ISSUE
NUMBER
NINETEEN

Excavation SAFETY

GUIDE & DIRECTORY™

Pennsylvania 811

SPECIAL

PENNSYLVANIA EDITION

2024

USIC

THE LEADER IN UNDERGROUND UTILITY DAMAGE PREVENTION

PROTECTING AMERICA'S CRITICAL INFRASTRUCTURE

OUR MISSION

The nation relies on the communication, gas and electric power, water, and sewer services transmitted across more than 20 million miles of underground infrastructure. At USIC, it is our mission to protect this critical infrastructure in service to our valued customers and the communities in which we work and live. It is a mission we carry out every day with an unmatched commitment to safety, quality, and efficiency.

USICLLC.COM
SCAN TO LEARN MORE

LEADING FROM THE GROUND UP

Documenting Your Complex Project Meeting

Meetings are held to assist in the scheduling of projects that meet the requirements of a complex project – an excavation that involves more work than can properly be described in a single locate request or any project with the potential to cause significant disruption to lines or facilities and the public. As a result of this project's designation, a complex project meeting should be held 3-20 business days prior to construction.

Several steps can be taken to ensure the complex project meeting is both informative and effective for those involved.

At the start of the meeting, the excavator should make sure that all individuals who are present have documented their attendance on the meeting's sign-in sheet. The sign-in sheet can help prove who attended the meeting and provide easy access to contact information. At the meeting the excavator should take notes about what is discussed at the meeting, including start dates, subcontractor information, a locate schedule, etc. All of this information should be transcribed and added to the project in the complex project portal, Coordinate PA. Templates for sign-in sheets and meeting notes can be downloaded within the project.

Adding both the attendance sheet and meeting notes to Coordinate PA under the project creates a virtual filing cabinet for the project. This allows those who are added to the project to have a quick reference spot for the project information.

A sign-in sheet and documented notes may seem like small actions to benefit large and complicated projects, but they go a long way to aid in communication amongst those involved. The documents also serve as recorded meeting minutes of the agreement. Working out the details of projects at these meetings can ensure that a project goes off effectively and efficiently. Attendance at meetings is critical; if a facility owner is not in attendance at the meeting, they lose the ability to negotiate based upon available resources. Non-attendance may lead to more headaches down the road, including a lack of workforce to handle the job. If a facility owner – or any other stakeholder - is unable to attend the meeting, they should follow up with the excavator to discuss any issues they may have.

"A sign-in sheet and documented notes may seem like small actions to benefit large and complicated projects, but they go a long way to aid in communication amongst those involved."

Following the documentation tips can go a long way in ensuring a project goes off without issue. Pennsylvania 811 offers free training on the complex project and reviews details such as this to help aid in the complex project process. For more information and to see a list of trainings visit www.pa1call.org/events or contact your local damage prevention liaison. ESG

Written by: Erika Dominick, Damage Prevention Liaison, Pennsylvania One Call System, Inc.

Repeating Our Past Mistakes – Setting Our Crews Up for Failure

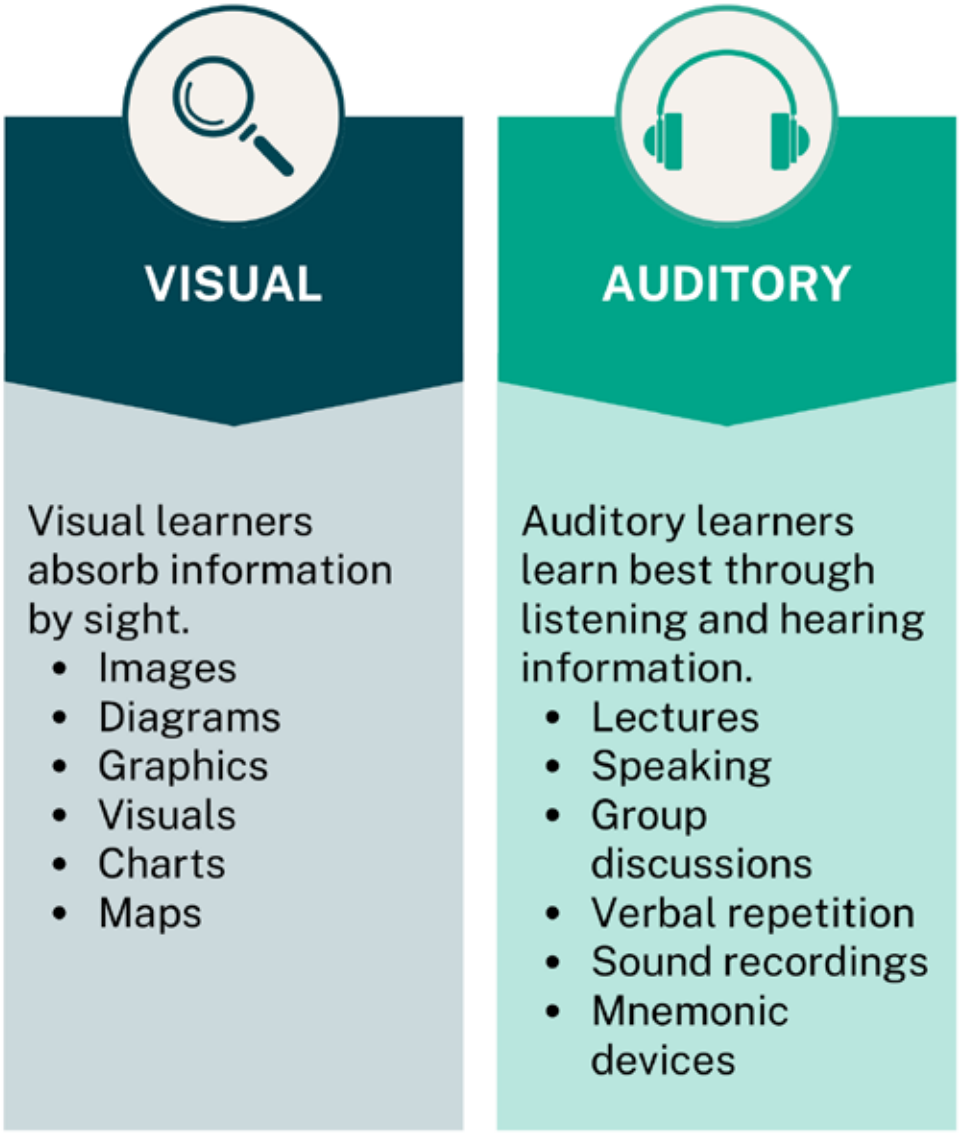
According to researchers at Cornell University, the average person makes approximately 35,000 conscious decisions a day. 35,000 chances every day to alter the trajectory of our lives, and potentially the lives of others.

Many of the man-made disasters throughout history can be drilled down to a poor decision made by a few individuals that altered the lives permanently of 100s or 1000s of others. These are the people who have changed the course of history forever solely due to a decision made, often under pressure, that was the wrong choice.

A prime example of a few wrong choices altering history is the Exxon Valdez shipping disaster that resulted in the destruction of Prince William Sound, forever affecting the health of the sound, the lives of those who depend on it, and countless others who became part of the cleanup, investigation, legal battle, and regulation changes. It came down to the decisions made by two main people, Captain Hazlewood, and his Third Mate. Captain Hazelwood decided he needed a break on that fateful evening and went down to his cabin. He left his Third Mate in charge to navigate the ship out of the Sound, a task he was not legally allowed to do. The third mate made several wrong decisions that resulted in the grounding of the vessel. The rest is history.

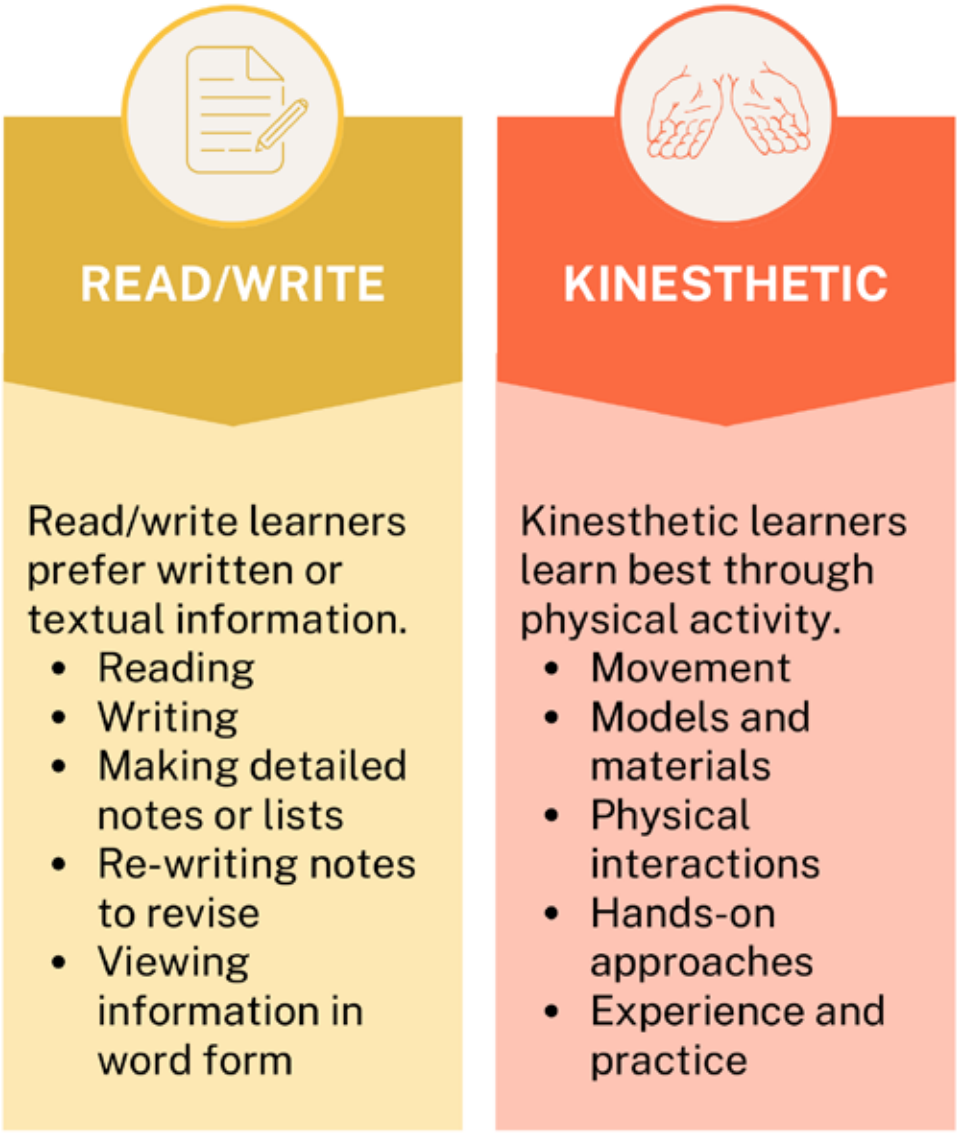
A battle we face in the safety world is how do we affect the decisions of our crews in the field each day. We rely heavily upon providing training to sway those choices into the right ones every day. This alone is laced with complexities as there is no "one size fits all" training that is effective on all employees. People learn in a variety of manners.

The most effective training will incorporate a variety of the learning styles, and be varied with each delivery to prevent it from becoming stale.



"Research shows that the average person loses approximately 50% of what they learn within one hour."

Despite our best efforts on training, it will not, however, manage all choices an employee will make throughout the day. That just is not feasible. Research shows that the average person loses approximately 50% of what they learn within one hour. Within one week, that number jumps to 90%. If



"There is no one size fits all for every company, but there are many mandated and optional processes that can help you prevail. "

we are relying solely on the correct choices of someone based on training provided to maintain complete safety, we are setting our crews up for failure.

So how can we, as companies, help set our employees up for success? This is where the company must plan and prepare for the worst in effective ways, and not just rely on field crews. There is no one size fits all for every company, but there are many mandated and optional processes that can help you prevail. Written safety programs are a requirement for many hazards, but writing it once doesn't leave you off the hook. Procedures and processes change, personnel rotate, and locations move. Updating your policies each year is not only legally required, it's also critically important to make sure we have the correct processes in place to mitigate potential issues.

Processes like JSA's, SOPs, Incident Investigations, etc. can also help us prepare for the worst. Work through potential failure locations and find mitigating techniques prior to the activities to ensure success, but don't just make it "lip service". If you say crews need specific tools or PPE, they need to be provided. If items like first aid kits and spill kits are referenced in your documentation, have ways to ensure they are there and stocked. If you are requiring task rotations, extra personnel or other factors in your policies, do not turn a blind eye to those for the sake of budget or schedule. Stand behind the paperwork, don't just write it and forget it.

"It is our responsibility as employers to stay up to date on the newest technologies that we may be able to implement to move the safety dial in the right direction for our crews."

Lastly, remember you are never done in the world of safety. New and imaginative ways are constantly being invented to keep our crews safer as the world becomes more complicated. It is our responsibility as employers to stay up to date on the newest technologies that we may be able to implement to move the safety dial in the right direction for our crews.

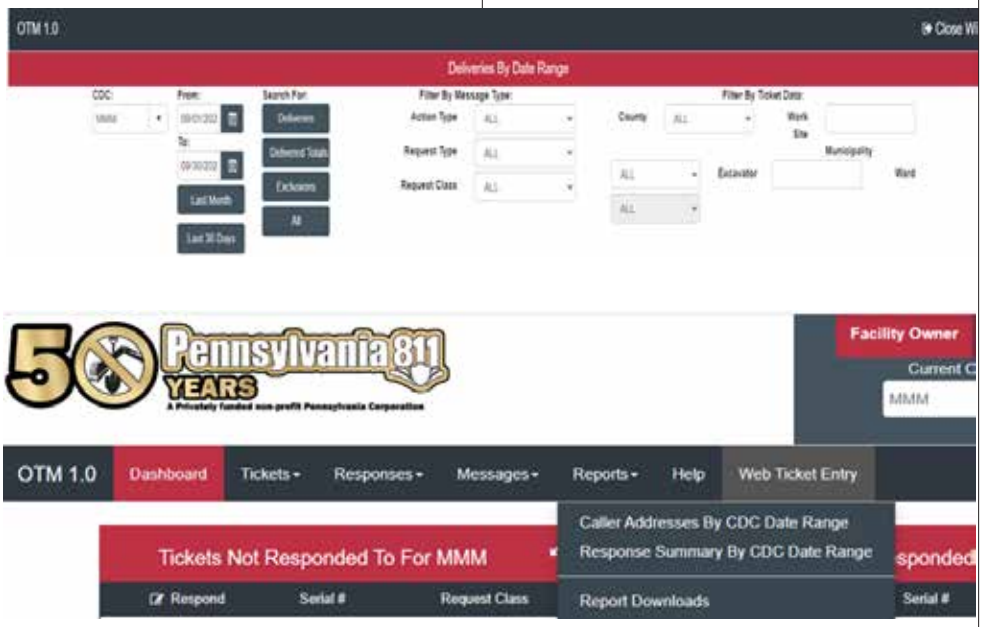
We must truly learn from our past mistakes. Safety cannot be laid solely upon the decision making of our individuals in the field. Even the best training cannot mitigate human nature. We must put our money where our mouth is and think safety through each and every aspect of the way our company is set up. Planning and preparation, constantly thinking of what else could go wrong, and keeping up with the latest technology are all ways to make sure that even if a wrong decision is made, it will not lead to a catastrophic event. ESG

Written by: Monica Rakoczy, Enter-TRAINING Solutions, LLC, monica@entertrainingsolutions.com

Damage Prevention and Public Awareness

Utilizing PA One Call's Efforts and Applications for Reporting

Whether your entity is regulated and required to report your damage prevention efforts to a federal agency or your management uses reporting to show your damage prevention efforts, PA One Call has tools to help you report. With this in mind you will want to compile a healthy dose of statistics from other sources as well, such as the Common Ground Alliance (CGA) Damage Information Reporting Tool (DIRT) report, information from the Pipeline and Hazardous Materials Safety Administration (PHMSA) and the Public Utility Commission (PUC), among others.



PA One Call houses records for five years, including information such as how many damage tickets were placed by your contractor in a certain year. Comparing annual information may get more into the measurement of your efforts.

Back to reporting, why not take advantage of some of the options PA One Call makes available to spice up your reports!

Another tool is Online Ticket Management (OTM). If you are an Excavator or Designer, the Report available is Tickets Per Excavator Designer which will display ticket details per phone number you have placed locate requests under or all phone numbers together.

If you are a facility owner, click on Reports from the dashboard to access. This will drop down the choice to run a report called Caller Addresses by CDC (Call Directing Code, which is your customer ID with PA One Call) Date Range, or Response Summary by CDC Date Range. In the past, this report was available with a fee and is now available free to our stakeholders.

A second way to see reports in OTM is to go to Tickets from the dashboard. Again, you may export reports which will be sent to you via email.

Another application with reporting is Coordinate PA (CPA). To access the reporting go into CPA and click on Reports at the top right of the screen. The dropdown will indicate choices of Standard and Custom. If you click on Standard, the next screen will allow you to narrow down the search by county, municipality, and start date. Then you may filter by many different choices, Creator, Owner, Status, Work Type, Facility Type, and Bid Date. Then simply press Run Report and your information will appear on the screen.

From here you may export the information into an Excel, CSV, or PDF format.

If you would like to run a custom report, click on Custom. You may create a new custom report or view existing reports. If you would like a new custom report, there are many report filters to choose from, including County or Counties, Municipality or Municipalities, Project Creator, Project Owner, Project Status, and more. Once you have narrowed down your choices, click on next to create a name for the report. At this stage, you can also share the report with others by typing their contact name into the share report field. Lastly, hit save and run. Once the report is run, you may export it by clicking on export at the bottom of the screen.

Here are some additional efforts on behalf of our stakeholders:

- **Annual Mailing to Stakeholders, Including Property Owners**
- **Damage Reporting**
- **Downloadable Educational Materials**
- **Utility Coordination Committees**
- **Safety Days**
- **Excavator, Locator, and Designer Programs**
- **Participate in Emergency Responder Programs and Tabletop Exercises**
- **Exhibit at Shows with many Associations**
- **Board Seats**

All of the data available can be filtered and analyzed within your organization for enhancing business processes or identifying trends. For assistance with reporting within our applications, please contact your local liaison via www.pa1call.org/liaisons. ESG

Written by: Maria White, Damage Prevention Liaison, Pennsylvania One Call System, Inc.


SAFETY
2024 PA SAFETY DAYS
May 7
Oaks
May 16
Wilkes Barre
June 13
York
Sept 17
Erie
Sept 19
Monroeville
Pennsylvania811
www.pa1call.org/safetyday

www.paonecall.org
DIAL 8-1-1 or
1-800-242-1776

WORK LOCATION REQUEST FORM

TELEPHONE NUMBER: (_____) _____ EXT.:_____ CALLER:_____

COMPANY NAME:_____

ADDRESS:_____ CITY:_____ STATE: _____ ZIP _____

EMAIL ADDRESS:_____ FAX #: (_____) _____

NOTIFICATION TYPE:

☐ **FINAL DESIGN** (Not less than 10 nor more than 90 Business Days) ☐ **PRELIMINARY DESIGN** (Greater than 90 Business Days)

☐ **CONSTRUCTION** (Not less than 3 nor more than 10 Business Days) ☐ **DEMOLITION** (Not less than 3 nor more than 10 Business Days)

WORKSITE INFORMATION:

COUNTY: _____ MUNICIPALITY:_____ WARD: _____

STREET ADDRESS:_____ STREET NAME:_____

NEAREST INTERSECTION:_____

WORKING BETWEEN 2 INTERSECTIONS ☐ YES ☐ NO

SECOND INTERSECTION/NEAREST MAIN ROAD:_____

SUBDIVISION:_____ LATITUDE/LONGITUDE COORD.:_____

WORKING IN: ☐ STREET ☐ SIDEWALK ☐ PUBLIC PROPERTY ☐ PRIVATE PROPERTY (☐ Front ☐ Rear ☐ Left ☐ Right)

☐ OTHER (SPECIFY)_____ SITE MARKED IN WHITE: ☐ Yes ☐ No

LOCATION INFORMATION:_____

TYPE OF WORK:_____ DEPTH:_____

EXTENT OF EXCAVATION:_____ METHOD OF EXCAVATION:_____

PROJECT OWNER:_____ ONSITE CONTACT:_____

ONSITE CONTACT PHONE:(_____) _____ EXT:_____ BEST TIME TO CALL:_____

ONSITE CONTACT EMAIL:_____

SCHEDULED EXCAVATION DATE:_____ TIME: _____ DURATION OF JOB:_____

JOB #: _____ PENNDOT CONTRACT/PERMIT #:_____

REMARKS:_____

COMPLEX PROJECT REQUEST NUMBER (if applicable)_____

TO BE COMPLETED AFTER PLACING ONE CALL

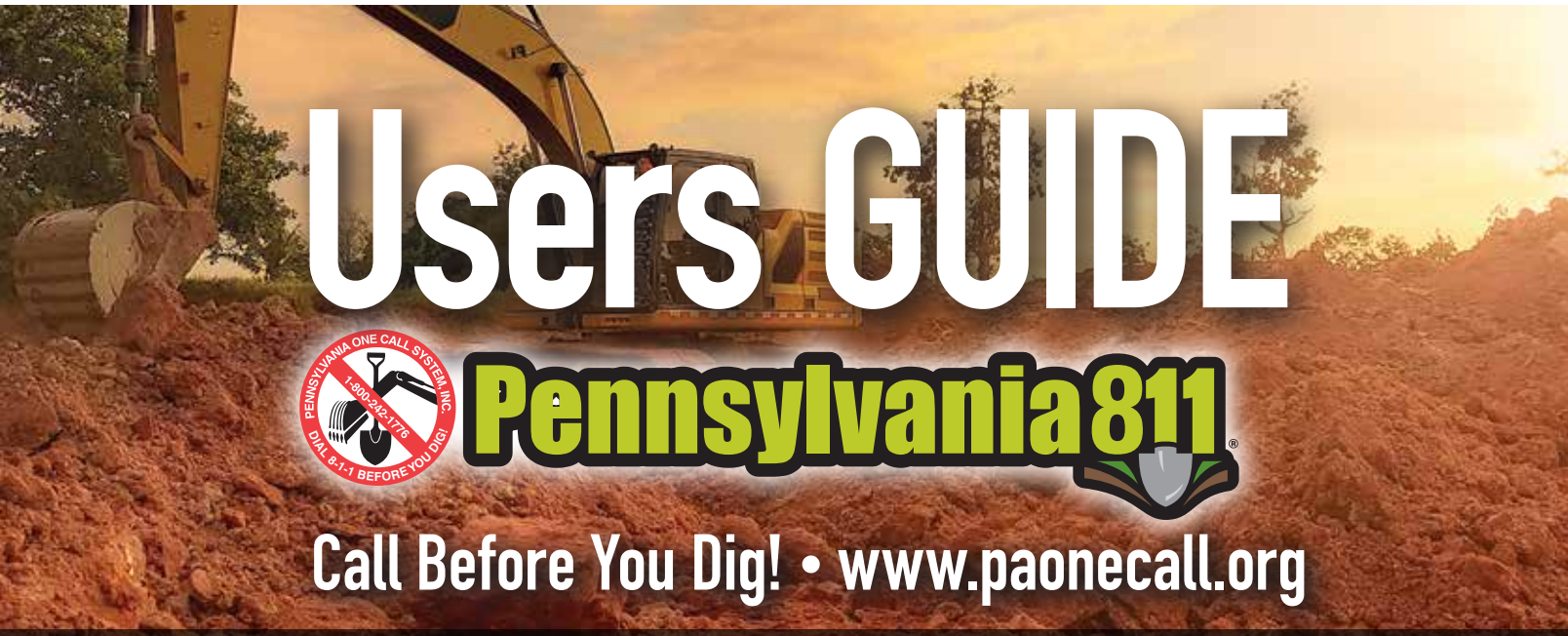
LAWFUL START DATES:_____ THROUGH_____

OTHER SERIAL NUMBERS REFERENCED:_____

FACILITY OWNER MEMBERS NOTIFIED:_____

SERIAL NUMBER ASSIGNED:_____ DATE/TIME:_____

THERE IS AN ANNUAL FEE PLEASE DO NOT FAX THIS FORM TO POCS



Users GUIDE

Pennsylvania 811

Call Before You Dig! • www.paonecall.org

CONTENTS

REFERENCES:

www.pa1call.org
www.puc.pa.gov
www.apwa.net
www.FHWA.dot.gov
www.commongroundalliance.com
http://www.nastt.org/

DISCLAIMER OF LIABILITY

This Guide has been prepared as an educational document for excavators, designers, operators, project owners, and facility owners. It is intended as a reference tool for interacting with the Pennsylvania One Call System, ("POCS"). It is also intended to explain in a general way the requirements provided for in Pennsylvania's Underground Utility Line Protection Law, Act 287 of 1974, as amended by Act 50 of 2017 (the "Act"). It is strongly recommended that all individuals who regularly contact POCS review the Act and this Guide. Familiarity with its contents will be valuable, but the Guide is meant to clarify and explain the law according to POCS' understanding of how it affects interaction with POCS. This Guide is not a substitute for the Act and it does not relieve anyone from discharging their responsibilities as set forth in the Act or as otherwise required by law.

This Guide and the reproduction of the Pennsylvania Underground Utility Line Protection Law are provided solely as a convenience for the person or persons requesting it, and are not to be used as legal reference documents. Every effort has been made to reproduce the applicable sections of the Pennsylvania Underground Utility Line Protection Law. However, neither POCS nor any officer, director, employee, or agent of the above-named

entity, makes any representations nor warranties, express or implied, as to the accuracy of this publication. POCS assumes no responsibility for the acts or conduct of any user of this Guide. Neither POCS nor any officer, director, employee or agent shall have any liability for any damage (including, without limitation, indirect or consequential damages) to any person or property resulting from the use of this Guide or reliance on any information contained herein.

This Guide has a copyright. POCS recommends and gives its permission for duplication of this Guide. Additional copies may be obtained from POCS or copied from its web site at www.paonecall.org. The contents of this Guide are subject to change without notice. The web site will be updated as soon as possible after changes are made and approved by the Board of Directors. If there are any questions you may call 1-800-248-1786 or use the home page.

INTRODUCTION

The Pennsylvania One Call System Board provides this Guide for the participants of the Act to help clarify the responsibilities of each of the parties under the provisions of the law. Over 3,700 facility owners participate in the Pennsylvania One Call System currently, and a 35 member Board of Directors represents each of the industries involved in subsurface activity. All of the public utilities, public works, pipe line, telecommunications, the Commonwealth, construction and design industries were represented throughout the legislative process.

This Guide has been prepared to assist you in preparing your own operating procedures to comply with the Act, and to protect yourself and those you work with. It also provides insight into what you can expect to encounter underground. It is our hope to provide you with information to assist you in developing your own policy and procedures to guard against dangers and situations of working underground.

In addition to this Guide please reference the latest version of the Common Ground Alliance (CGA) Best Practices. The Law specifically requires your best efforts to comply with the CGA standards.

SECTION I -

ODDS ARE YOU COULD BE MOVING MORE THAN EARTH

Damage prevention is a shared responsibility. Communication between stakeholders is the key to ensuring safety and protecting vital facilities. Free-flow communication and cooperation allows all parties to focus on the common goals for safety and damage prevention.

Virtually anywhere you need to dig, there are probably underground facilities somewhere in the vicinity. Growing networks of telephone cables, power lines, and cable TV lines are joining the gas, water, sewer and petroleum pipes. The odds of an excavator moving something besides dirt are growing every day. Even if you see overhead lines that doesn't rule out the existence of buried power, television or telephone facilities. Many utility companies have long-term programs to weatherproof their plant by putting it underground. Both aerial and underground facilities may be in use during transitions. Some areas have overhead main lines with buried services going to the homes and other buildings. Even water-filled ditches and streams may have underground utilities in or under them. A ditch may have been dry when utilities were buried. A stream may have been diverted. Even "open country" may conceal buried utilities. Large pipelines and high capacity cables are especially expensive to place, so utilities often cut across country to reduce total miles for these major installations. There are buried utilities located in most road rights of way. Buried utilities are also found along property lines and between lots and serve any building located on a lot.

Damage to buried utilities most often occurs when excavators do not call for utility locations before they dig. In many cases, utilities are damaged even after notification has been made and utility locations clearly marked. That's usually because some excavators do not know the procedures for safely excavating around the buried facilities. See section 5(4) of the Underground Utility Line Protection Act, or "Act" (PA 73 P. S. § 176 et. seq.) for excavator requirements.

SECTION II -

WHO AND WHEN TO NOTIFY THE ONE CALL SYSTEM

Notifications are referred to as Locate requests, dig notices, and tickets.

The Act; OSHA Standard 1926.651 (revised in 1990 and clarified in 2004); the Federal PIPES Act of 2020, protecting underground liquid (CFR 49 Part 195) and natural gas (CFR 49 Part 192.614) pipelines; and the National Electric Safety Code, ANSI C-2 (revised in 2016); require anyone who engages in any type of excavation or demolition work to provide advance notice. (See the Act for the definition of excavation or demolition work.)

Who should notify the One Call System?

- For excavation work, the person performing the excavation must make the notification. If the work is subcontracted, the subcontractor should make the notification. The only party protected by the notification is the person who notifies.
- A homeowner should notify the One Call System only if they are performing the excavation work themselves. A homeowner should not place a notification on behalf of their excavator because the excavator will not be protected by the notification.
- For demolition work, the person performing the demolition must make the notification. If the work is subcontracted, the subcontractor should make the notification. The only party protected by the notification is the person who notifies.
- Designers who work on project plans that include a work operation which involves the movement of earth with powered equipment as part of the project must place the notification.
- Project Owners, who or which engages the contractor for construction on any project which requires excavation or demolition work should ensure their designers and excavators notify the one call system.

When should you notify the One Call System?

- Designers are obligated to notify "not less than ten nor more than ninety business days before final design is to be completed".
  – Designers may also choose to notify more than ninety business days in advance if they state that the work is preliminary.
- Excavators (including homeowners) are obligated to notify "not less than three nor more than ten business days in advance of beginning excavation or demolition work", unless the project is complex, then additional requirements apply. Complex project notices require ten business days notice.

"Business day" means any day except a Saturday, Sunday or legal holiday prescribed by statute. A business day begins at 12:00:00 a.m. and ends at 11:59:59 p.m.

Example of calculating the three business day notice for excavation:

– The notice is made on Monday.
– The first business day is Tuesday.
– The second business day is Wednesday.
– Excavation work can commence on the third business day which is Thursday.

- For a notification made on Thursday, the earliest lawful start date for when excavation can commence is the following Tuesday. (The first business day is Friday, Saturday is not a business day, Sunday is not a business day, Monday is the second business day and Tuesday is the third business day.)
  – A legal holiday (defined below) may add one or two business days between the notification date and the date excavation can commence.

To facilitate timely and accurate mark-outs of the work site before you excavate, the maximum Locate request size is 1000 feet, or intersection to intersection, whichever is greater, along the same road, within the same political subdivision. Base your notifications on the resources you plan to use and the time of year (near term weather) for each date such information is provided to the system. All excavators, including subcontractors should make their own notification.

The Act states that the person doing the work shall make the notification/call. The only party protected by the notification is the caller.

PA One Call System is open 24 hours a day every day of the year. Pursuant to Sections 221 and 709 (e.1) of The Administrative Code of

1929, the Executive Board has determined that the administrative offices of State Government shall be closed on the following holidays for the purpose of transacting public business:

New Year's Day
Martin Luther King, Jr. Day
President's Day
Memorial Day
Juneteenth National Independence Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

SECTION III - *TYPES OF NOTIFICATIONS HANDLED BY PA ONE CALL*

There are several variations to the excavation notifications, covered in detail in Section IV of this document. Each variation can be used to solve unique situations or problems.

The following is a brief explanation of each type of notification taken by Pennsylvania One Call System, Inc. (POCS):

1. DESIGN NOTICE

Any drawing that is prepared for an excavation requires a Design Notification that must comply with the provisions in Section 4 of the Act. The Design Notice is meant to allow the designer to plan the new work around existing facilities as the Act prescribes. The information provided should cover the entire scope of the plan or development with enough detail to allow the facility owners to provide the approximate locations of their lines in the proposed work area. Digging is not permitted on a design notification.

There are two types of design notices:

- **Final Design Notice:** Those planning work that disturbs the earth are required to notify POCS not less than 10, nor more than 90 business days in advance of the final design.
- **Preliminary Design Notice:** Designers may request line and facility information more than ninety days before final design is to be completed, however, they shall state in their requirements that such work is preliminary.

The designer is required to send plans to the involved Facility Owners for mark up when requested. PA One Call can assist with this process through Coordinate PA, where plans and responses can be shared electronically. Once the facility owners have responded, the designer shall add their facility information to the drawing before the final design is approved.

As a designer, you are required to add the one call serial number and the 1-800-242-1776 or 8-1-1 number to the plan before you forward it to the involved facility owners.

2. EMERGENCY NOTICES

- **Emergency Notice -** An emergency is defined by Section 1 of the Act as "a sudden or unforeseen occurrence involving a clear and immediate danger to life, property and the environment, including, but not limited to, serious breaks or defects in a facility owner's lines."

When declaring an emergency excavation, excavators are required to confirm that the work being done falls within the definition of emergency and describe the nature of the emergency within the Locate request. Once complete, the ticket will be queued for immediate transmission.

- **Damage Report Notice -** When a facility is damaged the notice is generally considered an emergency to that facility owner and other facility owners in close proximity to the damage. If a line is damaged during excavation, call the One Call System or the facility owner immediately. Report the details and particulars once the work site is safe.

If the damage results in the escape of any flammable, toxic or corrosive gas or liquid which endangers life, health, or property, immediately notify 911 and the facility owner, as required by Section 5 clause (8). It is most often best to evacuate the immediate area. Local emergency contact information should be at the job site with the crew at all times where they have access to it, along with a map or directions to the nearest emergency care facility.

- **Odor of Gas Notice –** POCS accepts non-excavation related calls from those who smell natural gas. A notification is created and is immediately sent to the gas companies registered to receive such notices.
- **No One Call Notice –** POCS accepts notification from third parties who are not performing excavation work, but witness excavation work occurring and no physical markings are visible at or near the work site. Prior to processing a No One Call, the CSR performs a search of tickets created within the last 90 days to confirm no existing valid notification was created for the site.
- **Potential Cross Bore Notice –** When installing new utility lines in urban and suburban areas, utility providers typically dig horizontally underground, using a trenchless boring technique that avoids damage to sidewalks and landscapes. In the process, a new utility line may be unintentionally bored through a sewer pipe. Over time, a cross bore in a sewer pipe will cause a blockage. When a plumber or sewer operator plans to clear a clogged drain, he can notify the One Call System, and a ticket will be created and immediately sent to all facility owners in the area. Cross bores most often occur through sewer lines, but can be found in other types of lines and structures.

Utility Cross Bore definition: An intersection of an existing underground utility or underground structure by a second utility resulting in direct contact between the transactions of the utilities that compromises the integrity of either utility or underground structure.

3. ROUTINE LOCATE REQUEST NOTICE

Notification for excavation work shall be made not less than 3 business days nor more than 10 business days prior to commencing excavation work starting the day the notification is received. Each Locate request must clearly identify the work site (See Section IV). When exact site information cannot be provided, use white paint to outline the proposed excavation site. The Locate request shall be limited to the area described in the notification and the maximum Locate request size is 1000 feet, or intersection to intersection, whichever is greater, along the same road, within the same political subdivision. Facility owners should respond to routine locate request notices by the response due date.

4. DEMOLITION NOTICE

Notification for demolition work shall be not less than 3 business days nor more than 10 business days prior to commencing demolition work starting the day the notification is received. Caution: Demolition work may require more advance clearance from the facility owner if their service lines need to be disconnected. You also may need a permit for the work. The One Call notification should not be considered notice under any circumstance other than the Act. You must follow all local codes as a part of your compliance with the Act. Final billing and disconnect of the lines attached to the structure must be secured directly with the involved service provider. Facility owners should respond to demolition notices by the response due date.

5. COMPLEX PROJECT NOTICE

The Act defines complex project as: "Complex project means an excavation that involves more work than properly can be described in a single locate request or any project designated as such by the excavator or facility owner as a consequence of its complexity or its potential to cause significant disruption to lines or facilities and the public, including excavations that require scheduling locates over an extended time frame."

And in Section 5, clause (2.1), the last sentence states: "In the case of a complex project, notification shall not be less than ten business days in advance of the beginning of excavation or demolition work."

And Section 5 clause (3) states: "In a complex project or if an excavator intends to perform work at multiple sites or over a large area, to take reasonable steps to work with facility owners, including scheduling and conducting a preconstruction meeting, so that they may locate their facilities at a time reasonably in advance of the actual start of excavation or demolition work for each phase of the work. A preconstruction meeting may take place at any time prior to the commencement of excavation or demolition work, and the excavator, facility owners and designer, or their agents, shall attend the meeting. Notice of the meeting shall be given sufficiently in advance so as to permit

attendance, either in person or electronically, by the excavator, facility owners and designer, or their agents, and shall include information sufficient to identify the scope of work. If the excavator does not believe that a preconstruction meeting is necessary under the circumstances of this clause it shall indicate such belief in its notice, but any facility owner with facilities at the work site may request a meeting with the excavator, and a meeting shall be held between the facility owner and the excavator. After commencement of excavation or demolition work, the excavator shall be responsible for protecting and preserving the staking, marking or other designation until no longer required for proper and safe excavation or demolition work at or near the underground facility or by contacting the One Call System to request that the facilities be marked again in the event that the previous markings have been compromised or eliminated."

And Section 5 clause (3.1) states: "To comply with the requirements by the One Call System as determined by the board of directors regarding the maximum area that a notification may cover."

The Board of Directors adopted the following Complex Project Process Policy on 7/31/2019:

Complex Project Process Policy

I. Terms used in this policy are as defined in the Underground Utility Protection Act (UULPA).
II. Notifications will be handled through the Pennsylvania One Call System (POCS) Coordinate PA (CPA) Web Portal.

A. Designers:
1. The designer creates a project within the CPA web portal.
   a. Includes Project Description and proposed timeline.
   b. Uploads drawings.
2. Through permissions, the designer assigns access rights (View Only or Modify) to the project owner.
3. Depending on the timeline of the project, the designer creates at least one Preliminary Design or Final Design notification ticket via the portal, from within the CPA project.
   a. If multiple excavators will be working on the same project, the designer segments the project into phases based on bid requirements.
   b. The designer creates at least one Final design ticket for each phase of the project.
4. When the project moves to construction phase, the project owner or designer assigns access rights (Modify) to the excavator for the phases of the project in which they are involved.

B. Excavators:
1. When a project exists in Coordinate PA:
   a. The excavator creates a complex project notification ticket via the portal, from within the CPA project, and indicates if a preconstruction meeting is requested. The excavator follows Option 1 or Option 2 below.
2. When a project does not exist in Coordinate PA:
   a. The excavator creates a project within CPA.
   b. The excavator creates a complex project notification ticket via the portal, from within the CPA project, and indicates if a preconstruction meeting is requested.

The excavator follows Option 1 or Option 2 below.

Option 1: When a preconstruction meeting is requested, the excavator establishes the date, time and place of meeting in close proximity to the project work location. Electronic meetings are also acceptable. Meetings are strongly encouraged in the case of complex projects.
   a. It is strongly recommended that in the case of a complex project that extends over a large geographic area, the party should consider scheduling multiple meetings throughout the site to accommodate travel needs.
   b. The excavator is responsible for notifying the project owner and the designer of the meeting. Note: The designer is the one that prepared the drawing, not necessarily the one that is managing the project.

Option 2: If the excavator determines that a preconstruction meeting is not necessary, the notice shall indicate. If an individual facility owner nonetheless wishes to have a meeting, a meeting shall take place between that facility owner and the excavator. Other facility owners need not attend. [Sec 5(3) of Act.] In the notice, the excavator shall state the reason for determining that a pre-construction meeting is not necessary.
   a. A facility owner requests a meeting by sending response code 092 (Requests Meeting) through POCS. This notice must be made prior to the third business day from the complex project notification.
   b. The facility owner then contacts the excavator to establish the date, time, and place of meeting in close proximity to the project work location. The meeting must be held prior to the seventh business day from the complex project notification. Electronic meetings are also acceptable.

III. Meeting Protocol
1. At the meeting the parties shall agree upon their individual obligations consistent with the project. These obligations may vary from project to project based upon the specifics of the project and it is not the intent of this process to provide a specific set of standards for all complex projects. Rather it is intended that the parties shall have the flexibility to make decisions consistent with the project's parameters.
   a. Involved parties (facility owner, excavator, designer, project owners) are required to attend the meeting.
   b. The entire scope of the project must be defined at the meeting. Detail on phases should be defined as much as possible.
   c. Agreement on the scope of ticket will be left to the parties attending the preconstruction meeting.
   d. If a facility owner cannot agree to the proposed locate schedule, everyone must work to find a schedule that the one facility owner can agree to.
   e. If no agreement can be reached, the excavator must create single routine excavation notifications, from within the project, for the areas where the dissenting facility owner owns/operates lines.
   f. If an involved party fails to attend the meeting, the excavator may proceed according to the agreement reached at the meeting.
2. Meeting notes shall be taken by the excavator calling the meeting using the POCS approved template and the minutes shall set forth the agreements made by the parties. Meeting notes shall be uploaded to the POCS web portal as soon as practicable. In the absence of minutes or a meeting the parties shall be bound by the provisions contained in the POCS Users Guide for non-complex excavation notifications.
3. Within 90 days of the pre-construction meeting the excavator shall provide the routine excavation notification required by Sec. 5 of the Act. The notification shall be consistent with the agreements reached at the pre-construction meeting, if such a meeting is called.
4. A complex project requires 10 business days' notice. The excavator shall not enter a routine excavation notification prior to the pre-construction meeting.
5. If the project start is delayed AFTER the complex project preconstruction meeting has been conducted and the mark out schedule agreed to, the following will apply:
   a. If the start date that was agreed to is delayed more than 90 days:
   i. A new Complex Project ticket and meeting will be required, from within the same CPA project.
6. If the scope of the project changes, a new complex project notification and meeting will be required, from within the same CPA project.

Additional Guidance:
1. In the case where an excavator creates multiple routine excavations tickets:
   a. The facility owner may respond 092 (Requests meeting), via the KARL system and reach out to the excavator to work out a locate schedule.
   b. The one call system may reach out to the excavator to educate them on complex projects.
2. In the event an impacted facility owner fails to attend the pre-construction meeting, it is highly encouraged the facility owner contact the excavator and schedule a one on one meeting, a minimum of at least 3 business days prior to the first lawful start date of the first routine excavation ticket.
3. If a party disagrees with the posted minutes, they communicate back to the excavator through the communication tool within the CPA portal.

4. Announcements will be sent to all parties for communication related activity in CPA.

Addendum A:

1. ROUTINE AND COMPLEX PROJECT TICKETS
2. A routine ticket is one that does not meet the definition of a complex project as established by the Pennsylvania One Call System's (POCS) Board of Directors pursuant to the UULPA.
3. A complex project is one that meets the definition established by the POCS Board of Directors.
4. An excavator shall comply with the requirements of Section 5 of the UULPA but may determine that a pre-construction meeting is unnecessary, even in the case of a complex project as defined by the POCS Board of Directors. In the event that an excavator determines that a preconstruction meeting is unnecessary, an affected facility owner may, nevertheless, request a preconstruction meeting between itself and the excavator, pursuant to Section 5(3) of the UULPA.
5. Such request by a facility owner shall not require a preconstruction meeting with all affected parties, but only with the facility owner requesting the meeting, and an affected facility owner is not entitled to a meeting with all other parties.

"Large/Complex Project" is also included in the Common Ground Alliance (CGA) Best Practices, which are incorporated by reference in Act 287, as amended. Refer to chapter and sections: 2-2, 2-3, 2-4, 2-8, 3-14, 3-29, 4-11, 4-14, 4-17, 4-22, 5-4, 5-5, 5-6, 5-14, 5-23, 5-28, 6-18, and in the Glossary.

SECTION IV - *GUIDELINES FOR PREPARING A LOCATE REQUEST*

When initiating a Locate request, Section 5 clause (2.2) of the Act requires each excavator: "To provide the One Call System with exact information to identify the work site so that facility owners might provide indications of their lines. An excavator shall be deemed to have met the obligations of clause (2.1) if he calls the One Call System, provides the work site and other required information, and receives a serial number."

And Section 5 clause (11): "To use the color white to mark a proposed excavation work site when exact work site information cannot be provided."

We encourage excavators to visit the work site prior to placing a notification to outline their exact proposed work site in white, to assist the locator in marking only the area where the work will take place.

"If, after receiving information from the One Call System or directly from a facility owner, an excavator decides to change the location, scope or duration of a proposed excavation, the obligations imposed by this section [Section 5] shall apply to the new location."

ANNUAL FEE

Section 3 clause (f.1) states: "An excavator, designer or operator who proposes to commence excavation or demolition work and requests information from the One Call System shall pay to the One Call System an annual fee for the service provided by the One Call System under section 3. The fee shall be set by the One Call System board of directors and shall be used to offset a portion of the operating costs of the One Call System and a portion of the operation costs levied on the One Call System's political subdivision and municipal authority members. Failure to pay the fee shall constitute a violation of this act and shall subject the excavator, designer or operator to the enforcement authority of the commission for this nonpayment."

The annual fee will be charged on the first notification each calendar year.

LOCATE REQUEST CREATION

When calling in notifications, POCS Customer Service Representatives (CSRs) are trained to obtain specific information concerning locate requests. All telephone calls are recorded and kept for five years. Each question asked has a purpose. This section will provide a brief explanation of the reason for each question.

Locate request processing is more efficient if the caller is prepared to answer all questions. The best way to prepare for a call is to visit the website www.paonecall.org.

Excavators, Designers, Project Owners and Facility Owners can submit Locate requests via the website with valid log in credentials. Homeowners working on their own property may submit single address Locate requests via the website without logging in. Whichever input method is chosen, questions will be asked to complete specific data fields.

Field Definitions:

Information about the company making the *Locate request: (fields 1-6)*

1. Telephone Number & Extension:
The telephone number, including the area code, of the excavating company, design firm, or homeowner placing the call.

2. Caller Name:
(or Web Ticket Entry User name) The caller's name is taken in order to maintain records of what person placed the Locate request.

3. Company:
The name of the company for whom the caller works. For homeowners placing their own Locate requests, this field will contain the name of the caller.

4. Address, City, State, Zip:
The mailing address of the company is recorded and stored as part of the Locate request. For homeowners placing their own Locate requests, this field will contain their mailing address.

5. Caller Email Address:
(or Web Ticket Entry User Email Address)
The caller or web ticket entry user will be emailed a copy of the Locate request ticket. In addition, facility owners are required to respond back to the One Call System for all notifications, and the One Call System will collect and email the responses to the caller provided email address.

6. Caller Fax:
Needed only when an email address cannot be provided.

Description of the Work Site: (fields 7-16)

7. County:
The name of the county in which the work will be performed is required.

8. Municipality:
The name of the municipality in which the work will be performed is also required.
Ward: If the work is taking place in Allentown, Erie, Pittsburgh, or Philadelphia, the voting ward of the site is also required.

9. Street # & Street Name:
Name of the street and/or route number. Please use the exact address numbers, directional (N, S, E, W, etc.), and the street suffix (ST, RD, CT, AVE, LN, WY, etc.).

10. Nearest Intersection:
Name of the nearest intersecting street or cross street (within reasonable distance of the work site).

11. Second Intersection/Nearest Main Road:
The name of the second street if the work site is between two streets. If not working between two streets, the field can also be used to hold the nearest major intersection name, especially if the nearest intersection is a new or unnamed road. Directions and other clarifying information will be typed into location information so the facility owner knows which type of data has been entered in this field. Additional information is solicited to determine if the work is taking place in the intersection or between two intersections.

12. Site Marked in White?
Indicate by yes or no whether the proposed route or boundary of the work site had been marked in white. This field is not included for design notifications.

NOTE: If an exact location cannot be given, it is required that the proposed route or boundary of the work site be marked in white. Excavators should delineate the work site with 12 inch dashed white paint lines to avoid confusion with color codes used by facility owners (see Section V of this document). Marking the work site in white will provide locators with an accurate picture of the proposed excavation area, helps the locators complete the work and provides the excavator with the needed information, and prevents over marking. Over marking is a problem because in some areas, neighbors can get upset if the marks appear to be graffiti.

13. Location Information:
Clarifying information to specify the exact location of the dig. Include measurements and directional (N, S, E, W or variants) from known points, such as the curb line, street, structure, property line, or fence. If working on private property, note whether working in the front, rear, left, right or all sides. If known or visible, include utility pedestal or pole numbers, highway or railroad mile markers, landmark names, permanent pipeline marker identifiers, etc. You

can also provide directions from the nearest town, or major intersection. Give as much descriptive information as you can to help the facility owners and the locator find the site.

14. Subdivision:
The name of the subdivision, housing development, named community, or building complex where the work will take place will be entered, if applicable.

15. Latitude and Longitude Coordinates:
Provide the GPS coordinates of the location, if available.

16. Type of Work Being Done:
Facility Owners need to know the specific reason for the excavation, demolition, or design work to help them evaluate the possible impact on their underground assets. Be as specific as possible. For example, "installing a sanitary sewer lateral" is much more helpful than "digging a sewer line".

Formatted information based on specific notification types is also included here.

Demolition notice: the value will begin with the word DEMOLITION-.

Damage notice: the notice is qualified and will begin with the word DAMAGE- or EXPOSED-, followed by the facility type detail provided by the excavator.

Odor of Gas: the value will display ODOR OF GAS.

No One Call: the value will display NO ONE CALL

Potential Cross Bore: the value will display POTENTIAL CROSS BORE

Specific qualifiers are added to the work site information: (fields 17-21)

17. Working in:
Identify if the work will take place in the street, sidewalk, public or private property. Other designations such as right of way, treelawn, berm, river, stream, etc., can also be specified.

Street: indicate yes or no
Sidewalk: indicate yes or no
Public Property: indicate yes or no
Private Property: indicate yes or no
If on Private Property, indicate Front, Rear, Left or Right side of the property
Other: where applicable

18. Depth:
Give the approximate depth of the excavation.

19. Extent of Excavation:
Give the approximate size of the excavation. Indicate the length and width, the diameter, or some other measurement to indicate the size of the opening.

20. Method of Excavation:
Indicate how the earth will be moved, i.e. anchoring, augering, backfilling, blasting, boring, compressing, digging, directional boring, ditching, dredging, drilling, driving-in, grading, grinding, hand-digging, milling, plowing-in, powered equipment, pulling-in, ripping, scraping, tilling, trenching, trenchless excavation, tunneling, or vacuum excavation.

21. Type of Equipment:
Indicate what kind of equipment will be used to perform the work, i.e. auger, backhoe, boring, directional drilling, drilling, excavator, explosives, farm equipment, grader, hand tools, milling equipment, probing device, scraper, trackhoe, trencher, vacuum equipment, or other (specify). If you don't know what type of equipment will be used, and have no way to determine the type, then indicate unknown.

Identification of the project owner and onsite contact information: (fields 22-26)

22. Work Being Done For (Project Owner):
Identification of whom the work is being performed for is another resource for obtaining additional information about a project. The Act refers to this as the "project owner". The "project owner" means any person who or which engages an excavator for construction or any other project which requires excavation or demolition work.

23. Onsite Contact:
The name of the person at the work site with knowledge about the work being done, who a locator can speak with, or a facility owner can make direct contact with when clarification is needed about the Locate request.

24. Onsite Contact Phone Number and Extension:
Provide the telephone number of the onsite contact, including the area code. This number should be a mobile phone, but in the case where an office phone is auto-forwarded to a mobile device, an extension is permitted.

25. Best Time to Call:
When the onsite contact person is normally available to receive calls from facility owners.

26. Onsite Contact E-mail:
Provide the email address of the onsite contact person, as they will be sent a copy of the Locate request in addition to the caller.

Timeframes are identified: (fields 27-29)

27. Scheduled Excavation Date:
On non-design notifications, indicate the date the excavation work is scheduled to begin. Excavation work cannot begin prior to the date given. (See Lawful Start Dates below.)

Formatted information based on specific notification types is also included here.

Design notices: this field is populated with the word DESIGN.

28. Start Time:
Indicate the estimated time the excavation crew plans to be on site and digging.

29. Duration of Job:
To help the facility owner understand the complexity of notification, indicate the approximate number of hours, days, weeks, months, or years you will be actively working on the excavation or demolition. This information helps the facility owner determine the resources needed to deal with the Locate request or complex project. This field is not included on design notices.

Additional information: (fields 30-31)

30. Job Number:
This is an optional field for your use to help reference Locate requests to your internal work management systems.

31. Remarks:
Additional information you wish to include on the Locate request that was not asked in any other field, or exceeded a field size, can be entered here.

Formatted information based on specific notification types is also included here.

Demolition notices: Because disconnect of lines attached to a structure being demolished must be secured directly with the utility, the excavator is asked if they contacted utilities.

If yes, Remarks will display: CALLER HAS CONTACTED UTILITIES DIRECTLY FOR DISCONNECTS/METER REMOVAL.

If no, Remarks will display: CALLER HAS BEEN ADVISED TO TELL PROPERTY OWNER TO CONTACT UTILITIES DIRECTLY FOR DISCONNECT/METER REMOVAL.

Damage notices: The caller is asked if the damage resulted in the escape of any flammable, toxic or corrosive gas or liquid which endangers life, health, or property.
If yes, they are asked if they notified 911.
If no, they are advised to notify 911.
Based on the information they provided the Remarks will display:
HAZARDOUS RELEASE <YES> or <NO> and CALLER HAS NOTIFIED 911 or CALLER HAS BEEN ADVISED TO NOTIFY 911.

Odor of Gas notices: The caller is asked if they know the gas or pipeline company name. If yes, the Remarks will display: GAS COMPANY: <name of company provided>.

Update: The update action is available for design, non-emergency demolition and excavation Locate requests. An update banner is added in the Remarks and displays the serial number being updated. The banner will include a date/time stamp, CSR initials and channel number or web ticket entry user login followed by the requestor, the reason for the update, and whether lines need to be re-marked.

Example of what Remarks will display:
******=== UPDATE 20221231234-000 == 7/26/2022 1215 GRI 34===******
UPDATE REQUESTED BY: SALLY SMITH REASON FOR UPDATE: WORK NOT STARTED or WORK STOPPED STARTING AGAIN or WORK IN PROGRESS REMARK LINES or NO MARK OUTS NEEDED

Cancel: indicates the work will not take place, or the address provided on the notification was incorrect and a new serial number will be created to correct the bad information. A cancel banner is added in the Remarks and displays the serial number being cancelled. The banner will include a date/time stamp, CSR initials and channel number, the requester, and the reason for the cancel.

Example of what Remarks will display:
******=== CANCEL 20221231234-001 == 7/26/2022 1652 JEC 38===******

CANCEL SERIAL NUMBER: 20221231234
CANCEL REQUESTED BY: JANE DOE
INCORRECT ADDRESS, NEW TICKET HAS BEEN PLACED.

MAPPING THE LOCATE REQUEST

During the creation of a ticket, the system attempts to locate the described proposed excavation site using the data provided for county, municipality, street, nearest intersection, and second intersection. Up to two latitude/longitude points can also be provided to assist in the search. The mapping process is slightly different based on the method of input:

Caller:

- If the map search is successful, the CSR will attempt to confirm the search results with the caller and draw a notification area polygon around the proposed excavation site.
- If the map search is unsuccessful, the CSR will work with the caller to determine if all data provided by the caller is accurate.
- In the rare situations when a site cannot be found on the map, an unmapped notification will be sent and the facility owners notified will be based on the county and municipality given by the caller.

A single point with a 150 feet radius (300 feet diameter) buffer, or a polygon delineated with up to six latitude/longitude points, with a 150 feet buffer, can be used to draw the notification area polygon.

Web Ticket Entry User:

- If the map search is successful and the ticket is being created by a user via web ticket entry, the user must draw the notification area polygon.
- If the map search is unsuccessful, the user should ensure all data entered in the fields is accurate and try again.
- If the user is still unable to map the ticket, they must abort the entry and call the One Call System to place their notification.

A single point with a 150 feet radius (300 feet diameter) buffer, or a polygon delineated with up to six latitude/longitude points, with a 150 feet buffer, can be used to draw the notification area polygon.

Web Single Address (WSA):

- Users do not draw a notification polygon.
- If the address search is successful, the user is presented with geometry in the shape of the property parcel, and asked to verify and accept that the location found by the system is correct.
- If the address search is unsuccessful, or the user does not agree with the site parcel found, the ticket is placed in a suspend queue for manual intervention by a CSR prior to its release.
- All WSA notifications created are first reviewed by a CSR, then released and assigned a serial number. The ticket confirmation is emailed and includes the serial number, a copy of the ticket information, and the facility owners notified.

Important: The notification area polygon drawn by the CSR or the WTE user, and the geometry shape accepted by WSA users determines which member facility owners will be notified of the proposed work.

The type of notification area will be included on the Locate request:

32. Mapped Type--[P]

- P = Polygon
- X = Point
- S = WSA Parcel
- C = CPA geometry
- N = Not Mapped

33. Mapped Lat/Lon--
[40.361226/-79.926977,40.361981/
-79.924776,40.360903/-79.924907
40.361123/-79.927265]

If the Mapped Type = S or C, the latitude longitude coordinates will not be populated in the Mapped Lat/Lon field because the output is in OGC WKT format, which exceeds the six point limit. The OGC WKT points can be output on the ticket if the member receiving site requests the data. See field 43 Geometry. If the Mapped Type = N, coordinates do not appear in either field.

A link to the image of the drawn notification area will be included on the Locate request:

34. Map Graphic
--[http://www.pa811.org/ViewMap/view.aspx?sn=20221234567]

35. LAWFUL START DATES:
(3 business days) **through** (10 business days)

These dates are calculated for Locate requests, based on the business day the notification is originated. They indicate the earliest date that digging can begin and the last possible date when digging must begin. If digging does not start within these dates, a new one call notification must be placed. This information is provided to the caller by the CSR. The information is emailed to web ticket entry and web single address users.

If the scheduled excavation date given by the caller falls between the lawful start dates and is not the third business day, the lawful start dates are recalculated and the scheduled excavation date becomes the earliest lawful start date. The last possible lawful start date remains the same, i.e., ten business days from the origination of the notification.

It is very important not to begin work prior to the lawful start dates. Beginning work before the lawful start date can result in forfeiture of the excavator's rights and protection provided for under Pennsylvania Act 287 as amended. Additionally, commencing work prior to the lawful dig date is a violation of the law.

36. SERIAL NUMBER

Once the available information for the notification is gathered, the system assigns a serial number to the notification.

The serial number is eleven digits comprised of the four digit year, three digit Julian date, and four digit sequential number. A three digit version number is then appended to the serial number to track its action type. On the original ticket, the version is -000, designating a NEW or UPDATE action type. Example: 20220010001-000 is the first ticket taken in 2022. On each subsequent action taken on the original, the version number is incremented as -001 or higher to designate a RENOTIFY, CANCEL or ANNOUNCEMENT. Example: 20220010001-001 is the first RENOTIFY of the original request.

The serial number is provided to the originator of the notification based on the method of input:

Caller:

- The serial number is read to the caller, who is also offered a list of the facility owners being notified.
- Callers who provided an email address will receive a ticket confirmation which includes a copy of the ticket information and the facility owners notified.

Web Ticket Entry User:

- A ticket confirmation is emailed and includes the serial number, a copy of the **ticket information**, and the facility owners notified.

Web Single Address User:

- For successful parcel searches, a **ticket confirmation** is emailed and includes the serial number, a copy of the ticket information, and the facility owners notified.
- For unsuccessful parcel searches, the notification is first reviewed by a CSR, then released and assigned a serial number.

– Once released, a **ticket confirmation** is emailed and includes the serial number, a copy of the ticket information, and the facility owners notified.

The serial number is proof of your notification and should be saved.

Ticket confirmations should be reviewed for accuracy when received. If a discrepancy is found, the One Call System should be notified immediately and a new notification placed.

It is considered a Best practice is to have a copy of the notification at the work site.

37. RESPONSE DUE DATE

The ticket output will include the system generated response due date, which differs based on the Message Type. Facility owners must respond to all notifications through the One Call System by the response due date. (Refer to Section VI for additional information.)

38. LOCATE REQUEST MESSAGE TYPE

The ticket output format will include one designation from each of the three components below that define the Message Type. Example: [NEW] [EXCAVATION] [ROUTINE]

- ***Action Type:*** (how the request was created, which also determines the serial number and version assignment)

– NEW – a new Locate request – receives a unique serial number and version 000.
– UPDATE – modifies the Lawful Start Dates

on an existing Locate request due to work not starting, work stopped and is starting again, or work in progress when re-marking is needed, – receives a unique serial number and version 000.
– RENOTIFY – a re-transmit of an existing ticket, initiated by a caller, to advise one or more facility owners of locate related or response issues – the serial number does not change, however, the version number will increment with each successive re-notify.
– CANCEL – notification by the ticket originator that work will not be done – the version number will increment.

• ***Request Type:*** (the kind of work being performed)
– EXCAVATION – the movement of earth, rock, or other material.
– DAMAGE – damaged or exposed underground facility or facilities.
– ODOR OF GAS –third party reports of non-excavation related odor of gas.
– DEMOLITION – partial/complete destruction of a structure served by/adjacent to underground lines.
– NO ONE CALL –third party reports of excavation work where there is reason to believe no one call ticket exists.
– POTENTIAL CROSS BORE – called in by plumbers or sewer operators to provide notice of intent to clear a clogged sewer drain prior to using a cutting tool.

• Request Class: (the timeframe of the work being performed)
– FINAL DESIGN– a notification requiring not less than 10 nor more than 90 business days notice prior to final design.
– PRELIMINARY DESIGN – a notification giving more than 90 business days notice.
– ROUTINE – a notification requiring not less than 3 nor more than 10 business days notice.
– EMERGENCY – the excavator declares work is an Emergency as defined by Act 287 as amended.
– INSUFFICIENT NOTICE – the excavator fails to provide the required 3 business day notice and the work does not fall within the definition of emergency as defined by the Act.
– COMPLEX PROJECT – used to schedule a complex project preconstruction meeting request.

Based on the Message Type, there may be variations in the data fields. Some variations impact the data fields described above, and have been noted where possible. Other data fields are based on conditionals or are specific to certain action or request types and the request class.

39. PennDOT Permit Number:
If the work is taking place on a PennDOT road, provide the permit number issued to you by PennDOT.

40. Project dates:
Used in lieu of Lawful Start dates on design notices. Project dates are calculated based on the designation as final design or preliminary design.

41. Project Contact, Project Contact Phone, and Project Contact Email:
Used in lieu of Onsite contact, Onsite Contact Phone, and Onsite Contact Email on design notices.

42. CPA Project ID, CPA Phase ID, and CPA Location ID:
Used when a notice originates from the Coordinate PA (CPA) project coordination, collaboration and communication tool. (See Section XV Website Tools for more information on CPA.)

43. Geometry:
Used in lieu of Mapped Type and Mapped Latitude/Longitude on notices originating from CPA or WSA online. Due to its potential size, the Geometry field is suppressed unless the receiver CDC opts in to receive the data.

44.-51.
RNO Caller, RNO Caller Phone, RNO Onsite Contact, RNO Onsite Phone, RNO Onsite Contact Email, Crew Onsite, Unmarked or Incorrectly Marked, RNO Remarks:
RNO is an abbreviation for the action type RENOTIFY. The original Lawful Start Dates, Scheduled Excavation Date, Start time and serial number do not change. Cancel and Complex Project action types are not eligible for renotify action.

52. Direct Contact with Excavator Required within two hours:
The locate request will indicate Y(es) or N(o) based on information given by the excavator.

The following is one example of the ticket output format with proper information used to identify identifying the location of a work site:

CDC ABC 00001 POCS MM/DD/YY TT:TT:TT 20221234567-000 NEW XCAV RTN

==========PENNSYLVANIA UNDERGROUND UTILITY LINE PROTECTION REQUEST=========

Serial Number--[20221234567]-[000]
Channel#--[1234] [0123] [4567-89]

Message Type--[NEW] [EXCAVATION] [ROUTINE]

County--[ALLEGHENY] Municipality--[WEST MIFFLIN BORO]

Work Site--[925 IRWIN RUN RD]
Nearest Intersection--[NOBLE DR]
Second Intersection--[LUTZ LANE]
Subdivision--[BORLAND COMPLEX]
Site Marked in White--[Y]

Location Information:
[WORKING FROM THE FIRE HYDRANT ON THE LEFT SIDE OF THE BUILDING, CROSSING THE DRIVEWAY INTO THE TREELAWN, CONTINUING THROUGH THE MIDDLE OF THE TREELAWN PARALLEL TO THE BUILDING, FOR 100FT, CROSSING BACK OVER THE DRIVEWAY TO THE RIGHT CORNER OF THE BUILDING.]
Caller Lat/Lon--[]
Mapped Type--[P] Mapped Lat/Lon--[40.361226/-79.926977,40.361981/-79.924776,40.360903/-79.924907 40.361123/-79.927265]
Map Graphic--[http://www.pa811.org/ViewMap/view.aspx?sn=20221234567]
Type of Work--[INSTALL 2IN WATER SVC LINE] Depth--[3FT]
Extent of Excavation--[2FT X 230FT]
Method of Excavation--[TRENCHING]
Equip Type—[BH]
Street--[N] Sidewalk--[Y] Pub Prop--[N] Pvt Prop--[Y] Other--[TREELAWN]
Private Front--[Y] Rear--[Y] Left--[Y] Right--[Y]

Lawful Dig Dates--[DD-MON-YY] thru [DD-MON-YY] Response Due Date--[DD-MON-YY]
Scheduled Excavation Date--[DD-MON-YY]
Dig Time--[TTTT] Duration--[1 WEEK]

Caller--[ANNABELLE SMITH]
Caller Phone--[555-555-5555] Ext--[]
Excavator--[ABC CONSTRUCTION]
Address--[12345 MAIN ST]
City--[PITTSBURGH] State--[PA]
Zip--[15236]
FAX--[555-444-4444] Caller Type--[B]
Email--[asmith@aol.com]
Work For--[PA ONE CALL SYSTEM INC]
Onsite Contact--[ANNABELLE SMITH]
Onsite Contact Phone--[555-555-5555] Ext--[]
Best Time to Call--[0800-1600]
Onsite Contact Email—[asmith@abcconstruction.com]
Job Number--[]
Prepared--[DD-MON-YY] at [TTTT] by [CSR NAME]
Remarks--[]

SECTION V - *WHAT HAPPENS WHEN THE NOTIFICATION IS MADE*

POCS records all conversations that pertain to the Locate request, and maintains a copy. The voice and data records are maintained for five (5) years.

When the Locate request is submitted, the computer processes the ticket, assigns a serial number to the notification, determines which member facility owners to notify, where to transmit the notification, creates the ticket output format, and delivers it to each involved member, separately tracking the sequence number of the day for each unique delivery address.

The system also determines if the notification is the first one placed by a business in the calendar year. If so, an invoice is generated for the annual fee for the service provided by the One Call System. (See Section IV for more information on the annual fee).

SECTION VI -

RESPONSIBILITIES OF THE FACILITY OWNER (After receiving the Locate request)

Underground facility owners have the option to receive the information from the One Call System using a variety of delivery methods, such as email, fax, XML, or viewing Locate requests on the One Call System website. A sequence number is added to each transmission so a member can easily identify skipped transmissions.

To ensure successful delivery of Locate requests, an end of day (EOD) summary audit of messages transmitted from the One Call System is sent to each receiving site shortly after midnight each day. The summary lists by serial number, any messages the member should have received the day before. Members should check this audit for agreement with transmitted messages. If any serial numbers were missed, members can visit facility owner member web access or call the One Call System to request a resend. Members whose primary method of receiving tickets is web view should review the EOD online as they will not receive a transmission.

- A resend is a manual re-queue of a Locate request previously logged as a successful ticket delivery, initiated by the member facility owner.
- A resend does not change any data, but appends RSND to the delivery header, populates a new delivery sequence number and includes the date/time of the resend.
- A resend may also be manually forced to a facility owner not notified on the original list when the caller has cause to believe non-notified facilities are present at the work site and are requesting a locate/response.
- A resend conditionally adds one of two text lines at the end of the Locate request:

– When the member was listed on the original transmission:

- [Originally sent as sequence number NNNN at MM/DD/YY HHMM].

– When a ticket is forced to a member not in the original list:

- [Ticket (re) sent at your request.]

DETERMINING CONFLICT WITH EXISTING ASSETS

Once the information is successfully transmitted and received by the member facility owner, their personnel review the Locate request to determine possible conflicts. The review can include automated or manual comparison with asset maps and records, contact with the excavator to clarify data information about the request, or dispatching a locator to the work site. It is the facility owner's job to decide whether or not the location of the proposed excavation work is close to existing underground facilities.

If the work to be done or work site appears to be complex, or the lines at the site are considered critical, the facility owner may request to meet the excavator. In this case, the facility owner should respond via KARL with a "092-Requests Meeting" designation, and then contact the excavator to arrange a meeting date and time.

Some facility owners are required to be on site during excavation while work is in the vicinity of their line. Generally, there is no charge for this additional level of protection. Take advantage of their expertise and make sure you understand the safety precautions that are necessary to protect the line and yourself.

After receiving and screening the non-design Locate request, if a conflict exists within the excavation work site described on the Locate request, each underground facility owner is required to mark the location of the facility owner's underground lines within eighteen inches horizontally from the outside edge of the line, known as the tolerance zone, including known connections and appurtenances. At its option, the facility owner may timely elect to excavate around its facilities.

Under Section 2 clause (i.1), known as the Good Samaritan clause, as a helpful guide to the excavator or property owner, the facility owner may identify the location of a known facility connected to its facilities. The identification will not impose any liability upon the facility owner for the accuracy of the non-owned facility.

RESPONDING TO LOCATE REQUEST NOTIFICATIONS

Section 2 (5) (i)-(ix) requires Facility Owners to respond to all notifications by marking, staking, locating or otherwise providing the position of the facility owner's underground lines at the work site within eighteen inches horizontally from the outside wall of such line in a manner so as to enable the excavator, where appropriate, to employ prudent techniques; or by notifying the excavator they have no facilities to be marked. (See below for more information on abandoned facilities, and responding to notifications that do not require marking in the field.)

USE OF MARKING

Facility Owners may use standard locating techniques suitable to each type of line being located based on accepted engineering and operational practices, and mark with paint, stake, and/or flags, according to APWA/Common Ground Alliance Best Practices for Temporary Marking set in ANSI standard Z535.1 Safety Color Code. (See Appendix D of this document). Markings will be done in a reasonable manner; in order to enable the excavator to easily recognize the location of buried facilities.

WHITE	Proposed Excavation
PINK	Temporary Survey Markings
RED	Electric Power Lines, Cables, Conduit and Lighting Cables
YELLOW	Gas, Oil, Steam, Petroleum or Gaseous Materials and Hazardous Materials
ORANGE	Communication, Alarm or Signal Lines, Cables or Conduit, and Traffic Loops
BLUE	Potable Water
PURPLE	Reclaimed Water, Irrigation and Slurry Lines
GREEN	Sewers and Drain Lines

SYMBOLS

(These symbols further define the color-coding used in marking buried facility locations).

CH	Chemical	**SS**	Storm Sewer
E	Electric	**SL**	Street Lighting
FO	Fiber Optic	**STM**	Steam
G	Gas	**SP**	Slurry System
LPG	Liquefied Petroleum Gas	**TEL**	Telephone
PP	Petroleum Products	**TS**	Traffic Signal
RR	Railroad Signal	**TV**	Television
S	Sewer	**W**	Water
SD	Storm Drain	**W**	Reclaimed Water "Purple

Use color-coded surface marks (paint or similar coating) to indicate the location and route of buried lines. To increase visibility, color-coded vertical markers (temporary stakes or flags) should supplement surface marks. All marks and markers should include the symbols of the underground facility owner or actual company abbreviation (i.e., VZPA, DLCO, PECO, UGI, PAWC, ATT, etc.) of the company that owns or operates the line, and the width of the facility if it is greater than 50 mm (2") as practicable.

Supplemental offset marking may also be added at the discretion of the facility owner, and is recommended if the surface over the buried line is to be removed or destroyed. Such markings will identify the direction and distance to the actual facility. Offset markings should be on a uniform alignment and must clearly indicate that the actual facility is a specific distance away. Please see the attached marking card for guidelines for marking of underground facilities.

Facility owners should consider documenting the completed mark out with photos.

TOLERANCE ZONE

The width of the tolerance zone means the horizontal space within eighteen inches of the outside wall or edge of a line or facility. (see Section VIII of this guide for additional information on excavating within the tolerance zone.)

ABANDONED FACILITIES

Facility owners must make reasonable efforts to locate or notify excavators of the existence and type of abandoned main lines.

Information regarding abandoned facilities, in possession of the Facility Owner, should be provided in the following instances:

- with a correctly submitted preliminary or final Design request
- at a Pre-construction meeting on a Complex Project request
- for a Routine Locate request where the

specific excavation area is identified using white paint/flags. (CGA 4.11/APWA guidance)

The Act specifically requires your best efforts to comply with the CGA standards.

RESPONSE DUE DATE

Facility owners must respond to all notifications through the One Call System by the response due date.

Responses are due:

- **Emergency notifications:** Emergency Locate requests that fall within the definition of an emergency are given top priority. Underground facility owners are required to mark facilities within the emergency excavation area as soon as practicable. The response by the facility owner should be consistent with the nature of the emergency information received. The expectation is that within 2 clock hours of the notice the Facility Owner will respond to the site or make direct contact with the Excavator.

– Damage, odor of gas, no one call, and potential cross bore notifications are classified as emergencies.

– Note: In certain situations that fall within the definition of an emergency, but do not require immediate mark out, an emergency Locate request contains a scheduled excavation date greater than the current date. For example, a water line break during the winter months, which might freeze, causing a hazard, but can be kept safe until the next day using road salt. In such cases, the response due is 23:59:59 the calendar day prior to the scheduled excavation date.

- **Routine notifications:** When the scheduled excavation date is equal to three business days from the Locate request submit date then the response due is 23:59:59 the business day prior to the first Lawful Start date. When the scheduled excavation date is greater than three business days from the Locate request submit date, the response due is 23:59:59 the calendar day prior to the first Lawful Start date.

– Insufficient Notice: the response due is 23:59:59 two business days from the Locate request submit date.

- **Complex Project meeting request notices:** When a meeting is requested the response due is 23:59:59 the business day prior to the proposed meeting date. When a meeting is not requested, the response due is 23:59:59 two business days from the meeting request submit.
- **Design notifications:** For Preliminary and Final Design, the response due is 23:59:59 ten business days from the Locate request submit date.

If necessary, the facility should propose mutually agreeable scheduling by which the excavator, facility owner or designer may locate the facilities.

Responses may be sent to the One Call System via its web service, or by using web ticket response on the website, or by calling the automated IVR service know as KARL at 800-222-6470 and following the prompts.

KARL receives the facility owner responses and emails or faxes the collected responses to the originator of the Locate request at the end of the business day on the response due date.

For a list of the Facility Owner responses used in the KARL system please see Appendix B - KARL System of this guide.

RESPONDING TO EMERGENCY NOTIFICATIONS

Facility owners must respond as soon as practicable following receipt of notification from the One Call System. The response by the facility owner should be consistent with the nature of the emergency information received. The expectation is that within 2 clock hours of the notice the Facility Owner will respond to the site or make direct contact with the Excavator.

- **Excavation Emergency when the scheduled excavation date is not the same day the notification is placed:**

In certain situations that fall within the definition of an emergency, but do not require immediate mark out, an emergency Locate request contains a scheduled excavation date greater than the current date. For example, a water line break during the winter months, which might freeze, causing a hazard, but can be kept safe until the next day using road salt. In such cases, the response due is 23:59:59 the calendar day prior to the scheduled excavation date.

- **Damage Emergency:**

Damage notices can be the only notification received by the one call system of active excavation activity. Facility owners should respond to damage notices in the same manner as other emergency notifications.

Repairing the damaged facility: If the original ticket scope covers the area where repair work will occur, facility owners may proceed with repairs without placing a new notification, otherwise, facility owners should place an emergency notification prior to repairing damage to their lines.

- **Odor of Gas Emergency:**

Facility owners should respond to odor of gas notices in the same manner as other emergency notifications.

- **No One Call Emergency:**

Facility owners should respond to no one call notices in the same manner as other emergency notifications.

- **Potential Cross Bore Emergency:**

Facility owners should respond to potential cross bore notices in the same manner as other emergency notifications.

RESPONDING TO COMPLEX PROJECT MEETING REQUESTS

A facility owner is required to attend and participate in preconstruction meetings for a Complex Project and to work with excavators on a schedule to mark the underground lines reasonably in advance of the actual start of excavation or demolition work for each phase of the work.

If the excavator does not believe a preconstruction meeting is necessary, it will be noted in the Complex Project notice sent to the facility owner, however, facility owners with facilities at the work site may request a meeting with the excavator and a meeting shall be held between the two parties.

When notification(s) exceed the scope of a routine Locate request as defined by the Board, or the work otherwise is determined to be complex in nature, the facility owner may designate a project as complex, and request a meeting with the excavator to determine a mutually agreeable locate schedule. Facility owners must make direct contact with the excavator to set the meeting.

RESPONDING TO DESIGN NOTIFICATIONS

Facility owners are required to initially respond to a design request for information as to the position and type of the facility owner's lines based on the information in their possession, or to mark the plans which have been provided to them by the designer, by field location or by another method agreed to with the designer.

Designers may utilize the POCS Coordinate PA application which allows for the upload of drawings at the time the design notification is made. Facility owners can access the drawings and upload pdfs of their facilities in response to the design inquiry.

RESPONDING TO RENOTIFY LOCATE REQUESTS

Facility owners are required to respond to all notifications received from the one call system.

Excavators renotify facility owners when locate request issues arise. The timing of the renotify request determines the response required of a facility owner:

- *Scenario 1:*

– On a correctly submitted non-emergency Locate request from an excavator, who, upon their initial arrival at the work site determines that "clear evidence of facilities" exists which are not marked or may be mismarked, and initiates a renotify through the one call system.

– The facility owner is required to make "direct contact" with the excavator within two hours.

– If the facility owner fails to provide sufficient information to the excavator within three hours after the renotify call to POCS, the Act does allow the excavator to begin work as scheduled, but not earlier than the lawful dig date, provided he exercises due care and uses prudent techniques in his work.

- *Scenario 2:*

– An excavator disagrees with a response a facility owner made through the one call system, but it is not their initial arrival at the work site. The one call system will capture the locate issue in the text of the renotify.

– The facility owner must respond as soon as practicable.

Alleged Violations of the Law

Facility Owners are required to submit a report of an alleged violation. Please review Section X

for the specifics regarding reporting of alleged violations of Act 287 of 1974 as amended.

SECTION VII - *RESPONSIBILITIES OF THE DESIGNER*

A Designer is any architect, engineer or other person who or which prepares a drawing for a construction or other project which requires excavation or demolition work as defined by the Act. Each designer preparing a drawing requiring excavation or demolition work within the Commonwealth shall contact Pennsylvania One Call System. The Design Notice is meant to allow the designer to plan the new work around existing facilities as the law prescribes. The notice shall be placed not less than 10, nor more than 90 business days in advance of the final design. Designers can obtain such information more than 90 days before final design is to be completed, however, they shall state in their requirements that such work is preliminary.

According to the Act, Final Design means "the engineering and construction drawings that are provided to a bidder or other person who is asked to initiate construction on the bid or date the project is set for construction in the absence of a bid".

In many instances engineering and construction drawings are prepared far in advance of the bid date or the start of construction; or last minute project owner/designer adjustments may result in changes to the proposed excavation area. Preliminary design notifications should be created. The date of the most recent design One Call Notification should never be more than 90 days prior to the project bid date or date of construction in the absence of a bid. This provides the designer with the opportunity to assess the possible impact of any recently installed underground facilities within the project area and to adjust the design accordingly prior to the bid or the start of construction. It is the Project Owner's responsibility to not release any project to bid or construction until after final design is completed. Good communication between the designer, project owner and involved facility owners is necessary to produce the most accurate construction drawings possible.

Notifying POCS is the first step and there are several other responsibilities which need to be completed. Use of the web based Coordinate PA tool will facilitate the process of notifying POCS.

When contacting POCS to request the line and facility information, the information provided should cover the entire scope of the plan or development with enough detail to allow the facility owners to provide the location of their lines in the proposed work area. As much descriptive information as you can provide shall be given to help the facility owner identify the proposed construction area. Please be as specific as you can with the location information. It is very important to describe the site in detail.

The designer shall make a reasonable effort to prepare the construction drawings to avoid damage to and minimize interference with a facility owner's facilities in a proposed construction area by maintaining the clearance as provided for in the applicable easement condition or an eighteen-inch clearance of the facility owner's facilities, where practical, if no easement restriction exists, or other clearance permitted or agreed upon.

A copy of the project plans shall be forwarded to each facility owner who requests a copy. If a designer is unable to provide a copy because of security of the project or proprietary concerns regarding the design of the project, the designer shall negotiate in a timely manner with the facility owner the means of obtaining the necessary data.

Designers are encouraged to utilize the POCS Coordinate PA application which allows for the upload of drawings at the time the design notification is made. Facility owners can access the drawings and upload pdfs of their facilities in response to the inquiry.

The designer shall show upon the drawing the position and type of each facility owner's line derived pursuant to the request made, the name of the facility owner as shown on the list from the One Call System, the serial number of the Locate request and the toll free number of the One Call System.

The designer should consult with and advise the project owner regarding the project owner's requirement to utilize sufficient quality levels of subsurface utility engineering. Design stage responsibilities of the designer and project owner are contained within the law and in the latest version of the Common Ground Alliance (CGA) Best Practices. The Act specifically requires your best efforts to comply with the CGA Best Practices. It is also imperative that the external funding requests include the use of the SUE process in the early and the final design phases. (PENNVEST has advised POCS that this is an item they will include but it must be spelled out in the initial funding request.)

For projects requiring Section 6.1(1), a competent subsurface utility engineering (SUE) provider should be used to perform ASCE 38-22 utility investigations. ASCE 38 is a process where experience, good judgement, and proper equipment, are used for each quality level of ASCE 38 to enable the designer to prepare the construction drawings to avoid damage to, and minimize interference with a facility or line. ASCE 38 Quality Level D and Quality Level C are equivalent only to the current designer notification standard under Section 4 (2) of the UULPL. ASCE 38, Quality Level B and Quality Level A should be applied for more precise horizontal and vertical data necessary for conflict identification during the design phases, when appropriate. Projects under $400,000 may utilize Levels D and C only, with the exception of a potential conflict of a facility or line. The designer should enter a complex project that has a construction drawing into the Coordinate PA portal.

As ASCE 38 data is collected, this information should be included in the construction drawings in the final design, bid, construction, and post construction purposes. Electronic as-built data collected should be entered into the post design drawings and maintained for future projects. All pre and post design data collected are required to be submitted to the One Call System. Note: For more detailed requirements, refer to Section IX, Responsibilities of the Project Owner, outlined in this Users Guide.

As with notifications of excavation work, the facility owners shall respond to design notifications through the KARL System. Note that there is a response dedicated specifically for design notifications, "082 Design Conflict. Please send plans to: <facility owner name & address>". In addition to responding through the KARL System, facility owners:

- can send plans to the designer directly, or through the Coordinate PA application (described above);
- mark the plans provided by the designer by field location or by another method agreed to by the designer, excavator and facility owner or their agent;
- or mark the facilities in the field.

The designer is required to attend and participate in preconstruction meetings on complex projects when the excavator determines that the project is a Complex Project and actually schedules a meeting. project owners are required to participate in design and preconstruction meetings either directly or through a representative. In many instances the designer may be the project owner's representative. Such meetings are encouraged to improve communications between all parties.

Annual Fee

The Act requires designers request line and facility information from facility owners and to pay the applicable fee to the One Call System. The fee is billed on the date of the first notification placed each calendar year.

During Excavation

The designer is reminded that responsibilities under the law apply to all design activities, including changes of and additions to a project on which excavation is already underway. At the end of the project all SUE data shall be forwarded to the One Call Center in enhanced .pdf format.

Alleged Violations of the Law

Designers are required to submit a report of an alleged violation. Please review Section X for the specifics regarding reporting of alleged violations of Act 287 of 1974 as amended.

SECTION VIII - *RESPONSIBILITIES OF THE EXCAVATOR (After Making the Call)*

Many people believe that by notifying the One Call System of intended excavation they have completed all of their responsibilities with respect to the locating process. This is not the

case. Notifying is only the first step, and there are several other important considerations.

Prior to the Start of Excavation

When planning excavation activities, the excavator should consider all available site information relating to the existence of underground facilities. The position of facility marks, any Subsurface Utility Engineering information contained on the project plans and the existence of visible landmarks such as meters, valve boxes, manhole covers and similar evidence should be included in the excavator's site assessment. If working on private property, check with the property owner to help identify any privately owned underground lines.

The excavator must inform each powered equipment operator employed at the site of the information obtained as a result of his notification to POCS. It also is good practice to provide this information to all workers at the site. Except in the case of an emergency, the excavator at each job site should have available a complete description of the dig site, a list of the facility owner members impacted at that dig site as identified by the one call center, and the one call ticket number.

The excavator should plan the excavation or demolition work to avoid damage to or minimize interference with underground facilities in the construction area. If the work requires temporary or permanent interruption of the facility owner's service the excavator must coordinate the work with the affected facility owner(s) in all cases.

If the excavator is using horizontal directional drilling (HDD), he must, at a minimum, utilize the best practices published by the HDD Consortium.

If requested to do so by a facility owner, the excavator must assist a facility owner in determining involvement of their lines by disclosing additional available information including dimensions and the direction of the proposed excavations.

The excavator, except in an emergency with proper notification to POCS, may not begin excavation or demolition earlier than the scheduled excavation date which can be on or after the third business day after the notification to POCS was made. In a Complex Project, the excavator may not begin excavation earlier than ten business days after notification to POCS.

Consider documenting the position of marks as soon as possible after they are placed. Be watchful for possible removal and tampering of marks. This can occur unintentionally as a result of things such as lawn mowing, normal street maintenance, activities of children playing in the neighborhood as well as normal construction activities. Please remember that weather and wear can obliterate markings. Do not pile brush or spoilage on the marking. You are responsible for the marks once the locator has left the site. If the excavator suspects that marks may have been compromised or eliminated he should contact POCS to request that the facilities be marked again.

During the Excavation Process

All underground facilities encountered during the excavation work should be considered in use and potentially dangerous unless specific information from the facility owner indicates that the facility is abandoned or otherwise not in use and does not contain any dangerous elements or by-products.

If and when the excavation operation approaches the estimated location of underground facilities, the excavator must determine the precise location of the marked facility by safe and acceptable means. This must be accomplished by the use of hand tools or vacuum excavation techniques. The Act requires the use of prudent techniques for the area considered the "TOLERANCE ZONE", which means the horizontal space within eighteen inches of the outside wall or edge of a line or facility. After locating the precise location of underground facilities through the use of prudent techniques, excavators must continue to exercise due care within the tolerance zone to avoid interference, injury or damage to the underground lines.

If a marked facility is not found within the established Tolerance Zone during excavation, the excavator should contact POCS and renotify the facility owner. If excavation continues, prudent techniques must be used until the precise location of the facility is identified or until it has been otherwise determined that the excavation is not in conflict with the facility. The excavator may be entitled to compensation from the project owner for this extra work as set forth in clauses (4) and (15) of section 5 of the Act. The project owner under the Act is any person who or which engages the excavator for construction or any project which requires excavation or demolition work as herein defined.

Work with the locator to reduce the confusion at the work site. Scheduling and cooperation can keep your job moving efficiently. Discuss your schedule and resources with the locators and set up a working relationship that can save everyone significant delays and confusion. It is always a good practice to document the work you do and record what safety instructions are given by the locator or field representative at the site.

Some facility owners have special policies because of the critical nature of their lines, (i.e. liquid pipelines, fiber optic communications, high pressure natural gas, chemical lines), and want to be on site when you are near their lines. Some facilities demand special consideration and are significant enough that your risk management policy should dictate extreme care be taken when working around these lines.

The One Call System is a mandatory organization, however, exemptions do exist. Pennsylvania One Call System (POCS) is the only One Call System in operation in Pennsylvania. Some underground facility owners have elected not to belong; in violation of the Act. Excavators are not required to make an effort to contact these nonparticipating facility owners directly before attempting an excavation, but realistically there could be a safety issue if you see indications of facilities that are not marked. It is your safety that's at risk. Entities exempt from membership under the Act are listed in the definition of "Facility Owner" and excavators should also be aware of exemptions within the definition of "Line or Facility" within the Act.

POCS is not responsible for the actual marking of facilities. It takes information from the excavator and relays it to the underground facility owners. The facility owners are responsible for ensuring that their facilities are properly marked.

Facility owners are required to respond to all notifications. POCS will collect the responses from the facility owners through the KARL system and relay it to the excavator by email or fax. When one underground facility owner indicates that there are no facilities in conflict with specific excavation, the excavator must realize that this does not mean that POCS has cleared the site, nor does it mean that other facilities are not at that location. Excavators are encouraged to verify the current status of their one call request prior to commencing excavation or demolition work by calling the POCS KARL system at 1-800-222-6470. Please see Appendix B - KARL System of this guide for further details.

Failure to Locate Facilities Prior To the Start Date

In cases where a facility owner has not responded to a correctly submitted non-emergency excavation request, or they have responded and the excavator, upon their initial arrival at the work site determines that "clear evidence of facilities" exists and are not marked or may be mismarked, the excavator must re-notify POCS. The facility owner(s) must make "direct contact" with the excavator. Excavation within the location of the unmarked or mismarked lines may not begin until receiving sufficient information from the facility owner to safely excavate. If the facility owner(s) fails to provide sufficient information to the excavator within three hours after the call to POCS, the Act does allow the excavator to begin work as scheduled, but not earlier than the lawful dig date, provided he exercises due care and uses prudent techniques in his work.

When Damage Occurs

If during the course of excavation, a facility has been exposed and/or damaged, it is the excavator's responsibility to promptly notify the facility owner so that it may be inspected and repaired, if necessary, before being backfilled. Damage can also occur from improper backfilling around exposed utilities. The excavator should support

these exposed facilities until such time as the facility owner inspects them. Failure to notify the facility owner can result in the excavator being held responsible for any and all damages attributable to the damaged facility.

Cathodic Protection techniques are often used to deal with the earth's stray electric current where steel and other metal lines are buried. If these are damaged they cause problems to the pipe or cable and must be repaired by the facility owner, and the damage should also be reported.

If the damage results in the escape of any flammable, toxic or corrosive gas or liquid which endangers life, health or property the excavator must immediately notify 911 and the facility owner. The excavator must also take reasonable measures, based on his knowledge, training, resources, experience and understanding of the situation to protect himself and those in immediate danger, the general public, property and the environment until the facility owner or emergency responders have arrived and completed their assessment of the situation. The excavator must also remain on site to convey any pertinent information to responders that may help them to safely mitigate the situation. The requirement to notify 911 is mandated by the Act and by the Federal Pipeline Safety Act.

ANNUAL FEE

The Act requires excavators to make a locate request to the One Call System prior to excavation or demolition work and to pay the applicable fee for the request. The fee is billed on the date of the first Locate request placed each calendar year.

Alleged Violations of the Law

Excavators are required to submit a report of an alleged violation. Please review Section X for the specifics regarding reporting of alleged violations of Act 287 of 1974 as amended.

SECTION IX - *RESPONSIBILITIES OF THE PROJECT OWNER*

It is the Project owner who is in the best position to influence damage prevention measures applied in the design and preconstruction phases, as well as once excavation begins, as they control the finances, scope of project, and terms in the contract.

This section of the Users Guide recognizes the value of communication between all parties to the Act. To that end POCS has launched Coordinate PA, a planning tool intended to promote collaboration, cooperation, coordination and communication among all stakeholders. It is a tool that requires participation by Project owners or their designees to populate future projects to be successful at improving project quality, eliminating potential conflicts in advance of construction, and reducing damages to existing infrastructure.

It is the duty of Project owners to utilize and pay for Subsurface Utility Engineering (SUE) in accordance with the Act. It is the Project owner who initiates design projects that will require excavation or demolition and they are its principal beneficiary. The use of SUE or other similar techniques is required on large or complex projects costing $400,000 or more. The SUE process provides a way to accurately identify the quality of subsurface utility information. (see ASCE 38-22 (SUE) PROCESS - Standard of Care section, et.seq. below).

Project owners must furnish the pertinent data obtained through subsurface utility engineering to the One Call System in a mutually agreeable format. PA One Call's Coordinate PA application is the expected repository for upload of SUE data.

Project owners must not release to bid or construction any project until after final design is completed.

For new construction and where practicable in the opinion of the Project owner, color-coded permanent markers must be installed to indicate the type and location of all laterals installed by the Project owner. These markers will assist in locating efforts in the future.

Project owners are obligated to timely respond to notifications received from the excavator when facility owners cannot accurately locate or identify all lines. When not resolved in the design phase, and an excavator must ascertain the location or lines, including unclaimed or abandoned lines, as outlined in the Act in Section 5, clause (15), the excavator is entitled to compensation from the Project owner as outlined in said clause. The Project owner has responsibility to respond to such notifications, and to compensate the excavator for such work. By utilizing the SUE process, or other similar techniques, in the Design Phase, this potential is minimized. (Refer to Section III of this User Guide, Type of Calls, #1 for information on Preliminary and Final Design notifications.)

Project owners are required to participate in design and complex project preconstruction meetings and shall encourage such meetings, as appropriate, for work they put forth that is larger than the maximum area that a routine Locate request may cover to provide for a mark out plan with existing facility owners that can be maintained and help keep the project on track.

ASCE 38-22 (SUE) PROCESS - *Standard Of Care*

The American Society of Civil Engineers (ASCE) has developed an important standard of care guideline, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, CI/ASCE 38-02. As of August 26th, 2022 ASCE 38-02 has been updated to 38-22 and 75-22 added to clarify the recording of that Data.

This standard guideline describes four quality levels of utility depiction:

Quality Level D - Information derived from existing records or oral recollections.

Quality Level C - Information obtained by surveying and plotting visible above-ground utility features and by using professional judgment in correlating this information to Quality Level D.

Quality Level B - Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities.

Quality Level A - Precise horizontal and vertical location of utilities obtained by the actual exposure and subsequent measurement of subsurface utilities, usually at a specific point.

To order a copy of ASCE Standard 38-22 and 75-22, please go to the ASCE Bookstore: http://www.pubs.asce.org/ or call 1-800-548-2723.

This Chart is taken from ASCE and FHWA brochure. Click the link below to see the Federal Highway Administration Color Brochure and note that Final Design Level is "A"

Project Application

Updated: 06/27/2017 SUE Brochure - Subsurface Utility Engineering - Utility Program - Design - Federal Highway Administration (dot.gov)

SUE Definition. The ASCE standard makes it very clear that SUE is a process, not a technology. It defines SUE as a branch of engineering practice that involves managing certain risks associated with utility coordination; utility mapping at appropriate quality levels; utility conflict analysis; utility relocation, design, and coordination; utility condition assessment; and communication of utility data to concerned parties.

How can all these items be SUE? Keep in mind that SUE today is a process. It is no longer just paint marks on the ground or vacuum excavation. These technologies are not even mentioned in the ASCE definition. They may be part of SUE, but then again, they may not be.

ASCE 38 (SUE) Process. The SUE process doesn't follow any set pattern. Rather it is tailored to individual projects. It essentially involves systematically identifying the quality of utility information needed to design a project and acquiring and managing that level of information.

The following tasks are typically performed in the SUE process:

- Identify utility owners that have facilities on or may be affected by the project. Contact these utility owners (face to face meetings are preferable) and provide them with information about

the proposed project. Schedule periodic follow-up meetings.

- When the project plans are about 30% completed, or possibly even sooner in the planning phase, provide the plans to utility owners along with a request that they review the plans and provide pertinent "as built" or other existing utility information. Obtain existing utility information from other sources. Review all information that can be obtained and plot it on a utility composite drawing or something equivalent. This is Quality Level D (QL-D) information.
- Make field observations to identify visible above-ground utility features. Survey and plot resulting information. This is Quality Level C (QL-C) information. It is correlated with the records information (QL-D). When records and features information do not agree, resolve discrepancies.
- Use appropriate surface geophysical methods (i.e., pipe and cable locators, terrain conductivity methods, resistivity measurements, metal detectors, ground-penetrating radar, etc.) to designate existing subsurface utilities or to trace a particular utility system. This provides two-dimensional horizontal information. Place paint marks on the ground. Place identification flags or stakes on the paint marks or coding on the pavement at 50-foot intervals and survey to project control. Depict resulting information in the client's computer-aided design and drafting (CADD) system, Geographic Information System (GIS), and/or manually plotted plan sheets. This is Quality Level B (QL-B) information. If requested by the project owner, also survey and depict information about aerial utilities.
- Resolve differences between QL-B, QL-C, and QL-D information. This may involve additional surface geophysical searches and/or actual exposure of some subsurface utilities. This may require re-depicting utilities that have previously been depicted in order to present the more accurate information.
- Develop a conflict matrix showing all possible conflicts. This involves comparing depicted utilities information with proposed plans (highway, bridge, drainage, maintenance of traffic, and other). The resulting matrix contains columns to record the physical location of each conflict, the name of the utility involved, the nature of the conflict, and action needed. Upon analyzing the information recorded on the matrix, it will be obvious that some conflicts can be readily resolved, some conflicts are questionable and additional information is needed, and some conflicts cannot be resolved.
- Convene and facilitate a meeting with utility companies to discuss potential conflicts and other aspects of the project. Discuss possible strategies to avoid conflicts and identify locations where additional three-dimensional information is needed.
- Expose selected subsurface utilities to obtain three-dimensional information. Use minimally intrusive excavation methods, such as vacuum excavation. Depict resulting information using computer-aided design and drafting or manual plotting methods onto plan sheets. This is Quality Level A (QL-A) information.
- Resolve differences between QL-A information and the previously obtained QL-B, QL-C, and QL-D information. Depict new and corrected information. Go back to the conflict matrix with the new QL-A information to determine the status of conflicts requiring additional information. Meet with utility companies to discuss these conflicts and possible strategies to avoid utility relocations.
- Deliver depicted information to the project owner. The basic deliverables for utility information are a CADD file, a GIS file, or a plan sheet that has utility information in plan view for Quality Levels A, B, C, and D and utility information in plan and profile view for Quality Level A.
- Work with the project owner's designers to be sure they understand the information provided and to suggest possible ways to avoid conflicts.
- Where conflicts cannot be avoided, and utilities will have to be relocated:
  - Determine prior rights.
  - Obtain relocation cost estimates and plans from utility companies.
  - Prepare utility relocation agreements.
  - Provide utility relocation design.
  - Acquire necessary right-of-way.
- Store pipe location and condition information in a database for asset management.
- Work with utility companies, one-call centers, and contractors during construction as needed.
- Continue to represent the project owner in all utility-related activities as the project progresses.

In regard to the above tasks, several important things need to be kept in mind:

- These tasks may be provided by the project owner but are more commonly performed by a SUE provider working closely with the project owner. They are most effectively utilized when coordinated by a capable utility coordinator employed by the provider. The utility coordinator is responsible for working with the owner and the affected utilities to determine the need for each task and to assure selected tasks are performed properly and expeditiously.
- These tasks may be used in a different order than that prescribed above (i.e., it may sometimes be more practical to perform (a) QL-C tasks before and/or in conjunction with QL-D tasks, and/or (b) QL-B tasks before and/or in conjunction with QL-C or QL-D tasks).
- Some of these tasks should be used on every project, but it may not be necessary to use all of them (e.g., QL-D and QL-C information may be all the information deemed necessary for projects under $400,000). If not willing to accept potential risks involved in using only QL-D and QL-C, project owners may opt to obtain additional information using QL-B and QL-A or other methods. Determinations may be made every step of the way until acceptable risk levels are achieved.

No matter how many tasks are employed or in what order they are applied, it is all the SUE process.

Alleged Violations of the Law

Project owners are required to submit a report of an alleged violation. Please review Section X for the specifics regarding reporting of alleged violations of Act 287 of 1974 as amended.

SECTION X - *ENFORCEMENT AND REPORTING ALLEGED VIOLATIONS*

The UULPL assigns enforcement authority to the Pennsylvania Public Utility Commission (PUC) and established a Damage Prevention Committee (DPC). The DPC has the authority to review reports of alleged violations, issue warning letters, issue informal determinations that impose administrative penalties, and require persons to attend a damage prevention educational program. Affected parties have various rights regarding informal determinations, including the right to be heard, and the right to appeal administrative penalties; however, most cases are likely to be resolved at this level.

The DPC appointed by the PUC, consists of members of various stakeholder groups, as well as the PUC, the Department of Transportation, and Pennsylvania One Call System, with the PUC representative serving as the chairman. (See Section 7.8 of the UULPL.)

The PUC also has the right, in appropriate cases, to file criminal and civil complaints against violators. Such action is more likely to occur where there is death, personal injury, or significant property damage, or in the case of repeat offenders.

The PUC has established a full-time enforcement staff specifically for the UULPL. In addition, the PUC will issue regulations that describe how both enforcement and the DPC will operate, consistent with the UULPL. Initially, these will be temporary or interim regulations, but, eventually, they will become permanent regulations. The PUC has the power to amend the regulations, as well.

Alleged Violations

All Alleged Violation Reports are to be submitted via the POCS website under the Enforcement section.

Excavators, designers, project owners, and facility owners shall submit an alleged violation report to the commission through the One Call System for instances when a person by action or inaction fails to fulfill the obligation of the Act. The report of alleged violation shall be in a form and manner as required by the commission. An Alleged Violation Report (AVR) is submitted from the POCS website under the Enforcement section.

- Facility Owner - Submit a report of alleged violation not more than thirty business days after receipt of notice that the facility owner's

lines have been damaged by excavation or demolition work or if the facility owner believes a violation of this act has been committed in association with excavation or demolition work. No report may be required where the cost to repair the damage to the facility owner's lines is less than two thousand five hundred dollars ($2,500), unless the same person damaged the facility owner's lines two or more times within a six-month period.

- Designer - Submit a report of alleged violation not more than thirty business days from the time the designer becomes aware that a violation of this act may have been committed in association with excavation or demolition work.
- Excavator - Submit a report of an alleged violation not more than ten business days after striking or damaging a facility owner's line during excavation or demolition or if the excavator believes a violation of this act has been committed in association with excavation or demolition work.
- Project Owner - Submit a report of alleged violation not more than ten business days after striking or damaging a facility owner's line during excavation or demolition work activities, after a project owner's contracted excavator strikes or damages a facility owner's line during excavation or demolition activities or if the project owner believes a violation of this act has been committed in association with excavation or demolition.

When notified of an alleged violation, the stakeholder should fully investigate circumstances involved with the alleged violation.

Designate one person from your organization as a "contact person" to administer these alleged violation reports.

Pennsylvania One Call System is not responsible for the issuance of citations or enforcement under this statute.

Alternate Dispute Resolution

Pennsylvania One Call System has the authority under the statute to create and administer a voluntary payment dispute resolution process for all parties involved with the statute. This process may not be used to settle or resolve alleged violations of the law.

SECTION XI - *TAMPERING WITH MARKS*

Under the law owners of underground facilities such as pipe lines, electric, communication and other types of lines are required to place physical marks on the surface of the ground within 18" of the actual underground position of the lines, identifying the size, type and number of lines when an excavator makes a request to locate through Pennsylvania One Call System, Inc. These marks help the excavator determine, in advance of excavation, where the safety (tolerance) zone of the buried lines is so the excavator can use prudent techniques to safely excavate without causing damage to the underground facility within the tolerance zone. This process greatly reduces the chance that an existing line will be damaged during excavation activities.

It is important that these marks remain visible and unaltered until all excavation in the area is completed. Accurate marks for underground lines result in safer excavations with fewer damaged lines. Removing, moving or otherwise tampering with marks for underground facilities increases the chance of damage to the line. This can result in injury and even death to those in the immediate vicinity. It also can cause interruption of service to you and your neighbors and may result in costly repairs that could increase your monthly utility bills.

Marks that have been removed, moved or otherwise tampered with are never accurate and could prove to be deadly! The color, style, method and location of marks communicate critical information to the excavator. If you witness or otherwise have reason to believe that someone has tampered with underground utility marks, please immediately notify the excavation company and Pennsylvania One Call System, Inc. POCS may be contacted by dialing 8-1-1 or 1-800-242-1776.

Tampering with underground facility marks, even if those marks are placed on private property, violates Section (10) of PA Act 287, as amended.

Accurate marks result in safer excavations for everyone!

SECTION XII - *WEBSITE TOOLS*

POCS provides a variety of online tools to stakeholders: Excavators, Designers, Facility owners (members), and homeowners. All are available at **www.paonecall.org** to authenticated users.

A user account is needed to gain access to any and all of POCS's online tools. To create a user account, navigate to **www.paonecall.org** and select "Create Account" in the black bar at the top of the homepage. The following information, at a minimum, is needed to create a user account: First and Last Name; Company; Email address; Street Address; City, State, Postal Code; Desired user name and Password. Other information (such as title, company name, telephone number) is helpful to POCS but not required to create an account. When the form is completed, click the <save> button at the bottom of the form. The website will validate the information provided and create an account.

To gain access to online tools, navigate to **www.paonecall.org** and select "Sign In" from the black bar at the top of the homepage. Then choose "Request Applications" from the "Applications" menu selection in the red bar near the top of the screen. Then check the applications you wish to gain access to and click the <Request> button at the bottom.

The request will be pending until a Member Services Representative reviews the request and grants access. Not all applications are available to all users – for example, the "Member Database Verification" application is only available to users who work at a member company and are responsible for maintaining their information on file with PA One Call. When access is granted, the user is notified via email or a telephone call.

What online applications are available to authenticated users?

Coordinate PA (CPA). This web service application developed to support Public Works (governmental) and Utility advance planning to aid in design and project planning collaboration and cooperation.

POCS maps are used to display participating project scopes and phases to make it easy for contributors to identify collaborative project opportunities far enough in advance to recognize cost savings and minimize disruption to the public through sharing and coordination of their effort.

CPA integrates with POCS's Web Ticket Entry process to create Design and Excavation notifications from the project coordination tool to increase project safety and reduce project costs as required by Pennsylvania's Underground Utility Line Protection Law.

Pennsylvania coordinating committees meet to share their projects and project plans in an effort to find overlap in construction work. A list of coordinating communities is available in the Resource Center of the POCS website.

CPA also facilitates the exchange of electronic design files between a facility owner and a designer for design tickets. Instead of sending paper copies of design files to facility owners that request them, the designer can upload an electronic file for the facility owner to view, determine their involvement, and upload pdfs of existing facilities which then appear as layers within the application so the designer can view them to plan their work.

Facility Owner Billing. This application for underground facility members to view and pay PA One Call invoices electronically.

Member Database Verification. This application facilitates online verification without the need for a paper form. POCS verifies facility owner information on file every year. The member is asked to verify all information on file, including business address, contact information, municipalities where the member owns or operates underground facilities, and maps of their notification area(s).

Member Mapping. This application is a geospatial mapping tool used by facility owners to describe notification areas within the municipalities where the member owns or operates underground lines. The member draws points, lines or polygons on a map to indicate where they want to be notified of excavation activities.

POCS accepts shapefiles. These notification areas are compared to the proposed excavation area on a ticket. No overlap between the proposed excavation area and the member notification area indicates that excavation will not occur near the member's underground facilities, and ticket receipt to the member is suppressed.

Online Ticket Management. This application facilitates viewing the ticket database for facility owners, excavators, and designers. The facility owner can query the database for their tickets within a specified date range and filter on a variety of ticket attributes such as CDC, ticket action type, ticket county or ticket municipality, and response status. The excavator or designer can query the database for their tickets within a specified date range and filter on a variety of ticket attributes such as ticket action type, ticket county or ticket municipality, and facility owner responses and notes. A map is provided to both Facility Owners and Excavators to utilize a spatial search of the tickets received or placed, respectively. The center point of the notification area is represented by a blue or red dot. The red dots indicates the emergency tickets.

Web Single Address. This application is for Professional Excavators and Property Owners to submit an individual or "residential" address to request an underground facility line location prior to digging.

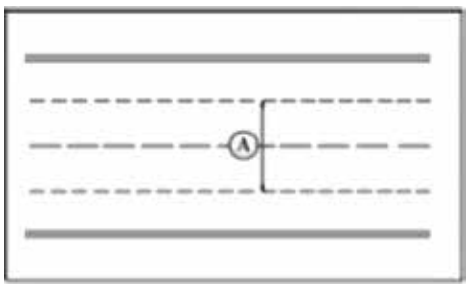
Web Ticket Entry. This application is an online or mobile application for excavators to enter design, construction or emergency location requests without contacting POCS by telephone.

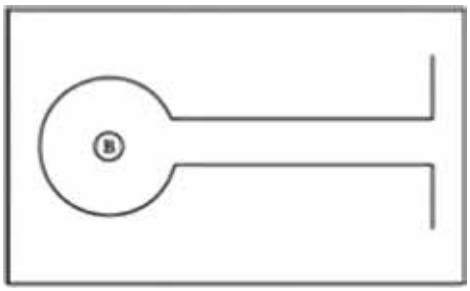
Web Ticket Response. This application is an online or mobile application that records ticket responses from facility owners. The facility owner logs in to the system and can view a color coded list of tickets, including tickets that need a <CLEAR> or <MARKED> response. Notes are accepted, saved for viewing with each response in our online applications, and shared with the excavator.

Appendix A

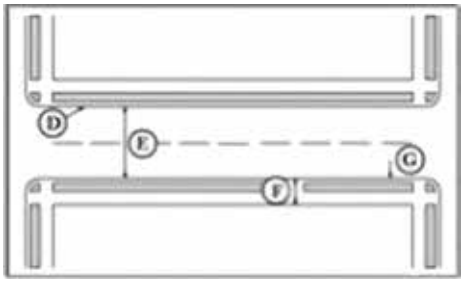
Terminology often used when creating a notification

A. Center Lane(s) – In a four-lane street, the two lanes at the center of the pavement.
B. Cul-de-sac – A local street open at one end with a special provision for turning around.

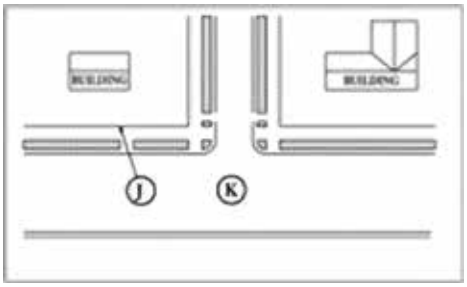




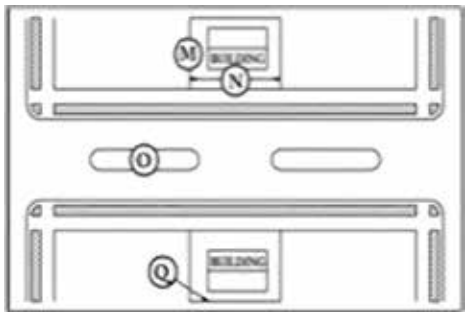
C. Culvert (not pictured) – Any pipe or structure under a roadway or driveway to facilitate drainage of surface water.
D. Curb Lane(s) – Traffic or parking lane immediately adjacent to the curb.
E. Curb to Curb – The paved area of a road right of way between the two curb lines.
F. Curb to Property Line – The area between the curb and the front property line.



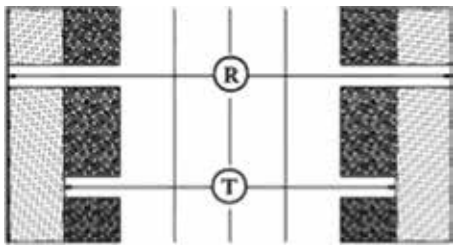
G. Curb Line – The point where the curb meets the edge of the street pavement.
H. Easement (not pictured) – A right to use or control the property of another for designated purposes.
I. Frontage Road (access road - not pictured) – A local street or road auxiliary to and located on the side of an arterial highway for service to abutting property and adjacent areas and for control access.
J. Front Lot Line – (Same as street right of way line) the property line adjacent to the street right of way.
K. Intersection – The general area where two or more highways join or cross, within which are included the roadway and roadside facilities for traffic movements in that area.



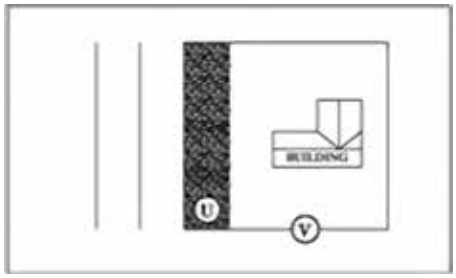
L. Interchange (not pictured) – A system of inter-connecting roadways in conjunction with one or more grade separations providing for the movement of traffic between two or more roadways on different levels.
M. Lot Line – A line marking the legal limits of an individual's property.
N. Lot Line to Lot Line – The area between the two side lot lines on private property and the entire road right of way (See R.)
O. Median – The portion of a divided highway separating the traveled ways for traffic in opposite directions.
P. Property Line – See Lot Line (M).
Q. Rear Lot Line(s) – Property lot line at the rear of the lot (area opposite street that connects the two side lot lines).



R. Right of Way – Dedicated street areas bounded by two generally parallel lines called right-of-way lines. Another name for these lines is front property lines.



S. Road (not pictured) – Highway in rural area.
T. Roadway – The portion of a highway, including shoulders, for vehicular use.
U. Shoulder – The edge of a road (generally gravel) between normal traffic lanes and grass areas. The term normally used in areas where there is no curb.
V. Side Lot Line(s) – The two property lines, which normally extend away from the street right-of-way.



W. Street (not pictured) – Highway in an urban area.
X. Tolerance Zone (not pictured) – The horizontal space within eighteen inches of the outside wall or edge of a line or facility.

Appendix B

The KARL System (Kathy Automated Response to Location requests)

Overview

Pennsylvania One Call System, Inc. (POCS) has created a voice relay and response solution that automates the call out process to facility owner members requesting supplemental voice relay of information on emergency notifications; allows facility owner members to respond to all notifications; faxes or emails excavators/designers with the collected responses; and allows excavators/designers to retrieve information about their responses.

When an excavator/designer calls into the system a customer service representative (CSR) will enter the ticket information into the POCS computer system as a Locate request (WLR). Excavators and designers who have registered with POCS may also create their own WLRs utilizing Web Ticket Entry. Each WLR is assigned a unique serial number. Based on information within the ticket the computer system assigns a message type and determines if voice notification has been requested by a facility owner member. This information is passed to the KARL System.

KARL determines the priority of the voice message and queues a voice call out request for each pertinent facility owner. When a facility owner answers a voice call out KARL speaks the WLR information. Upon completion of the callout, KARL records the outcall status as successful or failed.

Anytime during voice relay of an emergency, KARL will accept responses to the spoken WLR information. When a facility owner responds, KARL will record their response in the database. On all other WLR's, KARL will accept responses through telephone input, data transfer, or web ticket response.

On the response due date, KARL will fax or email the results to the excavator/designer who initiated the WLR, to inform them of the status. If a response is not received for a facility owner by the response due date, KARL will send a "No response" indication for that facility owner. At any time, the excavator/designer may call into KARL to inquire the current status of the WLR.

With the exception of 007 and 999, each response code has a "note" section, which Facility Owners may use to relay additional information to the excavator, designer, or homeowner.

KARL Responses - Uses and Constraints

NOTE: INTERIM responses require an update to a valid FINAL response.

001 CLEAR. NO FACILITIES OR FACILITIES NOT INVOLVED BASED ON TICKET INFORMATION.

- Facility Owner has no underground lines at the site as described in the Locate request.
- This is considered a final response under the law.

002 CONFLICT. LINES NEARBY. DIRECT CONTACT TO FOLLOW BY FACILITY OWNER.

- Facility Owner may have underground lines at the site and will contact excavator directly at the contact information provided on the Locate request.
- This is considered an interim response under the law and should be updated with a Clear (001) or Field Marked (003) response after contact is established with the excavator.

003 FIELD MARKED.

- A locator was dispatched and physically marked lines at the work site.
- This is considered a final response under the law.

004 INSUFFICIENT INFORMATION. DO NOT DIG.

- Facility Owner cannot make a determination of their involvement based on the information provided by the excavator on the Locate request.
- The facility owner should attempt to contact the excavator to obtain additional information, or instruct the excavator to call in a new Locate request.
- This is considered an interim response under the law and should be updated with a Clear (001) or Field Marked (003) response after contact is established with the excavator.

005 NOT MARKED DUE TO NO ACCESS.

- Facility Owner has a conflict but could not mark their lines at the site because the locator could not gain access to the location caused by things such as a bad dog, locked gate or other security measures.
- The facility owners should attempt to contact the excavator to arrange for access.
- This is considered an interim response under the law and should be updated with a Clear (001) or Field Marked (003) response after contact is established with the excavator.

006 SCHEDULED A DATE AND TIME LINES WILL BE MARKED BY: <Facility Owner enters date and time>

- Facility Owner will mark the lines at the site by the mutually agreed upon date and time.
- This is considered an interim response under the law and should be updated with a Field Marked (003) response once marking is complete.

007 VOICE MESSAGE (TEMPORARY)

- Facility Owner recorded a message to convey information to the excavator that is different from the standard KARL responses. It is important to note that this is a temporary message that is only saved for 30 days and is not considered a final response under the law.
- This is considered an interim response under the law and should be updated with a Clear (001) or Field Marked (003) response once contact is established with the excavator.

082 DESIGN CONFLICT. SEND PLANS TO: <system completes Facility Owner name & address from file>

- Facility Owner has lines at the site and the design drawings should be sent to them for markup.
- This is considered an interim response under the law and should be updated with an Engineering Completed (083) response once plans are marked up and returned to the designer, or updated with a Clear (001) response if after review of the plans, the Facility Owner determines no conflict exists.

083 ENGINEERING COMPLETED. A PDF FILE OR MARKED UP PLANS WERE SENT TO THE REQUESTOR.

RESPONSE CODES	
001	Clear. No facilities or facilities not involved based on ticket information.
002	Conflict, lines nearby, direct contact to follow by facility owner.
003	Field Marked.
004	Insufficient information, do not dig.
005	Not marked due to no access.
006	Scheduled date of mark.
007	Voice Message (temporary communication valid for 30 days)
082	Design conflict – Please send plans to (facility owner's address will be provided).
083	Engineering Completed – A PDF file or marked up planes were sent to the requestor
090	Will Attend Meeting
091	Clear – Will Not Attend Meeting
092	Requests Meeting
095	Did not attend meeting
096	Agrees No Meeting Required
099	Attended Meeting
999	Did Not Respond Through PA One Call. (system generated response when no response received from facility owner)

• The Facility Owner has answered the designer's request for plans by uploading a PDF of their lines, or marked up the PDF provided by the designer. Alternately, the Facility Owner may email or mail hard-copy, marked up drawings to the requestor.
• This is a final response under the law.

090 WILL ATTEND MEETING.
• Facility Owner may have underground lines in the area of the complex project and will attend the meeting.
• The law requires Facility Owners to attend complex project meetings when requested by the excavator.
• This is considered an interim response under the law and should be updated with a Clear (001), Field Marked (003), or Attended Meeting-Reached Agreement (099) response.

091 CLEAR. WILL NOT ATTEND MEETING.
• Facility Owner has no underground lines in the area of the complex project and will not attend the meeting.
• This is a final response under the law.

092 REQUESTS MEETING. DIRECT CONTACT TO FOLLOW BY FACILITY OWNER
• The Facility Owner is designating the work as complex for their company. The Facility Owner will contact the excavator. DO NOT DIG until the facility owner and excavator agree on a mark out schedule.
• Excavators are required by law to conduct a meeting with any Facility Owner that requests it.
• This is considered an interim response under the law and should be updated with a Clear (001) or Field Marked (003) response.

095 DID NOT ATTEND MEETING. DIRECT CONTACT TO FOLLOW BY FACILITY OWNER.
• Facility Owner may have a conflict at the site, but was unable to attend the preconstruction meeting.
• The Facility Owner should attempt to contact the excavator to set a one-on-one meeting.
• This is considered an interim response under the law and should be updated with a Clear (001), Field Marked (003), or Attended Meeting-Reached Agreement (099) response.

096 AGREES NO MEETING REQUIRED.
• Facility Owner agrees that a meeting is not required for this complex project.
• This is an interim response under the law and should be updated with a Clear (001) or Field Marked (003) response.

099 ATTENDED MEETING. REACHED AGREEMENT.
• The Facility Owner attended the meeting, has determined there is a conflict, and reached an agreement on a locate schedule.
• This is considered a final response under the law.

999 DID NOT RESPOND THROUGH PA ONE CALL.
• System generated response when no response is received from Facility Owner prior to the response due date.
• This is a violation of the law.

USING THE INTERACTIVE VOICE RESPONSE SYSTEM (KARL):

Users of the KARL response system will be required to enter numeric and alphabetic answers to interact with the voice response unit. These responses may be entered verbally or by using the telephone keypad. At different times in the script, KARL may ask facility owners for the member call directing code (CDC), for the initials of the person entering responses or accepting supplemental voice out-dials, and to confirm the company telephone numbers. KARL will ask excavators and designers for their company telephone number, for serial numbers, and the initials of the person performing the inquiry. It is best to speak the answers.

If you choose to enter your alphabetic response by using the telephone keypad you must translate the letters into numbers. To translate letters into numbers for entry into KARL, look at the letter on the telephone keypad and the letter's position on the key. For the letter Q enter 11 and for the letter Z enter 12.

For example, if your initials are SAM, you would enter the number 7 matching the key where the S is found, followed by the position of the letter S which is 3. The numeric representation for the letter S would be 73. The A would be 21 and the M would be 61.

K	A	R	L
52	21	72	53

1	ABC 2	DEF 3
GHI 4	JKL 5	MNO 6
PRS 7	TUV 8	WXY 9
*	0	#

Facility Owner Response and Excavator/ Designer Inquiry

Responses are initiated by facility owners after they have researched the serial number information delivered to them during the notification phase. Facility owners are required to respond to design stage serial numbers within ten business days of the creation date of the serial number, and by the response due date on construction serial numbers. Responses will be accepted from the facility owner after entering the member CDC and the initials of the person initiating the response. Serial number responses may be updated by a facility owner multiple times. The last response made will be included on the Response to Caller email/fax transmission.

Inquiries can be initiated by excavators and designers, who can listen to the current status of the serial number they entered. The date/time of the inquiry will be recorded in the database.

Facility Owner Response

Action required: Call KARL at 1-800-222-6470
KARL will say: "Thank you for calling the Pennsylvania One Call serial number response system. " Please indicate the type of caller you are. Press or say 1 for excavator, press or say 2 for facility owner, press or say 3 for homeowner. To speak with a customer service representative, press or say 0."

Action required: PRESS or SAY 2
KARL will say: "Please enter your CDC code. Press or say 7 for help on how to enter your cdc code numerically."

Action required: Enter your two or three digit cdc.
KARL will say: "CDC <cdc> is for <facility owner name>. If this is correct, press or say 1. If this is not correct, press or say 2. To speak with a customer service representative, press or say 0."

Action required: PRESS or SAY 1
KARL will say: "Please enter or say your initials. Press or say 7 for help on how to enter your initials numerically."

Action required: Enter or say at least two initials (4 numbers). KARL will accept three initials (6 numbers).
KARL will say: "The initials you have entered are <initials>. If this is correct, press or say 1. If this is not correct, press or say 2. To speak to a customer service representative press or say 0".

Action required: PRESS or SAY 1
KARL will say: "Please enter or say the one call serial number."

Action required: Enter your 11 digit serial number.
KARL will say: "The work location for ########### is for <work site address>. If this is correct, press or say 1. If this is not correct, press or say 2. To speak with a customer service representative, press or say 0."

Action required: PRESS or SAY 1.
KARL will say: "What is the status of this ticket?"
– "If this location is clear, no facilities or facilities not involved press or say 1.
– If this location has Conflict, lines nearby

direct contact to follow by facility owner, press or say 2.
– If this location is field marked, press or say 3.
– If this location has insufficient information, do not dig, press or say 4.
– If this location is not marked due to no access, press or say 5.
– If you will schedule a date and time for the mark, press or say 6.
– If you would like to leave a voice message, press or say 7.
– If there is a design conflict, press or say 82.
– If a PDF file is marked up plans were sent to the requestor, press or say 83.
– If you will attend the meeting, press or say 90.
– If you are clear and will not attend the meeting, press or say 91.
– If you have a possible conflict, require a meeting, and will make direct contact with the excavator, press or say 92.
– If you did not attend the meeting due to an unforeseen circumstance, and will make direct contact with the excavator, press or say 95.
– If you agree that no meeting is required, press or say 96.
– If you attended the meeting, reached agreement, and plan to follow the locate schedule, press or say 99."

Action required: PRESS or SAY 1, 2, 3, 4, 5, 6, 7, 82, 83, 90, 91, 92, 95, 96, or 99.
KARL will say:
– If 1: "You selected, clear, no facilities or facilities not involved."
– If 2: "You selected, conflict, lines nearby direct contact to follow by facility owner."
– If 3: "You selected, field marked."
– If 4: "You selected, insufficient information, do not dig."
– If 5: "You selected, not marked due to no access."
– If 6: "You selected, to mark by <date> 2359."
– If 7: "You will now be given the opportunity to record a message to be left with this serial number, to continue press or say 1, to return to the previous menu, press or say 2."
– If 82: "You selected, design conflict."
– If 83: "You selected, a PDF file or marked up plans were sent to the requestor."
– If 90: "You selected, will attend meeting."
– If 91: "You selected, clear - will not attend meeting."
– If 92: "You selected, requests meeting, direct contact to follow by facility owner."
– If 95: "You selected, did not attend meeting, direct contact to follow by facility owner."
– If 96: "You selected, agrees no meeting required."
– If 99: "You selected, attended meeting, reached agreement."
KARL will say: "Your response to serial number ########## has been accepted. If you would like to enter a response for another ticket, press or say 1. If you would like to enter ticket response for a different CDC press or say 2. If you have no more ticket responses, please hang up."

Excavator/Designer Inquiry
Action required: Call KARL at 1-800-222-6470
KARL will say: "Thank you for calling the Pennsylvania One Call serial number response system." Please indicate the type of caller you are. Press or say 1 for excavator, press or say 2 for facility owner, press or say 3 for homeowner. To speak with a customer service representative, press or say 0."

Action required: PRESS or SAY 1.
KARL will say: "Please enter or say the One Call serial number."

Action required: Enter or say your 11 digit serial number.
KARL will say: "Please enter or say your company's 10-digit phone number."

Action required: Enter or say the phone number used when the dig notice was created.

KARL will compare the phone number entered against the phone number associated with the serial number. If they match, KARL will speak the phone number and company name.
KARL will say: "If this is correct, press or say 1, If this is not correct, press or say 2. To speak to a customer service representative press or say 0."

Action required: PRESS or SAY 1.
KARL will say: Please enter or say your initials. Press or say 7 for help on how to enter your initials numerically.

Action required: Enter or say at least two initials (4 numbers). KARL will accept three initials (6 numbers).
KARL will say: "The initials you have entered are <initials>. If this is correct, press 1. If this is not correct, press or say 2. To speak to a customer service representative press or say 0."

Action required: PRESS or say 1
KARL will say: "The work location for serial number ########## is for < work site address>. If this is correct, press or say 1. If this is not correct, press or say 2. To speak to a customer service representative press or say 0."

Action required: PRESS or say 1.
KARL will retrieve the status of each utility that has responded to the current ticket and speak the response to the excavator/designer. If an excavator/designer presses 2, they will be given another opportunity to enter a different serial number.

KARL will say: "To hear this serial number's information again, press or say 1. To enter a new One Call serial number, press 2. To speak with a customer service representative, press 0. To end this call, please hang up."

Action Required: Hang Up.

Facility Owner Notification
As directed by the facility owner, on serial numbers requiring supplemental outcall notification, such as emergency notifications out of normal business hours, KARL will attempt to deliver information for all serial numbers that apply to the contacted facility owner within the same call. The outcall will be considered a success and removed from the outcall queue after the field "location information" has been spoken to the facility owner member. Outcalls will be limited to one attempt per member CDC. After each outcall attempt the resulting successful or failed status of the outcall will be entered into the database.

To ensure successful facility owner out-dials please follow these instructions when KARL calls you:

Action required: Answer the telephone
KARL will say: "Hello, this is the Pennsylvania One Call. We have an emergency location request for you. Press or say one to continue."

Action required: PRESS or say 1
KARL will say: "Please enter or say your company's ten-digit phone number."

Action required: Enter the telephone number designated for emergency notifications, which is the telephone number KARL dialed.
KARL will say: "Please enter or say your initials. Press or say 7 for help on how to enter your initials numerically.

Action required: Enter or say at least two initials (4 numbers). KARL will accept three initials (6 numbers).
KARL will say: "The initials you have entered are <initials>. If this is correct, press or say 1. Press or say 7 for help on how to enter your initials numerically."

Action required: PRESS or SAY 1.
KARL will speak the serial number, the proposed dig date and time; the work-site county, municipality, address, nearest intersection and location information of the WLR.
KARL will say: "To repeat this information, press or say 1. To respond to this serial number now, press or say 2. To continue, press or say 3. To speak with a service representative, press or say 0. To end this call, please hang up."

Action required: PRESS or SAY 1, 2, or 3.
– If 1: KARL will repeat the information.
If 2: KARL will accept your response to the serial number (see Response Section).
– If 3: KARL will continue and speak the excavator name.
KARL will say: "The excavator is <excavator name>. For detailed information on this excavator, press or say 1. To continue, press or say 2."

Action required: PRESS or SAY 1 or 2.
– If 1: KARL will speak the excavator address,

caller name, caller phone number, person to contact and contact phone number.
– If 2: KARL will speak the type of work, the extent of excavation, if the excavation is on the street, sidewalk, public property, private property, who the work is being done for, and remarks.

Appendix C
Underground Utility Line Protection Law
AKA PA One Call Law

SB242 ACT 50 Signed: 10/30/2017
PN1227 2017 Effective: 4/28/2018
73 P. S. § 176 et. seq.

Reprinted by Pennsylvania One Call System, Inc. The purpose of this reprinting is to provide those affected with a complete copy of the ACT.
www.pa1call.org/usersguide
http://commongroundalliance.com/programs/best-practices

Note: Changes are shown in bold italics.
Notes in red are POCS clarifications.

AN ACT
Amending the act of December 10, 1974 (P.L.852, No.287), entitled, "An act to protect the public health and safety by preventing excavation or demolition work from damaging underground lines used in providing electricity, communication, gas, propane, oil delivery, oil product delivery, sewage, water or other service; imposing duties upon the providers of such service, recorders of deeds, and persons and other entities preparing drawings or performing excavation or demolition work; and prescribing penalties," further providing for title and for definitions; providing for lawful start date; further providing for duties of facility owners, for duties of the One Call System, for duties of other parties, for duties of excavators, for duties of designers, for duties of project owners, for audits and for penalties; providing for enforcement, for damage prevention committee and for compliance; and further providing for One Call System authority and for expiration.

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

SECTION 1.

The title and section 1 of the act of December 10, 1974 (P.L.852, No.287), referred to as the Underground Utility Line Protection Law, are amended to read:

AN ACT
To protect the public health and safety by preventing excavation or demolition work from damaging underground lines used in providing electricity, communication, gas, propane, oil delivery, oil product delivery, sewage, water or other service; imposing duties upon the providers of such service and persons and other entities preparing drawings or performing excavation or demolition work; and prescribing penalties.

TERMS TO BE USED IN THIS ACT - DEFINITIONS
Section 1. The following words and phrases when used in this act shall have the meanings given to them in this section unless the context clearly indicates otherwise:

"Abandoned" means no longer in service and physically disconnected from a line.

"Alleged violation" means an instance when a person by action or inaction fails to fulfill the obligations of this act.

"Business day" means any day except a Saturday, Sunday or legal holiday prescribed by statute. A business day begins at 12:00:00 a.m. and ends at 11:59:59 p.m.

"Chairman" means the Chairman of the Pennsylvania Public Utility Commission.

"Commission" means the Pennsylvania Public Utility Commission.

"Committee" means the damage prevention committee established under section 7.8.

"Common Ground Alliance best practices" means the damage prevention industry recommended standards issued by the Common Ground Alliance, a not-for-profit corporation created pursuant to the issuance of the United States Department of Transportation's Common Ground Task Force report in 1999.

"Complex project" means an excavation that involves more work than properly can be described in a single locate request or any project designated as such by the excavator or facility owner as a consequence of its complexity or its potential to cause significant disruption to lines or facilities and the public, including excavations that require scheduling locates over an extended time frame.

"Consumer Price Index" means the index of consumer prices developed and updated by the Bureau of Labor Statistics of the United States Department of Labor.

"Conventional oil and gas well" means a conventional oil and gas well as defined in section 2 of the act of June 23, 2016 (P.L.375, No.52), known as the Pennsylvania Grade Crude Development Act.

"Demolition work" means the partial or complete destruction of a structure, by any means, served by or adjacent to a line or lines.

"Designer" means any architect, engineer or other person who or which prepares a drawing for a construction or other project which requires excavation or demolition work as herein defined.

"Emergency" means a sudden or unforeseen occurrence involving a clear and immediate danger to life, property and the environment, including, but not limited to, serious breaks or defects in a facility owner's lines.

"Excavation work" means the use of powered equipment or explosives in the movement of earth, rock or other material, and includes, but is not limited to, anchoring, augering, backfilling, blasting, boring, digging, ditching, drilling, driving-in, grading, plowing-in, pulling-in, ripping, scraping, trenching and tunneling. The term does not include soft excavation technology such as vacuum, high pressure air or water, tilling of soil for agricultural purposes to a depth of less than eighteen inches, performing minor routine maintenance up to a depth of less than eighteen inches measured from the top of the edge of the cartway or the top of the outer edge of an improved shoulder, in addition to the performance of incidental de minimis excavation associated with the routine maintenance and the removal of sediment buildup, within the right-of-way of public roads or work up to a depth of twenty-four inches beneath the existing surface within the right-of-way of a State highway, **work performed by persons whose activities must comply with the requirements of and regulations promulgated under the act of May 31, 1945 (P.L.1198, No.418), known as the Surface Mining Conservation and Reclamation Act, the act of April 27, 1966 (1st Sp.Sess., P.L.31, No.1), known as The Bituminous Mine Subsidence and Land Conservation Act, or the act of September 24, 1968 (P.L.1040, No.318), known as the Coal Refuse Disposal Control Act, that relate to the protection of utility facilities or the direct operations on a well pad following construction of the well pad and that are necessary or operations incidental to the extraction of oil or natural gas.**

"Excavator" means any person who or which performs excavation or demolition work for himself or for another person.

"Facility owner" means the public utility or agency, political subdivision, municipality, authority, rural electric cooperative or other person or entity who or which owns or operates a line. The term does not include the Department of Transportation within a State highway right-of-way. The term does not include any of the following:

(1).A person serving the person's own property through the person's own line, if the person does not provide service to any other customer.

(2) A person using a line which the person does not own or operate, if the use of the line does not serve more than a single property.

"Federal pipeline safety laws" means the provisions of 49 U.S.C. Ch. 601 (relating to safety), including the regulations promulgated under 49 U.S.C. Ch. 601.

"Final design" means the engineering and construction drawings that are provided to a bidder or other person who is asked to initiate construction on the bid date or the date the project is set for construction in the absence of a bid.

"Fiscal year" means the fiscal year utilized by the commission.

"Horizontal directional drilling" means the use of horizontal boring devices that can be guided between a launch point and a reception point beneath the earth's surface.

"Injury" means a bodily harm to a person, who, as a result of the bodily harm, immediately receives medical attention away from the scene of the incident.

"Lawful start date" means the scheduled

start date as provided under section 1.1.

"Line" or "facility" means an underground conductor or underground pipe or structure used in providing electric or communication service, or an underground pipe used in carrying, gathering, transporting or providing natural or artificial gas, petroleum, propane, oil or petroleum and production product, sewage, water or other service to one or more transportation carriers, consumers or customers of such service and the appurtenances thereto, regardless of whether such line or structure is located on land owned by a person or public agency or whether it is located within an easement or right-of-way. The term shall include unexposed storm drainage and traffic loops that are not clearly visible. The term **shall include unconventional oil and gas well production and gathering lines or facilities. The term** shall not include **stripper well lines** unless the line or facility is a regulated onshore gathering line as defined in regulations promulgated after January 1, 2006, by the United States Department of Transportation pursuant to the Pipeline Safety Act of 1992 (Public Law 102-508, 49 U.S.C. § 60101 et seq.), if the regulated gathering line is subject to the damage prevention program requirements of 49 CFR § 192.614.

"Locate request" means a communication between an excavator or designer and the One Call System in which a request for locating facilities is processed. Locate requests submitted by an excavator performing work within the right-of-way of any State highway, either under contract to the Department of Transportation or under authority of a permit issued by the Department of Transportation, shall include the number of the Department of Transportation contract or permit.

"Minor routine maintenance" means shaping of or adding dust palliative to unpaved roads, removal and application of patches to the surface or base of flexible base, rigid base or rigid surface roads by either manual or mechanized method to the extent of the existing exposed base material, crack and joint sealing, adding dust palliative to road shoulders, patching and cutting of shoulders and shoulder bases by either manual or mechanized methods to the extent of the existing exposed base, and cleaning of inlets and drainage pipes and ditches.

"One Call System" means the communication system established within this Commonwealth to provide a single nationwide toll-free telephone number or 811 number for excavators or designers or any other person covered by this act to call facility owners and notify them of their intent to perform excavation, demolition or similar work as defined by this act. The One Call System shall be incorporated and operated as a nonprofit corporation pursuant to 15 Pa.C.S. Pt. II Subpt. C (relating to nonprofit corporations).

"Operator" means any individual in physical control of powered equipment or explosives when being used to perform excavation or demolition work.

"Person" means an individual, partnership, corporation, political subdivision, a municipal authority, the Commonwealth and its agencies and instrumentalities, or any other entity.

"Powered equipment" means any equipment energized by an engine or motor and used in excavation or demolition work.

"Preconstruction meeting" means a scheduled event held by the excavator, designer, project owner and facility owner, or an agent of the excavator, designer, project owner and facility owner, prior to the commencement of excavation or demolition work in a complex project.

"Project owner" means any person who or which engages an excavator for construction or any other project which requires excavation or demolition work.

"Report of alleged violation" means a recorded account of an alleged violation.

"Stripper well" means a conventional oil and gas well with a maximum daily average production which does not exceed fifteen barrels of oil and ninety thousand cubic feet of natural gas during any twelve-month consecutive time period.

"Stripper well lines" means a production or gathering line or facility that has a nominal inside diameter of eight inches or less, only carries oil or natural gas produced exclusively from one or more stripper wells and is not regulated under the Federal pipeline safety laws and subject to the pipeline damage prevention requirements in 49 C.F.R. § 192.614 (relating to damage prevention program) or 49 C.F.R. § 195.442 (relating to damage prevention program).

"Subsurface utility engineering" or "SUE" means those techniques set forth in the American Society of Civil Engineers (ASCE) most recently published standard CI/ASCE 38-02, or its successor document as determined by the One Call System.

"Tolerance zone" means the horizontal space within eighteen inches of the outside wall or edge of a line or facility.

"Traffic loop" means a device that detects metal objects such as cars and bicycles based on the change in inductance that they induce in the device.

"Unconventional formation" means a geological shale formation existing below the base of the Elk Sandstone or its geologic equivalent stratigraphic interval where oil or natural gas generally cannot be produced at economic flow rates or in economic volumes except by vertical or horizontal well bores stimulated by hydraulic fracture treatments or by using multilateral well bores or other techniques to expose more of the formation to the well bore.

"Unconventional oil and gas well" means a bore hole drilled or being drilled for the purpose of or to be used for the production of oil or natural gas from an unconventional formation.

"Well pad" means area, under the control of an oil or natural gas company, occupied by equipment or facilities necessary or required for the drilling, production or plugging of an oil or natural gas well.

"Work site" means the specific place denoted on the locate request where excavation or demolition work is being or is planned to be performed. A work site should be denoted as a clearly defined, bounded area, including relevant identifiable points of reference such as the specific address with a specific description as to the portion of the property, including descriptions such as front, back, left side, right side and direction such as N, S, E, W or variants. Where possible, the points should also reference, without limitation, the size and radius or circumference of the excavation, utility pad or pedestal numbers, utility pole numbers, landmarks, including trees, fountains, fences, railroads, highway and pipeline markers, and latitude and longitude.

SECTION 2. The act is amended by adding a section to read:

SECTION 1.1. The lawful start date shall be three business days through ten business days following notification to the One Call System.

SECTION 3. Sections 2, 3, 3.1, 4, 5, 6.1 and 7 of the act are amended to read:

RESPONSIBILITIES OF THE FACILITY OWNER

Caution Some "Class 1" (RURAL) Stripper Well Gas & Oil Lines 8" or less are still exempt from Mandatory Participation along with PENNDOT in their Right of Way.

SECTION 2.

It shall be the duty of each facility owner:

(1) To be a member of and give written notice to the One Call System. Such notice shall be in a form acceptable to the One Call System and include:

(i) the legal name of the facility owner and their official mailing address;

(ii) as follows:

(A) The names of the counties and municipalities, down to and including wards in Philadelphia, Pittsburgh, Allentown and Erie, in which its lines are located and other related information as may be required by the One Call System regarding the location of a member's facilities.

(B) The One Call System may not require its members to locate lines or facilities installed before the effective date of this clause unless the member has existing maps of the lines or facilities and the member's existing maps meet the specifications of the One Call System's Member Mapping Solutions. Nothing under this clause shall prohibit the One Call System members from voluntarily submitting to the One Call System maps of lines or facilities installed before the effective date of this clause.

(iii) the facility owner's address (by street, number and political subdivision)and the telephone number and fax number, if available, to which inquiries may be directed as to the location of such lines;

(iv) the street identifications or like information within each of the municipalities in which its lines are located. This information shall be in a form acceptable to the One Call System. Upon acceptance of the information from a facility owner, the One Call System shall provide the facility owner with notification within the boundaries described. All facility owners shall agree to indemnify and hold

harmless the One Call System for any errors and omissions on the part of the facility owner or the excavator or designer providing the information as the agent of the facility owner; and
(v) any other information required by the One Call System.
(2) To provide the One Call System, within five business days, with any revised information required under this section.
(4) Not more than ten business days after receipt of a request from a designer who identifies the work site of excavation or demolition work for which he is preparing a drawing, to initially respond to his request for information as to the position and type of the facility owner's lines at such work site based on the information currently in the facility owner's possession or to mark the plans which have been provided to it by the designer by field location or by another method agreed to by the designer, excavator and facility owner, or their agent. The facility owner shall so advise the person making the request of the facility owner's status at the work site through the One Call System.
(5) After receipt of a timely request from an excavator or operator who identifies the work site of excavation or demolition work he intends to perform and not later than the business day prior to the lawful start date of excavation:
(i) To mark, stake, locate or otherwise provide the position of the facility owner's underground lines at the work site within eighteen inches horizontally from the outside wall of such line in a manner so as to enable the excavator, where appropriate, to employ prudent techniques, which may include hand-dug test holes, to determine the precise position of the underground facility owner's lines. This shall be done to the extent such information is available in the facility owner's records or by use of standard locating techniques other than excavation. Standard locating techniques shall include, at the utility owner's discretion, the option to choose available technologies suitable to each type of line or facility being located at the work site, topography or soil conditions or to assist the facility owner in locating its lines or facilities, based on accepted engineering and operational practices. Facility owners shall make reasonable efforts during the excavation phase to locate or notify excavators of the existence and type of abandoned lines.
(i.1) To identify the location of an actually known facility's point of connection to its facilities, where the point of connection is not owned or operated by the facility owner. A facility owner may identify the location of a known facility connected to its facilities, but not owned or operated by the facility owner, as a helpful guide to the excavator or owner. The identification shall not be deemed to impose any liability upon the facility owner for the accuracy of the other facility's identification.
(ii) To timely elect to excavate around its facilities in fulfillment of this subparagraph, at its option.
(iii.1) To propose mutually agreeable scheduling by which the excavator, facility owner or designer may locate the facilities.
(v) To respond to all notices through the One Call System, provided the request is made in the time frame set forth under this act. The response shall be made not later than the end of the second business day following receipt of the notification by the One Call System, excluding the business day upon which the notification is received, or not later than the day prior to the lawful start date of excavation if the excavator specifies a later date or, in the case of an emergency, to respond through the One Call System as soon as practicable following receipt of notification of the emergency by the One Call System.
(v.1) To, if a facility owner failed to respond to an original, proper, nonemergency locate request from the One Call System or to a renotification under section 5(20), communicate directly to the excavator within two hours after renotification of the information about its facility location and, if necessary and possible, go to the proposed work site to mark, stake or locate its underground lines or to verify to the excavator that the facility owner's underground lines are not within the area of the proposed work site.
(vi) In marking the approximate position of underground lines or facilities, to follow the Common Ground Alliance Best Practices for Temporary Marking set forth in ANSI standard Z535.1. Should the Common Ground Alliance Best Practices be amended, the amended guidelines shall be applied and followed. If the Common Ground Alliance Best Practices no longer publishes guidelines for temporary markings or if the responsibility for publishing the guidelines is transferred to or assumed by another entity, the facility owner shall follow the guidelines approved by the One Call System's board of directors.
(vii) To respond to emergency notifications as soon as practicable following receipt of notification of such emergency. The response by the facility owner shall be consistent with the nature of the emergency information received by the facility owner.
(viii) To participate in preconstruction meetings for a complex project or as described in section 5(3).
(ix) If notification is received pursuant to section 5(8), to give priority to responding to notification as an emergency.
(9) If a facility owner fails to become a member of the One Call System in violation of this act and a line or lines of such nonmember facility owner are damaged by an excavator by reason of the excavator's failure to notify the facility owner because the facility owner was not a member of the One Call System serving the location where the damage occurred, such facility owner shall have no right of recovery from the excavator of any costs associated with the damage to its lines. The right herein granted shall not be in limitation of any other rights of the excavator.
(10) To submit a report of alleged violation to the commission through the One Call System not more than thirty business days after receipt of notice that the facility owner's lines have been damaged by excavation or demolition work or if the facility owner believes a violation of this act has been committed in association with excavation or demolition work. The report of alleged violation shall be in a form and manner as required by the commission. No report may be required where the cost to repair the damage to the facility owner's lines is less than two thousand five hundred dollars ($2,500), unless the same person damaged the facility owner's lines two or more times within a six-month period.
(11) To comply with all requests for information by the ***commission*** relating to the ***commission's*** enforcement authority under this act within thirty days of the receipt of the request.
(12) To participate in the One Call System's Member Mapping Solutions as determined by the One Call System's board of directors.
(13) To maintain existing records of main lines abandoned on or after the effective date of this paragraph and to mark, locate or identify the main lines if possible, based upon the existing records. The records shall include written or electronic documents or drawings in the possession of the facility owner that show the location of an existing line or facility.

RESPONSIBILITIES OF THE ONE CALL SYSTEM

SECTION 3.

It shall be the duty of the One Call System:

(1.1) to assign one or more serial numbers and the date that the work site may legally be excavated and to log the entire voice transaction on logging recorders in appropriate digital form and maintain these logs for five years. All records shall be indexed and available to the parties involved at a reasonable cost and at reasonable times set by the One Call System.
(1.2) to perform the obligations, as set forth under this section, on behalf of the facility owner, excavator or designer as established by the board of directors of the One Call System.
(1.3) to provide access to municipal lists provided to the One Call System for those interested parties. This list shall contain facility owners having lines in the municipality, including wards as indicated in section 2(1)(ii), and to maintain, for each municipality, a list containing the information as required to be submitted by the facility owner. Such list shall be updated as revised information is received from the facility owner within five business days.
(3) To, per memoranda of understanding between the commission and the One Call System, provide reports of alleged violations and other information, such as photographs, photocopies and drawings, that are submitted with the report of alleged violation. The One Call System shall provide access to or photocopies of One Call System response records, tickets or other similar information related to matters covered by this act under investigation by the commission, pursuant to its enforcement authority under this act. The One Call System may provide reports of alleged violations

to the Pennsylvania Emergency Management Agency, per memoranda of understanding.
(4) To determine the maximum geographic area that shall constitute a valid single notification and to determine when multiple notifications shall be required of any person, including the method, the type and the number of notifications in a complex project.
Which has been set by the Board 1/2007 as: "1000' or Intersection to Intersection, whichever is greater, along the same street, within the same political subdivision" by the Board.
(5) If approved by the board of directors of the One Call System, to offer a service for the application and obtaining of State or municipal permits for excavation work. Issuance of the required permits shall be the responsibility of the appropriate State or municipal agency which has jurisdiction over the type of excavation work being performed.
(6) Pursuant to policies adopted by the One Call System's board of directors, to provide a secure repository for and access to subsurface utility engineering data received from project owners to affected facility owner members.
(7) To inquire, when an excavator has notified the One Call System of the existence of a release of natural gas or other hazardous substance or of potential danger to life, health or property, whether the excavator has notified the 911 system. If the 911 system has not been notified, the One Call System shall notify the excavator of the excavator's responsibility to notify the 911 system and shall make a record of the conversation.
(8) To notify the facility owner as soon as possible that an excavator has identified an unmarked or incorrectly marked facility and of the facility owner's responsibilities under section 2(5)(v.1).

SECTION 3.1.

(a) The duties of the One Call System are those duties as set forth in section 3. Duties assigned to other parties in other sections of this act shall be the duties of those parties and shall not be imputed to the One Call System, including the duty to provide accurate information to the One Call System concerning proposed excavation and the duty to locate facilities at a work site.
(b) The One Call System shall not be liable for damages to the person or the person's property arising out of its non-negligent actions in furtherance of the duties imposed under this act and shall be liable only if the failure to comply was the proximate cause of any damages claimed.
(c) (Reserved).
(d) The One Call System shall be governed by a board of directors to be chosen by the facility owners. No less than twenty percent of the seats on the board shall be held by municipalities or municipal authorities. The board shall include all of the following:
(1) The chairman or his designee.
(2) The Director of the Pennsylvania Emergency Management Agency or his designee.
(4) The Secretary of Transportation or his designee.
(5) An excavator or excavation industry representative.
(6) A designer or designer industry representative.
(7) An owner or operator or a representative of an owner or operator of pipelines associated with conventional oil and gas wells. The owner or operator may be a facility owner or a pipeline owner or operator who voluntarily submits maps of its lines or facilities to the One Call System.
(8) A facility owner or facility owner representative of pipelines associated with unconventional oil and gas wells.
(e) Operation costs for the One Call System shall be shared, in an equitable manner for services received, by facility owner members as determined by the One Call System's board of directors. Political subdivisions with a population of less than two thousand people or municipal authorities having an aggregate population in the area served by the municipal authority of less than five thousand people shall be exempt from the payment of any service fee. The One Call System may be reimbursed for its costs in providing this service from the contractor fees.
(f) All fees shall be set by the board of directors and shall be based on the latest annual audited cost factors of the One Call System. Fees shall be set and adjusted to a rate not more than five percent above the audited cost factor plus the current average published Consumer Price Index for Pennsylvania. Costs of capital improvements may be added, if the improvement receives a majority vote of the board of directors.
(f.1) An excavator, designer or operator who proposes to commence excavation or demolition work and requests information from the One Call System shall pay to the One Call System an annual fee for the service provided by the One Call System under section 3. The fee shall be set by the One Call System board of directors and shall be used to offset a portion of the operation costs of the One Call System and a portion of the operation costs levied on the One Call System's political subdivision and municipal authority members. Failure to pay the fee shall constitute a violation of this act and shall subject the excavator, designer or operator to the enforcement authority of the commission for the nonpayment.
(h) Any request for information shall be reviewed and provided as determined in accordance with the procedure established by the One Call System's board of directors.

RESPONSIBILITIES OF A DESIGNER

SECTION 4.

It shall be the duty of each designer preparing a drawing which requires excavation or demolition work within this Commonwealth:
(2) To request the line and facility information prescribed by section 2(4) from the One Call System not less than ten nor more than ninety business days before final design is to be completed. This clause is not intended to prohibit designers from obtaining such information more than ninety days before final design is to be completed; however, they shall state in their requirements that such work is preliminary. The Designer is required to send plans to the involved Facility Owners to mark up. PA One Call can assist through the Coordinate PA application.
(2.1) To forward a copy of the project plans to each facility owner who requests a copy. If a designer is unable to provide a copy because of security of the project or proprietary concerns regarding the design or the project, the designer shall negotiate in a timely manner with the facility owner the means of obtaining the necessary data.
(3) To show upon the drawing the position and type of each facility owner's line, derived pursuant to the request made as required by clause (2), and the name of the facility owner as shown on the list referred to in section 3.
(4) To make a reasonable effort to prepare the construction drawings to avoid damage to and minimize interference with a facility owner's facilities in the construction area by maintaining the clearance as provided for in the applicable easement condition or an eighteen-inch clearance of the facility owner's facilities if no easement restriction exists.
(5) A designer shall be deemed to have met the obligations of clause (2) if he calls the One Call System and shows, as proof, the serial number of one call notice on drawings. The designer shall also show the toll-free number of the One Call System on the drawing near his serial number.
(6) If, after receiving information from the facility owners, the designer decides to change the work site of a proposed excavation, the obligations imposed by this section shall apply to the new work site.
(7) The designer who has complied with the terms of this act and who was not otherwise negligent shall not be subject to liability or incur any obligation to facility owners, operators, owners or other persons who sustain injury to person or property as a result of the excavation or demolition planning work of the designer.
(8) To submit a report of alleged violation to the commission through the One Call System not more than thirty business days from the time the designer becomes aware that a violation of this act may have been committed in association with excavation or demolition work. The report of alleged violation shall be in a form and manner as required by the commission.
(9) To request line and facility information required under section 2(4) from the One Call System and to pay the applicable fee for the request.

RESPONSIBILITIES OF THE EXCAVATOR

SECTION 5.

It shall be the duty of each excavator who intends to perform excavation or demolition work within this Commonwealth:
(2.1) To request the location and type of facility owner lines at each work site by notifying the facility owner through the One Call System. Notification shall be not less than three

nor more than ten business days in advance of beginning excavation or demolition work. No work shall begin earlier than the lawful start date which shall be on or after the third business day after notification. The lawful start date shall exclude the date upon which notification was received by the One Call System and notification received on a Saturday, Sunday or holiday, which shall be processed on the following business day. In the case of a complex project, notification shall not be less than ten business days in advance of the beginning of excavation or demolition work.
(2.2) To provide the One Call System with exact information to identify the work site so that facility owners might provide indications of their lines. An excavator shall be deemed to have met the obligations of clause (2.1) if he calls the One Call System, provides the work site and other required information and receives a serial number.
(3) In a complex project or if an excavator intends to perform work at multiple work sites or over a large area, to take reasonable steps to work with facility owners, including scheduling and conducting a preconstruction meeting, so that they may locate their facilities at a time reasonably in advance of the actual start of excavation or demolition work for each phase of the work. A preconstruction meeting may take place at any time prior to the commencement of excavation or demolition work, and the excavator, facility owners and designer, or their agents, shall attend the meeting. Notice of the meeting shall be given sufficiently in advance so as to permit attendance, either in person or electronically, by the excavator, facility owners and designer, or their agents, and shall include information sufficient to identify the scope of work. If the excavator does not believe that a preconstruction meeting is necessary under the circumstances of this clause it shall indicate such belief in its notice, but any facility owner with facilities at the work site may request a meeting with the excavator, and a meeting shall be held between the facility owner and the excavator. After commencement of excavation or demolition work, the excavator shall be responsible for protecting and preserving the staking, marking or other designation until no longer required for proper and safe excavation or demolition work at or near the underground facility or by contacting the One Call System to request that the facilities be marked again in the event that the previous markings have been compromised or eliminated.
(3.1) To comply with the requirements established by the One Call System as determined by the board of directors regarding the maximum area that a notification may cover.
(4) To exercise due care and to take all reasonable steps necessary to avoid injury to or otherwise interfere with all lines where positions have been provided to the excavator by the facility owners pursuant to section 2 (5). Within the tolerance zone the excavator shall employ prudent techniques, which may include hand-dug test holes, vacuum excavation or similar devices to ascertain the precise position of such facilities. If insufficient information to safely excavate is available pursuant to section 2(5), the excavator shall employ like prudent techniques which shall be paid for by the project owner pursuant to clause (15).
(5) If the facility owner fails to respond to the excavator's timely request as provided under section 2(5) or the facility owner notifies the excavator that the line cannot be marked within the time frame and a mutually agreeable date for marking cannot be arrived at, the excavator may proceed with excavation as scheduled, but not earlier than the lawful dig date, provided he exercises due care in his endeavors, subject to the limitations contained in this clause and clauses (2.1) through (4) and (20).
(6) To inform each operator employed by the excavator at the work site of such work of the information obtained by the excavator pursuant to clauses (2.1) through (5), and the excavator and operator shall:
(i) Plan the excavation or demolition work to avoid damage to or minimize interference with a facility owner's facilities in the construction area. Excavation or demolition work which requires temporary or permanent interruption of a facility owner's service shall be coordinated with the affected facility owner in all cases.
(ii) After consulting with a facility owner, provide such support and mechanical protection for known facility owner's lines at the construction work site during the excavation or demolition work, including during backfilling operations, as may be reasonably necessary for the protection of such lines.
(7) To report immediately to the facility owner any break or leak on its lines, or any dent, gouge, groove or other damage to such lines or to their coating or cathodic protection, made or discovered in the course of the excavation or demolition work. The One Call System board of directors may adopt procedures to permit reporting under this clause through the One Call System.
(8) To immediately notify 911 and the facility owner if the damage results in the escape of any flammable, toxic or corrosive gas or liquid which endangers life, health or property. The excavator shall take reasonable measures, based on its knowledge, training, resources, experience and understanding of the situation, to protect themselves and those in immediate danger, the general public, the property and the environment until the facility owner or emergency responders have arrived and completed their assessment and shall remain on the work site to convey any pertinent information to responders that may help them to safely mitigate the situation.
(9) The time requirements of clause (2.1) shall not apply to a facility owner or excavator performing excavation or demolition work in an emergency, as defined in Section 1; nonetheless, all facility owners shall be notified as soon as possible before, during or after excavation or demolition work, depending upon the circumstances.
(11) To use the color white to mark a proposed excavation work site when exact work site information cannot be provided.
(11.1) To assist a facility owner in determining involvement of a facility owner's lines by disclosing additional available information requested by the facility owner, including dimensions and the direction of proposed excavations.
(11.2) If using horizontal directional drilling (HDD), at a minimum, to utilize the best practices published by the HDD Consortium.
(12) The following standards shall be applied in determining whether an excavator shall incur any obligation or be subject to liability as a result of an excavator's demolition work or excavation work damaging a facility owner's facilities:
(i) The excavator who has complied with the terms of this act and who was not otherwise negligent shall not be subject to liability or incur any obligation to facility owners, operators, project owners or other persons who sustain injury to person or property as a result of the excavator's excavation or demolition work damaging a facility owner's lines.
(ii) Where an excavator has failed to comply with the terms of this act or was otherwise negligent, and the facility owner or designer has misidentified, mislocated or failed to identify its facilities pursuant to this act, then in computing the amount of reimbursement to which the facility owner is entitled, the cost of repairing or replacing its facilities shall be diminished in the same proportion that the facility owner's or designer's misidentification, mislocation or failure to identify the facilities contributed to the damage. Should the facility owner or designer not have misidentified, mislocated or failed to identify its facilities pursuant to this act, there shall be no diminution of the facility owner's right of recovery.
(13) If, after receiving information from the One Call System or directly from a facility owner, the excavator decides to change the location, scope or duration of a proposed excavation, the obligations imposed by this section shall apply to the new location.
(14) If an excavator removes its equipment and vacates a work site for more than two business days, to renotify the One Call System unless other arrangements have been made directly with the facility owners involved in his work site.
(15) When the information required from the facility owner under section 2(5)(i) cannot be provided or, due to the nature of the information received from the facility owner, it is reasonably necessary for the excavator to ascertain the precise location of any line or abandoned or unclaimed lines by prudent techniques, which may include hand-dug test holes, vacuum excavation or other similar devices, the excavator shall promptly notify the project owner or the project owner's representative, either orally or in writing. If oral notification is given, the notice shall be reduced to writing within a reasonable time by the project owner or excavator. After giving such notice, the excavator shall be entitled to compensation from the project owner for this additional work as provided in the latest edition of the Pennsylvania Department of Transportation Form 408 specifications for extra work performed on a force account basis. The provisions of this subsection shall not be deemed to limit any other rights which the excavator has under its contract with the project owner or otherwise. Provisions in any contract, public or

private, which attempt to limit the rights of excavators under this section shall not be valid for any reason, and any attempted waiver of this section shall be void and unenforceable as against public policy and any such attempted waiver shall be reported to the commission.

(16) To submit a report of an alleged violation to the commission through the One Call System not more than ten business days after striking or damaging a facility owner's line during excavation or demolition or if the excavator believes a violation of this act has been committed in association with excavation or demolition work. The report of an alleged violation shall be in a form and manner as required by the commission.

(17) To comply with all requests for information by the commission relating to the commission's enforcement authority under this act within thirty days of the receipt of the request.

(18) To, if it chooses to do so and if working for a facility owner, a municipality or a municipal authority, delegate the power to discharge the duties set forth in clauses (2.1) and (2.2) to its project owner, with the project owner's consent. If the power is delegated pursuant to this clause, both the excavator and the project owner shall be responsible for providing the required notices.

(19) To ensure the accuracy of any information provided to the One Call System pursuant to this section.

(20) To renotify the One Call System of an unmarked or incorrectly marked facility, if an original, proper, nonemergency locate request has been made to the One Call System and, upon initial arrival at the proposed work site, it is apparent to the excavator that there is an unmarked or incorrectly marked facility. An excavator may not begin excavating in the affected area of the work site until after receiving sufficient information from the facility owner to safely excavate. If the facility owner fails to provide sufficient information to the excavator within three hours after the excavator has notified the One Call System of the unmarked or incorrectly marked facility, the excavator may proceed with excavation subject to the limitations under clause (5).

(21) To make a locate request to the One Call System prior to excavation or demolition work and to pay the applicable fee for the request. See www.paonecall.org for additional detail.

LEGISLATIVE INTENT

SECTION 6.

Except as otherwise provided in this act, this act shall not be deemed to amend or repeal any other law, Commonwealth regulation or any local ordinance enacted pursuant to law concerning the same subject matter, it being the legislative intent that any such other law or local ordinance shall have full force and effect where not inconsistent with this act.

RESPONSIBILITIES OF THE PROJECT OWNER

SECTION 6.1.

It shall be the duty of each project owner who engages in excavation or demolition work to be done within this Commonwealth:

(1) To utilize sufficient quality levels of subsurface utility engineering or other similar techniques whenever practicable to properly determine the existence and positions of underground facilities when designing known complex projects having an estimated cost of four hundred thousand dollars ($400,000) or more.

(2) To timely respond to notifications received from excavators pursuant to section 5(15).

(3) To not release to bid or construction any project until after final design is completed.

(4) To participate in design and preconstruction meetings either directly or through a representative.

(5) To furnish the pertinent data obtained through subsurface utility engineering to the One Call System in a mutually agreeable format.

(6) For new construction and where practicable in the opinion of the project owner, to install color-coded permanent markers to indicate the type and location of all laterals installed by the project owner.

(7) To submit a report of alleged violation to the commission through the One Call System not more than ten business days after striking or damaging a facility owner's line during excavation or demolition work activities, after a project owner's contracted excavator strikes or damages a facility owner's line during excavation or demolition activities or if the project owner believes a violation of this act has been committed in association with excavation or demolition. The report of alleged violation shall be in a form and manner as required by the commission.

PERFORMANCE CRITERIA

SECTION 7.

(a) The Auditor General may review management and financial audits of the One Call System, which audits shall be performed by a qualified auditing firm within this Commonwealth. A copy of the audit shall be submitted to the Auditor General upon its completion and to the General Assembly by October 31 of the year following the end of the audit period. The cost of reasonable expenses incurred by the Auditor General in performing the obligations under this section shall be reimbursed by the One Call System. The fees shall not be inconsistent with those of commercial auditing firms for similar work.

(b) The Auditor General, for the purposes set forth in subsection (a), and any contractor, excavator, facility owner or member of the One Call System shall have the right during regular business hours to inspect and copy any record, book, account, document or any other information relating to the provision of one call services by the One Call System, at the cost determined by the board of directors.

(c) The One Call System shall submit an annual report to its members, and a copy of the report shall be submitted to the Auditor General.

(d) The One Call System shall cause a financial audit to be performed annually by a qualified auditing firm within this Commonwealth.

SECTION 4. Section 7.2 of the act is repealed:

SECTION 5. The act is amended by adding sections to read:

ENFORCEMENT – NOW under the PA Public Utility Commission. www.puc.state.pa.us

SECTION 7.8.

(a) A damage prevention committee shall be established as follows:

(1) The committee shall consist of the following members, appointed by the commission:

(i) The chairman or his designee from the commission's professional staff.

(ii) The Secretary of Transportation or the secretary's designee.

(iii) The president of the One Call System or his designee from the One Call System professional staff.

(iv) One representative from each of the following nonmunicipally owned or affiliated facility owner industries: electric, natural gas or petroleum pipelines, telephone, water or wastewater and cable television, nominated by facility owners or affiliated organizations.

(v) Three representatives of excavators, nominated by excavators or affiliated organizations.

(vi) One representative of municipal governments, nominated by municipal governments or affiliated organizations.

(vii) One representative of municipal authorities, nominated by municipal authorities or affiliated organizations.

(2) A person appointed to the committee must have expertise within the operation of this act.

(3) A nomination under clause (1)(iv), (v), (vi) and (vii) shall be forwarded to the secretary of the commission. The executive director of the commission shall provide recommended candidates to the commission for approval.

(4) Except for an unexpired term or for committee members under clause (1)(i) and (iii), the following shall apply:

(i) An appointment to the committee shall begin January 1.

(ii) Except for initial terms under clause (5), a committee member's term shall be for a term of three years.

(5) The initial term of committee members shall be as follows:

(i) Two representatives of facility owners shall serve three years, one representative shall serve two years and two representatives shall serve one year.

(ii) One representative of excavators shall serve three years, one representative shall serve two years and one representative shall serve one year.

(iii) The representative of municipal governments shall serve two years.

(iv) The representative of municipal authorities shall serve three years.

(6) The commission member shall serve as the

chairman of the committee and shall be a non-voting member, except if the chairman's vote is necessary to break a tie. The chairman's attendance shall not be counted to establish a quorum.
(7) At least seven members of the committee who are present shall constitute a quorum for the transaction of business. A simple majority vote of the committee members present at a meeting shall be deemed to be the position of the committee.
(b) The committee shall meet regularly to carry out the following purposes:
(1) Review a report of an alleged violation of this act and damage prevention investigator findings and recommendations.
(2) Issue a warning letter to a person as deemed appropriate by the committee or as recommended by the damage prevention investigator.
(3) Issue an informal determination that imposes an administrative penalty.
(4) Require a person to attend a damage prevention educational program.
(5) Issue an informal determination that modifies or dismisses a recommendation of committee staff.
(c) The following shall apply to alleged violations:
(1) A person determined, in a report issued by a damage prevention investigator, to have committed an alleged violation shall do one of the following:
(i) Provide a written acknowledgment of the findings and administrative penalty contained in the report issued by the damage prevention investigator to the committee.
(ii) Appear before the commission to present its position.
(2) A person who is subject to an informal determination of the committee may accept or reject the result. If an informal determination is rejected, the matter shall be returned to the damage prevention investigator for further action, if appropriate, including referring the matter to the commission prosecutor staff for the purpose of issuing a formal complaint.
(d) Except for alleged violations involving injury or death, the provisions of subsection (c) may be applied in advance or instead of filing a formal complaint against a person determined, in a report issued by a damage prevention investigator, to have committed an alleged violation. An informal determination of the committee shall be binding on the commission unless the person rejects the informal determination.
(e) The committee shall have the following additional duties:
(1) Upon the request of the commission, the committee shall hold a special meeting to advise the commission on a matter related to damage prevention for underground facilities under this act.
(2) As soon as practicable after establishment, the committee, with input from the One Call System, shall develop and implement bylaws. The bylaws shall:
(i) Establish a schedule for the frequency of regular meetings.
(ii) Delineate the committee's practice and procedure concerning the performance of duties assigned under this act and commission orders and regulations.
(iii) Be approved by the commission.
(3) Submit an annual report containing relevant damage prevention data to the commission, the Committee on Consumer Protection and Professional Licensure of the Senate and the Committee on Consumer Affairs of the House of Representatives.
(f) Except for willful misconduct, members of the committee shall be immune, individually and jointly, from civil liability for an act or omission done or made in performance of the members' duties while serving as members of the committee.
(g) The commission shall have the following powers to carry out the purposes of this act:
(1) To employ individuals.
(2) To issue orders.
(3) To promulgate regulations. If the commission promulgates regulations that limit reporting to a specific type of incident, including contact with a line, damage to a line or line coating, personal injury, third-party damage and failure to comply with this act, the commission may consider the resources available for enforcement and other factors.
(4) For one year following the effective date of this section, to promulgate temporary regulations. Regulations under this clause shall:
(i) Expire no later than two years following the effective date of this section.
(ii) Be exempt from all of the following:
(A) Sections 201, 202 and 203 of the act of July 31, 1968 (P.L.769, No.240), referred to as the Commonwealth Documents Law.
(B) The act of June 25, 1982 (P.L.633, No.181), known as the Regulatory Review Act.

SECTION 7.9.

(a) Program costs for commission enforcement of this act shall be included in the commission's proposed budget and shall be subject to the review and approval of the Governor and the General Assembly as described under 66 Pa.C.S. § 510(a) (relating to assessment for regulatory expenses upon public utilities). The assessment of the commission's program costs for commission enforcement of this act shall not include Federal and State funds provided for the enforcement of this act and shall be allocated in the following manner:
(1) Eighty percent of the program costs shall be included within the amount assessed to public utilities under 66 Pa.C.S. § 510.
(2) Twenty percent of the program costs shall be assessed as a fee upon the One Call System, with the fee to be paid to the commission. The One Call System's board of directors shall determine the manner in which the fee may be recovered from facility owners, excavators, designers and other involved persons, provided that the One Call System's board of directors' manner of recovery may not include facility owners that are public utilities.
(b) (Reserved).

SECTION 7.10.

(a) The commission may issue a warning and order requiring compliance with this act and may levy an administrative penalty for a violation of this act. A warning, order or penalty shall be served on the person or entity violating this act at the person's last known address. A party aggrieved by the imposition of an order or administrative penalty imposed by the commission may appeal the order or penalty as provided under 2 Pa.C.S. Chs. 5 Subch. A (relating to practice and procedure of Commonwealth agencies) and 7 Subch. A (relating to judicial review of Commonwealth agency action).
(b) The following shall apply:
(1) A person or entity violating this act may be subject to:
(i) an administrative penalty of not more than two thousand five hundred dollars ($2,500) per violation; or
(ii) if the violation results in injury, death or property damage of twenty-five thousand dollars ($25,000) or more, an administrative penalty of not more than fifty thousand dollars ($50,000).
(2) The commission and committee shall consider the following factors in determining the administrative penalty to be assessed:
(i) The history of the party's compliance with the act prior to the date of the violation.
(ii) The amount of injury or property damage caused by the party's noncompliance.
(iii) The degree of threat to the public safety and inconvenience caused by the party's noncompliance.
(iv) The party's proposed modification to internal practices and procedures to ensure future compliance with statutes and regulations.
(v) The degree of the party's culpability
(vi) Other factors as may be appropriate considering the facts and circumstances of the incident.
(c) An administrative penalty recovered under this section shall be payable to the commission and collected in the manner provided for by law.
(d) This act shall not affect a civil remedy for personal injury or property damage, except as provided for under this act.
(e) The commission may issue a subpoena, on application of an attorney responsible for representing the Commonwealth in actions before the commission, for the purpose of investigating an alleged violation of this act. The commission shall have the power to subpoena witnesses and compel the production of books, records, papers and documents.
(f) No provision of this act shall be construed or interpreted to do any of the following:
(1) Affect the ability of a district attorney or the Attorney General to investigate or file a claim for the same conduct.
(2) Deprive a governmental agency, including a law enforcement agency, the Auditor

General and a district attorney, of any jurisdictional power or duty.
(g) A facility owner may petition a court of competent jurisdiction to enjoin excavation or demolition work conducted in violation of this act. Local law enforcement or emergency management personnel may, in the interest of public safety, order an excavator on a work site to stop further excavation if the excavation is being conducted in violation of this act.

Note: This may also be enforced under Section 3302 of PA Title 18 Section b - Risking catastrophe.

SECTION 6.
Section 8 of the act is amended to read:

DISPUTE RESOLUTION

SECTION 8.
The One Call System shall have the authority to design, establish and administer a voluntary payment dispute resolution process which may be used by excavators, facility owners, designers, project owners and other involved persons. The process shall provide for dispute resolution panels selected from among a list of representatives of stakeholder groups, including facility owners, excavators, designers and regulators. The process established under this section may not be used to settle or resolve alleged violations of this act nor may involve any issues related to the commission's enforcement activities.

COMMON GROUND ALLIANCE BEST PRACTICES

SECTION 9.
Except as otherwise provided for by this act, persons shall use their best efforts to comply with the Common Ground Alliance best practices.

SECTION 10.
No person shall intentionally remove or tamper with a marking provided for under this act.

SECTION 11.
Nothing in this act shall impair the rights or immunities provided to political subdivisions under 42 Pa.C.S. Ch. 85 Subch. C (relating to actions against local parties) or any other State law.

SUNSET PROVISION

SECTION 39.
This act shall expire on December 31, 2024.

SECTION 8.
This act shall take effect as follows:
(1) The following provisions shall take effect immediately:
(i) The addition of section 7.9 of the act.
(ii) The amendment of section 39 of the act.
(iii) This section.
(2) The remainder of this act shall take effect in 180 days. APPROVED--The 30th day of October, A.D. 2017.

GOVERNOR TOM WOLF
Appendix D

APWA/CGA Best Practices for Temporary Markings

This marking guide provides for universal use and understanding of the temporary marking of subsurface facilities to prevent accidents and damage or service interruption by contractors, excavators, utility companies, municipalities or any others working on or near underground facilities.

Know what's below. Dial 811 before you dig.

PA Act 287, as amended, Section 5, Clause 11
An excavator shall use the color white to mark a proposed excavation site when exact site information cannot be provided. THIS SHOULD BE DONE PRIOR TO THE NOTIFYING 811 or 1-800-242-1776 (from outside PA). Pennsylvania law requires notice no less than 3 nor more than 10 business days before you dig ANYWHERE IN THE COMMONWEALTH. Any excavation within the tolerance zone shall be performed by using prudent techniques. The excavator observes a tolerance zone which is comprised of the width of the facility plus 18" on either side of the outside edge of the underground facility on horizontal plane. Use pink temporary survey markings for all surveying and grade marks. Continue using Prudent Techniques until you find the Line. Notify Project Owner and charge PennDOT 408 Spec for the extra work necessary beyond the 18" Tolerance Zone.

Temporary Facility Markings by Facility Owners
To mark, stake, locate or otherwise provide the position of the facility owner's underground lines at the site within 18 inches horizontally from the outside wall of such line in a manner so as to enable the excavator, where appropriate within the tolerance zone, to employ prudent techniques, which may include hand-dug test holes, to determine the precise position of the underground facility owner's lines. This shall be done to the extent such information is available in the facility owner's records or by use of standard locating techniques other than excavation. The marking can be done in one of two ways: either placing the marks over the approximate center of the facility, or by placing the marks over the actual outside edges of the facility with a line connecting the two horizontal lines to indicate there is only one facility. PA One Call does not locate or mark lines.

Tolerance Zone
Any excavation within the tolerance zone is performed with non-powered hand tools or non-invasive method until the marked facility is exposed. The width of the tolerance zone is specified in PA Law. The tolerance zone including the width of the facility plus 18" (450 mm) measured horizontally from each side of the facility.

Best Practices for Locating & Marking Practices/Responsibilities
The APWA/CGA Temporary Marking Color Code and Chapter 4 marking practices are specified in PA Act 287, as amended. The Facility Owner or Representative is responsible to markings of facilities and appurtenances including the appropriate color of their facility type, their company identifier (name, initials or abbreviation), the number and width of their facilities and a description of the facility (HP, FO, STL). Use paint, flags, stakes or whiskers or a combination to identify the Facility Owner's line/facility(s) at or near the excavation Work site. It is against the Law to tamper with these markings. CGA BP Appendix B contains the Uniform Color Code and Marking Guidelines and Chapter 4 contains the practices.

Uniform Color Code
The American Public Works Association/CGA's Uniform Color Code is PA law. The code uses ANSI Standard Z535.1. Safety colors, as shown for temporary marking of excavation sites and underground facility identification (examples are provided on front). Release 5/23

Appendix E

Terminology used when creating a Design Notification

"Drawing" – is a type of technical plan that shows information about existing and proposed underground facilities, grading, landscaping, or other site details. These are intended to give a clear picture of construction to the excavator. This term does not include sketches made for the purpose of obtaining excavation related permits.

"Sketch" – is a physical depiction of the work site generally for permitting purposes and not solely or specifically applicable to design requirements. ESG

TRUVAC®

THE BEST NEVER REST

Powerful. Precise. Proven.

Whatever your excavation, digging, trenching or clean-up jobs call for, there's no time for a weak performance or the wrong tool for the task. Purpose-built for productivity, the entire TRUVAC line consists of proven performers offering:

- Task versatility and multiple equipment and capacity options
- Operator-focused design for safety, efficiency and comfort
- Powerful, accurate hydro and air vacuum excavation systems
- Industry-leading service and support on the ground and in the cloud

TO SEE THE FULL LINE OR REQUEST A DEMO, VISIT TRUVAC.COM

APXX™ HXX™ PARADIGM FLXX™ TRXX™

CONTENTS

2024 EXCAVATION SAFETY GUIDE & DIRECTORY

BEFORE YOU DIG

What you need to know and what you need to do before you dig.

LOCATING & MARKING

The importance of accuracy in locating and marking buried facilities.

DIGGING SAFELY

Technologies and techniques to stay safe and avoid damage.

WHEN THINGS GO WRONG

What to do in the event of underground damage.

FEATURING CURRENT PRACTICES AND TECHNOLOGICAL INSIGHTS FROM INDUSTRY EXPERTS!

RESOURCE DIRECTORY

A collection of invaluable information and access to resources.

The Excavation Safety Guide is designed to be a reference for readers to use all year long. The articles are concise, to the point and focus on current industry trends and technologies. The resources include the CGA Excavation Best Practices, a complete Notification Center listing along with the state laws and provisions, a pull-out Emergency Response poster plus much more. Protecting the buried infrastructure is becoming more of a challenge every day and this guide will help you navigate through these challenges.

Published annually by
Excavation Safety Alliance, LLC
3800 American Boulevard West, Suite 1500
Bloomington, MN 55431 • 866.279.7755
www.ExcavationSafetyGuide.com

This manual is an informational and educational guide, but it is not intended to provide you with any definitive information regarding legal issues. You need to follow your specific state laws and OSHA rules. If you have any questions on issues raised in this guide, please consult with legal counsel and/or your state Notification Center.

FREE

Excavation Emergencies Poster

LOOK ON PAGE 29 TO FIND YOUR COMPLIMENTARY PULL-OUT POSTER with complete information on how to recognize and respond to the hazards inherent in utility excavation.

Provided by Pipeline Association for Public Awareness

Photos courtesy of Eric Wilke, Owner, Elevated Locating Services

BE A GOOD NEIGHBOR & WHITE

BY TODD GRIFFETH, MANAGER OF DAMAGE PREVENTION, COLORADO 811

> To be a good neighbor is to wonder how your words and actions will impact others rather than to wonder how you will be impacted. This is not to say that we should abandon personal safety or exhaust ourselves in unhealthy ways. Instead, we should build the faith to understand that when we are unselfish, our needs will also be taken care of."
>
> ***-Megan Sanborn Jones on "Won't You Be My Neighbor?" (BYU Professor and Chair of the Theatre and Media Arts Department)***

When you think of being a good neighbor, what person comes to mind? For some it might be Jake from State Farm, or for us more seasoned Damage Prevention professionals, it just might be Mr. Rodgers or Wilson from Home Improvement. Regardless, I think both of their messages are somewhat the same. Good neighbors take care of each other!

So how do we apply being a good neighbor when it comes to white lining, either electronically or in the field?

As a good neighbor, the importance of white lining in excavation activities cannot be overstated. It's a practice that transcends the boundaries of construction sites, reaching out to neighboring properties and the community at large. By taking proactive measures like white lining before locator services, excavators not only enhance safety and efficiency but also demonstrate a conscientious attitude towards being a responsible member of the community.

White lining simply means using white paint, flags, stakes (or any combination of these) to mark the outer edges of your dig site. It is a valuable form of non-verbal communication between you and the locate technician who marks the approximate location of buried utilities within your dig site. When you take the time to white line, it makes it much easier for the technician to focus work on the exact area of excavation and complete the job quickly so you can start your project.

Each type of buried utility is designated by a different color (using the APWA color code). The color reserved for proposed excavation is white, hence the term "white lining." Do not use other colors to indicate your dig area. Marks made should be made in dashes 1" wide, and 6"-12" in length. Each mark should be 4'-50' apart, depending on the scope of the dig area. Line-of-site is important when determining how far apart you make the marks. For smaller dig areas, you may choose to use dots of paint or place a white stake in the center of the dig area with a radius indicated from that stake.

Additional methods of white lining (where available through the 811 center) include electronic white lining. Electronic white

lining provides a method where excavators may indicate their defined dig area visually by electronic data entry (lines or polygons) without the need for a physical site visit. Pre-marking, on-site and/or electronically, allows excavators to accurately communicate to the 811 center, facility owners/operators, or their locator where excavation is to occur.

The fundamental tenet of being a good neighbor involves looking out for the well-being of those in the vicinity. Effective white lining significantly contributes to safety. By outlining the intended excavation area clearly, excavators assist locators in precisely identifying underground utilities, reducing the risk of accidental utility damages. This proactive approach ensures a safer environment not just for workers but also for neighboring residents, minimizing the potential hazards associated with excavation work.

One of the cornerstones of being a good neighbor is respecting property boundaries. White lining demonstrates a respectful approach by clearly indicating the confines of the excavation area. This action prevents accidental encroachment onto neighboring properties, minimizing disruptions, and upholding the boundaries of shared spaces. It showcases an understanding of the importance of respecting the properties and spaces of others, fostering positive relationships within the community.

White lining aids locators by providing a clear demarcation of the intended dig site. This precision allows locators to focus efforts on the specific areas identified, allowing for increased productivity with an emphasis on accuracy. The result? Expedited processes that minimize disruptions and inconveniences caused to the neighborhood. By streamlining these activities, white lining contributes to a smoother and more efficient workflow, benefiting the entire Damage Prevention community.

The practice of white lining signifies a willingness to communicate and collaborate effectively. Excavators engaging in white lining procedures ensure that excavation boundaries are clearly communicated, fostering open lines of communication between contractors and locators. This transparent approach encourages understanding and cooperation among stakeholders involved, promoting a harmonious relationship within the community.

Underground utilities are shared resources serving multiple properties within aneighborhood. White lining plays a pivotal role in protecting these vital resources. By accurately outlining the excavation area, excavators assist in safeguarding underground utilities, minimizing the risk of service disruptions for neighboring properties. Preserving these resources ensures the integrity of essential services, benefiting the entire neighborhood.

The practice of white lining in excavation activities exemplifies the qualities of being a good neighbor. It prioritizes safety, respects boundaries, enhances efficiency, fosters open communication and collaboration, and preserves vital shared resources. By implementing white lining procedures, excavators not only optimize their work processes but also contribute to creating a safer, more harmonious neighborhood for everyone.

So how do we tie this all together?

The industry has been tasked with and accepted the challenge, "50 in 5" campaign to cut damages to buried utilities in half by 2028. There is no doubt this is an uphill battle, especially with the increase and complexity of today's locate requests. With the 2021 passage of the Infrastructure Investment and Jobs Act (IIJA) and slowdown in new home construction, regular lot type tickets have been replaced with extensive linear R.O.W. locate requests. With the industry still trying to manage the staffing shortage, now more than ever it's time to have a call to action to be a good neighbor. Whether white lining is mandated by your local or state laws, consider the benefit if we all contribute and do our part. It is with true collaboration we will move the needle closer to our "50 in 5" goal.

What does being a good neighbor look like to you? ESG

> "Meeting a deadline is crucial in utility locating. Mandatory white lining helps us meet those deadlines by giving us precise instruction on what area needs to be located so we can allocate the appropriate time and resources to that job."
>
> ***-Eric Wilke – Owner of Elevated Locating Services***

20 YEARS LATER:

The Impact of Online Ticket Entry

BY ADAM FRANCO, DIRECTOR OF OPERATIONS, ONE CALL CONCEPTS (OCC)

When the first "call before you dig" centers were created, the idea of a user submitting their own tickets over the internet was nothing more than science fiction. Much like hoverboards and laser blasters, it was just a dream of what could be. While flying cars are still in development, internet-based ticket entry systems have become the standard for how excavators interact with today's notification centers.

When ITIC was rolled out (One Call Concept's first ever online ticket entry system) in 2003, it forever changed the way we look at ticket entry. When asked what it means for excavators in particular, David Butler, OCC's national ITIC coordinator, shared:

From the excavator perspective, it provides a better user experience and the increased accuracy needed for today's projects. The system makes it quick and easy to process multiple tickets at once and features a variety of innovative mapping tools that streamline what has previously been a time-intensive task. It automatically populates much of the required location information – this not only saves time, but also greatly reduces the chance of human error.

Today, just 20 years later, we have seen many states go from 100% of tickets being called in to less than 20%. Having an online ticket entry system is no longer an option for notification centers – instead, it's now the cornerstone on which our systems are built and an expectation from many excavators. Online ticket entry opened doors to new and exciting ways to improve the excavator's experience. In the beginning, only text was collected. The excavator would provide a text-based description of the work area, basic information, and the locate request was then passed to the notification center where the ticket was completed by center staff.

Mapping soon followed. In addition to filling out an online form, excavators could identify their worksite visually. No one knows where the work is taking place better than the excavator. Providing them with the power to identify the site has resulted in the smallest, most precise notification polygons possible.

Today, the excavator has nearly the same level of access as a customer service representative (CSR) in the notification

center. They have the power to create an entire ticket from start to finish, map the area with the highest possible accuracy, and send the ticket directly to affected facility operators.

Even more importantly, the excavator is no longer limited to drawing a polygon – they can now identify the site with such precision that some are describing it as "electronic white lining." Excavators can identify their worksite by drawing a complex route, just like they would with white paint, flags, or stakes in the field. With the ITIC online ticket entry system, for example, they can draw a radius around a fixed object like a pole, hydrant, or meter. They can select a single parcel, or better yet – one quadrant of a parcel. And, as always, they can draw a freeform polygon to perfectly fit around their site.

Excavators around the country have found great value in these changes over time, and their feedback says it best. The following comments were shared by real online ticket entry users:

"I can do all of my jobs, then the system automatically knows how many tickets to file! Makes the process quicker and more efficient." *Chester Jones, Intren Electric*

"I love how quickly I can put in multiple locations." *Mark Enright, JBE Trenching*

It's not just excavators who have benefited from the evolution of online ticket entry – locators and facility operators have experienced a significant impact through the reduction in over-notification. Online ticket entry's more precise excavation site mapping has led to facility operators being sent fewer tickets that do not require locating to be completed in the field (tickets outside of a facility operator's coverage area). This has resulted in dramatic locating cost savings for facility operators, as the cost of receiving a ticket is negligible compared to the costs associated with physically responding to a locate request. More importantly, resources – including locators – can be better utilized where they are actually needed. Decreasing the number of distracting, unnecessary tickets to facility operators and locators not only allows for a faster response, it allows for more energy to be focused on damage prevention and excavation safety.

The introduction of user mapping through online ticket entry quickly revealed that work areas drawn by the excavator are far more valuable than any text-based description can ever be. User-drawn maps allow facility operators to see exactly where the work is taking place, eliminating any room for misinterpretation. Every time OCC sends a ticket to a facility operator, the user-drawn map is delivered with the ticket. Locators can access a fully interactive map – with street and satellite views of the site – that shows the excavation polygon overlayed with incredible accuracy. Locators can use this to guide their response in the field, review and screen tickets from anywhere, and ensure they know exactly where the work is taking place throughout the entire process.

So while we still may be waiting on flying cars, we can rest assured that the Notification Center world has changed for the better with the introduction of online ticket entry. We have only just scratched the surface of what we can accomplish with these new tools over the past 20 years. As our technology continues to develop, all of our existing systems will continue to be enhanced – providing increased accuracy, faster ticket processing, and a better user experience across the board. ESG

Pre-Excavation Checklist

Before EVERY Excavation

Click Before You Dig 811

In the Office

- ○ Review all drawings, plans, engineering blueprints for existing buried facilities
- ○ Proposed excavation area has been marked in white paint and/or flags
- ○ Call 811 at least 2-3 business days before excavation (check your state One Call laws)
- ○ Locate ticket number is posted at the work location
- ○ Onsite meeting scheduled with all high profile facilities in locate area (gas/oil pipelines, high-voltage cables, fiber optic)

Onsite

Complete a pre-excavation walkthrough of the entire jobsite and adjacent areas

Visually Inspect the Jobsite

- ○ Signs or marking posts
  - Pavement markers (stamped nails, pavement decals, A-tags)
  - Surface markers
- ○ Other surface signage for landscaped areas
- ○ Locate marks
- ○ Consult any maps or field sketches of the location
- ○ Identify all services to buildings such as:
  - Gas meters
  - Farm taps
  - Pipeline valves
  - Cable pedestals
  - Electric cables
  - Water valves
  - Telephone closures
- ○ Look for the evidence of trench lines from the previous exavation
- ○ Look for the cleared pipeline ROWs
- ○ Talk with the property owner or general contractor to identify potential private facilities that may not be marked:
  - Lighting
  - Outbuildings
  - Pools/Spas
  - Irrigation
  - Sewer laterals
  - Propane tanks
  - Communications lines

Document the Jobsite

- ○ Compare actual jobsite to One Call ticket
  - One Call ticket covers the scope of the work
  - One Call ticket "Work to Begin" date is valid
  - All utilities have responded
  - All facilities are marked within the excavation area
- ○ Photograph the jobsite
  - Locate marks and flags from 360°
  - Permanent signage and location relative to the dig area:
    - Note location, height, and operator of overhead lines
    - Note all required safety signage
  - Video and/or sketches where pertinent

Before You Dig

- ○ Review safety information with anyone working the job
- ○ Confirm with facility owner vacuum or hydro excavation is scheduled for all pipelines impacted
- ○ Locations for hand digging within the tolerance zone are noted
- ○ Emergency equipment available when hazardous atmospheres are potentially present
- ○ List of all emergency contact numbers for assets in and adjacent to the dig zone is readily available
- ○ The location and route to the nearest hospital is known by onsite supervisors
- ○ When possible before any excavation, do a sweep with a locator to identify any foreign lines that are not marked
- ○ Representatives for all critical facilities are present

The "Great Debate"– is Ditch Maintenance Considered Excavation?

BY CLINT KALFELL, PROGRAM ADMINISTRATOR, MONTANA811

THE MAINTENANCE and creation of ditches, whether for drainage or irrigation are critical tasks in both road construction and agriculture. These activities, which always involve some form of excavation, raise significant concerns about the safety and legal implications associated with damage to underground utilities, especially pipelines transporting hazardous materials such as gasoline, diesel, or natural gas to your local community.

Understanding Ditch Categories

Ditches are categorized into two types: road and agricultural. Agricultural ditches require frequent maintenance due to the accumulated silt and vegetation, necessitating periodic removal to maintain the functionality.

Excavation and Legal Limitations

A key question typically arises regarding the removal of accumulated material in ditches. Does the process count as excavation, thereby necessitating a One Call notification for the identification of underground utilities that could be impacted by the removal of dirt and vegetation? State laws vary across the U.S. drastically. Some state laws say no, ditch cleaning or road grading is not considered excavation if you are not "changing the grade". This is where the devil is in the details.

What about determining the original grade?

One challenge is determining the original bottom of a ditch, especially when using mechanical equipment. In cases where the ditch is not clearly marked or lined from the past, establishing the original grade becomes impossible to prove at times, and is a weak link for the excavator when it comes to liability. Some state laws offer exemptions for certain types of agriculture excavations, but the ambiguity remains, such as when cleaning irrigation ditches.

Incidents and Responsibilities

There have been incidents where ditch cleaning, conducted without locating underground utilities, resulted in utility damage. These situations lead to hardships for the individual doing the digging (without a locate) when it comes to paying for the repairs. The real conflict is often who bears the cost of repair and implementing preventative measures, leading to the question - did you have a locate or not?

Opinion: Arguing over what constitutes excavation in the context of ditches seems fruitless. The use of mechanical equipment near ditches should always be accompanied by a locate request to ensure safety. The approach is not only a form of preplanning but also a free service acting as an insurance policy for the safety of all involved.

In conclusion, while state laws and definitions vary, the emphasis should be on safety and precaution. A simple, proactive approach involving a locate request can prevent potential hazards and disputes, ensuring the safety of individuals and the integrity of the underground utilities and the services your community and neighbors count on. ESG

DON'T BE THAT NEIGHBOR - ALWAYS GET A LOCATE WHEN DOING ANY EARTH-MOVING ACTIVITY, ESPECIALLY DITCH CLEANING!

The Value of a Rigorous Utility Investigation for Project Construction

BY STEVEN M. RIENKS, P.E., PMP, DIRECTOR OF ENGINEERING, AMERICAN SURVEYING & ENGINEERING, LTD.

When it comes to underground utility construction, one of the most critical aspects that often doesn't receive the attention it deserves is the value of a rigorous utility investigation. This aspect plays a pivotal role in reducing damage to underground utilities and preventing injuries to construction personnel. Let's delve into why a rigorous utility investigation is essential and how it benefits excavators, Notification Centers, and facility operators who are dedicated to minimizing utility damages.

Understanding the Basics. What exactly is a rigorous utility investigation, and why is it crucial in project construction?

Defining Rigorous Utility Investigation. ASCE/CI/UESI 38-22 Standard Guideline for Investigating and Documenting Existing Utilities is an update to the 38-02 standard reflecting the updated changes in practice, technologies, and research for detecting/documenting the uncertainties of locations of underground utilities and other infrastructure. A rigorous utility investigation includes Quality Level B

(contains Quality Level C and Quality Level D), and Quality Level A test holes, if needed. This work is to be performed as part of the engineering plans and can be shared with the utility owners. Utility identification at this stage of planning and design development helps to prevent utility damages and service disruptions for utility companies and their customers.

A rigorous utility investigation involves a thorough and comprehensive assessment of existing underground utilities within a construction project's area. It goes beyond the standard utility locates and involves in-depth inspections to identify the precise locations, depths, and conditions of these utilities. This investigation aims to provide excavators and construction teams with accurate information to prevent utility damages during the project.

The Value for Excavators. Excavators are at the forefront of any construction project, and they bear a significant responsibility for preventing utility damages. Here's how a rigorous utility investigation adds value to their work:

a.) **Enhanced Safety.** Safety is paramount in construction, and accurate utility information obtained through a rigorous investigation significantly reduces the risk of accidents and injuries. Excavators can plan their activities with confidence, knowing the exact location of underground utilities.

b.) **Cost Savings.** Utility damages can be costly, both in terms of repairs and potential legal consequences. A rigorous utility investigation helps excavators avoid these expenses by preventing damages in the first place. It's a proactive approach that saves money in the long run.

c.) **Improved Efficiency.** Knowing the precise location of utilities streamlines construction operations. Excavators can work efficiently, reducing downtime caused by unexpected utility encounters. This leads to faster project completion and client satisfaction.

Benefits for Notification Centers. Notification, or 811 Centers play a vital role in coordinating utility locates and promoting damage prevention. They, too, can benefit from a rigorous utility investigation:

a.) **Streamlined Requests.** When construction teams provide detailed information from a rigorous investigation, Notification Centers can process locate requests more efficiently. This ensures utility locates are accurate and timely.

b.) **Data Verification.** A rigorous investigation can serve as a valuable source of data for Notification Centers. They can cross-check the information provided by construction teams with their records, ensuring accuracy and reducing the chance of errors.

c.) **Education and Outreach.** Armed with accurate utility data, Notification Centers can develop targeted education and outreach programs. They can work with construction stakeholders to promote best practices and raise awareness about the importance of damage prevention.

Overcoming Challenges. Implementing a rigorous utility investigation may face resistance due to perceived costs and delays. However, the long-term benefits far outweigh these concerns. By emphasizing the value that it brings to safety, cost savings, and efficiency, the construction industry can encourage its adoption.

Incorporating Industry Insights. Utility Scoop highlights the following industry insights:

a.) **Risk Mitigation:** Rigorous utility investigations reduce the risk of costly utility damages, ensuring a smoother construction process.

b.) **Efficiency Gains:** Access to accurate utility data from the investigation leads to increased efficiency and fewer delays.

c.) **Legal Compliance:** Many areas require a thorough utility investigation to comply with regulations, making it a necessary step in project development.

The value of a rigorous utility investigation for project construction cannot be overstated. It is a proactive and essential step in preventing utility damages and ensuring the safety of construction personnel. Excavators, Notification Centers, and utility operators should recognize the importance of this process and work together to make it a standard practice in the industry.

By embracing rigorous utility investigations, the utility construction industry can move towards a safer, more efficient, and cost-effective future. It's time to prioritize this aspect of construction, for the benefit of all involved. ESG

SUE AND VACUUM EXCAVATION HELP INCREASE SAFETY AND SAVE TIME

BY DUSTIN RHODES, PRODUCT MANAGER, TRUVAC

When it comes to underground utilities, safety is paramount. As municipalities grow and various areas undergo advancement and development, the number of buried utilities grows. Likewise, the number of potential problem points grows, including more live and abandoned utilities interfering with new projects.

Subsurface Utility Engineering, or SUE, looks to counteract these pain points or at least decrease them through civil engineering, surveying and vacuum excavation. Greg Jeffries is the Chair of the Subsurface Utility Engineering & Investigative Committee at the American Society of Civil Engineers Utility Engineering and Surveying Institute (ASCE/UESI).

"SUE, to me, is the proper characterization of existing utilities and avoidance of utility conflicts," said Jeffries. "Primarily SUE should be integrated in the early design process to give the design people the best foot forward. The idea is to give them very valid, precise information."

In years past, SUE happened far into the process. It was a matter of finding out how bad an underground obstacle was rather than being used early in the design phase to help avoid surprises. SUE now considers not only utilities but also underground vaults and manholes to give a full-picture look at what is occurring in that underground space and show existing structures.

For example, in Tampa, Florida, when a 72" drainage trunk line was going to be put into an old cobblestone street, the underground structures in addition to the utilities caused issues. SUE showed the pipe wouldn't work there, and the project would have been better served had SUE been utilized in the design stage.

"SUE as a whole isn't about eliminating risk such as encountering utility issues, but rather it's about drastically lowering the risk profile," said Jeffries. "There's a precision design when SUE is used, and it's a buildable design."

The vast majority of contracts put responsibility on the contractor to confirm all utilities. That puts every construction dollar at risk because there isn't good subsurface information.

"All construction projects cost roughly 14% more than they should cost because of these unmitigated risk profiles that are being dealt with on the contractor side of the equation," said Jeffries.

It's not only a matter of cost and dealing with problems in the build phase rather than the design phase. It's also a matter of safety. Digging into a utility creates a large safety risk. This is especially the case when working around natural gas lines.

"Safety is definitely the big consideration in SUE. It's no question," said Jeffries. "The more information we know about the utility installations that are out there, the more we can avoid an unnecessary or unwanted interaction with that utility."

That is one major reason why vacuum excavation is helpful when it comes to SUE. Rather using a shovel or backhoe to find out what lays beneath the surface, vacuum excavators use compressed air or pressurized water to uncover underground utilities. That loose soil is then vacuumed out of the way into a debris tank. This helps avoid any contact with utilities. The potholing technique also helps confirm the location, depth, and type of buried lines before construction begins.

Safety and risk avoidance are not the only benefits, though. Vacuum excavation also helps increase the speed of jobs because it identifies precise locations of utilities. Likewise, when SUE is incorporated in the design phase rather than the build phase, time is saved.

"SUE goes beyond safety in the idea of having a more functional design and buildable project," said Jeffries. "We call it concept to concrete time. If I have a more complete design without unforeseen conflicts, that's a much shorter window for building. That's time and money and less traffic interruptions. There's a number of factors that SUE provides answers to." ESG

Excerpts taken from the Underground Infrastructure article titled, "Damage Prevention and Safety: SUE, Vac Excavation Increase Safety and Save Time"

COLOR CODE IDENTIFIERS

WHITE	Proposed Excavation
PINK	Temporary Survey Markings
RED	Electric Power Lines, Cables, Conduit, and Lighting Cables
YELLOW	Gas, Oil, Steam, Petroleum, or Gaseous Materials
ORANGE	Communication, Alarm or Signal Lines, Cables, or Conduit
BLUE	Potable Water
PURPLE	Reclaimed Water, Irrigation, and Slurry Lines
GREEN	Sewers and Drain Lines

FACILITY IDENTIFIER			
CH	Chemical	E	Electric
FO	Fiber Optic	G	Gas
LPG	Liquefied Petroleum Gas	PP	Petroleum Products
RR	Railroad Signal	S	Sewer
SD	Storm Drain	SL	Street Lightning
STM	Steam	SP	Slurry System
SS	Storm Sewer	TEL	Telephone
TS	Traffic Signal	TV	Television
W	Reclaimed Water "Purple"	W	Water
UNDERGROUND CONSTRUCTION DESCRIPTIONS			
C	Conduit	CDR	Corridor
D	Distribution Facility	DB	Direct Buried
DE	Dead End	JT	Joint Trench
HP	High Pressure	HH	Hand Hole
MH	Manhole	PB	Pull Box
R	Radius	STR	Structure (vaults, junction boxes, inlets, lift stations)
T	Transmission Facility		
INFRASTRUCTURE MATERIAL			
ABS	Acrylonitrile - Butadiene - Styrene	ACP	Asbestos Cement Pipe
CI	Cast Iron	CMC	Cement Mortar Coated
CML	Cement Mortar Lined	CPP	Corrugated Plastic Pipe
CMP	Corrugated Metal Pipe	CU	Copper
CWD	Cresote Wood Duct	HDPE	High Density Polyethylene
MTD	Multiple Tile Duct	PLA	Plastic (conduit or pipe)
RCB	Reinforced Concrete Box	RCP	Reinforced Concrete Pipe
RF	Reinforced Fiberglass	SCCP	Steel Cylinder Concrete Pipe
STL	Steel	VCP	Vertrified Clay Pipe

Understanding the Marks: Locating and Marking Practices

Chapters from CGA Best Practices 19.0
For the complete Understanding the Marks: Locating and Marking Best Practices, See CGA Best Practices 19.0 at
BestPractices.CommonGroundAlliance.com

LOCATE REQUESTS: COVERING THE BASICS

*Originally published in the 2019 Excavation Safety Guide

Excavation Site Accuracy

Clearly defining the excavation site is critical when requesting a locate. The precision of this information improves the locator's ability to provide accurate marks in the appropriate space. Describing the dig site eliminates confusion. Driving directions and GPS coordinates can save time for the locator - especially in rural, newly-developed or difficult-to-find areas. Pre-marking the area with white paint or flags ensures an onsite visual for areas that are difficult to describe on the ticket.

Non-Members/ Private Utilities

Even if you call your Notification Center for every ground disturbance you undertake, you may still have unmarked facilities in your dig site. Laws vary between states and even municipalities on who is required to be a Notification Center member; and the ownership of many utilities transfer to the property owner at a specific demarcation point. For these facilities, a private utility locator is necessary to indicate their location. A few visual signs of private utilities on a dig site include utility meters, signs, markers, pedestals, hydrants, valve boxes, farm taps, regulators, lighting, or irrigation taps; especially if there is no paint or flags leading to them.

Locate Longevity

Each state has different laws governing when the ticket request should be submitted, how long the locate ticket is valid, how soon the work must begin, and what to do if the marks become illegible. It is important to know the law for the state you are working in. Review the Notification Center Directory beginning on page 51 for the law in your state.

Second Requests: Remark/Refresh Requests, Incomplete Marks, No-Shows

Requests for locates to remark the same location may be required for a variety of reasons. Normally these requests occur because the ticket expired before the project was completed, the initial marks were illegible or incomplete, one or more facility owners did not complete their marking within the required time or the marks were made but need to be refreshed due to activity at the dig site.

Emergency Locates

The exact definition of an emergency locate may vary, but this type of ticket is typically only allowed if there is a situation constituting an imminent danger to life, health, property, or a utility service outage, which requires immediate repair or action. It is a good idea to have a clear understanding of what qualifies in your state as an emergency locate before an emergency occurs.

Onsite or Joint Meeting Requests

An onsite meeting is scheduled when the scope of the work may be confusing or extends over a large geographic area. It is also useful when maps, plans, and schedules need to be shared. This type of meeting also allows excavators to discuss the project and any special circumstances with all concerned parties.

Held at the excavation site, or as close as practical, these meetings normally require more advance notice than a standard locate request. For jobs covering a large area, it is normally best to segment your request into reasonable sections. Identifying these sections on a map will facilitate communication between you and the locators, facility owners, and Notification Center. Notification Centers often need very specific information about your excavation site to request joint meets, so be prepared before you ca11 or click.

Design Notifications

Design notifications are done as a part of the development and preconstruction planning process to accommodate existing utilities and reduce problems during construction. Each state and/or facility owner will likely have specific polices on how these notifications are handled.

Tolerance Zone

The tolerance zone is a defined horizontal distance extending from either side of the outer edge of a buried utility. The exact distance of this tolerance zone varies from state to state, ranging from 18 inches to 24 inches on either side of the line or pipe, and is defined within the state's One Call law. To determine the tolerance zone for a given facility, you must know the state's law and the size of the utility. For example, in a state where the defined tolerance zone is 18 inches, the total size of the tolerance zone would be 38 inches for a two-inch pipe: 18 inches on either side of the pipe plus the two-inch diameter of the pipe itself.

CGA Best Practices call for the size of the pipe to be included in the locate marks on the ground, but caution should always be used when excavating within the tolerance zone as these indicators may be missing or incorrect.

Since locating equipment detects the electromagnetic field surrounding a pipe, and not the pipe itself, the science of locating underground facilities is not exact. The tolerance zone, therefore, serves as a warning to an excavator to proceed with care and caution while working in the area. Hand (or sometimes soft) digging is required within the tolerance zone. ESG

TOWN ESA EXCAVATION SAFETY ALLIANCE HALL

Excavator Insights from ESA Town Hall:

WHAT ARE THE TOP ISSUES AFFECTING THE UTILITY LOCATING INDUSTRY AND HOW DO WE RESOLVE THEM?

The excavation industry thrives on collaboration and adaptability, and this ethos was underscored in the ESA Town Hall that occurred on March 9, 2023. Moderated by Mark Drew, President of Vivax-Metrotech Corp, the discussion brought together industry leaders to address the paramount issues impacting utility locating and to explore potential resolutions. Here's a closer look at the insights shared by the panelists and engaged audience members:

Moderator: Mark Drew, President, Vivax-Metrotech Corp

Panelists:

- Shawn Hailey, CEO/Co-Founder, LineQuest, LLC
- Tracy Pursell, State Director (MN), VP – Tier 1, Blood Hound, LLC
- Dee Terry, Director of Operations, Benchmark – Subsurface Utility Services

A recurring theme in the discussions highlighted the importance of commencing projects with open communication channels. Proactively sharing project timelines, scopes, and potential challenges with utility locators, utility operators, and Notification Centers establishes a foundation for collaborative success. This aligns with the overarching sentiment expressed by Tracey Bryant of CenterPoint Energy: "It is not excavator vs. utility vs. locator, and I truly think we can move into a space where we work together and help each stakeholder be successful."

To address load management challenges, excavators can contribute by only calling in tickets for projects they are imminently working on. Considering historical planned resources, as exemplified by Gerald Johnson of USIC, becomes crucial to prevent backlogs among utility locators. Johnson highlighted an example where the southern and central portions of Illinois saw a staggering 249% increase in the work area scope, emphasizing the need for coordinated planning. Strategic ticket management can efficiently alleviate the workload for utility locators and enhance project planning accuracy.

The topic of emergency tickets also garnered attention, shedding light on the significance of excavators collaboratively assessing the urgency of situations when designating them as emergencies. This collaborative approach ensures a swift response to genuine critical scenarios, preventing unnecessary disruptions and fostering a responsive and efficient workflow. Frequent misuse of "emergency" tickets can strain the utility locating process, exacerbating existing backlogs in the industry.

The professionalization of the excavation industry was also touched on. There is a broad industry-wide discussion about elevating the positions of utility locators and excavators to that of a skilled trade. This involves a commitment to continuous education and potentially certification, fostering a culture of expertise, competence, and mutual respect among stakeholders.

Utility Coordination Councils were highlighted as essential forums for collaboration. Active participation in these councils enables excavators to engage in discussions, share insights, and collectively address potential challenges, ensuring a cohesive industry approach.

In conclusion, the excavation journey is a collaborative one. By embracing proactive planning, strategic ticket management, clear emergency ticket protocols, investment in skills, and active participation in industry forums, excavators can lead the way toward a more efficient and harmonious digging process for all.

View the Town Hall for more helpful insights!

- ☑ Foster communication at project start
- ☑ Manage tickets strategically
- ☑ Collaboratively evaluate emergencies
- ☑ Promote industry professionalism
- ☑ Engage in Utility Coordination Councils

WHO'S RESPONSIBLE FOR GETTING UTILITIES MARKED, AND WHEN?

BY STEVE GIAMBRONE, PIPELINE DIVISION DIRECTOR, LOUISIANA OFFICE OF CONSERVATION

I am writing this from the great State of Louisiana, where I work as the Pipeline Division Director for the Louisiana Office of Conservation. In addition to overseeing our Pipeline Safety Programs, I also am responsible for the implementation of the State's Damage Prevention Program (as it relates to pipelines). In 2022, I joined the CGA Best Practices Committee as one of the two NAPSR representatives and have been working with dredging and marine construction companies for years to improve marine safety when working around pipelines.

Since taking over damage prevention enforcement in 2018, we've made progress in Louisiana in both strengthening and enforcing our laws to bring down pipeline damages. In 2022, Louisiana's damage rate for pipelines was 2.7 damages/1000 tickets, which is down from 3.9 damages/1000 tickets in 2017. Additionally, Louisiana has passed laws requiring white lining, positive response, and potholing along with other minor changes to help clarify the law's intent.

But are you aware of the differences in laws from state to state when it comes to the damage prevention of underground utilities? Excavators (and utility operators) need to know and understand the laws in the state where they are working. Excavation laws are established at the state level and therefore, are not always consistent across state lines. Many excavation laws follow the Common Ground Alliances' Best Practices Guide, but even the guide may allow for deviations or provide a range for a Best Practice. As such, you will find differences in ticket life, tolerance zones, potholing (or daylighting) requirements, mark-by times and other standards commonly found in state "dig laws". Hopefully this article will help those who work across state lines to operate more safely, efficiently, and in compliance with state laws. Please understand that some of this information could be dated as states update their laws regularly, you must check the laws of the state you are working in.

MARK-BY TIMES

Let's start with "Mark-By" times. You've generally heard of the "48-hour rule" for a mark-by-time requirement, but not every state adopted the 48-hour requirement or if

"EXCAVATORS (AND UTILITY OPERATORS) NEED TO KNOW AND UNDERSTAND THE LAWS IN THE STATE WHERE THEY ARE WORKING. EXCAVATION LAWS ARE ESTABLISHED AT THE STATE LEVEL AND THEREFORE, ARE NOT ALWAYS CONSISTENT ACROSS STATE LINES."

they have, implements it in the same way. For instance, in Louisiana, the 48-hours granted to a utility operator to mark their facilities does not include weekends or holidays and the period doesn't start until 7:00 AM of the next working day. States such as Maine, North Carolina, and Wisconsin along with others have a waiting period of 3 days while Hawaii has a straight 5-day wait period (weekends and holidays included). Some states now allow excavators to choose their mark-by date and the Common Ground Alliance would like to see more states adopt this provision to provide for more efficient ticket management by utility operators.

TOLERANCE ZONES

How about Tolerance Zones? First, what is a tolerance zone? A tolerance zone does not mean I can't excavate within the area. Tolerance zones are generally a distance on either side of a mark where a utility may actually be located and the mark is still considered "accurate". In almost all states 18"-24" is the established tolerance zone. If I dig within that distance from either side of a utility marking, I should find the utility in question, right? Not always, as the distance is measured from the outside of the diameter of the utility. For a 20" pipeline, this means I have to add 10" on either side of the marking and then add the tolerance zone where the pipeline could be located. If the pipeline is located anywhere within that range, the mark is still "accurate". Now most states require "soft excavation" or non-mechanical excavation within the tolerance zone. Michigan has a 48" "Caution Zone". Before excavation activities can commence within this zone, pipelines must be exposed using soft excavation methods. More than 80% of states require soft excavation within the lawful tolerance zone.

TICKET LIFE

How long is my ticket good for? Did you know some states allow for your ticket to be valid for as long as the marks are visible and your work is continuous (MA, MO, PA)? The CGA Best Practices Guide lists 10 days with a maximum of 20 days on a ticket life. The ticket life in most states ranges from 14 days to as much as 60 days, with 14-30 days being the most prevalent. Some states allow for deviations in the established mark by time, generally this can occur if the parties agree to extend the time for a utility to be marked; however, check the state's laws for whether or not the ticket life has been extended by extending the mark-by time. Just because you agreed to allow for a week to mark, does not necessarily mean the ticket life has been extended the same amount of time.

SECOND REQUESTS?

So, what's this all about? We don't have this requirement in Louisiana, but it's an interesting one. 16 states require an excavator to make a 2nd request if no response is received from an operator and there are signs of utilities but no markings. For instance, in Connecticut the excavator shall immediately request assistance from the public utility if the excavator has reason to believe there are underground utilities in the designated area, but no markings (16-345-4(c)(8)). While in Tennessee, the excavator shall not proceed until an additional notice is made to the Notification Center (65-31-108(d)). In Georgia, a second request must be made and the operator(s) has until noon of that business day. The excavator may start AFTER that time, provided there is no visible and obvious evidence of the presence of an unmarked facility. I'd say that's an important law for excavators to be aware of when working in Georgia (25-9-7(e)).

DOES EACH EXCAVATOR NEED A TICKET?

It is a fairly universal requirement that each excavator at a job site has their own ticket, but four states do not require a separate request (Alaska, Georgia, Maine, and New Hampshire). In Louisiana, the person entering the ticket is allowed to add one excavator to the ticket.

ABANDONED FACILITIES

What do I need to do if I find what I suspect to be an abandoned facility? In many states, nothing at all. But some states have requirements for abandoned facilities, some for the operator and some for the excavator. In Alabama, for instance, if an excavator encounters an unmarked underground facility and attempts a follow-up (or second notice), all operators notified have four hours to contact the excavator with known active and abandoned facilities at the site (37-15-6(a)(40)). In Massachusetts, any facility that has been abandoned or is not in service shall also be marked if it falls within the safety zone of an active facility and shall further be marked to indicate its status as abandoned or not in service (220 CMR 99.606(F)).

There are other provisions in state dig laws to consider:

- **What do I do if I damage a utility?**
- **What about preserving marks?**
- **Does the state allow for exemptions from the law?**

We need to remember that these laws are there to ensure the reliability of critical services and for the protection of those working around utilities. Observing all aspects of the law will result in safe and efficient excavation and reduce delays and expenses. Taking shortcuts may seem tempting, but in the long run, they lead to damages, work stoppages, citations, and have negative impacts on worker safety. Let's all do our part in protecting our underground infrastructure. ESG

TRENCHING AND EXCAVATING PROCEDURES WITH SAFETY CONSIDERATIONS

BY ANKIT SEHGAL, CHIEF EXECUTIVE OFFICER, SWIFTDRAIN

Trenching and excavating are often at the core of a robust construction site and require proper planning and adherence to best practices to ensure a safe and successful project. It can be among the most hazardous sitework operations. However, disciplined attention to safety standards and procedures can increase job site safety and minimize risk.

Over the years, the Occupational Safety and Health Administration (OSHA) has increased efforts to define threats and identify safe practices. The good thing is there are safety measures and systems that people in the field can implement to reduce these incidents altogether.

We define excavation as any human-made trench, depression, cut, or cavity involving earth removal. As for a trench? It's defined more specifically as a narrow underground excavation, deeper than wide. Trenches are, by definition, no wider than 15 feet. What kinds of safety considerations can they pose? Like excavation, they include everything from maintaining structural integrity to watching out for utility lines. Fortunately, a little knowledge can go a long way in supporting safe excavations and earth removal.

Trenching and Excavating 101: What to Watch Out For

When trenching and excavating, you must thoroughly understand the most significant risks these operations pose - whether you're working on installing a trench drain system, digging for utilities, or any other sitework project.

What is the most significant consideration in excavations?

Cave-ins are among the primary risks associated with trenching and excavating. Cave-ins account for the majority of incidents. Trench collapses, in particular, account for a significant amount. Besides cave-ins during excavation and trenching, you'll also need to pay attention to other potential issues, such as:

- **Hazardous atmospheres**
- **Falls**
- **Falling loads**
- **Incidents involving mobile equipment**

What's the best way to guard against these potential hazards?

For starters, never enter a construction site without the proper protective gear, which includes a helmet, glasses, and vest. As for trenches, don't enter any that fail to have suitable protective systems in place.

Trenching and Excavation Safety Systems

A protective system should always be in place for commercial trenches five feet (1.5 meters) or deeper. You can only bypass this requirement when an excavated trench comprises stable rock. When trenches reach a depth of 20 feet (6.1 meters) or deeper, a professional must design their safety systems. This professional must be a registered engineer. You may also rely on tabulated data prepared or approved by such an expert.

What do these protective systems look like?

Different types of systems exist. They include:

- **Shoring**
- **Sloping**
- **Shielding**
- **Benching**

Shoring necessitates installing supports such as aluminum hydraulic or other types to prevent cave-ins and soil shifting. Sloping refers to the technique of cutting back the trench wall at an angle inclined away from the excavation.

What about shielding?

It relies on trench boxes or other support types to avoid sediment cave-ins.

Benching refers to protecting employees from cave-ins by removing earth from the excavation sides to form one or more horizontal steps or levels. This technique usually involves vertical or near-vertical surfaces between levels. There's a caveat to benching, though. It cannot be used in Type C soils.

How to Select the Best Safety System

How do you know which safety system is right for your needs? This decision-making process can be a complicated one, involving considerations such as:

- **Depth of cut**
- **Soil classification**
- **Water content of the soil**
- **Changes due to weather or climate**
- **Other operations in the vicinity**
- **Surcharge loads (surcharge loads may include materials used in the trench or spoil)**

Soil Types Demystified

Soil types fall into one of two categories: granular or cohesive. Granular soils contain coarse particles like gravel or sand. As a result, the dirt doesn't stick together and will require more extraordinary measures to prevent a cave-in. Cohesive soil types include enough clay or fine particles so the individual particles stick together. As the name suggests,

cohesive soil remains less likely to cave in. Besides these essential characteristics, OSHA relies on a "unconfined compressive strength" measurement to categorize each soil type. Unconfined compressive strength refers to the amount of pressure it requires to collapse a specific soil type. Soils are classified as follows:

• Stable rock • Type A • Type B • Type C

Let's explore each soil type in greater detail. That way, you'll develop a better sense of safe and dangerous working conditions.

Daily Inspections by a "Competent Individual"

Inspections must occur before workers enter the excavation area or trench. This step eliminates the risk of excavation hazards listed above. Who does OSHA define as a competent individual? An individual capable of identifying predictable and existing hazards or working conditions that are considered unsanitary, dangerous, or hazardous to workers. Tasks performed by a competent person include:

- **Testing and classifying soil**
- **Inspecting protective systems**
- **Monitoring water removal equipment**
- **Designing structural ramps**
- **Conducting site inspections**

This individual should be authorized to take speedy action and corrective measures to mitigate potential conditions and hazards.

Understanding Access and Egress Points

Your designated "competent individual" will also regularly inspect excavations and trenches to ensure safe access and egress to all excavations. These access and egress points may include:

- **Steps**
- **Ladders**
- **Ramps**
- **Other secure means of exit**

Access and egress safety guidelines apply to all trenches four feet (1.22 meters) or deeper. Means of entry and escape must lie within 25 feet (7.6 meters) of employees.

OSHA Trench Safety Rules

What else does OSHA recommend to keep employees safe while working in excavations and trenches? OSHA Trench Safety Rules include:

- **Maintaining surcharge loads a minimum of two feet (0.6 meters) away from trench edges**
- **Keeping heavy equipment away from trench edges**
- **Knowing where all underground utilities are located**
- **Testing for low oxygen, toxic gases, and hazardous fumes**
- **Inspecting trenches at the beginning of each shift**
- **Never working under raised loads**
- **Inspecting earthworks after rainstorms and other precipitous weather**
- **Inspecting the trench after any occurrence impacting conditions in the excavation or trench**
- **Ensuring that all personnel wear high visibility or suitable clothing when exposed to vehicular traffic**

By following the guidelines above, you'll ensure the safest working conditions for all employees on the jobsite. Besides following these rules, you must also incorporate pre-planning into all potential jobs.

What Is Pre-Planning?

Whether your construction company has one year of experience or two decades in trenching, backfilling jobs, and shoring, approach each new job with meticulous preparation and care. What's the root of most on-the-job accidents? A lack of initial planning. In other words, don't wait until stepping into the dirt to figure out the best safety system for an excavation or trench. After all, making adjustments to fix sloping and shoring issues will hinder operations, slow progress, and increase labor costs. Putting a band-aid on potential safety issues increases the likelihood of an excavation failure or cave-in over time. With that in mind, let's review the safety factors you must consider before bidding on a job.

Safety Factors to Consider Before Bidding

Before you even start preparing a bid, you must understand safety issues at the jobsite. You'll also need to know about the materials and equipment your employees need on hand to comply with OSHA safety standards. The following safety checklist will help you evaluate each job site and then draw up a plan accordingly. Factors you must consider include the following:

- **Proximity and physical condition of nearby structures**
- **Traffic**
- **Soil classification**
- **Ground and surface water**
- **Location of the water table**
- **Underground and overhead utilities**
- **Quantity of protective systems or shoring that may be required**
- **Weather**
- **Fall protection needs**
- **Number of ladders needed**
- **Other equipment needs**

Which processes can help you collect the information you need? They include taking test borings for soil conditions and types, observations, jobsite studies, consultations with utility companies, and meetings with local officials. This research will help you determine the kind, amount, and cost of safety equipment needed for your workers to do their jobs properly, safely, and more cost-effectively.

Promoting Excavation at Your Workplace

Trenching and excavation are among the two most dangerous activities at construction sites. For this reason, you must plan for both with a detail-oriented approach. OSHA lays out a comprehensive system of regulations to help you ensure the safety of your workers. From employing a competent person at your jobsite to understanding soil types and safety system implementation, these precautions translate into a safer workplace. Besides following these guidelines, you must consistently monitor for changing conditions. After all, exposure to vibrations or precipitation can lead to changing soil conditions and the need for different safety systems. Fortunately, with the proper skill set and approach, one can significantly prevent incidents, minimize risk, and effectuate site operational safety. ESG

Ankit Sehgal is the Chief Executive Officer at Swiftdrain, an American trench drain manufacturing company. He has worked on infrastructure improvement projects for the United States Air Force, the U.S. Department of Energy, and the Department of Transportation. For more information, visit swiftdrain.com.

Considerations for Your HEAT STRESS Management Plan

BY MARGARET C. MORRISSEY-BASLER, PHD, PROVIDENCE COLLEGE

Summer of 2023 was reported to have the hottest months ever recorded on earth. Unfortunately, these conditions will continue to get worse as the frequency, intensity, and duration of heat waves increase[1]. Climate change is a major public health priority that places many at risk for life-threatening heat injuries and illnesses. Workers are particularly vulnerable to heat-related injuries as they often engage in heavy physical exertion for prolonged hours[2–5]. Moreover, occupational heat stress is a combination of environmental heat, physical activity, and personal protective clothing, which taken together, exacerbates the level of heat strain placed on the body[3,6].

Unfortunately, there are no federal standards to protect the health and safety of workers. The Occupational Safety and Health Administration (OSHA) has created a National Emphasis Program on Outdoor and Indoor Heat Hazards, which is a nationwide enforcement mechanism to inspect workplaces for heat-related hazards. In other words, OSHA can perform heat-related inspections on high-risk worksites to make sure workers are not susceptible to preventable heat-related injuries, illnesses, and fatalities. Therefore, it is your responsibility as an occupational and environmental health and safety professional to ensure heat safety practices are in place and workers are protected during times of high heat exposure.

So, where do you start?

Here are some considerations and strategies to implement within your heat stress management plan.

Written Heat Safety Policies and Procedures

Like any hazard, it is important to have clear and written heat safety policies and procedures. During an inspection, this may be the first item OSHA personnel will ask to see. Successful heat safety policies and procedures include the following elements (but not limited to):

- **Heat Safety Education** (onboarding and annual training)
- **Prevention Strategies** (heat acclimatization, work to rest ratios, environmental monitoring, etc.)
- **Emergency procedures for heat-related medical emergencies** (i.e., exertional heat stroke)

Your plan must include what you will do to prevent heat-related injuries and illnesses from happening in the first place (i.e., prevention strategies). But it must also consider what happens when all systems fail and someone suffers an exertional heat-related illness. As no health and safety plan is 100% failproof, there needs to be clear guidance that outlines what workers should do in the event of a heat-related emergency. An exertional heat illness that is life-threatening is exertional heat stroke. The signs and symptoms of exertional heat stroke include extreme hyperthermia (greater than 105°F), altered consciousness, disorientation, confusion, vomiting, staggering, decreased performance, profuse sweating, dizziness,

and irritability/combativeness. Extreme hyperthermia, altered consciousness, disorientation, and confusion are characterized as diagnostic criteria for exertional heat stroke[7]. If you suspect that someone is succumbing to exertional heat stroke, you must act quickly to reduce their core temperature as quickly as possible. This requires aggressive body cooling within 30 mins of collapse[7]. The gold standard method to reduce core temperature and to treat exertional heat stroke is aggressive, whole-body cold-water immersion[8].

Heat Safety Prevention Strategies

To reduce the risk of exertional heat illnesses, it is key to have evidenced-based prevention strategies in place. Here are a few key prevention strategies to include in your heat stress management plan.

Hydration

Dehydration has been reported to increase a rise in core temperature (i..e, increase risk of heat-related illness), negatively affect performance, productivity, and mood[9]. Maintaining a hydrated state during work can improve your workers' health and safety while preserving or improving productivity. It is important to recognize that hydration is only part of the puzzle regarding risk of heat-related illness --- it is not characterized as the primary factor. Staying hydrated means paying attention to your body and using simple, hydration assessment tools to track your own hydration.

Urine Color

Workers should be encouraged to pay attention to their urine color before, during, and after work. A pale yellow or "straw-colored" urine color would be an indicator that the worker is adequately hydrated. The darker the urine, the more at risk an individual is to dehydration[10].

Urine Output

More urine is typically produced when adequately hydrated and less urine is produced when dehydrated. Therefore, a reduction in daily urine frequency (how often you urinate) may be an indicator of dehydration.

Thirst

When in a dehydrated state and body water content is low, fluid regulatory mechanisms in the body will initiate sensation of thirst as a signal to consume more fluids. It is important to note that the absence of thirst does not indicate the absence of dehydration[10].

Heat Acclimatization

Heat acclimatization is one of the most underutilized heat stress prevention strategies, but arguably, one of the most important. Most heat-related illnesses occur within the first three days of work, when workers are not accustomed to performing the level of physical exertion, sometimes in personal protective gear, in the heat[11]. Heat acclimatization is the gradual and progressive exposure to your physical work environment in the heat to achieve heat adaptations that allow workers to perform better in the heat[12]. Although there is limited research on industry-specific heat acclimatization protocols, NIOSH recommendations increase work by 10-20% over a 5-7 day period[13].

Environmental Monitoring for Activity Modification

As exertional heat illness is primarily driven by the metabolic heat generated by the individual, modifying the work to rest ratios is very effective to reduce risk. The industry standard for activity modification is the use of environmental monitoring, specifically Wet Bulb Globe Temperature (WBGT). WBGT uses four main meteorological components: air temperature, relative humidity, air velocity and radiant heat[14]. The National Institute for Occupational Safety and Health (NIOSH) and American Conference of Governmental Industrial Hygienists (ACGIH) provide WBGT-based activity modifications to protect workers during times of heat stress[13,15].

Margaret C. Morrissey-Basler, PHD can be contacted at mmorri17@providence.edu.

References:

1 Ishida H, Kobayashi S, Kanae S, et al. Global-scale projection and its sensitivity analysis of the health burden attributable to childhood undernutrition under the latest scenario framework for climate change research. Published Online First: 2014. doi:10.1088/1748-9326/9/6/064014

2 Gubernot DM, Anderson GB, Hunting KL. Characterizing Occupational Heat-Related Mortality in the United States, 2000–2010: An Analysis Using the Census of Fatal Occupational Injuries Database. Am J Ind Med 2015;58:203–11. doi:10.1002/ajim.22381

3 Morrissey et al.,. Heat Safety in the Workplace: Modified Delphi Consensus to Establish Strategies and Resources to Protect U.S Workers. GeoHealth 2021.

4 Morrissey MC, Kerr ZY, Brewer GJ, et al. Analysis of Exertion-Related Injuries and Fatalities in Laborers in the United States. Int J Environ Res Public Health 2023;20:2683. doi:10.3390/ijerph20032683

5 Spector JT, Sheffield P. Re-evaluating occupational heat stress in a changing climate. Published Online First: 2014. doi:10.1093/annhyg/meu073

6 Bernard TE, Luecke CL, Schwartz SK, et al. WBGT Clothing Adjustments for Four Clothing Ensembles Under Three Relative Humidity Levels. J Occup Environ Hyg 2005;2:251–6. doi:10.1080/15459620590934224

7 Casa DJ, DeMartini JK, Bergeron MF, et al. National Athletic Trainers' Association Position Statement: Exertional Heat Illnesses. J Athl Train 2015;50:986–1000. doi:10.4085/1062-6050-50.9.07

8 Casa DJ, McDermott BP, Lee EC, et al. Cold water immersion: the gold standard for exertional heatstroke treatment. Exerc Sport Sci Rev 2007;35:141–9. doi:10.1097/jes.0b013e3180a02bec

9 Cheuvront SN, Kenefick RW. Dehydration: physiology, assessment, and performance effects. Compr Physiol 2014;4:257–85. doi:10.1002/cphy.c130017

10 Ln B, Y H, Dj C, et al. Practical Hydration Solutions for Sports. Nutrients 2019;11. doi:10.3390/nu11071550

11 Tustin AW, Cannon DL, Arbury SB, et al. Risk Factors for Heat-Related Illness in U.S. Workers: An OSHA Case Series. J Occup Environ Med 2018;60:e383–9. doi:10.1097/JOM.0000000000001365

12 Périard JD, Racinais S, Sawka MN. Adaptations and mechanisms of human heat acclimation: Applications for competitive athletes and sports. Scand J Med Sci Sports 2015;25 Suppl 1:20–38. doi:10.1111/sms.12408

13 Jacklitsch B, Williams WJ, Musolin K, Coca A, Kim J-H, Turner. Criteria for a recommended standard: occupational exposure to heat and hot environments - revised criteria 2016. Published Online First: 2016. doi:10.26616/NIOSHPUB2016106

14 Budd GM. Wet-bulb globe temperature (WBGT)--its history and its limitations. J Sci Med Sport 2008;11:20–32. doi:10.1016/j.jsams.2007.07.003

15 ACGIH. TLVs and BEIs: threshold limit values for chemical substances and physical agents and biological exposure indices. American Conference of Governmental Industrial Hygienists 2017.

16 McDermott BP, Casa DJ, Ganio MS, et al. Acute Whole-Body Cooling for Exercise-Induced Hyperthermia: A Systematic Review. J Athl Train 2009;44:84–93.

TOWN HALL

ESA EXCAVATION SAFETY ALLIANCE

Originally published in the 2023 Winter Excavation Safety Magazine.

How Can We Improve Excavation Safety with Fair Enforcement?

Moderator: Scott Landes, Excavation Safety Alliance
Panelists:

- Stephen Allen, Energy Worldnet
- Shane Ayers, Stake Center Locating
- Kemp Garcia, LineScape of WA & NUCA of Washington
- Steven Giambrone, State of Louisiana
- John Hass, VEIT
- Chad Mathiowetz, Mathiowetz Construction Company

On August 10th, nearly 90 industry stakeholders converged for an insightful discussion centered around the existing challenges and promising avenues for improvement in enforcement.

Kicking off the Town Hall, Scott Landes posed a fundamental question that captured the essence of the Town Hall: How is enforcement structured across states, and does it offer equitable treatment for all stakeholders involved?

Shane Ayers offered an insightful perspective. He shared that for an enforcement process to be deemed fair and effective, it's imperative to create a holistic system. In his words, *"all stakeholders that participate in damage prevention have to be involved in the enforcement recommendations."* His call for unity laid emphasis on the indispensable role of excavators, utility locators, One Call centers, DOTs, and PUCs. Such inclusivity would not only foster fairness but also significantly ramp up efficacy in addressing excavation-related concerns.

Delving deeper, it was highlighted that some enforcement programs operate primarily on a complaint-based system. The potential consequences of such a system can include delayed problem resolution and potential safety risks due to reactive rather than proactive issue management. John Hass also shed light on a crucial underlying issue – the inaccuracies rampant in mapping data. He underscored this by stating that *"poor mapping is often the root cause of many excavation damages."*

The conversation transitioned to a vital question: why is there a strong emphasis on enforcing gas utilities over others? Stephen Allen pointed out that while proactive measures have significantly reduced damages to gas lines over the years, there's a noticeable disparity when it comes to other utilities. The heightened risks associated with damaging gas utilities certainly warrant attention, but a comprehensive approach is needed to ensure the protection of all utilities.

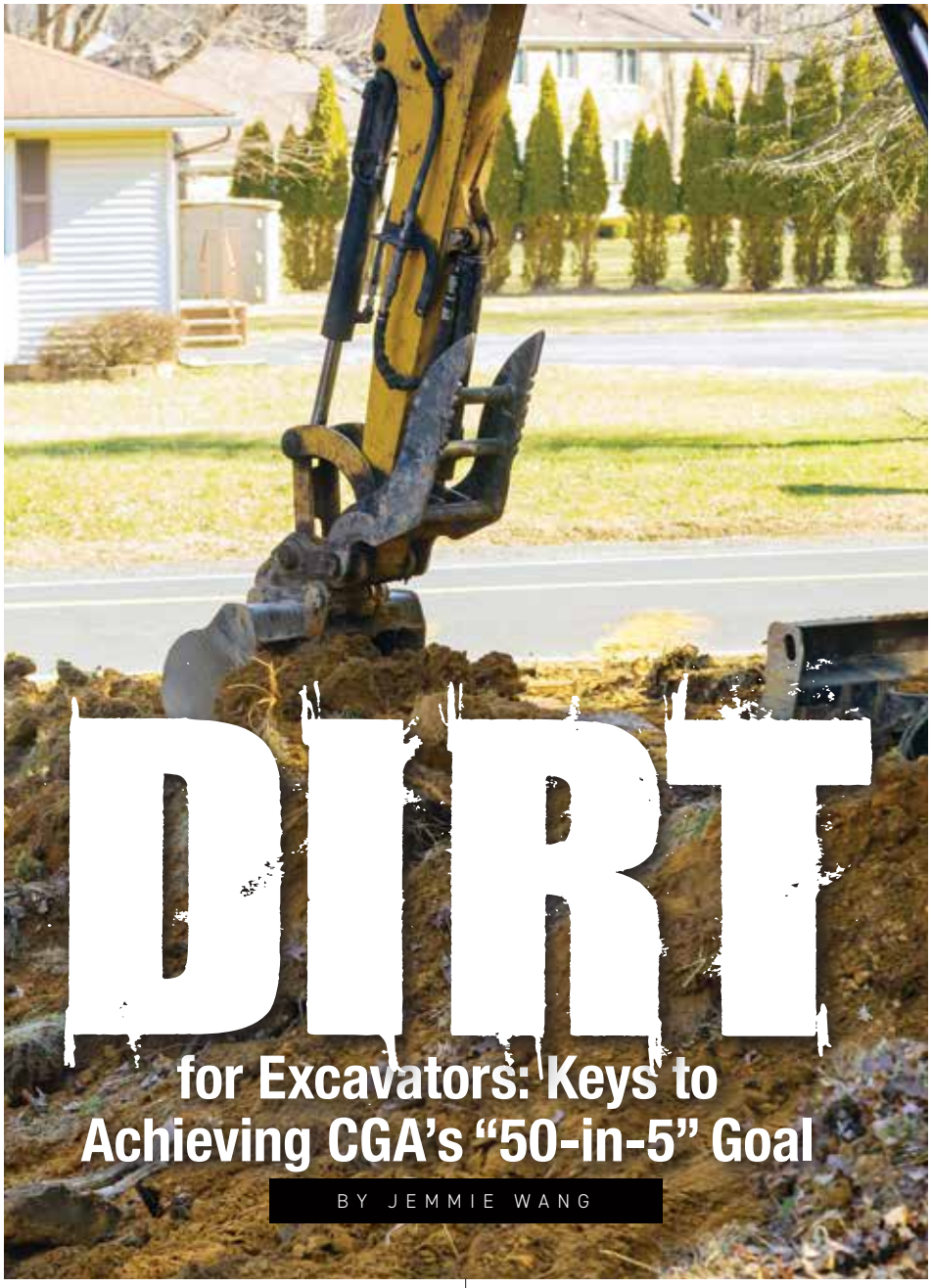
Kemp Garcia shared success stories, emphasizing that collective team initiatives can gain legislative backing. By joining forces, presenting cohesive strategies, and supporting proposals with solid data, they managed to capture the attention of policymakers.

Steven Giambrone highlighted a significant disparity in the current system, pointing out that while excavators face a myriad of regulations, utilities often have an easier path. Such an imbalance emphasizes the need for a regulatory overhaul to ensure fairness for all parties involved.

Chad Mathiowetz spotlighted Subsurface Utility Engineering (SUE) as a pivotal tool. By advocating for its use, he stressed that SUE could help ensure utilities are installed correctly, thus potentially reducing excavation-related issues in the future.

In essence, this Town Hall was a melting pot of ideas, experiences, and visions. It underscored the pressing need for collaborative efforts, innovative solutions, and revisited regulatory frameworks. For every professional involved in excavation, this discussion offers valuable insights, presenting both challenges to ponder and solutions to explore. ESM

If you missed the live discussion or wish to soak it in once more, the full Town Hall can be found by scanning the QR code or at the YouTube channel @excavationsafetyalliance.



DIRT for Excavators: Keys to Achieving CGA's "50-in-5" Goal

BY JEMMIE WANG

If the Common Ground Alliance's (CGA) goal of reducing damages by 50% over the next five years is to be achieved, unprecedented collaboration across the industry is required, with each stakeholder group taking ownership and committing to necessary improvements.

Excavators play a critical role in this effort. Doubling down on safe work practices and proper use of 811, expanded enforcement, and education programs are essential.

Failure to notify continues to be the most persistent singular root cause of damages year-over-year, with 77% of no-call damages attributed to professional excavators in 2022. Landscaping/fencing, water/sewer and construction are the top types of work performed when professionals cause no-notification damages.

An analysis of data from seven states revealed that as often as 56% of the time, an excavator cannot legally begin work on their planned start date. Telecom and water/sewer operators are the largest contributors to instances in which excavators cannot legally begin work. With an influx of additional excavation forthcoming because of state and federal infrastructure spending, it is imperative that we address the timeliness and accuracy of locating.

How Can We Improve?

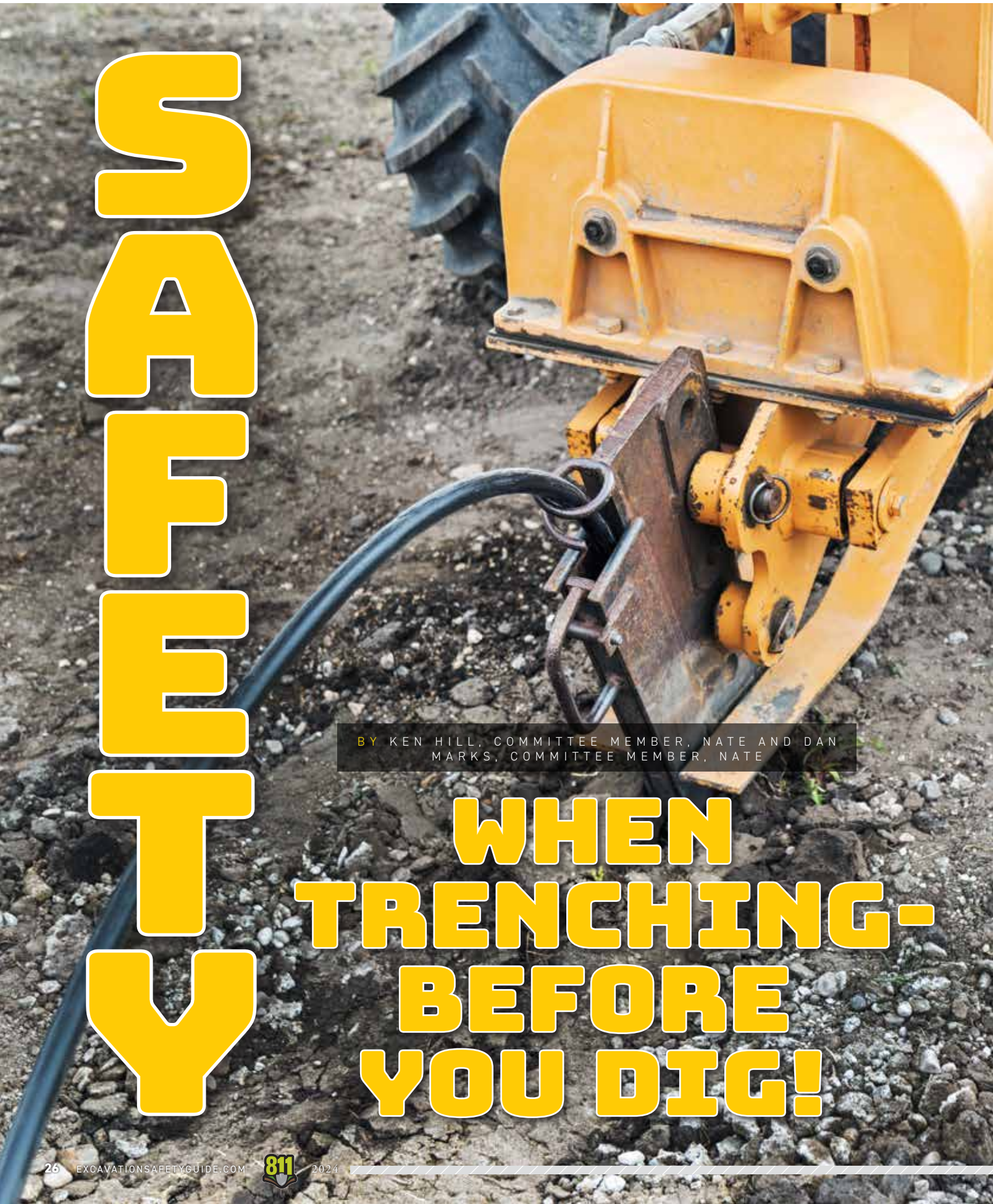
Here are a few key takeaways from the CGA report:

1. Focus on behavior change. 811 outreach to excavators should focus on behavior change – particularly consistent and effective use of 811 – and tailor messages to professional vs. private property excavators, focusing on the types of contractors and digging activities driving the majority of non-notification damages.
2. Restore confidence in the 811 system. Consider out-of-the-box ideas for meeting locating demand while reducing unnecessary locate requests; invest in locating process efficiencies and technologies.
3. Prioritize tolerance zone safety. Prioritize tolerance zone safety on the jobsite (pothole, maintain marks, use observers to help maintain clearance (see CGA Best Practices 5-17 through 5-20), in trainings, via technology investments (e.g., vacuum excavators) and through contract structures.
4. Provide excavators with access to additional information. Provide excavators with access to additional information such as map visualizations of the jobsite through processes like Enhanced Positive Response (see CGA Best Practice 3-31).

Conclusion

Excavators play a critical role in the damage prevention process. By doubling down on safe work practices, proper use of 811, and tolerance zone safety, excavators can help the industry achieve CGA's "50-in-5" goal. In addition to the above recommendations, excavators can also work closely with other stakeholders, such as facility owners/operators and locators. By communicating effectively and collaborating on best practices, we can all create a safer and more efficient work environment for everyone. ESG

Jemmie Wang was former Co-Chair of CGA's Damage Reporting and Evaluation Committee. Mr. Wang is a partner with BizMetrix, LLC and has over 20 years' experience in the damage prevention industry as an executive, consultant, and entrepreneur.



SAFETY

BY KEN HILL, COMMITTEE MEMBER, NATE AND DAN MARKS, COMMITTEE MEMBER, NATE

WHEN TRENCHING- BEFORE YOU DIG!

You've called 811, now what? Just waiting the necessary 3 days (depending on your state law) and then proceeding to excavate or directional drill doesn't mean you will not strike buried utilities. Reading the ticket responses is an important step in following any state 811 laws. Prior to starting the excavation, review the One Call ticket, paying careful attention to the responses provided by the utility owners. The notes may indicate the area is clear, or an on-site meeting is necessary to complete the locates. As part of your notification process you should have white lined your proposed excavation area. This helps ensure the mark out company knows exactly where you plan to excavate.

When you arrive at the work location, examine the area prior to starting your excavation. Walk the area and verify the locate markings have been completed. It is important to review the 811 ticket response and ensure you have all of the facilities marked. Many times there may be multiple telecommunications providers, and they all need to be marked out. If the trenching is outside the Public Right of Way, the facilities may not be marked and it is the excavator's responsibility to have the facilities located. Also, privately owned utilities will not be marked out and it will be up to the excavator and/or property owner to identify those underground facilities. Remember the uniform facility color coding markings.

Next, examine your route, looking for potential conflicts where your route crosses another utilities path, or where your proposed route runs closely parallel. All these are areas where potholing may need to be done to ensure your excavation or drilling operating does not damage the adjacent utilities. During this site walk, also look for clues that there may be an unmarked utility. Look at utility poles to see if there are risers for telephone, fiber optic, CATV or electric that haven't been located. There may be signage on a pole or a field marker to indicate a buried utility. Look for water meter vaults, valve boxes or utility manholes or handholes (all are indicators of buried utilities). As you are conducting your walk around, ensure you are taking video or photos of the route. This helps following a utility strike to prove your path was marked out and you did your due diligence.

When it comes to communications systems, often ILEC's and CLEC's install their systems in a duct bank, but they also routinely install them in a single duct, a pack of inner ducts, directly buried, and installed in a micro trench. Nearly every building or facility is going to have a communication system of some sort. If you do not see an aerial connection, chances are the communication system is buried. Remember there may be multiple ILEC and CLEC telecommunications cables buried at your worksite.

The depths of communications cables can vary greatly. In a micro trench, the line may only be a few inches deep. In other areas the communication system may be much deeper, even exceeding 6 feet. A common "excuse" heard for a deep utility strike is that they went deep to avoid all the other utilities. Chances are, though, that someone else had the same idea. Many times direct buried telecommunications and electric cables do not run in straight lines and may vary in their path. Trenching parallel to these facilities may require additional potholing to verify their exact location from the tolerance zone.

If you are unsure if the locates are accurate or if you think there may be an unmarked utility on private property, Electromagnetic (EM) locators and Ground Penetrating Radar (GPR) are tools that can help you verify locates. Read that again, EM and GPR are tools that can help you verify locates (it does not replace the 811 mark out).

Once you begin digging, take care while working around utilities. Pothole by using hand dig or soft dig techniques, starting at the outside edge of the tolerance zone and work your way in. Once the utility is exposed, leave it uncovered until you have completed your telecommunication installation. Often times the utility is verified, but then the hole is filled in and the utility is struck. Also, pothole where your pathway will cross the marked utility. The depth of marked utilities may change from where you pothole to where you are actually crossing the utility. If your pothole is in a location other than the crossing point, this could lead to damage.

In the event of a utility strike, alert the proper authorities or utility owners. With regard to telecommunications lines, fiber in particular, handle the system with care to prevent further damage and never look into the ends of a fiber optic cable. The light being transmitted may be beyond what human eyes can see, and that light can damage your eyes.

Underground construction can be done safely. Contractors should understand the situation (811 locates and ticket response), do their own verification (walk the site and document), and utilize proper digging techniques (hand or soft digging and proper potholing). ESG

Ken Hill and Dan Marks are both members of NATE: The Communications Infrastructure Contractors Association, with the Safety and Education Committee and Small Cell Committee. Dan Marks has over 20 years of telecom experience and is a Certified Safety Professional (CSP) and Construction Health and Safety Technician (CHST), and OSHA 500 instructor. Ken Hill has over 40 years' experience in the electric, gas, and telecom utility industry and is an OSHA 500 instructor.

The TRUE Cost of Telco Damages

The cost of cut or damaged communications cables can easily be underestimated when only repair costs are tracked and documented.

Improve your understanding of the real costs of a damage with this checklist based on insight from experienced professionals who have spent years working for communications companies.

What percent of hard and soft costs does your company collect? How do damages affect your brand?

Trackable Costs:

May or May Not Be Collected or Recoverable

- External Collection Costs/Agency Commissions
- Barricades / Traffic Control
- Permits (city/county/state/provincial) to install replacement cables
- Legal fees and litigation costs
- Exposing the damage for repair
- Materials used in repair
- Restoration of the area
- Actual cost of internal labor
- Heavy Equipment used
- Generator/Power Equipment
- Food, lodging, travel expense
- Emergency mobilization (Contractor/ Locator)

Overlooked/Difficult to Track

- Lost Customers
- Customer loss of use (refunds/credits)
- Resolution of customer complaints
- Engineering / reengineering due to the cut
- Establishing outage bridge to coordinate service interruption
- Support staff (3-20) for outage bridge
- Work load delays
- Future failure points (Damage may weaken system and lead to future failure)
- Damage data capture and submission (software and /or manual)
- Emergency One Call ticket notifications
- Facility owner records updates
- Reporting requirements (FAA, 911, PHMSA)

Soft Costs

- Loss of brand confidence
- Negative public feedback
- Difficulty maintaining customer relationships, especially large businesses, with inconsistent services

Societal Costs

- Loss of 911/emergency services
- Businesses closing
- Employee down time
- Road closures/traffic delays

Time

- Damage site investigator
- Collection efforts
- Out of service complaints
- Insurance resolution discussions
- Overtime for unexpected increases in workloads
- Employee time/travel for deposition and trial

Investing in damage prevention improves your bottom-line and keeps your work force continuously focused on proactive work.

ESA EXCAVATION SAFETY ALLIANCE

EXCAVATION EMERGENCIES

PROVIDED BY PIPELINE ASSOCIATION FOR PUBLIC AWARENESS

KNOW THE HAZARDS

- Natural gas and other petroleum products will ignite and burn. If exposed to the skin, serious irritations may occur. Escaping gases can displace oxygen.
- Electricity will arc or short to ground producing heat that is up to four times greater than the heat of the sun. At a minimum, it will burn skin and damage internal organs. High voltage electricity can arc significant distances through the air. Be aware of all aboveground high voltage lines and keep any part of the equipment at least 10 feet away from overhead lines.
- Water under high pressure can cause serious injury. Wastewater contains bacteria that can be a significant health risk. Sewer gas will ignite and burn.

RECOGNIZE UNSAFE CONDITIONS

- Pools of liquid, blowing dirt, hissing sounds, vapor clouds, gaseous odors, bubbles in standing water, dead vegetation, and frozen soil or ice next to pipelines are all signs of a natural gas or petroleum pipeline leak and should be treated as an emergency.
- Treat contact with any electric line as an emergency regardless of whether it appears undamaged, damaged or severed. This includes contact with aboveground high voltage lines.
- Utilities often jointly use trenches placing you at greater risk in trenches that also have electricity.
- Wet or discolored soil is an indication of a water/sewer leak and should be treated as a potential emergency condition.

EMERGENCY CONDITIONS INVOLVING UNDERGROUND FACILITIES INCLUDE:

Leaks, ruptures, explosions, fires, severe settling or soil movement, weakened or damaged facilities and similar instances where immediate action is necessary to prevent loss of life, injury to persons, or damage to property and the environment. Every situation is different and must be evaluated on the individual circumstances. Below are general emergency response guidelines for various emergency/damage situations involving underground facilities.

RESPOND IMMEDIATELY

NATURAL GAS & PETROLEUM LIQUIDS

1. Turn off equipment, if it can be done safely.
2. Abandon all equipment and get a safe distance away.
3. Avoid open flames or anything that might start a fire. Do not start motor vehicles or electrical equipment. Remove all ignition sources (cigarettes, cell phones, or anything that could create a spark or static electricity).
4. Evacuate the area and keep people out.
5. Do not make contact with escaping liquids.
6. Do not operate any pipeline valves.
7. Call 911 or your local fire, police, or sheriff's office.
8. Do not try to put out a fire. If it's burning, let it burn; ask local firefighters to observe and protect adjacent property.
9. Contact the facility operator immediately to report the condition.

ELECTRICITY

1. Only move equipment in contact with overhead or underground electric lines if you can move it away safely.
2. If excavator equipment remains in contact with electric equipment, it's safest to stay on equipment (unless on fire) until rescue workers arrive; keep others away. If you must abandon equipment, jump clear of it, landing with both feet on the ground at the same time, and then only shuffle or hop away.
3. If a buried electrical line is struck in wet soil/conditions, the ground may become energized for a large area around the strike. *(Hopping or shuffling away will help reduce your risk to step potential.)*
4. Contact the facility operator immediately to report the condition.
5. If appropriate, call 911 for local emergency response.

WATER/SEWER

1. Evacuate the area immediately and keep people out. Leaking water can fill a trench quickly making escape extremely difficult.
2. Do not close valves in order to stop flooding. Closing the wrong valve may affect fire flows and/or possible containment of potable systems.
3. Be careful of damaged high-pressure water lines because even the slightest scratch or vibration can cause pipelines to break.
4. Move carefully around trenches with wet walls. Wet soil can easily cause suffocation.
5. Avoid contact with wastewater. Do not wade in or work around wastewater.
6. Sewer gas is flammable; avoid open flames or anything that might start a fire.
7. Contact the facility operator immediately to report the condition.

FIBER/COMMUNICATION

1. If a fiber optic cable is cut, do not look into the end of it. Serious eye damage may occur.
2. Contact the facility operator and report the condition.

NEVER BURY A DAMAGED FACILITY!

Even a minor scrape, nick, cut, tear, break, or dent should be reported to the facility owner immediately. If not promptly repaired, it could result in a future leak, service outage, explosion, accident, injury, or death.

DIRECTRICES PARA REACCIONAR EN EMERGENCIAS

811

Click Before You Dig

PÓSTER DE SEGURIDAD PROVEIDO POR PIPELINE ASSOCIATION FOR PUBLIC AWARENESS

CONOZCA LOS PELIGROS

- El gas natural y otros productos de petróleo son inflamables y queman. Si la piel está expuesta, serias irritaciones pueden ocurrir. Los gases escapados pueden desplazar el oxígeno.
- La electricidad hará descargas o cortocircuito a tierra produciendo temperaturas que son cuatro veces más intensas que la temperatura del sol. Como mínimo quemaría la piel y dañaría los organos internos. Los altos voltajes de electricidad pueden hacer arco a distancias considerables a través del aire. Usted debe estar consiente de cables aéros de alto voltaje y aleje cualquier parte del equipo por lo menos a 10 pies de distancia de los cables aéreos.
- El agua a alta presión pueden causar heridas graves. Las aguas residuales contienen bacterias que puede ser de alto riesgo para la salud. Los gases del alcantarillado son inflamables y queman.

RECONOZCA LAS CONDICIONES PELIGROSAS

- Los charcos de liquido, la tierra soplando, los sonidos siseantes, las nubes de vapor, los olores a gas, las burbujas en agua estancada, la vegetación completamente seca, y la tierra congelada o hielo alrededor de gasoductos/ oleoductos son todas señales de escapes de gas natural o petróleo y deben de ser tratadas como una emergencia.
- Trate el contacto con cualquier cable eléctrico como una emergencia sin tener en cuenta si aparece dañado o no o si está cortado. Ésto incluye el contacto con cables aéreos de alto voltaje.
- Con frecuencia los servicios usan zanjas conjuntamente poniéndolo a usted en un mayor riesgo en las zanjas que támbien tienen electricidad.
- La tierra mojada o descolorida es un indicio de un escape de agua/alcantarillado y debe ser tratada como una condición de emergencia potencial.

CONDICIONES DE EMERGENCIA que afectan las instalaciones subterráneas incluyen: escapes, rupturas, explosiones, incendios, hundimiento severo o movimiento de tierra, debilitamiento y daño de gasoductos/oleoductos/acueductos, y casos similares donde es necesaria la acción inmediata para impedir pérdida de vidas, heridas a personas, o daños a propiedad y el medio ambiente. Cada situación es diferente y debe ser evaluada individualmente según las circunstancias. A continuación se dan directrices generales de emergencia para reaccionar ante varias emergencias/situaciones donde hay daños que afectan las instalaciones subterráneas.

REACCIONE INMEDIATAMENTE

GAS NATURAL Y LÍQUIDOS DERIVADOS DEL PETROLEO

1. Apague el equipo, si lo puede hacer con seguridad.
2. Abandone todo el equipo y aléjese a una distancia segura.
3. Evite llamas abiertas o cualquier cosa que pueda prender fuego. No arranque vehículos de motor o equipo eléctrico. Retire todas las fuentes de ignición (cigarrillos, teléfonos celulares, o cualquier cosa que pueda crear una chispa o electricidad estática).
4. Evacúe el área y no deje pasar a la gente.
5. No haga contacto con escapes de líquidos.
6. No maneje las válvulas de gasoductos/oleoductos.
7. Llame al número de emergencia 911 o llame a las oficinas locales del cuerpo de bomberos, policía, o sheriff.
8. No trate de apagar el fuego. Si está ardiendo déjelo quemar; pídale a los bomberos que observen y protejan la propiedad adyacente.
9. Inmediatamente póngase en contacto con a la compañía que opera los gasoductos/oleoductos para reportar las condiciones.

ELECTRICIDAD

1. Sólo mueva equipo que esté en contacto con cables eléctricos aéreos o subterráneos si usted lo puede mover con seguridad.
2. Si el equipo excavador continúa en contacto con equipo eléctrico, es más seguro quedarse en el equipo (a no ser que esté en llamas) hasta que lleguen los trabajadores de rescate: no deje que otros se acerquen. Si tiene que abandonar el equipo, salte lejos del equipo, cayendo con ambos pies a la misma vez, y luego sólo aléjese arrastrando los pies o saltando
3. Si hay impacto con un cable enterrado y la tierra está mojada, la tierra en el área alrededor del impacto puede estar energizada. (Reduzca el riesgo de electrocutarse alejándose saltando o arrastrando los pies.)
4. Inmediatamente póngase en contacto con la compañía que opera las instalaciones para reportar la emergencia
5. Si es apropiado llame al número de emegencia 911 para ayuda local.

ACUEDUCTO/ALCANTARILLADO

1. Evacúe el área de inmediato y no deje que la gente se acerque. Un escape de agua puede llenar una zanja rápidamente haciendo su escape sumamente dificil.
2. No cierre las válvulas para impedir inundaciones. Cerrar la válvula equivocada puede impedir que el agua pase por los ductos de agua que usan los bomberos para apagar fuegos y/o posiblemente contaminar el sistema de agua potable.
3. Tenga cuidado con los ductos de agua de alta presión debido a que cualquier leve rasguño o vibración puede causar una ruptura.
4. Muévase con cuidado alrededor de zanjas que tienen las paredes mojadas. Tierra mojada puede derrumbarse fácilmente y causar asfixia.
5. Evite contacto con aguas residuales. No camine o trabaje alrededor de aguas residuales.
6. Los gases del alcantarillado son inflamables; evite llamas abiertas o cualquier cosa que pueda iniciar un incendio.
7. Inmediatamente póngase en contacto con la compañía que opera los acueductos y alcantarillados para reportar la emergencia.

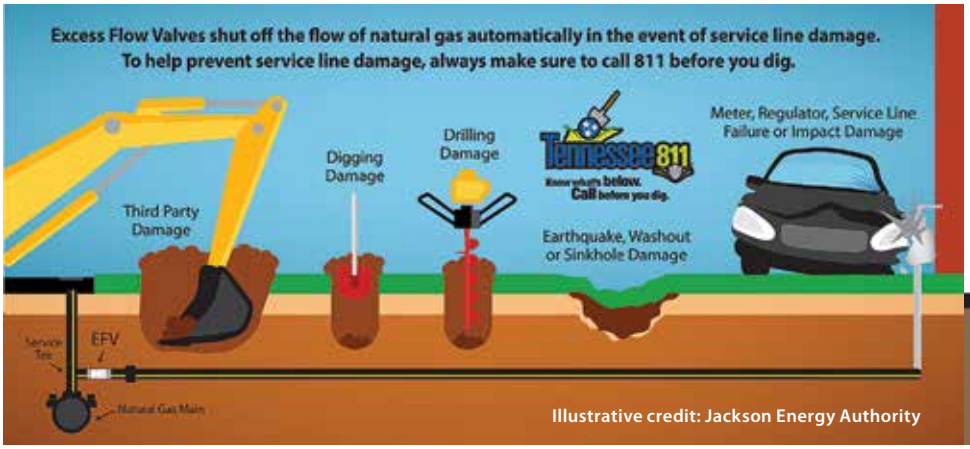
FIBRA ÓPTICA/COMUNICACIÓN

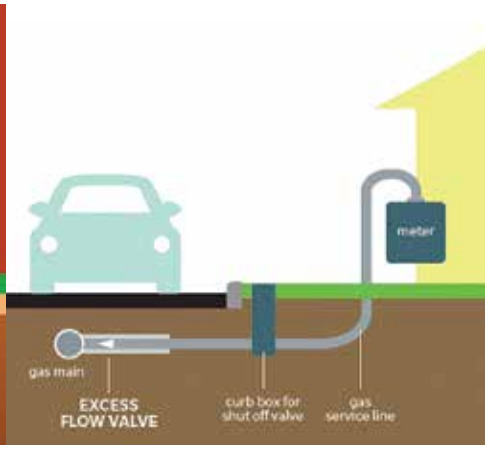
1. Si el cable de fibra óptica está cortado, no mire adentro de la punta del cable. Graves daños a los ojos pueden ocurrir.
2. Inmediatamente póngase en contacto con la compañía que opera la fibra óptica para reportar la situación.

NUNCA ENTIERRE EQUIPO DAÑADO

Nunca entierre equipo dañado como cables eléctricos, gasoductos, oleoductos, o ductos de cualquier tipo. Informe de inmediato a la compañía afectada cualquier leve rasguño, corte, rotura, o abolladura. Si la reparación no es hecha rápidamente en el futuro pueden resultar escapes, interrupción de servicios, explosiones, accidentes, heridas, o muerte.

The Crucial Role of Excess Flow Valves and Curb Valves:





A Reminder for Excavators

Excavation professionals encounter various challenges, particularly when working near utility lines. Within the realm of underground utilities, the significance of Excess Flow Valves and Curb Valves cannot be overstated in mitigating risks associated with gas service line damage. This article serves as a reminder to excavators, emphasizing the importance of refraining from independent valve operations and highlighting the necessity for collaboration with utility operators and emergency responders in the event of a utility hit.

Excess Flow Valves:

An excess flow valve, or EFV, is a mechanical safety device installed on the underground gas service line between the gas main and gas meter. It is designed to minimize the flow of natural gas in the event of a service line break.

- **Automatic Restriction:** Excess Flow Valves act as fail-safes, promptly limiting the flow of gas when faced with a service line break – comparable to an electric circuit breaker responding to design limits.
- **Bleed-by Safety Awareness:** It is important to note that an EFV's do not shut off the flow of gas completely when they are tripped. A very small, predetermined amount of gas will bleed by per code requirements and by manufacturers specified closure flow rates. The gas may not be escaping under full pressure, but there will typically be enough gas to provide a gas odor, indicating there is a problem. Also, the end user will be alerted as there will be no gas service. Because an EFV restricts the flow of gas, it reduces the potential for explosions, fires, and personal injury. To report a damaged service line, no gas service, or if you smell gas in or outside your home call the utility operator or 911.
- **Curb Valves:** In the domain of larger residential, commercial and industrial users, gas distribution companies where applicable may install Curb Valves in new or replaced service lines, for meter capacities exceeding 1,000 standard cubic feet per hour. These manually operated shutoff valves, situated near the service main, serve a parallel purpose to Excess Flow Valves in restricting gas flow during emergencies.
- **Manual Operation:** In contrast to Excess Flow Valves, Curb Valves require manual operation. The establishment of clear policies for emergency situations, in coordination with local gas companies, is essential.
- **Collaborative Approach:** Excavators are encouraged to work closely with utility operators and emergency responders in the event of a utility hit. Independent attempts to operate curb valves pose risks and can impede effective response measures.

In conclusion, this reminder underscores the critical role of Excess Flow Valves and Curb Valves in ensuring safety during excavation work. By refraining from independent valve operations, prioritizing collaboration with relevant authorities, and adhering to established safety protocols, excavators can play a critical part in preventing gas-related accidents, safeguarding their fellow professionals and the greater community. ESG

MarineSafe811–

In March 2009, a group of companies met with a mission to identify, trend, and explore common industry issues in preventing coastal and marine pipeline facility damage, releases, and spills. That day, the CAMO (Coastal and Marine Operators) pipeline industry group was born.

In 2023, CAMO included a consortium roughly 35 companies strong and growing. CAMO's current focus among other initiatives is to extend the same "On Land" damage prevention emphases and awareness into coastal and marine areas.

One of CAMO's 2024 initiatives is to rollout the new MarineSafe811 program that will enhance and drive "Goal of Zero Incidents, Near Misses and to Save Lives" through the Safety, Education, Integrity, Protection, and Damage Prevention of underwater infrastructure - resulting in a reduction or elimination of safety and/or environmental related accidents.

Your job may involve decisions that may directly or indirectly impact miles of underwater oil, gas, or chemical pipelines. With inland waterways such as rivers, bays, lakes, coastal areas and offshore areas, pipelines coexist with vessel and boat activity of all kinds. With more pipelines being installed every day, compounded with increased dredging and marine construction activity in the same waters, the chance of a marine vessel contacting an underwater pipeline continues to grow.

How to Stay Safe Around Pipelines

Making an 811 notification, even in marine areas, is the foundation for the safety of personnel. Additionally, pipelines need to be respected for their potential hazardous impacts to human life and the environment when ruptured. Understanding the roles pipeline and marine construction companies play in safety and damage prevention will help create a successful project. Precautions by all parties need to be understood, agreed upon, and in place before the project begins.

Avoidance procedures should be followed for marine construction projects of all sizes. Pipeline companies and marine construction companies generally have in-house tolerance or "no-go" zones where work may be unsafe or have special conditions. Marine Exclusion Zones, on-land known as Tolerance Zones, are areas near the pipelines where no activity or work should occur. Before work begins all parties should be in mutual agreement on the Tolerance Zones. Although Exclusion Zones vary among dredging and marine construction companies, 75 feet minimum is generally the no-go working distance.

Obtaining Pipeline Information

Due diligence is necessary when gathering pipeline coordinates, ownership, and contact information. Multiple sources must be checked and inconsistencies may exist across those sources. In many cases, other types of lines may exist in your project area, such as electric, water, fiber optic, phone, and sewer, to which the same general precautions apply. It is beneficial to familiarize yourself with the different pipeline resources available. Each data source has a different layout and provides different information. Question the pipeline companies. It is their responsibility to provide you with the facts. Prior to kicking off a project all parties involved must agree on project plans, crossing agreements, avoidance and safety measures, and work together to stay informed through project duration.

How to Work Safely Near Underwater Pipelines and Utilities

BY ED LANDGRAF, DIRECTOR OF MARINE OPERATIONS AND SAFETY, TEXAS811, AND CHAIRMAN, COASTAL AND MARINE OPERATORS (CAMO)

Once your marine construction project scope is known, outline your total project footprint in your execution plan and voyage plan. Identify all waterways, wetlands, and marine areas that will be traversed by project vessels including dredged material placement areas, heavy equipment transit ways across placement areas, equipment mooring areas, staging areas, off-loading areas, site access areas, anchoring and spud down areas, and any other areas of operational impact.

Safety, Environment, and Emergency Response

Saving lives, protecting the environment, and effectively responding to emergencies are the focus. Always consult with the pipeline company to learn if there are any specific safety, environmental, or emergency concerns and capture them in your safety plan. Cover the plan with all project and vessel personnel. Re-evaluate the plan as new hazards emerge. Include the following recommendations in your plans:

How to Identify a Pipeline Leak

The main signs of a pipeline leak are:

- A continuous bubbling, blowing, or hissing sound from the water
- A rainbow sheen or unusual colored water
- Hydrocarbon smell
  Note: Natural gas may be odorless. Always have an active gas detector activated during operations.

Actions After a Pipeline Leak

- Shutdown or minimize the use of all possible ignition sources, motors, lights, etc.
- If possible, drift out of the area before starting a motor or ignition source.
- Evacuate the vessel, if needed.
- Evaluate the situation; record your exact location and time; and move upwind at least ¼ mile or away from the affected area. When safe, call 911.
- Prevent and warn other vessels from entering the area.
- Boom-off or secure the area, if possible.
- If you see a pipeline sign nearby, call the emergency number listed.

Emergency Response and Notification

- Do not extinguish a pipeline fire.
- Immediately contact the pipeline company 24/7 emergency number in your plan to shut down the line and provide any pipeline information and location data. This will help the pipeline company identify the impacted line.
  – Wind and water flow direction are helpful.
  – Include the location of the nearest boat launch, if known.
- Notify the Coast Guard and the National Response Center (NRC) at (800-424-8802).
- Call 911 to notify the local emergency response agencies.
- Check your state's laws for other entities you must notify when an incident occurs.

Safety and Emergency Plans

All project plans should have the following basic pipeline information stored in multiple readily available locations:

- List of all pipelines in the project scope and the local company contact
- List of the products in each pipeline
  – This will help evaluate the risk and response level in the event of a release.
- Profile of the line X, Y, Z or as close as possible
- 24/7 emergency contact number

If you think a pipeline was struck but no leak occurs, call both the emergency and local contacts. In many states, reporting a strike is required by law. ESG

An Open Letter to Horizontal Directional Drillers (HDD)

Dear Operator,

As a former fire officer, I watched recent television coverage of several first responders injured in a western city explosion. I recognized that their quick decisions and heroic actions likely saved many lives. I know you're busy and don't want to hear about firefighters or how they risk their lives, but I must share that I am very worried for their safety. They put themselves in harms way to protect the public, rationalizing the risk by saying, "It's what we do." It's also what the public expects of fire and police in cities and towns all over the United States. Sadly, many incidents that harm people are absolutely avoidable. After many of these explosions, like the one in the Northwest, responders risk their lives while the public is endangered. Many times, these events are preventable.

As a fire service officer and an emergency trainer I have been educating responders in all 50 states on their response to natural gas and pipeline emergencies. Over the last few years I have been following the increased use of a tool you refer to as an HDD (horizontal directional drill). The Fire Service is not generally familiar with the types of construction equipment used by excavators to install underground facilities, such as directional drilling. In fact, responders use words like "small tanks," or a "strange" backhoe to describe the vehicle or operations due to the unrecognizable tracks or excavating nature of the work. Since most of these installations are completed without consequence to underground facilities many responders don't even understand what you do or how it works. In fact, it's not how it works, but what the drill can do when it is not operated safely that truly affects responders. It's not the call to 8-1-1, but it's the subsequent 9-1-1 call after a damage occurs that impacts us.

We are very public-safety oriented when we know the regulations. For example, if you were to block an exit door in a restaurant, chain the exits in a high school gym on game night, or smoke while pumping gas, if there is a conscientious firefighter near you, you'll hear about it! However, responders are not as aware of the safety recommendations of directional drilling. Educating responders about HDD is a great first step towards prevention. I am excited that some proactive states like Missouri, Pennsylvania, and others have been drafting legislation that allows local law enforcement or emergency responders to stop an excavator who is causing or risking a catastrophe.

In natural gas safety programs for emergency responders, I have seen the following problems:

- **Responders are not familiar with the need to locate the path of the bore (or that the path has to be marked).**
- **Responders are not familiar with the observation holes or why they are needed.**
- **Responders do not know excavators are required to hand dig within the defined tolerance zone when working in proximity to underground utilities such as electric or gas lines.**

They are, however, aware of and recognize the correlation between construction jobs using these trenchless technologies and their "runs" (response calls) increasing. They are also becoming uncomfortable with the length of time it sometimes takes the gas company to get there, often because the gas company is already at the site making repairs to similar damages.

It is guaranteed that emergency services will always respond to an "odor of gas," a "hit gas line," or any other accident if called. Let me help you understand the responders just a bit better. First, they look at accidents differently than the general public or contractors. Many of you might not know when we respond we focus on three priorities or strategic goals:

1. **Life Safety (preventing loss of life or injury)**
2. **Incident Stabilization (trying to keep the problem from spreading)**
3. **Environmental and/or Property Preservation (protecting property and the environment)**

If you use directional drills while disregarding safe operational procedures then you are jeopardizing the lives of many, including responders. The proliferation of these hits/accidents based on 45 years of emergency response and the increasing number of these emergencies tells me we are headed toward a severe incident of national significance with multiple deaths, injuries, and damage.

In fire service it has often been said, "There is no honor in fighting a fire that could have been prevented." The industry also has a safety motto, "All accidents are preventable." In both cases, prevention is the key.

Obviously doing anything more efficient is desirable. Using HDD is certainly faster than using a backhoe or a shovel with less inconvenience to the public, and efficiency is not in direct conflict with safety. Speed leads to unsafe conditions. Even in the Fire Service there are concerns with speed and safety. I learned a cardinal safety practice as a recruit 45 years ago, "There is no running on the fire ground." Rushing, disregarding procedures, or using a casual approach ("done this a thousand times") not only puts your personnel in jeopardy, but may place emergency services at the scene with disastrous results.

Directional underground drilling benefits the public, but progress should not be blind to the hazards and potential risks of a hit gas line that could have been avoided by simply taking the time to follow all safety procedures, such as:

- **Calling 8-1-1 or submitting an online locate ticket before digging**
- **Locating and waiting for services that mark the hazards**
- **Respecting the marks**
- **Digging holes for observation, and more...**

Preventing a tragedy makes your whole operation safer. The moment you think "safety," it also makes you safer. If not, the entire industry is headed toward an incident of disastrous proportions. My fear is that the emergency services will also be there and suffer injuries. In 45 years of my public safety experience many severe incidents of significance have had wide-ranging impact on an entire industry. Some are easily recognized because they are named after the "city" or the "company" involved.

Every day you have a choice to make - speed versus safety. Sadly, in many cases a clear disregard for safety procedures, whatever the reason, may lead to a tragedy that could have been prevented.

So, think safety – all day – every day!

Sincerely,
Michael Callan
Retired Captain, Wallingford FD
Responding to Utility Emergencies

Originally published in the 2018 Excavation Safety Guide

I am often asked how to better investigate a damage in order to beat paying for it. While I get the point of the question, the real purpose behind the damage investigation is to get to the truth of what happened. If the excavator is wrong, no amount of manipulation is going to change this fact. A good investigation, however, can tell what went wrong and how to change or improve things to prevent damage in the future. If the excavator did everything right, but has little or no documentation, they again find themselves involved in a claim. Excavators continue to find themselves in claims disputes because, in general, they don't do an adequate job of documenting a damage. To be fair, utilities don't do a good job either which leads to disputes and, in many cases, litigation.

A quality investigation can defend an excavator against unfair claims and literally save thousands of dollars. With just a few key processes in place, excavators can set themselves up for success in the event of an unforeseen incident. One of the most overlooked tasks necessary for a quality investigation occurs long before the incident ever happens. Taking photographs or video after locates are complete and before excavation begins can be critical in telling the story of a utility damage. Once excavation begins, the site changes forever; marks are destroyed making it impossible to know what the area looked like before the damage without the aid of pictures. Many court cases have been lost because the contractor could not prove their claim that a line had not been marked or was mismarked prior to the damage.

It is necessary to capture an overview of the area that provides a geographic reference to place the photograph at the location. Date

and time are important and many cameras have this information built into the metadata even though it may not show in the picture. Photographs should follow the path of the proposed excavation along with potential crossings of other utility lines. Even if there is no paint, pictures should be taken. If a line is struck, those photos will clearly show the absence of paint or flags. You can't take too many pictures. Pictures cost nearly nothing with today's technology, so take plenty.

Video can be an excellent addition to the documentation process. The concept is the same as with photography, except the videographer has the ability to narrate as the scene is captured. Talking about the marks (or lack of marks) as well as what will take place can be a powerful piece of evidence should things go wrong. Background noise and opinions should be kept out of the video. I've seen numerous videos produced that had great content, but the narration was filled with opinions and conclusions that were later proved wrong or with an obvious bias against the other party which hurt the contractor's case. Stick to the facts.

Potholing activities should be documented with pictures and video when possible. In many cases, open excavation will destroy any sign of potholing and if an incident occurs there will be questions as to whether potholing took place. Unfortunately, if it isn't documented, it might as well have not happened. This documentation will show the utility in question was safely exposed without damage, which can be helpful if something goes wrong several months or years down the road.

Once all utility responses have been verified and the potholing has been completed and documented, excavation can begin. It is a good idea to periodically take pictures and video throughout the excavation process.

All this documentation will certainly help to reduce damages, however, despite doing everything right incidents still happen. When they do, a quality investigation will get to the truth of what happened. Several steps are necessary to ensure a proper investigation.

First, do not leave the scene. If you are not on site, arrive as quickly as possible. It is necessary to preserve evidence and make sure that nothing occurs that may corrupt the scene. The first priority is to ensure the area is safe for workers and the general public.

Once it is safe to do so, pictures and, if possible, video should be taken of the scene. In the event of a natural gas release, always seek permission before using a camera as it could be an ignition source. Many efforts to document an incident result in four to eight pictures of a damage in a hole and not much more. While it is important to capture the actual point of damage, those pictures by themselves do little to help the case.

Damage investigators should remember they are telling the story of the damage through photos or video to someone who will likely never go to the site - an internal risk manager, insurance adjuster, utility claims representative or even a utility expert hired to review the case. Companies should develop a standardized process for photographing a scene that is easily repeatable.

One easy solution is called the "clock method". Using the center of the clock as the point of damage, the investigator starts at 12 at a distance away from it; potentially 50 feet or more depending on the size of damage and scope of work. A picture is taken looking toward the damage. The investigator moves halfway toward the damage and takes another picture. Moving close to the damage, the investigator takes one more. This process is repeated at the clock position 1:30, 3:00, 4:30, 6:00, 7:30, 9:00 and 10:30. This generates 24 pictures from varying perspectives. Designed for use with a disposable camera where there was no opportunity to review the photos prior to developing them, even with today's advanced digital cameras and cell phones, it is a good way to standardize the process of photography.

Additionally, photos following the path of the excavation and the path of the marks should be a point of emphasis. One key component of these pictures is a measuring device. Photos without these devices are fairly worthless when the dispute is whether marks put down were within the tolerance zone of the damaged utility line.

While a tape measure is fine, there are several products on the market which are very easy to see in photographs.

It is important to capture individuals involved in the incident in the pictures, including construction staff, locators, utility representatives and witnesses. If the case should go to litigation, this places them at the scene at the time of the incident. Vehicle photos including license plates may be helpful in determining the identity of an uncooperative representative. Video should follow the same basics process.

The next step of the investigation is to draw a diagram. This should be done on site during the investigation, not later at the office where details may be forgotten. This diagram should contain landmarks, directions, marks (if present), the path of excavation and all other important information. It doesn't matter if the investigator is not an artist. The drawing can be cleaned up or reproduced in a software program later. Pictures can be added, and comments, directions, names and other details can be overlaid on top of the photos to tell the story of the damage.

It may be possible to utilize a Google Earth image and redraw the diagram on it. The purpose is to help tell the story of the damage. Photographic locations can be added to the diagram to help provide perspective.

Interviews can be another important part of the investigation, including the excavator's staff, the locators and the utility representatives. In many cases, the locators and utility representatives may refuse to give a statement but an attempt should still be made. If litigation occurs, the investigator may find him/herself in a deposition in which the question is asked about whether he/she talked to the other sides. If the answer is no, it will be easy to spin the testimony to sound like the investigation was one-sided and didn't consider other parties. If other parties refuse, it should be documented on the investigation report. With this, the answer becomes, "I tried, but they refused to talk to me", which changes the dynamic and should diffuse that line of questioning. If they do talk, it should be documented and if possible, signed.

Along with interviewing internal staff, statements should be collected from those on site at the time of the incident. Each employee should write a personal statement about what they were doing when the damage happened and what was observed. The employee should sign and date this statement. Never write a group statement and have employees sign it. This can be made to imply the company is telling the employee what to say. After personal statements have been gathered, it is fine to gather everyone together to talk about what they saw as a group. One prominent attorney uses this technique to tap into what he calls their collective conscience. By getting them together, one employee may remember one thing that spurs the rest to build on the point and additional facts may be revealed.

It is important that, regardless of the investigation form used, it is completed entirely. "N/A" is better than a blank field. Blank spaces can lead to the perception of an incomplete report. Forms should be completed on site; waiting to get back to the office can lead to errors and loss of needed facts. One error could lead others to question the accuracy of the entire report.

Once all information has been collected, it is important to store it in a location where it can be easily retrieved at a later date. Because invoices for damages can come months or years after the incident, storage and retrieval are necessary requirements of any damage investigation process. This is one of the main reasons it is critical to thoroughly document a damage. After the incident, life goes on. Other jobs continue and the memory of the incident can fade away. Employees may leave, taking with them valuable information. A thorough damage investigation helps remind everyone of what actually happened and fills in the gaps caused by memory loss and employee turnover.

Simply put, a quality damage investigation puts your company in the driver's seat. ESG

Ron Peterson is dedicated to damage prevention and improving safety within the industry. In addition to providing damage prevention and investigation services as owner of Ron Peterson Consulting, Ron has held the position of Executive Director of Nulca since 2009. Ron can be reached at ron@ronpetersonconsulting.com.

OVERPIPE®

Setting the global standard for protecting pipelines, communities, and the environment.

OVERPIPE® plates are trusted globally to provide the highest level of protection for buried pipe systems without requiring the labor, equipment, or cost-intensive installation procedures of traditional pipe barrier systems.

Made from durable HDPE, **OVERPIPE®** plates can withstand 32-ton excavator impacts and resist degradation and embrittlement in any soil or climate. The plates do not interfere with cathodic protection systems and provide an unmissable barrier with custom coloring, messaging, and coverage dimensions.

Plates can be installed by hand and feature beveled edges and non-slip surfaces to ensure installer safety. Easy and quick installation procedures translate to reductions in project timelines, GHG emissions, and costs when compared to steel plates or concrete slabs.

CASE STUDY

Coastal GasLink - BC, Canada

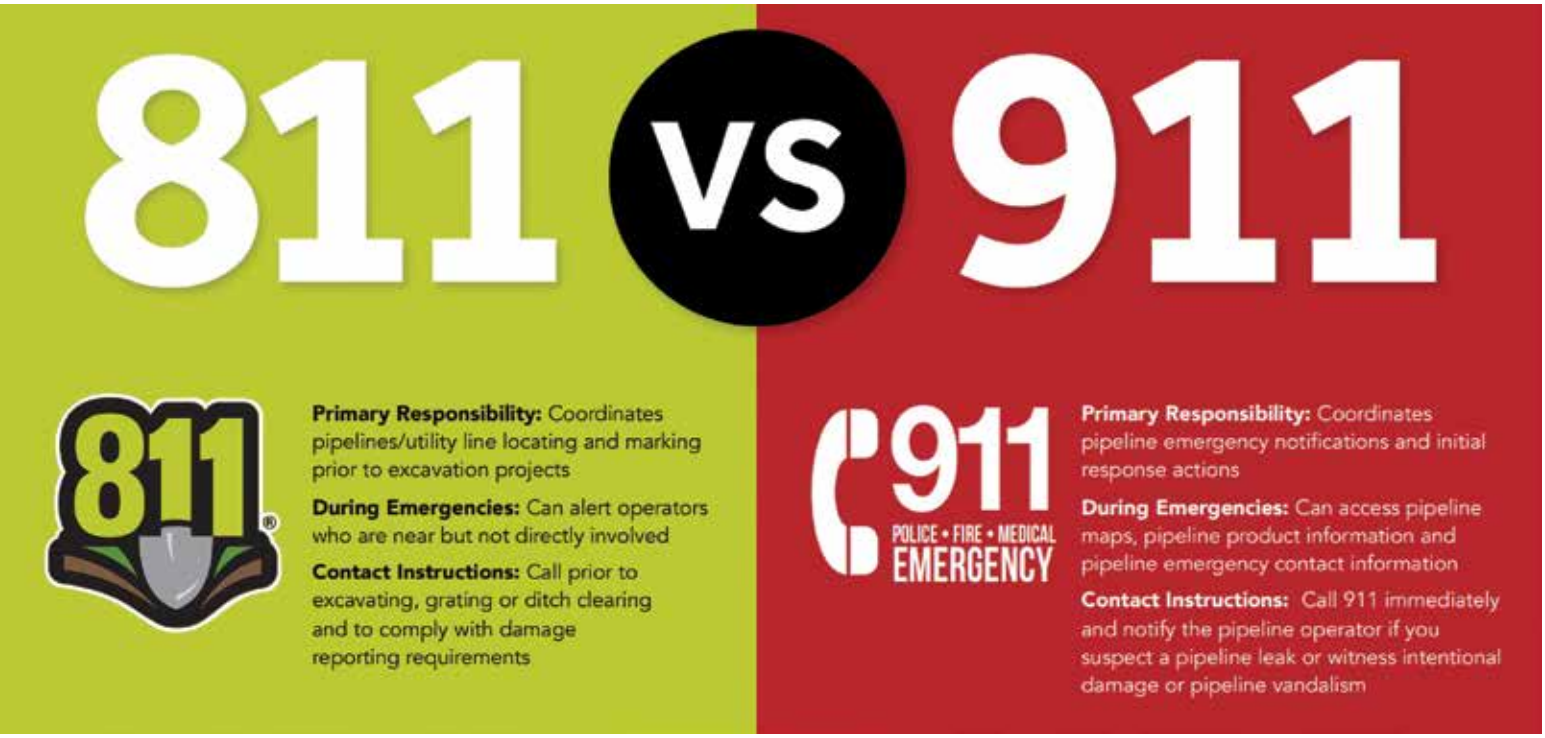
The Coastal GasLink project faced high levels of public scrutiny regarding the environmental impacts of the construction and use of the pipeline, necessitating the implementation of uncompromising safety and hazard control measures. **OVERPIPE®** was selected to protect the pipe against 3rd party damage without adding risks, costs, or delays to the construction of the line.

OV4 plates were assembled to create a 2.2 m wide barrier over a 1.1 km section of the 42" pipe. **OVERPIPE®** offered a resilient and easy-to-install system for protecting the pipeline, local communities, and the pristine mountain environment.

For more info, contact:
info@sealforlife.com

CANUSA-CPS
Corrosion Protection & Sealing

SEALFORLIFE Industries



Community Liaison Services

Formerly known as the Community Assistance and Technical Services (CATS) Program

PHMSA has renamed its CATS program to "Community Liaison Services" to more appropriately align with current roles and responsibilities and better interface with various stakeholders.

Mission:
To advance PHMSA's pipeline safety mission by proactively engaging with pipeline stakeholders, providing technical expertise, and leveraging technology, data, and information to reduce pipeline risks and influence change through program and policy development.

Vision:
To serve as "trusted" and "credible" stewards of public safety and environmental protection by raising awareness and influencing change to continuously improve pipeline safety.

If you need assistance with any of the following pipeline safety related matters, please contact a PHMSA Community Liaison today:
- Pipeline safety policy/programs (damage prevention, public awareness, emergency response, PIPA, etc.)
- Pipeline stakeholder engagement and outreach
- Pipeline technical services and support (public inquiries, whistleblowers, post incident/accident communications, siting and permit initiatives)
- Questions about pipeline safety in your community

Community Liaisons are located within each PHMSA region.

Community Liaison Services Program Manager
Karen Lynch: karen.lynch@dot.gov • Phone: (202) 366-6855

OPS Central Region:
Illinois; Indiana; Iowa; Kansas; Michigan; Minnesota; Missouri; Nebraska; North Dakota; South Dakota; Wisconsin.
Angela Pickett: angela.pickett@dot.gov • Phone: (816) 329-3823
Sean Quinlan: sean.quinlan@dot.gov • Phone: (816) 329-3800

OPS Southern Region:
Alabama; Florida; Georgia; Kentucky; Mississippi; North Carolina; Puerto Rico; South Carolina; Tennessee.
James Kelly: james.kelly@dot.gov • Phone: (404) 990-1848
Arthur Buff: arthur.buff@dot.gov • Phone: (404) 226-6153

OPS Eastern Region:
Connecticut; Delaware; Maine; Maryland; Massachusetts; New Hampshire; New Jersey; New York; Ohio, Pennsylvania; Rhode Island; Vermont; Virginia; Washington, D.C.; West Virginia.
Karen Gentile: karen.gentile@dot.gov • Phone: (609) 433-6650
Nita Raju: Nitander.raju@dot.gov • Phone: (609) 771-7806

OPS Southwest Region:
Arkansas; Louisiana; New Mexico; Oklahoma; Texas.
Bill Lowry: bill.lowry@dot.gov • Phone: (713) 272-2845
James 'Jay' Prothro:james.prothro@dot.gov • Phone: (713) 272-2832

OPS Western Region:
Alaska; Arizona; California; Colorado; Hawaii; Idaho; Montana; Nevada; Oregon; Utah; Washington; Wyoming.
Tom Finch: thomas.finch@dot.gov • Phone: (303) 807-7200
Dave Mulligan: david.mulligan@dot.gov • Phone: (720) 963-3193 ESG

SAFETY TRAINING VIDEOS

A valuable collection of educational videos for excavators in the underground utility industry, the videos below have been curated from industry stakeholders around the country. Delve into the content contributed by these experts to fortify your knowledge and to further promote a culture of safety in your daily work activities.

#1 – Pipeline Safety for Excavators

- Discover essential information on preventing third-party pipeline damage. Explore the methods employed by operators to locate underground pipelines, guidelines for safe digging near pipelines, recognizing signs of a pipeline leak, and the appropriate response protocols in the event of a pipeline damage.

#3 – Excavations in Construction/Trenching

- Learn how to prevent construction worker fatalities. This video showcases the dangers of trenching and emphasizes OSHA rules such as sloping, shoring, and shielding to ensure worker safety.

#2 – Excavation Emergencies

- Explore the significant topic of excavation emergencies, delving into real-world examples that underscore the importance of actively preventing these critical situations. Gain practical insights on how to address and navigate challenges effectively.

#4 – 5 Steps to Safer Digging Toolbox

- This resource highlights five essential steps for safely excavating around underground utilities, emphasizing pre-marking, contacting 8-1-1, accurate information submission, careful digging within tolerance zones, and prompt reporting of any damage.

API Releases CONTRACTOR SAFETY TOOL

BY
LAURIE KNAPE,
CSP, ASP, CLCS, QMS

Originally published in the 2023 Winter Excavation Safety Magazine

The American Petroleum Institute (API) and the Pipeline Safety Management Systems (SMS) Industry Team have long been committed to pipeline safety. In 2022, they released the *Pipeline SMS: A Contractor's Guide*, which provides pipeline contractors and service providers a clear roadmap for integrating their safety programs with an operator's Pipeline SMS.

Although the *Contractor's Guide* provides general guidance to API Recommended Practice 1173 (RP 1173), the sheer number of overall requirements can still make compliance a bit challenging. To provide clarity and address the industry's dynamic nature, API and the Pipeline SMS Industry Team have launched a proprietary tool on www.PipelineSMS.org. This free, cutting-edge tool complements the *Contractor's Guide*, providing users with real-time insights, benchmarks, and feedback mechanisms that further assist them in gauging their implementation of the *Guide's* numerous requirements.

History of the Guide

The release of the first edition of the *Guide* marked a significant milestone for industry progress towards full adoption of RP 1173. As a free complement to that 2015 document, the *Guide* distills RP 1173 and its 234 requirements down to 56 key requirements where, depending on a contractor or service provider's scope of work, operators can focus their collaboration efforts to ensure appropriate alignment with their pipeline SMS.

The *Guide* aims to align contractors, operators, and service providers in protecting workers, communities, and the environment. Both API and the Pipeline SMS Industry Team encourage contractors, service providers, and operators to use the *Guide* and begin discussions on the appropriate integration of safety programs relevant to pipeline SMS.

Tooling With Success

While the *Guide* streamlines RP 1173's requirements, navigating them can still be challenging. Recognizing this, the Pipeline SMS Evaluation Tool not only complements the *74* but also offers a hands-on approach to its implementation.

This tool represents a significant shift towards a more dynamic and collaborative approach to pipeline safety. While the Guide provides helpful explanations and details, the tool emphasizes real-time application and ongoing improvement, helping contractors effectively and efficiently manage the complexities of achieving pipeline safety.

As the pipeline industry continues to evolve, the new Pipeline SMS tool is an important resource for helping contractors consistently align with safety standards. It is yet another milestone in the organizations' efforts to promote pipeline safety. ESG

Laurie Knape is the Program Manager of Pipeline SMS with the American Petroleum Institute (API) in Houston, Texas. In this role, Laurie manages the Pipeline SMS Third-Party Assessment Program. Prior to this role, Laurie worked as EHS Manager for both operators and contractors. Laurie holds the CSP, ASP, CLSC and QMS designations.

RESOURCES:

Additional Aid as part of industry commitment to Pipeline SMS, the Industry Team, which includes contractors who build, maintain, and repair natural gas and oil pipelines continues to collaborate to provide education, training, and assistance to all industry stakeholders. Provided here are several additional resources contractors can use as they work to implement or improve their current Pipeline SMS.

Pipeline SMS website

This Pipeline SMS website at PipelineSMS.org provides a myriad of support tools ranging from handouts to tools which assist stakeholders in their Pipeline SMS assessments.

Third Party Assessment Program

API's Pipeline SMS Third-Party Assessment Program provides a team of independent, third-party safety management system experts ("assessors") to assist in evaluating the conformity, effectiveness and maturity of a stakeholder's Pipeline SMS.

American Petroleum Institute

On API's website at www.api.org, recommended practices, literature and the latest Pipeline SMS related news and events can be found.

Pipeline SMS Industry Team

The Industry Team serves to facilitate implementation of API RP 1173, Pipeline Safety Management Systems, among the energy pipeline industry and contractor community.

Pipeline Location Information

Reproduced with permission from Pipeline Association for Public Awareness

PIPELINE MARKERS

Pipelines are buried in areas called rights-of-way. Pipeline markers are used to designate the general route of the pipeline. Markers can also be found where a pipeline crosses a street or railroad, emerges from the ground, or in waterways.

BE AWARE: Pipeline markers will not designate the exact location, depth or number of pipelines in the area. Markers come in different shapes and sizes, but will always:

- **Include the word WARNING, DANGER OR CAUTION**
- **Identify the material being transported**
- **Provide a number to reach the company in event of an emergency**
- **Provide the name of the pipeline company**

Gathering pipelines are normally located in rural areas and transport crude oil or natural gas from wellheads and production facilities to processing facilities where the oil, gas and water are separated and processed.

Transmission pipelines move refined liquid products and natural gas from refineries to marketing and distribution terminals typically using larger diameter, high-pressure lines. The general location of all transmission pipelines can be viewed in the National Pipeline Mapping System at www.npms.phmsa.dot.gov

Distribution pipelines are normally located in populated areas and carry natural gas or propane from a transmission pipeline or storage facility directly to residential and industrial customers. Some companies have included the location of their pipelines in a mobile friendly web application called Pipelines Nearby, which can be accessed at www.pipelinesnearby.org

MARCADORES DE TUBERÍA

Las tuberías son enterradas en áreas llamadas derecho de paso (ROW por sus siglas en ingles). Los marcadores de tubería se usan para designar la ruta general de la tubería. Los marcadores también pueden ser encontrados donde una tubería cruza una calle o riel de tren, donde sale del suelo, o en vías navegables.

ESTÉ CONSCIENTE: Los marcadores no dan la ubicación exacta, profundidad ni número de tuberías en el área. Los marcadores vienen en diferentes formas y tamaños, pero siempre incluyen:

- **Incluye la palabra WARNING, DANGER OR CAUTION (aviso, peligro o precaución)**
- **Identifica el material siendo transportado**
- **Da el número de la compañía en case de emergencia**
- **Da el nombre de la compañía de tubería**

Tuberías **Recolectoras** están situadas en zonas rurales y transportan normalmente petróleo crudo o el gas natural de manantiales y de instalaciones de producción a centros de procesamiento donde se separan y se procesan aceite, gas y agua.

Las tuberías de **Transmisión** mueven productos y gas natural líquidos refinados desde refinerías a terminales comerciales y de distribución típicamente usando líneas de alta presión con diámetro más grande. La ubicación general de todas las tuberías de transmisión se puede ver en el sistema de trazado nacional de tubería en www.npms.phmsa.dot.gov

Las tuberías de **Distribución** están situadas en áreas pobladas y llevan normalmente el gas natural o propano de una tubería de transmisión o instalación de almacenamiento directamente a clientes residenciales e industriales. Algunas compañías han incluido la ubicación de sus tuberías en una aplicación web móvil llamada Pipelines Nearby, que puede ser accedida en www.pipelinesnearby.org ESG

Thank You, ESA Company Members!

ESA EXCAVATION SAFETY ALLIANCE MEMBER

ESA Company Members make the ESA mission possible by supporting impactful initiatives and the continued growth of this incredible community, over 1,500 individual members and growing.

Become an ESA Company Member

Your annual $2,000 membership will help make all the individual membership benefits possible and make it clear to the industry that you support damage prevention and excavation safety. In addition, your company will receive:

- **A 10% discount on attending the Global Excavation Safety Conference, excluding the early bird $811 offer (unlimited use)**
- **Company logo and link on the ESA member page**
- **Company logo on the ESA member section in the annual Excavation Safety Guide (Print circulation of 500,000+)**
- **Company logo on the ESA member section in the annual Excavation Safety Magazine (Print circulation of 15,000)**

Industry Publications

811 Magazines
Now published in 9 states and growing. It is not just printing the dig safely message that gets the job done. It's about connecting with the right people. Working with the One Call systems in each state, we reach the people you're looking to reach. Ask us how we do it!

American Gas Magazine
provides natural gas industry professionals with the information they need to enhance their effectiveness and that of their companies by publishing leading-edge reports on the industry and on American Gas Association activities that offer value to its members.

Broadband Communities
aims to accelerate the deployment of FTTH and FTTP while keeping readers informed on the available solutions for serving their practical needs. BC offers in-depth news, expert insights, and practical know-how on the technical, business, financial, and legal aspects of outfitting properties and communities with broadband solutions. For your free subscription, visit www.bbcmag.com.

CoatingsPro
Magazine takes a real-world look at coatings projects from the contractors' viewpoint. The magazine includes coatings on concrete and steel pipelines, foundations, and utilities. Featuring industry news and case studies to provide practical and cost-effective solutions to its 27,000+ readers, the magazine reaches contractors, applicators, specifiers, engineers, and facility managers in 16 unique market segments of the commercial and industrial coatings industry.

Compact Equipment
Compact Equipment is the ultimate resource for construction and landscape professionals who purchase, maintain and operate compact equipment. Learn more at https://compactequip.com/.

Construction Equipment Guide
Founded in 1958, it is a national publication and website that provides industry news; articles on construction equipment, projects and legislation; auction coverage; business profiles and events and more. CEG also has more than 100,000 new and used equipment listings from dealers and auction companies across the country, plus a full auction calendar to keep you up to date with the industry, and a historical database of equipment specs at your fingertips.

Dig Different
print magazine, along with its website and E-newsletters serve professionals involved in traditional excavation, vacuum excavation, trenching, directional drilling and boring, and bursting and tunneling, using the most innovative technology.

Excavation Safety Magazine
In 2010, Infrastructure Resources, LLC launched dp-PRO. In 2023, dp-PRO has become Excavation Safety Magazine reaching 15,000+ decision-makers through print and digital each year. Dedicated to protecting buried infrastructure and expanding the industry's knowledge on damage prevention and public awareness, Excavation Safety Magazine offers relevant and thought-provoking articles and features written by industry professionals.

Industry Publications

GoGeomatics
Founded in 2011, GoGeomatics is a Canadian-based social enterprise that focuses on geospatial information and technology. With a focus on professional development, career opportunities, knowledge sharing and community building, we attract the largest audience of professionals looking for all things geo. Each year, GoGeomatics hosts two major national events - GeoIgnite in Ottawa and the GoGeomatics Expo in Calgary. We are also home to popular webinars, numerous student-driven networking events and GeoIgnite Career Fairs.

ISE (ICT Solutions & Education)
connects network evolution professionals with innovative solutions and concise education across the rapidly changing ICT landscape. As the lines separating telephone, Internet and television companies continue to blur, ISE is the resource telecom providers have trusted for over 30 years. www.isemag.com

LECTURA
LECTURA has been the leading provider of machinery intelligence on the market since 1984. Our database contains information and data on more than 170,000 heavy machinery models and provides evaluation of used machines through our online tools and digital solutions. This extensive database of equipment information attracts over 1.2 million professional visitors every month, when researching machinery before their purchase decision. Our buyer's guide represents a perfect platform to reach buyers and decision makers.

Materials Performance
(MP) is the world's largest circulation magazine dedicated exclusively to corrosion prevention and control. MP covers the latest technologies used in industries and infrastructure worldwide including protective coatings, cathodic protection, chemical treatment, and materials selection and design.

Trenchless Today
focuses on the utility and application of trenchless methods in gas distribution pipeline repair and new construction programs.

The Locator
is an annual publication geared toward line locating and ground disturbance. It is focused on CAPULC initiatives, best practices, and damage prevention topics. 2023 Highlights: Locator Stories From the Trenches, and Working Toward the Underground Facility Locating and Marking Standard!

Trenchless North America
is the flagship publication of the North American Society for Trenchless Technology (NASTT). Published three times per year, Trenchless North America is a publication about the industry featuring project and equipment news, trenchless innovations, industry personnel profiles and NASTT training and conference information.

Utility Contractor
The official publication of the National Utility Contractor's Association, Utility Contractor keeps members up-to-speed on association news and practices affecting the industry. Learn more at https://utilitycontractormagazine.com/.

Trenchless Technology
Launched in 1992, Trenchless Technology is the most widely-recognized magazine serving the underground construction market. Learn more at https://trenchlesstechnology.com/.

Excavation Best Practices

Chapters from CGA Best Practices 19.0
For the complete Excavation Best Practices, see CGA Best Practices 19.0 at BestPractices.CommonGroundAlliance.com

5 Excavation
5.01 811 Facility Locate Request
5.02 Delineate Area of Proposed Excavation
5.03 Locate Reference Number
5.04 Pre-Excavation Meeting
5.05 Facility Relocations
5.06 Separate Locate Requests
5.07 811 Center Access (24/7)
5.08 Positive Response
5.09 Facility Owner/Operator Failure to Respond
5.10 Locate Verification
5.11 Documentation of Marks
5.12 Work Site Review with Company Personnel
5.13 811 Center Reference at Site
5.14 Contact Names and Numbers
5.15 Facility Avoidance
5.16 Federal and State Regulations
5.17 Marking Preservation
5.18 Excavation Observer
5.19 Excavation Tolerance Zone
5.20 Excavation within Tolerance Zone
5.21 Mismarked Facilities
5.22 Exposed Facility Protection
5.23 Locate Request Updates
5.24 Facility Damage Notification
5.25 Notification of Emergency Personnel
5.26 Emergency Excavation
5.27 Backfilling
5.28 As-Built Documentation
5.29 Trenchless Excavation
5.30 Emergency Coordination with Adjacent Facilities
5.31 No Charge for Providing Underground Facility Locations
5.32 Vacuum Excavation
5.33 Facility Owner Provides a Monitor During Excavation ESG

Notification Center and State Law Directory

Informational purposes only. Information and laws are subject to change. Consult your local Notification Center website for updated information. Excavation Safety Alliance, LLC attempted to verify all information as of publication date, and accepts no responsibility for missing or incorrect information.

You can reach your local Notification Center in the U.S. by dialing 811.

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

	TICKETS			STATE LAWS & PROVISIONS									NOTIFICATION EXEMPTIONS					NOTIFICATIONS ACCEPTED					Tolerance Zone (either side of the utility plus the width of the utility)
	FAX	Online	Mobile	Statewide Coverage	Civil Penalties	Emergency Clause	Mandatory Membership	Excavator Permits Issued	Mandatory Premarks	Positive Response	Hand Dig Clause	Damage Reporting	DOT	Homeowner	Railroad	Agriculture	Depth	Damage	Design	Emergency	Overhead	Large Projects	
ALABAMA / Alabama 811 / 800-292-8525																							
Website: al811.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 full working days (not including day of notification) **Marks Valid:** 20 working days **Law Link:** al811.com/law	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	Y	Y	12" *	Y	Y	Y	N	N	18"
	*Agricultural purposes only																						
ALASKA / Alaska Dig Line, Inc. / 800-478-3121 or 907-278-3121																							
Website: 811ak.com **Hours:** 8:00 AM - 5:00 PM, M-F/Emergency 24/7 **Advance Notice:** 2-10 business days based on location **Marks Valid:** 15-20 business days based on location **Law Link:** 811ak.com/faq	N	Y	Y	Y	Y	Y	N	N	N	N	Y	N	N	N	N	Y	N	Y	Y	Y	N	Y	24"*
	*24-30" based on proposed depth of dig																						
ARIZONA / Arizona 811 / 800-782-5348																							
Website: arizona811.com **Hours:** 6:00 AM - 5:00 PM, M-F **Advance Notice:** 2 full working days(excludes weekends and holidays) **Marks Valid:** 15 working days **Law Link:** arizona811.com/resources/	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	N	N	Y	N	N	Y	Y	N	N	24"
ARKANSAS / Arkansas 811 / 800-482-8998																							
Website: arkansas811.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 to 10 working days **Marks Valid:** 20 working days **Law Link:** arkonecall.com/statelaw/statelaw.aspx	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N	N	N	N	Y	Y	N	Y	18"
CALIFORNIA																							
Underground Service Alert of Northern CA & NV **USA North 811 / 800-642-2444** **Website:** usanorth811.org **Hours:** 24 x 7 **Advance Notice:** 2 working days, not including the day of notification **Marks Valid:** 28 days **Law Link:** usanorth811.org (Quick Links / Law & Excavation Manual)	N	Y	Y	N	Y	Y	Y*	Y	Y	Y	Y	Y	N	Y	N	N	N	Y	N	Y	N	Y	24"
Underground Service Alert of Southern California / 800-422-4133 **Website:** digalert.org **Hours:** 6:00 AM - 7:00 PM, M-F **Advance Notice:** 2 working days to 14 calendar days not including date of notice **Marks Valid:** 28 days **Law Link:** https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=GOV&division=5.&title=1.&part=&chapter=3.1.&article=2	N	Y	Y	N	Y	Y	Y*	Y	Y	Y	Y	Y	N	Y	N	N	N	Y	N	Y	N	Y	24"
	*DOT and non-pressurized sewer lines, storm drains and drain lines exempt																						
COLORADO / Colorado 811 / 800-922-1987																							
Website: co811.org • **Hours:** 24 hours **Advance Notice:** 2 days, not to include the day of notice **Marks Valid:** 30 days **Law Link:** colorado811.org/one-call-legislation/	N	Y	Y	Y	Y	Y	Y*	N	N	Y	N	Y	N	N	N	Y	Y	Y	Y	Y	N	Y	18"
	* DOT exempt																						
CONNECTICUT / Call Before You Dig / 800-922-4455																							
Website: www.cbyd.com **Hours:** 7:00 AM - 5:00 PM, M-F; Emergencies 24 Hours **Advance Notice:** 2 full working days up to 30 calendar days (excludes weekends, holidays and the day of notification) **Marks Valid:** 30 days **Law Link:** www.cbyd.com/resources/ct-cbyd-state-law-regulations#	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	Y	N	Y	Y	Y	N	Y	18"
DELAWARE / Miss Utility of Delmarva / 800-282-8555																							
Website: missutility.net/delaware **Hours:** 24 hours, 7 days **Advance Notice:** 2 full business days **Marks Valid:** must start within 10 calendar days, no expiration as long as marks still visible and scope does not change. **Law Link:** delcode.delaware.gov/title26/c008/index.shtml	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	N	N	N	N	Y	Y	N	N	24"
FLORIDA / Sunshine 811 / 800-432-4770																							
Website: sunshine811.com **Hours:** 7:00 AM - 6:00 PM **Advance Notice:** 2 full business days (10 if dig site is underwater) **Marks Valid:** 30 days **Law Link:** sunshine811.com/law	N	Y	N	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	24"

Notification Center and State Law Directory

HELP US STAY UP TO DATE.
Directory information is also available online at ExcavationSafetyGuide.com. Report any updates to this directory by calling 866-279-7755.

You can reach your local Notification Center in the U.S. by dialing 811.

Know what's below. Call before you dig.

	TICKETS			STATE LAWS & PROVISIONS									NOTIFICATION EXEMPTIONS					NOTIFICATIONS ACCEPTED					
	FAX	Online	Mobile	Statewide Coverage	Civil Penalties	Emergency Clause	Mandatory Membership	Excavator Permits Issued	Mandatory Premarks	Positive Response	Hand Dig Clause	Damage Reporting	DOT	Homeowner	Railroad	Agriculture	Depth	Damage	Design	Emergency	Overhead	Large Projects	Tolerance Zone (either side of the utility plus the width of the utility)
GEORGIA / Georgia 811 / 800-282-7411																							
Website: Georgia811.com **Hours:** 7:00 AM - 6:00 PM, M-F • (24/7 emergency) **Advance Notice:** 2 business days (excluding day of call) **Marks Valid:** 30 calendar days **Law Link:** georgia811.com/index.php/laws-policies/	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N*	N	N	N**	N	Y	Y	Y	Y	Y	18”
	** Routine road maintenance* *** Farming activities*																						
HAWAII / Hawaii One Call Center / 866-423-7287 / Tickets Fax: 877-695-2466																							
Website: callbeforeyoudig.org **Hours:** 24 hours, 7 days **Advance Notice:** 5 workings days, not to exceed 28 calendar days **Marks Valid:** 28 calendar days **Law Link:** callbeforeyoudig.org/law.htm	Y	Y	N	Y	Y	Y	Y	N	Y	Y	Y	N	N	Y	N	N	N	Y	Y	Y	N	N	30”
IDAHO																							
DIG LINE / 800-342-1585 **Website:** digline.com **Hours:** 24 hours **Advance Notice:** 2 business days **Marks Valid:** 21 Days **Law Link:** https://legislature.idaho.gov/statutesrules/idstat/title55/T55CH22/	N	Y	N	N	Y	Y	Y	N	Y	N	Y	Y	N	15”	N	Y	15”	Y	Y	Y	Y	Y	24”
BONNER/BOUNDRY One Call / 800-626-4950 **Website:** passwordinc.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 business days **Marks Valid:** 21 days **Law Link:** legislature.idaho.gov/statutesrules/idstat/Title55/T55CH22/	N	Y	N	N	Y	Y	Y	N	Y	N	Y	Y	N	15”	N	Y	15”	Y	Y	Y	Y	N	24”
SHOSHONE/BENEWAH One Call / 800-398-3285 **Website:** passwordinc.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 business days **Marks Valid:** 21 days **Law Link:** legislature.idaho.gov/statutesrules/idstat/Title55/T55CH22/	N	Y	N	N	Y	Y	Y	N	Y	N	Y	Y	N	15”	N	Y	15”	Y	Y	Y	Y	N	24”
KOOTENAI COUNTY One Call / 800-428-4950 **Website:** kootenaicounty811.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 business days **Marks Valid:** 21 days **Law Link:** legislature.idaho.gov/statutesrules/idstat/Title55/T55CH22/	N	Y	Y	N	Y	Y	Y	N	Y	N	Y	Y	N	15”	N	Y	15”	Y	Y	Y	N	Y	24”
ILLINOIS																							
JULIE, INC. / 800-892-0123 **Website:** illinois1call.com • **Hours:** 24 hours, 7 days **Advance Notice:** 48 hours notice (two business days), but no more than a 14 calendar day advance notice prior to the start of excavation. **Marks Valid:** 28 calendar days **Law Link:** illinois1call.com/lawandenforcement/	N	Y	N	N	Y	Y	Y	N	Y*	Y	Y	Y	N	N	Y	Y	N	Y	Y	Y	N	N	18”
811 CHICAGO / 312-744-7000 **Website:** ipi.cityofchicago.org/Digger **Hours:** 24 hours a day, 7 days a week **Advance Notice:** 48 hours • **Marks Valid:** 28 days **Law Link:** https://codelibrary.amlegal.com/codes/chicago/latest/chicago_il/0-0-0-2651040	N	Y	N	N	Y	Y	Y	Y	Y*	Y	Y	Y	N	N	Y	Y	N	Y	N	Y	N	N	18”
	**When possible*																						
INDIANA / Indiana 811 / 800-382-5544																							
Website: indiana811.org • **Hours:** 24 hours, 365 days **Advance Notice:** 48 hours notice (two working days), but no more than a 20-calendar day advance notice prior to the start of excavation. **Marks Valid:** 20 calendar days **Law Link:** indiana811.org/wp-content/uploads/2019/06/IC-8-1-26-1.pdf	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	N	Y	Y	N	Y	Y	Y	N	N	24”
IOWA / Iowa One Call / 800-292-8989																							
Website: iowaonecall.com • **Hours:** 24 hours, 7 days **Advance Notice:** 48 hours, excluding Saturdays, Sundays, and legal holidays **Marks Valid:** 20 calendar days **Law Link:** iowaonecall.com/Default.aspx?tabid=404#iowa	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	Y*	N	Y	Y	Y	N	Y	18”
	**Normal farm operations less than fifteen inches*																						

Know what's below. Call before you dig.

Expand public awareness by visiting call811.com. You will find a variety of downloadable elements available for use free in your company/organization's existing campaigns.

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

	TICKETS			STATE LAWS & PROVISIONS									NOTIFICATION EXEMPTIONS					NOTIFICATIONS ACCEPTED					
	FAX	Online	Mobile	Statewide Coverage	Civil Penalties	Emergency Clause	Mandatory Membership	Excavator Permits Issued	Mandatory Premarks	Positive Response	Hand Dig Clause	Damage Reporting	DOT	Homeowner	Railroad	Agriculture	Depth	Damage	Design	Emergency	Overhead	Large Projects	Tolerance Zone (either side of the utility plus the width of the utility)
KANSAS / Kansas 811 / 800-344-7233																							
Website: kansas811.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 full working days(not including day of notice) **Marks Valid:** 15 calendar days **Law Link:** kansasonecall.com/static/pdf/KUUDPA_04.03.2010.pdf	N	Y	Y	Y	Y	Y	Y	N	N	Y	N	N	N	Y*	Y	Y	N	N	Y	Y	N	N	24"
	*Homeowner retains responsibility for any damages due to digging																						
KENTUCKY / Kentucky 811 / 800-752-6007																							
Website: kentucky811.org **Hours:** 24 hours/7 days **Advance Notice:** 2 working days **Marks Valid:** 21 calendar days **Law Link:** kentucky811.org/the-dig-law	N	Y	N	Y	Y	Y	N	N	N	Y	Y	Y	N	N	Y	Y	N	Y	Y	Y	N	Y	24"
LOUISIANA / Louisiana 811 / 800-272-3020																							
Website: louisiana811.com **Hours:** 7:00 AM - 6:00 PM, Emergency Locates 24/7 **Advance Notice:** 2 Business Days **Marks Valid:** 20 Days/30 Days for Forestry **Law Link:** louisiana811.com/index.php/dig-law	N	Y	Y	Y	Y	Y	N	N	Y	Y	N	N	N	Y	N	Y	N	Y	Y	Y	N	N	18"
MAINE / Dig Safe System, Inc. / 888-344-7233																							
Website: digsafe.com **Hours:** 24 hours, 7 days **Advance Notice:** 72 hours(excluding weekends and holidays) **Marks Valid:** 60 days; must start within 30 days **Law Link:** http://www.digsafe.com/laws_rules.php	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	Y	N	Y	N	Y	18"
MARYLAND / Miss Utility (Western Shore) / 800-257-7777																							
Website: www.missutility.net **Hours:** 24 hours, 7 days **Advance Notice:** 2 full business days **Marks Valid:** 12 business days **Law Link:** www.missutility.net/maryland/	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	N	N	Y*	N	N	N	N	Y	Y	N	N	18"
	*Hand dig only up to a depth of 6". Mechanized equipment must call.																						
Miss Utility of Delmarva (Eastern Shore) / 800-441-8355 **Website:** missutilitydelmarva.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 full business days **Marks Valid:** 12 business days **Law Link:** www.missutility.net/maryland/	N	Y	Y	Y	Y	Y	Y	N	N	Y	N	Y	N	Y	N	N	N	N	Y	Y	N	N	18"
MASSACHUSETTS / Dig Safe System, Inc. / 888-344-7233																							
Website: digsafe.com **Hours:** 24 hours, 7 days **Advance Notice:** 72 hours(excluding weekends and holidays) **Marks Valid:** 30 days **Law Link:** digsafe.com/laws_rules.php	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	Y	N	Y	N	Y	18"
MICHIGAN / Miss Dig System, Inc. / 800-482-7171																							
Website: missdig811.org **Hours:** 24 hours **Advance Notice:** 3 business days(excluding weekends and holidays) **Marks Valid:** 3 weeks to 6 months **Law Link:** missdig811.org/education/public-act-174.html	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	Y	N	Y	18"
MINNESOTA / Gopher State One Call / 800-252-1166 or 651-454-0002																							
Website: gopherstateonecall.org **Hours:** 24 hours **Advance Notice:** 48 hours(excluding weekends and holidays) **Marks Valid:** 14 days **Law Link:** revisor.leg.state.mn.us/statutes/?id=216D	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N	Y	N	N	Y	Y	N	Y	24"
MISSISSIPPI / Mississippi 811, Inc. / 800-227-6477 / Tickets Fax: 601-362-7533																							
Website: ms811.org **Hours:** 24 hours, 7 days **Advance Notice:** 3 working days **Marks Valid:** 14 working days **Law Link:** ms1call.org/One Call-law	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y	24"	12"	Y	Y	Y	N	Y	18"
	*Less than 16"																						
MISSOURI / Missouri One Call System / 800-344-7483 / Tickets Fax: 573-635-8402																							
Website: mo1call.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 working days, not counting day of request **Marks Valid:** As long as visible **Law Link:** mo1call.com/manual_law.php	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	N	Y	Y*	N	Y	Y	Y	N	N	24"

Notification Center and State Law Directory

Informational purposes only. Information and laws are subject to change. Contact your local Notification Center website for updated information. Excavation Safety Alliance, LLC attempted to verify all information as of publication date, and accepts no responsibility for missing or incorrect information.

You can reach your local Notification Center in the U.S. by dialing 811.

Know what's below. Call before you dig.

	TICKETS			STATE LAWS & PROVISIONS									NOTIFICATION EXEMPTIONS					NOTIFICATIONS ACCEPTED					
	FAX	Online	Mobile	Statewide Coverage	Civil Penalties	Emergency Clause	Mandatory Membership	Excavator Permits Issued	Mandatory Premarks	Positive Response	Hand Dig Clause	Damage Reporting	DOT	Homeowner	Railroad	Agriculture	Depth	Damage	Design	Emergency	Overhead	Large Projects	Tolerance Zone (either side of the utility plus the width of the utility)
MONTANA																							
MONTANA 811 / 800-424-5555 **Website:** montana811.org **Hours:** 24 hours, 365 days **Advance Notice:** 2 business days **Marks Valid:** 30 days **Law Link:** montana811.org/montana-dig-law.html	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y*	N	Y	Y	Y	Y	Y	N	N	18"
*Only under certain circumstances																							
NEBRASKA / Nebraska811 / 800-331-5666																							
Website: ne1call.com **Hours:** 24 hours, 365 days **Advance Notice:** 2 to 10 business days excluding holidays and weekends **Marks Valid:** 17 Days **Law Link:** ne1call.com/ne-law-enforcement/nebraska-statutes/	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	N	Y	Y	N	Y	Y	Y	N	N	18"
NEVADA / USA North 811 / 800-642-2444																							
Underground Service Alert of Northern CA & NV **Website:** www.usanorth811.org **Hours:** 24/7 **Advance Notice:** 2 working days, not including the date of notification **Marks Valid:** 28 days **Law Link:** usanorth811.org (Quick Links/Law & Excavation Manual)	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	Y	N	Y	N	N	24"
NEW HAMPSHIRE / Dig Safe System, Inc. / 888-344-7233																							
Website: digsafe.com **Hours:** 24 hours, 7 days **Advance Notice:** 72 hours(exluding weekends and holidays) **Marks Valid:** 30 days **Law Link:** digsafe.com/laws_rules.php	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	Y	N	Y	N	Y	18"
NEW JERSEY / New Jersey One Call / 800-272-1000 / Tickets Fax: 800-705-4559																							
Website: nj1-call.org **Hours:** 24 hours **Advance Notice:** 3 full business days **Marks Valid:** 45 business days **Law Link:** nj1-call.org/nj-law/	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	N	Y	Y	Y	N	Y	N	N	24"
NEW MEXICO / New Mexico One Call, Inc. dba NM811 / 800-321-2537 / Tickets Fax: 800-727-8809																							
Website: nm811.org **Hours:** 7:00 AM - 5:00 PM, M-F / Emergencies & Damages: 24 hours **Advance Notice:** 2 working days, not including the day of the notification **Marks Valid:** 15 Days **Law Link:** nm811.org/new-mexico-811-law/	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	N	Y	18"
NEW YORK																							
DIG SAFELY NEW YORK / 800-962-7962 **Website:** digsafelynewyork.com **Hours:** 24 hours, 365 days **Advance Notice:** 2 to 10 working days(Excluding day of call) **Marks Valid:** 10 working days **Law Link:** digsafelynewyork.com/resources/nys-code-rule-753	N	Y	N	N	Y	Y	Y	N	N	Y	Y	N	N	N	N	N	N	Y	Y	Y	N	N	24"
NEW YORK 811 / 800-272-4480 **Website:** newyork-811.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 to 10 business days **Marks Valid:** 10 working days **Law Link:** newyork-811.com/excavators/code-753-at-a-glance	N	Y	Y	N	Y	Y	Y	N	N	Y	Y	N	N	N	N	N	N	Y	Y	Y	N	N	24"
NORTH CAROLINA / North Carolina One Call Center, Inc. / 800-632-4949																							
Website: nc811.org **Hours:** 24 hours, 365 days **Advance Notice:** 3 full working days **Marks Valid:** 15 working days **Law Link:** nc811.org/north-carolina-law.html	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	N	N	24"

Know what's below. Call before you dig.

You can also reach your local Notification Center by dialing 811 anywhere in the United States. This is a FREE call and a FREE service.

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

	TICKETS			STATE LAWS & PROVISIONS									NOTIFICATION EXEMPTIONS					NOTIFICATIONS ACCEPTED					Tolerance Zone (either side of the utility plus the width of the utility)
	FAX	Online	Mobile	Statewide Coverage	Civil Penalties	Emergency Clause	Mandatory Membership	Excavator Permits Issued	Mandatory Premarks	Positive Response	Hand Dig Clause	Damage Reporting	DOT	Homeowner	Railroad	Agriculture	Depth	Damage	Design	Emergency	Overhead	Large Projects	
NORTH DAKOTA / North Dakota One Call / 800-795-0555																							
Website: ndonecall.com **Hours:** 24 hours **Advance Notice:** 2 Full Business Days **Marks Valid:** 21 calendar days **Law Link:** legis.nd.gov/cencode/t49c23.pdf?20130530105605	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N	Y	N	N	Y	Y	N	N	24"
OHIO																							
OHIO811 / 800-362-2764 **Website:** OHIO811.org **Hours:** 24 hours, 7 days **Advance Notice** 48 hours but not more than 10 working days **Marks Valid:** As long as visible and work begins within 10 days of original ticket **Law Link:** oups.org/law	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N	Y	N	Y	Y	Y	N	Y	18"
OKLAHOMA / Okie811 / 800-522-6543																							
Website: okie811.org **Hours:** 24 hours, 7 days **Advance Notice:** 48 hours excluding date of notification, weekends and legal holidays **Marks Valid:** 14 calendar days **Law Link:** okie811.org/thelaw	N	Y	Y	Y	N	Y	Y	N	N	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	N	Y	24"
OREGON / Oregon Utility Notification Center / 800-332-2344 / Tickets Fax: 503-293-0826																							
Website: digsafelyoregon.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 Full Business Days **Marks Valid:** Marks Valid; 45 days **Law Link:** digsafelyoregon.com/faqs/ounc_ors_oar.htm	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	12"	N	Y	N	N	Y	Y	N	N	24"
PENNSYLVANIA / Pennsylvania One Call System, Inc. / 800-242-1776																							
Website: pa1call.org **Hours:** 24 hours, 7 days **Advance Notice:** 3 to 10 business days (construction), 10-90 days (design), at least 10 days (large projects) **Marks Valid:** as long as equipment is on site **Law Link:** pa1call.org/palaw	N	Y	Y	Y	Y	Y	Y**	N	Y	Y	Y	Y	N*	N	N	Y	N	Y	Y	Y	N	Y***	18"
** PennDot minor routine maintenance exempt if without 24" depth from highest spot in ROW* ** Municipal Roads - minor routine maintenance if within 18" depth from highest point in ROW* *** Exemptions include PennDOT within state road DOT, Stripper Well Lines in Class 1 areas* **** Large projects accepted online only*																							
RHODE ISLAND / Dig Safe System, Inc. / 888-344-7233																							
Website: digsafe.com **Hours:** 24 hours, 7 days **Advance Notice:** 72 hours(exluding weekends and holidays) **Marks Valid:** Must start within 30 days, as long as marks maintained **Law Link:** digsafe.com/laws_rules.php	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	N	Y	N	Y	N	Y	N	Y	18"
SOUTH CAROLINA / South Carolina 811 / 888-721-7877																							
Website: sc811.com **Hours:** 7:30 AM - 5:30 PM, M-F **Advance Notice:** 3 to 12 full working days notice(10-20 full working days notice subaqueous) **Marks Valid:** 15 working days **Law Link:** sc811.com/state-law/	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	24"
SOUTH DAKOTA / South Dakota 811 Center / 800-781-7474																							
Website: sc811.com/state-law/ **Hours:** 24 hours **Advance Notice:** 48 hours(excluding weekends and holidays) **Marks Valid:** 21 working days from start date and time on ticket **Law Link:** sdonecall.com/law.asp	N	Y	Y	Y	Y	Y	Y	N	Y	N	Y	Y*	N	N	N	N	N**	Y	Y	Y	N	Y	18"
** Damage reporting required. All damage must be reported to the facility operator, or if the operator is unknown, to South Dakota 811 Center.* *** For agricultural tilling and road and ditch maintenance to a depth of 18" only; homeowners have a 12" depth exception for tilling of soil and gardening*																							
TENNESSEE / Tennessee 811 / 800-351-1111																							
Website: tn811.com • **Hours:** 24 hours **Advance Notice:** Not less than 3 working days, not more than 10 working days **Marks Valid:** 15 calendar days **Law Link:** https://www.tn.gov/content/dam/tn/publicutility/documents/uudeb/65-31-101etseq.pdf	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	N	Y	Y	Y	N	N	24"

Notification Center and State Law Directory

HELP US STAY UP TO DATE.
Directory information is also available online at ExcavationSafetyGuide.com. Report any updates to this directory by calling 866-279-7755.

You can reach your local Notification Center in the U.S. by dialing 811.

Know what's below. Call before you dig.

	TICKETS			STATE LAWS & PROVISIONS									NOTIFICATION EXEMPTIONS					NOTIFICATIONS ACCEPTED					Tolerance Zone (either side of the utility plus the width of the utility)
	FAX	Online	Mobile	Statewide Coverage	Civil Penalties	Emergency Clause	Mandatory Membership	Excavator Permits Issued	Mandatory Premarks	Positive Response	Hand Dig Clause	Damage Reporting	DOT	Homeowner	Railroad	Agriculture	Depth	Damage	Design	Emergency	Overhead	Large Projects	
TEXAS / Texas811 / 800-344-8377 **Website:** texas811.org **Hours:** 24 hours **Advance Notice:** 48 hours (excluding weekends and holidays) **Marks Valid:** 14 working days **Law Links:** statutes.capitol.texas.gov/Docs/UT/htm/UT.251.htm	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	N	Y	Y	16"	Y	Y	Y	N	N	18"
UTAH / Blue Stakes of Utah 811 / 800-662-4111 **Website:** bluestakes.org **Hours:** 8:00 AM - 4:00 PM, M-F **Advance Notice:** 2 business days, 48 hours notice **Marks Valid:** 14 calendar day **Law Link:** le.utah.gov/xcode/Title54/Chapter8A/54-8a.html	N	Y	Y	Y	Y	N	Y	N	N	Y	Y	N	N	N	N	N	N	N	N	Y	N	N	24"
VERMONT / Dig Safe System, Inc. / 888-344-7233 **Website:** digsafe.com **Hours:** 24 hours, 7 days **Advance Notice:** 48 hours(excluding weekends and holidays) **Marks Valid:** 30 days **Law Link:** digsafe.com/laws_rules.php	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	N	Y	N	Y	N	Y	N	Y	18"
VIRGINIA / Virginia 811 / 800-552-7001 **Website:** va811.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 working days(excluding day of call) **Marks Valid:** 15 working days **Law Link:** va811.com/laws-and-regulation	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y	Y	N	N	Y	Y	N	Y	24"
WASHINGTON / Washington 811 / 811 / 800-424-5500 **Washington 811** **Website:** digsafewa.com **Northwest Utility Notification Center (NUNC)** **Website:** digsafewa.com **Inland Empire Utility Coordinating Council (IEUCC)** **Website:** digsafewa.com **Hours:** 24 hours, 7 days **Advance Notice:** 2 business days **Marks Valid:** 45 days **Law Link:** washington811.com/wa-dig-law-rcw-19-122/	N	Y	Y	Y	Y	Y	Y	N	Y	N	Y	Y	N	Y	N	Y	Y	Y	Y	Y	N	Y	24"
WASHINGTON D.C. / District One Call / 800-257-7777 **Website:** missutility.net **Hours:** 24 hours, 7 days **Advance Notice:** 96-business hours **Marks Valid:** 15 business days **Law Link:** https://code.dccouncil.gov/us/dc/council/code/titles/34/chapters/27/	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	N	N	N	N	N	N	N	N	Y	N	N	18"
WEST VIRGINIA / West Virginia 811 / 800-245-4848 **Website:** wv811.com **Hours:** 24 hours **Advance Notice:** 2 days but not more than 10 **Marks Valid:** 10 days **Law Link:** wv811.com/one-call-law	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	N	N	Y	N	Y	Y	Y	N	N	24"
WISCONSIN / Diggers Hotline / 800-242-8511 **Website:** diggershotline.com **Hours:** 24 hours, 7 days **Advance Notice:** 3 working days **Marks Valid:** For duration of work if marks remain visible and work is continuous **Law Link:** docs.legis.wisconsin.gov/statutes/statutes/182/0175	N	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	N	N	N	N	N	Y	Y	Y	Y	Y	18"

Know what's below. Call before you dig.

Expand public awareness by visiting call811.com. You will find a variety of downloadable elements available for use free in your company/organization's existing campaigns.

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

	TICKETS			STATE LAWS & PROVISIONS									NOTIFICATION EXEMPTIONS					NOTIFICATIONS ACCEPTED					
	FAX	Online	Mobile	Statewide Coverage	Civil Penalties	Emergency Clause	Mandatory Membership	Excavator Permits Issued	Mandatory Premarks	Positive Response	Hand Dig Clause	Damage Reporting	DOT	Homeowner	Railroad	Agriculture	Depth	Damage	Design	Emergency	Overhead	Large Projects	Tolerance Zone (either side of the utility plus the width of the utility)
WYOMING / One-Call of Wyoming, Inc. / 811 or 1-800-849-2476 (if out of state)																							
Website: onecallofwyoming.com **Hours:** 24 hours **Advance Notice:** 2 full business days **Marks Valid:** 14 business days **Law Link:** https://www.onecallofwyoming.com/wp-content/uploads/2022/10/WY-State-Statute.pdf	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	Y	N	Y	Y	Y	N	N	24"

Canadian One Call and Provincial Law Directory

Click Before You Dig / Cliquez Avant de Creuser

Canadian One Call Centres Committee

	TICKETS			PROVINCIAL LAWS & PROVISIONS									NOTIFICATION EXEMPTIONS					NOTIFICATIONS ACCEPTED					
	FAX	Online	Mobile	Statewide Coverage	Civil Penalties	Emergency Clause	Mandatory Membership	Excavator Permits Issued	Mandatory Premarks	Positive Response	Hand Dig Clause	Damage Reporting	DOT	Homeowner	Railroad	Agriculture	Depth	Damage	Design	Emergency	Overhead	Large Projects	Tolerance Zone (either side of the utility plus the width of the utility)
ALBERTA / Utility Safety Partners / 800-242-3447																							
Website: utilitysafety.ca **Hours:** 8:00 AM - 4:30 PM, M-F (Emergency or Online: 24/7) **Advance Notice:** 3 full working days **Marks Valid:** up to 30 days, determined by member	N	Y	Y	Y	N	N	N	N	N	Y	Y	Y	N	N	N	N	*	Y	Y	Y	Y	Y	1m (39")
	** 300 mm (12") hand tools only*																						
BRITISH COLUMBIA / BC 1 Call / 800-474-6886																							
Website: bc1c.ca **Hours:** 24 hours / 7 days **Advance Notice:** Regular & Project - 3 working days excluding weekends and holidays Large Project – 5 working days excluding weekends and holidays Planning & Design – 10 working days excluding weekends and holidays **Marks Valid:** 60 calendar days	N	Y	Y	Y	N	Y	N	N	N	Y	N	Y	N	N	N	N	N	Y	Y	Y	N	Y	VARIES
MANITOBA / Click Before You Dig Manitoba / 800-940-3447																							
Website: ClickBeforeYouDigMB.com **Hours:** 8:00 AM - 5:00 PM **Advance Notice:** 3 full working days excluding weekends and holidays **Marks Valid:** Determined by member	N	Y	Y	Y	N	N	N	N	N	Y	Y	N	N	N	N	N	N	Y	N	Y	N	Y	VARIES
ONTARIO / Ontario One Call / 800-400-2255																							
Website: OntarioOneCall.ca **Hours:** 24 hours, 365 days **Advance Notice:** 5 working days **Marks Valid:** Minimum 60 days **Law Link:** www.ontario.ca/laws/statute/12o04	N	Y	N	Y	Y	Y	Y	N	N	Y	Y	Y	N	N	N	N	N	Y	Y	Y	N	Y	VARIES
QUEBEC AND ATLANTIC PROVINCES / Info-Excavation / 800-663-9228																							
Website: info-ex.com **Hours:** 24 hours/7 days **Advance Notice:** 72 hours (3 working days) **Marks Valid:** Maximum 180 days	N	Y	Y	Y	N	Y	N	N	N	Y	N	Y	N	N	N	N	N	Y	Y	Y	Y	Y	1m (39")
SASKATCHEWAN / Sask 1st Call / 866-828-4888																							
Website: sask1stcall.com **Hours:** 8:00 AM - 4:30 PM, M-F (Emergency 24/7) **Advance Notice:** 3 full working days **Marks Valid:** 30 days	N	Y	Y	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	Y	Y	N	Y	VARIES

Pipeline Products & Facilities

NATURAL GAS is a naturally occurring resource formed millions of years ago because of heat and pressure acting on decayed organic material. It is extracted from wells and transported through gathering pipelines to processing facilities. From these facilities, it is transported through transmission pipelines to distribution pipeline systems. The main ingredient in natural gas is methane (approximately 94 percent). Natural gas is odorless, colorless, tasteless and nontoxic in its natural state. An odorant (called mercaptan) is normally added when it is delivered to a distribution system. At ambient temperatures, natural gas remains lighter than air. However, it can be compressed (CNG) under high pressure to make it convenient for use in other applications or liquefied (LNG) under extremely cold temperatures (-260° F) to facilitate transportation.

PETROLEUM GAS is a mixture of gaseous hydrocarbons, primarily propane, butane and ethane. These products are commonly used for cooking, heating and other industrial applications. They are easily liquefied under pressure and are often stored and transported in portable containers labeled as Liquified Petroleum Gas (LPG). When transported in transmission pipelines they may also be identified as Highly Volatile Liquids (HVLs) or Natural Gas Liquids (NGLs). Vaporized LPG may also be found in smaller gas distribution systems. Typically, LPG is a tasteless, colorless and odorless gas. When transported via transmission pipelines it normally will not have odorant added. Odorant is added when LPG is offloaded to a distribution pipeline system or transport tanks to facilitate leak detection. Ethylene and propylene do have a faint natural odor like petroleum.

PETROLEUM LIQUIDS is a broad term covering many products, including: crude oil, gasoline, diesel fuel, aviation gasoline, jet fuel, fuel oil, kerosene, naphtha, xylene and other refined products. Crude oil is unrefined petroleum that is extracted from beneath the Earth's surface through wells. As it comes from the well, crude oil contains a mixture of oil, gas, water and other impurities, such as metallic compounds and sulfur. Refinement of crude oil produces petroleum products that we use every day, such as motor oils and gasoline. Crude oil is transported from wells to refineries through gathering or transmission pipelines. Refined petroleum products are transported in transmission pipelines to rail or truck terminals for distribution to consumers. Odorant is not added to these products because they have a natural odor.

ANHYDROUS AMMONIA is the liquefied form of pure ammonia gas. It is a colorless gas or liquid with an extremely pungent odor. It is normally transported through transmission pipelines and is used primarily as an agricultural fertilizer or industrial refrigerant.

CARBON DIOXIDE is a heavy gas that is normally transported in transmission pipelines as a compressed fluid. It is a naturally occurring, colorless, odorless and tasteless gas used in the petroleum industry. Under normal conditions, carbon dioxide is stable, inert and nontoxic. However, it can act as an asphyxiant.

ETHANOL (also called ethyl alcohol) is a colorless liquid that is widely used as an additive to automotive gasoline. It may be transported in buried transmission pipelines. Ethanol has a natural odor like gasoline and will easily mix with water.

HYDROGEN GAS is commonly produced from the steam reformation of natural gas. It is frequently used near its production site, with the two main uses being petrochemical processing and ammonia production. Hydrogen is a flammable gas that is colorless, odorless and lighter than air. It is nontoxic, but can act as an asphyxiant.

"SOUR" CRUDE OIL AND "SOUR" GAS refer to products containing high concentrations of sulfur and hydrogen sulfide. Products containing little or no sulfur are often referred to as "sweet". Hydrogen sulfide (H2S) is a toxic, corrosive contaminant found in natural gas and crude oil. It has an odor like the smell of rotten eggs or a burnt match. Exposure to relatively low levels of hydrogen sulfide (500 ppm) can be fatal. ESG

EXCAVATION SAFETY ALLIANCE
3800 American Boulevard West, Suite 1500
Bloomington, MN 55431

CONTACT US

CONTACT	PHONE	EMAIL
Call Before You Dig	Dial 8-1-1 or 1-800-242-1776 outside of PA	
KARL System	800-222-6470	
POCS Administrative Offices	800-248-1786	contact@pa1call.org
Member Services	800-248-1786 x7168	membership@pa1call.org
Education	800-248-1786 x7136	registration@pa1call.org
Bill Kiger, President and CEO	412-464-7111	wgkiger@pa1call.org
Norm Parrish, Manager - Education	484-366-6647	nlparrish@pa1call.org
Marcos Bernal, Supervisor - Education	412-999-8009	mrbernal@pa1call.org
Mark Lipka, Supervisor - Education	570-939-7042	mjlipka@pa1call.org
Greg Danks, Damage Prevention Liaison (South East)	215-834-2069	gwdanks@pa1call.org
Jim Reynolds, Damage Prevention Liaison (South East)	215-859-2868	jereynolds@pa1call.org
Ryan Parrish, Damage Prevention Liaison (South East)	610-906-5137	rtparrish@pa1call.org
Kevin Goldblum, Damage Prevention Liaison (Central)	717-487-0797	ksgoldblum@pa1call.org
Blaire Prough, Damage Prevention Liaison (Central)	717-602-5976	baprough@pa1call.org
Brandon Dujmic, Damage Prevention Liaison (South West)	412-427-0112	bddujmic@pa1call.org
Chance Montgomery, Damage Prevention Liaison (South West)	412-503-3662	dcmontgomery@pa1call.org
Dan Nemanic, Damage Prevention Liaison (South West)	412-509-7232	djnemanic@pa1call.org
Erika Dominick, Damage Prevention Liaison (South Central)	814-615-7047	eadominick@pa1call.org
Maria White, Damage Prevention Liaison (North East)	570-954-3545	mawhite@pa1call.org
Kirk Kirkpatrick, Damage Prevention Liaison (North West)	814-572-8113	kpkirkpatrick@pa1call.org

Visit **www.pa1call.org/Events** to view our scheduled trainings and register!