

# How Regulatory and Business Drivers are Reshaping North America's Pipeline Infrastructure

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**GeoGathering 2011**

GIS for Gathering and Production Lines

## Joe Monroe

- 30 years of industry experience, primarily with Unocal Corporation and Tesoro Corporation
  - President, Unocal Pipeline Company
  - President, Unocal Natural Gas Pipeline Company
  - Senior Vice President, Tesoro Logistics and Marine
- Current Consulting Activities
  - Midstream/Downstream Acquisitions
  - New Pipelines and Terminals Commercialization
  - Crude Oil Marketing and Trading Optimization
  - Strategic Planning

## United States Pipeline Industry

- More than 2.5 million miles of pipelines, operated by over 3000 companies, deliver energy to homes and businesses across America
  - Over 300,000 miles of Natural Gas Transmission Lines
  - Over 170,000 miles of Liquid Pipelines
  - Other gathering and distribution systems
- Major pipeline incidents are down nearly 50% over the past 20 years

# Key Laws and Regulations

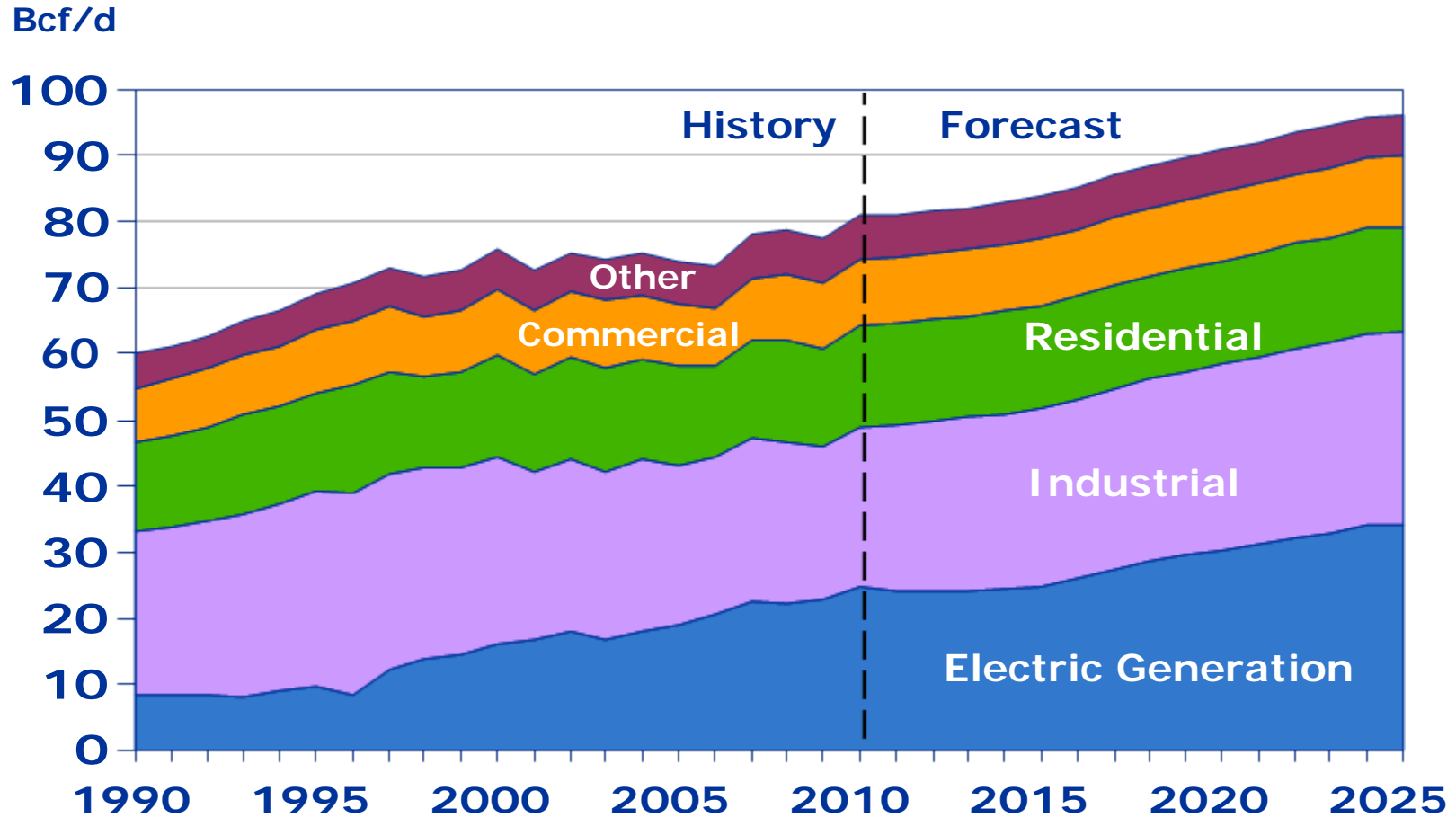
- Natural Gas Safety Act of 1968 and
- Hazardous Liquid Pipeline Safety Act of 1979
- Pipeline Safety Act of 1994
- Pipeline Safety Improvement Act of 2002
- Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006
- The American Energy Initiative: Pipeline Safety 2011

## Reauthorization of Pipeline Safety Program

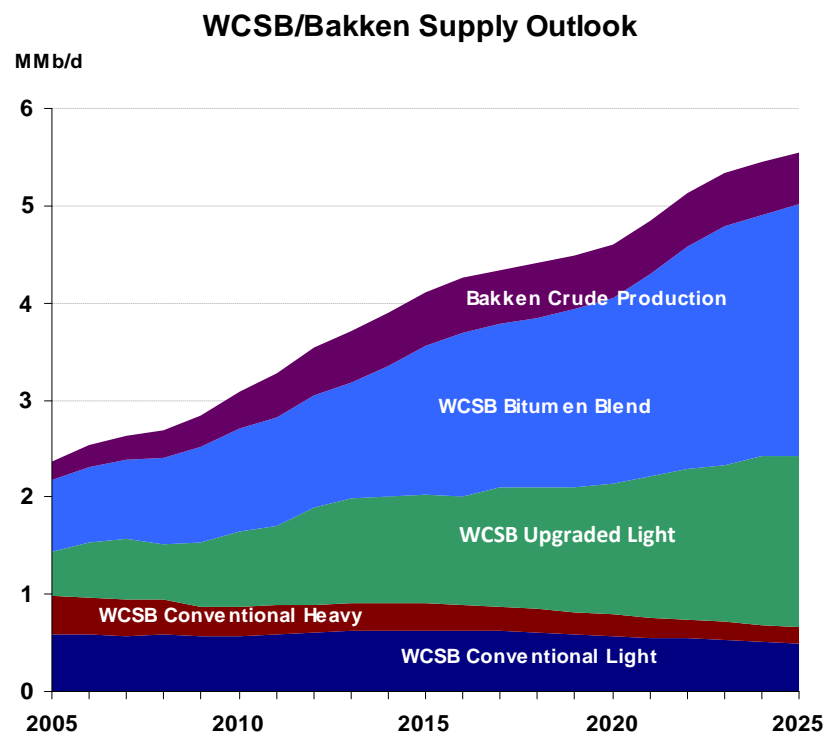
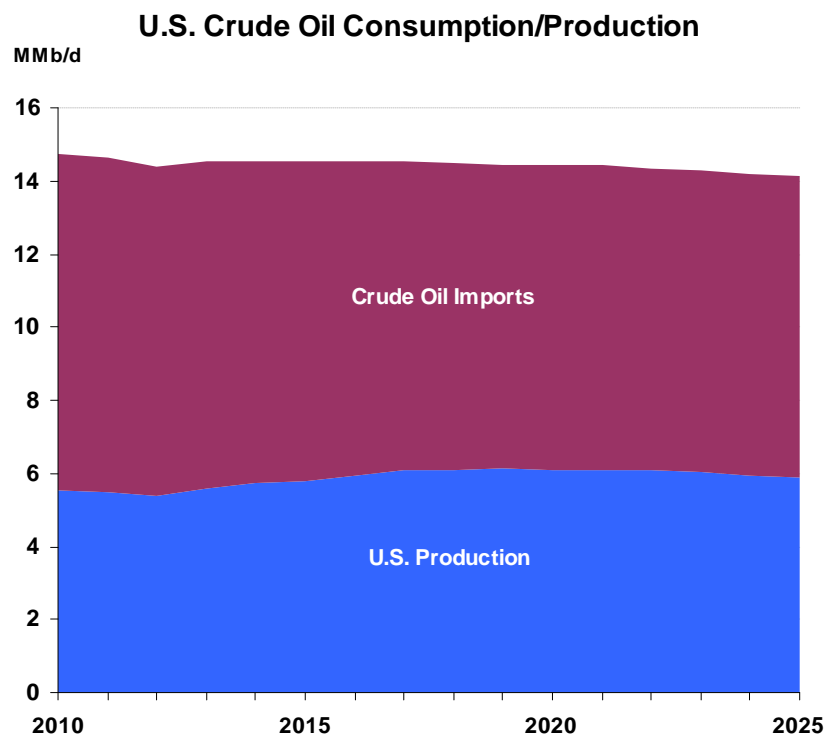
Pipeline Infrastructure and Community Protection Act of 2011

- Increase Civil Penalties
- Expanding Integrity Management Protection
- Pipeline Infrastructure Data Collection Authority
- Require Highly Enhanced Inspection Techniques
- Increase the Number of Pipeline Inspectors at Department of Transportation

# North American Natural Gas Demand



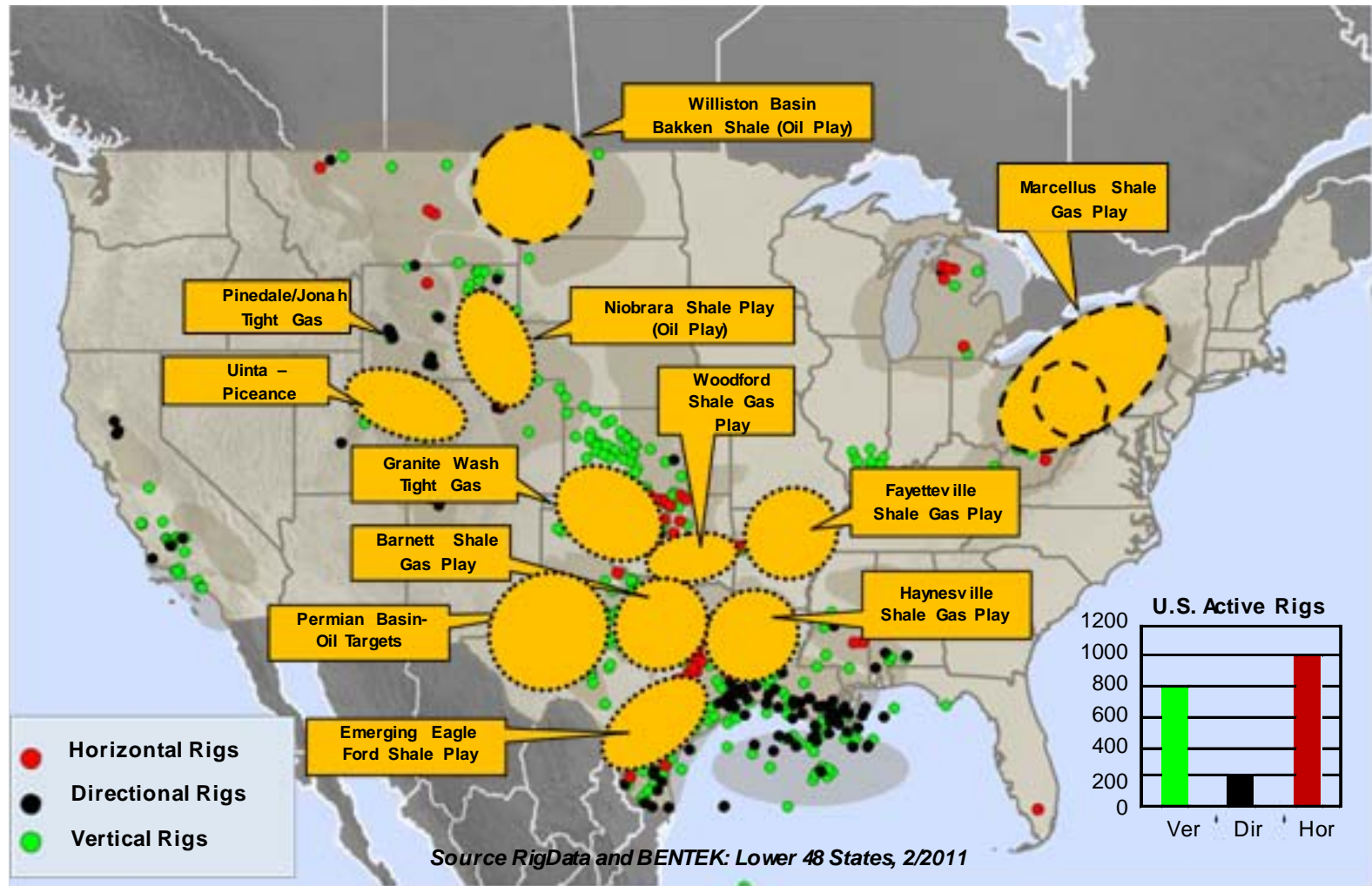
# U.S. Crude Oil Demand and Supply Outlook



Sources: U.S. EIA Annual Energy Outlook 2011 (April 2011) and CAPP 2010-2025 Canadian Crude Oil Forecast and Market Outlook (June 2011)



# Active Rigs by Play







## Pipeline Infrastructure Development in North America, 2011 through 2020

- 16,400 miles of new gas transmission mainline (29 Bcf/d new capacity, over 90% driven by increases in shale gas)
- 6,600 miles of new gas laterals
- 165,000 miles of new gas gathering lines
- 800 miles per year new oil pipelines (3 MMb/d new capacity)
- 10,600 miles of new NGL pipelines (1 MMb/d new capacity)
- Over \$130 billion required over the next 10 years

Thank You