

PHMSA Damage Prevention Initiatives



Natural Gas STAR / Methane Challenge Annual Implementation Workshop October, 2017



Know what's below.
Call before you dig.

James Prothro
James.prothro@dot.gov

1



U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

"To protect people and the environment by advancing the safe transportation of energy
and other hazardous materials that are essential to our daily lives."



Topics

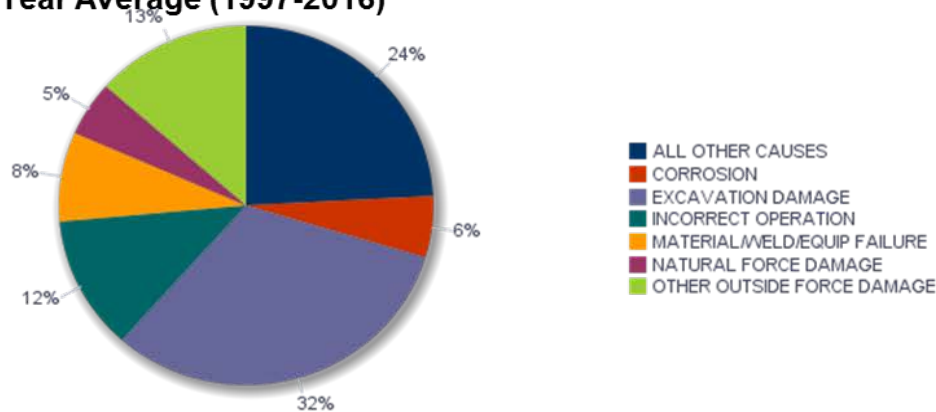
- Excavation Enforcement
- State One-Call Enforcement / PHMSA Enforcement
- Technology Study



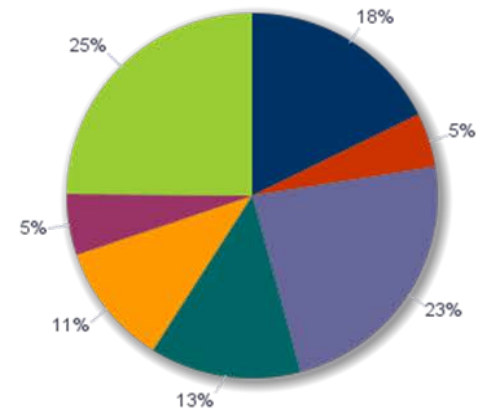
Background

- Excavation damage is a leading cause of serious pipeline accidents
- Efforts to reduce this threat are showing results

**Serious Incident Cause Breakdown
20 Year Average (1997-2016)**



**Serious Incident Cause Breakdown
10 Year Average (2007-2016)**



3



History of the Rule

- The Pipeline Inspection, Protection, Enforcement and Safety (PIPES) Act of 2006
- PHMSA developed the excavator enforcement rule as a prerequisite to using this new enforcement authority.
- NPRM published April 2, 2012
- Final rule published July 15, 2015
- Rule became effective January 1, 2016
- **INTENT:** ALL STATES ESTABLISH ADEQUATE ENFORCEMENT PROGRAMS



Part 196—Protection of Underground Pipelines from Excavation Activity

Damage Prevention Requirements:

- Use one-call before excavating,
- wait for pipelines to be located/marked, respect the marks and take all practicable steps to prevent damage,
 - make additional use of one-call if necessary for locates
- Report any pipeline damage to pipeline operator
- Promptly notify 911 if damage causes release of any 192 or 195 defined gas or hazardous liquid



Part 196—Protection of Underground Pipelines from Excavation Activity

PHMSA and States have authority to enforce against pipeline operators who do not perform timely and accurate locate and mark requests.

Administrative Enforcement Process:

- Use existing administrative adjudication process
- Assess administrative maximum civil penalties of \$205,638 per violation per day, \$2,056,380 for series of violations
- Use other civil and criminal penalties



Part 198—Regulations for Grants to Aid State Pipeline Safety Programs

State Damage Prevention Enforcement Programs:

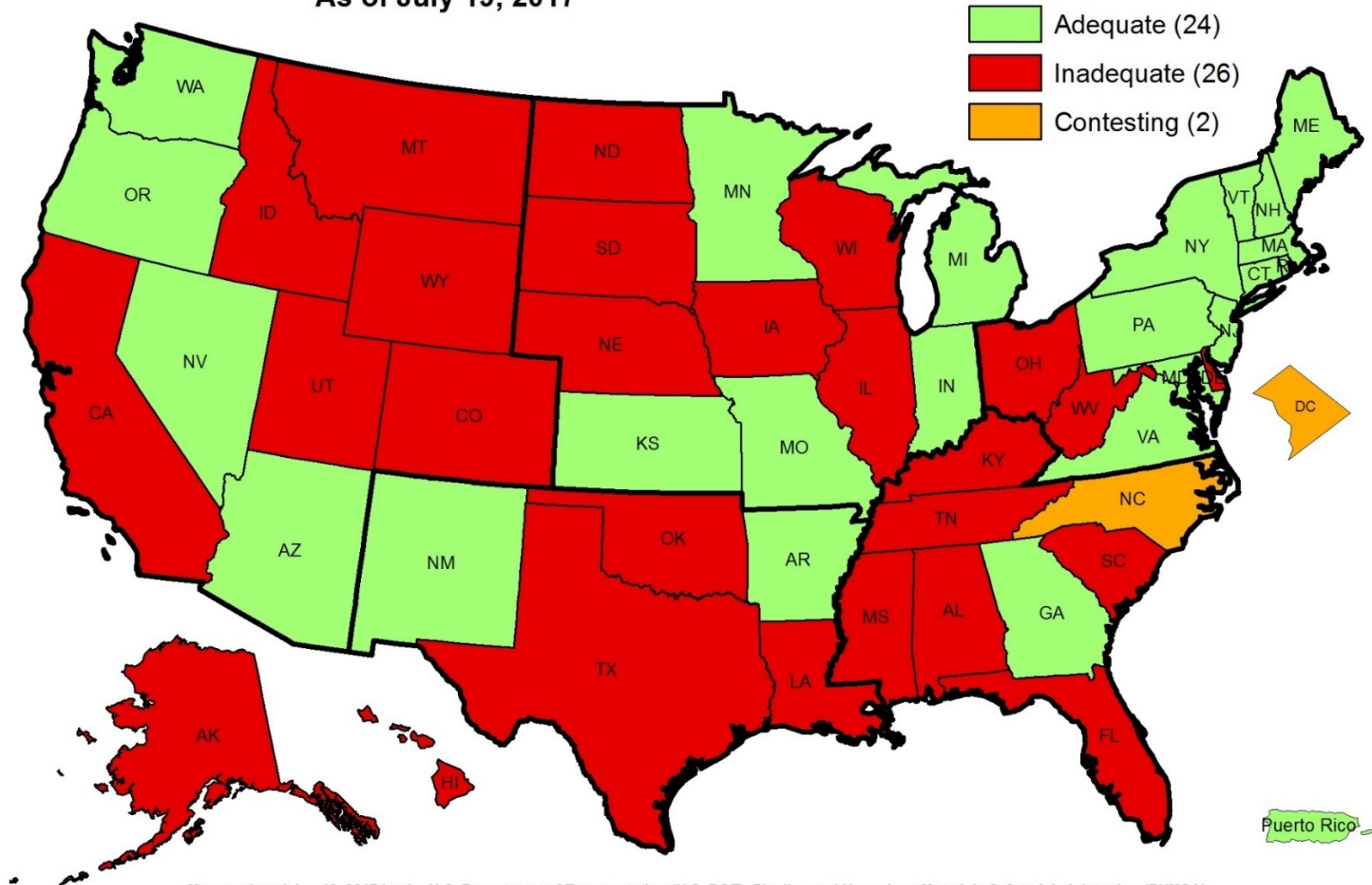
- When and how PHMSA evaluates states
- Criteria to evaluate states
- How PHMSA notifies states
 - (In general, primary addressee is the entity with enforcement authority in the one-call law)
- States have 30 days to contest an inadequate determination
- PHMSA will issue a final decision
- States may petition for reconsideration based on changed circumstances

7



Adequacy of One-Call Law Enforcement Programs

As of July 19, 2017



Map produced July 19, 2017 by the U.S. Department of Transportation (U.S. DOT), Pipeline and Hazardous Materials Safety Administration (PHMSA)
 Map provided as a reference only. PHMSA makes no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to this map for any purpose. PHMSA expressly disclaims liability for errors and omissions in the contents of this map.



State Evaluations / Enforcement

- Enforcement programs will be evaluated on an annual basis
- States deemed adequate / Inadequate
- States have five years to meet minimum adequacy criteria
- Reports submitted to PHMSA via web;
- Screening
- If appropriate, initial investigation by PHMSA Staff.
- Review team considers investigation reports, refers to leadership if appropriate
- Final determination to enforce is made by leadership



PHMSA Damage Prevention Technology Study

- PIPES Act of 2016:
 - Required PHMSA to submit study within one year of enactment of law
 - Results must include recommendations, that include the consideration of technical, operational, and economic feasibility
 - Must be developed with stakeholder input

10



Study - Approach

- Identify technologies are in place (through review of PHMSA programs, input from relevant industries, including CGA Technology and trade associations)
 - Locating
 - Mapping/GPS
 - Predictive analytic tools
 - Mobile devices
- Identify methods to improve excavation practices/technologies
- Analyze how increased use/development of the technologies could improve damage prevention
- Also looked at feasibility of national data repository, opportunities for stakeholder engagement

11



DP Technology Study – Key Findings

- Develop collaboration/communication tools that foster better communication.
- Evaluate and implement predictive analytic tools, which use data to identify and proactively address high-risk excavations.
- Improve and implement GPS/GIS technologies in accurately locating location of underground facilities.
- Consider requiring operator damage data reporting.
- Promote universal participation in the one-call process.
- Consider the development of national standards for state one-call requirements.
- Strengthen state damage prevention enforcement programs.
- Pursue improvements in locating processes and ROW monitoring technologies.
- Promote the continued identification and implementation of the Common Ground Alliance (CGA) and other damage prevention best practices, and the education of stakeholders toward the benefits thereof.

12



Damage Prevention Research

- PHMSA held 6 Pipeline R&D Forums seeking input and ideas for Damage Prevention research
- Since 2002, PHMSA has engaged the community for related topics in 10 separate research solicitations
 - Not all topics have become new research
- PHMSA Investment of \$7.1M for 28 technology development, product development & process improvement projects

13

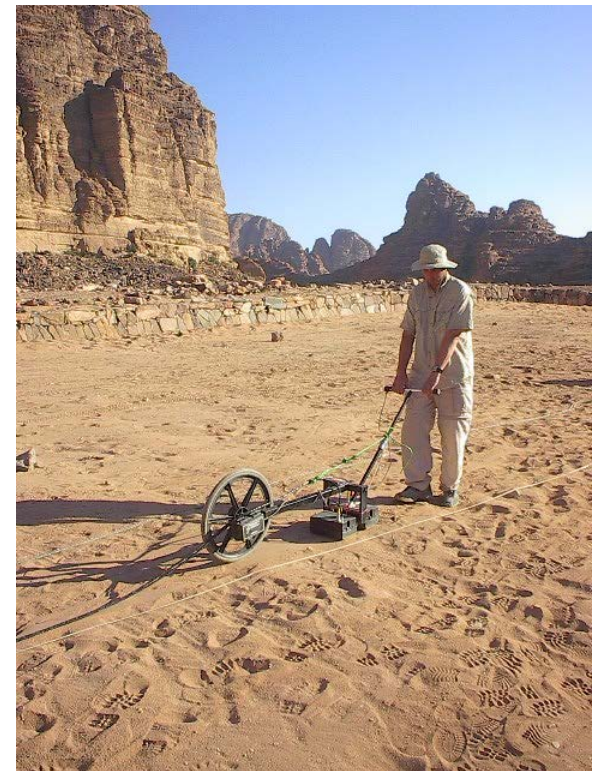


Damage Prevention Research



Ground penetrating radar in use near Stillwater, Oklahoma to locate underground utilities.

Ground penetrating radar survey of an archaeological site in Jordan

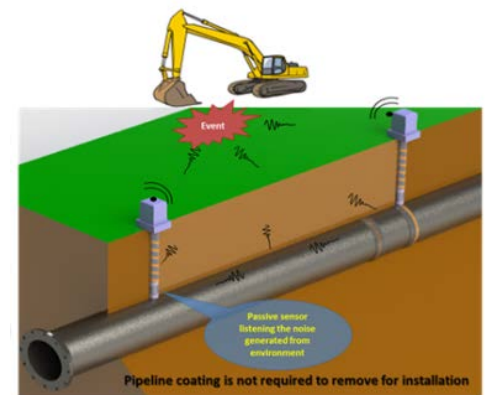
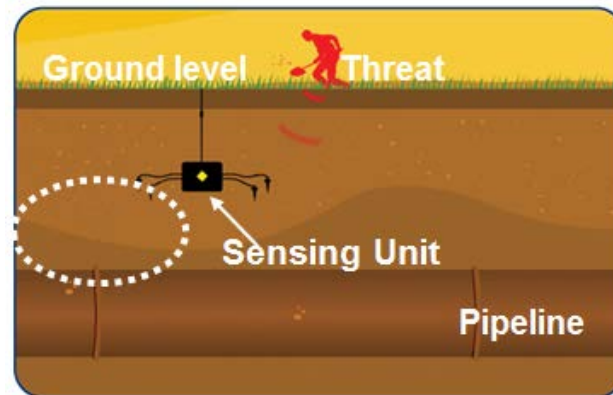
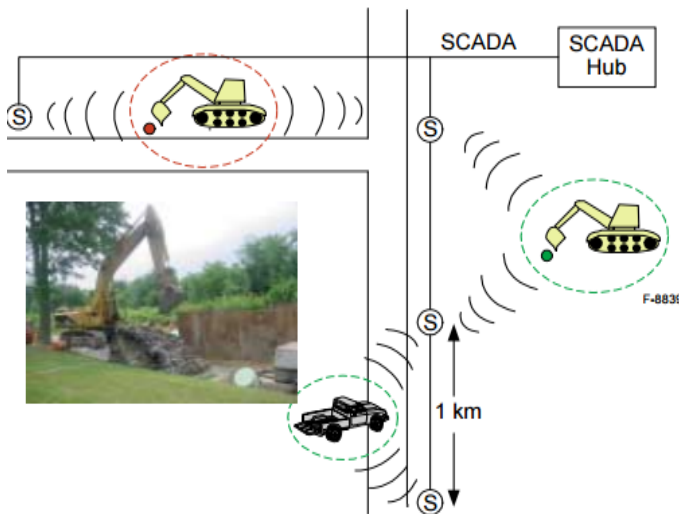


14




Other Notable Active Work

Project Title	Contractor	PHMSA	Resource Share
Infrasonic frequency seismic sensor system for preventing third party damage to gas pipelines	Northeast Gas Association	\$210,000.00	\$210,000.00
Pipeline Integrity Management for Ground Movement Hazards	Pipeline Research Council International	\$525,241.00	\$523,580.00
Advanced Development of PipeGuard Proactive Pipeline Damage Prevention System	Northeast Gas Association	\$268,492.00	\$71,508.22
Combined Vibration, Ground Movement, and Pipe Current Detector	Operations Technology Development NFP	\$299,030.00	\$299,030.00



PHMSA Damage Prevention – How to find more information/data

- Web site: <https://primis.phmsa.dot.gov/comm/DamagePrevention.htm>

 **U.S. Department of Transportation** | Pipeline & Hazardous Materials Safety Administration


Pipeline Safety Stakeholder Communications
Pipeline Safety Connects Us All

[Home](#) [General Public](#) [Emergency Officials](#) [Local Officials](#) [Excavators](#) [Property Developer/Owner](#) [Pipeline Safety Advocates](#) [State Regulators](#) [Federal Agencies](#) [Industry](#) [Contact Us](#)


Site Pages

- About Pipelines
- Regulatory Oversight
- Safety Programs
- Public Outreach

State Pipeline Profiles:

 [Print](#)

Damage Prevention



PHMSA's [final rule on excavation enforcement](#) establishes a process for enforcement of minimum Federal damage prevention standards in States where damage prevention law enforcement is inadequate.

PHMSA has created an [interactive map of reportable pipeline incidents caused by excavation damage](#).

Excavation damage continues to be a leading cause of pipeline incidents.

Pipeline incidents caused by excavation damage can result in fatalities and injuries, as well as significant costs, property damages, environmental damages, and unintentional fire or explosions.

In August 2017 PHMSA submitted to Congress the report titled "[A Study on Improving Damage Prevention Technology](#)." Also see [Appendix A to the Report](#), regarding PHMSA-Supported Research and Development Projects and its Competitive Academic Agreement Program. This study looked at improving existing damage prevention programs through technological improvements in location, mapping, excavation, and communications practices to prevent excavation damage to a pipe or its coating, including considerations of technical, operational, and economic feasibility and existing damage prevention programs.

In July 2015 PHMSA announced the issuance of a [Final Rule](#) to revise Federal pipeline safety regulations to establish the process for evaluating State excavation damage prevention law enforcement programs and enforcing minimum Federal damage prevention standards in States where damage prevention law enforcement is deemed inadequate or does not exist. The final rule amended the Federal pipeline safety regulations to establish:

- Criteria and procedures PHMSA will use to determine the adequacy of State pipeline excavation damage prevention law enforcement programs;
- The administrative process PHMSA will use in determining the adequacy of State excavation damage prevention law enforcement programs;
- The Federal requirements PHMSA will enforce in States with inadequate excavation damage prevention law enforcement programs; and
- The adjudication process for administrative enforcement proceedings against excavators where Federal authority is exercised.

In October 2014 PHMSA submitted to Congress a report entitled, "[A Study on the Impact of Excavation Damage on Pipeline Safety](#)". That report was prepared in response to a requirement in the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 (Public Law 112-90, January 3, 2012) that directed the Secretary of Transportation to conduct a study on the impact of excavation damage on pipeline safety, including the impact of removing all exemptions for mechanized equipment from State one-call laws.

State-specific Damage Prevention Information

PHMSA has gathered and reports excavation damage related information for each state. Go to the [index of State Pages on this site](#) to access a wealth of information for each state. Follow the state "Damage Prevention Information" links to access a variety of data and information related to damage prevention for each state.

Additionally, PHMSA's Pipeline Data Mart (PDM) allows you to [query state-specific pipeline excavation damage data](#).

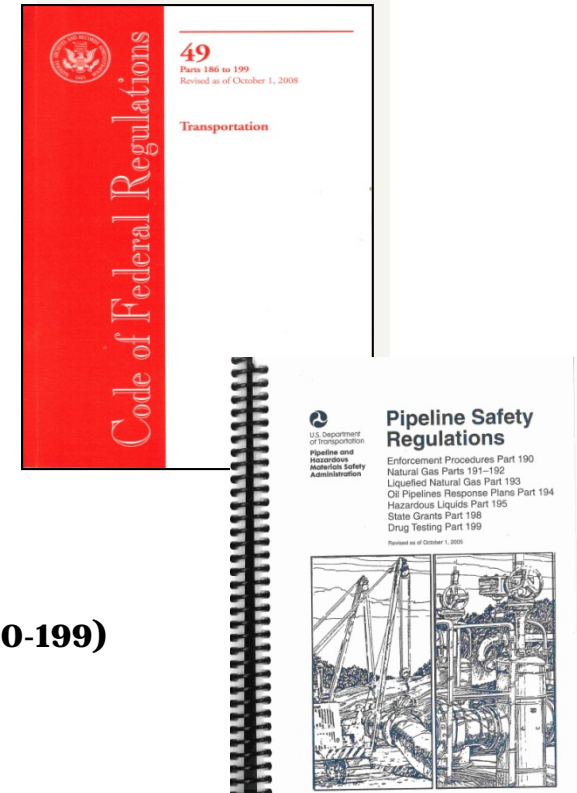
16





Important Links

- **PHMSA, Office of Pipeline Safety**
 - www.phmsa.dot.gov/pipeline
- **Standards & Rulemaking**
 - <http://www.phmsa.dot.gov/pipeline/regs>
- **National Pipeline Mapping System**
 - www.npms.phmsa.dot.gov
- **PHMSA's Stakeholder Communications Site**
 - <http://primis.phmsa.dot.gov/comm>
- **Access to PHMSA Regulations (Easy to read/print 49 CFR Part 190-199)**
 - www.phmsa.dot.gov/pipeline
 - Click on "Training and Qualifications"
 - Click on "Regulatory Information"
 - Click on the Part you want
- **For Federal Regulations (Official Version)**
 - www.regulations.gov



Thank You

James Prothro

Community Liaison

james.prothro@dot.gov

Phone: (713) 272-2832



**Know what's below.
Call before you dig.**



18

