

**National
Report**

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811 EMERGENCY

**\$61 Billion Lost to Waste, Inefficiency
in System to Protect Underground Utilities**

Infrastructure Protection Coalition • www.ipcweb.org





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Infrastructure Protection Coalition

American Pipeline Contractors Association • www.americanpipeline.org
 Distribution Contractors Association • www.dcaweb.org
 National Utility Contractors Association • www.nuca.com
 Nulca – representing utility locating professionals • www.nulca.org
 Power & Communication Contractors Association • www.pccaweb.org

About the Infrastructure Protection Coalition

The Infrastructure Protection Coalition is a coalition of industry groups who represent regular users and stakeholders in the 811 system and who want to see it run safely and efficiently. Members include: the American Pipeline Contractors Association (APCA); Distribution Contractors Association (DCA); National Utility Contractors Association (NUCA); Nulca – representing utility locating professionals; and Power & Communications Contractors Association (PCCA).

Study Conducted By:



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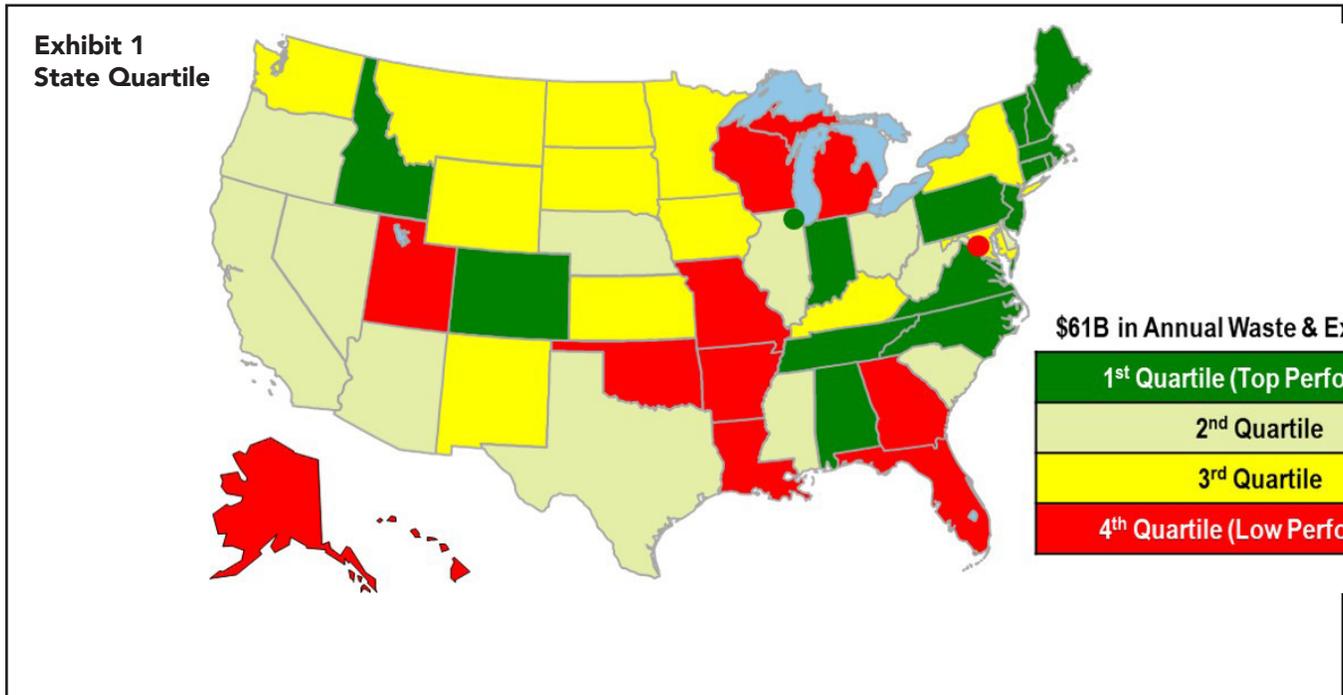
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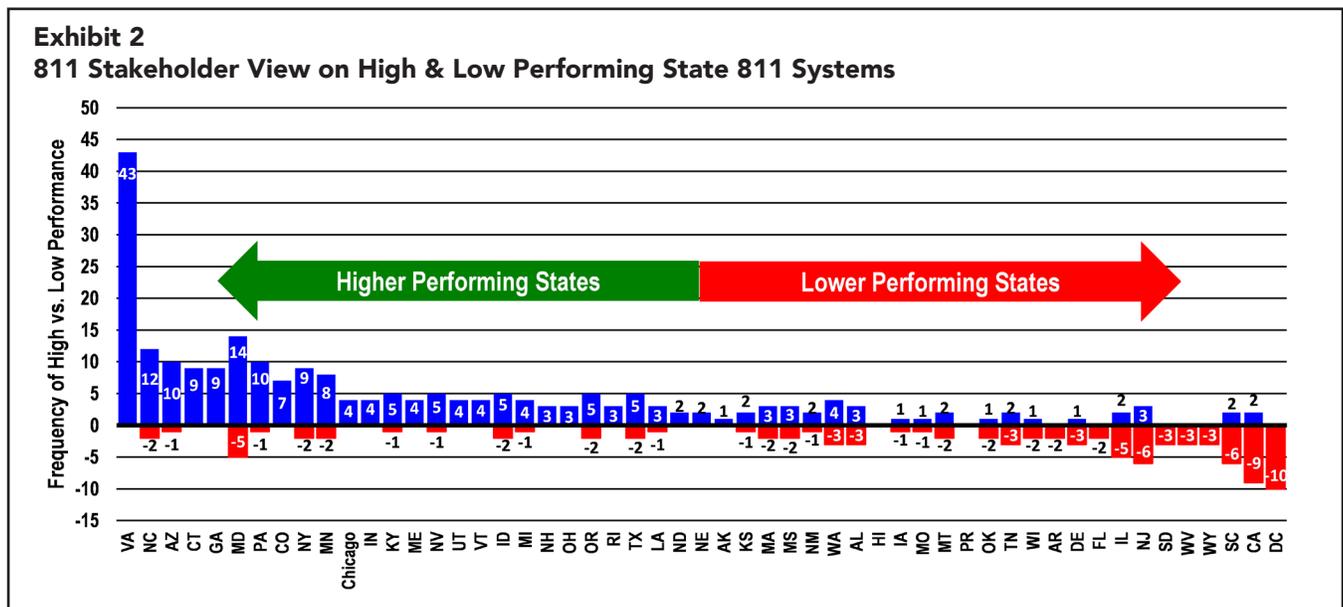
National Executive Summary

811 Failure: \$61 Billion Lost to Waste, Inefficiency in System to Protect Underground Utilities

Failures in the nation's 811 system used to prevent damage to underground utility lines are costing \$61 billion a year in waste and excess costs and creating unnecessary hazards for public safety, particularly in states where the implementation and accountability are most lax (Exhibit 1).



This comprehensive, independent review of the nation's 811 system – including an in-depth examination of its operations in every state, Washington, D.C., and the city of Chicago – shows that these costs and the increased risk to public safety could be substantially reduced if states with the worst records adopted more effective practices and procedures already in use in other parts of the country. Stakeholders, including utility and other asset owner/operators, locators, 811 system operators, and excavators, have strong opinions on which states are high performers in regard to their dig law, regulation, and 811 center operation and practice (Exhibit 2).



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A handful of states – Arkansas, Florida, Georgia, Michigan, Missouri, Wisconsin, and the District of Columbia – account for more than 20 percent of the national waste, a combined \$13 billion, because of 811 policies that lack teeth and, in some cases, do not require mandatory reporting of damage to utility lines. This waste is on top of the \$30 billion in annual damages to underground utilities, estimated by the Common Ground Alliance (CGA) in 2019.

This 2021 study was commissioned by the Infrastructure Protection Coalition (IPC), a group of associations representing broadband, electric, natural gas, pipelines, transportation, sewer, and water industries who design, construct, maintain or locate these underground systems, with both union and non-union workforces. These are regular users and stakeholders of the 811 system who want to see them run safely and efficiently.

The reasons for the waste and cost overruns found in this study include: utilities and third-party locators needlessly sent to locate lines for construction projects that then do not happen; poor instructions given to locators, causing wasted time or additional work; locate marks destroyed by construction and then requiring reinstallation and contractor wait time when location efforts exceed the legal notice period. These costs amount to an additional \$61 billion in waste, inefficiency, and excess cost that is imbedded in the system and largely invisible. It sits on top of the \$30 billion in annual and out-of-pocket cost to the system calculated in 2019 by Common Ground Alliance (CGA).

Regardless from whom or where these costs originate, they migrate over a 3- to 5-year timeline toward the most professional excavators and locators and by default to their utility customers, who are primarily the highly regulated electric and gas utilities, and ultimately their rate payers.

Once known and visible, these costs can be eliminated and mitigated. The 13 national recommendations proposed for selected implementation on a state-by-state basis can be implemented for an approximate \$1.2 billion cost nationwide and will eliminate \$30 billion in damage and waste over a 3- to 5-year timeline. The recommendation value outweighs the cost by a factor of 33x over the 3- to 5-year implementation timeline. These savings represent both damage frequency and waste embedded in the system. Severe damage reduction and public safety or societal benefits are not calculated and are on top of these figures.

This study comes at a critical time for the nation's infrastructure. Pacific Gas & Electric (PG&E) has announced plans to underground 10,000 miles of power lines. Dominion Energy's system reliability improvement efforts undergrounded 1,500 miles of electric lines with thousands of miles remaining. Lead pipe replacement for U.S. water systems is just beginning. Broadband systems are placing tens of thousands of miles of high-speed fiber optic cable underground for improved Internet access. And the passage of the national infrastructure bill will result in tens of thousands of miles of highway, bridge, road, broadband, and water & sewer infrastructure construction, all of which will be near existing underground utilities.

Can a trillion dollars in excavation be completed without damaging existing infrastructure and exposing the public to severe safety concerns?

The Infrastructure Protection Coalition believes it is possible to dramatically improve the system with a combination of law, regulation, practice, and process changes mirroring what the best-performing states are already accomplishing. That would:

- Eliminate all of the damages associated with legal excavation;
- Reduce public exposure to severe safety concerns; and
- Return to utility ratepayers, through lower rates, a significant portion of the \$61 billion in waste, inefficiency, and excess cost that is within the system and largely invisible.

A separate state-specific report was crafted for every state, Washington, D.C., and the city of Chicago. The national and state-specific reports provide an exhaustive, independent review of each of the state's systems to highlight specific areas where each state should focus for improvement. This can serve as a guide to regulators, legislators, and stakeholders as they explore the development and implementation of an 811 system that is safe and efficient.

National Recommendations

Recommendation Summary

Overall, IPC developed a set of 13 national recommendations that are demanded frequently among the 50 states, Washington, D.C., and the city of Chicago. A subset of these recommendations is applied to each state based upon the state's performance and characteristics. In addition, there are multiple unique conditions where a state-specific recommendation was appropriate and made by Continuum. National opportunities to improve include the following:

1. **No Exemptions:** Require all asset owners and operators, including municipalities and departments of transportation (DOT), to join and participate in the 811 system.
2. **Mandatory Damage Reporting:** Refine the dig law to require reporting of all damages to all underground utility types to support effective data collection, process improvement, damage adjudication, and enforcement.
3. **Balanced Enforcement:** Cause enforcement authority to weigh involvement of all primary participants in a damage and in a fair and balanced fashion hold the asset owner, excavator, and locator appropriately responsible in the damage adjudication process.
4. **Third-Party Enforcement Board:** Develop or enhance third-party investigation and enforcement board, with a balanced number of representatives from each stakeholder group, imbued with both responsibility and authority to manage the entire damage adjudication process.
5. **Standardize Minimum Notification Time:** Standardize the ticket notification time to a minimum of two full business days after the day/date of a call.
6. **Ineffective Penalty Structure:** Bring balance to the penalty structure or amount so that asset owners, excavators, and locators each face similar risks and responsibility.
7. **Effective Metrics:** Identify, develop, collect, and track metrics that effectively support trending and continuous improvement of the state damage prevention performance. Mandatory reporting is necessary to accomplish this effort.
 - a. Develop and track metrics that support behavioral change in addition to metrics designed to track violations of the law.
8. **Annual Reporting to CGA and DIRT:** Require state entity(s) responsible for the oversight of the 811 system and collection and adjudication of compliance or damage reports, ticket volumes, etc., to submit data to the Common Ground Alliance (CGA) to support preparation of the annual DIRT Report.
9. **Positive Response Requirement:** A web-based electronic positive response requirement by all asset owners / locators through the 811 system.
 - a. Ticket holders can choose how to receive positive response from this electronic system.
10. **Excavation Site Accurate Description:**
 - a. **Premark / White-line Requirement:** Require pre-mark or white-lining of any proposed excavation area that includes traditional reference to intersecting streets/roadways paired with one or more of the following options: GPS coordinates, electronic white-line using aerial image(s), or physical white-lining.
 - b. **GIS System Adoption by Asset Owners:** By 2030, cause all asset owners to adopt a GIS system for asset mapping and require notification through 811 using GPS coordinates.
11. **Continuous Improvement:** Develop a culture of continuous improvement within the 811 system and more broadly through stakeholder education and public outreach programs.
12. **Standardize Ticket Size, Distance, Duration, and Life:** Standardize the ticket size, distance, duration, and life to the described characteristics.
13. **Educational Resources:** Develop and publish electronically an excavator's manual that is updated and republished every 5 years or when an update to the law takes place, whichever is more frequent.

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As previously noted, the 2019 estimated national total damage cost is approximately \$30 billion in annual and out-of-pocket cost to the system. An additional \$61 billion in waste, inefficiency, and excess cost is imbedded in the system and largely invisible. The 13 recommendations proposed, would eliminate \$40 billion of the combined \$90 billion in damage and waste costs over a 3- to 5-year timeline, where these benefits exceed the implementation cost of \$1.2 billion by a factor of 33x over the 3- to 5-year implementation timeline (Exhibit 3 – National Utility Locate Systems Cost Impacts).

| Exhibit 3 National Utility Locate System Cost Impacts | | | | |
|--|---------------------------|---------------------------------------|---------------------------------------|---|
| System Cost Category | Current Conditions | Recommendation Cost (Millions) | Damage & Waste Reduction % | Damage & Waste Reduction \$ (Millions) |
| 2019 Damage Frequency | 450,000 | \$1,200.00 | 40% | (\$11,000.00) |
| Damage Severity | Nc | | nc | nc |
| Unneeded Locates | Often (10%) | | 45% | (\$250.00) |
| Poor Instruction to Locator | Daily (>10%) | | 45% | (\$200.00) |
| Destroyed Marks | Often (8%) | | 45% | (\$200.00) |
| Contractor Wait Time | Often (8%) | | 51% | (\$29,000.00) |
| Total Reduction | | | | (\$40,650.00) |

Source: Proprietary Continuum analysis.