

# MPSC Damage Prevention Statistics and Enforcement

Cindy Creisher

Office: 517-284-8232

Email: [creisher@michigan.gov](mailto:creisher@michigan.gov)

Jeff Quirante

Office: 517-284-8282

Email: [quirante@michigan.gov](mailto:quirante@michigan.gov)



# Why Damage Prevention?

## Underground Facility Congestion



## Abandoned - Not Marked - Mismarked



Photo Taken 1-24-2007, compliments of R&M Consultants & Project Management, LLC, Virginia Beach. Presentation to Virginia State Corporate Commission, Division of Utility and Railroad Safety.



# MPSC Damage Prevention Statistics and Enforcement

- Public Act 174 of 2013 (PA 174) – Updates & Highlights
- Damage Prevention Statistics
  - USDOT annual report data
  - Data collected under PA 174
- Complaint & Incident Investigations
- Significant Excavation Damage Incidents
- Federal Damage Prevention Enforcement
  - 49 CFR Parts 196 and 198
  - State Program Evaluations



# Public Act 174 of 2013

- **Notification System** - Receive dig notices and promptly transmit a dig ticket to facility owners and operators in the area of proposed excavation or blasting, administer Positive Response.
- **Excavator** – Provide a dig notice to the notification system; check positive response; abide by laws pertaining to excavators.
- **Facility Owner or Facility Operator** - Respond to dig ticket within required time by accurately marking facilities and posting a positive response to notification system.
- **MPSC** – Enforcement of PA 174, process complaints, maintain information on damaged facilities and make data publicly available.

# Rulemaking Process Completed Steps

November  
26, 2013

- Public Act 174 of 2013 was signed into law

April 1,  
2014

- Public Act 174 of 2013 became effective
- The Commission sought permission from ORR, now OPT, to adopt rules

April 4,  
2014

- ORR approved the request to adopt rules

January  
2016

- Informal approvals are granted for draft rules that were submitted to OPT and LSB

April 4,  
2016

- Regulatory Impact Statement was submitted to ORR

# Rulemaking Process Completed Steps

May 3,  
2016

- The Commission issued an order in Case No. U-18078 providing the public with an opportunity to comment on the proposed rules

May 6,  
2016

- Regulatory Impact Statement was approved by ORR

June 16,  
2016

- A Public hearing was held with three people making comments

June 30,  
2016

- The Commission provided for written comments, six parties filed comments

July 22,  
2016

- The Commission issued an order in U-18078 approving rules
- Rules are submitted to OPT and LSB for final certification



# Rulemaking Process Next Actions

- 
- OPT has approved rules, LSB final certification is still pending
  - Rules will be filed with JCAR. JCAR will have 15 session days to allow for opportunity to object to the rules
  - Commission will issue Order in U-18078 adopting final rules
  - Final rules will be filed with the Secretary of State's Office of the Great Seal
  - Final rules will become effective

# 2015 Natural Gas Distribution Pipeline Excavation Damage Summary

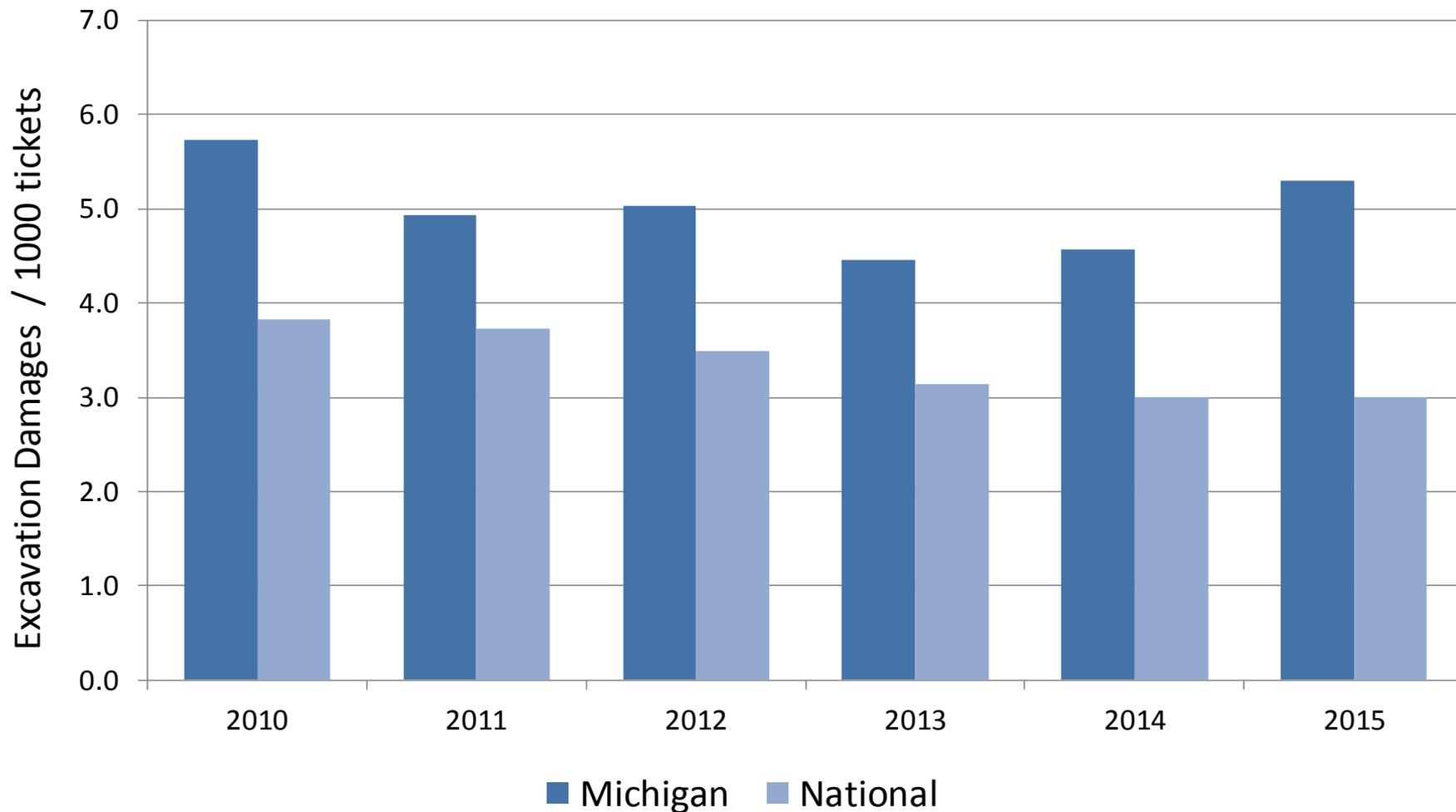
<b>Michigan</b>	
Excavation Damages	4,256
Excavation Tickets	796,641
Excavation Damages / 1000 Tickets	5.3

<b>National</b>	
Excavation Damages / 1000 Tickets	3.0

Source: 2010-2015 Annual Distribution Reports. Form PHMSA F7100.1-1

# Natural Gas Distribution Pipeline Damages per Ticket



Source: 2010-2015 Annual Distribution Reports. Form PHMSA F7100.1-1

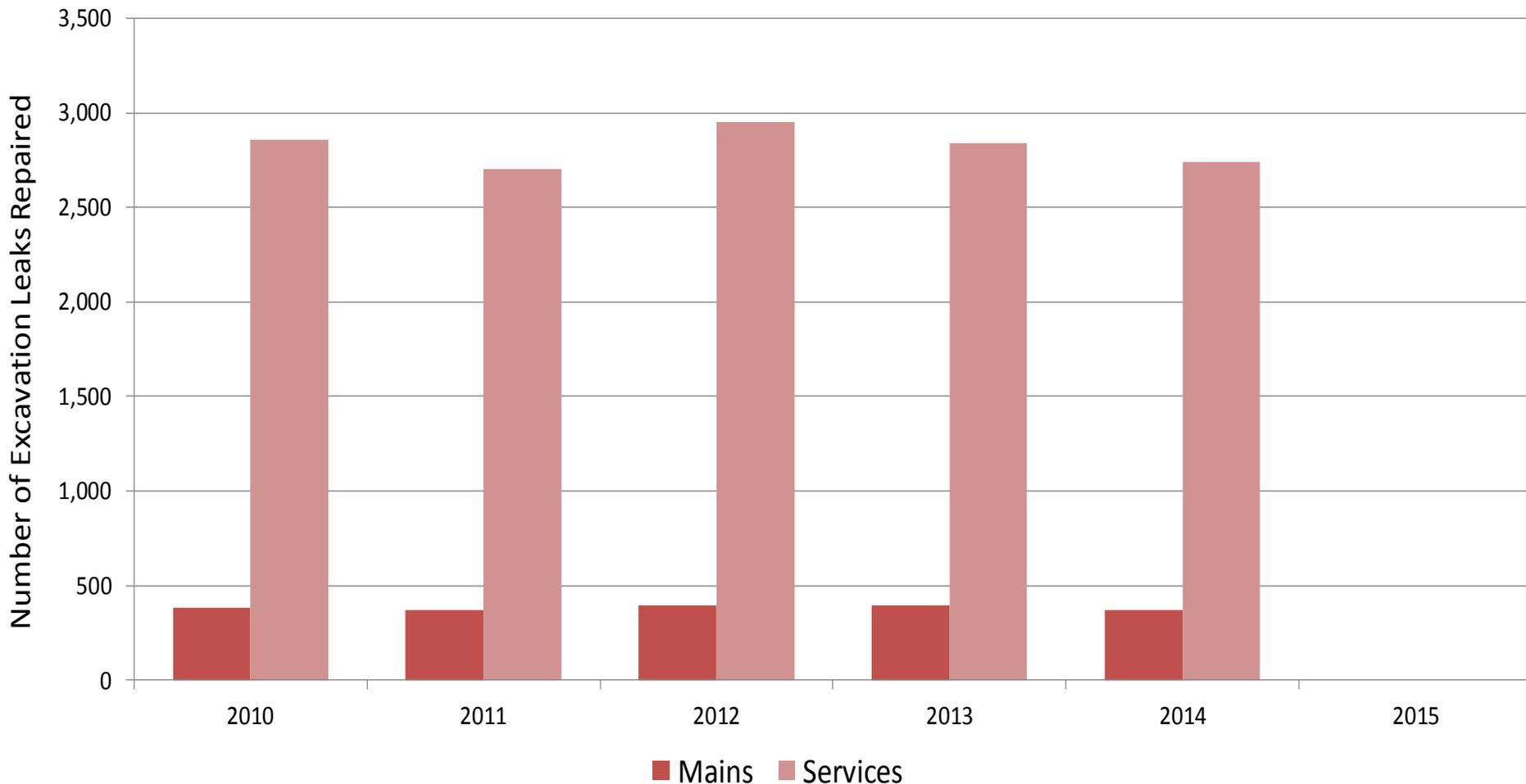
# 2015 Distribution Pipeline Excavation Leak Summary

<b>Mains</b>	
Excavation Leaks	457
Leaks / 100 Miles of Main	0.79

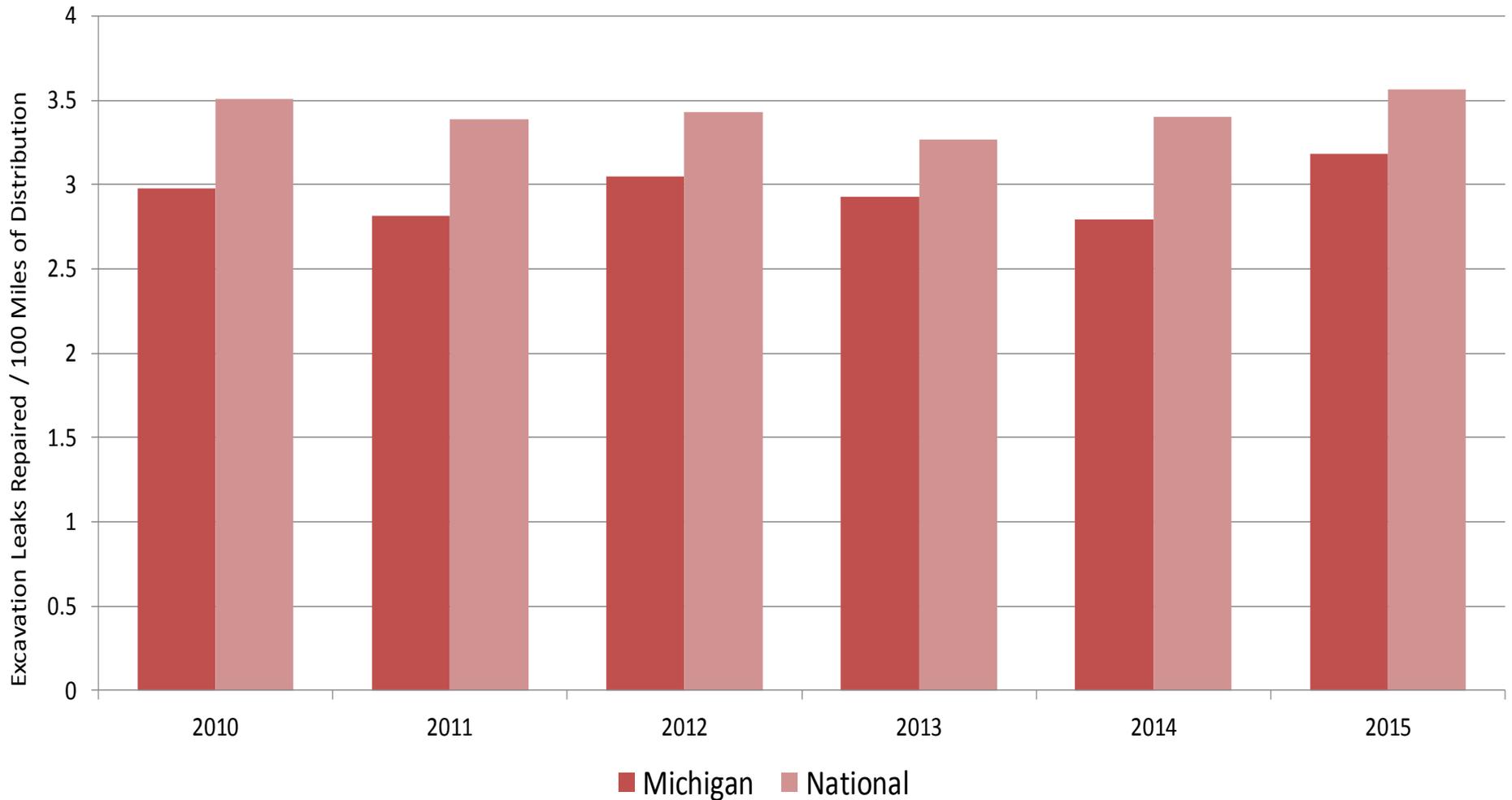
<b>Services</b>	
Excavation Leaks	3115
Leaks / 1000 Services	0.95

Source: 2010-2015 Annual Distribution Reports. Form PHMSA F7100.1-1

# Natural Gas Distribution Pipeline Leaks Caused by Excavation Damage



# Natural Gas Distribution Pipeline Leaks Caused by Excavation Damage



Source: 2010-2015 Annual Distribution Reports. Form PHMSA F7100.1-1



# Damage Reporting under PA 174

- PA 174 requires the MPSC to maintain information on reported facility damages. This information will be made publicly available on the Commission's website.
- Damage data is being submitted to the MPSC by underground facility owners and facility operators.
- Data will be used to focus on future improvements to reduce underground damages.
- The data collected is consistent with DIRT so damage data can be shared with other agencies, but also includes select additional fields.



# Damage Reporting under PA 174

## Common issues with data files received

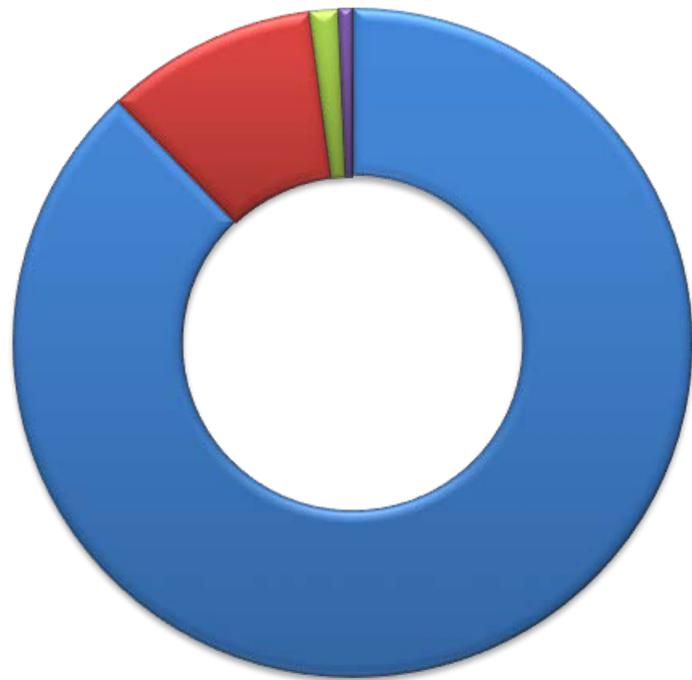
- Incomplete data submitted
- Commas in CSV file
- Header row contains incorrect field names
- Incorrect field order or missing fields
- Formatting as currency for cost reporting
- Incorrect file format
- Reporting prior to end of reporting period



# Damage Reporting Highlights

- 6687 damage incidents reported
  - **41%** of damages reported that there was no MISS DIG notification.
  - **4** damages reported that there were exemptions under Act 174 for facility marking.
  - **60%** of hand tool damages reported had no MISS DIG notification.

# Excavation Damages by Reporting Industry

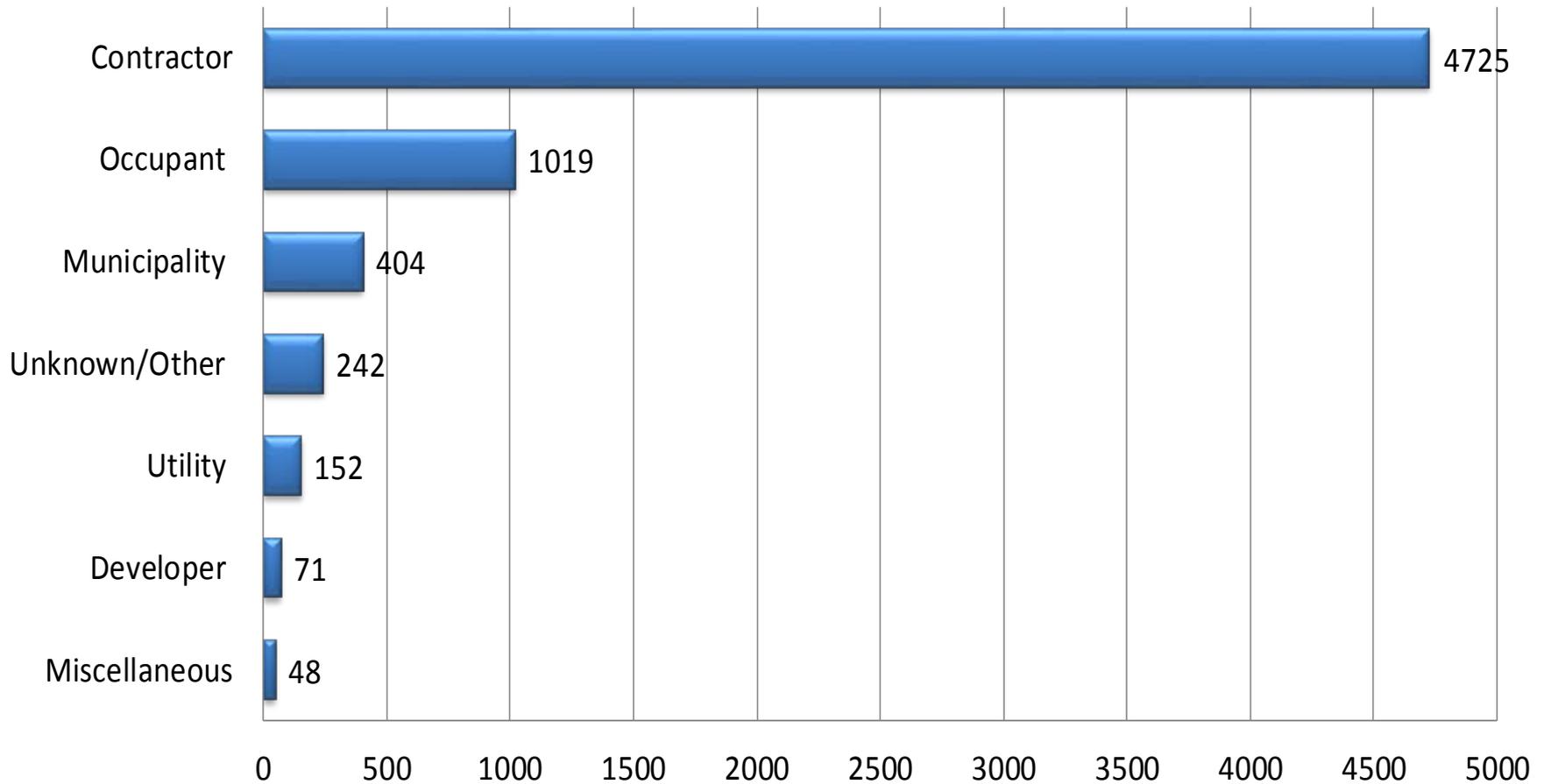


- Natural Gas
- Electric
- Telecommunications
- Public Works

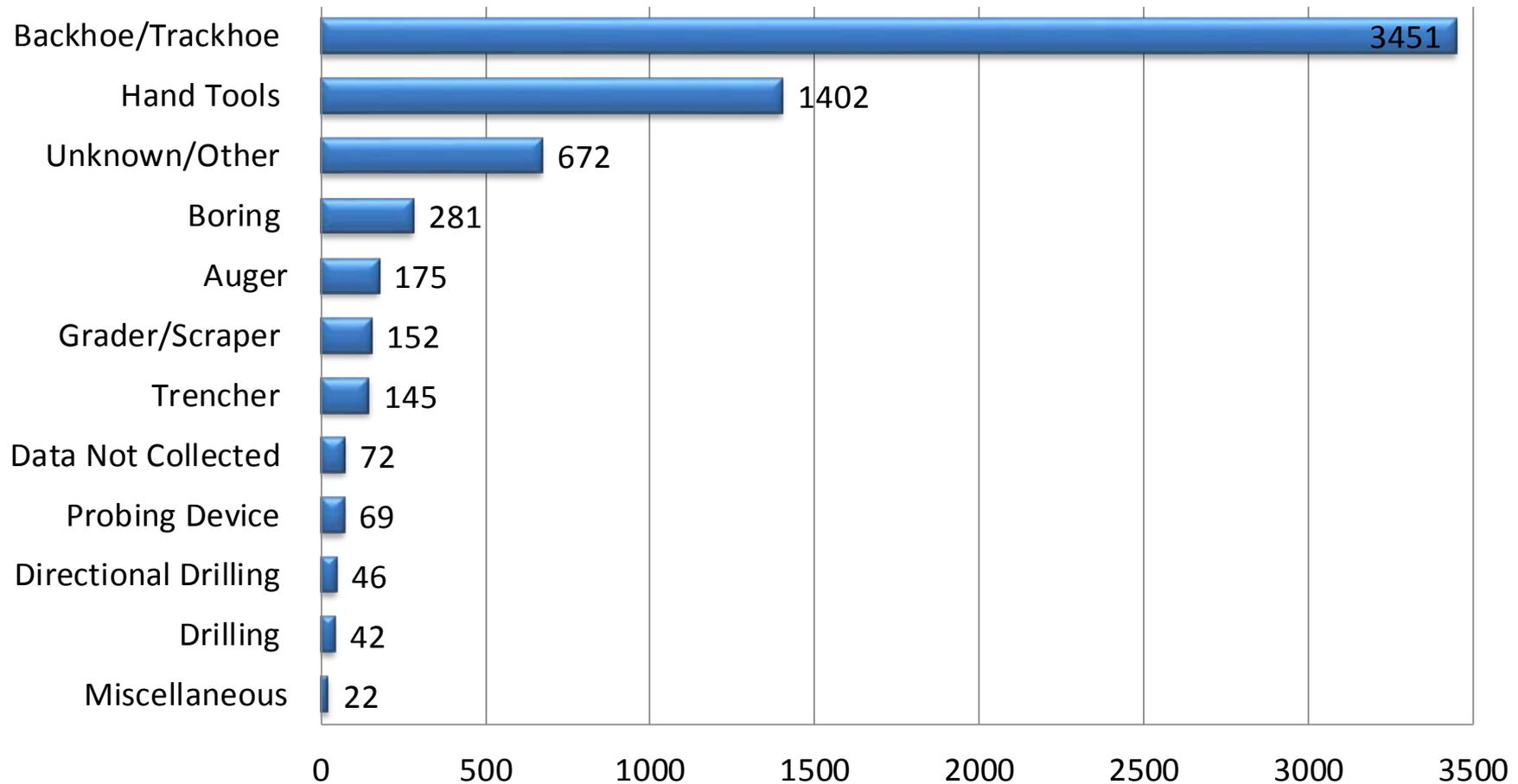
Disproportionate industry reporting is evident

- Over 90% of natural gas distribution customers are accounted for in reports received.
- Less than 50% of electric distribution customers are accounted for in reports received.
- Reporting for major utility operators for other industries is lacking.

# Excavation Damages by Excavator Type



# Excavation Damages by Excavation Equipment





# Boring vs. Directional Drilling

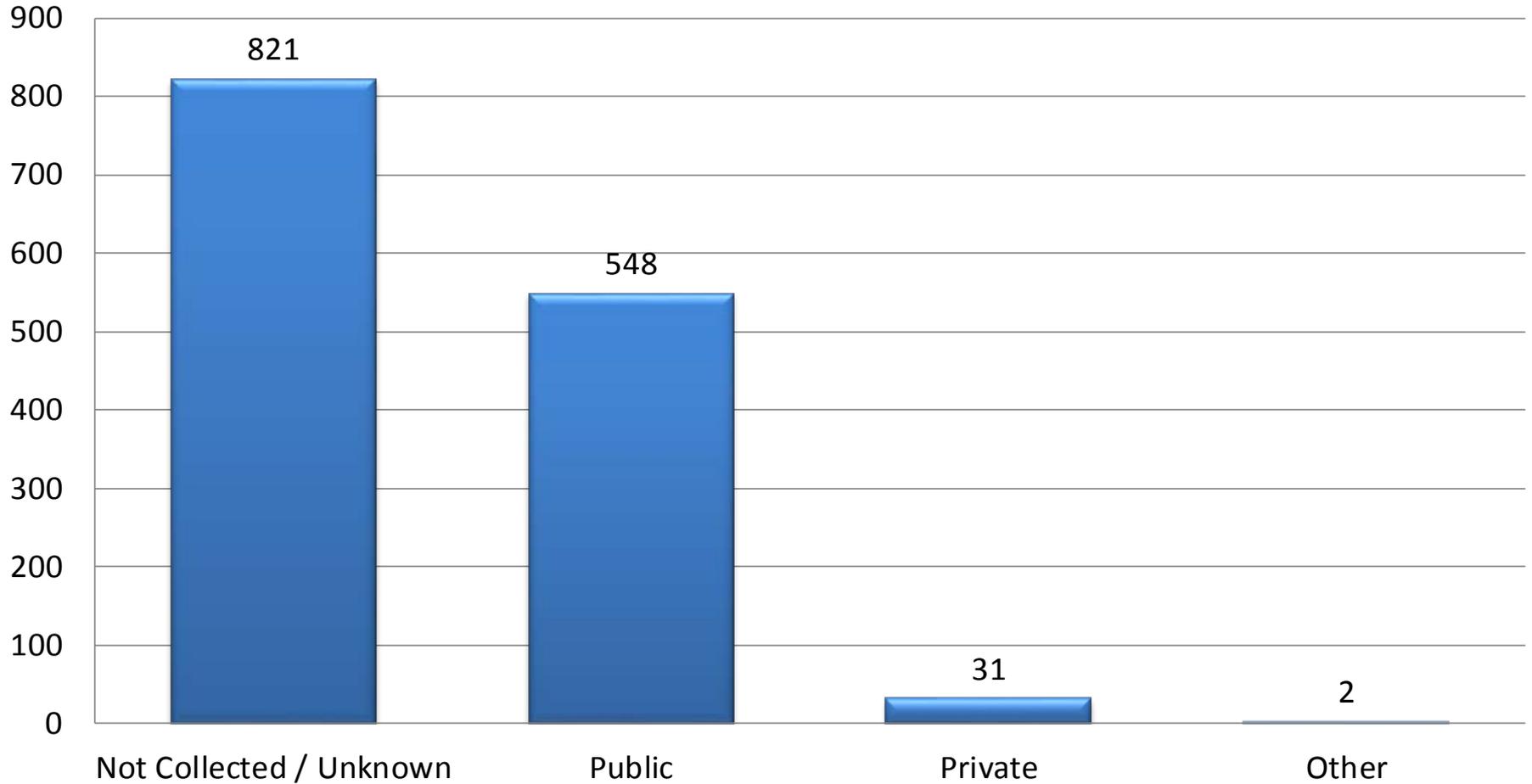
## **Boring:**

Machinery used to dislodge or displace soil by a rotating auger or drill string to produce a hole called a bore. Also include pneumatic tools such as hammer head or hole hog.

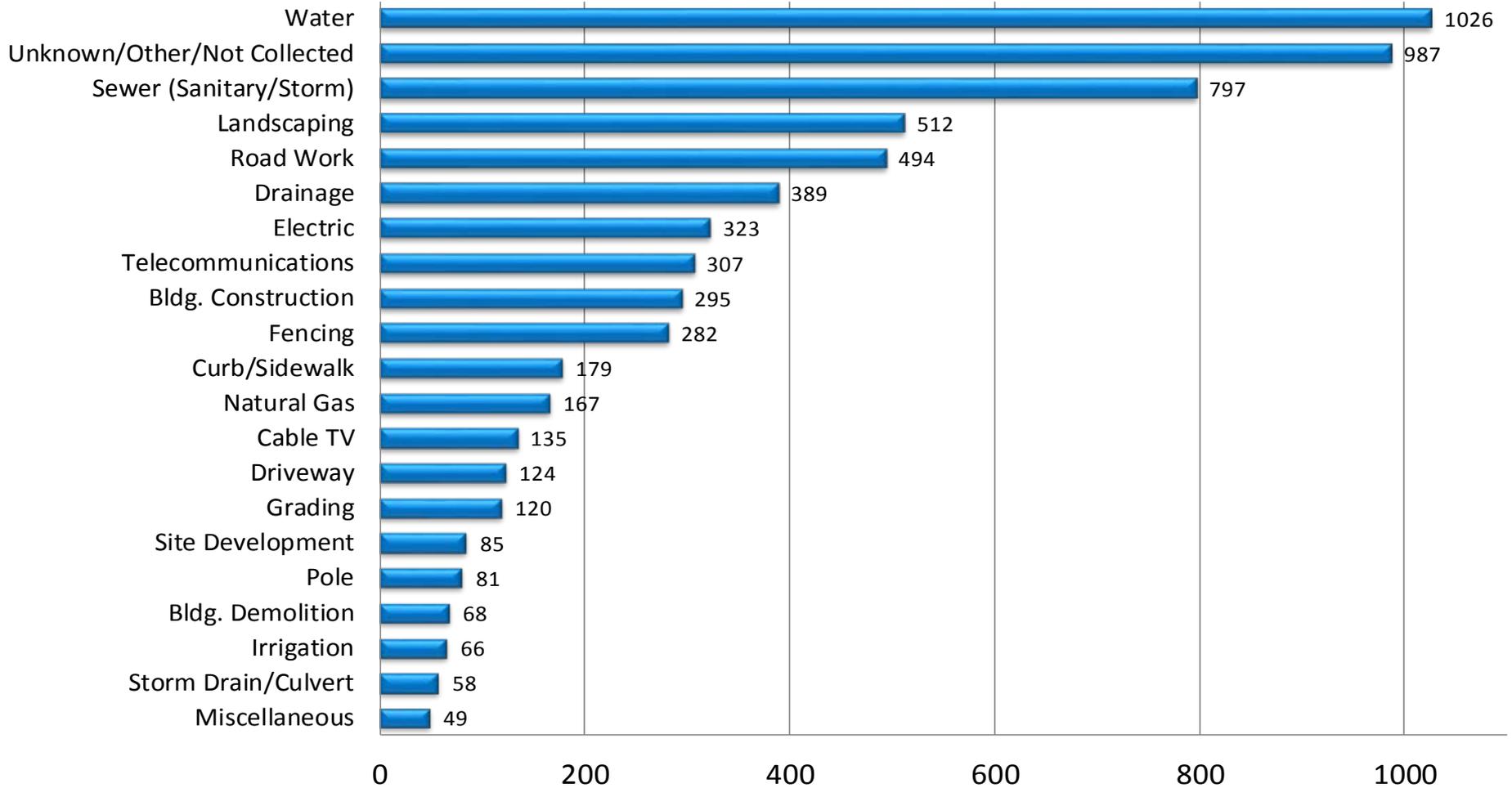
## **Directional Drilling:**

A steerable system for the installation of pipes, conduits and cables in a shallow arc using a surface launched drilling rig. Traditionally the term applies to crossings in which a fluid-filled pilot bore is drilled using a fluid-driven motor at the end of a bent-sub, and back reamer to the size required for the product pipe.

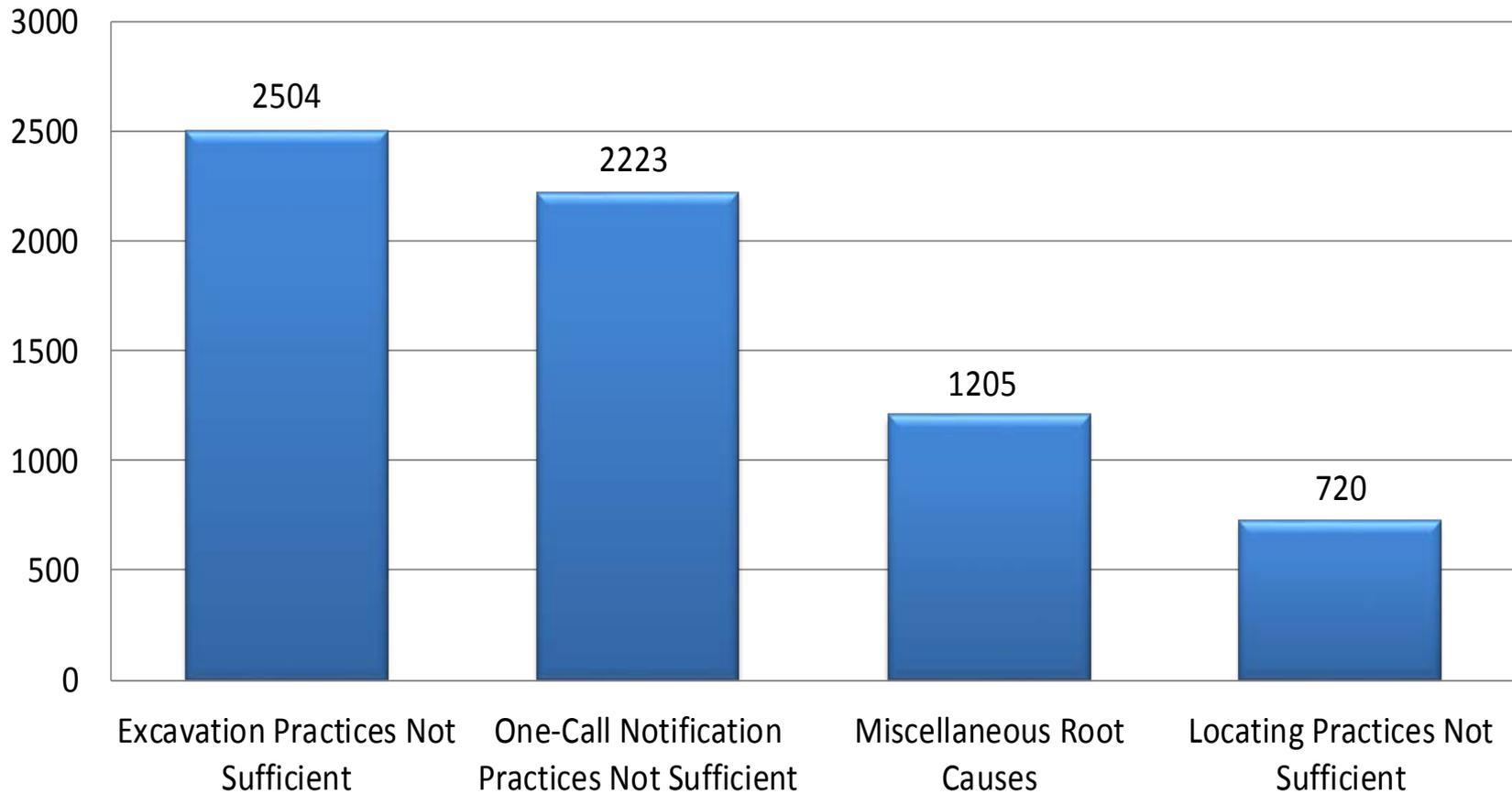
# Hand Tool Excavation Damages by Right of Way



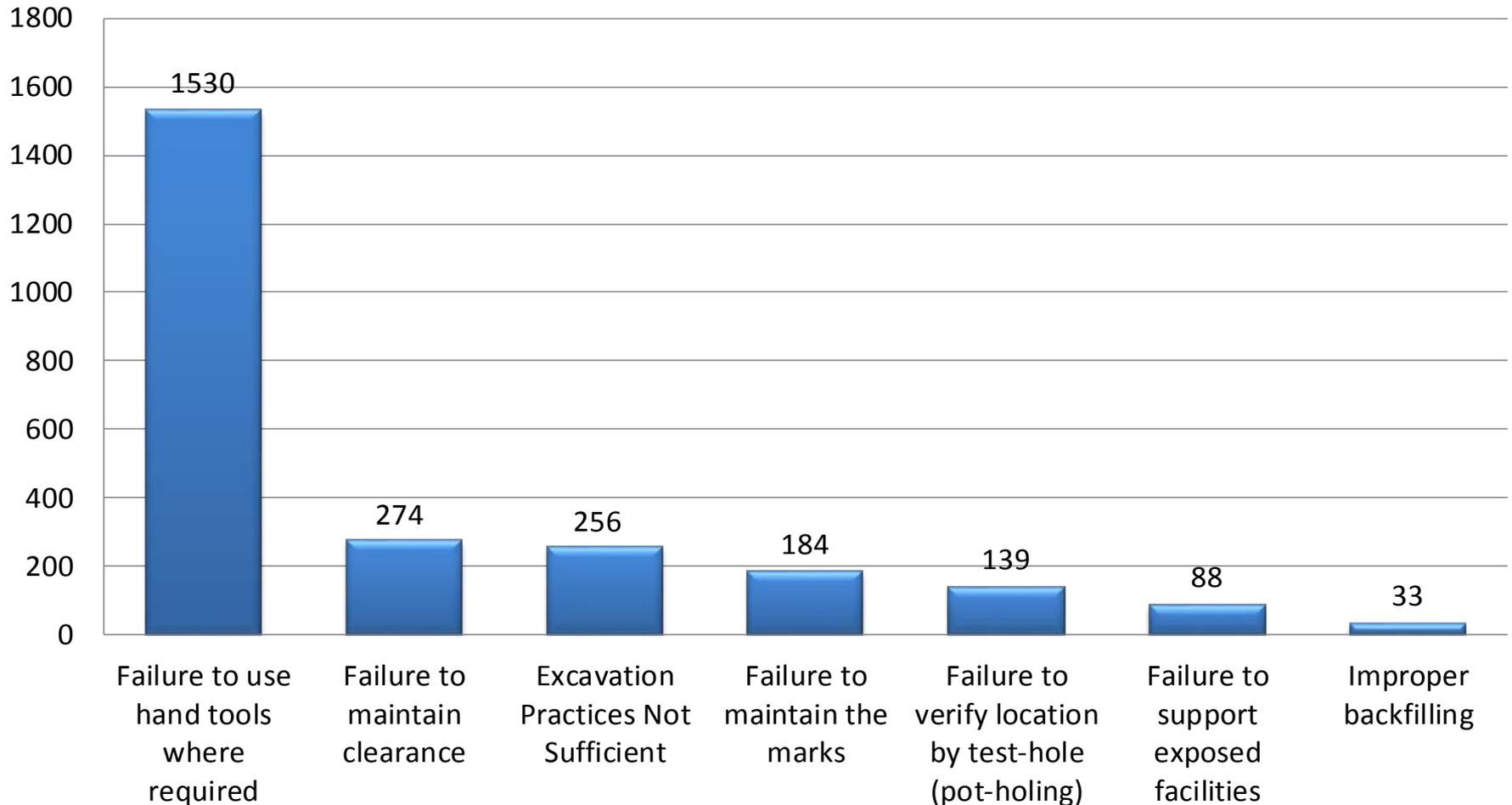
# Excavation Damages by Work Type



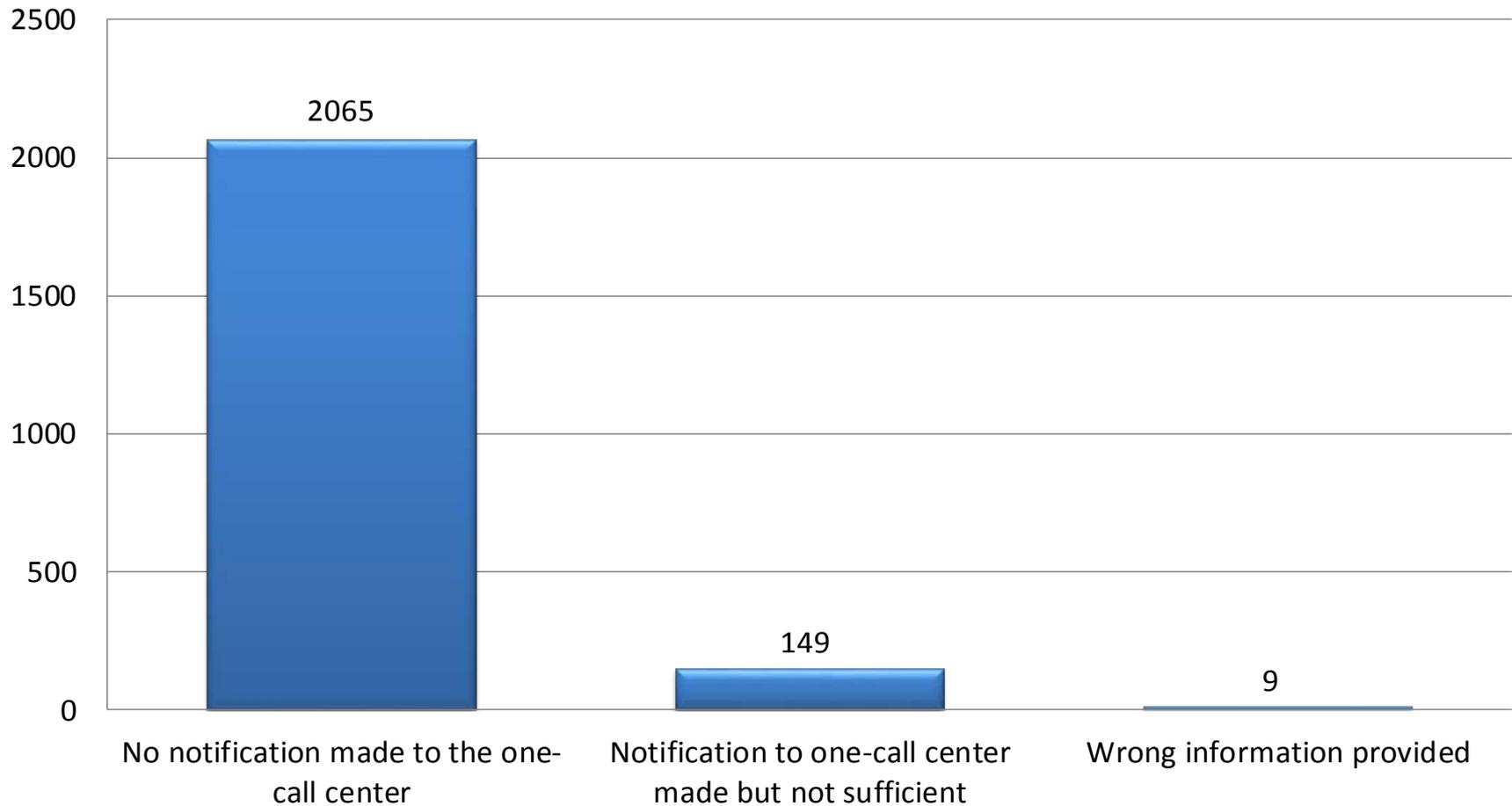
# Excavation Damages by Root Cause Category



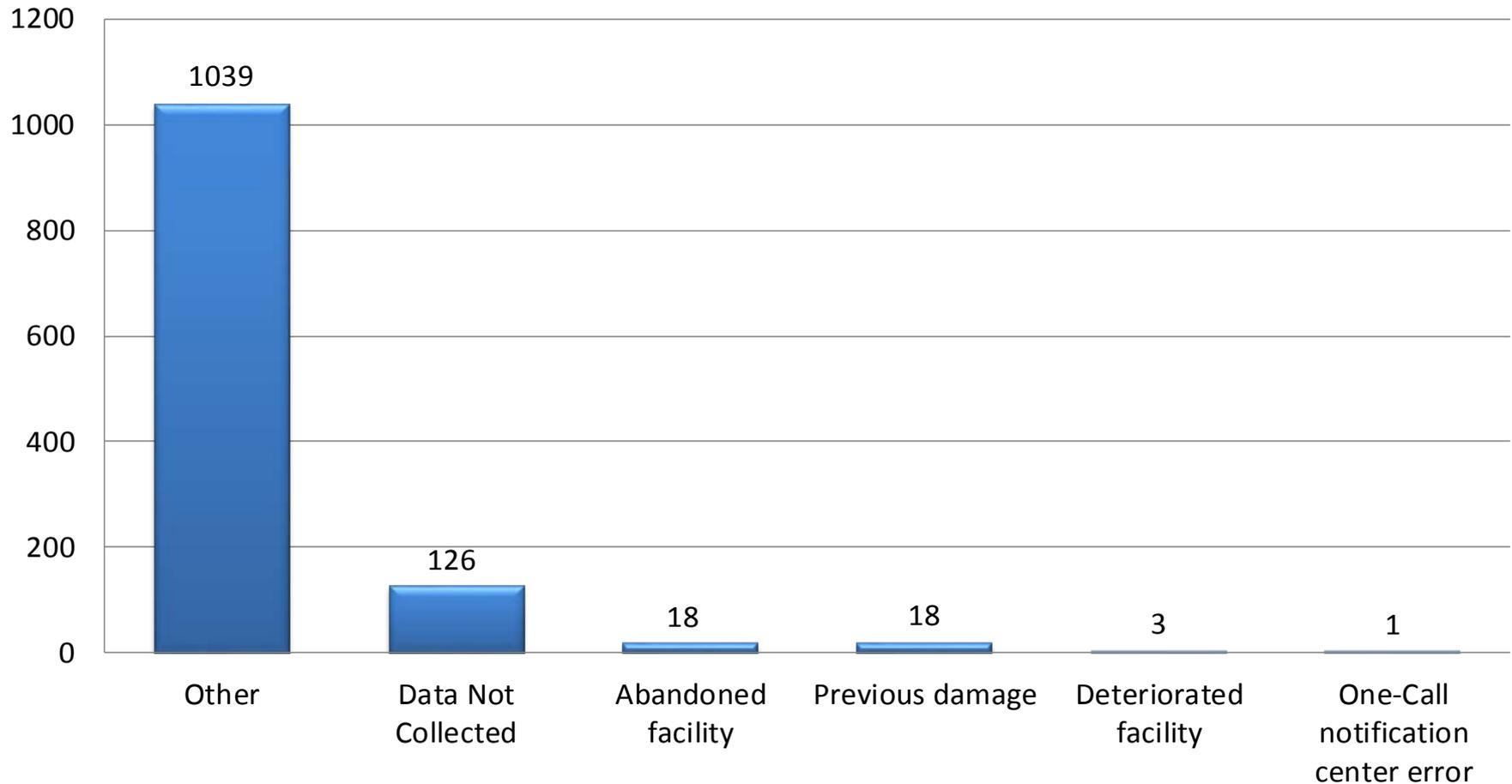
# Excavation Damages by Root Cause (Excavation Practices Not Sufficient)



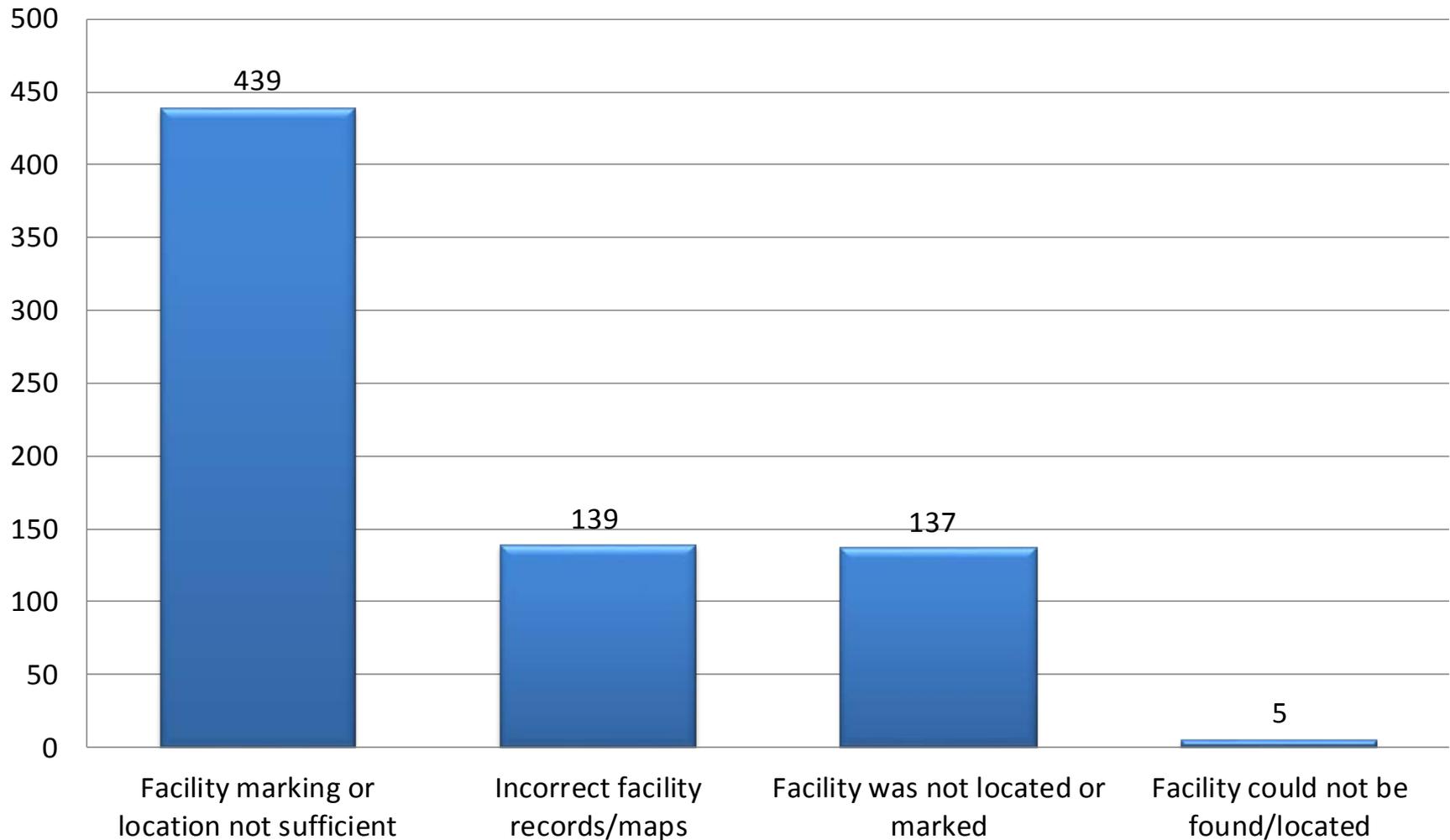
# Excavation Damages by Root Cause (One-Call Notification Not Sufficient)



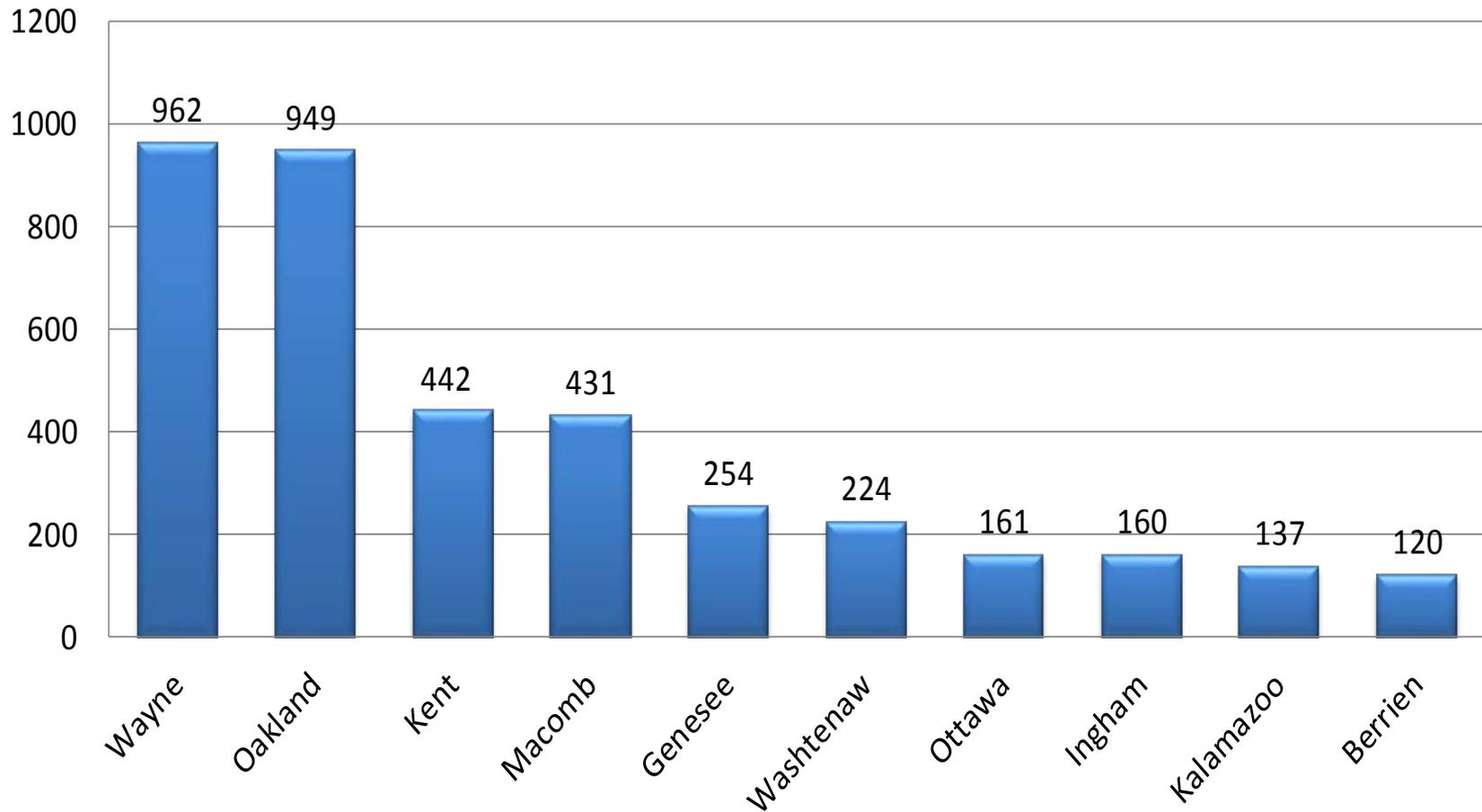
# Excavation Damages by Root Cause (Miscellaneous Root Causes)



# Excavation Damages by Root Cause (Locating Practices Not Sufficient)



# Excavation Damages Top Natural Gas by County



# Damage Prevention Complaints and Incidents Involving Excavation

## Investigation Process

- Both parties are contacted (facility owner/operator and excavator) and requested to submit evidence.
- Evidence typically reviewed:
  - Review MISS DIG ticket(s).
  - Confirm if excavator used soft excavation within caution zone (48" on each side of marking).
  - Confirm marking accuracy.
  - Review operator's maps/records for accuracy.
  - Review photographs.
  - Review reports and field notes documenting the incident.





# Damage Prevention Complaints

- Damage prevention complaint form is available at <http://michigan.gov/mpsc>
- 67 complaints filed since PA 174 became effective on April 1, 2014.
- 18 complaints warranted investigation under PA 174.
- Complaint resolution:
  - Complaints withdrawn after resolution reached.
  - Informational letters sent
  - Notice of Probable Violation letters issue (with civil penalties) to facility operator(s) and excavator(s).



# Incidents Involving Excavation Damage

(reported under the Gas Safety Standards Rule 460.20503)

- Damages reported under R 460.20503 since April 1, 2014, are subject to investigation for violations of PA 174
- Numerous damage cases have been investigated and closed with letters sent to the damaging party informing them of a probable violation
- Incidents involving damage are being actively investigated as they are received



# Significant Non-Compliances

- MCL 460.725(1): Excavator not providing a dig notice at least 72 hours in advance of excavation
- MCL 460.725(5): Excavator not using soft excavation to expose all marked utilities in the caution zone or not at intervals reasonable to establish precise location of facility
- MCL 460.725(6): Excavator not providing support or bracing of facilities or excavation walls in an excavation or blasting area that are reasonably necessary for the protection of facilities
- MCL 460.725(9): Excavator not providing immediate notice and stop digging when the facility did not post a positive response or reason to suspect presence of unmarked facility
- MCL 460.727(1): Operator failing to mark facilities by the start date and time of the excavation activity or in a manner that employs the excavator to use soft excavation to establish precise location
- MCL 460.727(5): Operator failed to provide additional assistance within three hours

# Significant Non-Compliances

- MCL 460.727(1): Excavator damaged a 6" steel gas main while drilling a well. The utility location was mismarked by approximately 41'. The staker located and marked a phone line (photos provided by operator).



# 2015 Significant Incidents

Description	Cause as determined by state if known Preventable? Yes/No	F	I	Gas Lost (MMCF)	Cost
Third-party damage, House fire	An electrical contractor installing a grounding rod with power equipment punctured a service line, resulting in the release of natural gas at a housing complex. Gas migrated to a nearby structure and ignited at a furnace. The resulting fire destroyed the housing unit within the structure and severely damaged seven additional units. A locate ticket to mark facilities had not been submitted.	0	0	~	\$304,423
Third-party damage	A contractor performing road construction work damaged an eight-inch plastic distribution main, resulting in the loss of gas. Ignition of escaping gas later occurred that resulted in injuries to two passing motorists. Facilities were marked, but excavation practices were found to be insufficient.	2	0	5.9	\$58,551
Third-party damage	A contractor operating a milling machine during road maintenance operations damaged a service line, resulting in the release of gas that ignited and caused damage to the milling machine.	0	0	~	\$304,155
Third-party damage	A contractor performing directional boring for a water main damaged a six-inch plastic distribution main, resulting in the loss of 8 MMcf of gas. Facilities were marked, but the excavator failed to verify location by pot-holing.	0	0	8	\$85,416

# Significant Incident - 310925

- Third-party damage causing multi-unit condo fire.
- Electrician installed a grounding rod by driving it with a jackhammer punctured through a 1-1/8" copper service line 6.5' from building wall. 60 psig MAOP.
- Electrician waited 2 hours before notifying operator.



# Significant Incident - 310925

- Technician detected gas inside building and was evacuating when fire started.
- Witness observed flames exiting floor drain near furnace.
- Supervisor told technician not to shut gas off at the master meter.
- Technician had poor communication with fire department.
- Damages \$304,423.



# Significant Incident - 326629

- Third-party damage.
- 5 hours, 6MMcf
- Contractor did not request re-stake; did not hand expose.
- Traffic was allowed to pass blowing gas.
- Unknown responsibility for road closure between fire department and the operator.
- Operator did not immediately dispatch a construction crew. Gas blew 1.5 hours before ignition.
- Two motorists injured.

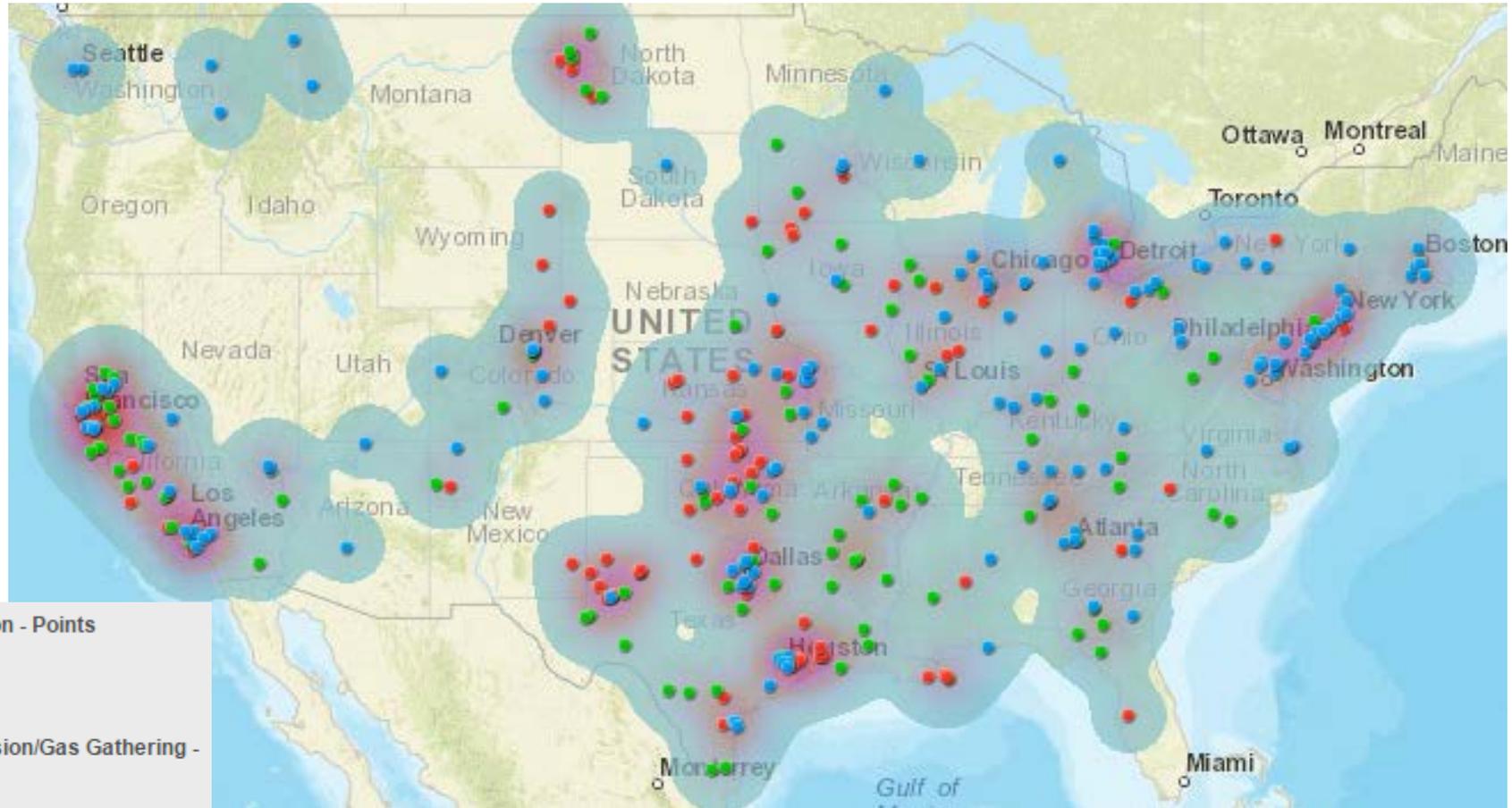


# Significant Incident – 329125

- Third-party damage causes ignition.
- Milling the road 10 inches deep. Hit a plastic service line. 60 psig MAOP.
- MISS DIG ticket called by general contractor. Facilities were staked.
- No injuries.
- \$304,923 damages.



# Federal Reportable Pipeline Incidents Caused by Excavation Damage 2010 through March 31, 2016



Gas Distribution - Points



Gas Transmission/Gas Gathering -  
Points



Hazardous Liquid - Points



Source: <http://primis.phmsa.dot.gov/comm/DamagePrevention.htm?nocache=7090>



# Federal Damage Prevention Enforcement

- 49 CFR Part 198, Subpart D establishes criteria for adequate state Damage Prevention enforcement programs and the process for enforcement
  - PHMSA evaluation of state damage prevention law enforcement programs
- 49 CFR Part 196 establishes standards for excavators digging near pipelines
  - Requires use of 811 before excavation
  - Wait for operators to establish and mark location of pipelines
  - Excavate with regard for marks to prevent damage
  - Additional use of one-call if necessary
  - Report all contact with pipelines to operator at earliest practical moment
  - Excavator must call 911 in the event of a release
  - NO EXEMPTIONS

# State vs. Federal Damage Prevention

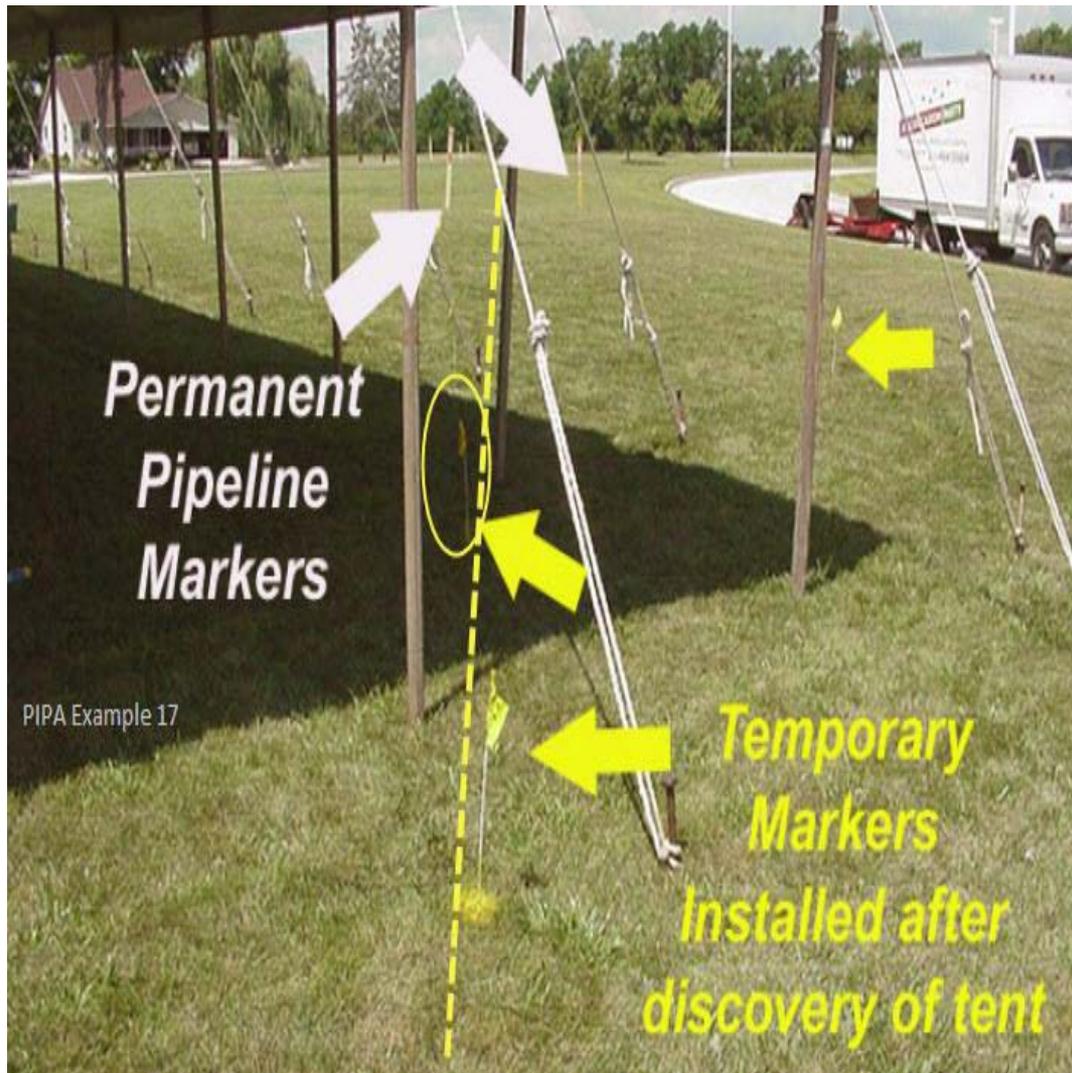
## Michigan Law – PA 174 of 2013 Effective April 1, 2014

- “**Excavator**” means any person performing excavation or blasting.
- “**Excavation**” means moving, removing, or otherwise displacing earth, rock, or other material below existing surface grade with power tools or power equipment, including, but not limited to, grading, trenching, tiling, digging, drilling, boring, augering, tunneling, scraping, cable or pipe plowing, and pile driving; and wrecking, razing, rending, moving, or removing a structure or mass of materials.
- “**Soft excavation**” means a method and technique designed to prevent contact damage to underground facilities, including, but not limited to, hand-digging, cautious digging with nonmechanical tools, vacuum excavation methods, or use of pneumatic hand tools.

## Federal Rules – 49 CFR Part 196 Effective January 1, 2016

- **Excavator** means any person or legal entity, public or private, proposing to or engaging in excavation.
- **Excavation** refers to excavation activities as defined in Section 192.614, **and covers all excavation activity involving both mechanized and non-mechanized equipment, including hand tools.**
- 192.614(a) states in part, the term “excavation activities” includes excavation, blasting, boring, tunneling, backfilling, the removal of aboveground structures by either explosive or mechanical means, and other earthmoving operations.”

# Staking Outside Structures with Hand Tools



A Michigan rental center installs a bounce house in a residential yard. The bounce tent is secured with 18-inch stakes, which are driven into the ground using hand tools.

MISS DIG **was not notified**. Underground utilities were not marked.

Upon removal of the stakes, damage to the natural gas service line was discovered, resulting in a potentially dangerous situation, and a bill to the rental company to repair the damage.



# State vs. Federal Civil Penalties

## Public Act 174 of 2013

- For a person other than a governmental agency:
  - not more than \$5,000 for each violation and/or require reasonable training.
- For a governmental agency:
  - \$5,000 for first violation
  - \$10,000 and/or require governmental agency to provide training at its expense for second violation occurring within 12 months of first violation
  - \$15,000 and/or require governmental agency to pay facility owner or operator for the cost of damage repairs for third violation occurring within 12 months of the second violation.

## Public Act 165 of 1969

- Not more than \$10,000 for each violation for each day that the violation persists, except that the maximum civil penalty shall not exceed \$500,000 for any related series of violations.

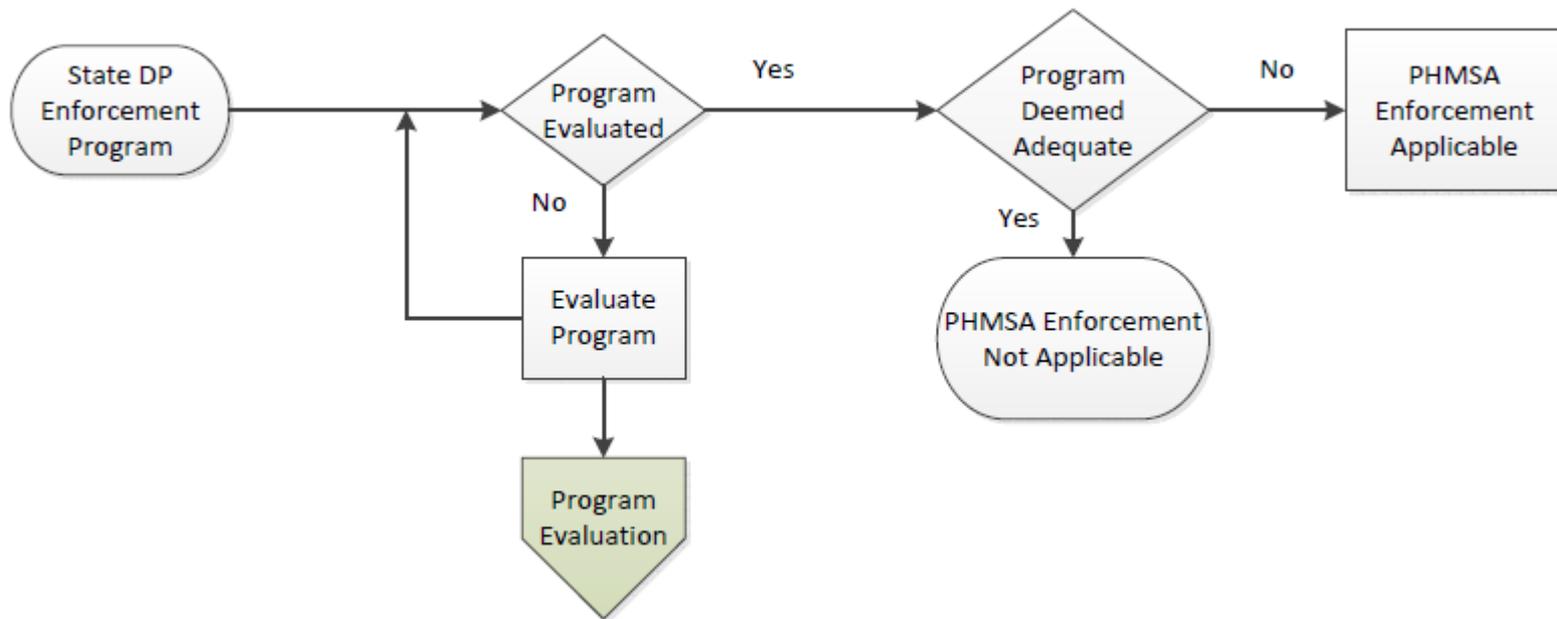
## 49 CFR 190.223 Maximum Penalties

- Not to exceed \$205,638 for each violation for each day the violation continues, except that the maximum administrative civil penalty may not exceed \$2,056,380 for any related series of violations.

# Evaluation of State Programs for Adequacy

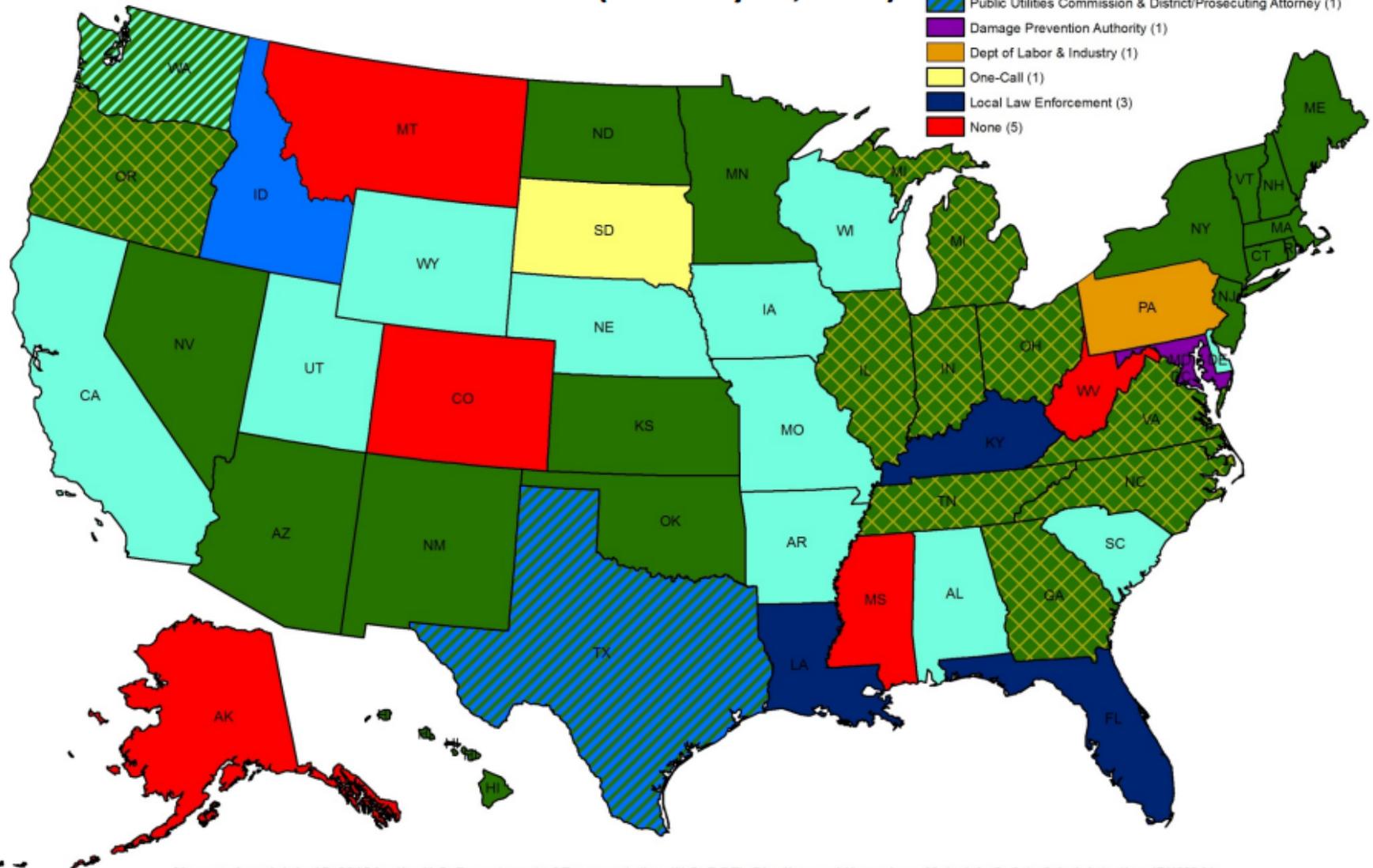
## State Damage Prevention Enforcement Program Adequacy

- Reference: 49 CFR 198 Subpart D
- Note: 49 USC 60114(f) limitation is not applicable to PHMSA 1<sup>st</sup> and 2<sup>nd</sup> party excavator enforcement



# Organizations with Enforcement Authority for State Excavation Damage Prevention Laws (as of July 15, 2015)

- Public Utilities Commission or Equivalent without Advisory Board (16)
- Public Utilities Commission or Equivalent with Advisory Board (9)
- Attorney General (12)
- Public Utilities Commission & Attorney General (1)
- District/Prosecuting Attorney (1)
- Public Utilities Commission & District/Prosecuting Attorney (1)
- Damage Prevention Authority (1)
- Dept of Labor & Industry (1)
- One-Call (1)
- Local Law Enforcement (3)
- None (5)



Map produced July 15, 2015 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 Program Evaluations

States Deemed Adequate	States Deemed Inadequate	States Pending Determination	States Pending Evaluation
Connecticut, Nevada, Virginia	Alaska, Colorado, Mississippi, Montana, West Virginia	<b>Michigan</b> , California, Washington, Utah, Idaho, South Dakota, Wisconsin, Maryland, Missouri, Nebraska, Hawaii, Alabama, New Mexico, Georgia, Rhode Island, Massachusetts, Texas, District of Columbia, Delaware, Minnesota, Kansas, Arizona, Maine, New Hampshire, Vermont	Arkansas, Florida, Illinois, Indiana, Iowa, Kentucky, Louisiana, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Puerto Rico, South Carolina, Tennessee, Wyoming

A scenic photograph of a long wooden pier extending into the ocean at sunset. The sky is a mix of orange, red, and yellow, with the sun low on the horizon. The water is dark with some white foam from waves. Several people are visible walking along the pier.

# Michigan Program Evaluation

## General

- Code citation for State excavation damage prevention law/requirements
- When was the State damage prevention law most recently updated?
- What recent changes have been made to the State damage prevention law/requirements?

The background image shows a long wooden pier extending into the ocean at sunset. The sky is a mix of orange, red, and yellow, with the sun low on the horizon. The water is dark with some white foam from waves. Several people are visible walking along the pier.

# Michigan Program Evaluation

## Criterion 1

**Does the State have the authority to enforce its State excavation damage prevention law using civil penalties and other appropriate sanctions for violations?**

- Pass/Fail
- PHMSA does not consider criminal penalties to be “other appropriate sanctions.”

The background image shows a long wooden pier extending into the ocean at sunset. The sky is a mix of orange, red, and yellow, with the sun low on the horizon. The water is dark with some white foam from waves. Several people are visible walking along the pier.

# Michigan Program Evaluation

## Criterion 2

**Has the State designated a State agency or other body as the authority responsible for State-wide enforcement of the State excavation damage prevention program?**

- What organization is the designated authority?
- What are the enforcement roles and responsibilities of each organization?
- Does the enforcement process include a stakeholder advisory committee?
- What parties are subject to enforcement?

The background image shows a long wooden pier extending into the ocean at sunset. The sky is a mix of orange, red, and yellow, with the sun low on the horizon. The water is dark with some white foam from waves. Several people are visible walking along the pier in the distance.

# Michigan Program Evaluation

## Criterion 3

**Is the State assessing civil penalties and other appropriate sanctions for violations at levels sufficient to deter noncompliance and is the state making publicly available information that demonstrates the effectiveness of the State's enforcement program?**

- Did the State assess civil penalties or other sanctions?
- What levels of civil penalties are enabled?
- What other sanctions are available to the State?
- Are enforcement actions progressive?
- How does the State assess the effectiveness of enforcement actions over time?
- Does the State make information about enforcement actions and outcomes publicly available?

The background image shows a long wooden pier extending into the ocean at sunset. The sky is a mix of orange, red, and yellow, with silhouettes of people walking on the pier. The water is dark with some whitecaps.

# Michigan Program Evaluation

## Criterion 4

**Does the enforcement authority have a reliable mechanism (e.g., mandatory reporting, complaint-driven reporting) for learning about excavation damage to underground facilities?**

- How are suspected violations reported?
- How does the enforcement agency learn about excavation damages?
- How does the enforcement agency inform stakeholders about the process for reporting excavation damages?

The background image shows a long wooden pier extending into the ocean at sunset. The sky is a mix of orange, red, and yellow, with the sun low on the horizon. Silhouettes of people are visible walking along the pier. The water in the foreground is dark with some white foam from waves.

# Michigan Program Evaluation

## Criterion 5

**Does the State employ excavation damage investigation practices that are adequate to determine the responsible party or parties when excavation damage to underground facilities occurs?**

- Does the State have documented investigation procedures?
- Does the State investigate all pipeline excavation damages that it learns about or use written procedures to determine when an investigation is warranted?
- What information does the State collect?
- Does the State take action against the violator in every case of excavation damage to a pipeline?
- How does the State demonstrate fair and consistent enforcement against violations by either a pipeline operator or excavator?



# Michigan Program Evaluation

## Criterion 6

**At a minimum, do the State's excavation damage prevention requirements include the following:**

- **Excavators may not engage in excavation activity without first using an available one-call notification system to establish the location of underground facilities in the excavation area.**
- **Excavators may not engage in excavation activity in disregard of the marked location of a pipeline facility as established by a pipeline operator.**
- **An excavator who causes damage to a pipeline facility:**
  - **Must report the damage to the operator of the facility at the earliest practical moment following discovery of the damage; and**
  - **If the damage results in the escape of any natural and other gas or hazardous liquid from a PHMSA-regulated pipeline, must promptly report to other appropriate authorities by calling the 911 emergency telephone number or another emergency telephone number.**

The background image shows a long wooden pier extending into the ocean at sunset. The sky is a mix of orange, red, and yellow, with the sun low on the horizon. Several people are visible walking along the pier. The water is dark with some whitecaps.

# Michigan Program Evaluation

## Criterion 7

**Does the State limit exemptions for excavators from its excavation damage prevention law?**

- What exemptions for excavators exist?
- Does the enforcement agency maintain information that demonstrates the impact of exemptions?
- How does the enforcement agency use information about the impact of exemptions?



# State Program Evaluation FAQs

**If PHMSA declares a State enforcement program inadequate, does the state damage prevention law remain in effect?**

- Yes. If PHMSA declares a State enforcement program inadequate, that State's damage prevention law still remains in effect. A declaration of inadequacy simply clears the way for PHMSA to take targeted federal enforcement action against an excavator or other party that unlawfully causes damage to a pipeline that is regulated by PHMSA or the state.



# State Program Evaluation FAQs

**If PHMSA declares a State enforcement program inadequate, will PHMSA take over that State's damage prevention program?**

- No. PHMSA is not taking over any State damage prevention programs. A declaration of inadequacy simply clears the way for PHMSA to take targeted federal enforcement action against an excavator or other party that unlawfully causes damage to a pipeline that is regulated by PHMSA or the state.



# State Program Evaluation FAQs

**Does PHMSA expect State damage prevention law enforcement programs to have the authority to levy civil penalties that are equal to PHMSA's civil penalty levels?**

- No. PHMSA expects States to simply have civil penalty authority in their damage prevention laws and to use their civil penalty authority (and/or other sanctions) to discourage noncompliance with State damage prevention laws. PHMSA does not expect State civil penalty maximums to match PHMSA's civil penalty maximums.



# State Program Evaluation FAQs

**When can PHMSA take enforcement action in a State that PHMSA deems to have an inadequate enforcement program?**

- PHMSA may take enforcement action in a State at any time following a final finding of inadequacy.



# State Program Evaluation FAQs

**Will PHMSA take enforcement action against an excavator even if that excavator (or the excavator's activity) is exempt from the requirements of State damage prevention law?**

- There are no exemptions from the federal standard defined in 49 CFR Part 196, Subpart B. When conducting enforcement in a State with an inadequate damage prevention law enforcement program, PHMSA will be cognizant of the requirements – including exemptions – in that State's law.



# State Program Evaluation FAQs

## What will trigger PHMSA enforcement action?

- PHMSA's authority should be considered federal "backstop" authority. PHMSA will use its regulatory discretion in determining when to initiate enforcement action. PHMSA will focus on serious violations of the regulation, since the purpose of this rule is to encourage states to enforce their own damage prevention laws.



# State Program Evaluation FAQs

## **What does PHMSA expect of a State when excavation damage affects an interstate pipeline that is not regulated by the State?**

- State damage prevention laws typically (but not always) apply to all underground pipelines, regardless of whether the pipelines are regulated by the State or PHMSA. If excavation damage occurs on an interstate pipeline, and if the damage is the result of a violation of State damage prevention law, the State should enforce that law even if the pipeline is regulated by PHMSA. Violations of 49 CFR Part 192 or 195 (damage prevention regulations applicable to pipeline operators) should be enforced by the regulator having authority (usually PHMSA for interstate pipelines and States for intrastate pipelines, but not always).

# Questions or Comments?





**Thank You!**

