Letters of No Objection for two purposes 1) to show agreement of short-term acceptable activities of land on or near the pipeline transmission pipeline rights-of-way and 2) to notify a transmittal between the developer/landowner/government and the operator to signal that the operator does not object to the proposed plans for use of the land on or near the pipeline right-of-way.

Practice Description: Between a landowner/property developer/owner and the pipeline operator, a Letter of No Objection provides interested parties a document that indicates the operator has reviewed plans and does not have objection to the proposed use of land on or near the right-of-way. The document provides details of allowable temporary land use as well as the terms and conditions for use until the land is returned to its original use. Additionally, a letter of no objection may be used to provide a documented response from the operator to the government planner or developer that they have no objection to the proposed development plans. When used for proposed planning, Letters of No Objection provide documented communication between operator and developer/government planner so that activities that adversely affect pipeline safety are identified early in the planning phase. Letters of No Objection are generally not recorded with the appropriate statutory office (i.e. county recorder, parish clerk) but are retained by the operator.

Briefly describe the origin/rationale behind the practice proposal: This provides interested parties documentation of temporary land use until the land is returned to its original use. When used for proposed planning, Letters of No Objection provide documented communication between operator and developer/government planner so that activities that adversely affect pipeline safety are identified early in the planning phase.
ND28  Documenting, Recording and Retaining Partial Release Use, Documentation, Recording and Retention

Old Practice #  PTP D-6

Audience  Local Government, Property Developer/Owner, Pipeline Operator, Real Estate Commissions

Practice Statement  Partial Releases are used to allow some part of the right-of-way to be released from certain easement conditions, should be documented, recorded and retained.

Practice Description: An existing easement may encumber an area of the right-of-way that is not occupied by pipeline transmission facilities or needed to perform pipeline related activities now or in the future. If requested by the landowner, the pipeline operator may agree to nullify the easement to this part of the land through a Partial Release. This may occur when a larger tract of land is subdivided and sold off to be developed. A Partial Release allows land to be released from an easement that is no longer needed. Partial Releases need to be recorded at the appropriate statutory office (i.e. county recorder, parish clerk) and are retained for the life of the easement.

Briefly describe the origin/rationale behind the practice proposal: A Partial Release allows land to be released from an easement that is no longer needed.
ND29 Pipeline Operators Evaluate New Development for Identified Sites and Impacts on Unusually Sensitive Areas and HCA’s for Natural Gas Transmission Operators

Old Practice # PTP A-3

Audience Pipeline Operator

Practice Statement Pipeline operators may review guidance for operators to assist in determining if the proposed development of the right-of-way would result in an “identified site” and the creation of an HCA or impact an Unusually Sensitive Area.

Practice Description:

When development occurs near natural gas transmission pipelines, operators review the new development to determine if it may affect the regulatory category of “high consequence area (HCA)”. Generally these are high population density areas or “identified sites” which include difficult to evacuate facilities, such as hospitals, prisons or schools, and locations where people congregate, such as churches, office buildings, or playgrounds. High consequence areas are where the potential consequences of a gas pipeline accident may be significant or may do considerable harm to people and their property. If the development is determined to be an “identified site”, the changes may bring the pipeline transmission pipeline under more stringent construction, inspection, maintenance and public education requirements. The operator may not allow a land use activity in the pipeline right-of-way if the activity creates an HCA. The following FAQs (located on PHMSA’s web site) provide guidance to operators to assist in determining if the proposed development of the right-of-way would result in an “identified site” and the creation of an HCA.

If an “identified site” is within the “potential impact circle” of a transmission pipeline, it creates an HCA. The equation to calculate the potential impact radius (PIR) is BLO6.

- FAQ-17: Definition: Identified Site
- FAQ-143: Standing Traffic in HCA Analysis
- FAQ-145: Parking Lots in HCA Analysis
- FAQ-182: 20 people, but not all at once
- FAQ-211: Time limit for gathering of 20 people

Hazardous liquid operators consider the potential affects to unusually sensitive areas due to development on and adjacent to the right-of-way. Unusually sensitive areas are drinking water or other ecological resource areas that are unusually sensitive to environmental damage from hazardous liquid releases. Operators are responsible for independently evaluating information about the area around their pipeline to identify changes that could result in new areas becoming HCA’s.

Potential impact circle is a circle of radius equal to the potential impact radius (PIR). Potential impact radius (PIR) means the radius of a circle within which the potential failure of a pipeline could have significant impact on people or property. PIR is determined by the formula \( r = 0.69(\frac{p}{d})^{0.5} \) where ‘\( r \)’ is the radius of a circular area in feet surrounding the point of failure, ‘\( p \)’ is the maximum allowable operating pressure (MAOP) in the pipeline segment in pounds per square inch and ‘\( d \)’ is the nominal diameter of the pipeline in inches.

Note: 0.69 is the factor for natural gas. This number will vary for other gases depending upon their heat of combustion. An operator transporting gas other than natural gas must use section 3.2 of ASME/ANSI B31.8S-2001 (Supplement to ASME B31.8, incorporated by reference, see §192.7) to calculate the impact radius formula.
The following are excerpts from PHMSA’s FAQ’s which concern identified sites.

**FAQ-17: Definition: Identified Site**

**Question:** What is an identified site?

**Answer:** An identified site is an area where people congregate near the pipeline meeting one of three criteria:

- It is an outside area or open structure occupied by 20 or more persons on more than 50 days in any 12-month period (the days need not be consecutive).
- It is a building occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period (the days and weeks need not be consecutive), or
- It is a facility occupied by persons of limited mobility, e.g., hospitals, prisons, day-care facilities, schools, retirement communities or assisted living centers.

**FAQ-211: Time limit for gathering of 20 people**

**Question:** What is the time period for the 20 persons in an area? 20 people for 10 min/day, 20 people for 2 hours/day, 20 people for 8 hours/day?

**Answer:** If a building or outside area is typically or normally occupied by 20 or more people while in use, then the location is considered an identified site. The rule provides that operators can rely on information from local public officials with emergency response or planning responsibilities to make these determinations. Operators need not consider persons who merely pass through an area, since these persons are considered to be in transit and cannot truly be said to “occupy” the location.

**FAQ-145: Parking Lots in HCA Analysis**

**Question:** Are parking lots considered to be outside areas occupied by people in the definition of an identified site (specifically, commercial or industrial parking lots and church parking lots)? If a PIR crosses the back portion of a parking lot where it is unlikely that people will congregate, should this area be considered an identified site? If so, is there any guidance on how many people per parking space should be used to compute the total of 20?

**Answer:** Where parking lots are used for other purposes (e.g., an antique car club that meets on weekends, regular social gatherings), these uses must be considered on their own merits. Identified sites are defined as areas that are occupied by more than 20 persons for specified periods. While it is possible that sufficient people might be in a parking lot near a pipeline resulting in more than 20 persons in proximity to the pipeline at one time, these persons are considered to be in transit and cannot truly be said to “occupy” the parking lot and therefore are not subject to the regulation.
FAQ 182: 20 people, but not all at once

Question: If a facility or site has 20 or more people visit throughout the day but never 20 or more at one time, does this meet the identified site criteria?

Answer: No. The definition of an identified site provides for buildings/locations that are “occupied by twenty (20) or more persons”. A location that 20 or more people passed through in a day would not be “occupied” by 20 or more persons. Twenty or more persons must be present at one time for the building/inside area/open structure to be defined as an identified site.

FAQ 143: Standing Traffic in HCA Analysis

Question: When determining “identified sites”, does one have to consider standing traffic on roads/expressways under the “outside area or open structure” portion of the definition? If so, is there any guidance on how many people per vehicle should be used to compute the total of 20?

Answer: Identified sites are defined as areas that are “occupied” by more than 20 persons for specified periods. While roads and expressways near pipelines could well carry enough traffic that more than 20 persons are in proximity to the pipeline at one time, these travelers can not be said to “occupy” that location. The definition of identified sites is intended to provide additional protection for areas where people stay for more than a few seconds or minutes. Most roads and expressways need not be considered as potential “outside areas” that could qualify as identified sites. Additionally, the preamble recognized that added protection was provided to pipelines near highways with design characteristics commensurate with the pipeline safety regulations.

However, for operators of pipelines that are not designed commensurate with the pipeline safety regulations and are located in areas that are regularly congested, such that traffic stands for many minutes within a potential impact circle, operators should make a determination to include or exclude these pipelines as “identified sites” on their own merits based on the integrated information they have about their pipelines at these locations. OPS expects that such areas will usually occur within developed areas where the pipeline would already be defined as a high consequence area, and that HCAs identified solely due to the proximity of traffic choke points will be rare.