



**Pipeline and Hazardous Materials  
Safety Administration  
Office of Pipeline Safety**

**Midwest Damage Prevention  
Training Conference  
November 15, 2023**

**Damage Prevention:  
A PHMSA Perspective**

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# PHMSA's 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.

- ✓ Develop & implement pipeline safety regulations
- ✓ Perform inspections, accident investigations and enforces compliance
- ✓ Conduct R&D
- ✓ Conduct outreach with stakeholders



# PHMSA 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></b>		<b>229,290</b>	<b>8%</b>	<b>524</b>
<b>Gas Transmission</b>		<b>300,850</b>	<b>10%</b>	<b>1,070</b>
<b>Gas Gathering</b>		<b>111,411</b>	<b>4%</b>	<b>512</b>
<b>Gas Distribution</b>		<b>2,336,957</b>	<b>78%</b>	<b>1,332</b>
<b>subTotal</b>		<b>2,978,508</b>		
<b>Reporting-Regulated-Only</b>		<b>Miles</b>	<b>% Miles</b>	<b># Operators</b>
<b>Hazardous Liquid</b>		<b>37,423</b>	<b>14%</b>	<b>125</b>
<b>Gas Gathering</b>		<b>234,293</b>	<b>86%</b>	<b>483</b>
<b>subTotal</b>		<b>271,716</b>		
<b>Total</b>		<b>3,250,224</b>		

Data as-of 7-9-2023

<b>Hazardous Liquid Breakout Tanks</b>	<b>8,519 Tanks, 241 Operators</b>
<b>Liquefied Natural Gas</b>	<b>171 Plants, 243 Tanks, 91 Operators</b>
<b>Underground Natural Gas Storage</b>	<b>400 Facilities, 16,630 Wells, 126 Operators</b>



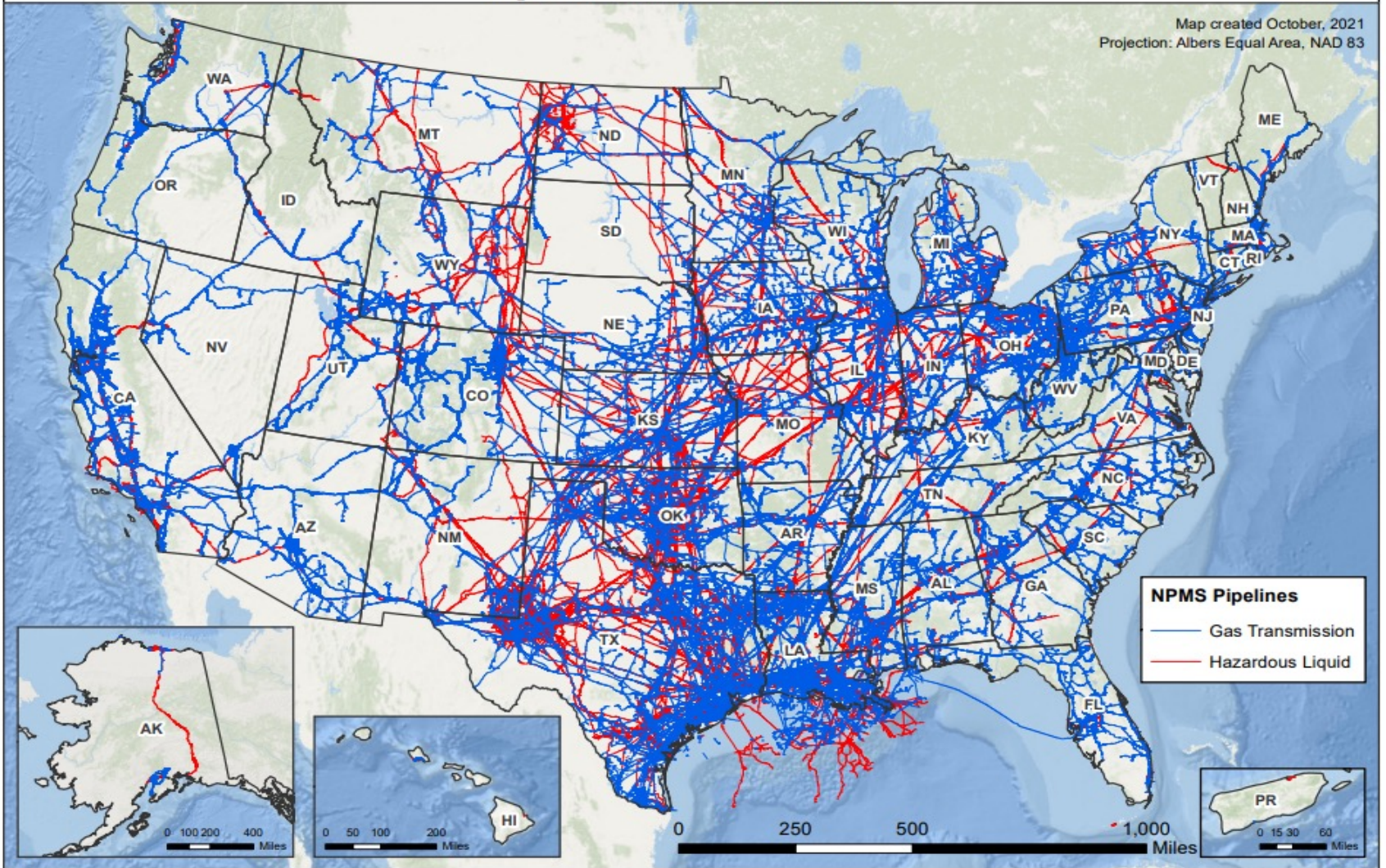


# Gas Transmission and Hazardous Liquid Pipelines

Pipeline data as of 10/05/2021



Map created October, 2021  
Projection: Albers Equal Area, NAD 83



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# Pipeline Safety Stakeholders





# A Shared Responsibility

- Nationwide, excavation damage continues to be one of the leading causes of pipeline failures.
- PHMSA works with all stakeholders to advance excavation damage prevention.



# Common Ground Study

**1998** - Congress directed DOT to conduct a study of best practices for:

- Enhancing worker safety,
- Protecting vital underground infrastructure, and
- Ensuring public safety during excavation activities around existing underground facilities.

**1999** - The Common Ground Study identified and validated over 130 best practices.

**2000** - CGA was established.



# PIPES Act of 2006

The Act established 9 Elements for an Effective Damage Prevention Program.

1. Enhanced **communication** between operators and excavators
2. Fostering support and **partnership** of all stakeholders
3. Operator's use of **performance measures** for locators
4. Partnership in **employee training**
5. Partnership in **public education**
6. Enforcement **agencies' role** to help resolve issues
7. Fair and consistent **enforcement** of the law
8. Use of **technology** to improve the locating process
9. **Data** analysis to continually improve program effectiveness





# Key Drivers of PHMSA's Damage Prevention Program

- Safety – our #1 priority
- Minimizing environmental impact
- Significant pipeline events
- Gaps in damage prevention Programs
- Congressional mandates
- NTSB Safety Recommendations
- Collaborating with our state Partners



# Grants to Support Damage Prevention

- Technical Assistance Grants - \$2.0 million
- State Damage Prevention Program Grants - \$1.5 million
- One-Call Grants - \$1.0 million
- States Base Grants - \$60.5 million



# Top Priorities of PHMSA's Damage Prevention Program

- Influencing change at the state level
- Advocating change through transparency
- Using data to inform policy
- Serving as damage prevention resource to empower stakeholders
- Supporting damage prevention research
- Promoting broad damage prevention awareness
- Collaborating with all stakeholders

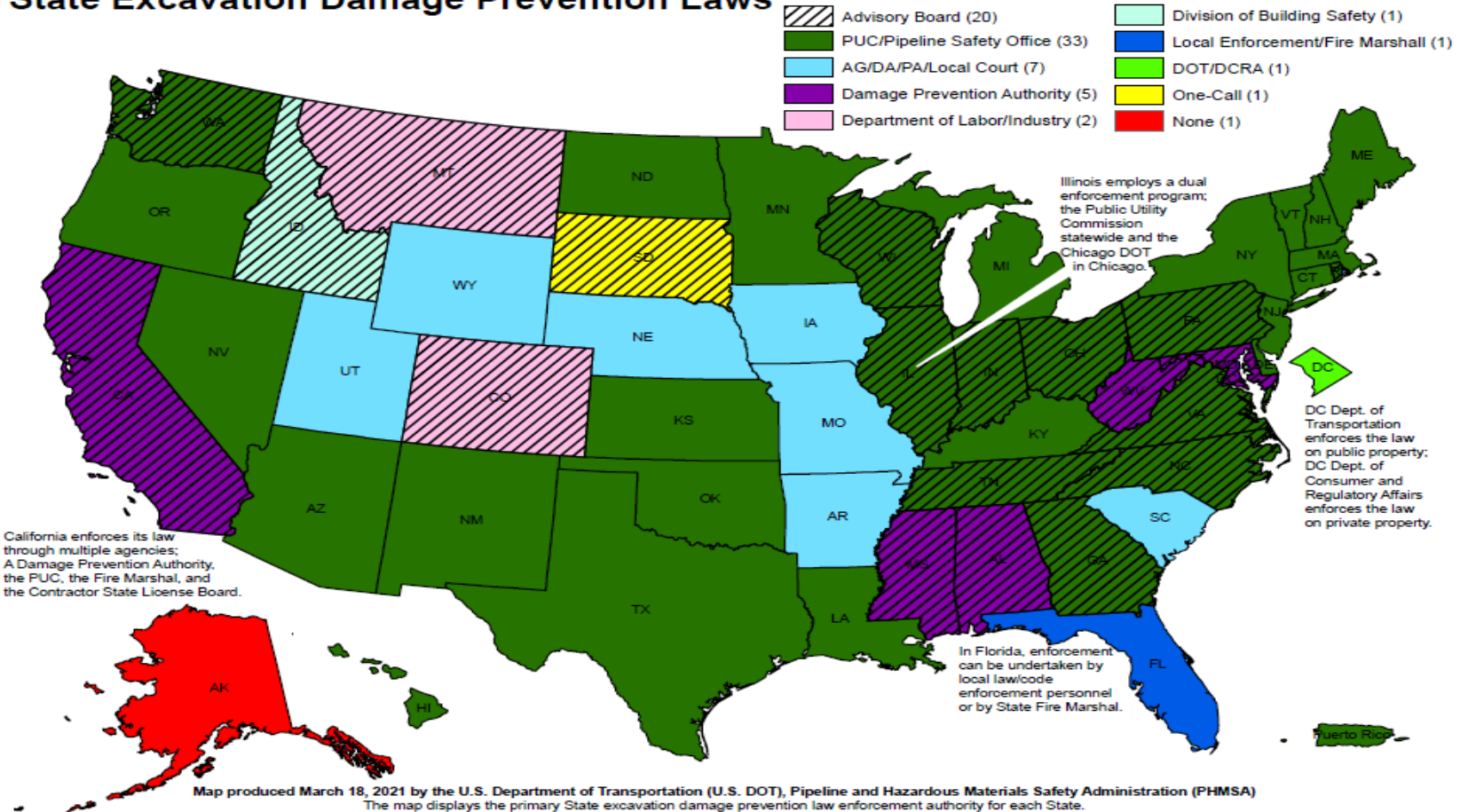




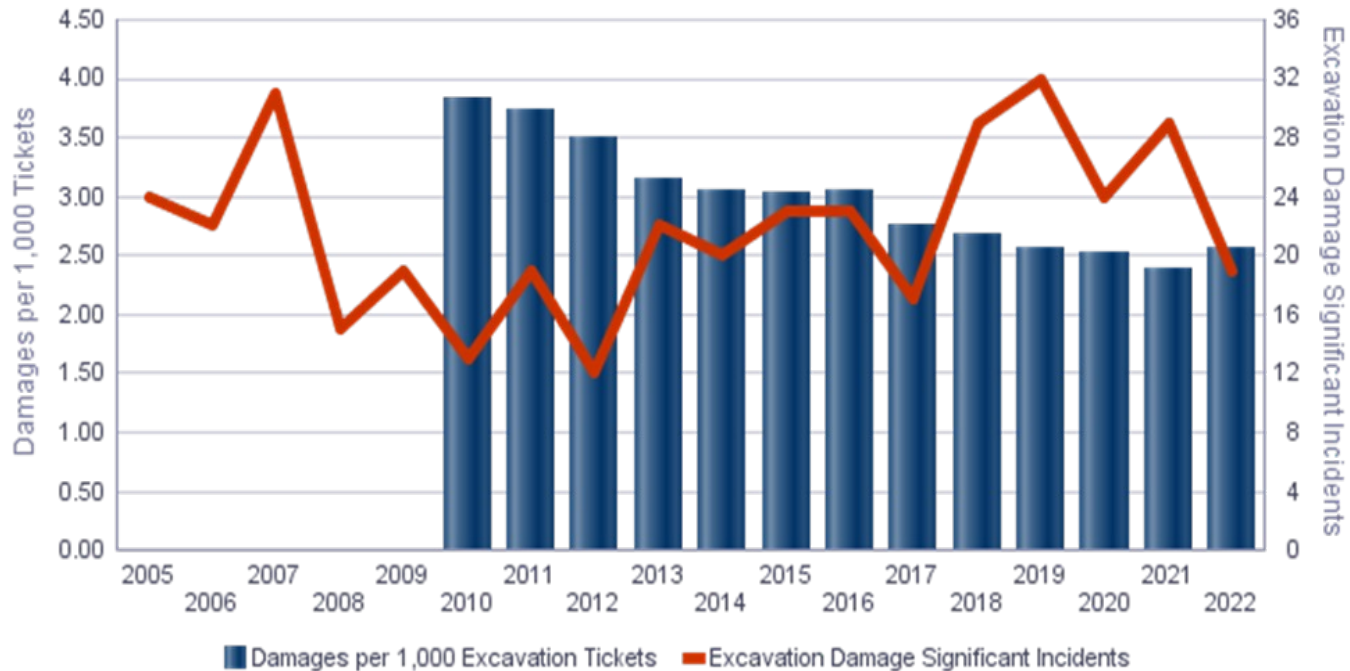


# Enforcement

## Organizations with Enforcement Authority for State Excavation Damage Prevention Laws



# Gas Distribution Excavation Damage 2005-2022

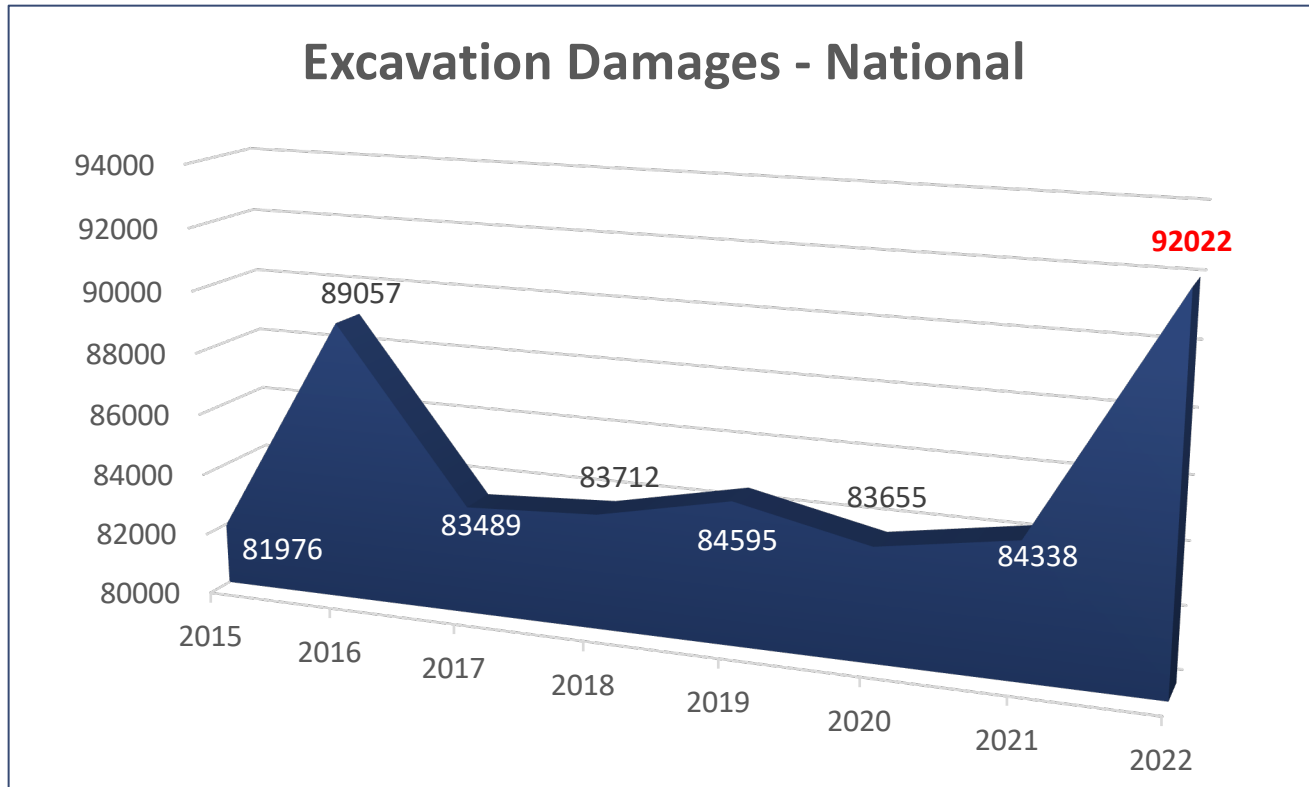


Data as-of 03-22-2023





# Pipeline Excavation Damages



# Top 25

- 1229 Gas Distribution (GD) operators
- 92,022 excavation damages
- 25 GD operators account for:
  - 52% (48,006) of all GD excavation damages
  - 45% (16,242,953) of all one-call tickets
- Damage /1000 notices of excavation for 18 of the 25 operators is above the national average of 2.38



# Shared Responsibility

- Work with 25 operators with the most damages
  - Focus on those with poor performance indicators
    - Damage /1000 notices of excavation
    - Excavation leaks per 1000 services
    - Damages per 1000 miles of main
- Meet with operators and state partners
- Review performance expectations under DIMP
- Measure progress regularly





# DIMP Requirements

The gas distribution Integrity Management (DIMP) regulations require operators to develop written plans and implement integrity management programs with the following elements:

- Understand system design & material characteristics, operating conditions & environment, and maintenance & operating history
- Identify existing & potential threats
- Evaluate and rank risks
- Identify and implement measures to address risks
- Measure IM program performance, monitor results, and evaluate effectiveness
- Periodically assess and improve the IM program
- Report performance results to PHMSA and, where applicable, also to states



# Threats: Understanding the Data

## Excavation Damage (Sub Root) Data

### Notification Issue:

- No notification made to the One-Call Center/811
- Excavator dug outside area described on ticket
- Excavator dug prior to valid start date/time
- Excavator dug after valid ticket expired
- Excavator provided incorrect notification information

### Excavation Issue:

- Excavator dug prior to verifying marks by test-hole (pothole)
- Excavator failed to maintain clearance after verifying marks
- Excavator failed to protect/shore/support facilities
- Improper backfilling practices
- Marks faded or not maintained
- Improper excavation practice not listed above

### Location Issue:

- Facility not marked due to Abandoned facility
- Facility not marked due to Incorrect facility records/maps
- Facility not marked due to Locator error
- Facility not marked due to No response from operator/contract locator
- Facility not marked due to Incomplete marks at damage location
- Facility not marked due to Tracer wire issue
- Facility not marked due to Unlocatable Facility
- Facility marked inaccurately due to Abandoned facility
- Facility marked inaccurately due to Incorrect facility records/maps
- Facility marked inaccurately due to Locator error
- Facility marked inaccurately due to Tracer wire issue

### Other Data:

- (CenterPoint/Atmos contractors)
- Any OQ suspensions or requalification's in CY 2022
- Any systemic issues discovered or remaining (e.g., shallow pipe)
- List, with details, of habitual/repeat offenders



# Excavation Threat

- **Excavation Threat - Root causes:**

Example – facility not marked

- Locating resources strained
- Locator performance (contract versus in-house, qualification)
- Systemic issues (tracer wire, accurate maps)
- Ticket size
- Abuse of emergency tickets

Example - No one-call ticket

- Homeowners
- Habitual Offenders
- New fiber installations

- **Which threat mitigations can be deployed now?**
- **What is needed to deploy additional mitigations?**



# 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.





# Bipartisan Infrastructure Law (BIL)

Through the Bipartisan Infrastructure Law, thousands of infrastructure projects are underway in every state and territory that will serve to bolster our economic security and prosperity for decades to come.



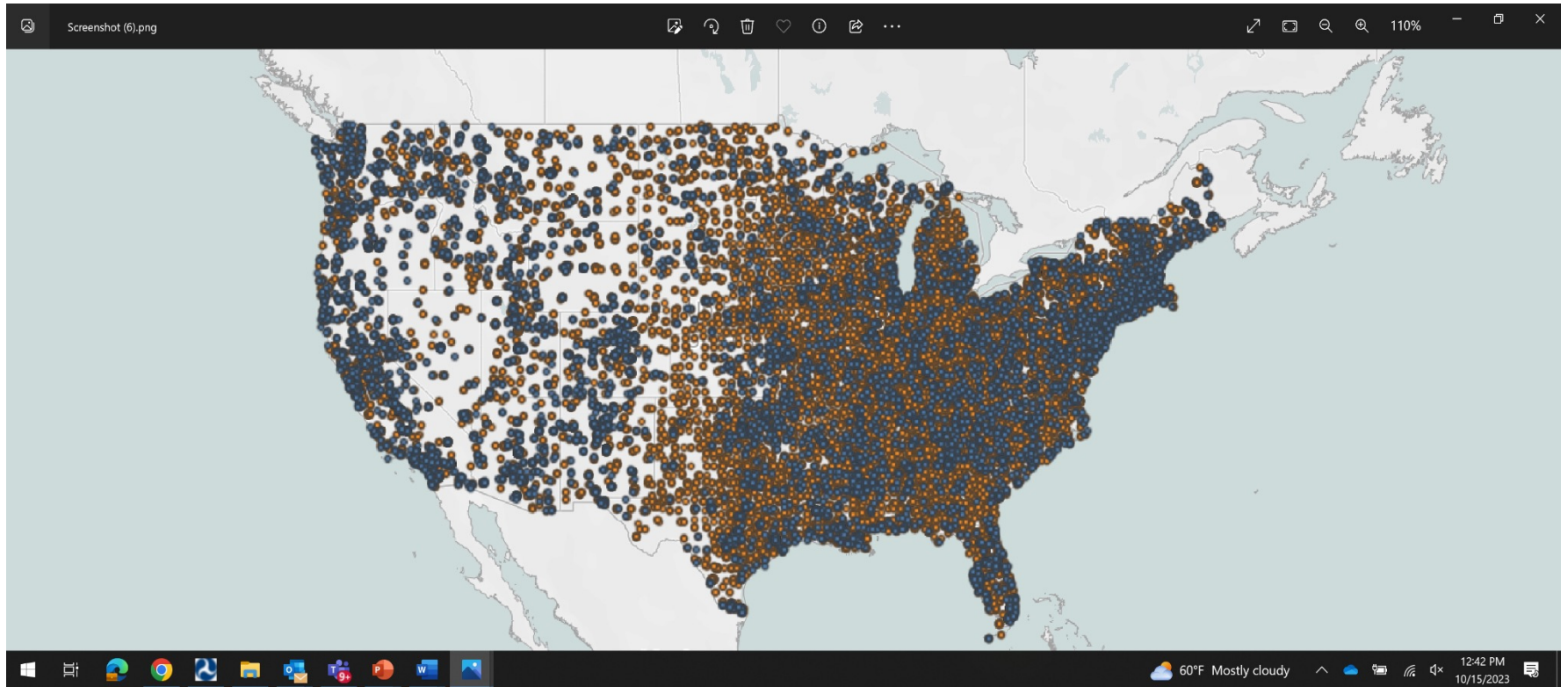
# Bipartisan Infrastructure Law (BIL)

The BIL provides up to \$973 billion over five years for:

- Roads, bridges, and bicycle and pedestrian safety (\$350 billion)
- Public transit and rail (\$210 billion)
- Transportation projects of national, regional and local significance (\$30 billion)
- Ports, airports and waterways (\$42 billion)
- Water infrastructure (\$91 billion)
- Broadband (\$65 billion)
- Clean energy and power infrastructure (\$65 billion)
- Resilience and environmental remediation (\$71 billion)



# Bipartisan Infrastructure Law (BIL) Dashboard



<https://d2d.gsa.gov/report/bipartisan-infrastructure-law-bil-maps-dashboard>



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# Conclusions

- Underground facilities have become increasingly complex and congested.
- Almost all the damages to underground facilities are preventable and most frequently occur due to a breakdown in the damage prevention process.
- We all share the responsibility for preventing excavation damage as we maintain and repair the existing underground infrastructure and build new ones to serve this Nation in the future.





# Thank You!



<http://primis.phmsa.dot.gov/comm/>

Includes damage prevention initiatives, information on grants, incidents and mileage data, and more.

