



BUILDING

Pipeline Safety

Chad Zamarin

**Vice President – Engineering
NiSource Gas Transmission & Storage**

MARC 2011 Annual Meeting

June 6, 2011



NiSource[®]

Natural Gas Transmission Pipelines

What is a “transmission pipeline”?

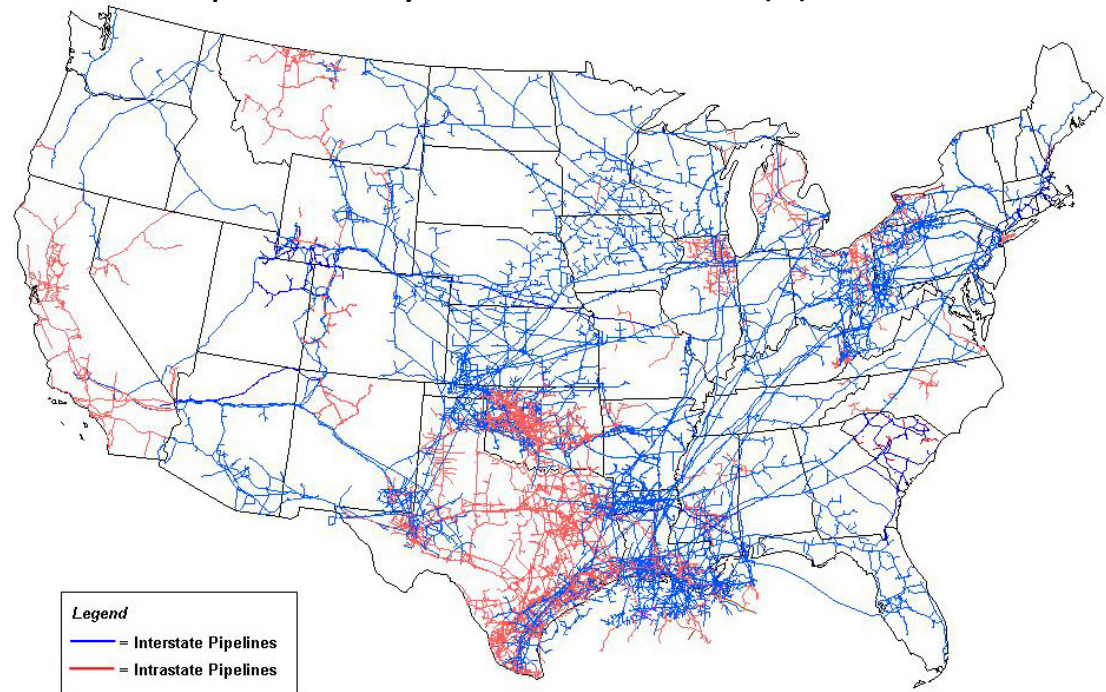
- A high-pressure and generally larger-diameter pipeline that transports gas from the production area to the market area.

How many miles of transmission pipeline are in the U.S.?

- 302,110 miles of natural gas transmission pipeline(1)
- 202,703 miles of natural gas pipelines are operated by INGAA members(2)

Who are the owners of transmission pipeline?

- Interstate pipeline
- Intrastate pipeline
- Local distribution company
- Municipalities



(1) 296,441 miles onshore + 5,669 miles offshore

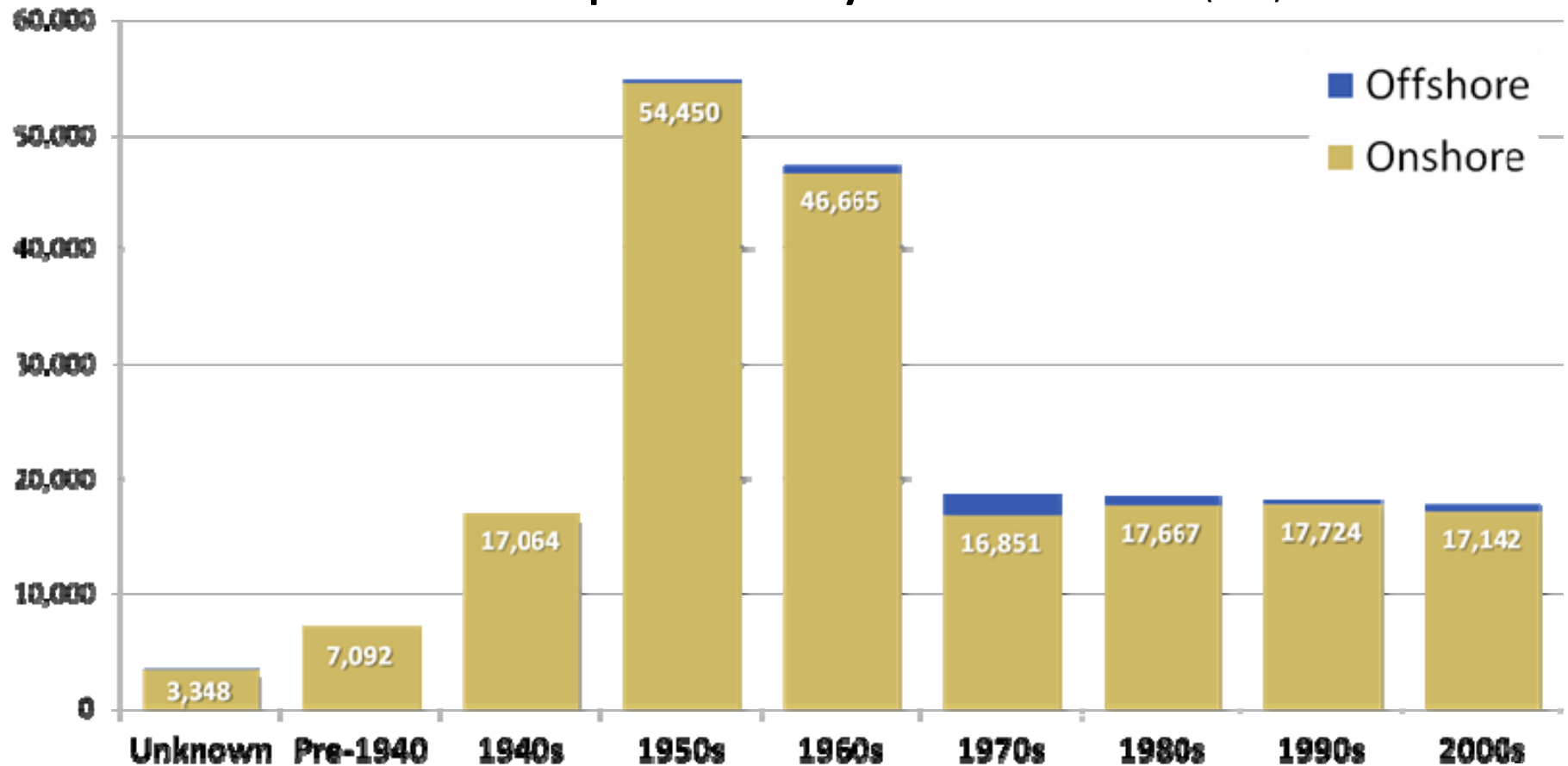
(2) 197,869 miles onshore + 4,834 miles offshore

Source: Energy Information Administration, Office of Oil & Gas, Natural Gas Division, Gas Transportation Information System

Natural Gas Transmission Pipelines

When Were Transmission Pipelines Built?

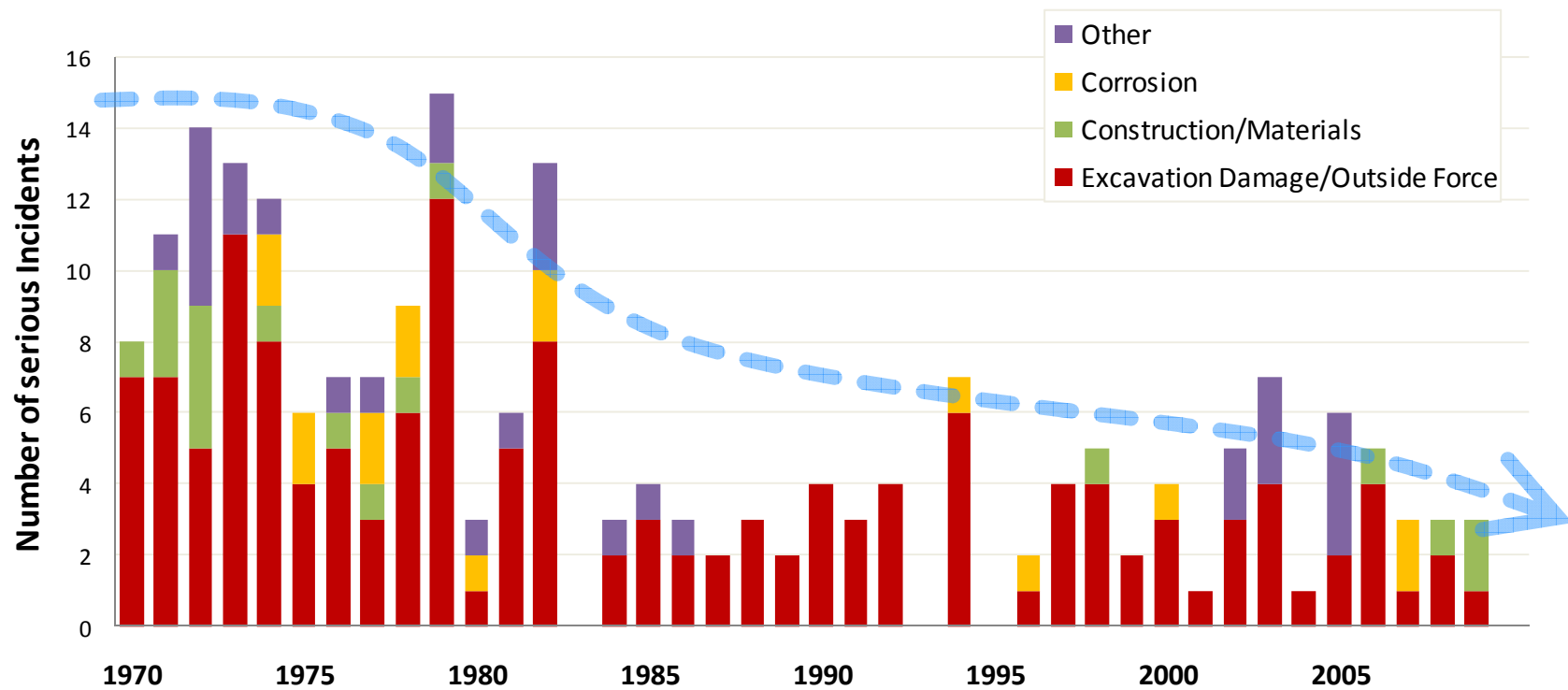
Transmission Pipeline Built by INGAA Members (miles)



Source: PHMSA web site, annual report data submitted by INGAA operators for 2009

Natural Gas Transmission Pipelines

Serious Transmission Pipeline Incidents Involving Public are Declining



Source: PHMSA web site, incident report data submitted by all PHMSA regulated operators (INGAA and non-INGAA) for 1970-2010 involving death or injury of a member of the public; onshore only.

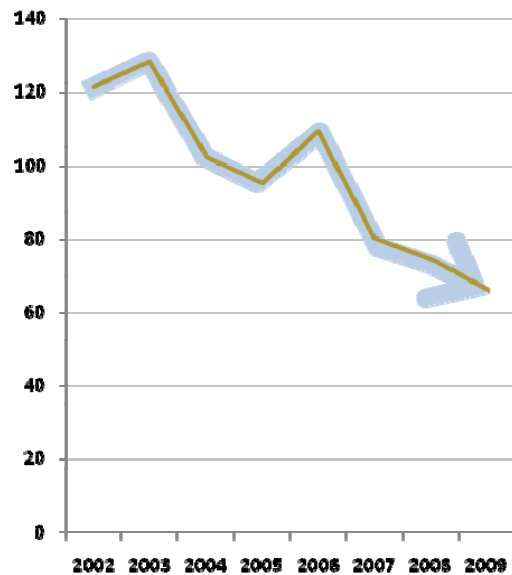
Natural Gas Transmission Pipelines

Risks to Pipeline Safety (per ASME B31.8S)

- Excavation / Third Party Damage
- External Corrosion
- Internal Corrosion
- Manufacturing Flaws
- Construction Flaws
- Outside Forces
- Operator Error
- Equipment Failure
- Stress Corrosion Cracking

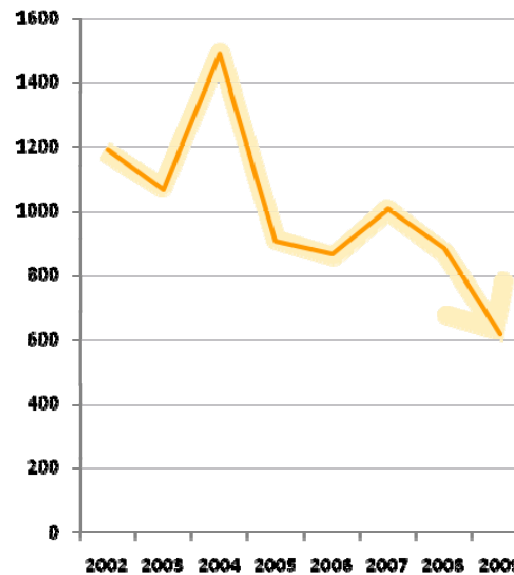
2002-2009: Significant progress made in reducing leaks

Excavation Damage Leaks



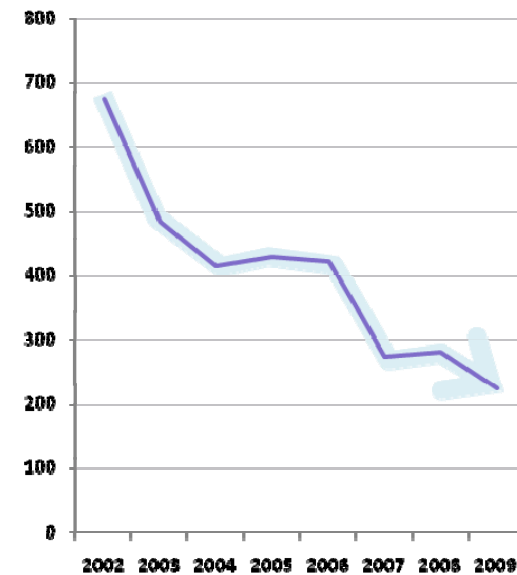
54% reduction

Corrosion Leaks



46% reduction

Material & Weld Leaks



65% reduction

Source: PHMSA web site, annual report data submitted by all PHMSA regulated operators (INGAA and non-INGAA) for 2002-2009, onshore only.

What Does the Safety Data Mean?

Our Present Practices and Policies have had an impact

- **Serious Incidents** involving the public have been declining for four decades
- **Leak** trends in the Major Cause Categories are showing positive results
 - Corrosion is the major cause of gas leaks, but;
 - Excavation Damage is the predominant cause of Serious Accidents
- However, **Significant Incidents*** - while infrequent - are still occurring at an unacceptable level

*PHMSA web site, incident report data submitted by all PHMSA regulated operators (INGAA and non-INGAA) for 1970-2010 involving death or injury of a member of the public; or property damage and the value of natural gas lost to atmosphere exceeds the equivalent of \$50, 000 in 1984 Dollars.

Guiding Principles of Pipeline Safety



- **Our goal is zero incidents** - a perfect record of safety and reliability for the national pipeline system. *We will work every day toward this goal.*
- **We are committed to safety culture** as a critical dimension to continuously improve our industry's performance.
- **We will be relentless in our pursuit of improving** by learning from the past and anticipating the future.
- **We are committed to applying integrity management principles on a system-wide basis.**
- **We will engage our stakeholders** - from the local community to the national level - so they understand and can participate in reducing risk.



Driving improvement in key areas

- Creating Stakeholder Engagement to Achieve Common Goals
- Evolving Risk Management Processes
- Improving Existing Integrity Management Tools
- Ensuring Safety of Older Pipelines
- Accelerating Technology Development & Deployment
- Defining “Responsible Operator” Management Systems
- Improving Emergency Preparedness & Response
- Ensuring Asset Integrity During New Construction

Parallel Efforts

- Communications & Stakeholder Engagement
- Legislative Changes for Pipeline Safety
- Cost Recovery Mechanisms

“We share a common goal and together we can ensure the safety of our critical infrastructure”

Operator Impacts

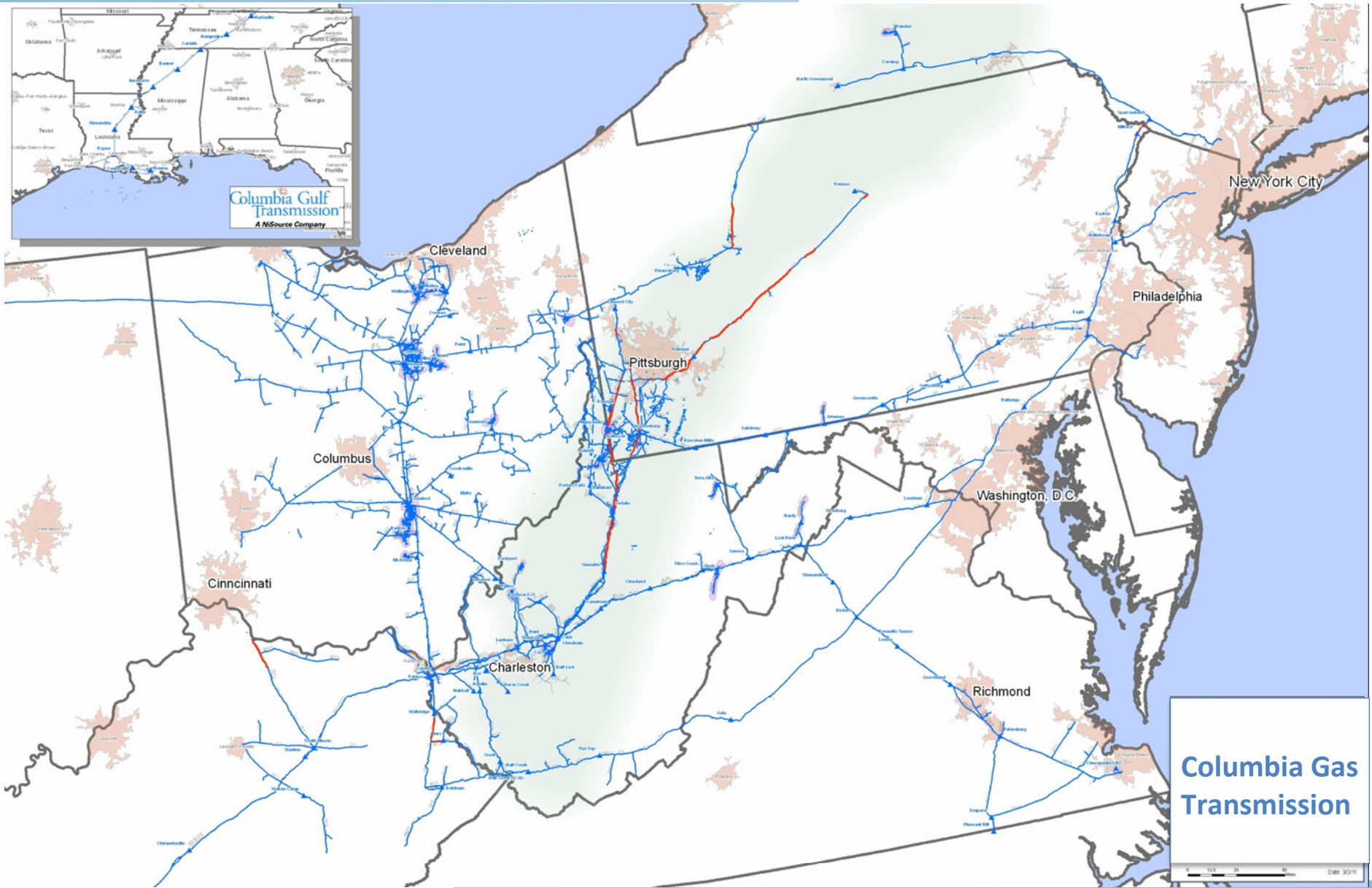
Stepping Up

- Developing processes and commissioning teams to perform more aggressive records research
- Extending Integrity Management beyond HCA's
- Resource allocation for more aggressive pipeline assessment, repair, rehabilitation and replacement
- Taking on legacy cultures and management systems
- Enhancing discipline, focus and communications

Key Risks/Issues

- Effects different operators in different ways
- Cost recovery is complex and may cause competitive challenges
- There is no silver bullet to mitigating risk
- It won't happen overnight – realistic goals and milestones
- Outages and service disruptions
- Abandonment and retirement of assets

The NGT&S System



Takeaways...

**Our performance has been strong and is improving, however...
...we must do more**

Transmission operators are stepping up to the plate and we are committed to making improvements

Zero incidents is our goal AND we believe it is achievable

There is no silver bullet – a comprehensive approach is required

The diverse stakeholders have a common goal – we can work together

Each operator has unique issues and circumstances through which to navigate

The future will be different, challenging and exciting

