

## PIPELINE DANGERS

### PIPELINES EXPLODE

These photos show the fire and damage from the Williams-Transco gas pipeline explosion in Appomattox, VA in 2008. The flames were 300 feet tall. The blast zone had a 1,125 foot radius. The pipeline, installed in 1955, was 30 inches in diameter and operated at 800 psi. Two homes were destroyed. Five people were injured, and another 100 homes suffered damage. Corrosion of the pipe caused the explosion. Williams was ultimately fined \$1 million for improper pipeline maintenance. Is that enough?



### Blast Radius

Today we face much greater threats by the industry's rush to build larger diameter pipelines operating at higher pressures. The proposed Atlantic Coast Pipeline (ACP) and Mountain Valley Pipeline (MVP), would be 42 inches in diameter, operating at 1400 psi. The chart below shows the blast radius of a 42 inch pipeline operating at 1400 psi at 1100 feet. Data from actual blasts indicate the blast radius estimates are off by as much as 50% as indicated by the blast radius of the Appomattox explosion.

### Sacrifice Zones

Pipelines are often constructed within a few hundred feet of existing homes, placing families in the blast zones. This seems to be acceptable to industry and government. Rural areas with lower population density, farming communities, and those with a majority of minority populations are consistently chosen for these projects. Why? These communities have fewer resources with which to fight back. Regulations are designed to make construction less expensive for industry to build in rural areas. Land is cheaper. The companies can construct their pipelines with thinner walled pipe and without certain safety features, saving them millions of dollars. Construction standards should not be lowered in rural areas simply because there are fewer people who would lose their lives or whose property would be devastated.

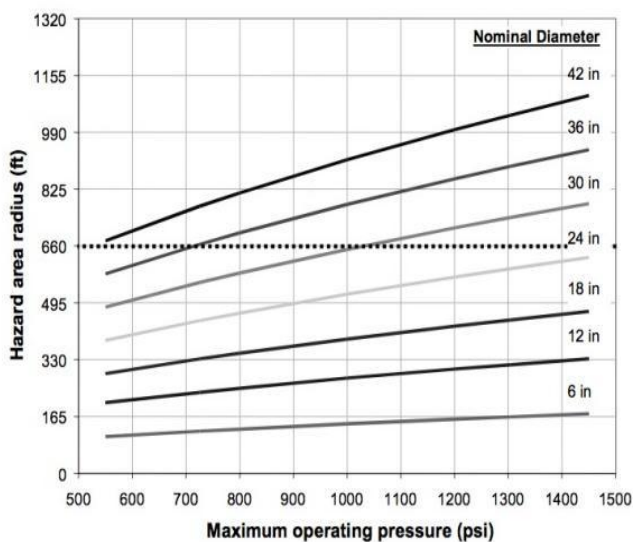


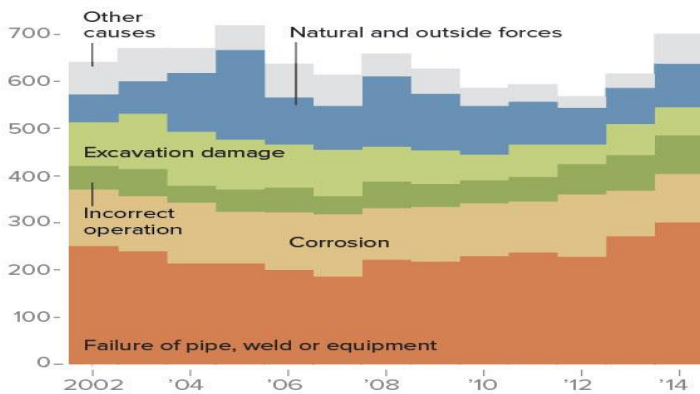
Figure 2.4 Proposed hazard area radius as a function of line diameter and pressure.

## Aging pipes, growing risk

Incidents caused by equipment failure, including welds on aging pipelines that the National Transportation Safety Board has warned about for decades, have risen by more than 60 percent since their low point in 2007.

### INCIDENTS BY TYPE

2002-2014



Source: Pipeline and Hazardous Materials Safety Administration

## The human toll

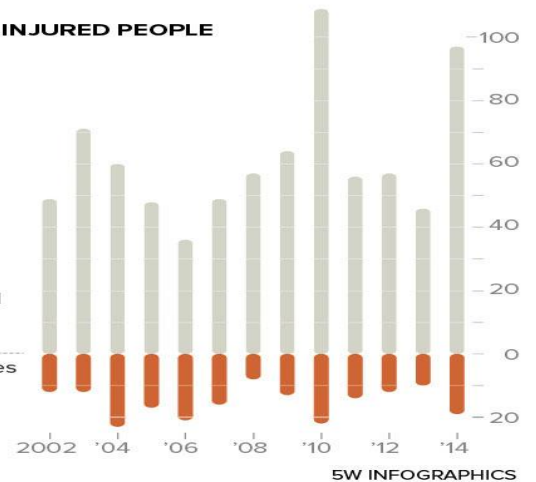
The number of fatalities and injuries from pipeline incidents does not show a clear pattern in recent years. But in the past 13 years of records, the two worst years for deaths and injuries combined have come since 2010.

### DEAD AND INJURED PEOPLE

2002-2014

INCIDENTS  
8,321

Total injured  
799  
Total fatalities  
199



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One would believe new pipelines would be safer than older ones, but a recent analysis of Federal data completed by the Pipeline Safety Trust indicates new pipelines are failing at an even higher rate. Gas transmission lines installed in the 2010's had an annual average incident rate of 6.64 per 10,000 miles, greater than the pre-1940's pipes which had an incident rate of 6.08 per 10,000 miles. "Last year, more than 700 pipeline failures killed 19 people, injured 97 and caused more than \$300 million in damage. Two of the past five years have been the worst for combined pipeline-related deaths and injuries since 2000."<sup>1</sup>

## Environmental Dangers

Compacted farm land yields fewer crops. Stream crossing construction causes water pollution. Improper construction techniques cause sediment and erosion problems as well as invasive species growth. Blasting causes the contamination or destruction of nearby wells and springs. Forest fragmentation and animal habitat destruction caused by acres upon acres of forested land being clear cut. There are destructive flood plain crossings and wetland devastation. The pipeline companies say they will mitigate these issues, but we know better. We have witnessed their failures.

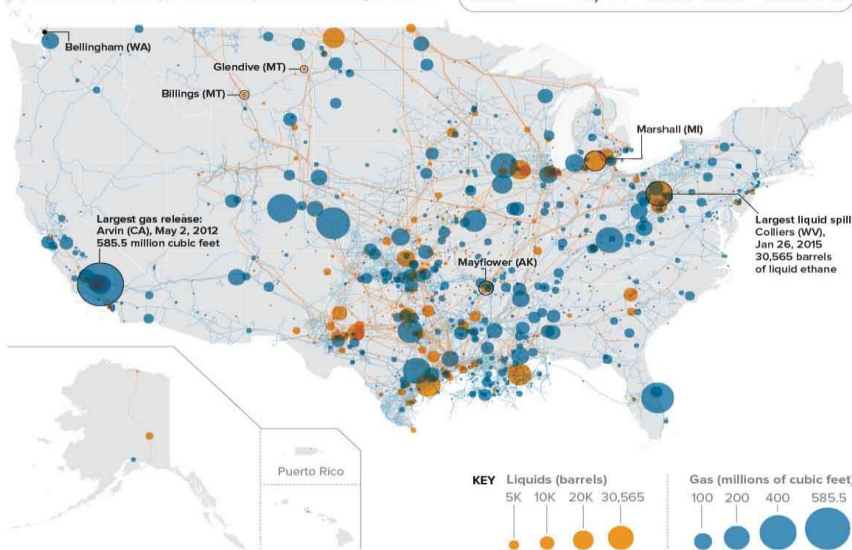
### Explosions, leaks and spills

There's more than one leak, failure or rupture involving an oil or gas pipeline every day in the United States. The incidents are concentrated in the oil-patch states of Texas, Oklahoma and Louisiana and a cluster in the North Dakota Bakken formation. But pipelines traverse every state. Hazardous liquid spills are sized by the barrel (each barrel is 42 gallons) and gas leaks are measured by cubic feet.

#### ALL INCIDENTS IN THE UNITED STATES, 2010-15

\*By amount of liquid or gas accidentally released, through Feb. 24

TOTAL INCIDENTS 2010-15: 3,141 INJURIES 369 DEATHS 78



Sources: Pipeline and Hazardous Materials Safety Administration; Energy Information Administration

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Devastating San Bruno gas pipeline explosion killed 8 people on Sept 9, 2010<sup>2</sup>

<sup>1</sup> <http://www.politico.com/story/2015/04/the-little-pipeline-agency-that-couldnt-117147#ixzz3mHkYEOqy>

<sup>2</sup> <http://framework.latimes.com/2010/09/09/fire-in-san-bruno/>