Informed Planning Near Transmission Pipelines

Carl Weimer
Executive Director, Pipeline Safety Trust
&
Member, Whatcom County Council
Planning Near Transmission Pipelines

Most pipelines were put in rural areas.
But now growth is encroaching on many pipelines
This creates an increased risk that communities should consider when planning
Growing Recognition of Problem with Development Encroaching on Pipelines

- National Academy of Science in 2004
- Washington Utilities & Transportation Commission in 2006
- Pipelines and Informed Planning Alliance, U.S. Department of Transportation – 2008
- FEMA - 2015
How much risk is there?

- The chance of a pipeline failing in any one specific place is extremely small, so the risk is very very small.

- But if a pipeline does fail the consequences can be catastrophic.

Each pipeline has different risks, and should be considered separately.
<table>
<thead>
<tr>
<th>Date</th>
<th>Operator Name</th>
<th>County</th>
<th>Reported Cause of Incident</th>
<th>Property Damage Reported</th>
<th>Gallons Spilled</th>
<th>Gallons Recovered</th>
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</thead>
<tbody>
<tr>
<td>11/03/2008</td>
<td>EXXONMOBIL PIPELINE</td>
<td>SPOKANE</td>
<td>INCORRECT OPERATION</td>
<td>$580,170</td>
<td>3570</td>
<td>2982</td>
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<td>12/26/2008</td>
<td>AVISTA</td>
<td>LINCOLN</td>
<td>MATERIAL/WELD/EQUIP FAILURE</td>
<td>$55,200</td>
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<td>01/08/2009</td>
<td>NORTHWEST PIPELINE</td>
<td>SNOHOMISH</td>
<td>MATERIAL/WELD/EQUIP FAILURE</td>
<td>$128,035</td>
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<td>05/05/2009</td>
<td>CASCADE NATURAL GAS</td>
<td>YAKIMA</td>
<td>OTHER OUTSIDE FORCE DAMAGE</td>
<td>$54,300</td>
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<td>06/01/2009</td>
<td>NORTHWEST PIPELINE</td>
<td>WHITMAN</td>
<td>MATERIAL/WELD/EQUIP FAILURE</td>
<td>$320,578</td>
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<td>08/19/2009</td>
<td>PUGET SOUND ENERGY</td>
<td>KING</td>
<td>EXCAVATION DAMAGE</td>
<td>$108,667</td>
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<td>09/02/2010</td>
<td>NORTHWEST PIPELINE</td>
<td>SKAGIT</td>
<td>INCORRECT OPERATION</td>
<td>$300,100</td>
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<td>EXCAVATION DAMAGE</td>
<td>$103,133</td>
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<td>09/13/2011</td>
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<td>KITSAP</td>
<td>OTHER OUTSIDE FORCE DAMAGE</td>
<td>$59,201</td>
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<td>09/26/2011</td>
<td>PUGET SOUND ENERGY</td>
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<td>OTHER OUTSIDE FORCE DAMAGE</td>
<td>$511,500</td>
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<tr>
<td>03/14/2013</td>
<td>GAS TRANSMISSION NORTHWEST</td>
<td>WHITMAN</td>
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<td>SPOKANE</td>
<td>EXCAVATION DAMAGE</td>
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<td>12/16/2013</td>
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<td>CHELAN</td>
<td>NATURAL FORCE DAMAGE</td>
<td>$250,847</td>
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<td>03/31/2014</td>
<td>WILLIAMS PARTNERS OPERATING</td>
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<td>INCORRECT OPERATION</td>
<td>$46,503,060</td>
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<td>11/10/2014</td>
<td>OLYMPIC PIPE LINE</td>
<td>SKAGIT</td>
<td>MATERIAL/WELD/EQUIP FAILURE</td>
<td>$1,561,513</td>
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<td>06/18/2015</td>
<td>PUGET SOUND ENERGY</td>
<td>KING</td>
<td>OTHER OUTSIDE FORCE DAMAGE</td>
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<tr>
<td>08/18/2015</td>
<td>CASCADE NATURAL GAS</td>
<td>KITSAP</td>
<td>OTHER OUTSIDE FORCE DAMAGE</td>
<td>$1,006,935</td>
<td>0</td>
<td>0</td>
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<tr>
<td>03/09/2016</td>
<td>PUGET SOUND ENERGY</td>
<td>KING</td>
<td>OTHER OUTSIDE FORCE DAMAGE</td>
<td>$3,018,172</td>
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<td>10/07/2016</td>
<td>PUGET SOUND ENERGY</td>
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<td>ALL OTHER CAUSES</td>
<td>$783,243</td>
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</table>

**Totals** |  $56,200,355 | 3,884.58  | 2,982.00  |
The main pipelines through the state include:

- The Olympic Pipe Line (refined fuels)
- William’s – Northwest Pipeline (natural gas)
- TransCanada's GTN System (natural gas)
- Phillips 66 Pipe Line (refined fuels)
- Tesoro Logistics Northwest Pipeline (refined fuels)
- Kinder Morgan - Trans Mountain Pipeline (crude oil)

In addition there are 14 smaller transmission pipelines operated in the state that range in length from 1 to 36 miles.
Trans Mountain Route

Crude oil pipeline from Alberta to the Cherry Point and Anacortes refineries.

16-20 inch diameter

7.5 million gallons/day

Operated by Kinder Morgan
Consequences of spills from crude oil pipelines

Potential large liability to local government, businesses, property owners
Damage to property and expensive clean up
Environmental damage and drinking water contamination
Williams Northwest Pipeline is a 3900 mile bi-directional pipeline bringing about 1.8 billion cubic feet of natural gas per day from Alberta and Colorado/Utah.

The pipeline varies from 24-36 inches in diameter.
TransCanada’s Gas Transmission Northwest system is 612 miles long in the United States with 309 miles in Washington State. It system typically transports 2.9 billion cubic feet of natural gas each day.
Consequences of natural gas pipeline failures

Explosions & Fires
Olympic Pipeline

Liquid products pipeline (jet fuel, gasoline, diesel) from Whatcom/Skagit refineries to SeaTac and Portland.

Moves about 13 million gallons/day

16 inch diameter

Operated by BP, Majority Owner Enbridge
The Tesoro Logistics Northwest Pipeline
157 miles long in Washington state and transports gasoline, diesel, and jet fuel
Conoco Phillips “Yellowstone” Pipeline
129 miles long in Washington State and carries gasoline, diesel, and jet fuel
Consequences of liquid product pipeline failures

Explosions and Fires
Soil & Groundwater Contamination
National Pipeline Mapping System

Way for the public and local government to know about pipelines near by

<table>
<thead>
<tr>
<th>Hazardous Liquid Pipelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPERATOR NUMBER</td>
</tr>
<tr>
<td>OPERATOR NAME</td>
</tr>
<tr>
<td>SYSTEM NAME</td>
</tr>
<tr>
<td>COMMODITY CATEGORY</td>
</tr>
<tr>
<td>COMMODITY DESCRIPTION</td>
</tr>
<tr>
<td>INTERSTATE DESIGNATION</td>
</tr>
<tr>
<td>PIPELINE STATUS CODE</td>
</tr>
<tr>
<td>PERSON TO CONTACT</td>
</tr>
<tr>
<td>ENTITY TO CONTACT</td>
</tr>
<tr>
<td>CONTACT ADDRESS</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Pipeline and Hazardous Materials Safety Administration

NATIONAL PIPELINE MAPPING SYSTEM
Two ways to protect communities

• Protect the pipelines from damage so they stay safe

• Protect people near pipelines in case something happens
Why Local Planning Is Important

Swiss Cheese (Static) Model

- Hazard
- Pipeline Operations & Testing
- Local Government Planning
- Pipeline Materials
- Pipeline Regulations
- Harm
Just Last Month

“While the state requires companies drilling new oil and gas wells to keep pipelines 500 feet from homes (unless companies make deals with landowners and get special permission), state officials leave it to local governments to determine how close to such pipelines new houses can be built.”

The Denver Post
Different types of development near pipelines
Multiple layers of bad planning
Allowing space for repairs
Pipeline right-of-ways and green space
The Bottom Line - Better planning can help ensure safe fuel transport and avoid tragedies.
20.81.010 Purpose.
The purpose of this chapter is to help minimize unnecessary risk to the public from hazardous liquid and natural gas transmission pipelines by:

A. Minimizing the likelihood of accidental damage to pipelines by ensuring early communication between those developing property and pipeline operators.

B. Limiting exposure of land uses with high on-site populations that are difficult to evacuate and land uses that serve emergency functions to the risk of injury or damage in the event of a pipeline failure.

C. Ensuring that there is adequate protection of existing pipelines from inadvertent damage during nearby construction.
300 N. Commercial St, Suite B
Bellingham, WA  98225
360-543-5686
carl@pstrust.org
http://www.pstrust.org
PIPA and the Recommended Practices

Jim Doherty
MRSC Legal Consultant
jdoherty@mrsc.org
How did we get to this point?

- In 2003 & 2004 Meetings in the State of Washington
- 2005 AWC/MRSC/WUTC workshops
- 2008 PIPA meetings
- 2009 PIPA – conflict resolution
- 2010 Final PIPA Report

- Pipelines and Informed Planning Alliance
Feds don’t (typically) control local land use regulations
State does not want to issue regulations
Pipeline Operators have no direct authority over land uses outside their easements
So it is up to local governments to decide what is appropriate in their communities
Know your pipeline locations and mark them on all relevant maps

Maps are only good for “approximate” locations

National Pipeline Mapping System
http://www.npms.phmsa.dot.gov/
Maps and GIS layers also available from the WUTC
Relatively easy change in your process that may do more to promote pipeline safety than any other practice
Local governments should adopt land development procedures requiring 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.
A local government may determine the appropriate width of the consultation zone based on its own research and discussions with pipeline operators.
The Hammer

No permit is issued until the local government jurisdiction in notified, by the pipeline operator, that the plans have been reviewed and the project will not effect the integrity of the pipeline.

Roy City Code, Title 11, chapter 39
Goals

Get developer to reasonably “incorporate” pipeline into project:

-- Land disturbance, location of utilities, accessibility of pipeline for repair, emergency egress, orientation of structures, etc.
The “Zone”

How big?

What projects or permits should be covered?

Talk with your pipeline operator – what are they concerned about?
Planning Zone and ND 11 through ND 23

The area where you may want to impose additional development regulations restricting the allowed land uses or the conditions under which those uses will be permitted

Trees, utilities, parking lots, public safety facilities, new industrial uses, etc.
Conditional Uses

How close do you want schools or day-care facilities, hospitals, theatres, etc.?

Allow with conditions?
Common Sense Practices

Temporary markers/fencing during construction (ND 24)

Halting dangerous excavation activities (BL 16)

811 – “call before you dig” compliance
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. (ND 09)
Planning Near Pipelines

Review the webpage http://mrsc.org/Subjects/PubSafe/transpipes.aspx

Info Available
• Model Ordinances
• Ordinances adopted by various jurisdictions
• Recommended Practices
• Technical Reports
• Other Pipeline Safety Reference Sources

Call to ask questions

Arrange for a presentation to your planning department, legislative body or planning commission
Washington Utilities And Transportation Commission
Pipeline Safety Program

Alan Rathbun
Pipeline Safety Director
arathbun@utc.wa.gov
(360) 664-1219
Washington Utilities and Transportation Commission - Pipeline Safety Program

- Safety Regulation of Intrastate Operators
- Agents for Interstate Operators - Pipeline and Hazardous Material Safety Administration (PHMSA)
- Not a “Siting” Agency

**Types of Pipelines and Related Facilities**

<table>
<thead>
<tr>
<th>Natural Gas Distribution</th>
<th>Biogas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas Transmission</td>
<td>Crude Oil</td>
</tr>
<tr>
<td>Liquefied Natural Gas (LNG)</td>
<td>Refined Oil</td>
</tr>
<tr>
<td>Propane</td>
<td>Highly Volatile Liquid (Butane)</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>Breakout Tanks</td>
</tr>
</tbody>
</table>

- Enforce RCW 19.122 - Underground Utilities - Dig Law
Post Bellingham Initiatives

- City/County Consortium
- Pipeline Awareness Study
- Citizens Committee on Pipeline Safety (CCOPS)
- Land Use Planning in Proximity to Natural Gas and Hazardous Liquid Transmission Pipelines (June 2006)
  - WUTC
  - Association of Washington Cities
  - Washington State Association of Counties
  - Municipal Research Services Center
  - Pipeline Safety Trust
Underground Utilities - Dig Law - RCW 19.122

- External (or outside force) damage remains a leading cause of pipeline failures
- 2011 rewrite further defined roles and responsibilities and established an enforcement mechanism

811
Know what’s below.
Call 811 before you dig.
Local government responsibility under 19.122.033 (3) and (4)

(3) The state, and any subdivision or instrumentality of the state, including any unit of local government, must, when planning construction or excavation within one hundred feet or greater distance if required by local ordinance, or a right-of-way or utility easement containing a transmission pipeline, notify the pipeline company of the scheduled commencement of work.

(4) Any unit of local government that issues permits under codes adopted pursuant to chapter 19.27 RCW must, when permitting construction or excavation within one hundred feet, or greater distance if required by local ordinance, of a right-of-way or utility easement containing a transmission pipeline:

(a) Notify the pipeline company of the permitted activity when it issues the permit; or
(b) Require, as a condition of issuing the permit, that the applicant consult with the pipeline company.
The Utilities and Transportation Commission is a resource!

All our pipeline system inspections are posted online: www.utc.wa.gov

Questions for the Pipeline Safety Program: pipelinesafety@utc.wa.gov

We share pipeline GIS layer with local government - RCW 81.88.080
(Subject to restrictions on public disclosure)