



Pipeline and Hazardous Materials Safety Administration  
Office of Pipeline Safety

# PHMSA and Pipeline Safety Overview

Utility Public Safety Alliance Meeting

September 20-21, 2023

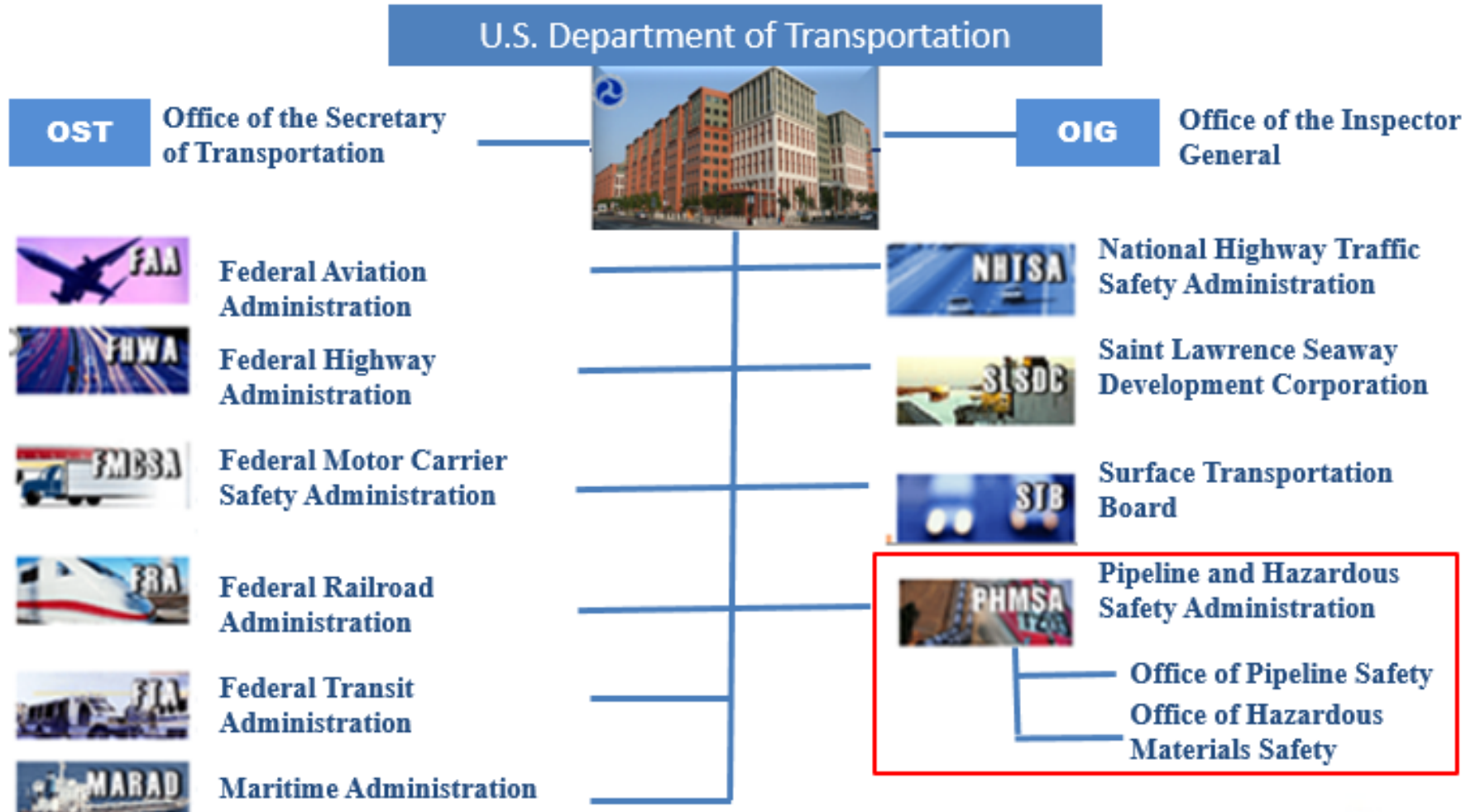


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Pipeline and Hazardous Materials  
Safety Administration

PHMSA: Your Safety is Our Mission



# Who Is PHMSA?



# Mission

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



## PHMSA By the Numbers

**3.3 Million**

Miles of Regulated Pipelines

**1.2 Million**

Daily Shipments of Hazardous Materials

**16,700**

Underground Natural Gas Storage Wells

**1.6 Billion**

Tons of Hazardous Materials Shipped Annually by All Modes

**64%**

Of U.S. Energy Commodities Transported by Pipeline



# Our Focus and Tools



**Inspection & Enforcement**



**Accident Investigation**



**Grants**



**Research & Development**

**Regulations & Standards**



**Outreach**



# Regulated Pipeline Information



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# Regulated Pipeline Facilities OPS and States

<b>Pipeline Facilities by Regulation and System Types – CY 2022 Annual Reports</b>			
<b>Safety and Reporting Regulated</b>	<b>Miles</b>	<b>% Miles</b>	<b># Operators</b>
<b>Hazardous Liquid/CO<sub>2</sub><sup>1</sup></b>	<b>229,944</b>	<b>8%</b>	<b>566</b>
<b>Gas Transmission</b>	<b>300,964</b>	<b>10%</b>	<b>1,046</b>
<b>Gas Gathering</b>	<b>101,004</b>	<b>3%</b>	<b>362</b>
<b>Gas Distribution</b>	<b>2,331,888</b>	<b>79%</b>	<b>1,249</b>
	<b>subTotal</b>	<b>2,963,800</b>	
<b>Reporting-Regulated-Only</b>	<b>Miles</b>	<b>% Miles</b>	<b># Operators</b>
<b>Hazardous Liquid<sup>1</sup></b>	<b>34,836</b>	<b>13%</b>	<b>101</b>
<b>Gas Gathering</b>	<b>230,799</b>	<b>87%</b>	<b>441</b>
	<b>subTotal</b>	<b>265,635</b>	
	<b>Total</b>	<b>3,229,435</b>	

Data as-of 3-26-2023

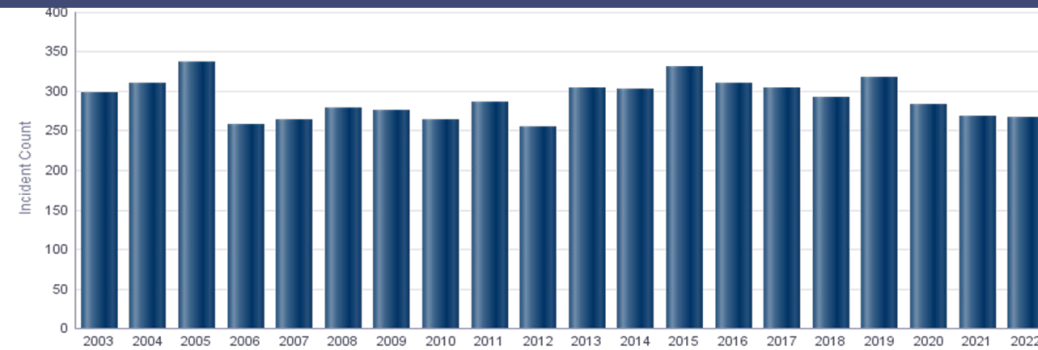
<b>Hazardous Liquid Breakout Tanks<sup>1</sup></b>	<b>8,692 Tanks, 249 Operators</b>
<b>Liquefied Natural Gas</b>	<b>168 Plants, 245 Tanks, 89 Operators</b>
<b>Underground Natural Gas Storage</b>	<b>400 Facilities, 16,630 Wells, 126 Operators</b>

<sup>1</sup> CY 2021 data. Hazardous Liquid/CO<sub>2</sub> CY 2022 annual reports are due on June 15, 2023

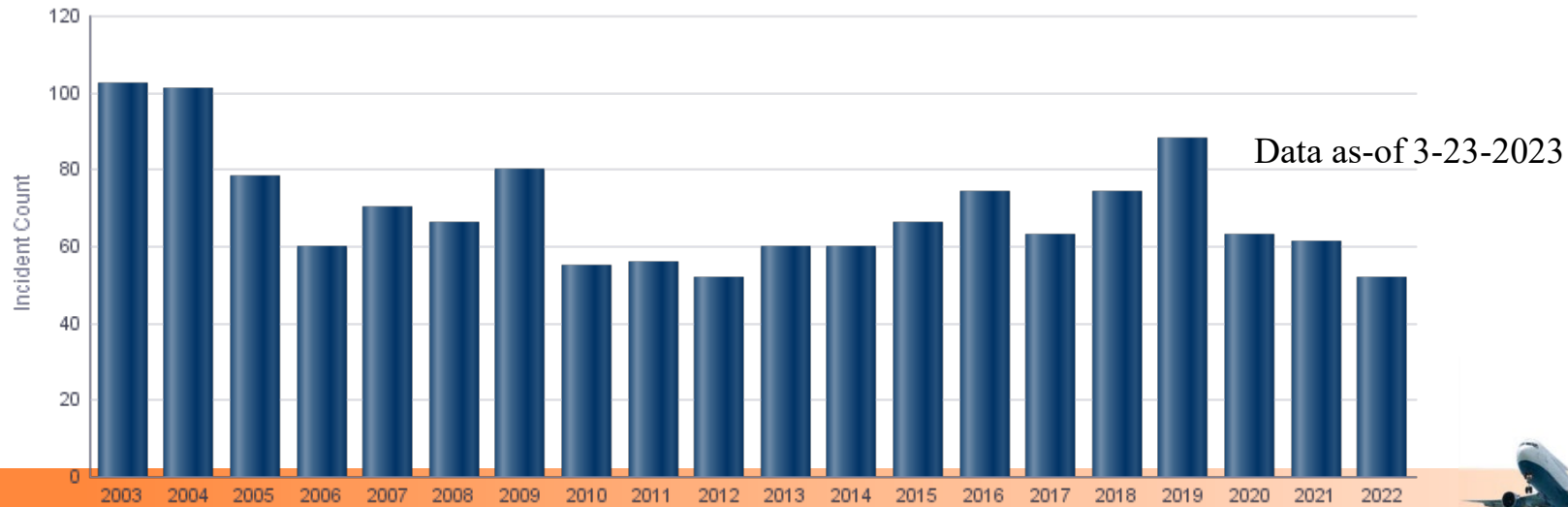


# Gas Distribution Significant Incidents 2003-2022

**All System Types**  
Slight decrease from  
2021 to 2022



**Gas Distribution**  
Decreased 15% from 2021 to 2022



# Gas Distribution Significant Incidents 2022

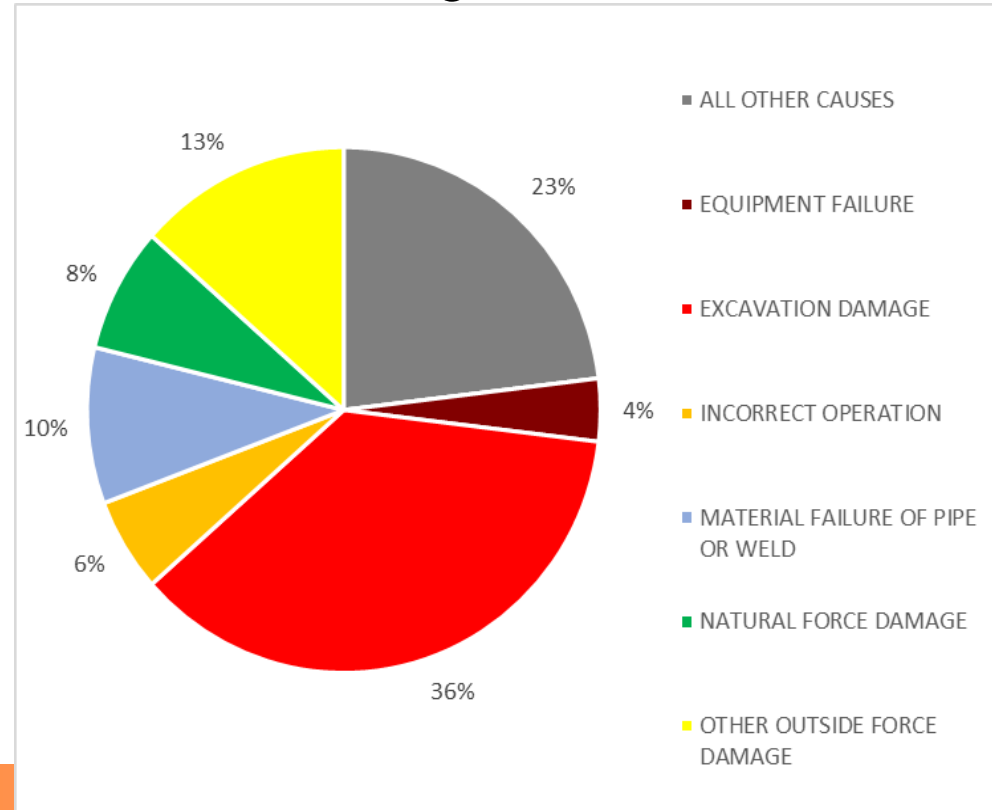
## Leading Causes:

Excavation Damage – Third Party

All Other Causes - Unknown

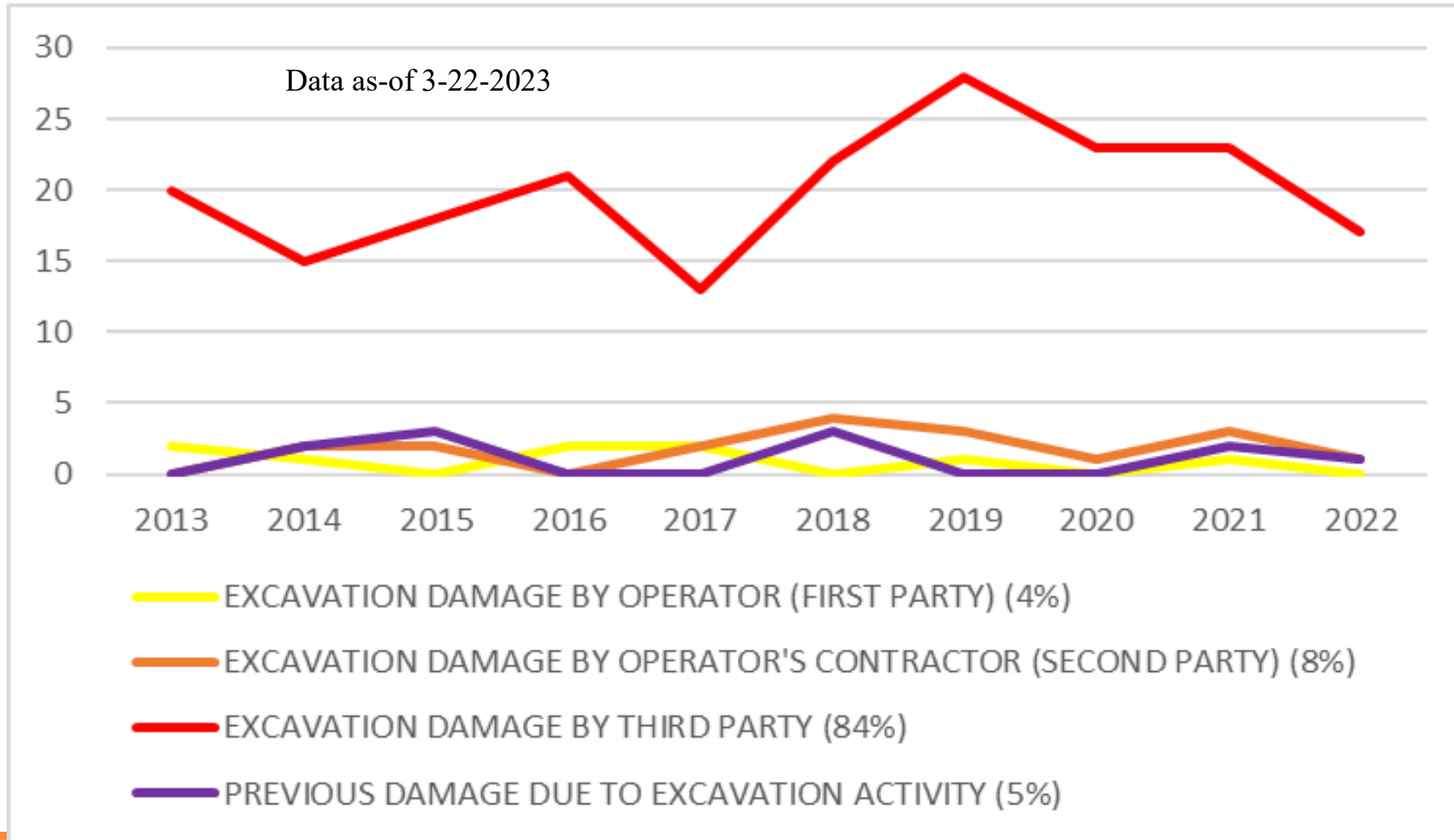
Other Outside Force Damage – Vehicles and “Other”

Data as-of 3-22-2023

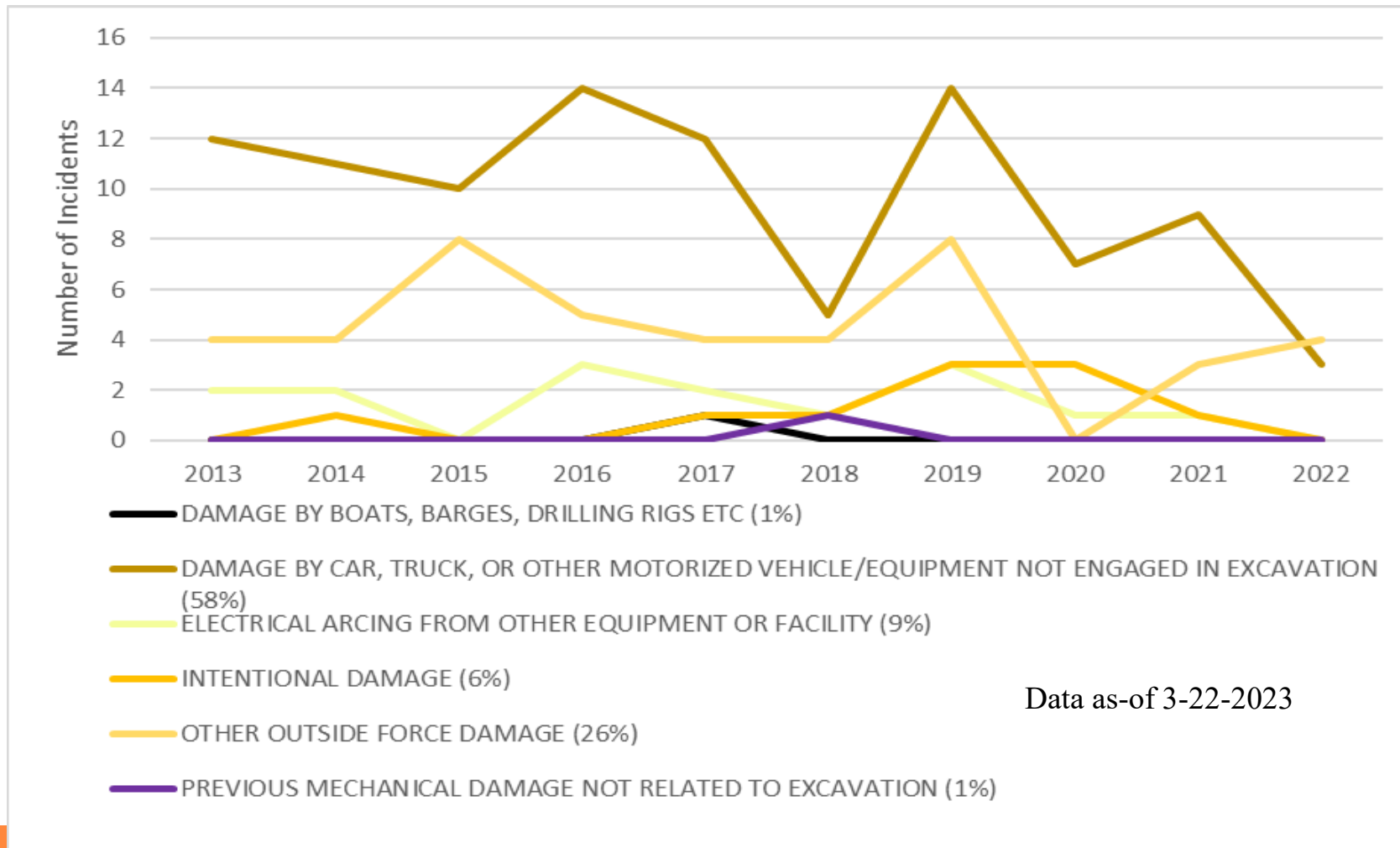




# Gas Distribution Significant Incidents Excavation Damage by sub-Cause 2013-2022



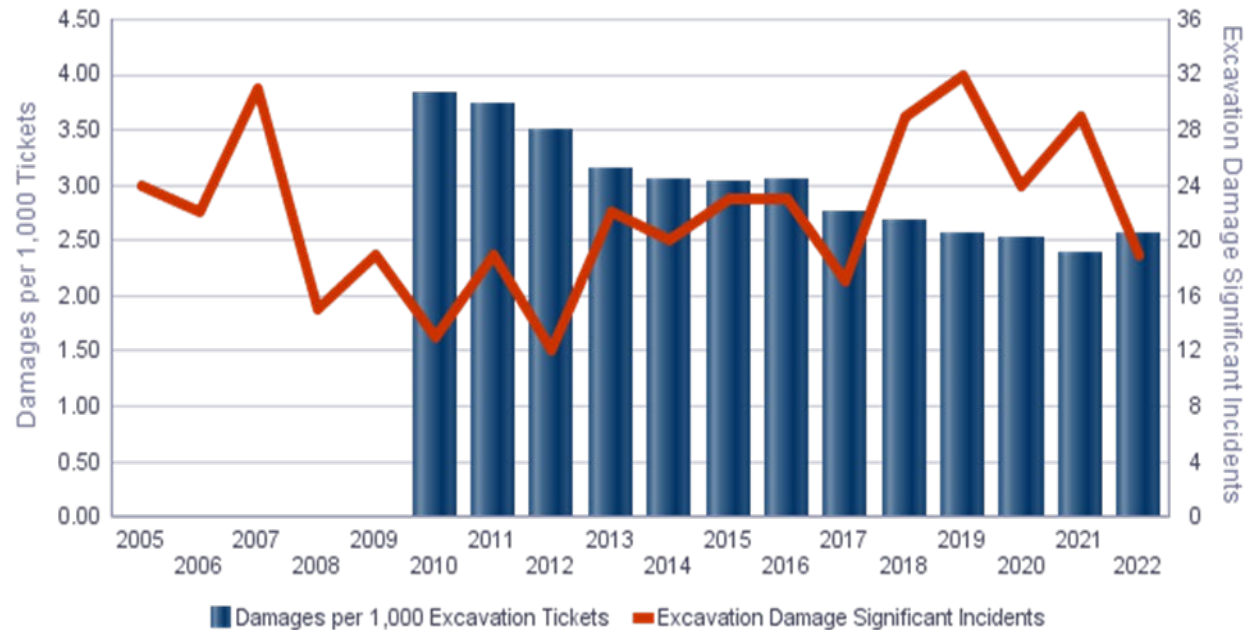
# Gas Distribution Significant Incidents Other Outside Force Damage by sub-Cause 2013-2022



# Gas Distribution Excavation Damage 2005-2022

Number of **Significant Incidents** caused by **Excavation Damage** has fluctuated since 2005 but trending upwards since 2012

**Damages per 1,000 Tickets** has decreased 33% since 2010



Data as-of 03-22-2023



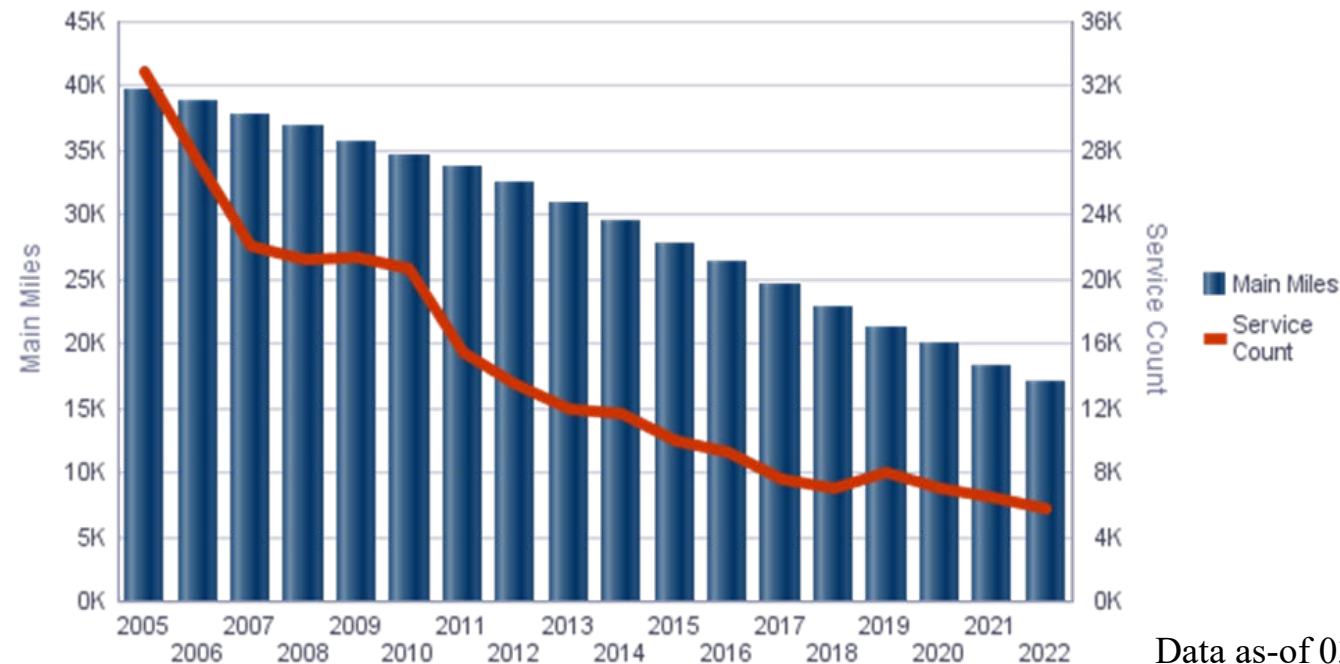
# Gas Distribution Cast and Wrought Iron 2005-2022

**Cast and Wrought Iron Main Miles** have decreased over 57% since 2005

Cast Iron mains make up 1% of the total gas distribution main miles

**Cast and Wrought Iron Service Count** have decreased 82% since 2005

Less than .01% of all gas distribution services are Wrought Iron



Data as-of 03-22-2023



# Damage Prevention Efforts



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# PHMSA Promotes Excavation Damage Prevention

## Current focus areas:

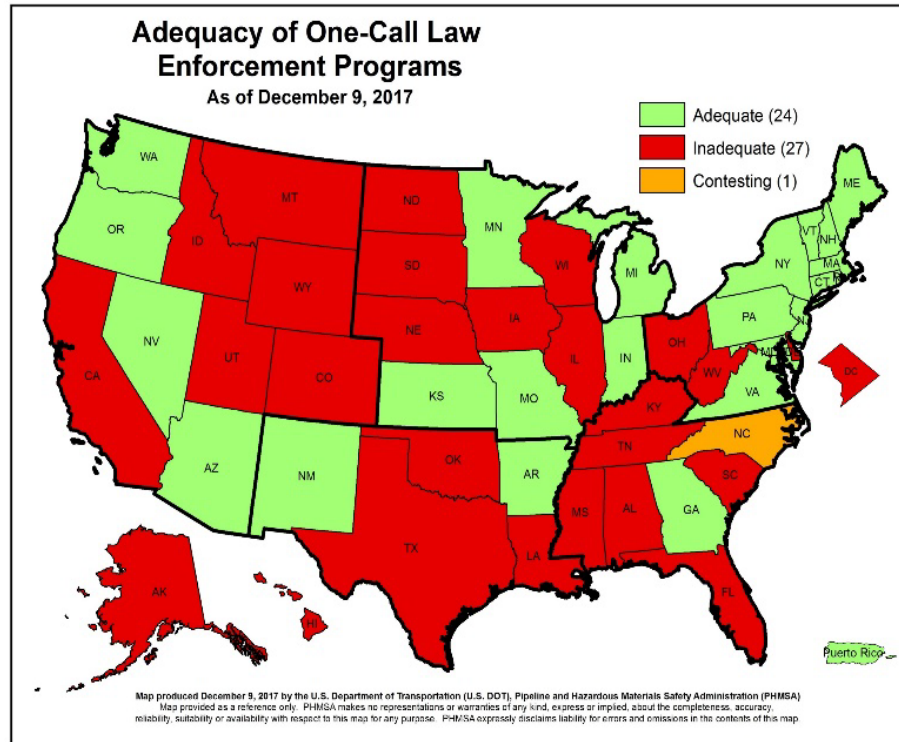
- Strong state one call laws, especially in the area of enforcement
- Use of data to understand damage prevention landscape in each state
- Promoting use of 811
- Providing resources to damage prevention stakeholders
- Providing pipeline safety education and outreach in historically underserved/disadvantaged geographic areas
- Reducing excavation damages overall



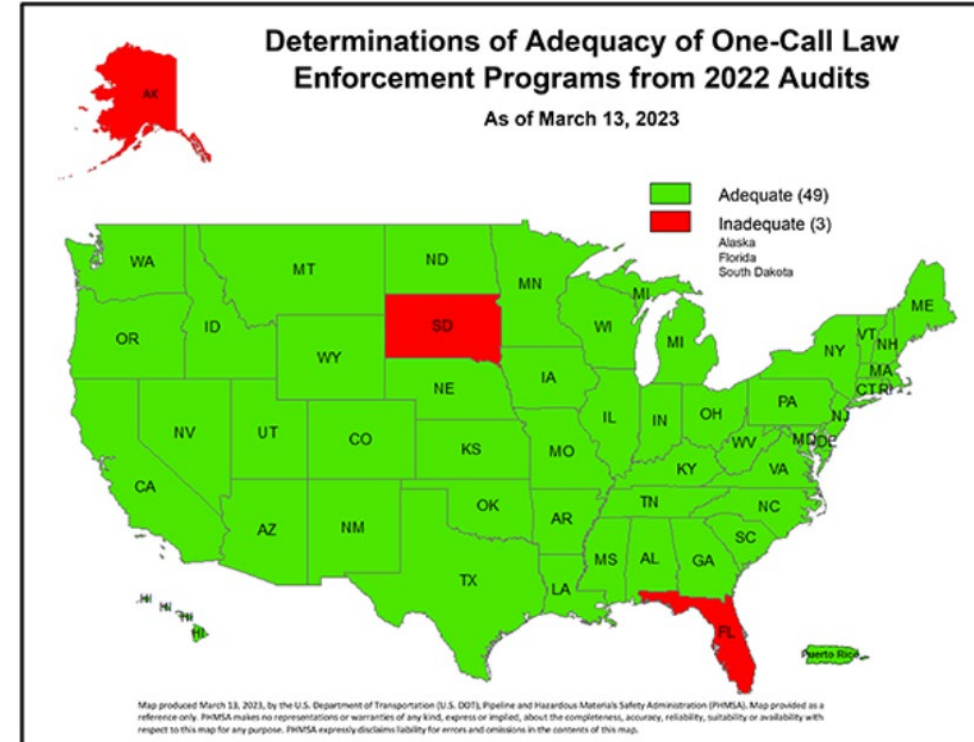
SAFETY IS IN YOUR HANDS.  
EVERY DIG. EVERY TIME.



# PHMSA Evaluations – Determinations of Adequacy



2017



2023

## Effective Programs Look Beyond “Adequate”



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# Executive Order 13985

## Advancing Racial Equality and Support for Underserved Communities Through the Federal Government

CALL before  
you do this.



- Identify underserved communities
- Improve public education and outreach
- Coordinate Call 811 outreach events
- Prioritize outreach to underserved communities in “inadequate” states
- Track and measure outreach





# Equity Tools

- PHMSA has created 4 new mapping tools to visualize **reportable** pipeline incidents for:
  - Gas Distribution
  - Excavation Damage
  - Gas transmission
  - Hazardous Liquid
- The tools allow users to view pipeline incidents in disadvantaged communities, as defined by DOT in the Justice40 initiative.
- The tools are now public. <https://dac-phmsa-usdot.hub.arcgis.com/>
- The tools offer a state-by-state analysis of pipeline incidents that allows users to view the cause of pipeline failures, the operator of the line, and the communities impacted.
- 
- These tools support PHMSA and our state partners' efforts to determine areas with a high concentration of incidents and follow up with the necessary actions.
- 
- The tools use pipeline incident data from 2013 through 2023 (partial year) and will be updated annually.



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# Other Pipeline Safety Efforts



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# Other Key Efforts

## RESEARCH AND DEVELOPMENT

Support research to improve pipeline safety

## RISK/DATA ANALYSIS

Analyze safety performance, improve data quality and analytical capabilities to identify, assess and manage safety risks

## INSPECTION, ENFORCEMENT & ACCIDENT INVESTIGATION

Federal and State inspectors, trained side-by-side, evaluate pipelines to determine compliance with our regulations & Investigate accidents/incidents and share lessons learned

## STAKEHOLDER OUTREACH & ENGAGEMENT

Enhancing safety through special programs, communication and education

## SAFETY MANAGEMENT SYSTEMS (SMS)

Supporting Pipeline SMS principles and a robust safety culture both internally and externally



# PHMSA's Focus on Public Engagement

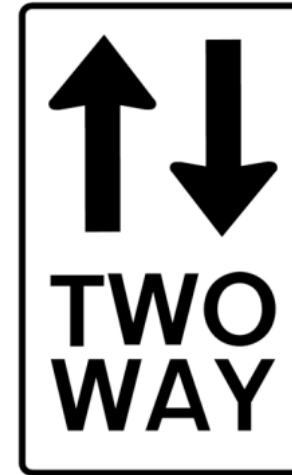
## Public Awareness

“Telling”



## Public Engagement

“Involving & Asking”



- Alignment with API RP 1173
- Supporting working group for new standard for public engagement (*API RP 1185*)
- Measuring and improving effectiveness



# Safety Management Systems (SMS)



# Research & Development Program (FY23)

Research & Development (R&D) Program	Anticipated Amount
Core R&D Program	\$9,000,000
Competitive Academic Agreement Program (CAAP)	\$4,000,000
Small Business and Innovative Research (SBIR) Program	\$5,000,000

PHMSA encourages all pipeline safety stakeholders, including to be involved with PHMSA's R&D Program.



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# H2 Pipelines

- PHMSA has regulated H2 pipelines since the 1970s.
- PHMSA currently has safety oversight for about 1,500 miles of H2 pipelines.
- PHMSA is investing in H2 research to determine the impact of blending on existing pipelines.



# CO2 Pipelines





# NGDISM Grants

- \$196 million was available to award in FY22.
- The grant program was highly competitive with over \$1.2 billion requested by 179 applicants from 31 states.
- **Due to the demand, PHMSA made available \$392 million (FY23 and 24 funding) in FY23 NOFO.**
- **The application deadline was August 4<sup>th</sup> and we have received over 200 applications requesting approximately \$1.8 billion.**





# Rulemakings in Progress

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# PAC Activity



- **Upcoming PAC meetings:**

- Class Location and Leak Detection
  - Nov. 27 – Dec. 1
  - GPAC only
- Standards Update II
  - Planning – 2024?
  - GPAC/LPAC
- Gas Distribution
  - 2024?
  - GPAC only



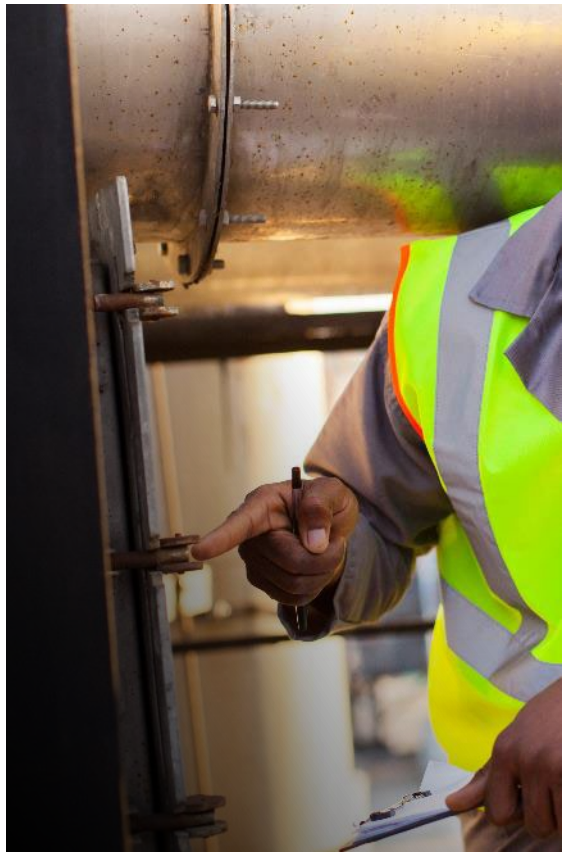
# PHMSA - What's Happening

- **PIPES Act of 2011/PIPES Act 2020**
  - Completion of 2011/2016 mandates
  - PIPES Act of 2020 impact on current regulatory agenda
  - PIPES Act web chart
    - Monthly updates
- **White House Methane Reduction Action Plan**
  - RIN2, RIN3, Valves, LDAR, GD, LNG
- **CO2/Hydrogen/Bio-Gas**
- **Rulemaking Timelines**
- **Reauthorization**



# Published: Leak Detection and Repair NPRM

**RIN: 2137-AF51**



- **NPRM Published 5/18/23**
  - Available on PHMSA website
  - Responds to Section 113 of PIPES Act of 2020
  - Comment period ended 8/16/23
- **Major Topics in the NPRM**
  - Leak detection and repair (LDAR) program.
  - Grade and repair all leaks.
  - More frequent leakage surveys and patrols
  - Performance standard for LDAR equipment and programs.
  - Minimize O&M-related releases.
  - Reporting on large releases, leaks discovered, and NPMS participation for regulated gathering.
- **Impacts:**
  - 0.5-1.0 MT of methane eliminated annually
  - \$0.3-1.4 billion of annualized net benefits
- **Next Action:** GPAC meeting scheduled for Nov. 27 – Dec. 1 2023



# Leak Detection NPRM Impact



- Cost estimated at \$739 - \$879 million,
- Benefits estimated at \$1,081 - \$2,320 million,
- Methane emissions eliminated 0.5-1.0 MT, annually



# Leak Detection and Repair NPRM

- **Advanced Leak Detection Program**
  - Program Elements
    - List of leak detection equipment
    - Leak detection procedures
    - Periodic evaluation and improvement
  - Performance standard
    - Equipment: each leak detection device must have a minimum sensitivity of 5 PPM.
    - Program: ALDP as a whole must be capable of detecting all leaks large enough in volume to produce a reading of 5 ppm when measured within 5 ft from the pipeline.
- **Distribution-specific amendments (§ 192.723)**
  - Annual leak survey for pipe known to leak
  - More frequent surveys outside business districts





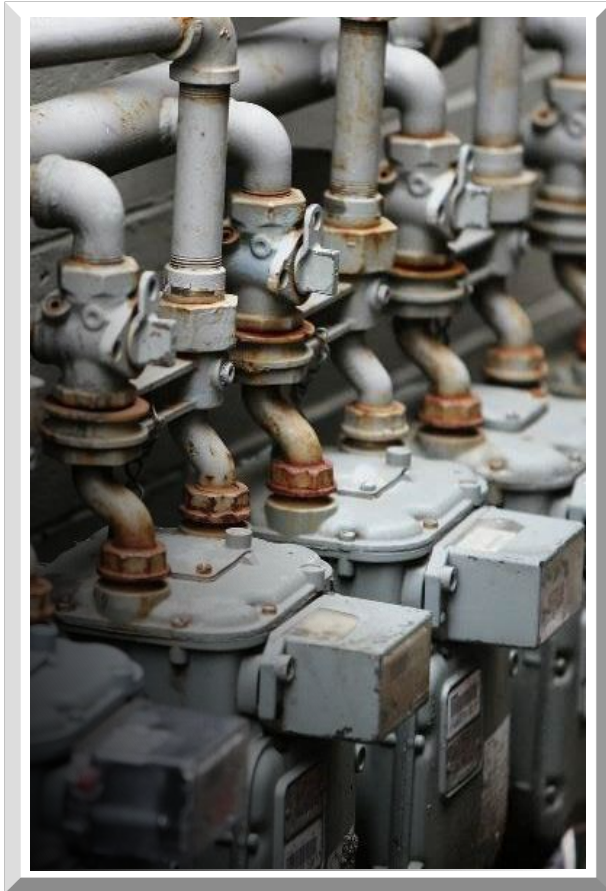
# Leak Detection and Repair NPRM

- **Transmission-specific amendments**
  - Leak Surveys and patrols (§§ 192.705, 192.706)
    - Require leak detection equipment, except class 1+2 with notification
    - More frequent surveys in HCAs and on assemblies.
    - More frequent patrols
  - Requirement to minimize emissions from routine blowdowns (§ 192.770)
  - Exception for Compressor Stations in compliance with EPA regulations.
- **Gathering specific amendments (§ 192.9)**
  - Proposed rule applies to Type A, B, C and offshore gathering
  - Eliminate leakage survey exception for Type C lines
  - Require patrols for regulated gathering lines.
  - Require § 192.605 procedure manuals for regulated gathering
  - NPMS for regulated gathering lines
- **LNG specific amendment:**
  - require periodic leak surveys (§ 192.2624).



# Safety of Gas Distribution Pipelines

**RIN: 2137-AF53**



**Published 9/7/23**

- **Comment period ends 11/6/23**
- Addresses Leonel Rondon Act in the PIPES Act of 2020
- **Major Topics Under Consideration**
  - Distribution integrity management plans
  - Emergency response plans
  - Operations and maintenance

**Impacts:** \$117M costs

**Next Action:** Comment period ends & GPAC prep



# Gas Distribution NPRM Impact Summary

- Preliminary cost estimate of \$110 million annually.
- **Benefits of the rule:**
  - Reduces risks of over pressurization events,
  - Improves emergency response time to reduce severity of incidents when they do occur,
  - Reduces accident frequency and severity,
  - Reduces methane emissions.



# Safety of Gas Distribution Pipelines

## Proposed Requirements:

- Clarifies and revises DIMP to address threats related to overpressurization
- Removes small LPG operators from DIMP and institutes annual reporting requirements on these operators
- Codifies use of SICT when PHMSA determines State pipeline safety program funding
- Requires operators to include procedures for contacting first responders, the public, and customers in emergency response plans
- Requires operator O&M manuals include overpressurization considerations and MOC process
- Requires recordkeeping of TVC pressure controls
- Requires qualified personnel to monitor construction activity
- Requires improved district regulator station design
- Misc. – inspections, testing records, annual reporting



# Standards Update I

**RIN: 2137-AF13**



- **NPRM Published 1/15/2021**
  - Comment period ended 3/16/2021
  - PAC meeting held 10/21/21
- **Major Topics Under Consideration**
- **Next Action:** Publish final rule



# Standards Update II

**RIN: 2137-AF48**



- **NPRM Published 8/29/22**
  - Comment period ended 10/28/2022
- **Major Topics Under Consideration**
  - Proposes 28 updated standards
- **Next Action: PAC meeting**



# RIN-2 (Repair Criteria, IM Improvements, Cathodic Protection, MOC, and Other Amendments)

**RIN: 2137-AE72**



- **Published August 4, 2022; effective May 24, 2023**
- **Petitions, stays of enforcement until Feb. 24, 2024**
  - **Dec. 6, 2022 for existing pipelines**
  - **April 17, 2023 for pipelines entering service after August 4, 2022**
- **Lawsuit filed by INGAA on July 12, 2023**
- **FAQs**



# RIN-2 (Repair Criteria, IM Improvements, Cathodic Protection, MOC, and Other Amendments)

**RIN: 2137-AE72**



- **NAPSR Petition for an Indefinite Stay of Enforcement for the “distribution center” definition**
- **Also looking at issue re: change in transmission line definition for use of MAOP vs. % SMYS**





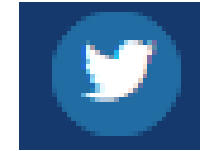
# Important Links

- **PHMSA, Office of Pipeline Safety**
  - [www.phmsa.dot.gov/pipeline](http://www.phmsa.dot.gov/pipeline)
- **Pipeline Emergency Responders Initiative**
  - <https://www.phmsa.dot.gov/pipeline/peri/pipeline-emergency-responders-initiative-peri-overview>
- **Standards & Rulemaking**
  - <http://www.phmsa.dot.gov/pipeline/regs>
- **National Pipeline Mapping System**
  - [www.npms.phmsa.dot.gov](http://www.npms.phmsa.dot.gov)
- **PHMSA's Stakeholder Communications Site**
  - <http://primis.phmsa.dot.gov/comm>
- **Electronic Code of Federal Regulations (eCFR)**
  - [www.ecfr.gov](http://www.ecfr.gov)
- **For Federal Regulations (Official Version)**
  - [www.regulations.gov](http://www.regulations.gov)

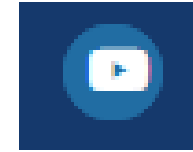


# PHMSA's Social Media

[https://twitter.com/PHMSA\\_DOT](https://twitter.com/PHMSA_DOT)



[www.youtube.com/user/PHMSADOT](http://www.youtube.com/user/PHMSADOT)



[www.linkedin.com/company/pipeline-and-hazardous-materials-safety-administration](http://www.linkedin.com/company/pipeline-and-hazardous-materials-safety-administration)



# Contact Info: Southwest Region Community Liaisons



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