“Can You Dig It?”

NARUC Winter Meeting

Distribution Contractors Association

February 15, 2016

HDD Basics

Markets Served

- Fiber
- Electrical
- Water
- Sewer
- Oil
- Gas

Vermeer

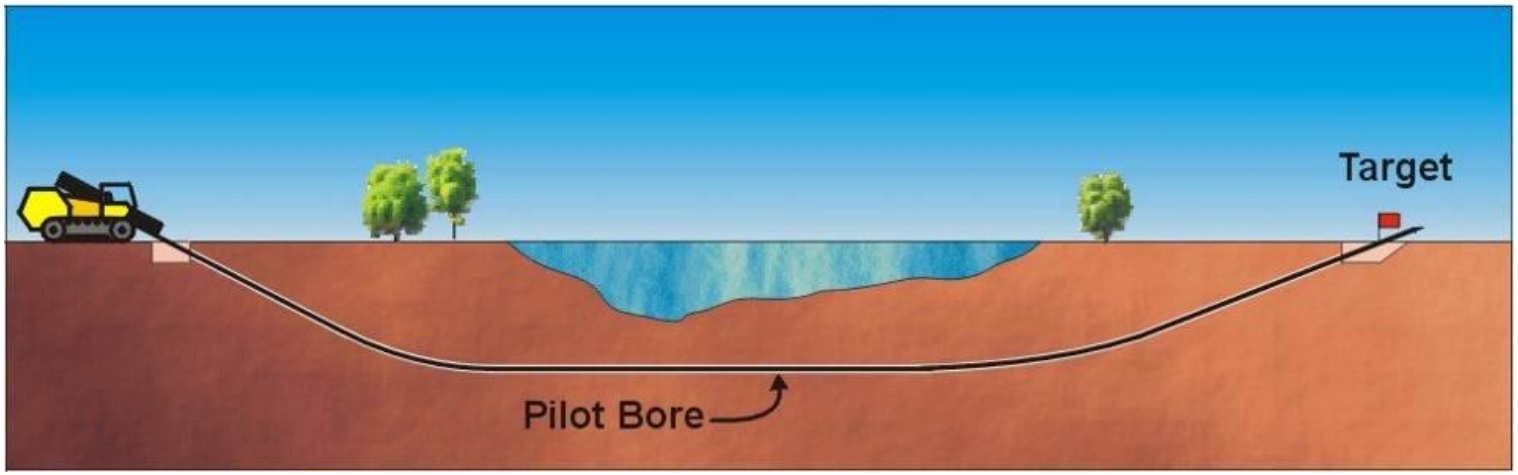
Advantages of HDD

- Minimum excavation
- Minimum restoration
- Often lower cost compared to open-cut
- Shorter construction duration
- Lower carbon footprint
- Lower “social” cost
- Safer method

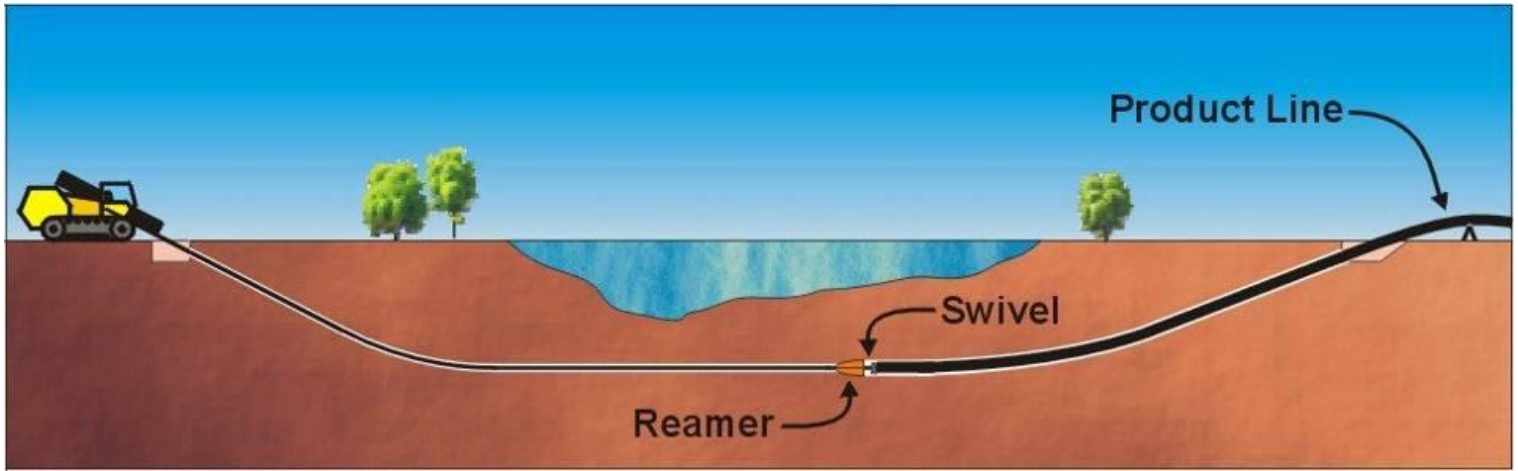
Vermeer

Steps

1. Pilot Bore



2. Reaming/Pullback



Vermeer

Ingredients of HDD

Duck Bill/Drilling Tool

Location Equipment

Depth
Direction (side to side)
Pitch (up/down)
Deviation (from bore plan)
Distance

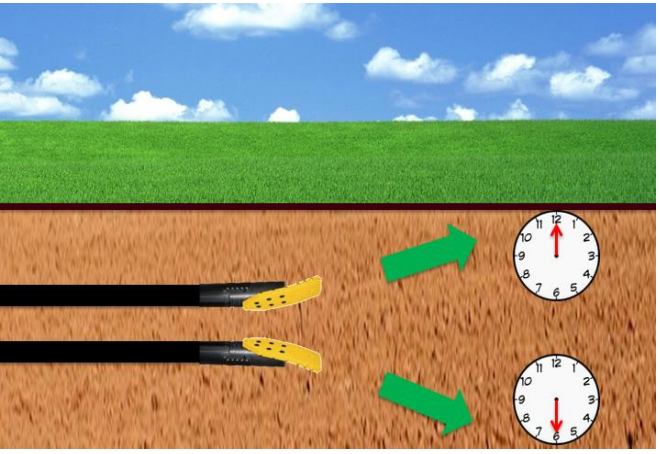
Drill Head

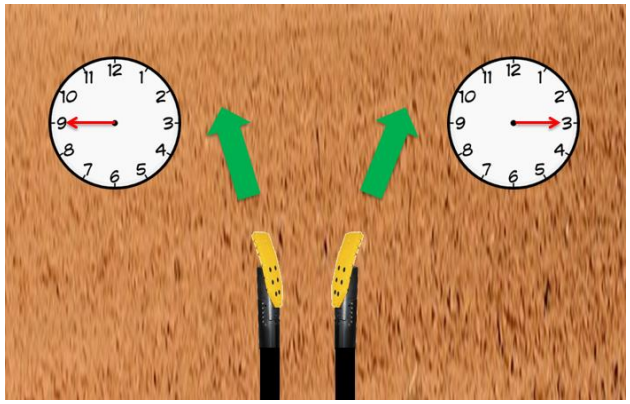
Drilling Fluids/Mud

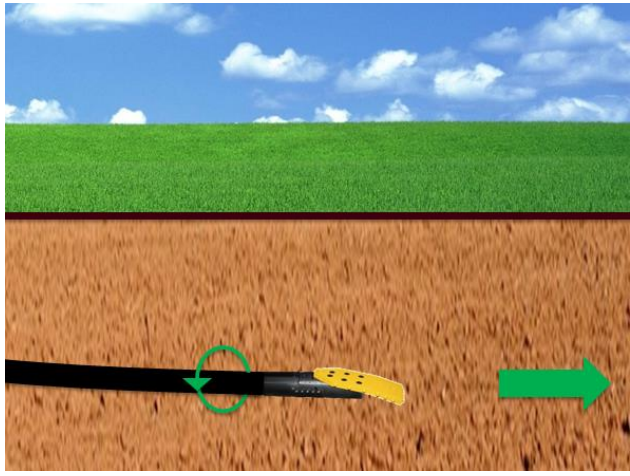
Drill

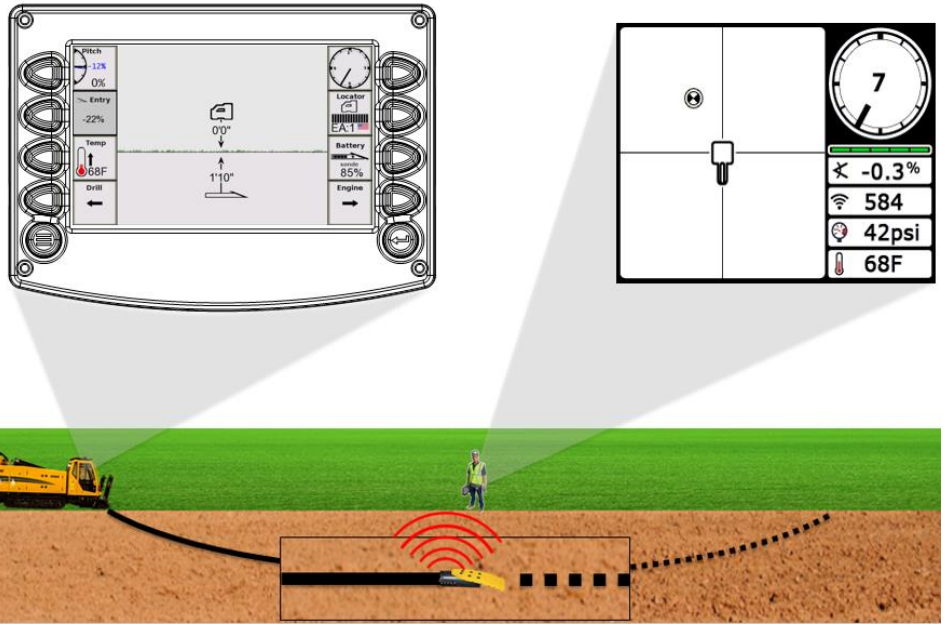
Reamers and Pullers

How HDD Works









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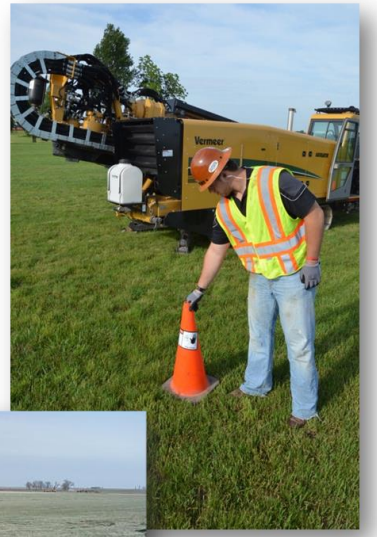
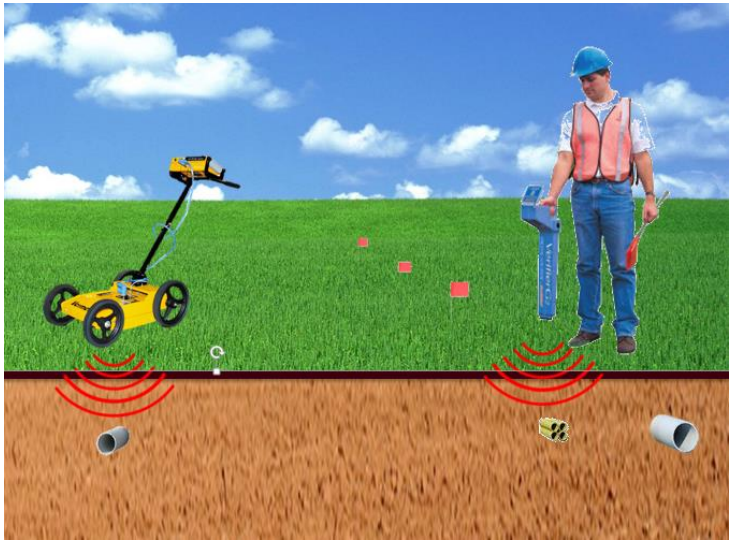
Safety On Site

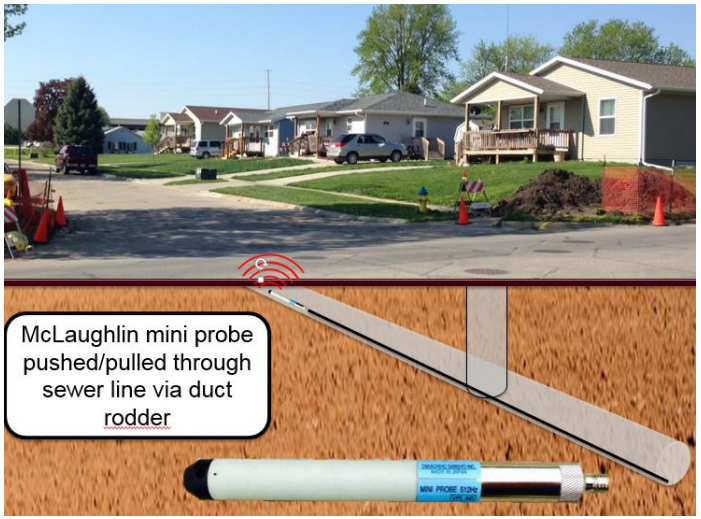
- Emergency services (911)
- Gas company
- Electric
- Water
- Telephone
- Cable TV
- Foreman
- Co-workers



Locating/Potholing



Locating all utilities and obstacles underground



Exposing all Utilities using vacuum excavation and core saw

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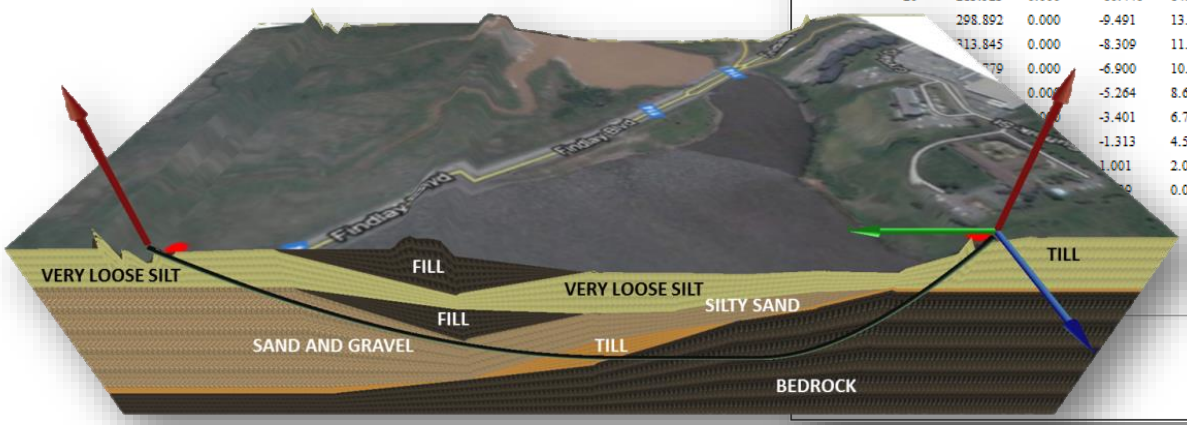
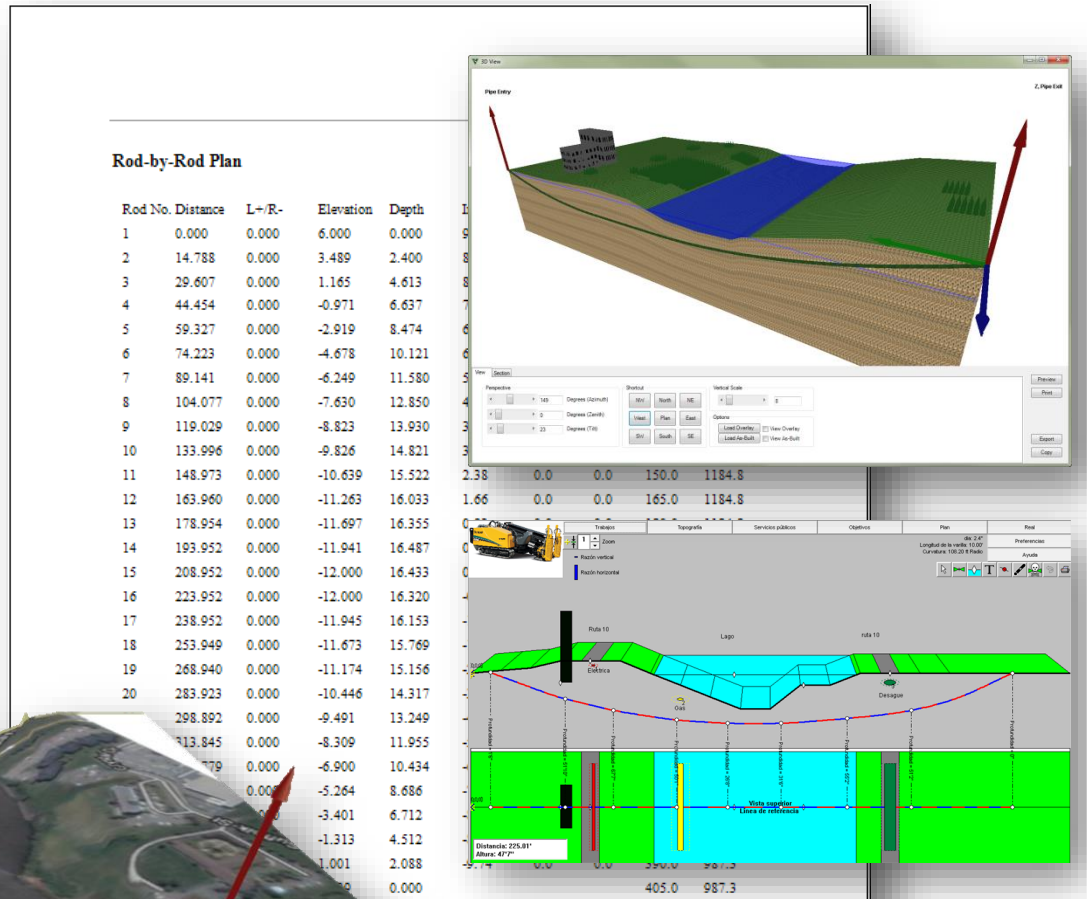
Bore Plan

Atlas Bore Planner® computer software or BoreAid® design tool will map out the bore path as well as provide a rod-by-rod navigation plan according to the soil, elevation and utility data inserted.

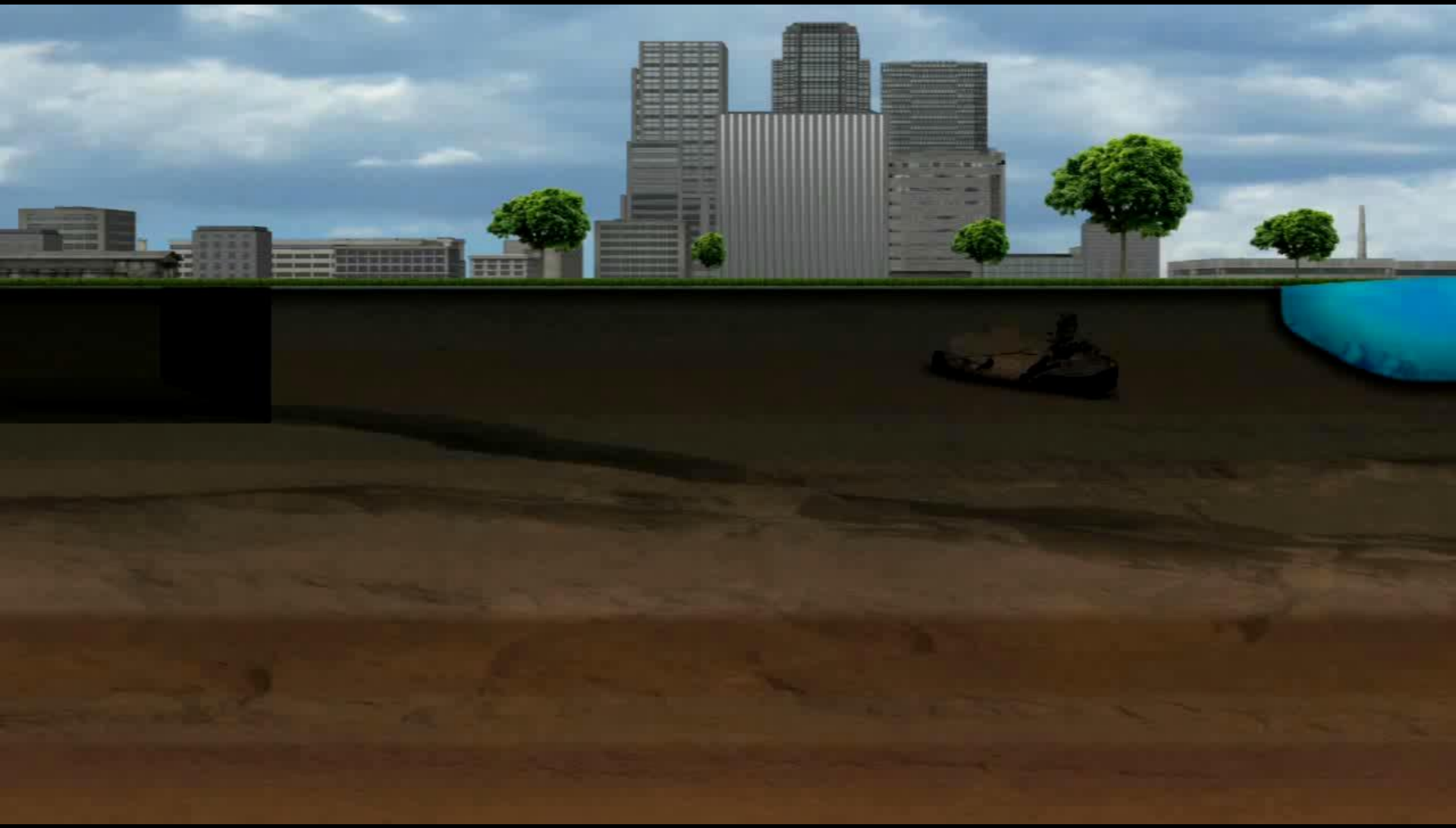




Rod-by-Rod Plan

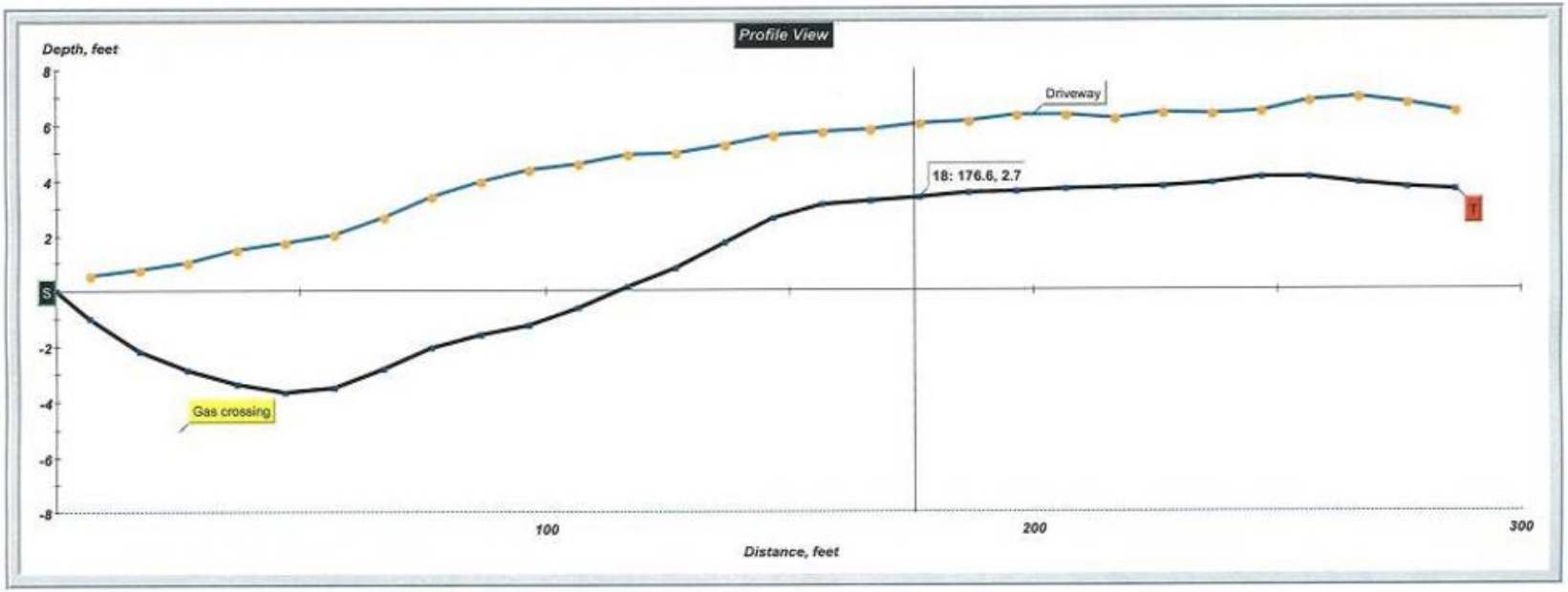
Rod No.	Distance	L+/R-	Elevation	Depth					
1	0.000	0.000	6.000	0.000					
2	14.788	0.000	3.489	2.400					
3	29.607	0.000	1.165	4.613					
4	44.454	0.000	-0.971	6.637					
5	59.327	0.000	-2.919	8.474					
6	74.223	0.000	-4.678	10.121					
7	89.141	0.000	-6.249	11.580					
8	104.077	0.000	-7.630	12.850					
9	119.029	0.000	-8.823	13.930					
10	133.996	0.000	-9.826	14.821					
11	148.973	0.000	-10.639	15.522	2.38	0.0	0.0	150.0	1184.8
12	163.960	0.000	-11.263	16.033	1.66	0.0	0.0	165.0	1184.8
13	178.954	0.000	-11.697	16.355					
14	193.952	0.000	-11.941	16.487					
15	208.952	0.000	-12.000	16.433					
16	223.952	0.000	-12.000	16.320					
17	238.952	0.000	-11.945	16.153					
18	253.949	0.000	-11.673	15.769					
19	268.940	0.000	-11.174	15.156					
20	283.923	0.000	-10.446	14.317					
	298.892	0.000	-9.491	13.249					
	313.845	0.000	-8.309	11.955					
	[illegible]	0.000	-6.900	10.434					
	[illegible]	0.000	-5.264	8.686					
	[illegible]	0.000	-3.401	6.712					
	[illegible]	0.000	-1.313	4.512					
	[illegible]	0.000	1.001	2.088					
	[illegible]	0.000	[illegible]	0.000					
								405.0	987.3

Vermeer



After the Bore
As-Built/Operator Logs

- Plan
- Actual
- Any Deviations
- Operator log and notes



Vermeer

A Finished Job

Exposed product properly marked

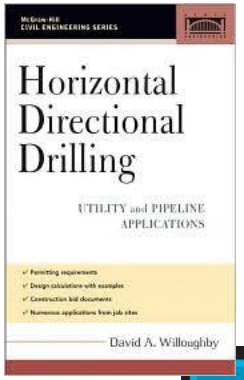
Properly marked and protected pits

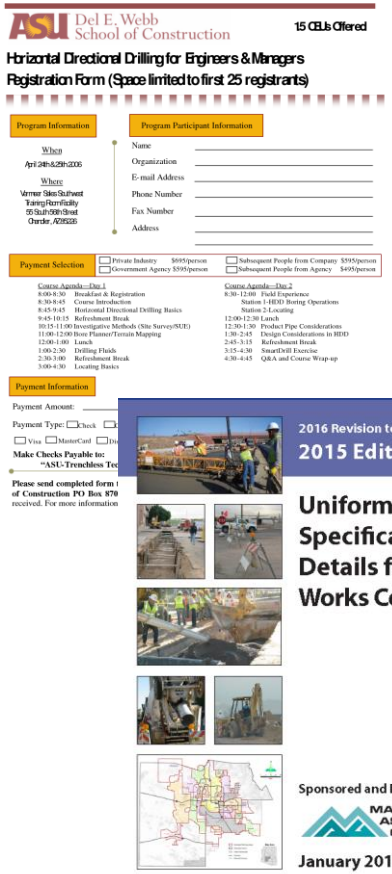
Jobsite cleaned and properly restored

Vermeer

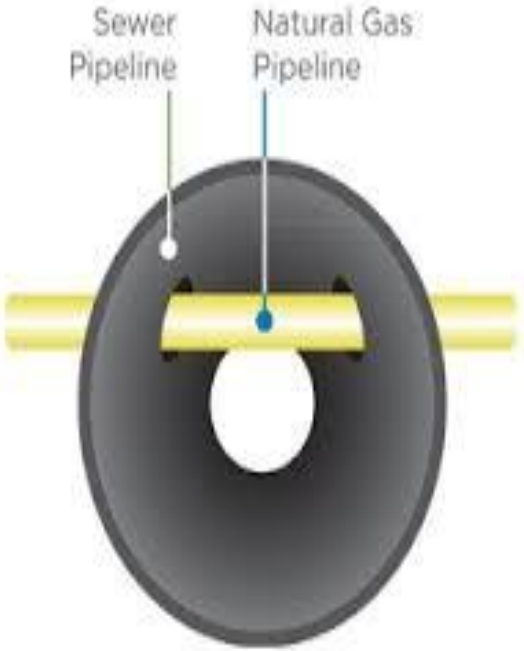
Training

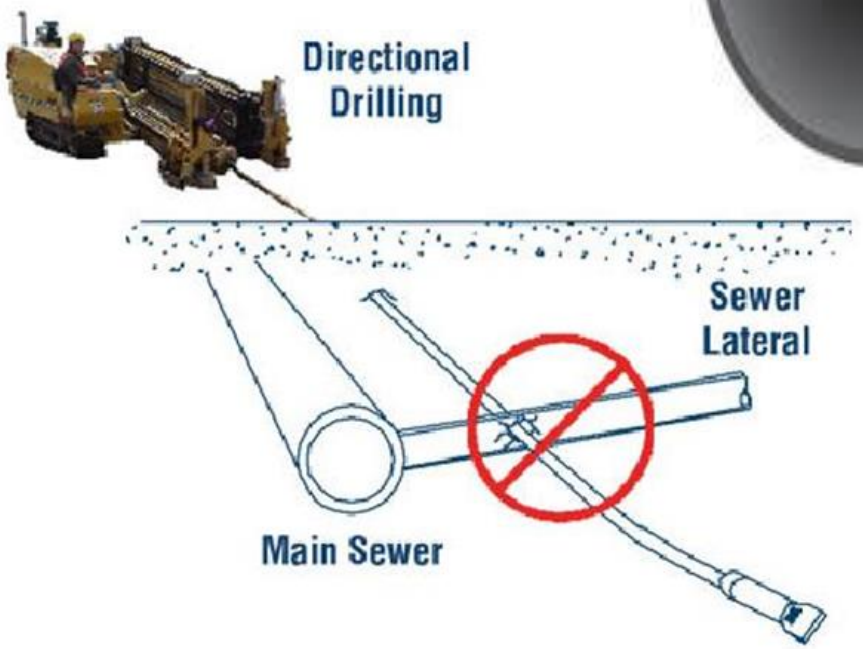
- Equipment dealers
- Contractors
- Utilities
- Civil Engineers

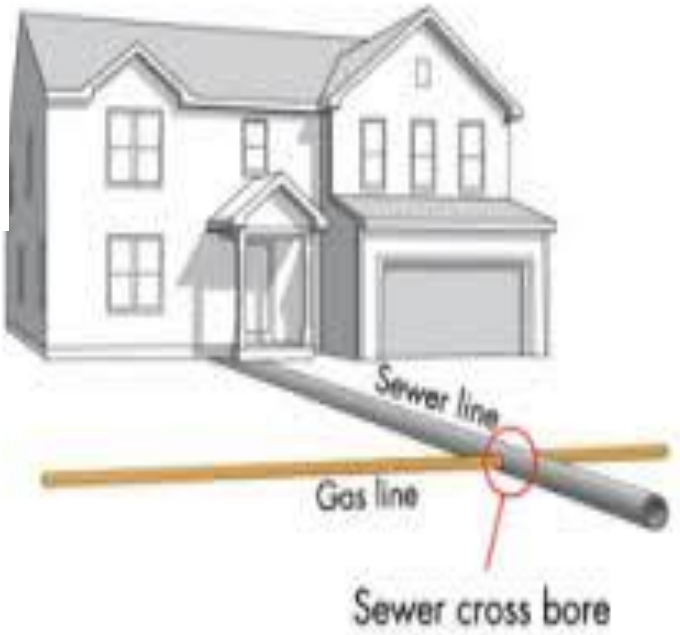




Cross Bores

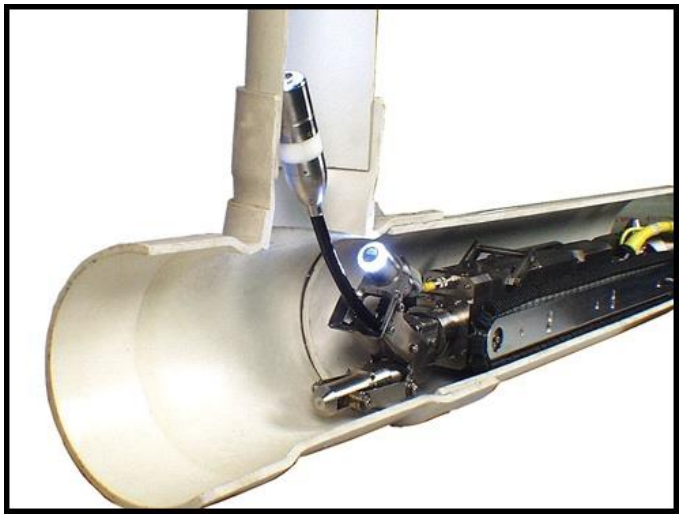

Sewer Pipeline
Natural Gas Pipeline

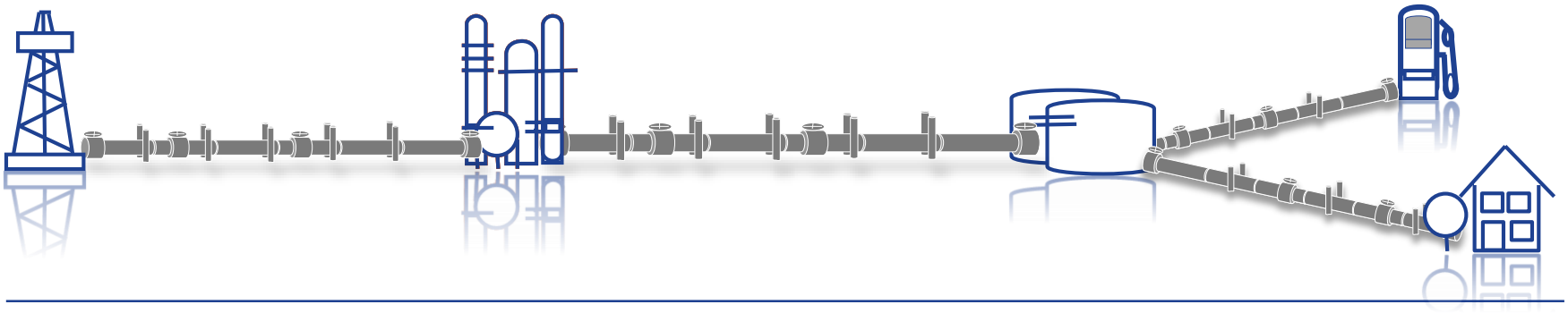

Directional Drilling
Sewer Lateral
Main Sewer


Sewer line
Gas line
Sewer cross bore

Cross Bore Potential Results

Potential Solutions





Intelligent Pipeline Solution from GE and Accenture

Enabling safer, more efficient gas transmission operations.

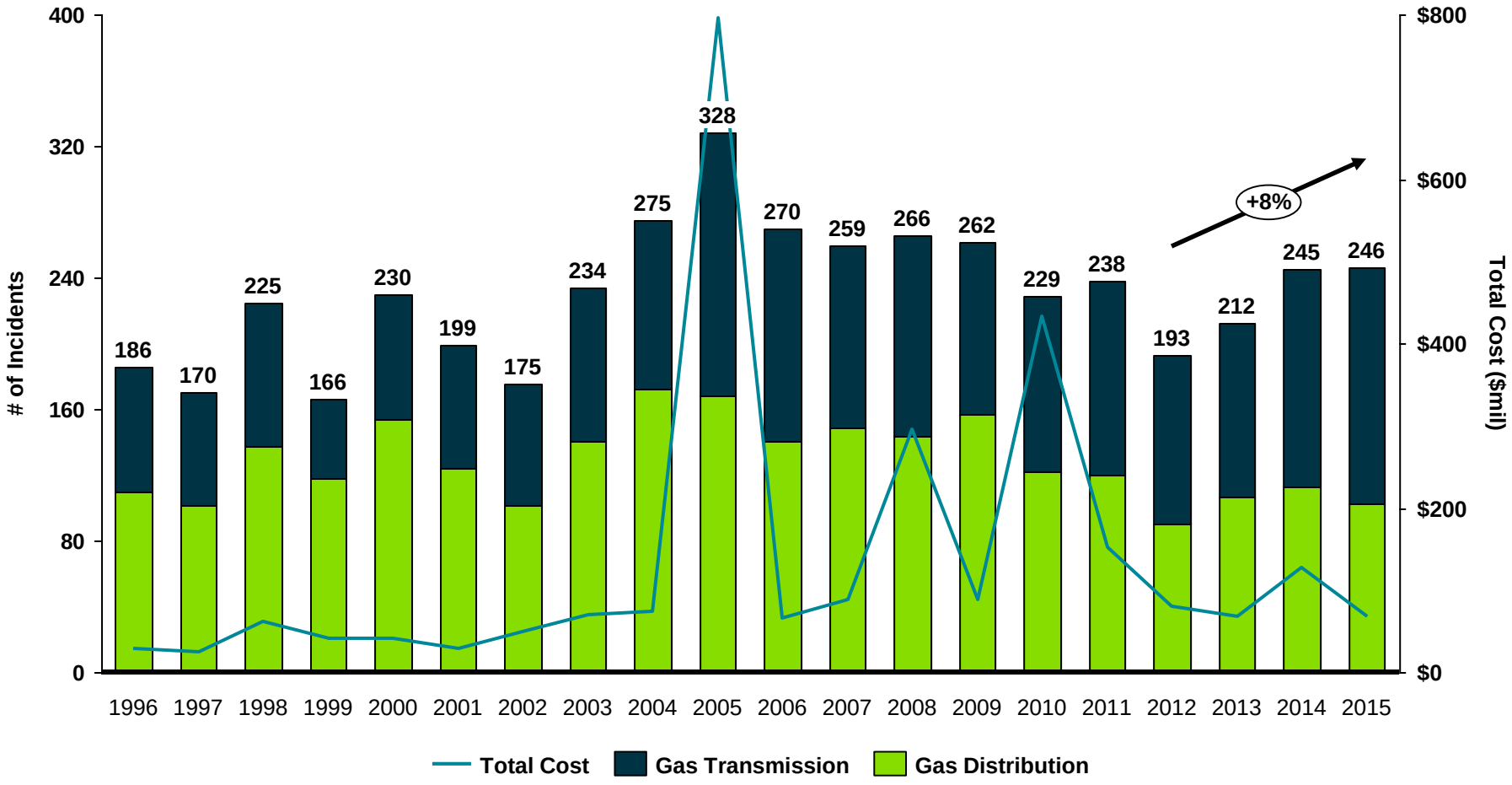
Overview for NARUC

February 15, 2016

Pipeline Incidents

1996-2015 Gas T&D Pipeline Incidents

(# of deaths and injuries reported to the PHMSA)

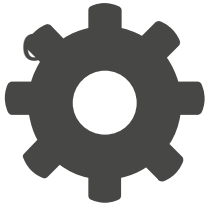


Source: U.S. Dept. of Transportation, Pipeline and Hazardous Materials Safety Administration

How IPS can help pipeline operators…

1. Improve safety

2. Optimize operations



3. Maximize return on current IT spend

4. Prepare for regulatory changes

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High performance. Delivered.

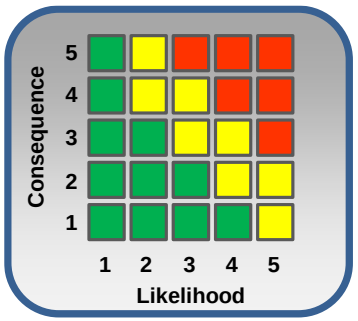
What is the Intelligent Pipeline Solution?

A standard way to view pipeline assets, enhance situational awareness and run predictive analytics at scale.

Data Integration

Asset data is integrated with operational, ***integrity and commercial data*** and layered with ***external data*** such as weather and one call tickets

Risk Modeling



Semi-quantitative risk model applied to gas transmission systems near real-time

Data / Risk Visualization

Geospatial map
- Linear transmission assets
- Data sets overlaid onto the map as layers
- Risk scores applied to assets
- Filtering of assets by attribute

Data Analytics

Forecasting and predictive capabilities from past data trends

Reports

Data completeness reports; exportable integrity and risk tables for additional analysis

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Cheryl Campbell
SVP, Gas, Xcel Energy
NARUC Winter Meeting
February 15, 2016

Maintaining Natural Gas System Safety and Integrity

Infrastructure Investments

For Economic Renewal

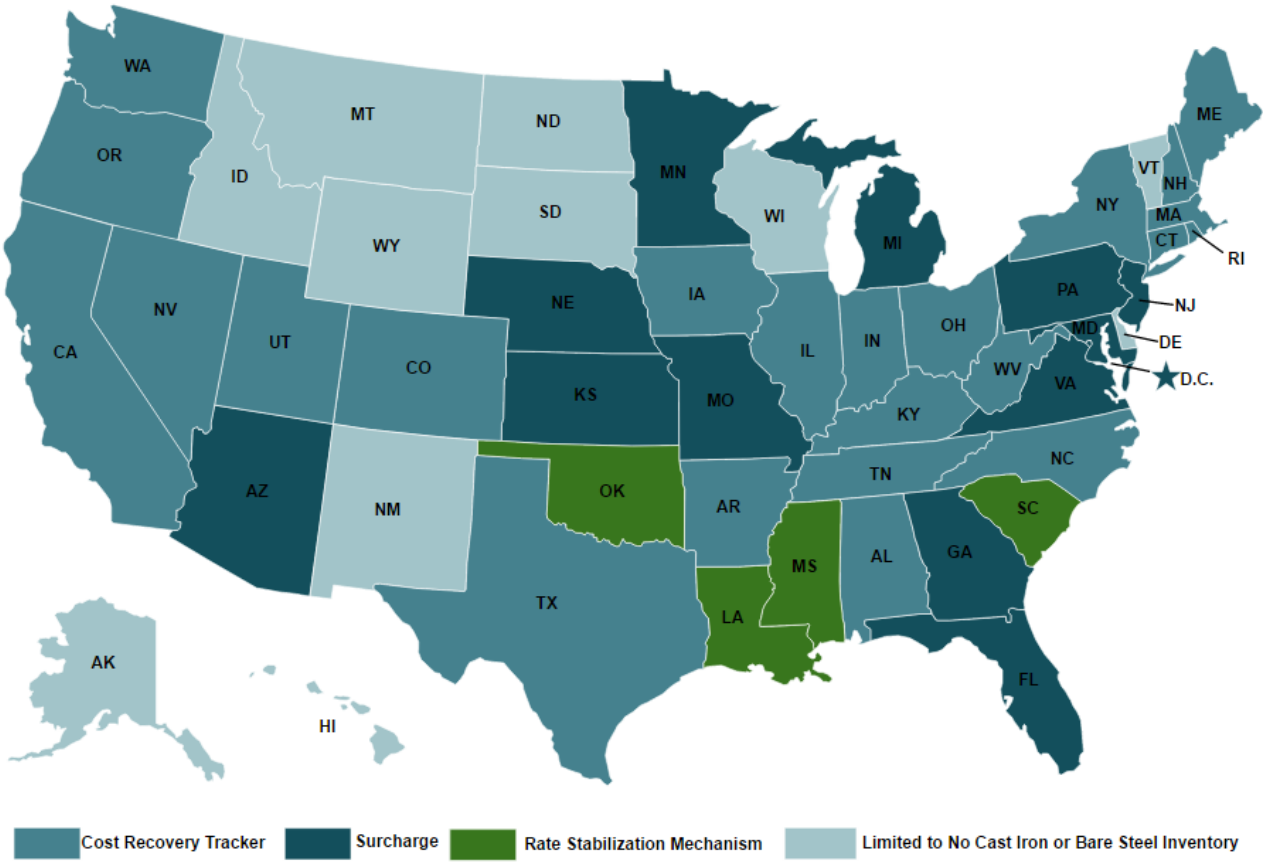
America's natural gas utilities invest billions in our nation's ***2.5 million miles of pipeline infrastructure*** — the most extensive, integrated, safe and reliable in the world.

Natural gas utilities ***spend more than $22 billion annually to help enhance the safet***y of natural gas distribution and transmission systems and to upgrade systems and expand service so more Americans can access this foundation fuel.

Industry also has a number of voluntary and proactive programs to enhance safety, such as the ***AGA National Peer Safety Review Program*** that allows local natural gas utilities to review their peer's safety program, share leading practices and identify opportunities to better serve customers and communities.

Working with governors, legislators and state regulators around the country, utilities are developing ***innovative models for making these capital investments possible***.

States with Accelerated Infrastructure Replacement Programs

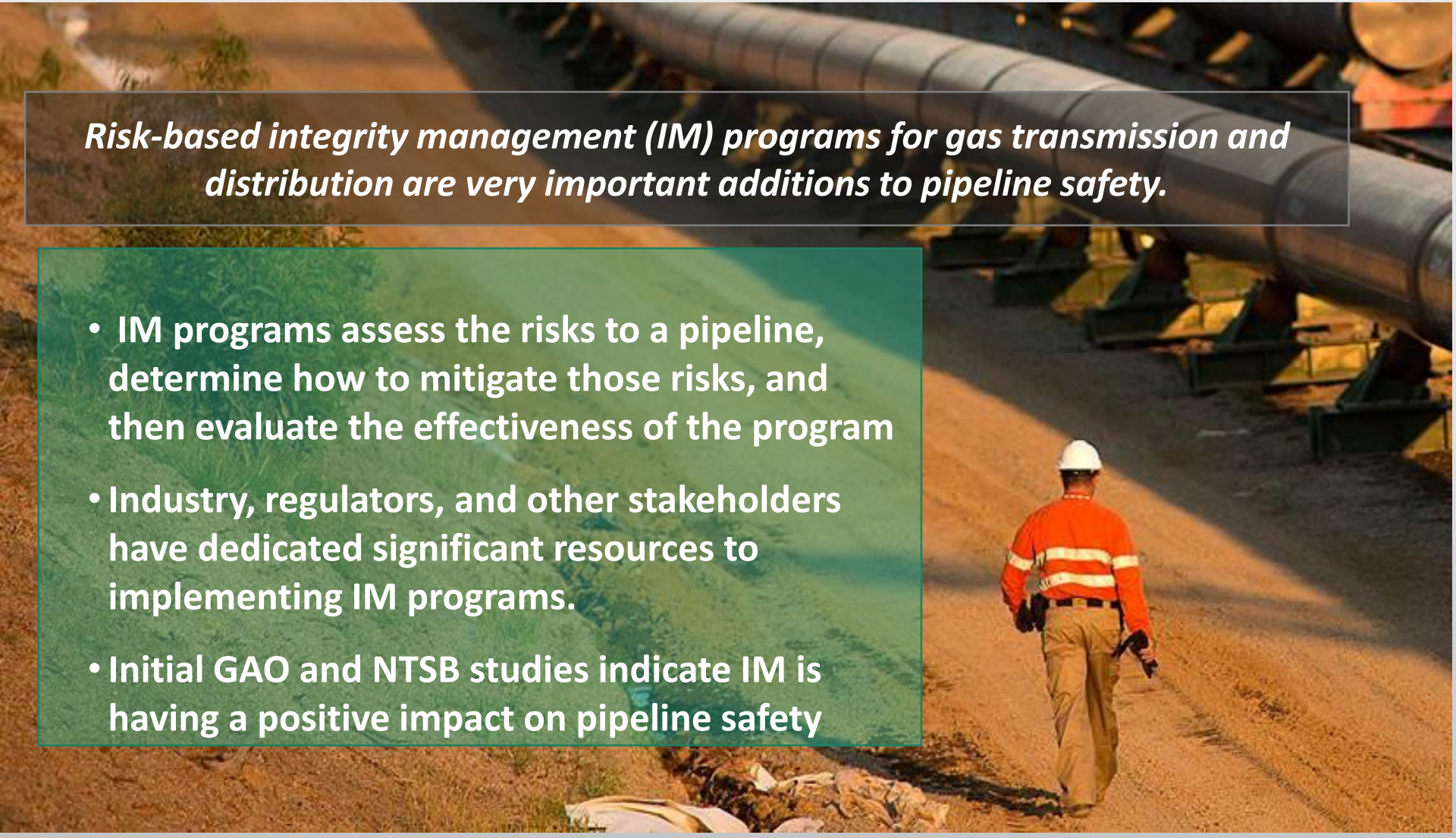


- *The overall trend is positive*
- *States address this issue differently*
- *The basis for these decisions is always just and reasonable rates for consumers*

Terry McCallister *(far left) leads the way during a tour of WGL's Pipetown Training Facility with Prince William County, Virginia, first responders and other visitors.*

Enhancing Safety:
A Joint Effort

Safety is a joint effort, a partnership that engages customers, regulators and policymakers at every level. We are committed to proactively collaborating with public officials, emergency responders, excavators, consumers, safety advocates and the public



Risk-based integrity management (IM) programs for gas transmission and distribution are very important additions to pipeline safety.

- IM programs assess the risks to a pipeline, determine how to mitigate those risks, and then evaluate the effectiveness of the program
- Industry, regulators, and other stakeholders have dedicated significant resources to implementing IM programs.
- Initial GAO and NTSB studies indicate IM is having a positive impact on pipeline safety

Pipeline Safety – Continued Improvement

- Continued collaboration
- Identification and implementation of industry best practices
- Continued focus on proactive risk management through integrity management programs
- Improved record keeping – legacy and new
- R&D resources
- Pipeline Safety Management System implementation
- Continued focus on leadership
  - NARUC
  - Industry
  - Operators

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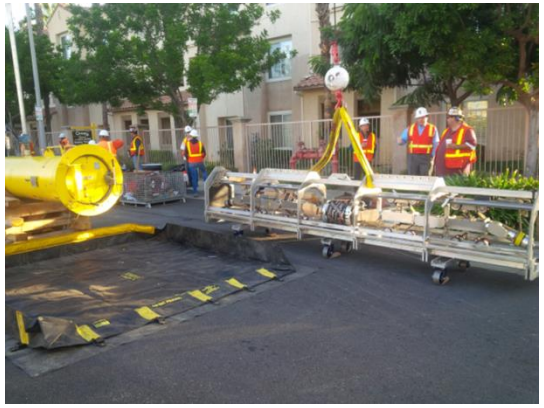
NYSEARCH

Innovations that Provide Safety & Integrity Opportunities



Daphne D'Zurko
Executive Director, NYSEARCH
NARUC Winter Meeting
February 2016

Important Areas of Tech Devt for Inspection of Trans/Distribution Lines

- Multi-faceted inspection platforms that do not require shutdown of operation or large/numerous excavations
- Advanced warning for activity of threats near pipelines
- Real-time knowledge of condition of pipeline assets
- Simplified customer awareness of presence of natural gas

Important Areas of Tech Devt for Inspection of Trans/Distribution Lines

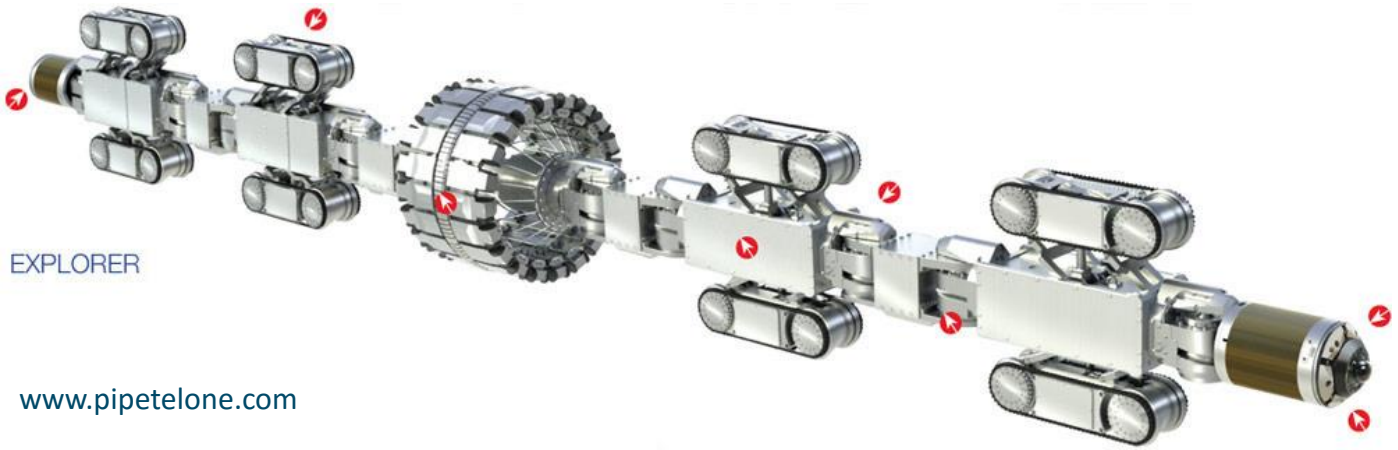
- Risk Assessment Techniques
- Innovations in Leak Pinpointing
- Trenchless innovations; reduced risk with installation of new utilities

NYSEARCH Program Areas

- Improved Installation, Maintenance and Repair
- Pipeline Integrity/Direct and Remote Assessment
- Pipe Location/Damage Prevention
- Leak Detection
- Real-time Sensing & Inspection for Distribution
- Environment/Reducing GHG Emissions
- Gas Quality
- Evaluation of New Materials

Inspection of LDC-owned Transmission Pipes

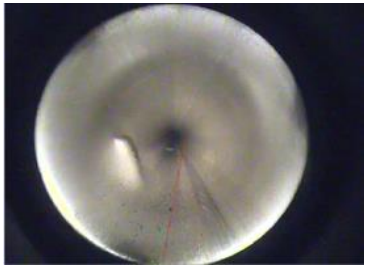
- Have completed all planned Explorer robotic inspection platform sizes for un-piggable pipe
  - 6” – 36” pipeline sizes; up to 750 psig
  - Visual and MFL data; operate thru bends and plug valves
  - Tetherless, battery powered, wireless communication, operation under live conditions

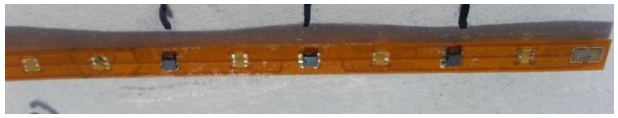


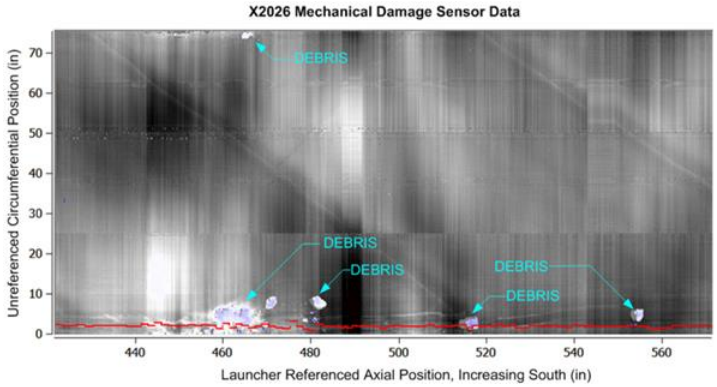
www.pipetelone.com

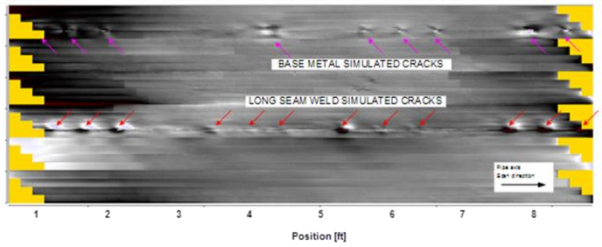
Supporting Technologies Enhance Inspection

- Addition of sensing functionality to Explorer platform
  - Mechanical damage/ovality
  - Crack sensor (TMFL/EMAT and EC)
  - Hardness Tester
  - Higher quality data in bends









Scenes from Commercial Jobs

Over 30 gas companies in N. America have used these tools

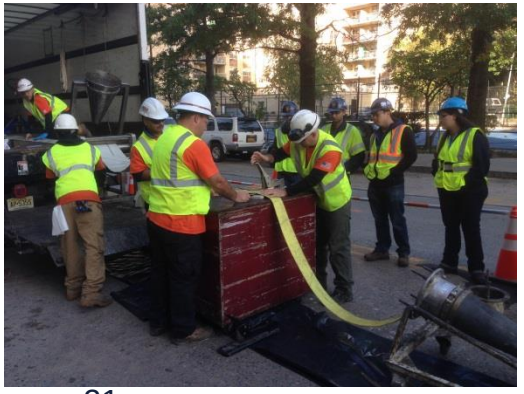

X 16/18

What's Needed for New Technology Deployment?

- Experienced personnel to support testing and secure variance from traditional work practices
- Incentives to first adopters; approval processes that promote safety and encourage innovation
- Recognition that manufacturers can only commit to innovations where a short term and reasonable return on their investment is likely

What's Needed for New Technology Deployment? (cont.)

- Acceptance that product technology transfer requires licensing of proprietary & sensitive Intellectual Property & information
  - Collaboration is important but tricky in a commercial arena
  - Publications are limited in commercial license arrangements

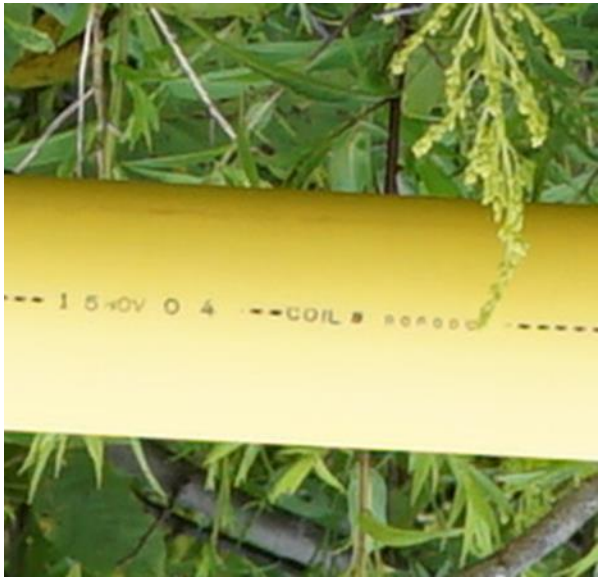


Technologies Available or On the Horizon

- CIPP Liners to Rehabilitate Steel & Cast Iron
- Live Electrofusion Repair Sleeves for PE
- Cased Pipe Vent Inspection
- Proactive Monitoring/DP Systems for Distribution & Transmission

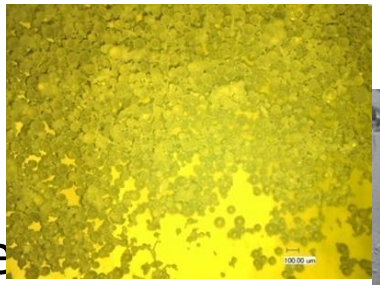
Technologies Available or On the Horizon (cont.)

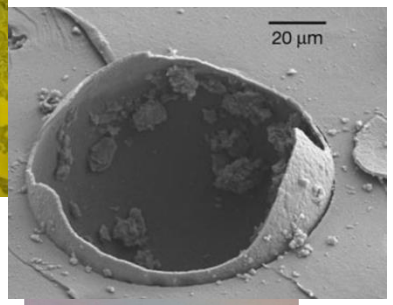
- Better Techniques/Tools for Non-Destructi Evaluation of PE joints
- Tools for Tracking & Traceability
- sUAS (drones) for inspection & methane detection
- Next Generation Methane Detector for Use in Homes



Technologies Under Development

- Indirect & Direct Methods of Emissions Flow Rate Measurement
- Real-time Gas Distribution Sensing Network
- Inspection of Plastic Pipe
- Self-Healing PE Pipe





Future

- Exo-Skeletons for Injury Pre
- Energy Harvesting from Pipelines

Current NYSEARCH Members

- Alagasco
- BG & E
- CHG & E
- Con Ed
- Enbridge Gas
- NGrid/Keyspan
- National Fuel Gas
- NGrid/Niagara Mohawk
- NYSEG
- O & R
- PSE&G
- PECO Energy
- PG & E
- Questar
- RG & E
- SoCal Gas
- SouthWest Gas
- Union Gas
- Washington Gas
- Xcel Energy

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Closing Remarks

- Many gas companies have been proactive in innovations for safety and integrity

- Implementation and market development of innovations in a regulated, risk-averse pipe environment are challenging!

ddzurko@northeastgas.org

ACCELERATED INFRASTRUCTURE REPLACEMENT AND MAINTENANCE IN ILLINOIS

COMMISSIONER SHERINA MAYE EDWARDS
ILLINOIS COMMERCE COMMISSION
NARUC WINTER MEETING
FEBRUARY 2016

INFRASTRUCTURE REPLACEMENT IN ILLINOIS: A BRIEF HISTORY

- Docket No. 09-0167-**People's Gas Rate Case**
  - Company proposed and ICC approved a rider for accelerated replacement.
  - The parties challenged it in court; the court remanded, the rider was cancelled and money collected through the rider was refunded. The ICC continues to work with the company on its modernization program
- April 18, 2011 **Pipeline Safety Forum** Hosted by Secretary of Transportation Ray LaHood following the events in Allentown, PA and San Bruno, CA.
  - **Key topics** included questions about the safety of aging pipeline infrastructure; U.S. DOT's partnership with States' programs; pipeline owners' risk analysis and assessment technologies; accelerated pipeline repair, rehabilitation and replacement programs
- Before U.S. DOT's Pipeline Safety Forum, PHMSA contacted States' regulatory chairpersons and urged them to prepare to discuss current replacement plans for the highest risk pipelines and what is necessary to accelerate those plans.
- In response, **the ICC's Pipeline Safety Program gathered pertinent data from Illinois' gas utilities**, including: (1) Miles of cast iron, ductile iron, bare steel, cathodically protected steel, and pre-1973 Aldyl "A" mains in the operator's system, (2) the miles of those mains scheduled for replacement by 2016, (3) the number of non-cathodically protected metallic and pre-1973 Aldyl "A" services in the system, and (4) the number of those services scheduled for replacement by 2016.

INFRASTRUCTURE REPLACEMENT: SEC. 9-220.3-NATURAL GAS SURCHARGE TARIFF (QIP RIDER)

- **Enacted July 2013 to encourage**: (1) Retirement/replacement of "at risk" facilities; (2) Relocation of meters from inside to outside; (3) Upgrading from low to medium pressure; (4) System modernization; (5) Replacement of high-pressure transmission pipelines; (6) Replacement of difficult to locate facilities and; (7) Replacement of facilities to establish over-pressure protection (OPP).
- Capital investments must fall into one of these seven categories. **Investments must be placed in-service**, be non-revenue producing, and include identification and review of facilities ranked within the highest risk categories.
- Investments cannot be included in rate base that is already in utility delivery rates or include operating and maintenance costs. The utility must maintain a minimum level of non-QIP investments equal to average total depreciation expense for calendar years 2006-2010.
- Return on QIP investment is based upon overall Rate of Return authorized in the last gas case. Increase in billed revenue may not exceed annual average of 4% increase; year over year increase in may not exceed 5.5%.
- QIP Rider rate base is updated monthly with an annual reconciliation comparing billed QIP revenue to the actual QIP incurred cost. **This helps eliminate regulatory lag and make IL gas companies more attractive to investors**.
- QIP Rider sunsets December 31, 2023.

THE ICC HAS APPROVED RIDERS FOR ILLINOIS' THREE LARGEST NATURAL GAS COMPANIES: NICOR GAS, AMEREN ILLINOIS AND PEOPLES GAS

Company	Docket No.	Filing Date	Order Date	Rider Name
Peoples Gas	13-0534	Sept. 19, 2013	Jan. 7, 2014	Rider QIP
Nicor Gas	14-0292	April 7, 2014	July 30, 2014	Rider 32, or Rider QIP
Ameren Illoinois	14-0573	Sept. 19, 2014	Jan. 6, 2015	Rider QIP

- For Peoples Gas, Rider QIP was effective on January 1, 2014. The ongoing case to reconcile amounts billed under the rider with the actual prudently incurred costs recoverable under the rider is Docket No. 15-0209.
- Nicor and Ameren Illinois began charging customers through Rider QIP in 2015. Reconciliation cases for calendar 2015 will be filed in 2016.

INFRASTRUCTURE MAINTENANCE:

- Public Utilities Act Sections 8-505 and 15-601: **The ICC has the power to require public utilities, including common carriers by pipeline, to construct, maintain, operate and set uniform standards for facilities, equipment, etc., such that the health and safety of employees, customers, and the public is promoted and safeguarded.**
- Illinois Administrative Code, Title 83 Public Utilities:
  - Part 500: Standards of Service for Gas Utilities
  - Part 520: Training Programs for Natural Gas System Operating Personnel
- **ICC's Pipeline Safety Program**
  - Audits records and conducts site visits for 110 gas system operators representing 3,710,481 individual service lines. This includes large utilities, small utilities, municipal systems, and housing authorities.
  - Conducts inspection and enforcement activities to assure compliance with all Federal and State safety rules and regulations.
  - Investigates incidents involving injuries requiring hospitalization, a fatality, or property damage exceeding $50,000.

FUTURE/PROPOSED PIPELINE SAFETY REGULATIONS

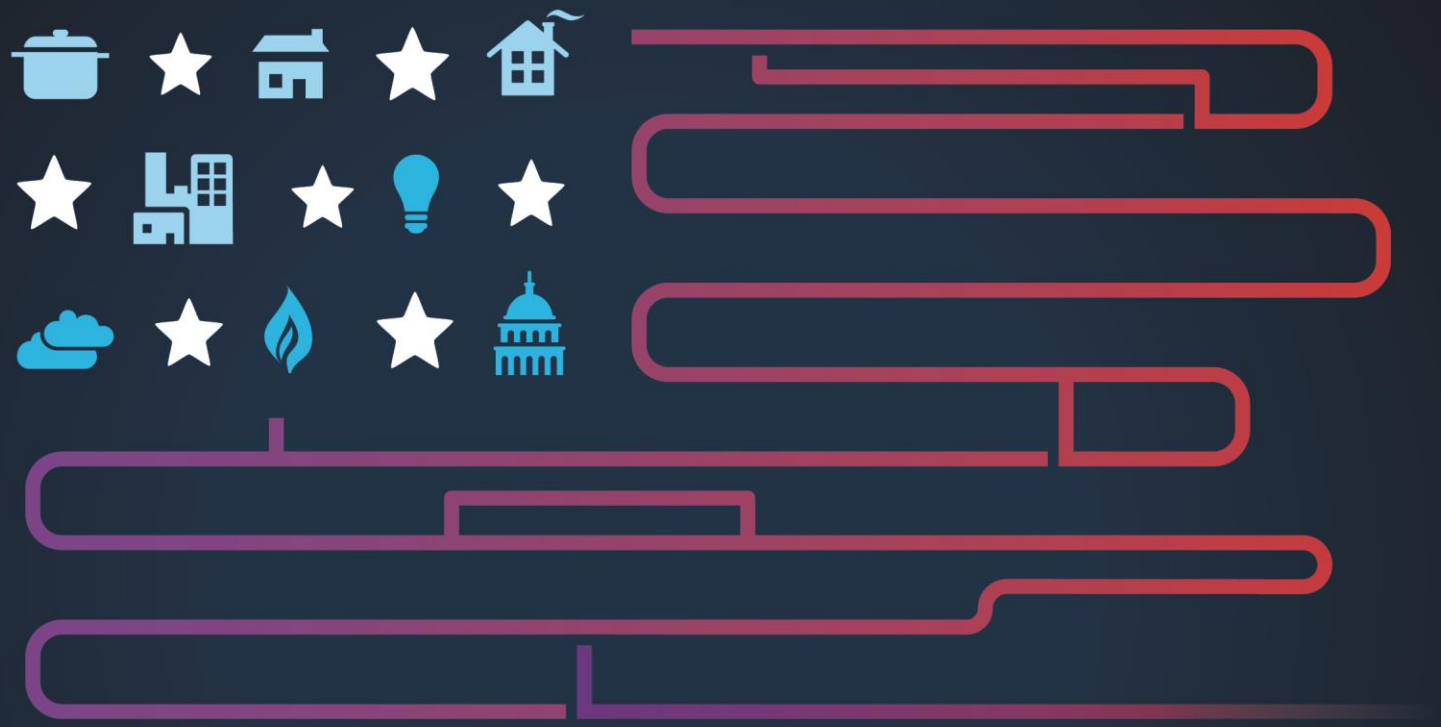
- Inspection of pipeline construction tasks (contractors and company crews)
- National Pipeline Mapping System (geospatial accuracy and 28 pipeline data attributes)
- Pipe component traceability (for plastic and all materials)
- Expansion of operator qualification
- Farm tap inspections (3 year requirement)
- Automatic/remote control valve installation and rupture detection standards

KEY CHALLENGES/CONCERNS WITH NEW REGULATIONS

- Timeframe for compliance with integrity verification process requirements
- Availability of experienced gas pipeline engineering resources
- Availability of construction contractors and skilled craft (welders)
- Rate impact on customers for IVP requirements/regulations
- Interfacing with materials and collecting/analyzing data during the transition from old systems to the incorporation of new technology

KEY TAKEAWAYS

- All of the gas utilities in Illinois currently have programs for main replacement and maintenance.
  - In fact, most of these programs have been in place since before the legislation was enacted.
- Since many current programs are based on legacy applications and data, and because of the age of some of the Illinois infrastructure, it is not always feasible to apply and/or take advantage of new technology.
  - Systems of different vintages are not necessarily merged together. Transition plans are needed to capture these analytics re: new materials.
  - System-wide benefits from this technology will not be apparent for many years.
- **It's important for regulators to support the use of new technology to alleviate the costly and time consuming process of replacing pipes.**



Natural Gas Works

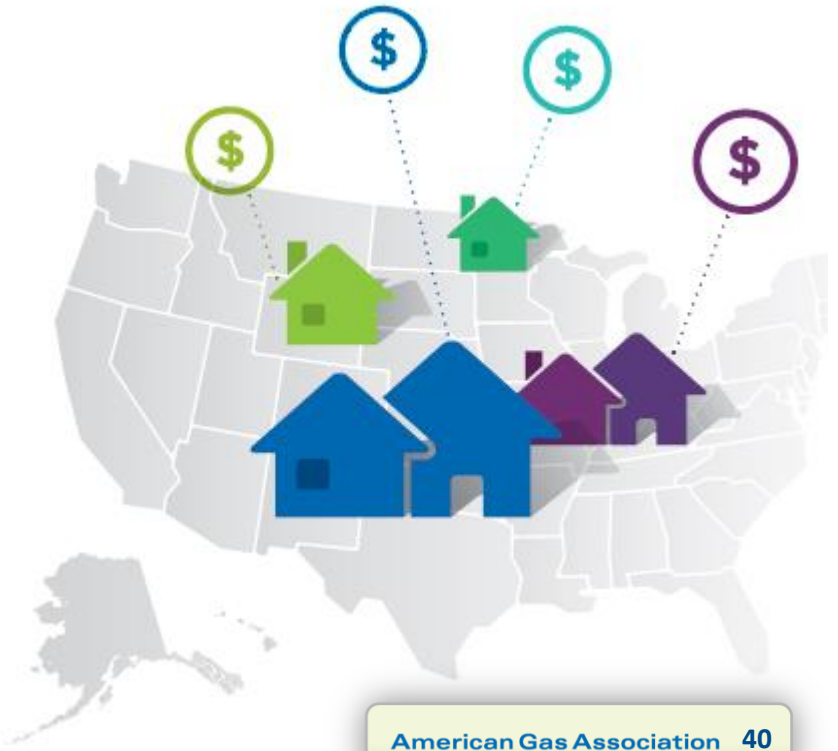
AGA
American Gas Association

Americans want natural gas

- Natural gas is comfortable and affordable.
- The direct use of natural gas reduces emissions.
- An opportunity to hire a diverse and inclusive workforce that will upgrade and maintain the energy infrastructure of the 21st century.

Lowest-cost home *heating* **option**

- Natural gas ***storage levels i***n the U.S. peaked at 4 trillion cubic feet and injection levels in 2015 and were among the highest ever.
- Domestic ***working gas*** is now 16% ahead of last year and 9% higher than the five-year average.
- U.S. Energy Information Agency now expects 2015-2016 ***winter bills*** to be 13% lower than last year.
- ***Nationwide, bills may be the lowest in the past decade on average.***



The Clean, Efficient Choice

Direct use, which can cut carbon emissions nearly in half, refers to natural gas consumed directly in appliances for heating and cooling, water heating, cooking and clothes drying.

Consumers can immediately save on their monthly utility bills through converting their households to natural gas.

- Households with natural gas versus all-electric appliances save an average of $840 per year and produce 37 percent lower greenhouse gas emissions.
- Low domestic natural gas prices have led to savings of almost $69 billion for residential natural gas customers over the past four years.
- Through efficiency investments, utilities helped offset 7.1 million metric tons of carbon dioxide emissions in 2012.

AGA Report Achieving Greenhouse Gas Reductions through Direct Use of Natural Gas

Expanding the Reach

- ***Low prices*** are encouraging more businesses to switch to gas and the construction of new gas powered electric generating plants.
- States recognize the intrinsic ***economic benefits*** of natural gas and looking to expand their natural gas infrastructure as a way of increasing opportunity.

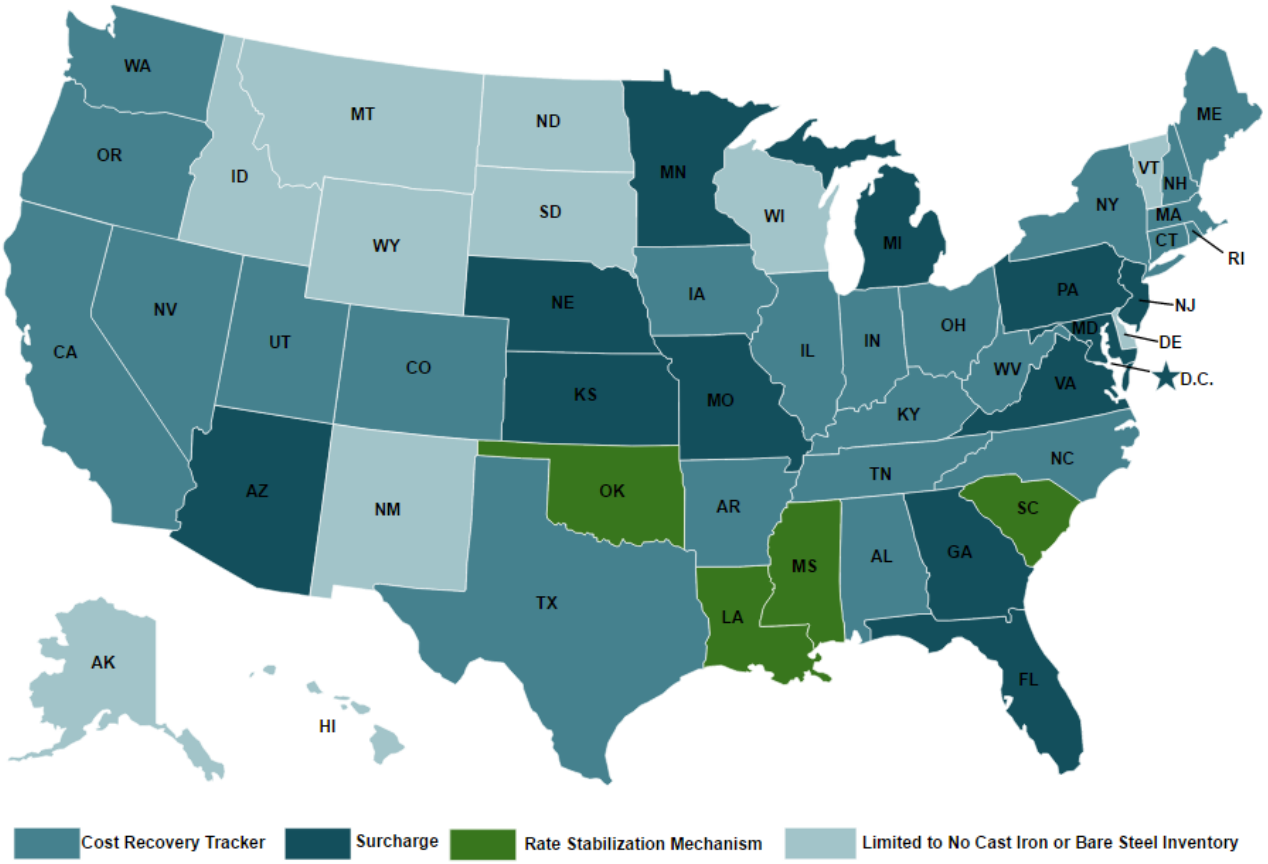
37 STATES

have adopted or considered innovative expansion proposals, and that number continues to grow.

Safely Transported

- ***Natural gas utilities spend $22 billion annually*** to monitor, maintain and upgrade natural gas distribution and transmission systems.
- ***National Peer Safety Review Program*** allows local natural gas utilities to review their peer's safety program, share leading practices and identify opportunities to better serve customers and communities.

States with Accelerated Infrastructure Replacement Programs



- *The overall trend is positive*
- *States address this issue differently*
- *The basis for these decisions is always just and reasonable rates for consumers*

States without Accelerated Replacement Mechanisms

State	Main -Steel Unprotected Bare (Miles)	Main - Cast/Wrought Iron (Miles)	Estimated Miles of Services -Steel Unprotected Bare	Estimated Miles of Services - Cast/Wrought Iron
AK	0	0	0.00	0.00
DE	11.122	82.173	9.97	0.00
HI	105	0	86.06	0.00
ID	0	0	0.00	0.00
MT	5.43	0	6.98	0.00
ND	0	0	0.00	0.00
NM	6	0	0.0	0.0
SD	0.068	2.65	3.20	0.00
VT	0	0	0.00	0.00
WI	0	0	0.00	0.00
WY	0	0	22.67	0.00
Totals	127.62	84.823	128.88	0

Source: DOT Data

- *Alaska, Idaho, North Dakota, Vermont and Wisconsin have finished replacing their cast iron and bare steel.*
- *Wyoming has finished replacing its cast iron and bare steel main and has a limited quantity of bare steel services remaining.*
- *Other states on this list are on the verge of completing their cast iron and bare steel replacement.*

Throughout the country, natural gas utilities are upgrading pipeline systems to make them safer and are driving down emissions in the process.

PIPELINE LEAKS DECREASED

25% for pipeline mains

and **16%** for services

SINCE 1990

According to a nationwide field study led by Washington State University published in March 2015.

We have an opportunity to hire a ***diverse and inclusive workforce*** that will upgrade and maintain the energy infrastructure of the 21st century.

Combined Heat and Power

Combined Heat and Power projects already exist in all 50 states and significant technical and economic potential remains.

- Eight percent of electric capacity in the U.S.
- National goal of increasing total CHP in market to 122GW by 2022.
- Energy and cost savings, along with CO2 reductions.
- Billions of dollars in new capital investment in American manufacturing and facilities.
- Important tool to help states meet their emission targets under the Clean Power Plan.

Clean *Transportation* Fuel

- Three to five year payback times for medium duty fleets, less than three years for the heavy duty vehicles due to the high miles they are driven.
- Number of CNG stations has grown by over 11% each year since 2008.
- 239% growth in the nation's LNG refueling infrastructure since 2009.

CO
Carbon monoxide by 70 to 90%

NOx
Nitrogen oxides by 75 to 95%

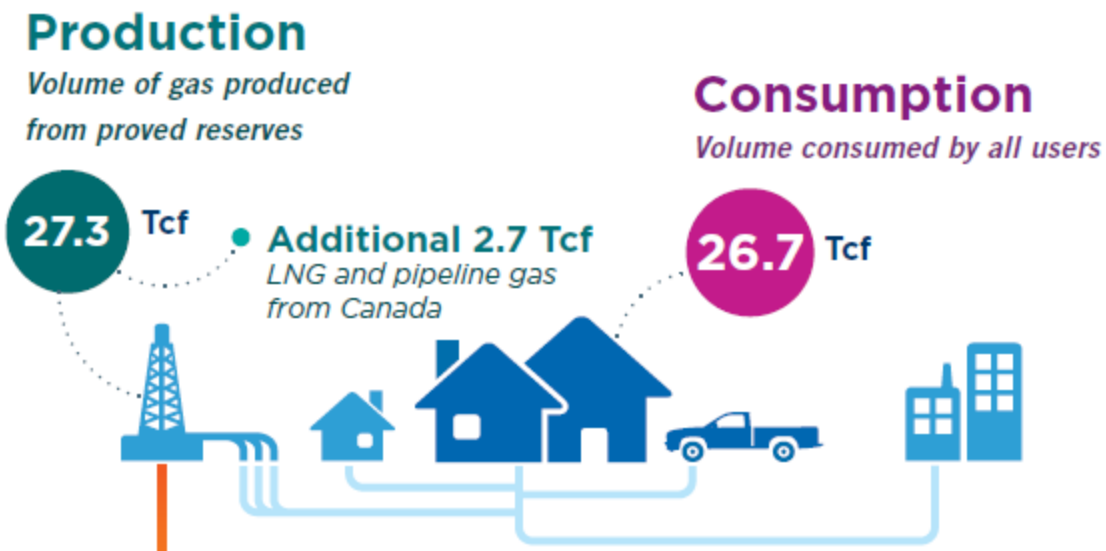
NMOG
Non-methane organic gas by 50 to 75%

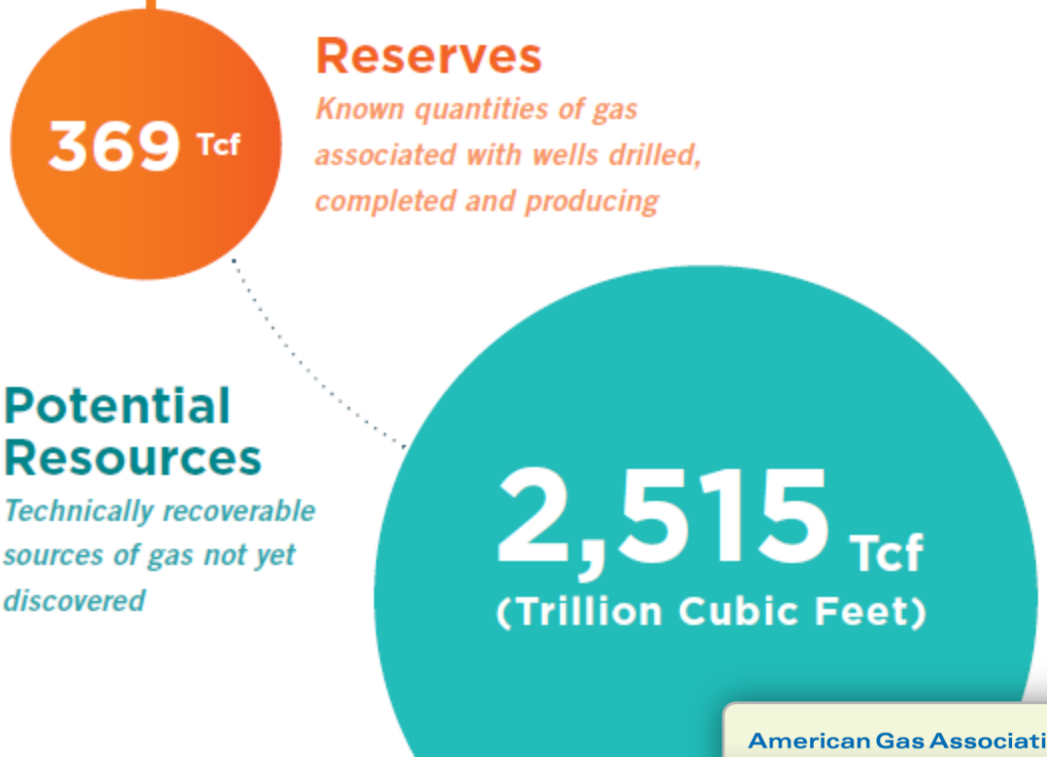
CO_2
Carbon dioxide by 20 to 30%

And Then

There Was Abundance

The U.S. estimated future supply of natural gas (reserves plus resources) stood at 2,884 Tcf at year end 2014 – enough natural gas to meet America's diverse energy needs for more than 100 years. Estimated future supply has more than doubled for the period 1990-2014 average.





Exports

For the next decade and beyond, domestic natural gas supplies will be sufficiently ***robust to meet growth in demand across all sectors.*** U.S. exports of natural gas will not have a material adverse impact on core LDC customers for the foreseeable future.

First U.S. large-scale LNG exports from Cheniere's facility at Sabine Pass expected during the first quarter of 2016

Natural Gas **Price Outlook**

Our nation's strong natural gas supply fundamentals and robust and reliable natural gas delivery infrastructure suggest that over the next decade, a range of demand scenarios can be met by a diverse and responsive supply market within an estimated price band of $4.00-$6.50 per MMBtu—a level well below the peak market prices of the preceding decade.

Source: *Rethinking Natural Gas, A Future for Natural Gas in the U.S. Economy,* p.6, American Gas Association, ©2012, Citing Source: Wood MacKenzie Spring 2012. See paper for outlook limitations.

Natural Gas Works

- Natural gas is a foundation fuel for the future.
- Helping us meet our national goals of boosting our economy, improving our environment and increasing our energy security.
- This is an industry you can count on.

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President & COO
Public Service Electric & Gas Company
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Find Us Online

www.aga.org

www.truebluenaturalgas.org

http://twitter.com/aga_naturalgas

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www.linkedin.com/company/5090 5?trk=tyah

Natural Gas CEO
Wellhead to Burner Tip Challenges

NARUC Winter Meeting
Committee on Gas
2/15/16

Steve Mueller
Chairman Southwestern Energy

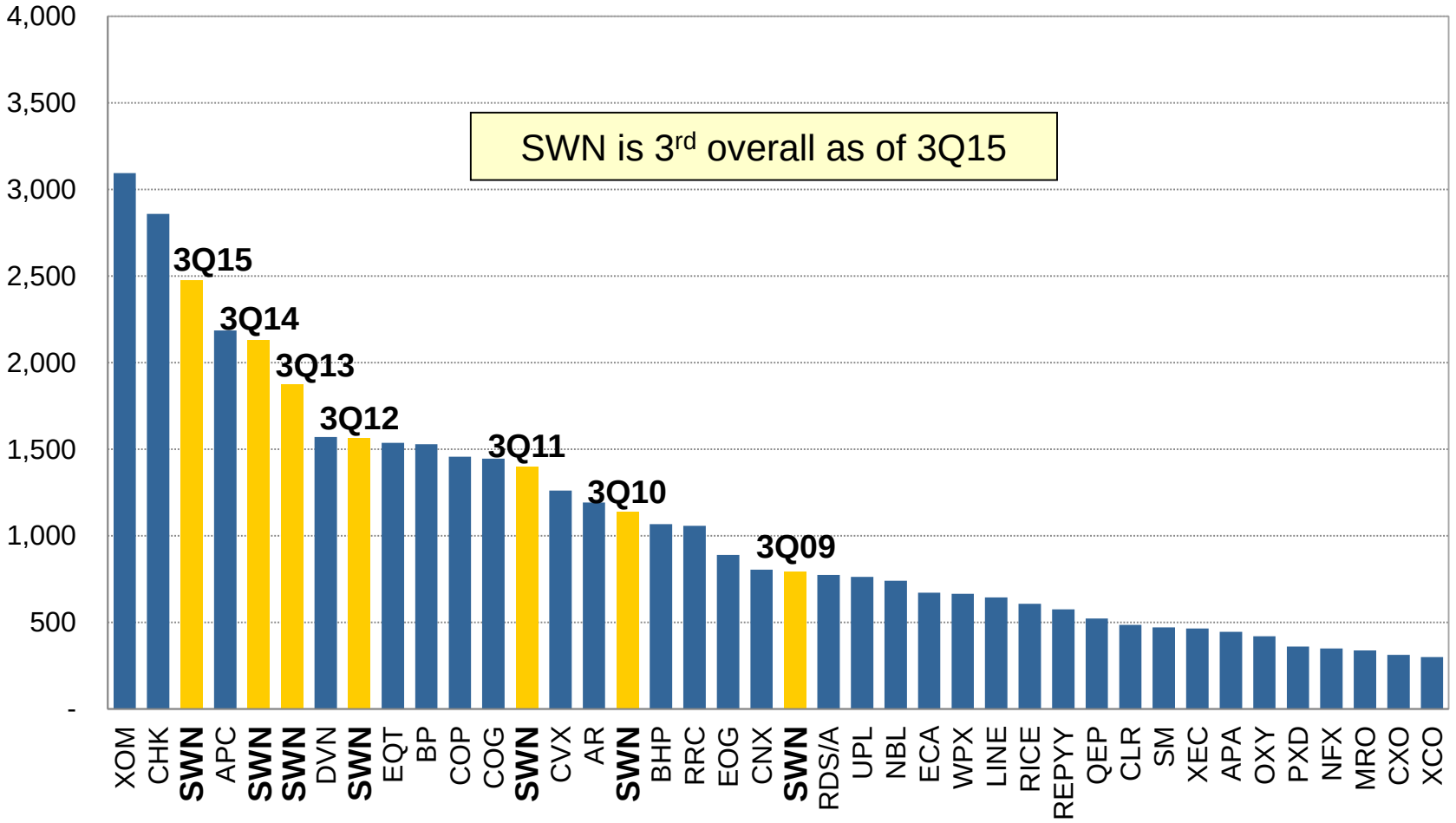
Forward-Looking Statements

All statements, other than historical facts and financial information, may be deemed to be forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements that address activities, outcomes and other matters that should or may occur in the future, including, without limitation, statements regarding the financial position, business strategy, production and reserve growth and other plans and objectives for the company's future operations, are forward-looking statements. Although the company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in the forward-looking statements. The company has no obligation and makes no undertaking to publicly update or revise any forward-looking statements, other than to the extent set forth below. You should not place undue reliance on forward-looking statements. They are subject to known and unknown risks, uncertainties and other factors that may affect the company's operations, markets, products, services and prices and cause its actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. In addition to any assumptions and other factors referred to specifically in connection with forward-looking statements, risks, uncertainties and factors that could cause the company's actual results to differ materially from those indicated in any forward-looking statement include, but are not limited to: the timing and extent of changes in market conditions and prices for natural gas and oil (including regional basis differentials); the company's ability to fund the company's planned capital investments; the company's ability to transport its production to the most favorable markets or at all; the timing and extent of the company's success in discovering, developing, producing and estimating reserves; the economic viability of, and the company's success in drilling, the company's large acreage position in various areas and, in particular, the Fayetteville Shale, Northeast Appalachia and Southwest Appalachia as well as relative to other productive shale gas plays; the company's ability to realize the expected benefits from recent acquisitions; the impact of title and environmental defects and other matters on the value of the properties acquired in the company's recent acquisitions and any other future acquisitions; difficulties in integrating the company's operations as a result of any significant acquisitions; the impact of government regulation, including any legislation relating to hydraulic fracturing, the climate or over-the-counter derivatives; the costs and availability of oil field personnel services and drilling supplies, raw materials and equipment, including pressure pumping equipment and crews; the company's ability to determine the most effective and economic fracture stimulation; the company's future property acquisition or divestiture activities; the effects of weather; increased competition and regulation; the financial impact of accounting regulations and critical accounting policies; the comparative cost of alternative fuels; the different risks and uncertainties associated with proposed activities in Canada; conditions in capital markets, changes in interest rates and the ability of the company's lenders to provide it with funds as agreed; credit risk relating to the risk of loss as a result of non-performance by the company's counterparties; and any other factors listed in the reports the company has filed and may file with the Securities and Exchange Commission (SEC). For additional information with respect to certain of these and other factors, see the reports filed by the company with the SEC. The company disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

The contents of this presentation are current as of November 30, 2015.

About Southwestern

US Lower 48 Gas Production Sorted by 3Q15 (MMcf/d)



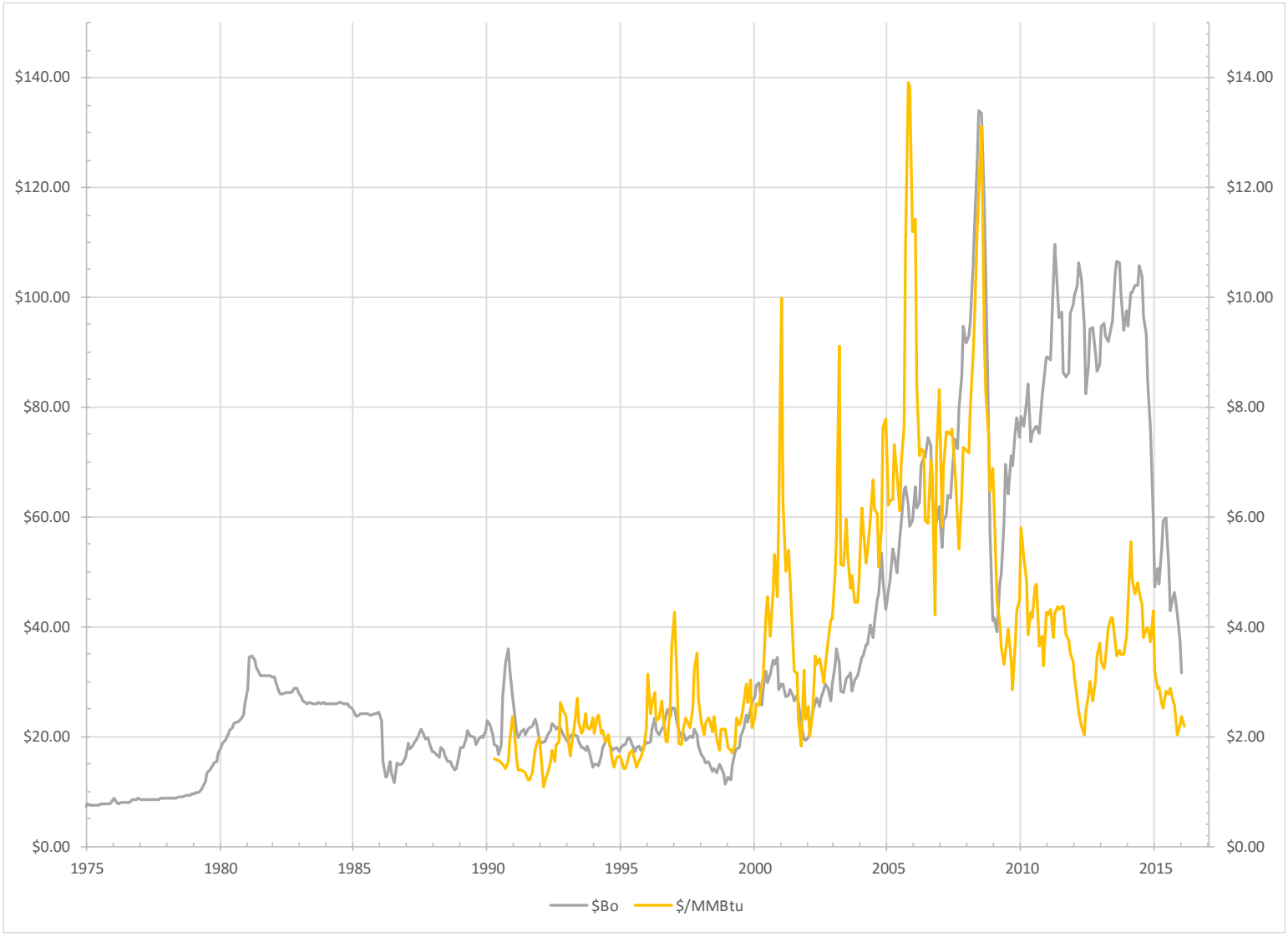
- **Strategy built on the Formula: The *Right People* doing the *Right Things*, wisely investing the cash flow from the underlying *Assets* will create *Value* +.**

$\frac{R^2}{A} \rightarrow V+$®

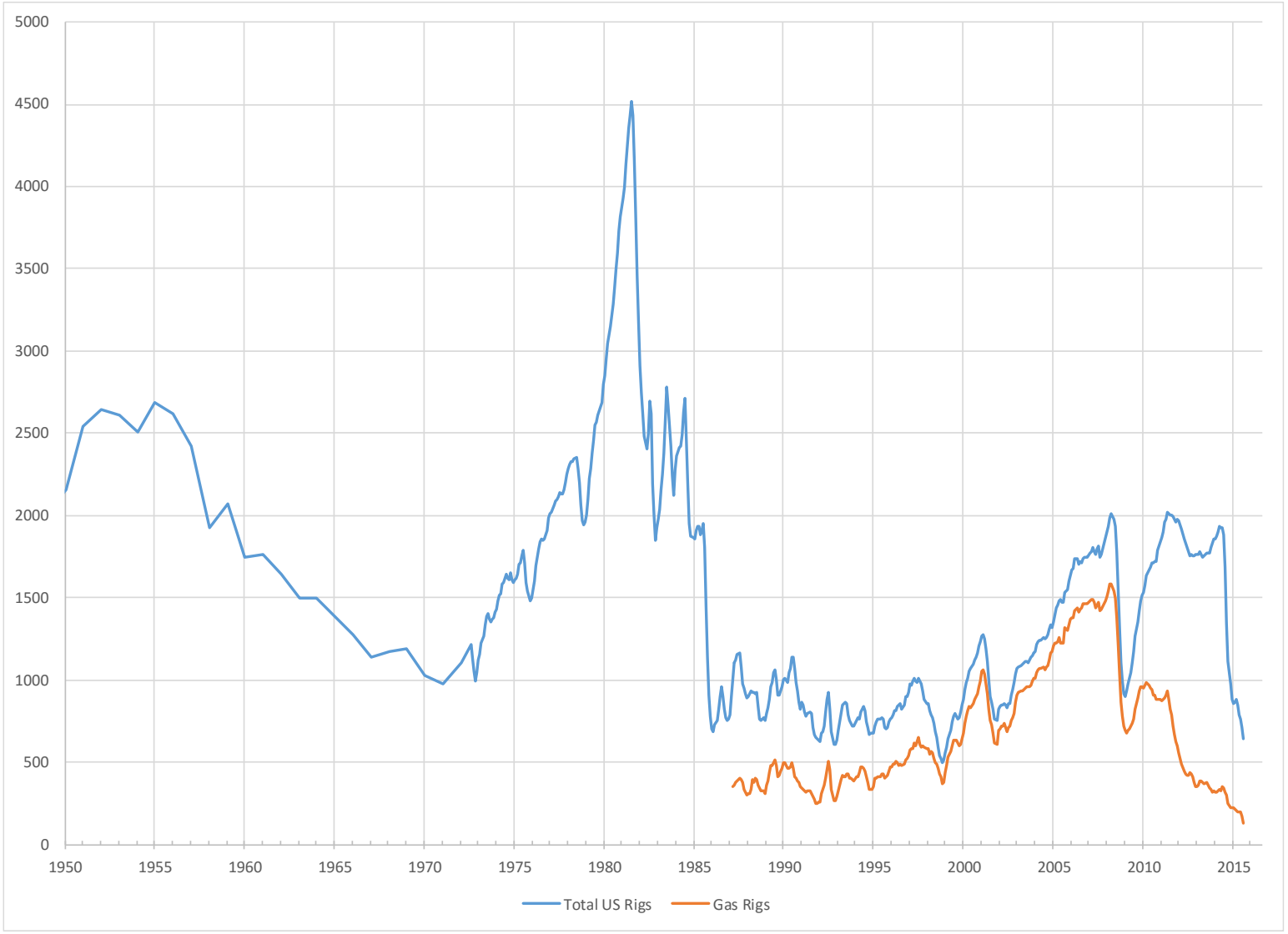
Source: Public company reports, Southwestern Energy

$\frac{R^2}{A} \rightarrow V+$®

Today's Largest Challenge
Product Prices



Near Record Low Rig Activity



Job Cuts

More job cuts expected for oil workers in 2016

Explosive job growth in the oil and gas sector propped up the U.S. economy for several years in the wake of the recession, as the fracking revolution put American energy workers back to work.

But 2015 was the year that job gains in the energy sector came to a screeching halt as rock-bottom oil prices triggered **layoffs of more than 258,000 workers globally**, according to a comprehensive analysis by industry consultant Graves & Co. And the energy business is poised to endure a fresh round of job cuts and bankruptcies in early 2016, analysts say.

USA TODAY 4:30 p.m. EST January 8, 2016

Sector Downgrades

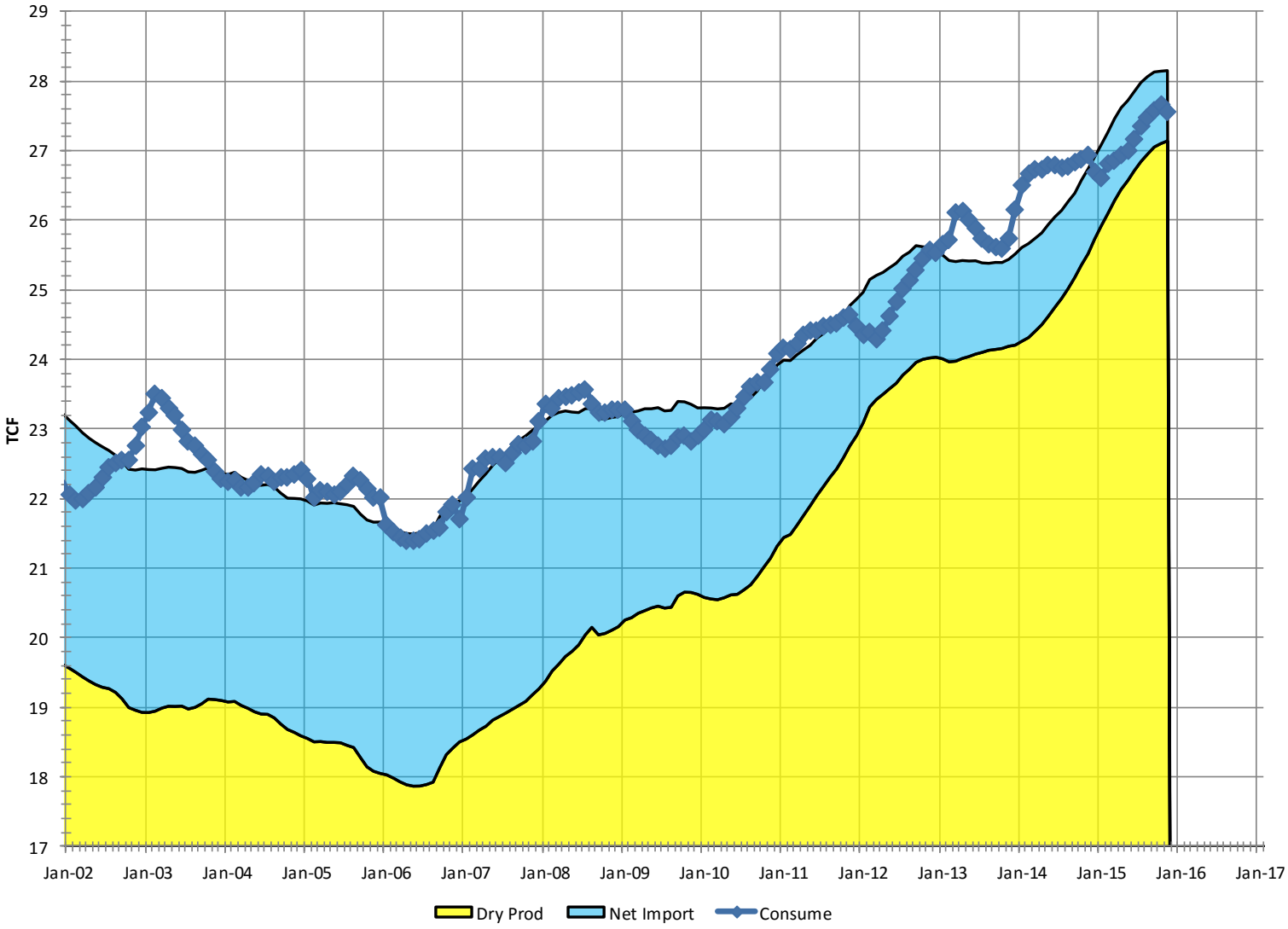
E&Ps and their banks get no love from S&P

Standard & Poor's Rating Services delivered a one-two punch of bad news on Tuesday, **downgrading the corporate credit ratings of 25 exploration-and-production companies**, while reducing issuer credit ratings for banks with large loan portfolios in the energy sector. …

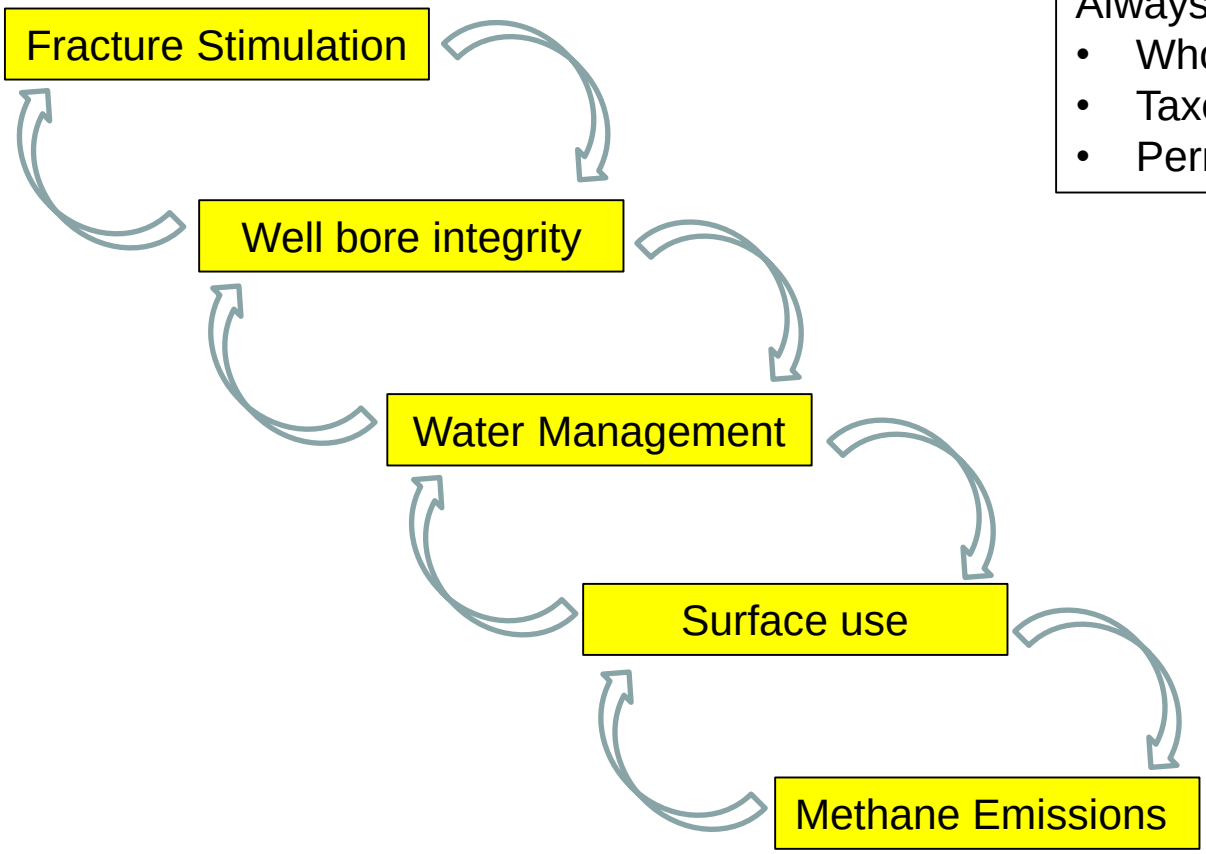
The rating action on speculative-grade E&Ps disclosed Tuesday followed the same action taken by S&P on the investment-grade (AAA to BBB-) E&Ps announced on February 2. **Ten investment-grade E&P companies were downgraded one notch** …

Gas Daily Thursday, February 11, 2016

Consumer Wins



Regulatory Progression



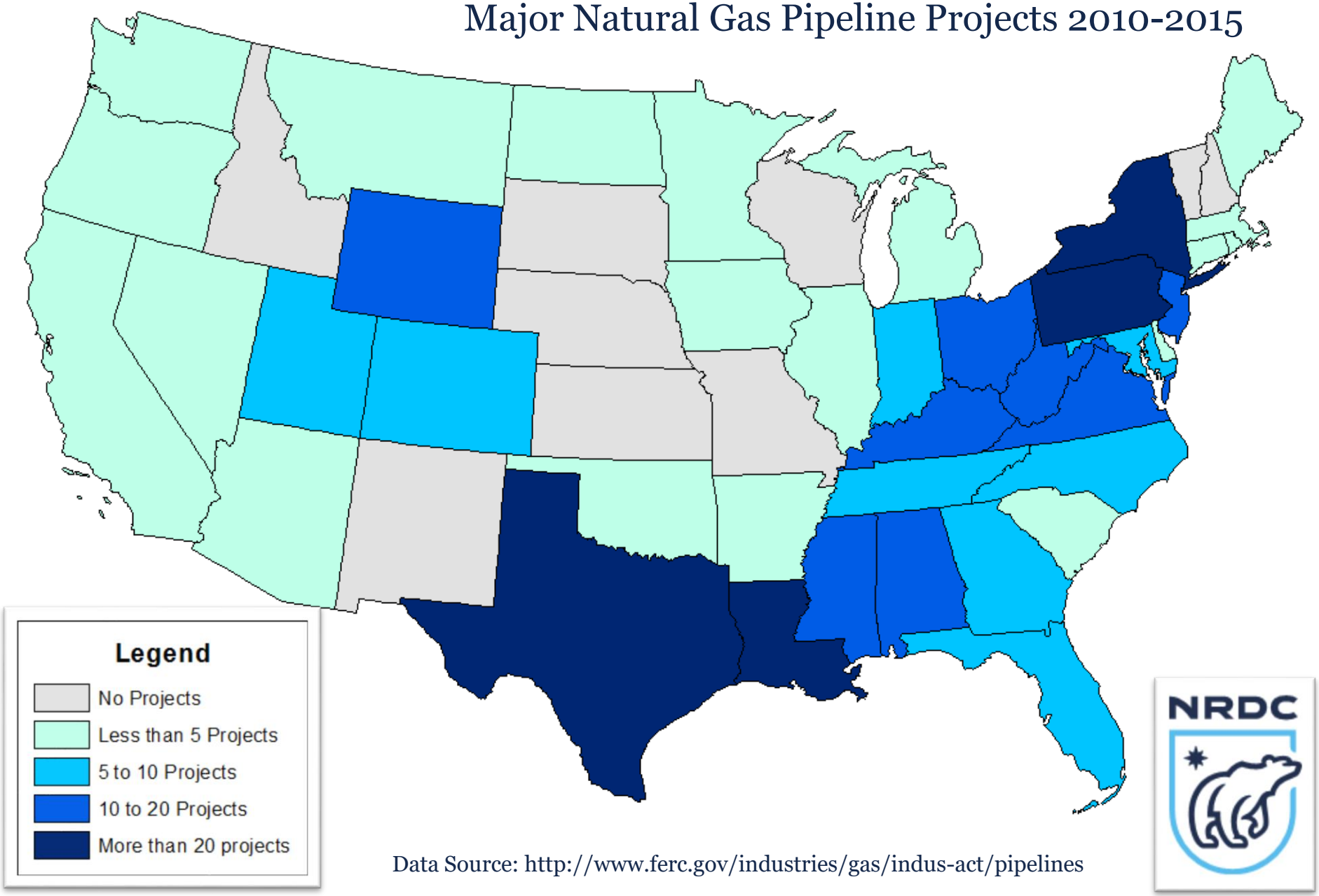
Always an issue:
- Who regulates
- Taxes/fees
- Permit time

Natural Gas CEO
Wellhead to Burner Tip Challenges

NARUC Winter Meeting
Committee on Gas
2/15/16

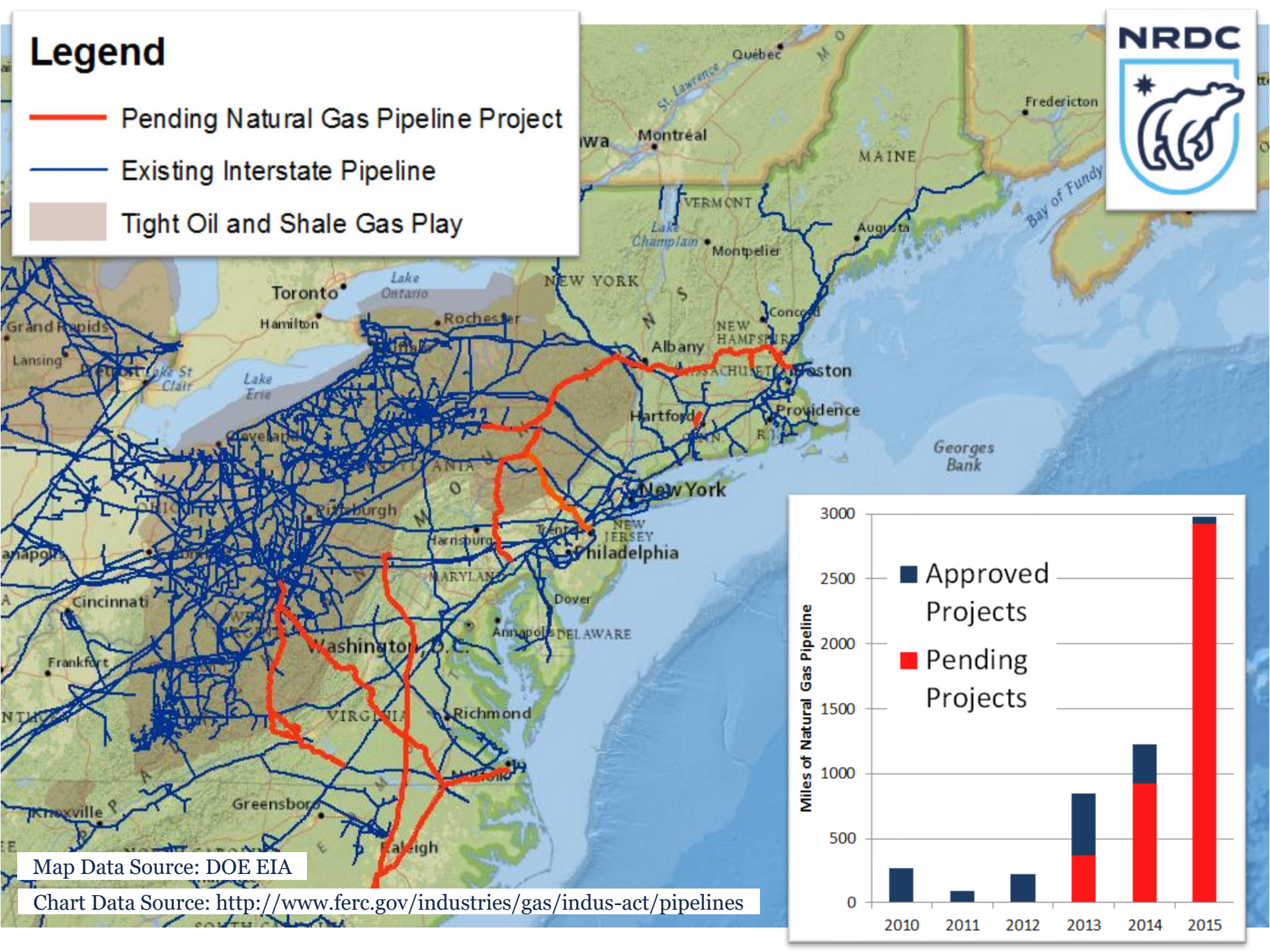
Steve Mueller
Chairman Southwestern Energy

Major Natural Gas Pipeline Projects 2010-2015



Data Source: http://www.ferc.gov/industries/gas/indus-act/pipelines

NRDC



Map Data Source: DOE EIA

Chart Data Source: http://www.ferc.gov/industries/gas/indus-act/pipelines

KINDER MORGAN

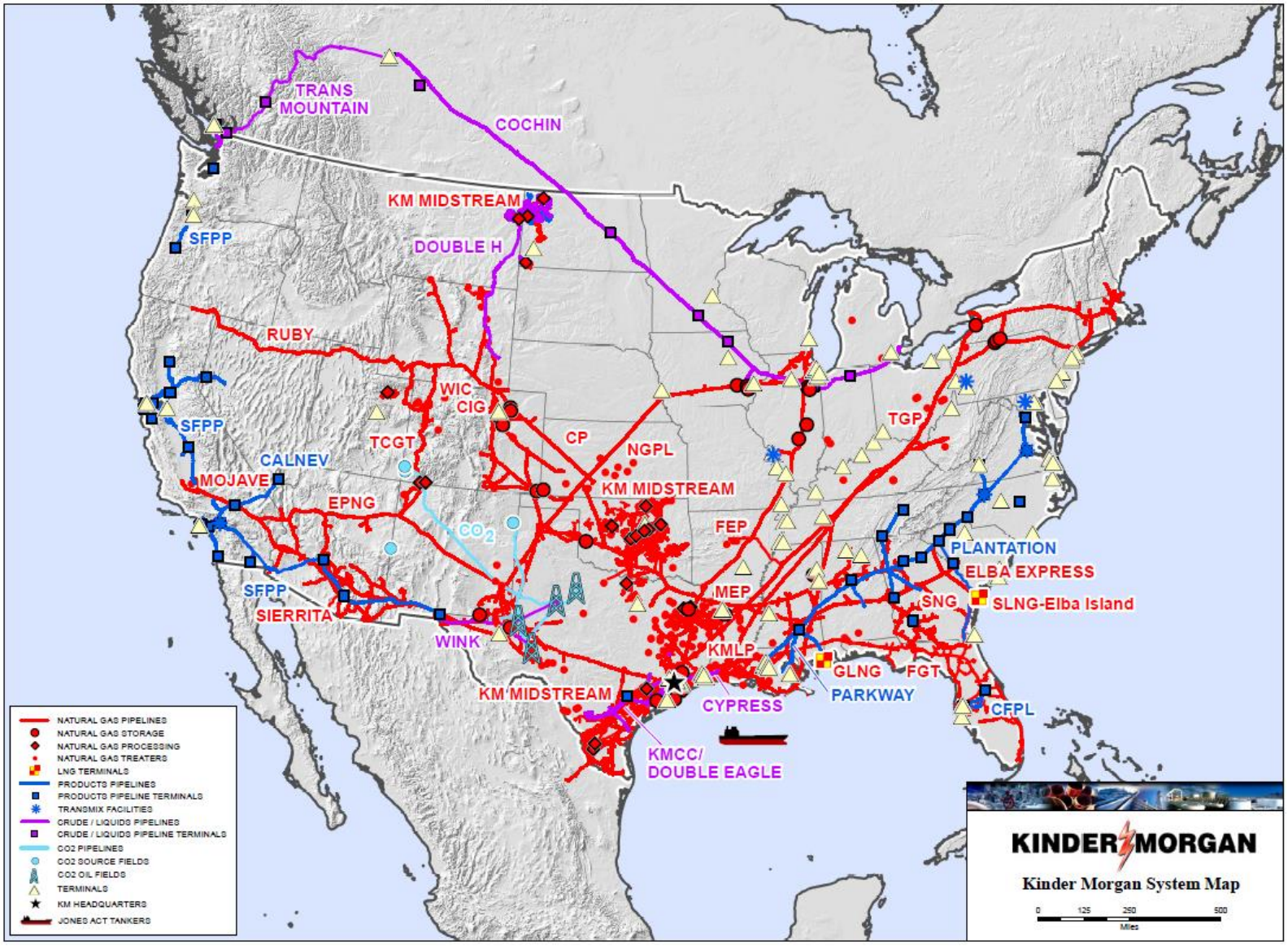
Natural Gas Pipeline Siting - Easy, Right?

Stakeholder Outreach

February 15, 2016



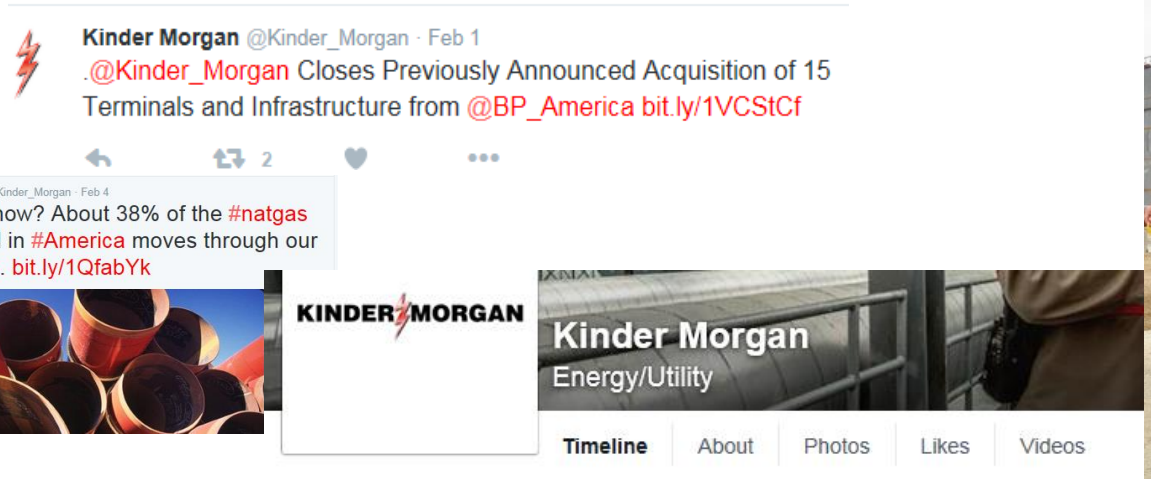
Kinder Morgan Asset Map



Stakeholder Outreach for Pipeline Projects

Outreach

- Coordination between public affairs and other areas of the project including right-of-way, environmental, safety, operations and legal.
- Identify and engage a wide variety of constituents along and near the project area.
- Utilize all communication platforms to help explain information, providing updates throughout the life of the project.



Stakeholder Outreach for Pipeline Projects