PIPELINE SAFETY AND GIS
HOW WE LEVERAGE GIS TO MAKE PIPELINES SAFER
OVERVIEW:
ACCESS MIDSTREAM AND OUR INDUSTRY
WHO IS ACCESS MIDSTREAM?

- Headquartered in Oklahoma City with operations across the United States.
- Industry’s largest independent gathering and processing master limited partnership as measured by throughput volume. Operations in 13 states with over 6500 miles of pipeline.
- Access owns, operates, develops and acquires natural gas and liquids gathering systems and other midstream energy assets across the United States for the largest energy companies in the country.
- Access is committed to safe and environmentally sound operations across all of its operating areas and in 2011 celebrated a third consecutive year with no lost-time injuries, zero agency reportable spills and no air permit violations.
- Founded as Chesapeake Midstream, a wholly owned subsidiary of Chesapeake Energy. Now an independent midstream company.
WHERE DOES MIDSTREAM FIT?

Upstream
- Geology
- Land
- Drilling
- Production

Midstream
- Gathering
- Transmission
- Compression
- Treatment and Processing

Downstream
- Local Distribution
- Power Generation
- Consumers
PIPELINE SAFETY:
REGULATORY COMPLIANCE AND PIPELINE INTEGRITY WITH GIS
WHAT DOES IT MEAN TO BE REGULATED?

- Government inspections and audits
  - Agencies inspect and monitor operator activity for regulated lines
- “Unregulated” does not mean “Unsafe”

Examples of Required Tasks:

- General compliance requirements:
  - Pipeline patrols
  - Stringent construction requirements
  - Operator qualification training and certification
  - Operations and maintenance inspections
  - Data retention requirements
  - Corrosion control documentation
  - Class location and HCA studies
  - Integrity management
  - Annual Reporting
  - Quality control and inspections
  - Inspections by state and/or federal auditors

- Public Awareness:
  - Safety communication and outreach efforts
  - Required messaging
  - Defined stakeholders
  - Effective measurement

- Damage Prevention:
  - One call ticket audits
  - Positive response audits
  - Bottom Line Results
GOVERNMENT REGULATIONS

- Not all pipelines are regulated...
  - *Natural gas pipelines* are subject to Class Location Determinations based upon population density and operating characteristics (operating pressure, line size, material grade, usage type, etc)
  - *Liquid product pipelines* are regulated based primarily upon potential environmental impacts, or High Consequence Areas
REGULATORY JURISDICTION

- Interstate vs Intrastate
  - Determines the government entity with oversight/jurisdiction
    - Pipeline A is *interstate* and regulated by PHMSA
    - Pipeline B is *intrastate* and regulated by Texas Railroad Commission
    - Pipeline C is *intrastate* and regulated by Oklahoma Corporation Commission

![Diagram of Texas with pipelines labeled]

Pipeline A
Pipeline B
Pipeline C
PIPELINE SAFETY AND GIS:
1. DAMAGE PREVENTION & ONE CALL MANAGEMENT
2. INCIDENT TRACKING
3. INTERNAL INSPECTIONS
4. RISK ANALYSIS
5. PUBLIC AWARENESS AND EMERGENCY RESPONSE
WHY DAMAGE PREVENTION?

- Over 2.5 million miles of oil/gas pipeline in the United States
- That doesn’t include electric lines, water pipe, sewage, fiber-optic, telephone lines or other types of facilities.
BENEFITS AND GAPS OF GIS FOR ONE CALL MANAGEMENT

- **Benefits**
  - Efficient – Ticket requests to OCC processed quickly
  - Precise – Less “white noise”
  - Cheaper – Less tickets means lower costs
  - Online request systems

- **Gaps**
  - Poor geocoding results on tickets
  - Incorrect GPS coordinates
  - Requires highly accurate asset datasets
PIPELINE INCIDENT MANAGEMENT WITH GIS

- "DIRT" – Damage Information Reporting Tool
- National program sponsored by the Common Ground Alliance, used internally at Access Midstream
- Used to analyze and trend excavation related damages
Pipeline Integrity – Internal Inspections with GIS

- Inline inspection (ILI) data is gathered using smart pigs to locate defects along a pipeline.
- The data is collected and reported in GIS format to locate weld locations, as well as defects, dents, gouges, corrosion or other abnormal operating conditions.
GIS is used to identify probability and consequence rankings for each pipe segment in regards to internal or external corrosion, excavation damage and other operating concerns.

Risk scores impact business decisions.
WHAT IS PUBLIC AWARENESS?

- Required safety education and outreach for external audiences regarding pipeline and related facilities.
REGULATORY OVERVIEW FOR PUBLIC AWARENESS

- **State Enforcement:**
  - We are audited and inspected by state enforcement agencies.

- **API RP 1162:**
  - Provides guidance for pipeline operators to develop and manage public awareness programs. Requires regular (annual/bi-annual) contact with affected stakeholders.

- **CFR 49 Part 192 & 195:**
  - Incorporates by reference the API RP1162 as required guidelines by PHMSA.

- **Access’ Safety Culture:**
  - Provides the support and empowerment for our pipeline safety and integrity efforts.
PUBLIC AWARENESS GOALS

8 Core Safety Messages

- Pipeline Purpose and Reliability
- Damage Prevention
- Right of Way
- Potential Hazards
- Pipeline Location
- Prevention Measures
- Encroachments
- Leak Recognition and Response

4 Stakeholder Groups

- Emergency Officials
- Excavators & Farmers
- Local Public Officials
- Affected Public & Schools
GIS IN PIPELINE EMERGENCY RESPONSE

Current Uses:

- Audience identification
- NPMS

Current Gaps:

- NPMS only contains transmission pipelines
- Emergency responders are without a centralized GIS
- Lack of national effort to advance the technology for pipeline safety

- Shows pipeline location
- Simulations/training
GIS FOR PUBLIC SAFETY IN THE PIPELINE INDUSTRY

Our goals as an organization:

• A national public safety GIS initiative that will put important pipeline and other public safety data from all industries in the hands of emergency response personnel and community planners to make our communities safer.

• A pipeline specific GIS can be deployed easily, but if it’s not a useful tool for multiple tasks for the target audience it will not be leveraged to full potential.
THANK YOU!

QUESTIONS?

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- After January 1: eric.williams@accessmidstream.com
- Learn more and take our survey: www.AccessMidstream.com/Safety