



Elements of a

Pennsylvania

Damage Prevention Program

Acknowledgements

This publication was created through the dedicated efforts of Pennsylvania 811 Underground Damage Prevention Program Task Force. The task force was chaired by Stephen Schafer of FirstEnergy. Steve's leadership and persistence in developing this publication are greatly appreciated. Other members of the task force are: Tracey Barnes-Hunsinger, Dave Bolton, Rick Burke, Dave Haverstick, Tracy Hoffman, Robert Johnson, Brittanie Lewis, Kathleen McVeigh, Jordan Partlow, Mark Santayana, and Eric Swartley. Their contributions to this effort are acknowledged and appreciated.

Table of Contents

Introduction	1
Disclaimer.....	1
The Document Purpose	1
Damage Prevention Plan.....	1
Underground Facility Owner Roles	2
Damage Prevention Stakeholders.....	2
Pre-Excavation Considerations	3
One Call Center	5
Electronic Operator One-Call Ticket Management System	5
Processing One-Call Tickets Utilizing a One-Call Ticket Management System	5
Operator One-Call Ticket Management System Optimization	6
One-Call Quality Assurance.....	6
One-Call Notification Screening	7
Facility Owner Member Mapping	10
Utility Coordination.....	11
Why form a Utility Coordination Committee?	11
Poor Communication Leads to Problems.....	11
Likely Benefits of Better Coordination and Communication	11
Metrication	12
Public Works Management Practices	13
Telecommunications Act of 1996	13
Coordination is the Key.....	14
How to form a Utility Coordination Committee	14
Establish the Purpose.....	15
Set Goals and Objectives.....	16
Form a Leadership Core	18
Identify Membership	19
Sample Bylaws for a Utility Coordination Committee	20
Appoint Subcommittees and Task Forces.....	21
Possible Subcommittees and Task Forces.....	22
Set the frequency and type of meetings.....	23
Outline the geographic area	23
Adopt a committee name	23

Elements of a Pennsylvania Damage Prevention Program

Establish formal communications procedures	24
Sample Agenda for a Utility Coordination Committee	24
Sample Outline for minutes of a Utility Coordination Committee meeting	24
Opportunities for improved communication & coordination in Pennsylvania	25
Pennsylvania Coordinating Committees	25
Pennsylvania Common Ground Alliance (CGA) Regional Partners	25
Current Coordinating Committees (committees in bold italic are also CGA Regional Partners).....	26
Other Samples of Opportunities for improved communication & coordination	27
Alaska	27
Arizona	27
New Mexico	27
Conclusion – Getting Started	28
Coordination activities for utilities and public works	29
For Utilities:.....	29
For Public Works Agencies:.....	30
Locating & Marking	31
Abandoned Lines.....	31
Line Locating Quality Assurance	31
Line Locating and Temporary Marking	34
Service Lines.....	37
Example Locate/Marking Specifications	38
General Conditions	38
Administration	38
Maps & Records	39
Receive & Dispatch	39
Locate, Marking, & Positive Response	39
Performance Expectations & Metrics	41
Disputes	42
A Note on Personal Protection Equipment (PPE)	42
Excavation	43
One-Call Notification Response and Communications	45
Cross Bore Mitigation	47
PHASE I – Legacy	47
PHASE II – Design (Minnesota OPS)	49
Open Trench Method.....	49

Elements of a Pennsylvania Damage Prevention Program

Map and Record Method (Trenchless)	49
Exposed Sewer Method (Trenchless).....	49
Sonde Method (Trenchless).....	49
Relative Elevation Method (Trenchless)	49
Televising Method (Trenchless).....	50
Other Trenchless Sewer Service Lateral Verification Methods	50
Unacceptable Practices:.....	50
PHASE III – Construction	50
Acceptable Installation Practices and Documentation Requirements	50
PHASE IV – Documentation and Record Keeping	51
Compliance	52
Unauthorized Activity or Excavation/Third Party Damage	52
Discovery of Unauthorized Third Party Construction Activity	52
General Procedure	53
Investigation of Near Miss and Damage Incidents	54
Warnings and Reimbursement Letters	55
Demands for Damages and Initiation of Civil Proceedings	56
Referral to Enforcement Authorities and Injunctive Proceedings.....	57
Public Education & Awareness	58
Outreach	58
Partnerships	58
Public Outreach.....	59
Education	59
Internal Stakeholders.....	59
Target Audience	60
External Stakeholders	60
Preferred Contractors	60
Target Audience.....	60
General Public.....	61
Reporting & Evaluation	62
Data.....	62
Data Collection for analytics	62
Data Reporting for analysis.....	62
Measurements	62
Reporting	63

Elements of a Pennsylvania Damage Prevention Program

Tracking Excavation Incidents	64
Training	66
One Call Center	66
Mapping	67
Locator	67
Excavator.....	68
Uniform Color Code and Marking Guidelines	69
Uniform Color Code	69
Best Practices Chapter 5—Excavation	69
Tolerance Zone	70
Best Practices Chapter 5—Excavation Excerpts.....	70
Guidelines for Excavation Delineation.....	70
Single Point Excavations Markings.....	71
Single Stake Marking Center Point of Excavation Site	71
Trenching, Boring, or Other Continuous-Type Excavations.....	71
BEST PRACTICES CHAPTER 4—LOCATING AND MARKING.....	72
Guidelines for Operator Facility Field Delineation.....	72
Guide for Abbreviation Use	79
Sample Forms and Reports	80
Example Report	80
Example Team One-Call Report	81
Example Monthly One-Call Report	82
Excavation Site Inspection Report	83
Example locate performance report.....	84
Example Notice to Excavator report.....	85
Pennsylvania 811 Membership Information	86
Resources	87
PennDOT District Map	87
73 P. S. § 176 et. seq. (Underground Utility Line Protection Law).....	88
Coordinate PA	106
Introduction	106
Benefits	107
Website Community Resources	108
Communities	108
Current Pennsylvania 811 communities	108

Elements of a Pennsylvania Damage Prevention Program

Accessing a Community	108
Glossary.....	109

Introduction

Disclaimer

This is a suggested guide, and provided as a courtesy by Pennsylvania 811. Should you choose to make use of it, in whole or in part, we specifically recommend that you obtain advice from your own counsel, who is the best source of information as it pertains to your company or other entity, and is the primary source of information for any actions you choose or do not choose to undertake. Pennsylvania 811 makes no representations concerning the text of this document, nor to your use of it, and specifically disclaims any responsibility for any errors or omissions, including, but not limited to, those arising out of its use.

The Document Purpose

The purpose of this document is to describe the elements of an Underground Damage Prevention Plan. The audience of this document is a regulated utility company that may not have a documented Damage Prevention Plan, or a regulated utility company plan that may need augmentation or enhancement. This Damage Prevention Plan represents ideas, process and practices developed and implemented by regulated utility companies within the Commonwealth of Pennsylvania. Contributions to this Plan have been made by:

- American Public Works Association (APWA)
- Common Ground Alliance (CGA)
- Columbia Gas of Pennsylvania
- FirstEnergy
- Interstate Energy
- PPL Electric
- Pennsylvania 811
- UGI Utilities

The Damage Prevention Plans from these companies have been examined, and Best Practices from each plan have been incorporated herein. To the extent possible, any specific processes have been generalized. In addition, this document is written as an example plan, with examples of processes, practices and implementations.

RP 1162 Elements were considered in creation of this Plan.

Damage Prevention Plan

To implement an effective and proactive Facility Owner Damage Prevention Program designed to continuously improve damage prevention metrics, reduce the number of damages, minimize excavation damages and promote safety and awareness to all stakeholders.

Underground Facility Owner Roles

Facility owner has multiple hats:

- Designer
- Excavator
- Project Owner
- Locator

To implement an effective Plan, a Facility Owner must consider their responsibilities under each of those roles.

Damage Prevention Stakeholders

Facility Owners	PennDOT
Excavators	Manufactured Homes
Designers	Master Meter Operators
Project Owners	Board of Directors
Locators	Farmers
Enforcement agencies	Demolition contractors
Public	Mining Companies
Emergency Responders:	Railroad
• Public	Landscapers
• Facility Owners	Seismic contractors
Governmental agencies:	Drillers
• Federal	Equipment suppliers
• State	Rental agencies
• Municipalities	Military and Federal facilities
Local Elected Officials	Colleges & Universities
Homeowners	Homeowner Associations (HOAs)/Property
Landowners	Management Companies
Pennsylvania 811 staff	Trenchless Technology Installers
Insurance Companies	Plumbers/Drain Clearing Contractors
Public Utility Commission	DIY suppliers
Gathering line owners	Claims Managers
	Common Ground Alliance (CGA)

Please see the Glossary for definitions of stakeholders.

Pre-Excavation Considerations

Before you send a crew to start work on your successful bid, a responsible excavating company may want to consider their one call obligations and review some best practices to ensure a safe, productive and profitable excavating job. Have you read and do you understand the excavator section of your state's One Call law? Before you send a crew or fire up the engine on the backhoe or trackhoe, consider these steps:

1. Plan your excavation. Take time to review the excavation site. What potential obstacles do you see? Are there any indications that underground facilities may be nearby? (For example, do you see any electric transformers? Fire hydrants? Telephone poles with conduit? Telltale signs of traffic loops? Do you see any pipeline right-of-way markers? All are indications that underground facilities may be near or in your excavation site.) Take notes. Take pictures. Formulate a plan for excavation.
2. Premark in white. You know exactly where you will be digging. The professional locators who will visit your site do not. The best way to communicate your intent at the work site is to document where you intend to dig with white chalk, paint, flags or stakes around the area where excavation is planned, and communicate clearly on the ticket: street, cross street, landmarks, measurements, and distances. This step is important enough that many states, including Pennsylvania, will ask the question: "Is the site marked in white?" when you call 811.
3. Call 811. The damage prevention industry has spent hundreds of millions of dollars over the last decade promoting a simple message: "Call 811 before you dig." This is worth repeating again and again because of two statistics from the Common Ground Alliance Damage Information Reporting Tool (DIRT): if the excavator calls 811 in advance of excavation, there is a 99% chance that the project will complete without damage or injury; and 25% of all damages are caused by the excavator failing to call 811 before beginning excavation. Call 811 before you dig.
4. Wait the required time. Each state has different requirements for when excavation can begin after a call to 811. In Pennsylvania, three business days are required (i.e. call on Monday, excavate on Thursday). This wait time gives the facility owners nearby time to mark the approximate location of underground utilities at the work site with colored paint, flags, chalk, stakes or other means. Other states have different wait times, and excavators should check applicable State laws.
5. Review the facility owner responses. Many states, including Pennsylvania, obligate the facility owner to provide the disposition of the notification ("Clear" or "Marked") back to the One Call center. Pennsylvania 811 will collect the responses from all notified facility owners and send an email or fax to the excavator on the morning of excavation with all of the responses. This provides the excavator with a clear understanding of what was marked (and therefore what underground facilities to expect), and, as important, what facilities are "clear" and therefore should not be located within the work site.

6. Compare the responses. A list of responses from the One Call center is one half of a facility checklist. The list of responses should be compared to the temporary marks found at the work site. Has the electric company responded but there are no red marks on the ground? Are yellow marks at the work site but no corresponding "Marked" on the responses list? Discrepancies in this comparison should raise a red flag (pun intended) and warrant further investigation before excavation begins.
7. Document the work site. Before excavation begins, the excavator should document the work site. Do you have a copy of the notification on site? Everyone's cell phone has a camera. Take pictures of the work site, the temporary marks, landmarks, etc. Make sure the pictures are far enough away to clearly see where the marks are at the work site and close enough to show needed details. Remember to download the pictures to a project folder to keep in the unlikely event they are needed in a dispute.
8. Know your Tolerance Zone. Do you know how big the tolerance zone is within the state you are excavating? In Pennsylvania, the tolerance zone is defined as eighteen inches from the outside wall or edge of the facility. This means that different facilities have different tolerance zones, and the locator should have placed a facility size in addition to the colored paint on the ground. In Pennsylvania, 2 inches is assumed if no size is marked. Common sense should prevail: A green mark (for a sewer line) with no corresponding size should warrant investigation and a question back to the facility owner.
9. Excavate prudently. Within the Tolerance Zone, the excavator should use hand digging or soft excavation techniques (such as a vac truck) until the underground facility is found and exposed within the tolerance zone of the temporary mark. In Pennsylvania, powered excavation equipment within the tolerance zone is discouraged. Hand dig. Find the facility. Expose the facility. Only then should the excavator consider mechanized equipment for the excavation.
10. Protect the marks. Temporary marks are temporary, and should be protected until the excavation job is complete, even if the facilities are exposed. Consider asking the locator to provide offset marks, outside the active excavation area. In Pennsylvania, the excavator is responsible to maintain the temporary marks throughout the job, and damaging the marks is a fineable offense.
11. Protect the exposed facilities. The facility owner is the best resource to determine how to protect exposed facilities during an excavation project. Some facility owners will insist on specific actions to protect facilities, including temporary shoring. Other facility owners may insist on observing the excavation activity. Please remember that the facility owner wants to keep their facilities safe and the excavator safe from injury, and their requests to protect their facilities during excavation should be honored.
12. Clean up the work site. Most contracts include clauses for site cleanup. The excavator who originated the request to locate underground utilities is ultimately responsible for cleaning up the work site when the excavation project is complete. This includes removing temporary marks from the work site and surrounding area.

One Call Center

Electronic Operator One-Call Ticket Management System

Operator One-Call Ticket Management Systems can manage every aspect of processing a One-Call notification, including receiving tickets from the One-Call Center, locating the site on a mapping system, transmitting the information to field personnel and sending responses back to contractors, and documenting all actions.

Processing One-Call Tickets Utilizing a One-Call Ticket Management System

A One-call center provides one-call dig site location information that enables field personnel to clear a one-call ticket utilizing a One-Call Ticket Management System. These systems can process one-call dig site location information such as dig site address, city, state, GPS points (both state one-call provided and contractor provided) and grids which are state provided. These systems can store company designated infrastructure and buffers that are utilized in the screening process. This one-call ticket information is received automatically from the one-call center directly into the One-Call Ticket Management System and the information is then processed according to the individual system capabilities. It should be noted that an Operator should have an additional screening process for evaluating a dig site which may fall just outside of the identified company buffer boundaries. Once the system processes the dig site information, it is distributed electronically to the applicable field locations where field employees will conduct the final screening based on the individual company's procedures. Some of these Operator One-Call Ticket Management Systems can even process and record positive responses as required by individual states.

CONSIDERATIONS: Operator One-Call Ticket Management System

- Have a vendor provide you with a detailed demonstration of the One-Call Ticket Management System's capabilities.
 - Have the software vendor explain what total IT infrastructure will be required to implement such a system.
- Know your IT network specification in order to understand its limitations related to processing and disseminating the one-call ticket information to field locations.
- Establish company proximity buffers along entire right-of-way.
- Type of coordinates received from one-call systems.
 - GPS, township/section/range, grids, or state specific requirements.
- Knowledge of utilizing GPS equipment and knowledge of variations in coordinate systems:
 - Examples: Deg/Min/Sec, Decimal Degree
 - Examples: selection of the same Datum point such as, NAD83 or WGS 84
- Accuracy of equipment:
 - Examples: level of sub-meter accuracy, as required by company or state regulation
- Consider implementing a consistent map color coding scheme for identifying different types of infrastructures to ensure consistent interpretation of information.
 - Blue=Near Street
 - Green=One-Call Center (OCC) Dig Area
 - Color scheme for operator defined route

Operator One-Call Ticket Management System Optimization

Each operator should have in depth working knowledge of its individual software programs, by knowing its system's functionality and limitations in order to minimize impact of end users.

CONSIDERATIONS: System Optimization

- Have knowledge of how to maintain current base map data or where to find it if company services were to be lost
- Maintaining current GIS information which includes pertinent company infrastructure data
- Knowledge of network speed limitations
 - If the operator has a slow network then consider:
 - Limiting/turning off some of the mapping imagery, such as water features, points of interest
- Items required regardless of network speed:
 - Dig site information
 - Company GIS information
 - Grids and quads
 - Streets
 - Railroads
- Additional items that may be included if operator has a fast network:
 - Company infrastructure information including valve sites, mileposts, meters, cathodic protections systems
 - Foreign line crossings
 - Foreign lines/utility infrastructure in proximity to company established buffers

One-Call Quality Assurance

As a process-centered approach, One-Call Quality Assurance is designed to identify and eliminate systematic errors through frequent review and reporting. Unfortunately, systemic problems are sometimes discovered following an undesired event. Lagging indicators as these can be costly when considering the risks of excavating near underground utilities. This topic provides an Operator with a platform for establishing his/her own One-Call Quality Assurance program. It provides a more proactive approach for assessing and optimizing damage prevention efforts related to One-Call processes, their systems, and the people that manage them.

Reporting:

Operator Ticket Management Systems are designed to transmit and record incoming ticket details including a time-stamped history of outgoing company responses. Most of these systems grant the Operator the ability to mine and report ticket histories as a single ticket or in the aggregate. Collected over time, these data may prove useful for assessing a one-call program that includes, but not limited to, an internal evaluation of protocols for screening, communication & response and a measure for monitoring other one-call activities.

Screening, Communication and Response:

Standard on all incoming one-call notifications are attributes such as date, time, location, excavator name and work descriptions. Such information is the starting point for an Operator to perform the necessary due diligence and determine the appropriate screening action and response back to the excavator. All positive responses will contain date and time responded and response type, e.g., "clear" or "marked". Other pertinent details should be included in the response such as type and color of markings, conversation log, or any other details as outlined by the Operators'

communication and response protocols. Designing reports around screening, communication & response details may provide useful feedback for One-Call Quality Assurance.

Records Information:

All records regarding Quality Assurance should be maintained by the Operator as required as Operators' document retention policy.

CONSIDERATIONS: Records Information

- Is there a company retention policy?
- How will company use these records?
- Will data be used for internal and external rendering analysis activities? How?

One-Call Notification Screening

The purpose is to share learnings with utility operators related to the process of receiving, analyzing, and managing notifications from the State One-call Center to decide the appropriate course of action for each ticket (including whether or not a site visit investigation is warranted).

Refer to individual State Regulations. Each state may have different requirements for managing ticket notifications. Consider determining things such as required notice prior to excavation, tolerance zone and positive response laws. (i.e. Pennsylvania law is a 3 business day notice, 18 inch tolerance zone, and positive response requirements. Pennsylvania also charges anyone who is excavating an annual fee—the service is not free to an excavators).

Receiving State One-Call Tickets

As a member of a State One-Call Center, an operator furnishes the State One-Call Center with utility location information and provides a designated buffer zone or grid for receiving notifications from the State One-Call Center. The information provided is in a format acceptable by the State One-Call Center. The State One-Call Center will then notify the Operator of calls or messages received concerning proposed excavations on or near the furnished utility locations. Operators may receive notifications from a State One-Call Center at a centralized location, various field locations, or a combination of the two.

CONSIDERATIONS: Factors for an Operator to consider when developing a system for receiving and screening all notifications from a state one-call center.

- Management of emergency notifications, 24/7 from the state one-call center (i.e. centralized processing center, after hours operations control center, email system for emergency line locates).
- Response required by state regulations for marking or responding.
- Work date on a ticket for ascertaining screening priority.
- State specific regulations or guidance for notifications with for large proposed excavation or work areas, proposed project or design notifications and land survey notifications.
- Performing a daily audit of state one-call notifications received versus what the state one-call reports indicate were sent.

Analyzing One-Call Tickets

Operators may consider including in their process some general steps for analyzing one-call tickets and the requirements necessary to make a decision on the final status of a ticket. After reviewing the detailed information described on the notification, the first step taken by an Operator is to determine whether or not the scope of the proposed excavation has the potential to impact the integrity of the utility system. Operators may establish additional screening criteria to assist in analyzing one-call tickets.

CONSIDERATIONS: Additional Screening Criteria

- Type of excavation
- XX feet from centerline or secondary buffer zone
- Experience with excavator
- High construction/excavation activity areas
- High consequence areas and unusually sensitive areas

Clearing One-Call Tickets

Clearing the notification may be done in a variety of methods.

Clear by map - Many Operators use an electronic screening process whereby the proposed excavation location is automatically placed on their map within the operator one-call management system. If the ticket indicates a specific, verifiable work location and meets company designated criteria, then it may be analyzed and cleared by map.

If the dig site location and physical landmark descriptions, provided on One-call ticket, can be verified on the Operator’s mapping system and the dig site location is outside of the Operator’s additional screening criteria, then the ticket may be cleared and the excavator should be informed that no conflict exists. Some states require the operator to notify the excavator that no conflict exists.

CONSIDERATIONS: Factors to consider when clearing a ticket by map

- If the work location is outside the designated buffer zone, investigate why the ticket was received or consider there may be a different work location than the initial location found.
- Contact with the Excavator may not be required if the exact work location is known and the proposed work or activity falls outside the Operator additional screening criteria. Note some states require a positive response even when tickets are cleared.
- Map should be aligned with excavation location description referencing such things as roads, creeks, intersections, coordinates, landmarks, addresses (i.e. SW corner of intersection of Main and Beacon Streets, Front property line of 704 Byrne, going east for 500 feet, stated latitude and longitude).

Clear by contact - Another method that can be used by the Operator is to contact the Excavator directly to determine the scope of proposed excavation. This method is used when contact with the Excavator is necessary to obtain more information than what is described on the ticket or when the information contained on the notification needs clarification.

Contact the Excavator if:

- The address cannot be located on map or appears to be incorrect (e.g. street number and name don't correspond)
- The ticket indicates location map or additional information is available upon request
- The ticket contains conflicting or unclear information on work location or work scope

Examples of general work locations requiring Excavator contact:

- Approximately five miles east of city on Highway 77, then 1 mile south on lease road
- 704 Byrne (rural location and property size unknown)

Clear by site visit - An Operator may elect to visit the proposed excavation site to determine if the proposed excavation work or activity has the potential to affect the utility. This method may be used when a map or contact with the excavator does not provide enough information to clear the one-call notification. A site visit to secure additional information or to validate the scope of the work may be required.

CONSIDERATIONS: Factors to consider when clearing a ticket during a site visit

When evaluating the proximity of proposed excavation work or activity at the site, additional considerations may influence whether or not the notification should be cleared.

- Does the excavator have a proven record of following utility company procedures and requirements?
- Has the proposed excavation area been white lined or marked by the excavator (is the area a well-defined excavation area).
- Has the utility operator or appointed representative confirmed the type of equipment to be used?
- Does the work plan indicate the need for special considerations or individual operator designated procedures, such as:
 - Blasting
 - Seismic testing
 - Mining
 - Quarry Operations
 - Dredging
 - Heavy Surface Loading
 - Multiple Utility Corridors
 - Abandoned line Segments
 - Boring/Directional Drilling
 - Pile Drilling

Conflict Tickets

If the proposed excavation will be in conflict with the utility, an Operator will notify the excavator that proposed excavation has the potential to impact the integrity of the utility. Usually State regulations require the Operator to send a "positive response" to the excavator notifying him of the no conflict analysis or that the utility at the proposed excavation location has been located and marked. A Company representative can contact the excavator about the type of temporary markings that will be used, notes on the ticket the actions taken, and file the tickets.

Training/Responsibilities

Operators may assign people within their organizations or outside their organizations, to ensure all tasks associated with One-Call Screening are performed. Personnel assigned to perform screening activities are responsible for receiving the notice, analyzing the notice, dispatching personnel for temporary marking and inspection, and maintaining the documentation.

CONSIDERATIONS: Personnel associated with one-call notification screening

- Initiating a training and qualification program for personnel responsible for screening One-Call notifications.
- Coordinating an oversight program to ensure One-Call Notification Screening is being handled in accordance with the company procedures.

One-Call Ticket Documentation

- If there is not a conflict: the ticket will be marked “Not a Conflict or Clear” and filed.
- If there is a conflict: the operator’s line locating procedure should be followed and the information regarding the one-call ticket is documented and filed.
- Verify positive response requirements are met, documented and filed.
- The One Call Tickets should be maintained in compliance with the company’s retention policy or as required by regulation.

Facility Owner Member Mapping

Member Mapping from Pennsylvania 811 allows Pennsylvania underground facility owners to refine their municipal level ticket notifications by using an Internet-based mapping system at no cost. Underground utility owners in PA have seen a 63% reduction in notifications, on average, with no compromise in safety. Pipelines have enjoyed 97% reductions while controlling the safety buffer around their facilities.

Advantages of Member Mapping:

- Facility information you add to your secure layer is only visible to you.
- The ability to draw notification areas that become active the next business day without call center intervention.
- The ability to create and update notification areas by using an ordinary Web Browser (no special software is needed).
- Ease of use with polygon-based drawing tools instead of 'pick the grid' tools common in other applications.
- Intelligent tools to draw facility lines that automatically follow roads.
- The ability to receive notifications via municipal level notification or map level notification on a municipality-by-municipality basis.
- HTTPS security and full auditing of all activities to ensure security and integrity of the system and data.
- The flexibility to define a facility buffer as large as 2,500 feet or as small as zero feet, or to vary the facility buffer size on an object-by-object basis.

Utility Coordination¹

Why form a Utility Coordination Committee?

Utility and public works services are so basic to daily life that they are usually taken for granted-until something happens to disrupt service. Public rights-of-way have become more intensively used, particularly in urban areas, and as more utilities have developed, so have the opportunities for conflict. A utility coordination committee provides a means to negotiate win/win solutions to these conflicts. To successfully resolve what are becoming more complicated issues, an agency must balance advocating its position with learning more about the other agencies' concerns and issues.

A utility coordination committee provides a venue to discover and explore the issues, concerns, and other factors that affect the operations (and decisions) of organizations that deal in public and private infrastructure. Bestselling author Stephen R. Covey has as one of his seven habits of highly effective people seek first to understand, then to be understood." This is a key element of an effective utility coordination committee.

Poor Communication Leads to Problems

During the development of major public works projects (such as street widenings, or sewer or water service upgrades) a number of problems are often encountered in the relocation of facilities in the public rights-of-way. The basic cause of many of these problems is poor communication and coordination between key parties (local and state agencies, utilities, contractors, and other users of the public right- of-way). Some of the commonly encountered problems are:

- Insufficient time for the utility to perform relocation design.
- Untimely utility relocations.
- Shifting project and utility schedules or priorities.
- Project or utility plans with omissions or errors.
- Late changes to plans.
- Agency or utility change of policies without adequate notification.
- Lack of a three to five year Capital Improvement Program.

Some of the likely impacts of these problems are substantial increases in project costs, project construction delays, and difficult working relationships.

Likely Benefits of Better Coordination and Communication

The key to understanding between utilities and governmental agencies (as well as just among utilities) is an active utility coordination committee that works on a regular basis to address mutual concerns. A common concern in project coordination is the impact of re-engineering and re-organization efforts.

¹ The How to Book on Utility Coordination Committees, American Public Works Association, 1997

These restructurings have become common in the utility and public works industry. They often lead to changes in personnel, and accompanying gaps in knowledge or participation. The utility coordinating committee can play a vital role in utility coordination education for new personnel as well as in providing continuity in project coordination efforts.

Utility coordination committees are not just for issues related to use of the public right-of-way. These forums can prove beneficial for all issues that result from interaction of public infrastructure, private utilities, or construction of any nature (public works, commercial, residential, industrial). A utility coordination committee can be the mechanism to merge public capital improvement program efforts with a private utility industry which often operates in a more private, and competitive arena.

Utilities may find they have more trouble talking to each other than to the city, or agency regulating use of the public right-of-way. A coordinating committee can bring these parties together to deal with issues important to the community. A lack of coordination among agencies using the public way is easily noticed by residents and business owners. A common complaint expressed about utilities in highway development projects is getting the utility work done on schedule to allow highway improvements to continue on time. This requires proper notice, interaction, communication and coordination of programs of two or more independent agencies, all of which want to disturb a common piece of ground.

The San Francisco Public Works Department promotes coordination of planned construction activities in the public way. Capital improvement programs are gathered from the various utilities and agencies that have facilities in the right-of-way and these are plotted on an electronic base map. Where conflicts are identified in project schedules (i.e., utility work scheduled after street resurfacing), the City will adjust its planned work to accommodate the utility's schedule.

Metrication

One case for forming a utility coordination committee may be found in something as basic as measurements. In 1991, the Federal Highway Administration (FHWA) established a five year timetable for the metric conversion of federal and federally funded highway construction projects. Most major state and local highway projects receive some federal funding (often as high as 80 percent) from revenues raised by the federal gasoline tax. By late 1995, most states had completed the majority of the conversion process and were ready to meet the October 1996 FHWA deadline for building new projects in metric units. A clause was then inserted in the National Highway System Designation Act that moved the FHWA deadline from October, 1996 to October, 2000. Approximately 44 states have opted to meet the original October, 1996 deadline.

What impact might the metrication efforts of state highway agencies have on local governmental agencies and private utility companies? Particularly affected will be those utility companies that have facilities located in public rights-of-way that are impacted by proposed highway projects. Typically these utility companies submit drawings (with dimensions) of their facilities which are used by the state or local highway agency in the development of highway plans. A utility coordination committee can increase awareness of issues such as metrication, as well as provide a means to achieve a workable solution for addressing these issues.

Public Works Management Practices

The American Public Works Association has published the Second Edition of the Public Works Management Practices (October, 1995) manual. This publication contains more than 440 practice statements that describe the basic criteria and procedures necessary to perform as a full service public works agency.

A public works management practice is a statement that identifies management and operations requirements for public works services. The practice statements in this manual are italicized. The statements call for the development and implementation of a policy or procedure in the form of a rule, regulation, or written directive, or the execution of an activity, report, procedure, or other action. The management practices are followed by information that explains or expands the practice, or provides guidance for complying with the practice. Following is an excerpt on utility coordination from this manual:

15.1 Utility Coordination

The agency develops appropriate means to have public works, engineering, and planning authorities consult, cooperate, and establish effective liaison with all public and private utilities including water, drainage, sewer, wastewater, gas, electric power, street lighting, municipal communication, telephone and cable television.

Proposals and requests for zoning changes, subdivision approval, annexations. Street improvements, building encroachments into public right-of-way, request for vacating streets, bridge construction or reconstruction, and roadway relocations should be reviewed by governmental agencies and utilities that could be affected by these decisions. In addition to an established review process, agencies will benefit from participation in utility coordinating councils. These councils promote coordination by bringing representatives of all utilities and public works agencies together to discuss topics of mutual interest. Often they include sharing of capital improvement programs and planning documents so that scheduling conflicts and delays can be avoided.

The manual provides the framework for an objective evaluation of an agency. Many public works agencies have used the manual to conduct self-assessments of their operations. These assessments have led to improvements in how these agencies conduct their work. More information on the Public Works Management Practices program can be obtained from APWA.

Telecommunications Act of 1996

The Telecommunications Act of 1996 began a new era in telecommunications policy. Local governments found themselves developing new relationships with telecommunication providers. Local governments also found more confusion over interpretation of the Act and its impact on public rights-of-way. The basic assumption of the Act is that competition will benefit all consumers of telecommunications services and that competition should be encouraged wherever possible. The approach of the Act is to remove as much regulation of telecommunications providers as possible. The Act is broad and conceptual and implementation details are still evolving.

Some significant impacts of the Telecommunications Act are found in public rights-of-way. Where formerly one telephone company and one cable television company used local rights-of-way to install

poles, wires and conduits, there are now often four to ten new telecommunications companies seeking to enter the right-of-way. This affects other utilities in the right-of-way, the traveling public, and the maintenance budget for the agency responsible for maintaining the right-of-way and street pavements.

The Telecommunications Act of 1996 is an excellent topic to be addressed by a utility coordinating committee. The variety of interests and insights represented by the other occupants and users of the public right-of-way can be helpful in shaping policies and procedures that will ensure appropriate implementation of the Act in a community.

Coordination is the Key

Utility and public works agencies can benefit from better coordination. Input from utilities early in the project development process can greatly assist agencies in scheduling design, start and completion of right-of-way acquisition, and construction bid dates. Another benefit of regular, face-to-face meetings is a more cooperative and less adversarial relationship among users of public right-of-way. This can yield more workable and innovative policies and approaches for using limited space to everyone's advantage. Public works agencies win a better project with fewer delays, while utilities win fewer damaged facilities and more efficient relocations. Utility coordination requires participation of privately owned utility companies, governmental utility agencies, regulating bodies, public works agencies, highway departments and other interested groups. Utility coordination councils have been formed by these agencies in a number of communities to coordinate their utility location problems and establish corrective programs. This coordination process benefits the agencies as well as their communities.

How to form a Utility Coordination Committee

Before considering the formation of a new organization to accomplish the desired ends, it is best to determine if the goals can be readily achieved within the framework of an existing viable organization. While it is unlikely that an existing organization is presently oriented in this direction, such an organization may be modified to accomplish the desired results. Possible duplication of efforts which might result from formation of a new organization should be carefully evaluated.

Perhaps a snapshot of utility coordination initiatives over time will help tell the story of how communication and coordination efforts do not go out of style in the public right-of-way. The issues and facts that made utility coordination valid in 1920, or 1960, are even more substantial as we approach 2000.

In Los Angeles a Substructure Committee was formed in 1926 to review issues related to highways and utilities and to share information on specific projects. This group continues its work today with participants including representatives from city agencies such as Contract Administration, Engineering, General Services, Street Lighting, Transportation, Water and Power; county agencies such as Public Works and Sanitation District; and utilities such as telephone, CATV and the gas company. The committee conducts business through monthly meetings with agenda items which include minutes of prior meetings, treasurer's report, project status reports, reports from related organizations, one-call centers, and subcommittees and new business. The monthly substructure reports distributed for these meetings list individual construction projects of each agency. Agenda topics may also cover permit requirements and procedures, or new technology and methods.

In 1959, the San Diego/Imperial Counties Chapter of APWA formed a Utilities Coordination Committee as part of its efforts to promote and encourage local governmental agency coordination and cooperation. The group consisted primarily of employees of public utilities, contractors, and governmental agencies who had been active in project development work. The function of the committee was to:

- Improve coordination between public agencies and utility companies in all phases of construction in public and private rights-of-way,
- Develop proper locations and standards specifications for installation of public utility facilities in streets and rights-of-way,
- Assist in obtaining a better understanding of the many problems involved in underground and overhead construction, and
- Keep current a manual devoted to traffic interference and public safety.

This APWA committee was organized with a chairman, secretary, and sergeant-at-arms, each holding office for one year. Subcommittees on topics such as planning, substructure specifications, project coordination, legislation, traffic and design, are appointed as needs dictate. The group meets monthly.

Establish the Purpose

The purpose is a statement of general values held by the committee and describes the committee's broad scope of interests. Goals, on the other hand, are refinements of values and provide further clarification by describing the desired state to be achieved. Objectives go even further in clarifying the organization's purpose by focusing on specific activities that must be undertaken in order to achieve a given goal. If these basic organizational elements are well written and understood by all participants, communication will be greatly enhanced and improved coordination will result.

In defining the purpose of the committee, care should be taken to avoid limiting the scope of the committee's activity and interests. Representatives from utility companies and local and state government public works agencies will have a prime interest in the committee. But contractors, consulting engineers, community planners, and others can also play an important part in effecting improvements in this area and should not be excluded because of limited purpose.

Some feel that most operational problems can be resolved by those directly involved in day-to-day construction and maintenance activities. Others feel that those responsible for planning such activities are key. But most agree that individuals with both types of responsibilities must be involved in programs to improve coordination. Especially in the formative stages, involvement of top supervisory personnel is needed to give the activity the priority it deserves. A well-organized approach to forming the committee will go far to show top management, and the community, that proper steps are being taken to make it a productive activity warranting their support. Another reason for documenting the committee's purpose is to show that the committee is aware of all relevant activities in the community. The committee's program emphasis will become evident in the development of its goals, objectives, and program priorities.

How to form a coordination committee has been a regularly featured topic in APWA-sponsored utility coordination workshops. Hundreds of practitioners have tackled the task of documenting the purpose of the committee. The two descriptions most frequently selected are:

1. The purpose of the utility coordination committee is to bring about improved communication, cooperation, and coordination among the people who are in any way responsible for placing or disturbing below-ground or overhead utilities by establishing an effective, harmonious working relationship among municipal utilities, private utilities, governmental agencies, engineers, and contractors serving a common area for the safety and protection of the general public.
2. The purpose of the utility coordination committee is to effect improved planning, construction, maintenance, and operational policies and practices related to all facilities commonly located within the public rights-of-way through an officially recognized, voluntary, cooperative association of individuals and bodies who have vested interest as granted by state law, franchise, or permit.

In almost all cases, workshop participants from throughout the U.S. and Canada said that they would modify each of these somewhat. The point is that each committee's described purpose may consist of several common elements. Purpose statements must be written to reflect local values and needs.

Chicago established a Board of Underground in 1994 by amending existing sections of the municipal code. The primary purpose of the Board is to promote efficiency of work in the public way, to reduce the risk of damage to existing underground facilities, and to reduce the inconvenience to the public caused by work in the public way. Members of the Board include departments of transportation, streets and sanitation, water, sewers, planning and development, and each public utility that provides service within the city. The Board was authorized to do the following:

- Coordinate the exchange, review and planning of annual and five year capital improvement plans and schedules and oversee resolution of identified construction conflicts.
- Review design requests, contract plans, proposed vacations and dedications of real property, and applications for construction permits affecting the public way to assess the impact of proposed work.
- Assist and coordinate any changes in plans resulting from reviews.
- Issue guidelines for the review and examination of plans and construction permits for work in, or adjacent to, the public way.

No department of city government can perform or permit work in, or adjacent to, the public way unless the work complies with the guidelines issued by the Board of Underground.

Set Goals and Objectives

As noted earlier, goals are refinements of values and provide further clarification by describing the desired state to be achieved. Objectives clarify the organization's purpose by focusing on specific activities that must be undertaken in order to achieve a given goal. Major goals of utility coordination committees are to:

- Improve communication and exchange information among all responsible parties, trade and professional associations, and the general public.
- Minimize damage to utility and street structures.
- Coordinate scheduling of capital improvement and maintenance projects.
- Minimize inconvenience and cost to the public in providing services.

- Improve safety conditions.
- Develop suggested standards for accommodating utilities within common corridors.

Keep in mind that potential members will be assessing progress in achieving the committee's goals and objectives. Therefore, including a few objectives that can be achieved in a short time and have high, visible impact is important. Select a few projects that have been successfully developed by similar groups throughout the country (e.g. uniform map legends or guidelines for field marking) and adapt them to meet local needs.

In Saint Paul, Minnesota, the public works department conducted an extensive review of utility coordination issues and problems. A Public Works Utility Coordination Committee was formed to obtain information and make recommendations on ways to take greater responsibility for all utility and construction work within the public way, and to improve the process wherever possible. Participants in the work included representatives of city departments such as street engineering, traffic, street maintenance, construction, sewer engineering, and sewer maintenance; and private entities such as telecommunications, water utility, one-call system, utility contractors association, gas and electric utilities, and cable television. A report on the findings of this evaluation was published in December, 1994.

On the topic of planning and coordination, the Committee sought to provide coordination among the many users of the public way by creating a system that develops good relationships with all users, provides for plan review and discussion, and looks at long-term project planning encompassing all users. Among the issues and problems identified by the group were:

- Better coordination among facility owners is needed.
- Contractors that do not coordinate with facility owners during construction.
- Need for adequate notification by public works of changing requirements.
- Difficulty getting locations of existing facilities during the project design phase.
- Poor communication among city departments.
- Multiple utility permits granted for the same location.
- Relocating facilities that are only two or three years old.
- Poor coordination among utilities and those making street improvements.
- Lack of one city coordinator or department with final authority.
- Pre-construction meetings too close to construction start dates.

Better coordination and communication were seen as keys to resolving issues before they become a problem. The department had instituted several measures to promote coordination over the years. Some were tied to a major combined street and sewer program, and others related to specific actions, such as providing information on street reconstruction projects a year or two in advance. The Utility Coordination Committee recommended that the Public Works Department establish leadership and facilitate a process to better coordinate work within the public ways of Saint Paul. Recommendations of the Committee included:

1. Public works serve as the lead agency responsible for coordination and approval of all facilities (public and private) in the public way. The city engineer has final authority to resolve issues.

2. All proposed construction within, or affecting, the public way must be approved by public works before construction begins.
3. A permanent Utility Coordination Committee should be established and meet regularly. This would provide a forum for all agencies to coordinate construction and maintenance activities. Representatives should be authorized to speak on behalf of facility owners and represent their specific concerns.
4. All agencies or facility owners that have facilities in the public way should provide a five-year plan, updated annually, for major facility upgrades, street improvements, paving programs, and major maintenance. Public works is responsible for correlating this information and informing the committee of all capital and major maintenance work planned for the public way.
5. Each facility owner should designate one individual responsible for preparing, submitting and revising the agency's five year program.
6. To ensure adequate planning and coordination, no use-of-street permits should be issued (except for emergencies) until it has been determined that the work has been correctly scheduled in the five year plan, and/or all members have been made aware of the project.
7. No permits should be issued for work that affects newly surfaced streets, unless an emergency exists, or the work is deemed necessary by the city engineer.
8. The one-call system be used in the design of projects.

The Utility Coordination Report prepared by the Committee looked at a range of related issues, including permits, facility location in the public way, restoration and installation standards, enforcement, mapping and records, and locating underground facilities.

Form a Leadership Core

Once there is general agreement among those responsible for drafting statements of the committee's basic organization elements, consideration should be given to management and operating elements of the committee.

A chairperson, vice-chairperson, and a secretary-treasurer typically form a leadership core. As the committee grows it may be desirable to separate the secretary and treasurer responsibilities and to add other officers.

Once the leadership core is identified and selected it will serve as the executive committee. As the governing body, the executive committee generally will be responsible for managing programs and activities and promoting the committee's purpose. It should have the authority to establish such subcommittees and task forces as necessary to discharge its responsibilities effectively.

Identify Membership

The charter membership of the utility coordination committee should include all of the major players found in the public right-of-way. This would typically include public works (often the agency responsible for regulating use of the right-of-way), water, sewer, electric power, gas, telecommunications, and cable television. Other initial members may include other governmental agencies such as planning, permits, emergency management and police, as well as the one-call system, other utility service providers, or contractor groups.

A structure needs to be put in place for conducting business. This often involves designating voting members. Organizations that regulate use of the right-of-ways and those having facilities located in these right-of-ways should be voting members of the utility coordinating committee. This usually includes all utilities and most government agencies. Generally, an equal vote for each of those organizations will be adequate. Some utility services will not be located throughout the coordinating group's geographical area of concern.

Cable television systems now exist in virtually every community. Cable television systems often share overhead and underground structures with other utilities and may feel they should be granted full voting rights for activities that have a direct effect on their facilities.

Alternative techniques for providing equitable voting rights for committee members include prorating the number of votes or assigning weighted values to votes based on the benefits gained from the group's activities. Until a history of categorized savings is available, an estimate of anticipated savings could be used as a basis for negotiation. The resolution of equitable participation can become a complex issue and may depend on local funds to get the program underway, with other organizations providing their share indirectly by contributing staff services. And while it is important to be aware of these factors, it is much more important to get the committee organized and focused on its work. Do not get bogged down by specifics in the beginning. The immediate objective is to get organized and operating, even if it is in a less formal manner using volunteer staffing. It may be helpful to have one member organization provide needed office facilities to serve as the center for initial operations. Because most legal and needed working records are often available for reference in a public works or engineering department, the government agency may offer the use of office space as a way of sharing in the costs of supporting the utility coordinating committee.

When the coordinating group is operational and has developed a history of operating costs and yielded long term gains for the participants, a base will have been developed for use in determining organization cost sharing methods. Each should have a minimum of one representative on the committee.

Leadership, planning ability, and implementation skills are highly desired qualities for members. As special projects are identified, other representatives of participating companies and agencies can be drafted to serve on task forces. An example of such situations might be the assignment of a computer specialist to a task force dealing with records systems.

The utility coordination committee may develop and adopt bylaws to define the key elements of the group and how business will be conducted.

Sample Bylaws for a Utility Coordination Committee

Introduction: *Utilities, operators and governmental organizations maintaining underground and overhead plant in the specified community, and other organizations at the discretion of the committee, hereinafter referred to as "members", support these efforts to enhance utility coordination by adoption of these bylaws.*

Section 1 - Name: *The name of this committee shall be the Utility Coordinating Committee, hereinafter referred to as "UCC."*

Section 2 - Purpose: *The purpose of the UCC shall be to act for utilities, operators and government organizations operating in the specified community in bringing about the coordination of activities with each other and to thereby secure the maximum advantage in location and construction features with the minimum amount of interference with each other and with other organizations. It is the intent of this UCC to achieve this purpose through frank and impartial consideration of all matters referred to it with full recognition of the respective rights and obligations of the organizations concerned. It is the further intent of the UCC to keep its members informed of all proposed work in the territory of other members and to provide a source of engineering information upon which to base such decisions as it may be called upon to give. The UCC shall give support and aid to other local and state utility and coordinating groups or committees.*

Section 3 - Membership: *The membership of the UCC shall consist of representatives of the organizations defined above and other organizations at the discretion of the UCC. The appointment of membership of a representative or alternate, and the term of membership shall be controlled by the organization represented. A member or alternate shall be authorized to act within reasonable limits for the organization they represent.*

Section 4 - Officers: *The UCC shall elect from its membership a Chairperson and a Secretary. The term of office of each shall be one year commencing January 1 and ending December 31. Vacancies may be filled by election at a regular meeting of the UCC. The offices of Chairperson and Secretary shall be so distributed that when a particular type member organization is represented in one office, another and different type utility or organization shall be represented in the other office. No one type utility or organization shall be represented in the same office for a continuous period longer than one year. Ascension to office shall be accomplished in the following manner: the outgoing Secretary will become the incoming Chairperson, and the incoming Secretary shall be elected from the general membership. Should the outgoing Secretary decline to serve for the incoming year, the opening will be filled by vote of the general membership. Vacancy created during the term for office of Secretary shall be filled by the Chairperson.*

Section 5 - Subcommittee: *The UCC may establish such subcommittees and task forces as it may deem necessary to handle the work. The personnel of such sub-entities will be from the membership of the UCC and other expertise as deemed necessary by the UCC.*

Section 6 - Meetings: *The regular meeting of the UCC shall be held at least monthly. If this day is a legal holiday, or if the UCC desires, the Chairperson shall select a substitute date agreeable to*

the UCC. The hour and place of all meetings shall be designated by the Chairperson. The Chairperson, Secretary, and one member may call a special meeting of the UCC, by notification of all members, at any time. Calls for special meetings shall be accompanied by a statement of the matter, or matters, to be considered.

Section 7 - Action by the UCC: *A quorum shall consist of a majority of representatives of member organizations. Each member organization shall be entitled to a single vote. Final action by the UCC on recommendations or amendments to these bylaws shall be taken by two-thirds consent of the members or their alternate present. Election of officers shall be by a majority vote of the members or their alternates present at the December meeting.*

Appoint Subcommittees and Task Forces

Consideration should be given to establishing special subcommittees and task forces after the committee is operational and directions are formulated for its activities. These sub-entities will likely be the means by which much of the committee's work is accomplished. Care should be taken in constituting subcommittees and task forces to involve as many members as possible. Success depends largely on how these are formed and managed. In the effort to choose good leaders, there should be no hesitation to consider any representative who has leadership potential.

Subcommittees should be established to achieve objectives of a routine nature such as training, plan review, project coordination, creation of standards, or maintenance of records to name a few. Task forces should be used to accomplish a single task, such as a feasibility study of a one-call notification system. Subcommittees generally work best with five to ten members and task forces with three to five.

The leadership core should provide committees and task forces with a written statement describing what it expects them to accomplish and how the assignment is to be implemented. This includes objectives written in terms of measuring progress. It also includes documentation of related policies and other parameters with which the subcommittee/task force must comply. If such groups are to serve in an advisory capacity, they should be so informed. If they are to perform specific work tasks (whether a one-time job or routine in nature) the scope and authority must be well understood by everyone involved in doing and evaluating the work.

When assignments are completed and no others of a similar nature are forthcoming, subcommittees and task forces should be dissolved. They may be re-established when warranted. Appointments should be reviewed from time to time and changes made, if desirable, to assure that a high level of interest, expertise, and productivity is maintained.

Chairpersons of subcommittees and task forces are responsible for program management and submitting written activity reports. With a properly constituted subcommittee and task force structure, most representatives will have an opportunity to be actively involved.

Possible Subcommittees and Task Forces

Subcommittees:

- Construction Plan Review
- Capital Improvement Program Review
- Long Range Planning
- Education and Training
- Publicity
- Research and Technology Transfer
- Standards
- Excavation Damage Statistics
- Publications
- Liaison
- Intergovernmental Relations

Task Forces:

- Geographic Information System
- One-Call Excavation Notice System
- Joint Agency Work Forces
- Joint Agency Billing
- Joint Agency Inspections
- Uniform Permits
- Plan Standards

Each community will establish subcommittees and task forces to meet their own needs. Examples of statements that may define the responsibilities of subcommittees and task forces are provided below. These are examples only. Each community has problems that require individual solutions. The number of subcommittees and their missions will be determined by local needs.

- **Executive:** This subcommittee is the governing body and manages the general operation of the organization concerning changes of the bylaws and financial matters and reviews proposed changes in related governmental matters.
- **Damage Prevention:** This subcommittee compiles and maintains a directory of emergency telephone numbers, investigates and discusses incidents and types of damage to utilities and suggests how to further reduce damage.
- **Public Relations and Education:** This subcommittee communicates the committee's purpose, goals, objectives, programs, and accomplishments, educating other organizations and the public. This group may also develop training programs.
- **Standards:** This subcommittee develops standard practices and procedures for participating organizations, including permits and temporary markings to show utility locations and areas for utility facilities within the public right-of-way.
- **One-Call System:** This subcommittee promotes and supports one-call systems.
- **Legislation:** This subcommittee reviews proposed legislation and reports to the membership of its potential impact on the work of the utility coordination committee, or individual utility industries. Tracks individual pieces of legislation and reports on its final disposition.
- **Coordination:** Develops a pattern for coordination of the activities of the various members to minimize conflicts as to location and number of cuts, or other adverse impacts in the public way.

One example of a possible subcommittee or task force can be found in work done to promote coordination in Washington. The Washington State Chapter of APWA developed and adopted Computer Aided Drafting and Design Standards for use by public works agencies, utilities and consulting engineers throughout the state. Work began in 1987 with a task force appointed by the members on the task force represented cities, consultants and utilities. The task force surveyed agencies in Washington to gather drafting symbols and selected the most common symbols from approximately 30 examples. The

resulting menus and drawings are distributed to interested agencies on diskette so they can be directly imported into computer applications. This effort promotes consistency in map symbols, which is very useful when several different agencies will be reviewing a set of project plans. When planning construction projects, public agencies and utilities can exchange facility location information on maps that have consistent symbols and thus avoid confusion over different symbols for the same map feature.

Set the frequency and type of meetings

The frequency and length of meetings will depend on goals and objectives adopted by the committee and on typical agenda items. Since one of the key functions of the committee is to review project plans of participating agencies and companies, the committee should establish a schedule for meeting regularly. Consideration should be given to rotating meeting locations among participating agencies and companies to provide participants with exposure to the operating environments of all the members.

While work at hand may be the primary reason for such meetings, it is also important that participants develop an informal rapport. Beginning regular meetings with self-introductions is a common method to achieve this objective. From time to time, it may be desirable to hold luncheon or evening gatherings to attract those who normally are unable to participate in daytime meetings.

In Indianapolis, Indiana, a Public Works Coordinating Council meets monthly. Member agencies include a contractor association, state department of transportation, power and light company, Gas Company, Telephone Company, Water Company, gas and electric company, cable television, and local government departments such as transportation, transit service, public works, parks and recreation, and the surveyor's office. Members of the committee report on the status of proposed projects as well as those under construction. Agenda items may also cover permit requirements and changes in agency procedures.

Outline the geographic area

The geographic area to be encompassed by the committee will depend on local needs and interests of participants. Boundaries of the Standard Metropolitan Statistical Areas (SMSA) are one option.

Normally included within an SMSA are municipalities, county governments, special service districts, state transportation agencies, and most utilities. Each of these agencies and companies owning and/or regulating facilities located within the public right-of-ways should be represented. Other options may include city, county, or state boundaries.

Adopt a committee name

Once the prime geographical area of interest is identified, the next task for the organizers is to name the committee. Care should be taken to select a name which does not imply a limited scope of interest. Much can be gained by using an acronym that conveys a desired message and is convenient to use. Some of the best known coordination efforts use acronyms. The use of clearly understood logos and symbols is another aspect to consider at this time.

Establish formal communications procedures

Included in this category of formal communications are meeting agendas, minutes of meetings, newsletters, news releases, committee reports, and liaison reports to other committees within the state or region.

A well prepared meeting agenda distributed in advance of the meeting is as essential to the orderly conduct of a meeting as is a good leader. Minutes of meetings must include official actions taken. Also, it is desirable to include information on key items and comments leading to these decisions. This has the added benefit of informing absentees regarding the reasons behind an action. A newsletter offers members an opportunity to keep informed on issues of mutual concern that may occur between meetings, or those specifically related to issues generally discussed at meetings. A well prepared news release that is of general interest to the community and requires little editing will be given serious consideration for publication by the news media. Since some problems involve the general public, this communication device should be well used by the committee. Reports of standing committees and task forces should be documented and supplemented by succinct verbal reports. The very act of putting thoughts into writing helps them to surface as concrete, meaningful, and organized actions.

Sample Agenda for a Utility Coordination Committee

Location: Time: Date

1. Call to order and introduction of guests
2. Approval of minutes of previous meeting
3. Treasurer's report
4. Secretary's report
5. Unfinished business
6. New business
7. Review of pending construction reports
8. Special subcommittee reports
9. Task force reports
10. Other business
11. Adjournment

Estimates of time required to address each topic should be made in order to ensure that all matters, and especially the priority topics, can be properly covered. These priority topics may typically be project schedule information for pending construction or maintenance projects. These priorities need to be addressed within the allocated meeting time.

Sample Outline for minutes of a Utility Coordination Committee meeting

1. Call to Order: Meeting called to order at specified time by appropriate official in certain location.
2. Organization represented at the meeting: name, title, representing.

3. Member organizations not represented.
4. Approval of minutes of previous meeting.
5. Adoption of Treasurer's and Secretary's report.
6. Topics of discussion
7. Major street improvements – planned
8. Major street improvements - under construction
9. Major utility projects – planned
10. Major utility projects - under construction
11. Private projects with major public improvements
12. New business
13. Street lighting and traffic signals
14. Sewers and storm drains
15. Street vacations - status report
16. Subdivisions - status report
17. Adjournment: action to adjourn meeting, identify time and location of next meeting.

Minutes should not be a verbatim record of the meeting. The essence of the discussion is all that is necessary.

Opportunities for improved communication & coordination in Pennsylvania

Pennsylvania Coordinating Committees

Local coordinating committees meet to share their projects and project plans in an exercise to find overlap in construction work. They meet monthly, or bi-monthly, or quarterly, to discuss and share project plans. Committee members consist of utility stakeholders, i.e. utility companies, PennDOT, public works officials and planning commission members.

Pennsylvania Common Ground Alliance (CGA) Regional Partners

The Common Ground Alliance (CGA) Regional Partners Committee partners with local state coordinating committees for the purpose of encouraging communication about Best Practices among all stakeholders. The purpose of the partnership is to strengthen initiatives among national, regional, state and local damage prevention professionals.

Elements of a Pennsylvania Damage Prevention Program

Current Coordinating Committees (committees in bold italic are also CGA Regional Partners)

- ***Allegheny/Kiski Valley Coordinating Committee, Western Pennsylvania***
- Altoona Coordinating Committee, Blair County, Pennsylvania
- Beaver County Utility Coordinating Committee, Beaver County, Pennsylvania
- Central PA Regional Partnership, Centre County, Pennsylvania
- ***Delaware Valley Damage Prevention Council, Southeastern Pennsylvania***
- Erie Utility Coordinating Committee, Erie County, Pennsylvania
- Fayette County Coordinating Committee, Fayette County, Pennsylvania
- Harrisburg Coordinating Committee, Dauphin County, Pennsylvania
- ***Johnstown Area Public Service Coordination Committee, Johnstown, Pennsylvania***
- ***Lancaster County Regional Partnership, Lancaster County, Pennsylvania***
- ***Lehigh Valley Regional Partnership, Lehigh and Northampton Counties, Pennsylvania***
- North Central Utility Coordination Committee, Tioga, Bradford, Susquehanna, and Wyoming Counties, Pennsylvania
- North East PA Regional Partnership, Wayne, Lackawanna, and Luzerne Counties, Pennsylvania
- ***Pittsburgh Public Service Coordination Committee, Allegheny County, Pittsburgh, Pennsylvania***
- ***Public Service Coordinating Committee, Indiana County, Pennsylvania***
- Somerset Utility Meeting, Somerset County, Pennsylvania
- Washington Area Utility Coordinating Committee, Washington County, Pennsylvania
- Westmoreland Utility Meeting, Westmoreland County, Pennsylvania
- Williamsport Coordinating committee, Lycoming County, Pennsylvania
- York County Coordinating Committee, York County, Pennsylvania



Other Samples of Opportunities for improved communication & coordination

Alaska

The Alaska Utility Coordinating Council is a non-profit organization formed to serve as a statewide organization of utilities, governmental agencies, contractors, and other interested organizations or individuals to promote coordination between utilities and government agencies, reduce damage to above-ground and sub-structure utility facilities, and disseminate legislative information affecting utilities. The Council sponsors an annual statewide utility conference which provides a forum for discussion and exchange of ideas and technology. The Council also distributes a quarterly newsletter.

Arizona

The Arizona Utility Coordination Committee was cited earlier in this publication for its success in developing and using a public improvement project guide. This group meets regularly to address issues of mutual concern. These issues typically affect the quality of life for the communities served by agencies. The AUCC has entered the information superhighway by adding a new communication tool to its utility coordination program. An electronic bulletin board provides libraries, databases, mail services, and discussion forums for utility coordination issues. Permitting is also a part of this electronic communication system. This group has continued to examine their goals and objectives and work to develop new initiatives to accomplish them, whether using new technology, or promoting basic communication and understanding.

New Mexico

In Albuquerque, New Mexico, representatives of the City and the gas, telephone, and power companies set up the Albuquerque Utility Council to enhance communication and coordination. The Utility Council convenes a bi-annual construction coordinating planning session in which each member (gas, telephone, power, water, sewer, storm drainage, major street construction, street maintenance, and CATV) place their projects for the next year on an overlay map. Participation by the governmental agencies in this process is mandatory for effective coordination.

Other accomplishments of the Albuquerque Utility Council include:

1. Starting a call-before you-dig program,
2. Establishing a provision in State law requiring excavators to call for locates,
3. Establishing utility street corridors,
4. Initiating a requirement for utility review of summary plats,
5. Initiating a requirement for locate numbers from the call-before-you-dig program prior to issuing excavation permits,
6. Establishing criteria and approval for utility coordinator, and
7. Establishing a requirement through franchise agreements that CATV companies become members of the utility council.

The Council has also developed a utility coordination agreement which has been adopted by the members. The agreement outlines the steps to be taken by city agencies and utility companies to coordinate programs during planning, design, and construction of infrastructure projects. In summary,

the agreement provides that the city and utility companies exchange information on planned utility/infrastructure projects on a continual basis. Highway and street project design plans are sent to all utility companies for review and comment. Utility companies then comment within two weeks on the location of existing or planned utilities. For city projects with extensive utility concerns, a project coordination plan is prepared after project utility coordination meetings.

The utility coordination agreement notes that the goal of project coordination is to provide a means to properly plan, design, and construct projects by avoiding utility conflicts during the design stage when possible; developing and evaluating innovative methods of resolving utility conflicts; identifying and planning the resolution of utility conflicts in advance of construction; determining responsibilities (including payment of costs and expenses) involved with affected participant utilities relocations; avoiding delays during project construction due to unresolved utility conflicts; and following up to ensure all participants have performed their responsibilities.

One specific method of fostering project coordination is to require that, for projects planned for construction within the next 12 months, each party to the agreement provide others with the project name, location, synopsis of project work, schedule, and project manager's name and phone number.

Each party to the agreement develops implementation procedures to meet the objectives of the utility coordination agreement. The city's procedures outline steps to be taken during project planning, concept design, project design, and construction. Notably, these procedures require all agencies' capital improvement project schedules to be submitted quarterly and reviewed for potential schedule conflicts. Unique characteristics of projects are identified early in the concept design phase so that the project is not slowed down when the unique aspects show up later. Project layout maps are distributed to all parties to identify facilities. The utility may provide system maps instead of marking the project maps.

Field verification requirements are identified, both for horizontal and vertical location of underground facilities. For new or resurfaced roadways, all underground utility companies perform condition surveys of their facilities during early phases of design. Condition surveys include excavation and potholing at appropriate intervals. A concept design presentation meeting is held for each project involving utilities. All utilities and agencies affected by the project participate and address potholing requirements (where, who performs, who pays) and joint use by utilities to minimize work activity on the project site.

Conclusion – Getting Started

Variations in institutional, geographical, and political conditions and types of services provided from community to community make it inappropriate to develop a model community-wide utility coordination committee. However, if suggestions presented in this publication are given proper consideration, the opportunity for success in forming a viable committee will be greatly improved. The best format for a committee is one developed by those in the local community and one which fits the needs of participants. The most important items to remember when forming a committee are:

- Don't become overly sophisticated in the beginning. Keep it simple.
- Be sensitive to the needs of the people in your organization. They make it work.
- Establish realistic, achievable goals.

Planning is part of good management. It requires anticipating and preparing for future events, while taking steps to solve existing problems and avoid creating new ones. Joint planning efforts between public works agencies and utilities can avoid conflicts and inefficient use of resources. Public works and utility agencies find areas of mutual interest in sharing public rights-of-way, upgrading older facilities, expanding or adding facilities, and responding to emergency events.

Many challenges face public works agencies as they manage public facilities. The challenges include funding of capital and maintenance programs, selecting and evaluating improvement projects, and addressing concerns of highway users, neighborhood groups, and special interest groups.

Accommodating the needs of the users of highways and streets (motorists, pedestrians, bicyclists, buses, and trucks) is balanced with other community goals which can involve issues as diverse as urban development patterns, utilities, wetlands, and dust control.

Utility companies also work in a complicated environment, attempting to address many of the same issues (system capacity, rehabilitation of facilities, planning and programming improvements, funding capital and operating expenses, supporting community development efforts) as public works agencies. When public works agencies and utilities find themselves sharing a valuable resource such as right-of-way, extra care and attention must be given to coordinating efforts so the entities complement each other rather than work against each other and the community's interest.

Basic efforts can have big benefits as public works agencies and utilities coordinate efforts. The following figure presents some activities that support coordination. These efforts not only affect the operations of the individual agencies involved, they enhance the quality of the community and the services provided by the community.

Coordination activities for utilities and public works

For Utilities:

1. Develop a utility master plan in conjunction with other public planning efforts.
2. Provide capital improvement programs to public works agencies.
3. Update utility system plans every two to five years and provide them to public works agencies.
4. Meet with local or state agencies to discuss projects, determine impacts, and explore alternatives to avoid potential conflicts.
5. Develop one point of contact to work with the public works agency on resolution of potential conflicts.
6. Seek to minimize the impact of utilities on streets with high traffic volumes, few alternative routes, or limited right-of-way.

For Public Works Agencies:

1. Develop and share a capital improvement program.
2. Include all construction and maintenance work in the capital improvement program planned for at least the next two years with longer time frames (5-6 years) desirable.
3. Hold meetings (at least annually) between utility company personnel and public works personnel to discuss upcoming project development and construction activities.
4. Notify utilities of projects prior to the design phase.
5. Route plans of highway projects to utilities for comment during the design phase.
6. Determine the impact of all projects on other facilities in or adjoining the right-of-way.
7. Convene meetings of public works and utility personnel involved in project planning and development prior to each major phase of a project (planning, design and construction).
8. Identify and resolve conflicts before any construction.
9. Share construction schedules with utilities.
10. Develop one point of contact in the public works agency to work with utilities on a project from inception to completion.
11. Publish maps each year showing municipality, county, state/provincial, and utility projects.
12. Publish detailed descriptions or directories of projects and list project schedules, managers, and telephone numbers.
13. Take a leadership role in advancing utility coordination efforts in the community.

Locating & Marking

Abandoned Lines

"Abandoned Line" generally means a line is no longer transporting any electricity, liquid, solid or slurry from one place to another. In general, an abandoned line is no longer in service and is physically disconnected.

Line Locating Quality Assurance

ROW Protection and Damage Prevention are not limited to responding to one-calls. It also may include: protection from encroachments, such as buildings being built over utility or within the easement, adequate permanent line markers, ensuring one-call maps are adequate, updating (redlining) alignment sheets as needed, contactor and emergency response agency communication and responding to Aerial Patrol Reports.

A Line Locating Quality Assurance Program is designed to assure that the elements of the Program are in place and being followed. A typical line locating quality assurance evaluation includes:

- Confirming training documentation
- Confirming map and alignment sheets in use are current and correct
- Verifying that handling of one-call tickets are done in accordance with state laws and Company procedures;
- Verifying that line locating and marking meet State Law and Company Procedures
- Confirming that communication with excavator meets Company Requirements

Line Locators may perform additional tasks that may be included in a Quality Assurance program; for example ROW inspection, meeting with excavators or emergency officials, observation and monitoring, or responding to patrol reports. Where separate audits are performed for various phases of the one-call management process, effort should be made to ensure that the entire process is reviewed. Operators may wish to conduct unannounced, random line locating assessments.

The results of a Line Locating Quality Assurance Program should be communicated with the appropriate supervision/management. Documentation of the corrective action or response should be maintained as well as documentation to substantiate the Line Locating Quality Assurance Program. Results of individual assessment should be compared with others to identify trends and other analysis.

Persons locating utilities within the ROW should possess the Knowledge, Skills and Abilities (KSA) to perform their duties. Training and qualification of locating personnel should be described in the Company's Program and is beyond the scope of this document. However, a Quality Assurance Program should determine that the Line Locator has met the Company's training and qualification requirements.

CONSIDERATIONS: For individual line locator to confirm

- Company required ROW protection training is complete
- Company required qualifications are correct.
- Company required review of procedures are met.
- Company required equipment training.

Map and Alignment Sheets

Line Locators must have current maps and alignment sheets and know how to use them. The quality control assessment should substantiate that the maps and/or alignment sheets used by the Line Locator are current and correct, that the Locator understands the symbology and layout, and knows the process to be used in getting the maps and/or alignment sheets updated if errors are found.

CONSIDERATIONS: Operators may wish to confirm

- Alignment sheets in use by the Line Locator are current.
- The process for disseminating alignment sheet/maps is functioning correctly and understood by the locating personnel.
- The centerline data and one-call buffer in use by the Line Locator are current and periodically reviewed.
- The Line Locator demonstrates the ability to read and understand the alignment sheets, i.e. symbology, stationing and orientation.
- Company process for marking up and submitting alignment sheet errors is being followed.

Processing One-Call Tickets

A Line Locating Quality Assurance Program must confirm that one-call tickets are being processed in accordance with state one-call laws and Company procedures and are done in a at timely manner.

CONSIDERATIONS: Operators may wish to confirm

- Routine tickets are processed in accordance with Company/State requirements or waiver (note— company cannot waive a state requirement)
- Emergency tickets are processed promptly and in accordance with Company/State requirements or waiver
- After hour coverage is provided
- Design tickets are processed appropriately
- Daily review of OneOCall tickets are being conducted to ensure that all one-calls received are processed appropriately and that all tickets are received into the system.
- Documentation is adequate to substantiate the above

Marking Underground Structures

A Line Locating Quality Assurance Assessment should ascertain that the underground structures are accurately located and marked. It is recommended that the assessment include verifying the accuracy of the marks made by re-locating the facilities or comparing the marks to the location of the exposed facilities.

CONSIDERATIONS: Operators may wish to confirm

- Routine tickets are processed in accordance with Company/State requirements or waiver (note— company cannot waive a state requirement)
- Maps/alignment sheets reviewed (i.e., appurtenances could be attached to utility that could be snagged)
- Locate is performed safely (proper PPE/traffic control)
- Line Locator is aware of and conducts visual inspection for other utilities
- Markings are within state tolerance or company requirements of centerline
- Bends and other changes are clearly marked
- Flags/Marks are spaced within State or company specifications, whichever is more stringent
- Marks contain – Name/Size/Identifier
- Engineering Department or responsible department is notified of any point of intersection/inflection (P.I.) or error not on alignment sheet
- That abandoned lines are marked (if known) or contractor informed (if unable to locate)
- Markings and area photographed
- Photos attached and documented as required by the procedure
- Communicate markings to contractor and One-Call Center if required

Line Locating Equipment

A Line Locating Quality Assurance Program should ensure that Line locating equipment is checked for proper functioning prior to use in accordance with Company Procedures and that proper documentation of check is available.

CONSIDERATIONS: Operators may wish to confirm

- Tools and equipment are in proper working order and properly calibrated.
- Line locating equipment is checked for proper operation in accordance with Company procedures (for example, “daily prior to use”).
- Conductive method used (or justifiable inductive)
- Proper hook-up and grounding procedures where applicable
- Document the equipment field check maintained
- Appropriate safety equipment and procedures were used by the locator

General Requirements Associated with Line Locating

Other items that may be confirmed in a Line Locating Quality Assurance Program include “Observation”/“Monitoring” in accordance with Company procedures, inspection forms completed, and possible prohibition from power excavation within tolerance zone and documentation associated with each.

CONSIDERATIONS: Operators may wish to verify

- Company representative is continuously present (observe) when work is within 10’ or per company requirements.
- Company representative (monitor) if work is within 10’ to 25’ or company’s procedure.
- Proper documentation is completed.
- No power excavation within tolerance zone unless appropriated b Company.

- Foreign Line Crossing Report completed and maintained in accordance with Company procedure.
- Line Inspection Reports are completed and maintained in accordance with Company procedure.

Line Locating and Temporary Marking

This topic/document applies to utility locating and for the placement of temporary excavation marking. This topic/document references the guidelines of the Common Ground Alliance (CGA) Best Practices and National Utility Locating Contractors Association (NULCA) standards.

Available Records

Facility locators use available records at all times. Facility records indicate approximate location, number of facilities, and access points for buried facilities within a requested area. The use of facility owner/operator---supplied records is an effective method of identifying facilities as part of the locating process. In addition, consult with field employees familiar with the site to identify any other below grade facilities that may not be recorded.

During the course of a locating activity, a locator may become aware of errors or omissions within records. "Redlining" is a process used when the maps of facility do not match the physical locations of these facilities. The locator should mark the correct position and GPS coordinates of the located facilities on the map/drawing. The locator should give this map to the appropriate parties so that the drawings can be updated. Failure to note errors or omissions when found could result in damages to the facility at a later date.

CONSIDERATIONS: Information sources

- As-built drawings
- Mainline route/alignment sheets
- Station drawings
- Electrical/mechanical drawings
- Site photographs
- Survey plans
- Administrative plot plans
- Depth of cover plans
- Engineer plot plans
- Instrumentation and cathodic protection drawings
- Aerial photographs and GIS maps
- Landowners
- Provincial/state regulatory boards, agencies or commissions
- Locator drawings
- Land titles or instruments
- Government records (county/parish records)
- Third party databases
- Other owners/operators of buried facilities

Affecting Locate:

Locators must understand, identify and solve various locating obstacles including:

CONSIDERATIONS:

- Technology limitations
- Inaccurate records
- Differences in size
- Facility depth
- Surface structures
- Congestion
- Unwanted coupling
- Air coupling (transmitter interference)
- Sharp drop in signal
- Complete loss of signal

- Common bounded facilities
- Short facilities
- Signal distortion
- Ghost signals

Facility Marking:

Surface markings may include one or any combination of the following: paint, flags, stakes, brushes, or offsets. All marks extend a reasonable distance beyond the bounds of the requested area. Proper training for all facility locators includes properly identifying the varying surface and environmental conditions that exist in the field and what marking methods should be used. Conditions that may affect markings are rain, snow, vegetation, high traffic, construction, etc. Paint markings must be 1---inch in width and 12 – 18---inches in length.

In the ROW: Markings should be appropriately spaced on centerline of facility. The line of sight between markings must be taken in to consideration.

In a station\terminal\congested area: Underground facilities should be marked at sufficient intervals to clearly identify the alignment of the buried facility. The markings should be clear enough so that anyone can clearly see the location(s) and directions of underground facilities.

CONSIDERATIONS:

- Parallel lines can be marked as sets, perpendicular to each other, to help eliminate confusion.
- Temporary markings should be labeled with Company Name, Centerline, and the size and type of facility.

Marking Multiple Facilities in the Same Trench:

In general, the number of lines marked on the surface equals the number of lines buried below. In circumstances where the total number of lines buried in the same trench by a single facility owner/operator may not be readily known, a corridor marker is used. The corridor marker indicates the width of the corridor.

Abandoned Facilities:

When the presence of an operator’s abandoned facility within an excavation site is known, an attempt can be made to locate and mark the abandoned facility. Information regarding the presence or location of an abandoned facility may not be available because of updating or deletion of records. Abandoned facilities may be difficult to locate due to limited or non-existing access points or if sections of the facility have been removed. When located or exposed, all abandoned facilities may be treated as live facilities.

Locating Methods:

To identify all below grade facilities within the work area, consider the following methods:

CONSIDERATIONS:

- Electromagnetic line locating equipment (direct hook up, inductive mode, inductive clamp)
- Probing
- Hand digging
- Hydrovac

For electromagnetic line locating equipment:

CONSIDERATIONS:

- Variable frequencies, frequency indicator
- Output ≥ 3 watts
- Depth indicator
- Current measurement indicator
- Headphone jack (recommended when working in noisy areas)
- Peak and null
- Depth accuracy
- Battery condition
- Radio or A/C mode
- Transmitter makes appropriate contact with ground
- Passive mode can be used to perform the initial locate of a target line. However, an active mode must be used to confirm the location. Always perform locate in PEAK mode.

Check with equipment manufacturer for appropriate calibration and accuracy schedule and recorded. Equipment should be checked for accuracy (in relation to location and depth against a known underground facility) on a regular basis and recorded.

CONSIDERATIONS:

- Snow must be removed prior to placing transmitter on the ground
- Units should be periodically warmed to ensure the receiver and transmitter function properly
- Caution should be used when storing cables used for direct hookup and inductive clamp methods to prevent freezing

Locating Electromagnetically:

Induction

When using “induction” technique the locator should ensure that the locator is placing the box in a spot conducive to finding the target facility. The locator should be aware of air coupling and unwanted coupling. The locator should also ensure that the equipment is in the proper mode and frequency. The locator should trace lines to point where they can be “proven”.

Direct Hook---Up

When using the “Direct Hook---Up” technique, the locator should ensure that the hook---up is properly grounded. The positive lead should be hooked directly to the targeted facility. The negative lead should be grounded, at as close to 90 degrees as possible, to the anticipated direction of the targeted facility. The locator should also ensure that the equipment is in the proper mode and frequency. The locator should trace lines to point where they can be “proven”.

Inductive Clamp

When using the “inductive clamp” method, the locator should ensure that the clamp is properly attached. The locator should also beware of air coupling. The locator should also ensure that the equipment is in the proper mode and frequency. The locator should trace lines to point where they can be “proven.”

Facility Owner/Operator Identification:

The owner/operator of a facility is identified on markings at the time the facility is located and marked.

Communication between Parties:

One---call centers, facility owners/operators, and excavators all have clearly defined processes to facilitate communication between all parties. If the complexity of a project or its duration is such that a clear and precise understanding of the excavation site is not easily conveyed in writing on a locate request, then a pre---location meeting should be scheduled on-site to establish the scope of the excavation.

Any changes to the areas that are to be located are in writing and include all parties responsible for the excavation and marking of the excavation sites. Locators also schedule meetings if the complexity of the markings requires further explanation.

Documentation of Work Performed:

The locator should fill out a locate form which captures the critical methodology that must be followed when completing a line locate, and includes the three primary steps of a successful locate: pre-locate, locate and post-locate.

CONSIDERATIONS:

- Ensuring that employees are following the appropriate steps of a line locate.
- Fully completed forms protect locators in the case of an incident, documenting that they followed correct procedures.
- Ensures improved communication amongst all parties regarding the line locate.
- Improved utility protection and damage avoidance.

The locate form captures information such as the locator name, locate date, excavator name, ticket number, and the locate details. GPS coordinates, a sketch of the search area, and photograph locations are also included on the locate form.

Service Lines

Section 6, clause 6 of the Underground Utility Line Protection Act encourages permanent markings for service laterals: “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.”²

PA Code Chapter 57 states to the effect that electric utilities must locate and mark underground service lines³

² 73 P. S. § 176 et. seq., Section 6, clause (6).

³ <https://www.pacode.com/secure/data/052/chapter57/chap57toc.html>

Example Locate/Marking Specifications

The following Underground Locate / Marking Specifications are courtesy of First Energy.

General Conditions

These Specifications identify Contractor requirements for the following:

1. Receipt of UG locate requests, from an operator or directly from the state one-call centers.
2. Determining presence of operator-owned facilities or others as required.
3. Locating/marketing of operator-owned facilities or others as required.
4. Making Positive Response entries, as defined by applicable law / regulation and operator specifications.

Although an operator receives ticket requests directly from the state one-call centers, the contractor shall also have the ability and resources to receive ticket requests directly from the one-call centers, on an as-needed or emergency basis.

This specification may be modified, upon notice to Contractor, to reflect changes to industry standards or best practices.

Administration

Contractor shall provide sufficient staff, office services, equipment (e.g., office, field, communication), and supplies for the safe and efficient processing of locate requests, as required by applicable law / regulation and operator Specifications or its Companies.

Contractor must maintain adequate staffing to cover peak workload periods, while accommodating its employee absences.

The contractor shall maintain a trained workforce of locate technicians and supervisors to fulfill the requirements of the operator Specifications. Contractor staff shall also be familiar with Company UG maps, records, and geographic areas. The operator and its Operating Companies reserve the right to evaluate qualifications of contractor or any of its employees at any time, during the term of the contract.

Normal service hours and working days of Contractor's office shall be in common with those of the Operating Companies, which might vary by Company.

Contractor shall provide FE, Operating Companies, and state one-call centers with current contact information for round-the-clock contact as well as 24-hour answering service.

Processing responsibilities include, but are not limited to, the following: receiving, processing, recording, dispatching, closing out location requests, providing reports, documentation, statements, and dig-in reports.

The Contractor shall maintain records for a minimum of a six-year period.

Maps & Records

The operator Company will furnish maps and records that define the approximate location of its UG facilities, on an as-needed basis.

1. Electronic maps and / or prints of UG facilities, when available.
2. The cost of maps and associated software shall be borne by Contractor.
3. Construction prints for new, or proposed, UG facilities will be supplied by the Company when requested by the Contractor (if available).

The Contractor shall maintain and update files of maps and records with new / revised maps and records.

The Company will provide the Contractor with one orientation session of mapping symbology, upon request.

Maps and records of Company facilities are intended to be a guide and for reference only.

Receive & Dispatch

The Contractor shall provide software suitable to process and record UG locate ticket request information from the operator ticket-screening and / or state one-call center software.

The Contractor shall make a field visit for each UG locate ticket request.

The Contractor shall not locate / mark customer-owned UG facilities (i.e. beyond the meter), nor bill the Company, therefore, without prior consent from the Company (See 5.e.4).

Locate, Marking, & Positive Response

Contractor shall provide locating equipment and marking materials (paint, flags, etc.) for performance in accordance with operator Specifications and applicable law / regulation.

1. Oil-based marking paint shall be used in roadways only.
2. Water-based marking paints shall be used on walkways and driveways.
3. Identification on flags shall be in compliance with applicable law / regulation and / or as required by operator or its Operating Companies.

4. All locate, marking, and positive response shall be in accordance with applicable law / regulation and operator Specifications.

The Contractor shall notify the Company, state one-call, and excavator, of any ticket requests that cannot be processed (i.e. locate / mark out) within the required timeframe, including an action plan to become current.

The Contractor's locating equipment is subject to prior approval by operator and its Operating Companies.

Emergency ticket request notices shall be processed immediately. Contractor shall arrive at excavation site as soon as practical, not to exceed one hour from receipt of notice, unless a specific time is designated.

For each UG locate notice, the Contractor's responsibilities include, but are not limited to the following:

1. Arrival at the excavation site.
2. Reference to current maps / records, if supplied.
3. Locating / marking of UG electric facilities shall be performed in accordance with applicable law / regulation and operator Specifications.
4. Using UG locating equipment, locate/mark Company-owned UG electric facilities. Locate/mark customer-owned UG electric facilities, emanating from the Company-owned distribution point to the meter. The Contractor may locate other customer-owned UG electric facilities under separate contract (e.g. beyond the meter). If the Contractor determines the presence of said "other" customer-owned UG electric facilities, Contractor shall inform excavator of possible conflict, not less than 24 hours prior to the excavation start time.
5. Take digital photographs of mark out with time / date stamp, which shall become part of the Contractor's record.
6. Positive Response is required, to be performed in accordance with applicable law / regulation and operator Specifications. Positive Response is required to be sent to the operator ticket-screening software application.

Contractor shall mark UG facilities, in accordance with applicable law / regulation and operator Specifications, as follows:

Paint stripes shall be 1" x 12" and at intervals of 10'.

Damages caused by excavator, found to be outside of the Contractor's markings, or failure to mark, shall be concluded to be Contractor locate error.

Contractor's personnel shall not open or enter any operator Company equipment, including but not limited to manholes, vaults, substations, pad mounted equipment, pedestals, and UGuards. Requests to meet for express purpose of locating facilities, prior to pending excavation activity, shall be the

responsibility of the contractor. Contractor shall provide sufficient notice for Company-authorized personnel to schedule access.

The Contractor shall maintain marking, as defined by law / regulation.

Contractor shall notify Company and excavator of “identified, but unlocatable” UG facilities, and caution the excavator that any location information supplied under these conditions may not be within the definition of reasonable accuracy.

Contractor shall notify Company of any field conditions discovered, that could be considered unsafe to the public, environment, or employees.

In event of a dig-in, once the excavator has notified the state one-call center of the dig-in, operator will receive a dig-in notification, which will be sent to the Contractor. However, if the Contractor is made aware of a dig-in to UG electric facilities, the Contractor shall immediately notify the Company of the dig-in. The Contractor shall immediately conduct their investigation so that the Company’s restoration process is not delayed. The Contractor shall submit a Dig-In Report with before / after photographs to the Company within ten (10) working days of the dig-in notification. The Contractor shall state, on the Dig-In Report, if they are accepting responsibility for the damage. If Contractor feels they are not responsible for the damage, they shall identify the responsible party with supporting explanation. Operator will provide reporting format.

Performance Expectations & Metrics

Contractor shall maintain a dig-in ratio, not to exceed 1:5,000 (# dig-ins: # tickets).

Contractor shall provide a weekly summary of late tickets (open and closed), as defined by applicable law / regulation, and inclusive of cause and corrective action plan.

Electric Company reserves the right to audit any part of the Contractor’s process.

To account for all tickets, Contractor shall generate an end-of-day audit report and, by 0700 EDT the following morning, send via email to operator at the operator’s ticket screening email address.

Contractor shall respond to a call from operator or its operating companies within one hour.

Contractor shall maintain accurate records, including but not limited to, the following: photographs / video, date / time, location, and shall make the same available to operator and / or the Company upon request.

Contractor shall notify the Company of any discrepancies or omissions between Company UG facilities found at the excavation site and Company UG facilities maps and records.

Contractor shall be liable for errors or omissions as it relates to the locating / marking of UG facilities.

Disputes

Any damages, as the result of non-compliance with one-call law or erroneous marking, shall be the sole responsibility of the Contractor. The Contractor and Company representative shall meet as requested in an attempt to resolve conflicts regarding damage claim liability.

Contractor is responsible for complying with applicable law / regulation and operator Specifications. Any fines associated with the Contractor's non-compliance shall be borne solely by the Contractor and the Company shall be reimbursed for such fines.

A Note on Personal Protection Equipment (PPE)

Follow your organization's safety requirements. Personal Safety and PPE (hard hat, steel toe boots, safety vest) is a minimal requirement.



Excavation

Frequency of Monitoring or Need for Observation:

Monitoring may be conducted on a pre-determined frequency (daily, bi-weekly, weekly, etc.) while observation may be on a full time basis while active excavation is taking place.

CONSIDERATIONS: Factors affecting frequency of monitoring or need for observation

- Scope of work
- Duration of expected excavator work
- In the event of parallel encroachments or other circumstances where monitoring will require a Company Representative to be present for a long duration, the contractor's work schedule should be provided to Company inspector(s) periodically to review the schedule and scope
- Type of equipment
- Potential impact on utility
- Complexity of work
- Depth of excavation—what safety requirements will be necessary for utility, excavator, and monitor
- History with the landowner/excavator
- Number of excavators involved on the site
- Proximity of work to line—less than (x) feet. Observation recommended.
- Depth of utility
- Foreign Utility Crossing. Observation recommended.
- Isolation measures in place to protect utility (security fencing, physical barriers, natural barriers, etc.)
- Company Risk Tolerance

Excavation results in damage or excavator won't follow company requirements:

During monitoring or observation, if excavator does not comply with company's expectations and requirements or damage results, consider the following actions:

CONSIDERATIONS:

- Stop excavation.
- Inspect site.
- Take necessary steps to correct or prevent unsafe or abnormal operating conditions including shutting down the utility if necessary.
- Take necessary steps to inspect integrity of utility if damage observed or suspected following your company's integrity management requirements.
- If excavator won't stop work, contact Control Center, ROW Department, Company Management, Company Legal Department, Excavation Company, Law Enforcement or 911 as deemed necessary to determine and enforce company rights.

Documentation of Communication with the Excavator:

Documentation should be completed each time the company representative is on-site or makes contact with the excavator:

CONSIDERATIONS: items to consider documenting and communicating during monitoring/observation

- Excavator and excavation company name and company information
- Location—ROW #, Station #, Mile Marker, GPS Coordinates
- Depth of excavation
- Duration of excavation
- Monitoring expectations (fulltime, daily, bi-weekly, weekly, etc.)
- If directional drilling—ensure that directional drilling plans have been reviewed and approved by competent personnel and that any required precautions are being followed in the field including company clearance requirements.
- If foreign utility crossing—clearance, orientation, other company crossing requirements.
- Set back requirements for structures, fences, landscaping, and septic systems.
- Site restoration requirements for excavation on easement including trash removal, ground cover requirements, and utility markers.
- Liability of excavator if damage occurs and monitoring plan not followed or deviation occurs without approval. This could include reimbursement for damage repairs or expenses to relocate company's facilities, if necessary.
- One-Call ticket information
- Excavation date and time
- Description of excavation
- Safety and security concerns—excavation access/grading requirements around utility, etc.
- If utility will be exposed—pot holing, hand/soft digging, line support, utility backfilling requirements.
- If blasting—company requirements for clearances and inspection/leakage surveys.
- Load restrictions and matting or design of cover requirements for heavy loads over utility
- Hand excavation requirements agreed by the utility company and the excavator or based on the state one-call law tolerance zone if agreement cannot be reached.
- Agreed excavation distances/depths/practices if company representative is not on-site. If no excavation is permitted without company representation document that communication with the excavator.
- Company communication and approval requirements for schedule or scope changes.
- Request the excavator of the company's expectations and requirements. Refusal should also be documented.
- Document any of the aforementioned discussion items.

Each time the site is visited or contacted with excavator is made until excavation is complete:

- Company personnel, locator or contractor that visited the excavation site.
- Excavator on site
- Date and Time of Monitoring/Observation
- Photos
- Any schedule or scope changes
- Location of work to utility and progress (faster/slower than expected, moving to another area, etc.)
- Any pertinent communication with excavator regarding scope, schedule, concerns, expectations, changes in work, company requirements, back-fill requirements, etc.

- Any crossing of the utility by foreign utility including type of utility, distances, and coordinates. Communicate to appropriate department for mapping updates.
- Any safety concerns.
- Update documentation provided to excavator to reflect changes in company’s expectations and requirements and reissue to excavator.

Company Records – ensure company records have been updated and maintained with crossing information and other pertinent information:

- Crossing information – life of the asset
- Monitoring/Observation logs – per company’s retention policy or regulatory requirements

One-Call Notification Response and Communications

Companies should clearly define the roles and responsibilities of personnel responding to one-call notices. In addition, the communication process and methods should be addressed for positively notifying the Excavator of the actions taken or to be taken in response to their one-call notification.

It is important for the Excavator to be able to identify the operator, location of utility and requirements of the operator to excavate in close proximity to the utility. Likewise, it is important for the operator to understand the scope of work, equipment being used, start date and duration of the excavation, as well as the schedule of the excavator’s schedule of activities.

Communication begins with the initial one-call submittal by the excavator and should continue until the work is complete or all parties are satisfied that no further communication is needed. Unless the state law states otherwise, communication can be accomplished in person, by phone, electronically, by “marks on the ground” or a combination of these.

With respect to the initial response to the notification, some states require the underground facility owner to provide positive response. “Positive response” is a term used to describe the two types of actions (communication) taken by a facility owner/operator after it receives notification of intent to excavate. The facility owner/operator must: 1) mark its underground facilities with stakes, paint, or flags; or 2) notify the excavator that the facility owner/operator has no underground facilities in the area of excavation. This process allows the excavator to begin work in a timely manner.

When marking the utility, the operator should inform the excavator of the types of marking used.

CONSIDERATIONS: Excavators should know

- The type of temporary markings used (flags, stakes, whiskers, paint, etc.)
- How to identify the markings (color, name, nomenclature used)
- Restrictions or prohibitions (tolerance zone, when the operator representative must be on site)
- Scope changes may require a new one-call
- Company Contact (i.e. Field Representative, Control Center)
- Know what to do in an emergency or if the utility is hit

When meeting at the excavation site, the operator should consider documenting the conversation and agreement between the parties. The document should explicitly state the agreements between the parties so that the agreements are clear. Both parties should sign the document.

A new or amended document should be re-issued for changes in activities, including, but not limited to:

- Changes in the scope of work that could affect the safety of the line
- Changes of affected personnel on the site (excavator, foreman, etc.)
- Changes to the schedule/work plan, that is, digging faster or moving to another area, i.e., across the road.

Cross Bore Mitigation

Cross Bore: an intrusion 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 the utility or underground structure.

Cross Bores are an issue with two specific challenges:

- 1- Legacy Cross Bores – are cross bores that currently exist, were created by prior trenchless excavation installations and if disturbed can result in a catastrophic event.
- 2- Prevention of Cross Bores – a forward looking approach to Design and Construction installation standards for underground facilities, premised on cross bore avoidance, when trenchless excavation methods will be utilized.

PHASE I – Legacy

The fundamental Legacy question is “Did or does your company or contractor crews use trenchless excavation methods to install your underground facilities?”

If the answer is no, you’re done.

If the answer is yes, you have the probability of having cross bores in your system and proceed immediately to the next step.

Macro approach: You are probably not alone in this initiative

Both Legacy and Prevention are challenging issues and require a commitment and resources to fully vet. Utility companies, prior to building your Cross Bore Program consider formation of a partnership with key stakeholders (plumbers, sewer system operators and rental centers) and other stakeholders as there is power in numbers. If the goal is public safety and an objective approach is taken obstacles are minimized. Much work has been done nationally in regard to cross bores and the industry is predisposed to sharing their experiences.

Micro approach: Do your internal Cross Bore health check

Step 1 – Assess your organizations risk of having Cross Bores in your distribution system.

Do your current Design and Construction standards eliminate the potential for a Cross Bore? Did you spot marked facilities, account for any unmarked facilities, document results?

If not, perform a review of company records to determine if you can identify locations where trenchless installations were installed.

- I. Your systems may track the installation method of facilities which is an easy way to do a data query and review the number of potential locations.
- II. Review prior years claims activity to determine if any related to Cross Bores
- III. Review payments for installations to Contractors who use trenchless excavation methods
- IV. Speak with your experienced and tenured employees who have knowledge of projects, past contractors, the distribution system and who may be able to point you in a specific direction.

If the above preliminary review suggests you have a number of locations where undocumented trenchless installations exist, consider piloting a risk assessment of those locations by means of field inspections of non-pressurized facilities such as sewer laterals and drainage systems.

Step 2 – Begin or become involved in Cross Bore Education and Outreach to raise awareness across all stakeholder groups. While plumbers’/drain cleaners, sewer system operators and municipalities are an obvious focus groups for this outreach don’t forget your customers and the public. Many homeowners will attempt to clear a clog in their sewer system by going to the local rental center for an auger to clear the sewer. Education in the form of brochures, rental center tags and bill stuffers have the potential to increase stakeholder awareness and promote safety. Education is a powerful tool and safety net given the unpredictable nature of cross bores.

Step 3 – Evaluate your review and pilot inspections results to determine what is the best course of action for your organization. While there is an abundance of information and applications to mirror, each organization must establish its own approach with their leadership.

Below are considerations not recommendations or endorsements,

Full Press: results suggest a formalized active legacy inspection program that includes aggressive education and outreach coupled with a “zero tolerance” construction standard for future trenchless excavation installations.

Moderate: results suggest risk is low though not zero. This may be a scenario where field inspection results produced some cross bores, but a greater number of reports of cross bores found and mitigated were from stakeholders such as plumbers and sewer system operators or were found as a result of stakeholder suggestions to field inspect specific areas in their jurisdiction, municipalities and sewer system operators are examples. Raising awareness through education and outreach and providing a safety net is essential if you opt to respond to and assess these type of reports versus a formal legacy inspection program.

Supporter: results suggest zero risk, supportive of cross bore awareness outreach and current installation standards include cross bore avoidance criteria.

Document all inspected locations and remediated Cross Bore locations in detail. Record this information in retrievable format and map on a GIS system if available.

The fundamental Prevention question is does your company have a zero tolerance commitment for the creation of new Cross Bores?

If the answer is yes, you’re done.

If the answer is no, you have not eliminated the potential of creating new cross bores in your system.

Eliminating Cross Bore potential is contingent on Design and Construction standards being aligned

PHASE II – Design (Minnesota OPS)

Acceptable Design & Installation Practices and Documentation Requirements:

Gas facility designers must use one or more of the following methods when considering installations. These requirements cover all installation methods utilizing existing or future trenchless excavation technologies. Every individual sewer service lateral or non-pressurized underground facility must be protected by use of one of these methods. Each description below includes documentation requirements.

Open Trench Method

The open trench must extend the full width of the property or the full length of the installation. Document all addresses/locations where the installation was performed by open trench.

Map and Record Method (Trenchless)

Maps and records of sewer service laterals may be used to demonstrate that no conflict between the gas pipeline and the sewer service lateral is possible. For example, if the gas service enters the front of a structure and the sewer service exits the back of the same structure, the two utilities will not cross. Installer's complete confidence in sewer service lateral maps is essential. Document the criteria by which the lack of conflict was established and all addresses/locations where this method was used.

Exposed Sewer Method (Trenchless)

Pothole and expose the sewer service lateral at the gas crossing; the cutting head must be visible in the pothole. Document the distance between the drilling head and the sewer service lateral at all addresses/locations where this method was used. Photographic documentation showing both the drilling head and the sewer lateral is optional, but recommended.

Sonde Method (Trenchless)

Sewer service lateral location and depth may be determined by a sonde transmitter at the crossed location. If this method is used, the drilling head must be equipped with a sonde, and must be at least three feet from the sewer service lateral. Each sonde must be calibrated daily. Document the sewer service lateral depth and the drilling head depth at each crossed location along with all addresses/locations where this method was used.

Relative Elevation Method (Trenchless)

The highest elevation of an individual sewer service lateral may be determined by entering the structure and verifying the sewer drain's elevation as it leaves the structure. The drilling head must be equipped with a sonde, and the drill must at all times be at least three feet **above** the highest sewer service lateral elevation. The three-foot separation must be maintained across the entire width of the property. The sonde must be calibrated daily. Document the highest sewer service lateral elevation relative to the drilling head elevation along with all addresses/locations where this method was used.

Televising Method (Trenchless)

Individual sewer service laterals may be televised after the gas pipe has been installed. No gas may be introduced into the new pipeline until the sewer service lateral has been televised. Documentation: provide the televising video along with the written report. Correlate the sewer lateral connection (wye) location with the street address in written report. Use of this method does not alleviate the excavator's responsibility to obtain all available information regarding the location of sewer service laterals prior to installation of a gas pipeline (maps, drawings, diagrams or other records). Upon request by any representative of the Office of Pipeline Safety, excavator should be prepared to produce such information at the job site.

Other Trenchless Sewer Service Lateral Verification Methods

With prior approval from VP Engineering or their designee, other gas pipeline installation methods that demonstrate and document protection of sewer service laterals may be used.

In all methods, documentation must be retained for the life of the pipeline.

After installation of new gas facility by methods 3 through 7, gas pipeline installers should report to local sewer operators the verified locations of individual sewer service laterals. These verifications improve location records of sewer operators. Improved sewer location records make future installation of underground utilities safer.

Unacceptable Practices:

1. Listening devices may be used to supplement acceptable practices, but must not be used in lieu of them. Because there is no positive visual verification and no way to accurately document the results, the use of listening devices alone is unacceptable.
2. Any procedure that does not allow for positive documentation of cross bore prevention is unacceptable.

PHASE III – Construction

Acceptable Installation Practices and Documentation Requirements

All design considerations to avoid damage to existing underground facilities applies to the construction and installation process. If an installation has not been evaluated in the design phase the installation method defaults to open trench. Every individual sewer service lateral must be protected by use of one of these methods. Each installation method below requires that the method be documented on the company's records.

Options for installing underground facilities using trenchless technologies.

- Horizontal Directional Drilling (HDD)
- Piercing tools (hogs, moles, missiles, etc.)
- Water boring equipment
- Auger boring equipment, including pipe jacking

Quality Assurance/Quality Control:

Consider post camera of non-pressurized facilities if any design or construction steps were not feasible
Insure installed facility is locatable using current industry technology. Consider use of GPS and
Electronic Marking Systems such as Marker Balls in addition to industry standard tracer wire.

PHASE IV – Documentation and Record Keeping

Proceed with the mindset that if you didn't document it, it didn't happen and you will build
closure into Construction projects and insure Audit quality asset information that is accessible
and useful.

Compliance

What regulatory agencies are interested in your damage prevention program?

- Federal Energy Regulatory Commission (FERC)
- United States Environmental Protection Agency (EPA)
- Pipeline and Hazardous Materials Safety Administration (PHMSA)
- Department of Transportation (DOT)

Unauthorized Activity or Excavation/Third Party Damage

Third party damage occurs when a party other than a utility operator or a contractor acting on its behalf commits actions that result in damage to the operator's utility. Third party damage is a leading cause of serious utility incidents. Utility operators may establish standardized protocols for responding to unauthorized activity, excavation and/or third party damage affecting Company assets. Preventing excavating damage to utilities by third parties is a top priority of both government regulators and the utility industry. An obvious way for utility operators to prevent excavation damage by third parties is to educate excavators about state One-Call Notification Systems and encourage their use.

A utility operator should take action whenever it becomes aware that an excavator - whether a homeowner, licensed contractor, or public employee - has commenced digging in the vicinity of a utility without first utilizing the One-Call Notification System, or has utilized the One-Call System but failed to report damaging the utility. Company response to such behavior should include promptly providing offending excavators with written notice of their failure to comply with state and/or federal law, and, where appropriate, provide offenders with a written demand for reimbursement for the cost of investigation, repair, and all damages. Through these responses, utility operators will be able to achieve the goal of deterring those who carelessly or intentionally bypass the One-Call System and/or conceal damage they cause.

Under some circumstance, utility operators may need to take more aggressive action. For example, when unauthorized third party excavation results in damage to a utility, the costs of which the excavator refuses to repay, or where an excavator repeatedly violates the one-call requirements, the operator could initiate civil litigation to recover damages or seek a court order barring the excavator from digging without first notifying the One-Call System. In addition, the operator may refer the offending party to appropriate enforcement authorities.

Discovery of Unauthorized Third Party Construction Activity

In the course of everyday duties, utility operator personnel may encounter an excavator doing work on or near company ROWs without the appropriate notifications having been given and authorization being granted.

CONSIDERATION: When unauthorized third party excavation is discovered

- Immediately investigate any construction activity near company utilities to see that proper procedures are, or were, followed and the utility maintains good integrity.

- When third party construction activity involving a company utility or facility is discovered without prior approval or without a one-call notification, the locator should notify appropriate company personnel immediately to determine and enforce company rights. The ROW department and the appropriate supervisory personnel may be contacted.
- Inspect the premises immediately and take necessary steps to correct or prevent unsafe conditions, including shutting down the utility if needed.
- If a third party is seen within the ROW, or working over the company utility, the excavation and construction activities should immediately be stopped until company facilities have been located and investigated for possible damage.
- If excavation occurs within the Company's easement without authorization or an Encroachment Agreement, the excavation should be stopped until proper authorization is granted.
- The outside party should be advised that company does not allow encroachments without prior agreement, and any such encroachment must be within requirements specified by company.
- The outside party should be advised that if the excavation activities are determined to have caused damage, or may have an adverse effect on the future maintenance and operation of company's facilities, they can be held responsible for current and future damages, and if the need arises, the repair, maintenance, and relocation of company's facilities.
- If a mutual agreement cannot be reached or excavation activities continue, the appropriate company personnel and legal department may be advised. If necessary, local law enforcement authorities may be called for assistance.

General Procedure

When unauthorized activity, encroachment or excavation is reported or encountered upon a Company ROW, contact should be made with the party to evaluate the unauthorized activity, encroachment or excavation. If utility integrity has been compromised, Company personnel should take immediate action, which may include initiating emergency procedures and the removal of the encroaching party by law enforcement officials. If the encroachment is unauthorized but it is determined that the Company can permit it to remain within the ROW, the appropriate Company personnel should commence documentation of the unauthorized activity, encroachment or excavation. Such documentation may include an Encroachment Agreement or other standardized document that will detail the utility operator's requirements to the party.

CONSIDERATIONS: possible mitigation measures

- Request the activity cease until proper consent is given by the company.
- Notify other appropriate company personnel of the location, date, and time, type of unauthorized activity, encroachment, or excavation, and the name and address of the party.
- Coordinate with appropriate company personnel if an encroachment agreement or other standardized documentation will be developed.
- Appropriate company personnel investigate the unauthorized activity, encroachment, or excavation, as necessary, and coordinate with the landowner or party regarding the final disposition.

Note: some states may require mandatory reporting by utility operators of unauthorized activity, encroachment or excavation involving excavation on or near underground facilities without a proper one-call.

[Investigation of Near Miss and Damage Incidents](#)

Mandatory reporting of third party damage may be required by state regulatory agencies. The utility operator should submit the information to the appropriate enforcement authorities within the required timeframe. Accordingly, immediately upon learning that a person or entity has engaged in excavation near the utility without first contacting the appropriate One-Call Center or that a utility has received damage from third party excavation, documentation of the incident should be commenced by the Company's damage prevention team leader for the area in which the incident has occurred or other appropriate personnel. Thorough, timely and accurate documentation of all relevant information involving unauthorized excavating activity and damage to the utility is critical to the successful implementation of a utility operator's damage prevention initiatives.

CONSIDERATIONS: for investigations

- Record all relevant information regarding unauthorized excavation activity and unreported damage.
- Photograph the scene of the excavation as well as the damage to the utility.
- Documentation of the labor and material costs involved in investigating and repairing the line maintained.
- If work crews are in the vicinity, inquire whether they, or others might have observed, were working at the site of the excavating activity.
- Inquire of adjacent landowners or occupants of neighboring commercial premises to determine if they observed any excavating activity in the area.
- Documentation of the labor and material costs involved in investigating and repairing the line maintained.
- If other utilities are located near the point of the excavating activity, contact the utility and determine whether workers were recently in the area performing maintenance work or if they can provide any helpful information.
- Inspection of the line necessary to verify that the line is not damaged.
- Photos of exposed line segments taken and maintained.
- All steps undertaken as part of the investigation should be documented.

- In the event that information regarding the identity of the excavator cannot be obtained, all relevant information concerning the incident should be sent to company's damage prevention coordinator or appropriate company personnel, pending the discovery of additional investigative leads or other information.
- Where the name of the person or entity damaging the utility or that has engaged in unauthorized excavating activity is unknown, an investigation should be undertaken to determine, if possible, the identity of the offending party.
- Contact the appropriate One-Call center to obtain information regarding calls received by persons or entities intending to dig in the vicinity of the excavation site on or near the date that damage or excavating activity was discovered.
- If the One-Call center has information that appears relevant to the incident under investigation, contact information for the person or entity that notified the One-Call center should be obtained and appropriate company personnel should attempt to contact the party and determine if they excavated near the utility or damaged the line.
- Assuming no useful leads are available from the One-Call center, further investigation at the site of the excavation/damage should be conducted in a timely manner as soon as possible.
- Contacts based upon follow-up with the One-Call center should be documented.
- Development of a "Contractor Conflict Report Form" or equivalent to record incident information.
- The unauthorized activity recorded in a database or spreadsheet by appropriate company personnel for tracking.

Warnings and Reimbursement Letters

Company considers prevention of third party damage to its utility a top priority. Consequently, Company should respond in writing any time it learns the identity of a person or entity that commences digging without first contacting the appropriate one-call notification authority or fails to report damaging the line or performs excavation in violation of Company policy.

CONSIDERATIONS: warning letters for the unauthorized excavation

- Can be sent via Certified Mail with the return receipts added to the documentation, or by other methods so delivery can be verified.
- Appropriate Company personnel prepares the letter and sends copies to Company field operations supervisor and to the enforcing agency (i.e. One-Call Center, State Attorney General, public utility commission, etc.) for the jurisdiction where the incident of non-compliance occurred.
- Sent to the offending party as promptly as possible after the unauthorized excavation or failure to report damage.
- Sets forth the time, place and circumstances of the excavation in issue.
- Cites the pertinent federal or state statute or ordinance setting forth the

- requirement for notice to a one-call notification center.
- Provides appropriate one-call Center information.
- Notifies the offending party that Company expects to be reimbursed for the labor and material costs of all investigation and repairs to the utility and that Company will initiate civil proceedings to recoup such costs and expenses.
- Indicates that a copy of the letter will be sent to appropriate enforcement authorities and states that subsequent incidents involving the same party may result in the seeking of injunctive relief.
- Includes a copy of state One-Call Law in an effort to educate offenders to the requirements of the One-Call Law as well as consequences for failure to comply.

[Demands for Damages and Initiation of Civil Proceedings](#)

Company may seek to recover reimbursement for all but the most insignificant third party damage to the utility.

CONSIDERATIONS: seeking reimbursement for damages

In a timely manner following completion of repairs, appropriate Company personnel will send a certified letter explaining the nature of the damage to the utility, the steps necessary to repair the line, and a formal request for reimbursement of the labor and material costs expended to investigate and make repairs.

- All related emails to the excavator and their responses should be kept in the incident file and phone calls should be logged and retained in the file.
- Photographs of damage to the utility and the repair process, as well as relevant documentation as to the costs of repair should be included with the demand letter.
- A model demand letter is included in the exhibits.
- In those instances where a party is unwilling to voluntarily reimburse Company for the damage that the party caused, Company may consider initiating civil proceedings to recover the costs of investigation and repair.
- The One-Call law in some states provides for both a civil penalty and for recovery of costs incurred in repairing and/or relocating the utility in the event the excavator fails to notify the One-Call center when excavating near known underground facilities (including utilities) and subsequently damages such facilities.
- Working with the excavator for a mutually beneficial outcome is always the desired result, but when the excavator is not cooperative, the commencing of litigation may be required after consultation with appropriate Company personnel.
- Prior to recommending that civil litigation be commenced, at least one additional attempt to contact the excavator by telephone may be made and documented following receipt of proof that the initial letter was delivered.
- Absent a response, an additional certified letter should be sent repeating Company's demand for reimbursement and to give the excavator a final

opportunity to agree to reimburse Company within a set period (i.e. ten (10) business days) or to explain why immediate reimbursement in full is not possible.

- If no satisfactory response is received, or if the excavator refuses to reimburse the costs of repair, prompt referral of the excavator to counsel for initiation of civil litigation may be undertaken.

Referral to Enforcement Authorities and Injunctive Proceedings

Depending on the circumstances, formal referral of offending excavators to appropriate enforcement authorities should be considered; including local public safety authorities (local police, fire, building inspection/codes enforcement). Additional referrals about the incident may also be made to other authorities with enforcement powers, such as the state Attorney General, Public Utility Commission, or other state agencies tasked with enforcement of the One-Call and Health/Labor/Industry regulations.

CONSIDERATIONS: referring to authorities

- Mandatory reporting may be required by the law in the state where the incident occurred.
- Seriousness of threat or potential threat to lives and property in vicinity of excavation.
- Seriousness of damage or potential damage to the utility.
- Whether the excavator has previously engaged in high-risk excavating activity.
- Attitude of excavator in response to Company warning/demand letter.

NOTE: Appropriate Company personnel should approve the decision to refer the matter to counsel, at the discretion of management.

Referral of an excavator for criminal and/or civil prosecution or for imposition of administrative penalties may be appropriate. Enforcement authorities should be notified as soon as possible when they are to be involved.

CONSIDERATIONS: process for contacting authorities

- Contact should initially be by telephone or email, informing the authorities that a formal referral is in process.
- This initial contact should be documented and maintained in the incident file.
- After telephonic or email notification of enforcement authorities, a referral letter may be faxed or emailed to the appropriate enforcement officials with a copy sent by certified mail.
- The substance of the letter will vary depending upon the circumstances of the incident.

Public Education & Awareness

Outreach

What kind of outreach will you use in the damage prevention program?

Partnerships

- Pennsylvania 811.
 - PA Safety Day
 - Sponsorship and training
 - Pipeline Safety Bulletin
- Common Ground Alliance
- CGA Regional Partners
- OSHA Training on Excavation Safety and Work Site preparation
- Associations (UTILITY)
 - Energy Association of PA (EAP)
 - Pennsylvania Rural Electric Association (PREA)
 - Pennsylvania State Association of Boroughs (PSAB)
 - Pennsylvania Municipal Authorities Association (PMAA)
 - Pennsylvania State Association of Townships Supervisors (PSATS)
 - American Water Works Association (AWWA)
 - American Public Works Association (APWA)
 - Water & Waste Operators of America (WWOA)
 - Pennsylvania Communication Association (PCA)
 - Congress of Neighboring Communities (CONNECT)
 - Pennsylvania Independent Oil and Gas Association (PIOGA)
 - Cross Bore Safety Association (CBSA)
 - Pipeline Association for Public Awareness (PAPA)
 - National Transportation Safety Board (NTSB)
- Other Pennsylvania Facility Owners
- Associations
 - Associated PA Constructors (APC)
 - Constructors Association of Western PA (CAWP)
 - Brotherhood of Master Plumbers of Philadelphia (BMPP)
 - Contractors Association of Eastern PA (CAEP)
 - Electrical Association of Philadelphia (EAP)
 - General Contractors Association of PA (GCAP)
 - Inter County Contractors Association (ICCA)
 - Mechanical Contractors Association Of Western PA (MCAWA)
 - National Electrical Contractors Association, Western PA Chapter (NECA)
 - North Suburban Builders Association (NSBA)

- National Utility Contractors Association (NUCA)
- Pennsylvania Associated Builders & Contractors (ABC)
- Pennsylvania Association of Plumbing/Heating/Cooling Contractors (PAPHCC)
- Pennsylvania Builders Association (PBA)
- Pennsylvania Ground Water Association (PGWA)
- Pennsylvania Land Improvement Contractors Association (PLICA)
- Pennsylvania Landscape & Nursery Association (PLNA)
- Pennsylvania Manufactured Housing Association (PMHA)
- Pennsylvania Propane Gas Association (PPGA)
- Pennsylvania Septage Management Association (PSMA)
- Pennsylvania Society of Land Surveyors (PSLS)
- Suburban Contractors Association (SCA)

Public Outreach

- Advertisement/Promotions
 - Social Media
 - Radio
 - Television
 - Print Ads
- Sponsorship
 - Common Ground Alliance
 - Golden Shovel Program
 - SPORTS Major & Minor League Games
 - High School and College Games
 - Contractors of Choice Program
 - Children's Program
 - Home shows
 - AG Shows
- Fundraising
 - Touch a Truck
- No cost promotions
 - Look Out for the Mark Out Program (internal program)
 - Banner Program (Pennsylvania 811) (external program)

Education

What kind of education will you deliver to support damage prevention?

Internal Stakeholders

- Weekly meetings

- Pennsylvania 811 liaison training
- By department discussions on damage prevention and excavation safety processes

Target Audience

- Company upper management
 - Support damage prevention efforts
 - Open to new technology
- Company managers and supervisors
 - Update policies, procedures, processes and laws
- Employees
 - Review policies, procedures, processes and laws
 - Dedicate damage prevention safety resources
 - Damage Prevention Team
 - Consequences of damages
 - Incentives
 - Report incidents

External Stakeholders

Preferred Contractors

- Face to face meetings
- Hands on equipment
- Boot Camp 101
- Tailgate meetings
- Pennsylvania 811 liaison training
- Excavator who frequently damage lines
- Presentations
- 3rd party presentations, i.e. Paradigm
- Training specific: First Responders

Target Audience

- Excavator
- Designer
- Project Owner
- Municipalities
- Emergency Responders
- Railroad workers
- First Responders
- Insurance Company
- Other facility owners
 - Develop relationships with other facility owners in the coverage area

General Public

Consider outreach to the general public as an integral component of your education and awareness plan. General public outreach can include:

- Sports venue sponsorships
- Radio advertising
- Billboard advertisements
- Public service announcements
- Public transportation vehicle wraps
- NASCAR

A good resource for public outreach ideas is the Common Ground Alliance Communications Plan.⁴

⁴ <http://commongroundalliance.com/media-reports/recent-announcements/2018-communications-plan-now-available>

Reporting & Evaluation

Data

What data do you have, and what data will you collect to support your damage prevention program?
Opportunities to use data to drive decisions for public awareness and outreach

Data to consider (and expand):

Data Collection for analytics

- Damage data
 - Determine who is at fault—contractor, locator or facility owner
- At Fault Damages per 1000 tickets marked
- No call damages per 1000 tickets marked
- Call data
- Geographic area
- Seasonal data
- Service area
- Calculations for time spent

Data Reporting for analysis

- RP 1162
- By type of call
- By excavator
- By locator
- By facility owner
- By service area
- By damages
- By demographics
- By effort
- By fault
- By challenges

Measurements

Measurement of your damage prevention plan is dependent on what metrics are important to you. The goal should be continuous improvement of metrics over time, with the overall goal of zero damages and zero injuries to personnel and the public.

Reporting

Operator Ticket Management Systems are designed to transmit and record incoming ticket details including a time-stamped history of outgoing company responses. Most of these systems grant the Operator the ability to mine and report ticket histories as a single ticket or in the aggregate. Collected over time, these data may prove useful for assessing a one-call program that includes, but not limited to, an internal evaluation of protocols for screening, communication & response and a measure for monitoring other one-call activities.

Screening, Communication and Response

Standard on all incoming one-call notifications are attributes such as date, time, location, excavator name and work descriptions. Such information is the starting point for an Operator to perform the necessary due diligence and determine the appropriate screening action and response back to the excavator. All positive responses will contain date and time responded and response type, e.g., “clear” or “marked”. Other pertinent details should be included in the response such as type and color of markings, conversation log, or any other details as outlined by the Operators’ communication and response protocols. Designing reports around screening, communication & response details may provide useful feedback for One-Call Quality Assurance.

Work Load Balancing

Perhaps easiest to report is one-call activity levels. As a simple ticket count, known activity levels provide an Operator with a baseline for identifying or predicting changes in field workloads. Operators covering large geographic areas may find it useful to identify and report upon work zones of responsibility. Activity level reports broken into zones have potential to highlight workload imbalances that may be corrected by redefining responsibility boundaries or a justification for adding headcount to cover areas with higher ticket volumes. A ratio of tickets per locator or tickets per zone may be established to bring attention to sudden spikes in one-call activity. At a more macro level, trends in monthly or seasonal variability may provide enough evidence for shifting the workforce or planning other activities, such as training, during periods of lull.

Timeliness and Effort

Another variable to consider when reporting one-call activity is effort or the time it take to close a ticket. While some tickets are straightforward, taking minutes to complete, others are more complicated and may take additional time for marking and observation. Normalizing activity levels can be accomplished by one of two ways. The first is to assume effort by reporting response type categories. Tickets that were identified as not in conflict with the planned excavation can be assumed a lower effort than those that required marking or a field visit (no-conflict vs. conflict). Optionally, some ticket management systems have the ability for the Operator to enter effort in units of time. Used correctly this method is a more precise measurement of effort.

Auditing

Most Operator Ticket Management Systems have the ability to configure daily audit criteria as practical way to confirm notification systems and processes are functioning properly. Operators may choose to configure automatic electronic audits such as a daily count of received notifications in comparison of notifications sent by the One-Call Center. Most systems allow audit notification sent via email to the appropriate one-call stakeholder for review or immediate attention.

CONSIDERATIONS:

- Count of Tickets per Month, per Quarter, per Year.
- Tickets per Mile of Line
- Ratio of tickets per locator
- Outstanding tickets/past due tickets
- Monitor variability in ticket volumes (monthly, seasonal)
- Number of Positive Responses
- Average and Median Time for Positive Responses
- Percentage Marked
- Percentage Update Tickets (Ticket Extensions)
- Ticket Type (regular, emergency, update, etc.)
- Average and Median Time to Respond to Emergencies
- Tickets with pictures attached
- Drove to field (Y/N)
- Method of Clearing (map, contact, site visit)
- Method of Marking (paint, pin flags, cane poles)
- Distributed Safe Digging Literature (Y/N)
- Required Crossing Agreement (Y/N)
- Daily Audit of Tickets Received by Operator vs. Tickets Sent from One-Call Center

Tracking Excavation Incidents

Tracking the disposition of third party excavating incidents is important:

1. To gauge the success of the Company's efforts in implementing a policy to deter unauthorized excavation in the vicinity of the utility.
2. Accurate documentation of case dispositions and the timely warning and referral letters that Company has sent to offending excavators will allow Company to demonstrate to regulators, the community, and other interested parties that Company is committed to a substantive course of action to prevent a leading cause of utility accidents.

Accordingly, appropriate utility operator personnel (i.e. Damage Prevention Coordinator or Team Leader) should prepare documentation that can be tracked using a spreadsheet or other method.

CONSIDERATIONS: information that may be tracked

- The number of unauthorized third party excavating notifications received
- Amount of repair reimbursement recovered
- The number of reporting excavating incidents involving damage to the utility
- The number of civil lawsuits commenced to recover repair costs
- The number of warning letters sent in response to notifications
- The number of referrals to enforcement authorities
- The number of demand letters sent in response to notifications
- The number of injunctive proceedings commenced
- Total amount of repairs reimbursement demanded
- The number of injunctive proceedings resulting in the issuance of an injunction

Zero-tolerance of unauthorized excavating activity and unreported damage to the utility requires that all incidents brought to Company's attention be considered potentially serious and be promptly and meaningfully addressed. Implementation of the forgoing practices, in addition to publicizing the initiation, settlement and/or other favorable disposition of legal proceedings commenced to deter third party damage and to recover repair costs may deter and ultimately prevent unauthorized excavating activity. Adherence to these practices and consistent enforcement will lead to positive relations in the communities where utilities operate. Implementation of these practices is safe and prudent and consistent with the goal of operating utilities in the safest and most environmentally responsible manner possible.

Training

Anything with training to be moved here with a reference to the section.

One Call Center

Training: Training may be provided by Operator One-Call Ticket Management System’s software vendor or may be developed in house. Training may be provided via different mediums such as in person, online, video, etc. Continuing education/training is essential to stay current with changes in software, state, or company requirements. Although it is preferred to have staff members that are GIS professionals, it is not specifically required for a successful program. (TAB: Training)

CONSIDERATIONS: Training

- Training programs should address GIS staff and user needs
- GIS staff should have a working knowledge of how to link GIS mapping system with state one-call program
- Vendor supplied or company supplied GPS mapping software training
- Utilization of GPS equipment
- Examples, selection of correct coordinate system, and Datum point
- Company mapping screening processes for the end user
- Company required documentation processes
- Knowledge of individual state documentation requirements which includes one-call ticket clearing process.

Training/Personnel Responsibility: If required, training should be available to ensure that designated personnel can manage all one-call mapping files and all supporting software. Operators may also designate personnel to assess and manage the configuration of reports and metrics identified for One-Call Quality Assurance reviews.

CONSIDERATIONS: Training/Personnel Responsibility

- Are designated personnel adequately trained in the tools and software that supports the management, submission, and review of one-call mapping files?
- Does the one-call buffer review process require any specialized training that includes editing or confirming coverage using any proprietary One-Call Center mapping software?
- Are designated personnel adequately trained in the tools and software that supports the configuration of reports and metrics identified for One-Call Quality Assurance reviews?

Mapping

Training/Personnel Responsibility: If required, training should be available to ensure that designated personnel can manage all one-call mapping files and all supporting software. Operators may also designate personnel to assess and manage the configuration of reports and metrics identified for One-Call Quality Assurance reviews.

CONSIDERATIONS: Training

- Are designated personnel adequately trained in the tools and software that supports the management, submission, and review of one-call mapping files?
- Does the one-call buffer review process require any specialized training that includes editing or confirming coverage using any proprietary One-Call Center mapping software?
- Are designated personnel adequately trained in the tools and software that supports the configuration of reports and metrics identified for One-Call Quality Assurance reviews?

Locator

Training may be necessary to ensure that designated personnel can identify and perform locates in a variety of environments, for example locating within a station may be more complex and require additional training. Some states may require specific training requirements.

CONSIDERATIONS: Training Guidelines and Practices

- Understanding system design/prints/technology
- Understanding construction standards and practices for all types of facilities
- Equipment training and techniques
- Terminal/station recognition training
- Theory of locating
- Daily operations
- Facility owner/excavator relationships and image
- Safety procedures per Occupational Safety and Health Administration (OSHA) regulations/federal, state/provincial and local laws
- Written and field locating
- Field training
- Annual retesting
- Abnormal Operating Conditions (AOC) training

Documentation of all training is maintained to ensure that facility locators have been properly trained.

Visual Inspection:

Be aware of, and avoid, electric fencing, rodents, stinging insects, venomous reptiles, livestock, predatory animals, excavations, soil conditions and poisonous vegetation in the vicinity. Operators may want to check with municipal or county authorities to see if a permit is required to temporarily mark the system. Be aware of road conditions and traffic when working near roads/streets/highways and appropriate personal protective equipment (PPE), such as wearing bright visible colors (i.e. fluorescent orange or yellow). “Workers Ahead” highway signs may be required in some areas when working adjacent to roadways. Before performing a locate, a visual inspection should

be completed at the site to determine potential hazards or obstacles. A visual inspection should identify the following, hazards if present:

CONSIDERATIONS:

- Obstructions such as buildings, poles, fences, and trees.
- Traffic includes highways, rocks, or railways.
- Physical site conditions such as extreme weather, uneven terrain, holes (hydrovac or animal), traffic, barbed wire, electric fences, livestock, etc.
- Signs of new construction such as fresh dirt, safety fencing, new signs, etc.
- Signs of foreign underground facilities including markers, signs of trenching, etc.

Excavator

Processes should be considered which ensure that any required training for monitoring and observation personnel is current and maintained. Additionally, joint training between company personnel and contractors may be beneficial.

CONSIDERATIONS: the following training should be considered for company representatives performing excavation monitoring or observation.

- Company Safety Training (PPE, Excavation Access including confined space entry)
- Verify placement of line markers
- Locate Underground Utility including placement of temporary markers and line locating equipment
- GPS Mapping Skills
- Monitor Right-of-way Encroachment including observation
- State One-Call requirements
- Abnormal operating conditions
- Communication and conflict resolution
- Install and maintain line marker
- Company public awareness education
- Perform right-of-way inspection
- Inspect excavation and backfilling of utility facility

Uniform Color Code and Marking Guidelines

(Reprinted with permission from the Common Ground Alliance *Best Practices*, version 14.)

The information contained in this appendix is intended to supplement information for existing practices found within CGA Best Practices.

BEST PRACTICES CHAPTER 4—LOCATING AND MARKING

Practice Statement 4–3: Color Code: A uniform color code and set of marking symbols is adopted nationwide.

Uniform Color Code

The following APWA uniform color code (ANSI Z535.1) shall be adopted as the uniform color code for marking excavation sites and underground facilities in conflict with an excavation. This recommendation is not intended to preempt any existing state requirement that specifies other colors.

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

References:

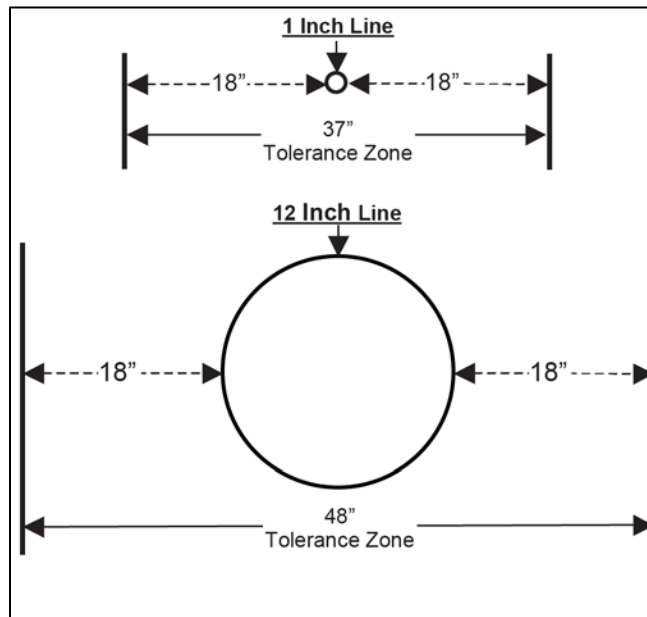
- APWA Uniform Color Code
- Existing operating practices from various states' one call centers
- Existing one call laws from various states
- ANSI Standard Z535.1 Safety Color Code

Best Practices Chapter 5—Excavation

Practice Statement 5–19: Excavation Tolerance Zone: The excavator observes a tolerance zone that is comprised of the width of the facility plus 18 in. on either side of the outside edge of the underground facility on a horizontal plane. This practice is not intended to preempt any existing state/provincial requirements that currently specify a tolerance zone of more than 18 in.

Tolerance Zone

The following examples are of tolerance zones for a 1 in. and 12 in. line:

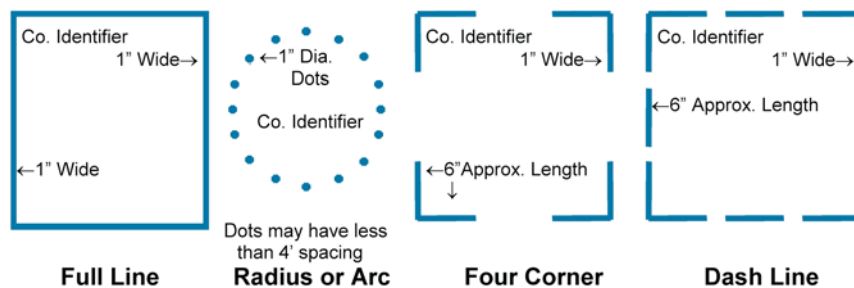


Best Practices Chapter 5—Excavation Excerpts

Practice Statement 5–2: White Lining: When the excavation site cannot be clearly and adequately identified on the locate ticket, the excavator designates the route and/or area to be excavated using white premarking prior to the arrival of the locator.

Guidelines for Excavation Delineation

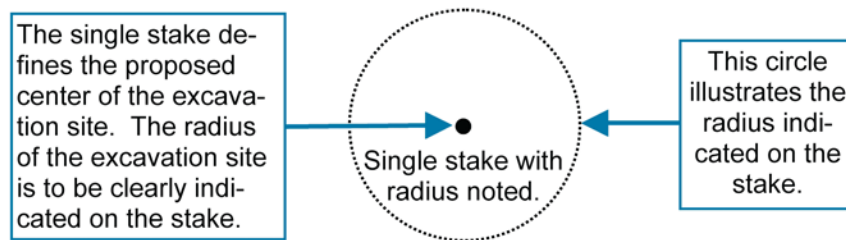
The following marking illustrations are examples of how excavators may choose to mark their area of proposed excavation. The use of white marking products (e.g., paint, flags, stakes, whiskers, or a combination of these) may be used to identify the excavation site.



Single Point Excavations Markings

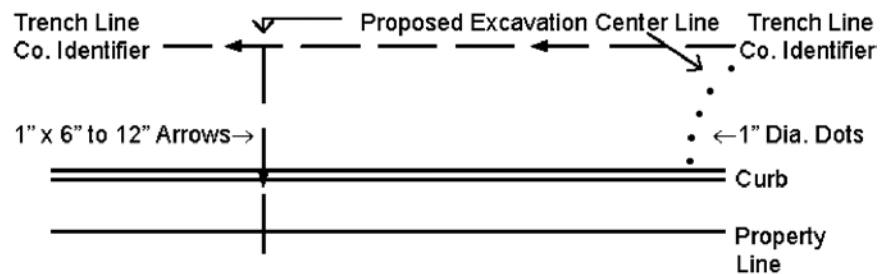
Delineate in white the proposed area of excavation using a continuous line, dots marking the radius or arcs, dashes marking the four corners of the project, or dashes outlining the excavation project. Limit the size of each dash to approximately 6 in. to 12 in. long and 1 in. wide with interval spacing approximately 4 ft to 50 ft apart. Reduce the separation of excavation marks to a length that can reasonably be seen by the operator’s locators when the terrain at an excavation site warrants. Dots of approximately 1 in. diameter typically are used to define arcs or radii and may be placed at closer intervals in lieu of dashes.

Single Stake Marking Center Point of Excavation Site



When an excavation site is contained within a 50 ft maximum radius or less, it can be delineated with a single stake that is positioned at the proposed center of the excavation. If the excavator chooses this type of delineation, they must convey that they have delineated the excavation site with a single stake at the center of the excavation and include the radius of the site in the notification to the one call center. This single stake is white in color and displays the excavator’s company identifier (name, abbreviations, or initials) and the radius of the excavation site in black letters on the stake or with a notice attached to the stake.

Trenching, Boring, or Other Continuous-Type Excavations



Continuous Excavation Marking

Mark in white/ the proposed centerline of planned excavation using 6 in. to 12 in. x 1 in. arrows approximately 4 ft to 50 ft apart to show direction of excavation. Reduce the separation of excavation marks to a length that can reasonably be seen by the operator’s locators when the terrain at an excavation site warrants. Mark lateral excavations with occasional arrows showing excavation direction

from centerline with marks at curb or property line if crossed. Dots may be used for curves and closer interval marking.

Stake, Flag, or Whisker Excavation Markers



Delineate the proposed area of excavation using stakes, flags, or whisksers instead of spray paint to mark radius or arcs; the four corners of the project; or when outlining the excavation project. Limit the interval spacing to approximately 4 ft to 50 ft. Reduce the separation of excavation marks to a length that can reasonably be seen by the operator’s locators when the terrain at an excavation site warrants. Stakes, flags, or whisksers provided to illustrate arcs or radii may be placed at closer intervals to define the arc or radius. Stakes, flags, or whisksers are white in color and display the excavator’s company identifier (name, abbreviations, or initials).

BEST PRACTICES CHAPTER 4—LOCATING AND MARKING

Practice Statement 4–3: Color Code: A uniform color code and set of marking symbols is adopted nationwide.

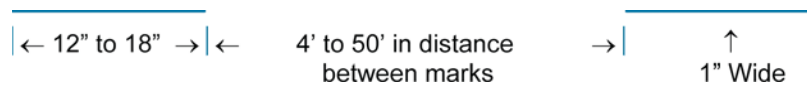
Guidelines for Operator Facility Field Delineation

Operator markings of facilities include the following:

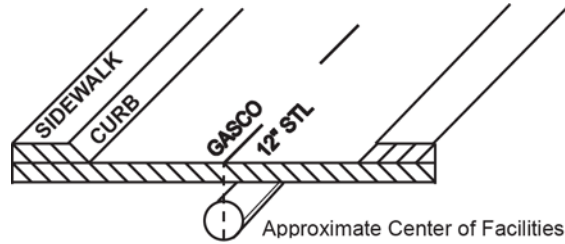
- The appropriate color for their facility type
- Their company identifier (name, initials, or abbreviation) when other companies are using the same color
- The total number of facilities and the width of each facility
- A description of the facility (HP, FO, STL, etc).

Use paint, flags, stakes, whisksers, or a combination to identify the operator’s facility(s) at or near an excavation site.

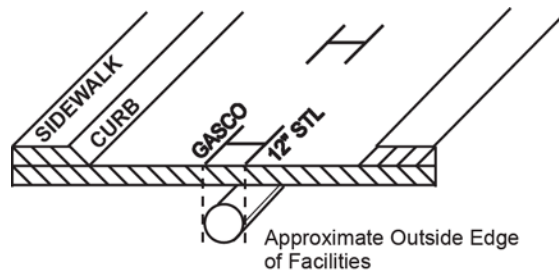
1. Marks in the appropriate color are approximately 12 in. to 18 in. long and 1 in. wide, spaced approximately 4 ft to 50 ft apart. When marking facilities, the operator considers the type of facility being located, the terrain of the land, the type of excavation being done, and the method required to adequately mark the facilities for the excavator.



2. The following marking examples illustrate how an operator may choose to mark their subsurface installations:
- a. Single Facility Marking: Used to mark a single facility. This can be done in one of two ways—
1) placing the marks over the approximate center of the facility:



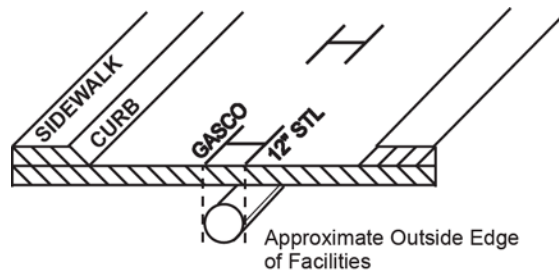
or 2) placing the marks over the approximate outside edges of the facility with a line connecting the two horizontal lines (in the form of an H) to indicate there is only one facility:



These examples indicate an operator's 12 in. facility. When a facility can be located or toned separately from other facilities of the same type, it is marked as a single facility.

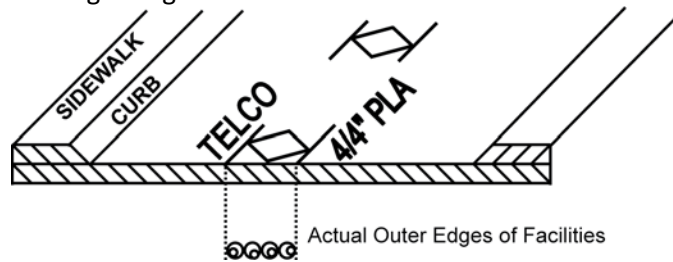
- b. Multiple Facility Marking: Used to mark multiple facilities of the same type (e.g., electric), where the separation does not allow for a separate tone for each facility, but the number and width of the facilities is known. Marks are placed over the approximate center of the facilities and indicate the number and width of the facilities.

Example: four plastic facilities that are 4 in. in diameter (4/4" PLA)



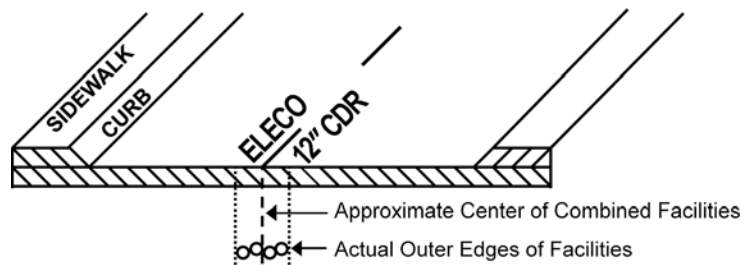
- c. Conduit Marking: Used for any locatable facility being carried inside conduits or ducts. The marks indicating the outer extremities denote the actual located edges of the facilities being represented.

Example: four plastic conduits that are 4 in. in diameter (4/4" PLA), and the marks are 16 in. apart, indicating the actual left and right edges of the facilities:



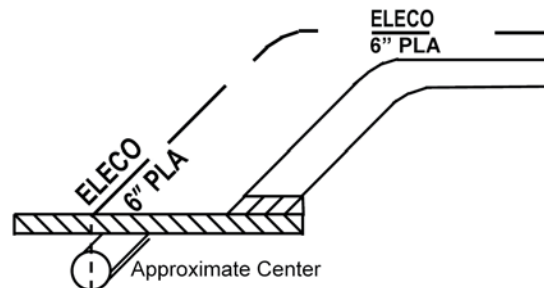
d. Corridor Marking: Used to mark multiple facilities of the same type (e.g., electric), bundled or intertwined in the same trench, where the total number of facilities is not readily known (operator has no record on file for the number of facilities). Marks are placed over the approximate center of the facilities and indicate the width of the corridor. The width of the corridor is the distance between the actual located outside edges of the combined facilities.

Example: a 12 in. corridor (12" CDR)

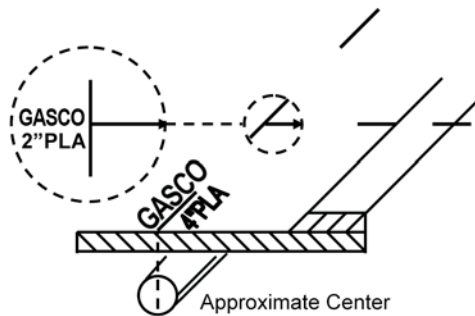


3. Changes in direction and lateral connections are clearly indicated at the point where the change in direction or connection occurs, with an arrow indicating the path of the facility. A radius is indicated with marks describing the arc. When providing offset markings (paint or stakes), show the direction of the facility and distance to the facility from the markings.

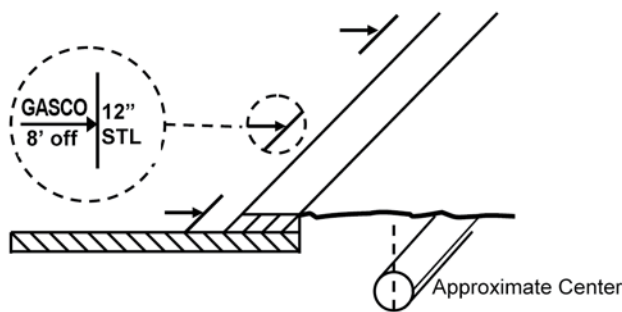
Example: radius



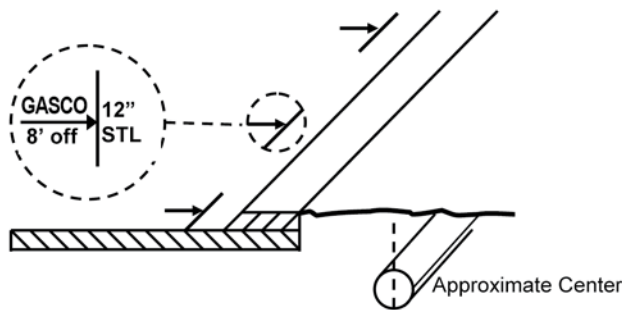
Example: lateral connection



Example: painted offset (off)



Example: staked offset (off)



4. An operator's identifier (name, abbreviation, or initials) is placed at the beginning and at the end of the proposed work. In addition, subsequent operators using the same color mark their company identifier at all points where their facility crosses another operator's facility using the same color. Reduce the separation of excavation marks to a length that can reasonably be seen by the operator's locators when the terrain at an excavation site warrants.

Examples:

CITYCO

ELECO

TELCO

5. Information regarding the size and composition of the facility is marked at an appropriate frequency.

Elements of a Pennsylvania Damage Prevention Program

Examples: the number of ducts in a multi-duct structure, width of a pipeline, and whether it is steel, plastic, cable, etc.

TELCO
9/4" CAB

GASCO
4" PLA

WATERCO
12" STL

6. Facilities installed in a casing are identified as such.

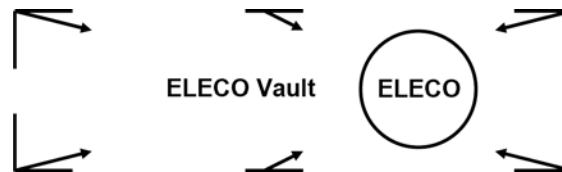
Examples: 6 in. plastic in 12 in. steel and fiber optic in 4 in. steel

GASCO
6" PLA/12" STL

TELCO
FO (4" STL)

7. Structures such as vaults, inlets, and lift stations that are physically larger than obvious surface indications are marked so as to define the parameters of the structure.

Example:



8. Termination points or dead ends are indicated as such.

Example:



9. When there is "No Conflict" with the excavation, complete one or more of the following:

- Operators of a single type of facility (e.g., TELCO) mark the area "NO" followed by the appropriate company identifier in the matching APWA color code for that facility.

Example: NO TELCO

- Operators of multiple facilities mark the area "NO" followed by the appropriate company identifier in the matching APWA color code for that facility with a slash and the abbreviation for the type of facility for which there is "No Conflict."

Example: NO GASCO/G/D illustrates that GASCO has no gas distribution facilities at this excavation site. The following abbreviations are used when appropriate: /G/D (gas distribution); /G/T (gas transmission); /E/D (electric distribution); /E/T (electric transmission).

- Place a clear plastic (translucent) flag that states "No Conflict" in lettering matching the APWA color code of the facility that is not in conflict. Include on the flag the operator's identifier, phone number, a place to write the locate ticket number, and

Elements of a Pennsylvania Damage Prevention Program

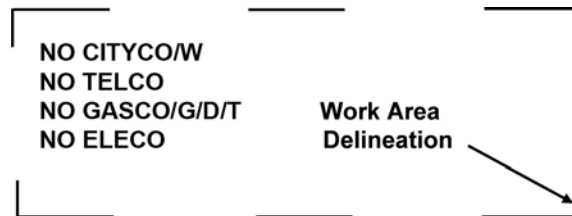
date. Operators of multiple facilities indicate on the flag which facilities are in “No Conflict” with the excavation (see the previous example).

- If it can be determined through maps or records that the proposed excavation is obviously not in conflict with their facility, the locator or operator of the facility may notify the excavator of “No Conflict” by phone, fax, or e-mail, or through the one call center, where electronic positive response is used. Operators of multiple facilities indicate a “No Conflict” for each facility (see the previous examples).
- Place “No Conflict” markings or flags in a location that can be observed by the excavator and/or notify the excavator by phone, fax, or e-mail that there is “No Conflict” with your facilities. When the excavation is delineated by the use of white markings, place “No Conflict” markings or flags in or as near as practicable to the delineated area.

Caution: Allow adequate space for all facility mark-outs.

“No Conflict” indicates that the operator verifying the “No Conflict” has no facilities within the scope of the delineation; or when there is no delineation, there are no facilities within the work area as described on the locate ticket.

Example:



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

Elements of a Pennsylvania Damage Prevention Program

Common Abbreviations

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
SS	Storm Sewer
SL	Street Lighting
STM	Steam
SP	Slurry System
TEL	<u>Telephone</u> , <u>TS</u>
	Traffic Signal
TV	Television
W	Water
W	Reclaimed Water "Purple"

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	Creosote 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 <u>Fiberglass</u>
<u>SCCP</u>	Steel Cylinder Concrete Pipe
STL	Steel
VCP	<u>Verified</u> Clay Pipe

Guide for Abbreviation Use

Follow these guidelines when placing abbreviations in the field:

- Place the Company Identifier at the top or at the left of the abbreviations.
- Place the abbreviations in the following order: Company Identifier / Facility Identifier / Underground Construction Descriptions / Infrastructure Material

Example: TELCO/TEL/FO/PLA indicates that TELCO has a telecommunication fiber optic line in a single plastic conduit. The use of the abbreviation TEL is not necessary, because the orange marking would indicate that the facility was a communication line; but its use is optional.

- To omit one or more of the abbreviation types, use the order described above but omit the slash and abbreviation that does not apply.

Example: to omit /TEL), the result would be TELCO/FO/PLA.

Sample Forms and Reports

Example Report

Ticket Volume

Area: _____

District: _____

State: _____

Month: _____ This Year's Volume: _____

Previous Year's Volume: _____

% Change: _____

Total Tickets per Area: _____

Total Tickets per District: _____

Miles per Area (District): _____ Tickets per Mile (District): _____

TOTAL Tickets: _____

TOTAL Miles per Area: _____ Tickets per Mile: _____

%of TOTAL Budget: _____

Elements of a Pennsylvania Damage Prevention Program

Example Team One-Call Report

Team One Call Report

Team Name
Jan-11
01/01/2012 - 01/31/2012

Summary					
Metric	Current Month	Previous	YTD	Target	Description
Total Tickets					Raw Ticket Counts
Outstanding Tickets					Tickets w/o any response (internal or postive)
Positive Response Ticket Count					Tickets with response to excavator
% 48 hr Positive Response Timeliness					Postive Responses recorded before 48 hrs
Avg. Positive Response Time					Avg. response time
Avg. Internal Response Time					First acknowledged
Avg. Response Time (Emergency Locates)					Avg. response time for emergency locate requests
Conflict vs. No-Conflict					Marked & conflict work complete vs. no-conflict
% Update Tickets					Tickets identified as an extention to an existing ticket

Positive Responses							
Positive Response	Regular	Emergency	Update	Design	Total	Responses ≤ 48 hrs	% Timeliness
Marked							
No-Conflict							
Total							

All Responses					
Type	Regular	Emergency	Update	Design	Total
All Responses					
Marked					
Conflict Work Complete					
No-Conflict					
Investigating					
Update Retrans					

All Responses					
Type	Regular	Emergency	Update	Design	Total
All Responses					
Marked					
Conflict Work Complete					
No-Conflict					
Investigating					
Update Retrans					

Responsibility Area							
Folder	Total Tickets	Open	Positive Responses	% Timlienss	Avg Emergency Response Times	Conflict No Conflict	% Updates
Area 1							
Area 2							
Area 3							
Totals							

Other	
Drove to Site	
Distributed Literature	
Pictures Attached	

Example Monthly One-Call Report

One-Call Month Year Summary Chart

Region	Entity	State	CDC	CDC Description	Total Tickets	Daily Avg
Emergency	%	Not Processed	Marked	%	No Conflict	%
In-Progress Current	%	In-Progress Total	<10 feet	10-25 ft	25-50 ft	50-500 ft
>500 ft	Field Visit	Excavator Contacted	Excavation Observed	Line Crossing	Line Exposed	Excavation Monitored
CO Procedures Not Followed	Warning Signs Used	Parallel Construction	Waiver			

Elements of a Pennsylvania Damage Prevention Program

Excavation Site Inspection Report

		ONE-CALL ID NO.	INITIAL CALL DATE	DISTRICT/LOCATION					
EXCAVATOR COMPANY		PERSON TO CONTACT							
LOCATION OF CONSTRUCTION WORK									
<table style="width:100%; border:none;"> <tr> <td style="width:5%; text-align:center;">YES</td> <td style="width:5%; text-align:center;">NO</td> <td colspan="3"></td> </tr> </table>					YES	NO			
YES	NO								
<input type="checkbox"/>	<input type="checkbox"/>	1. Was the utility required to be located?							
<input type="checkbox"/>	<input type="checkbox"/>	2. Does the excavation require temporary marker flags?							
		When are they needed?	Time	<input type="checkbox"/> AM <input type="checkbox"/> PM					
		Have they been placed? Date	From	to					
		<input type="checkbox"/> YES <input type="checkbox"/> NO							
<input type="checkbox"/>	<input type="checkbox"/>	3. Will the excavation (or heavy equipment above grade) cross or be within 50 feet of the Company's utility(s)?							
<input type="checkbox"/>	<input type="checkbox"/>	4. Has crossing of the utility(s) or excavation <u>encroachment within</u> 50 feet of the utility(s) been completed?							
		If no, when will it begin/resume? Date	Time	<input type="checkbox"/> AM <input type="checkbox"/> PM					
Conditions found and type of equipment on site									
ADDITIONAL COMMENTS									

Example locate performance report

MONTHLY SCORECARD									
SUMMARY									
	Tickets Received	Tickets Completed	Tickets Open	Tickets Past Due	Past Due Open Rescheduled	Tickets Late	OTP%	Total Damages	Damage Ratio
YTD	162430	161562	295041	7027	2293	2508	98.4%	28	0.0173%
1/1/2017	139	80	3114	279	17	0	100.0%	0	
1/2/2017	528	165	3477	279	19	1	99.4%	0	
1/3/2017	2621	2697	3401	184	12	80	97.0%	1	0.0371%
1/4/2017	3205	2664	3942	149	14	56	97.9%	1	0.0375%
1/5/2017	2279	2742	3479	102	14	75	97.3%	1	0.0365%
1/6/2017	2152	2357	3274	73	20	104	95.6%	0	
1/7/2017	230	296	3208	312	21	0	100.0%	0	
1/8/2017	188	183	3213	302	24	0	100.0%	0	
1/9/2017	2488	2420	3281	234	17	43	98.2%	0	
1/10/2017	2080	2282	3079	243	16	33	98.6%	0	
1/11/2017	2390	2476	2993	247	17	72	97.1%	1	0.0404%
1/12/2017	2551	2326	3218	241	17	34	98.5%	2	0.0860%
1/13/2017	2419	2209	3428	102	12	152	93.1%	1	0.0453%
1/14/2017	309	280	3457	127	17	5	98.2%	0	
1/15/2017	180	199	3438	123	18	3	98.5%	0	
1/16/2017	2346	2459	3325	68	13	27	98.9%	0	
1/17/2017	2855	2482	3698	52	12	16	99.4%	0	
1/18/2017	2734	2678	3754	140	10	35	98.7%	0	
1/19/2017	2442	2745	3451	136	11	69	97.5%	0	
1/20/2017	2214	2400	3265	139	19	46	98.1%	0	
1/21/2017	224	375	3114	147	23	22	94.1%	0	
1/22/2017	158	172	3100	145	27	3	98.3%	0	
1/23/2017	2452	2376	3176	109	25	59	97.5%	0	
1/24/2017	2257	2305	3128	74	26	80	96.5%	0	
1/25/2017	2431	2400	3159	76	20	59	97.5%	1	0.0417%
1/26/2017	2655	2325	3489	81	17	40	98.3%	1	0.0430%
1/27/2017	2462	2379	3572	75	10	27	98.9%	1	0.0420%
1/28/2017	227	352	3447	91	13	4	98.9%	0	
1/29/2017	178	183	3442	91	15	0	100.0%	0	
1/30/2017	2693	2534	3601	70	15	62	97.6%	0	

Example Notice to Excavator report

Notice to Excavator		
<p>Excavation equipment and blasting can damage, resulting in the release of product which may cause <u>serious injuries and/or death and severe damage to the environment.</u></p> <p>No excavation is allowed within 10' of any Company utility unless a COMPANY representative is onsite or has given explicit exception. All excavation within 2' of a COMPANY utility must be done either using hand tools or, with approval, a <u>hydrovac</u>, unless state requirements are more stringent and require a larger tolerance zone.</p> <p>To avoid damaging a utility:</p> <ul style="list-style-type: none"> • Look for evidence of a utility, including such things as caution signs, aerial patrol markers, casing vents and above ground piping. When excavating, look for warning tape. • Never assume the location of utilities because: <ul style="list-style-type: none"> ○ They can change directions abruptly between above ground physical evidence. ○ Their depths can vary substantially in short distances. ○ More than one utility may be present. • Call Company to have its Representative approximately locate the line and provide on-site assistance (both are free services) before ANY excavating activity. • If you encounter warning tape while excavating, cease excavation and contact the Company representative immediately. 		
EXCAVATOR NAME		
EXCAVATOR REPRESENTATIVE		TELEPHONE
COMPANY REPRESENTATIVE NAME & NUMBER		
MEETING DATE	TIME <input type="checkbox"/> AM <input type="checkbox"/> PM	SIGNATURE (EXCAVATOR REPRESENTATIVE)
<p><i>IF YOUR PLANS AS INDICATED ABOVE CHANGE, CALL (XXX) XXX-XXXX, 24/7, BEFORE YOU DIG. IN ADDITION CONTACT APPLICABLE ONE-CALL CENTER IF REQUIRED.</i></p>		

Pennsylvania 811 Membership Information

If you own or operate underground lines in the Commonwealth of Pennsylvania, 73 P. S. § 176 et. seq. (The PA “One Call Law”) obligates you to be a member of Pennsylvania 811.

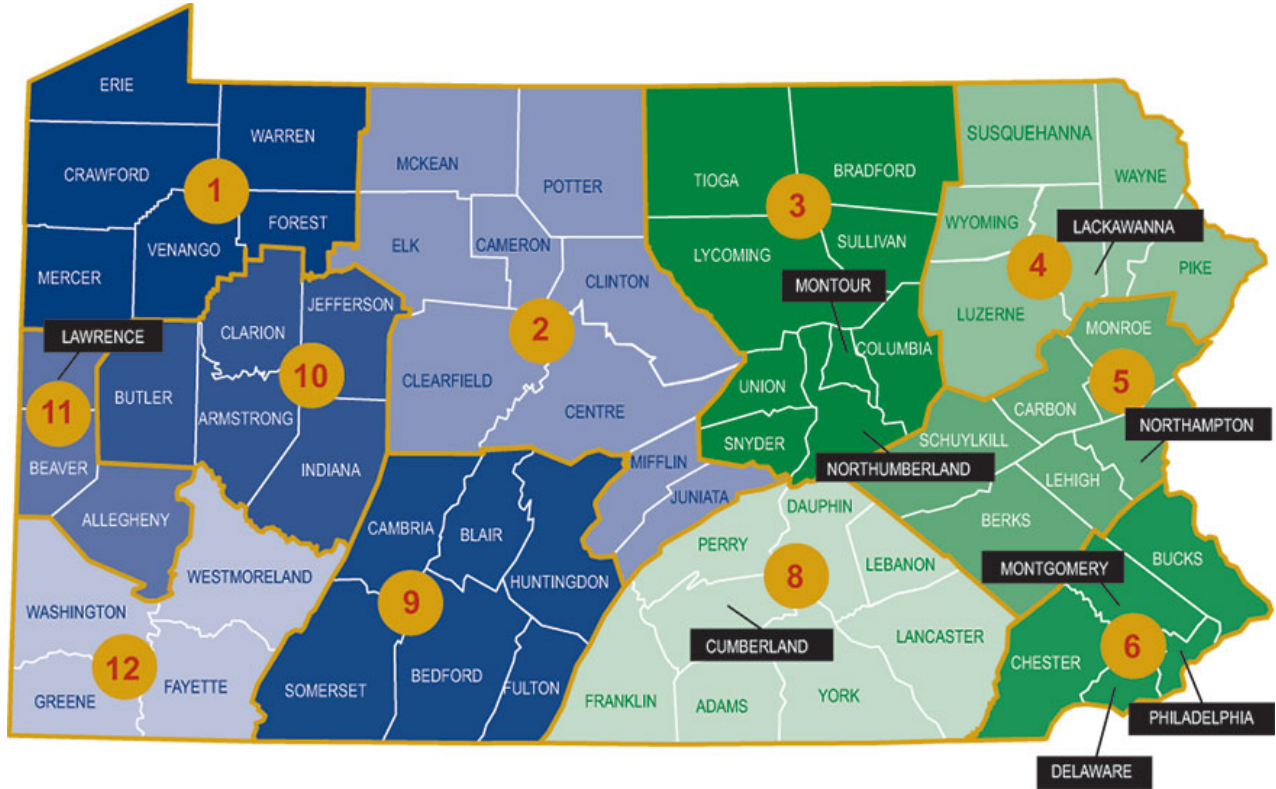
The Membership process can be started by visiting www.paonecall.org and choosing the <Contact> option from the red menu bar and selecting Apply for Membership.

The screenshot shows the Pennsylvania 811 website interface. At the top, there is a navigation bar with links for Sign In, Create Account, Cart, and Contact, along with a Keyword Search field. The main header features the Pennsylvania 811 logo, which includes a circular seal with a shovel and the text "PENNSYLVANIA ONE CALL EXCAVATION SAFETY BEFORE YOU DIG" and "A privately funded non-profit Pennsylvania Corporation". Below the logo is a red navigation menu with links for Home, About, Member Services, Events, Resource Center, Products & Services, Applications, and Contact. A secondary menu below it lists various user roles: Homeowner, Excavator, Facility Owner, Designer, Project Owner, Emergency Responder, PA Damages Database, and Safety Days. The main content area is titled "Contact Us" and includes the text "Dial 8-1-1 or 1-800-242-1776". It also contains a paragraph about planning to dig and a link to contact administrative offices. A list of individual departments is provided, including Accounting, Member Services, Marketing and Education, and Shipping and Receiving. A red-bordered box highlights the link "Underground Facility Owners - [Apply for Membership](#)".

Resources

PennDOT District Map

Source: <http://www.penndot.gov/RegionalOffices/Pages/default.aspx>



73 P. S. § 176 et. seq. (Underground Utility Line Protection Law)

Reprinted by Pennsylvania 811 (POCS). The purpose of this reprinting is to provide those affected with a complete copy of the ACT.

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.***

The maximum geographic area has been set at: "1000' or Intersection to Intersection, whichever is greater, along the same street, within the same political subdivision" by the Board.

"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 “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 at: "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 nonnegligent 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 thru its "Drawing Exchange" electronically.**

(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 nonvoting 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

Coordinate PA

Introduction

Pennsylvania 811 (POCS) is introducing *Coordinate PA*, a web application to help project owners coordinate their projects with other project owners, designers, excavators, and facility owners. The goal of this application is to help you maximize the benefits of shared costs and much more; combined with the ongoing efforts to prevent damage to underground facilities.

Coordinate PA has been developed to integrate with the current Web Ticket Entry (WTE) system you may currently use to create project tickets.

“We plan to repave Main Street from First Avenue to Ninth Avenue in August.”

“Our gas main and service line replacement program starts in July.”

By coordinating these two projects, both entities (the local municipality and the natural gas distribution company) can realize benefits. If the gas company is aware of the municipality’s pavement schedule, they can ensure that the gas main and service lines are replaced before the repaving starts, or, ideally, at the same time. This would allow for project cooperation with potential cost savings for both parties – e.g. the gas company opens the street to replace the lines, and the municipality closes the street to repave. Both parties receive financial benefit, and other stakeholders also benefit – for example, the street is under construction for less time, benefitting the residents of the street and neighborhood.

These types of opportunities only exist if utility companies and right of way custodians communicate by sharing their plans. Traditionally, this has occurred at the local level at a Utility Coordination Committee (UCC) meeting. There, utility stakeholders (utility companies, PennDOT, public works officials, planning commission members) share their projects and project plans in an exercise to find overlap. They meet monthly, or bi-monthly, or quarterly, to discuss and share project plans.

Is there a better way to collaborate?

Coordinate PA is a web service application developed by Pennsylvania 811 to support Public Works and utility project planning and utility coordination within the Commonwealth of Pennsylvania. Coordinate PA uses the power of the Internet to represent a spatial, map-based look at underground utility and public works projects to help identify opportunities for coordination and collaboration when projects overlap in space and overlap in time.

Coordinate PA is the next generation of utility coordination. Instead of meeting to discuss plans, or copy maps, or create a spreadsheet of projects, Utility companies, public works directors and others describe their projects on a map. Coordinate PA then shows the projects and the project timeframes for users and automatically identifies opportunities for collaboration between projects. The user can see project overlap within a geographic area (for example, Main Street from First Avenue and Seventh Avenue) and can query for overlap within a specific time frame.

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

Coordinate PA integrates with Pennsylvania 811's Web Ticket Entry process to create Design and Excavation notifications to increase project safety and reduce project costs as required by Pennsylvania's Underground Utility Line Protection Law.

Benefits

Coordinate PA offers significant benefits to Pennsylvania 811 stakeholders. Coordinate PA has the ability to:

- Identify project collaboration opportunities across the Commonwealth of Pennsylvania;
- Identify opportunities to coordinate and collaborate on projects outside your scope of responsibility, saving both parties money and improving the level of service to constituents;
- Expand information gathering from a broader range of stakeholders beyond project planners and public works officials;
- Expand information dissemination to a broader range of stakeholders beyond project planners and public works officials;
- Define projects in an easy to use tool that works inside a Web browser. No special software is required;
- Record project records, One Call obligations and stakeholder participation of the project in a secure repository;
- Provide project status and updates in near real time, rather than waiting for a monthly, bi-monthly or quarterly UCC meeting;
- Significantly improve the impact of utility coordination. Individual project details are captured in a tool that provides a common map base, is available near real time and can be securely accessed from the office or job site.

Website Community Resources

Communities

Pennsylvania 811 communities allow members of the community to share knowledge, communicate and connect with others, and stay in touch using email subscriptions.

- Announcements - broadcast messages sent to all community subscribers and members and are posted to the community page.
 - These posts display in the Announcements area of the Community page and can be configured to allow replies. They allow community administrators to broadcast messages to all community subscribers and members.
- Blog – A blog entry is user contributed content that might offer commentary, news, event announcements, or material such as images or photos or links to other blogs.
- Recent Activity – This area offers a view of every content item that has been added or updated in reverse chronological order.
- Discussions – This area contains topics, and subsequent entries on a topic are called posts. When a community member subscribes to a discussion, they receive an email every time that a post is added or when someone replies to a topic with a post.
- Resource Library – This area stores shared files, which are content such as Word or PDF files, forms, or graphics that are available to everyone in the community to download.
- Wikis – A Wiki is a group of collaborative web pages grouped together, enabling quick editing of the pages by allowing community members to add or edit articles to the community website.
- Participants - the participant list comprises the subscribers of the community.
 - Participants can:
 - Create posts to reply, comment, blog entry, discussion topic, or wiki page
 - Report inappropriate content
 - View community subscribers

Current Pennsylvania 811 communities

- Delaware Valley Damage Prevention Council
- Lancaster County Regional Partnership
- Lehigh Valley Regional Partnership
- Pittsburgh Public Service Coordinating Committee
- Pennsylvania 811 Board of Directors
- Pennsylvania 811 Board Committees and Task Forces

Accessing a Community

Send an email to contact@pa1call.org to request access to a Community

Once access is granted Sign In to your web account on the Pennsylvania 811 website:

- Click “Member Services” 
- scroll down to “Communities” then select “My Subscriptions” to select the Community

Glossary

(Portions reprinted with permission from the Common Ground Alliance *Best Practices*. For the purpose of the Common Ground Study, a common set of definitions are used. These definitions were arrived at through a consensus process similar to the methodology used to identify the best practices.)

Abandoned Line or Facility: Any underground or submerged line or facility no longer in use.

Alternative Dispute Resolution (ADR): Any process or procedure other than litigation that is agreed to by the disputing parties as the means for resolving a dispute, and is binding or non-binding pursuant to the agreement by the disputing parties. ADR includes, but is not limited to, advisory boards, arbitration, mini-trials, mediation, partnering, and standing neutrals.

As-built Drawing: A detailed depiction of facilities as installed in the field.

Attribute: Characteristic that helps describe the data.

Backfill: To fill the void created by excavating.

Board of Directors: A board of directors is a recognized group of people who jointly oversee the activities of an organization, which can be either a for-profit business, nonprofit organization, or a government agency. Such a board's powers, duties, and responsibilities are determined by government regulations (including the jurisdiction's corporation law) and the organization's own constitution and bylaws. These authorities may specify the number of members of the board, how they are to be chosen, and how often they are to meet.

Business Day (or Working Day): Any day of the week except Saturday and Sunday and state/provincial and federal legal holidays.

Cathodic Protection: The process of arresting corrosion on a buried or submerged structure by electrically reversing the natural chemical reaction. This includes, but is not limited to, installation of a sacrificial anode bed, use of a rectifier based system, or any combination of these or other similar systems. Wiring is installed between the buried or submerged structure and all anodes and rectifiers; wiring is also installed to test stations that are used to measure the effectiveness of the cathodic protection system.

Claims Managers: Supervises, coaches and develops a team of claims representatives responsible for the management, investigation and resolution of claims, aligning their actions to ensure achievement of key organizational initiatives.

Colleges & Universities: The term college encompasses a wide range of higher education institutions, including those that offer two- to four-year programs in arts and sciences, technical and vocational schools, and junior and community colleges. The term university specifically describes an institution that provides graduate and professional education in addition to four-year post-secondary education.

Common Ground Alliance (CGA): A member-driven association of 1,700 individuals, organizations and sponsors in every facet of the underground utility industry.

Compliance: Adherence to the statute and its regulations.

Damage Reporting: The immediate reporting to a one call center and the facility owner/operator of any damage caused or discovered in the course of excavation or demolition work; to immediately alert the occupants of premises as to any emergency that such person may create or discover at or near such premises; to contact emergency responders, if necessary, as quickly as practical.

Damage: Any impact or exposure that results in the need to repair an underground facility due to a weakening or the partial or complete destruction of the facility, including, but not limited to, the protective coating, lateral support, cathodic protection, or housing for the line, device, or facility.

Demolition contractors: Are permitted to perform work involving the demolition of any building, structure, or site, which shall include one-, two-, and three-family dwellings and buildings, structures or sites associated.

Demolition Work: The partial or complete destruction by any means of a structure served by, or adjacent, to an underground line or facility.

Designer: Any architect, engineer, or other person who prepares or issues a drawing or blueprint for a construction or other project that requires excavation or demolition work.

Designers: Any architect, engineer or other person who or which prepares a drawing for a construction or other project which requires excavation or demolition work. A Designer is a key stakeholder group for Pennsylvania 811.

Digital Imagery: A computer-compatible version of land-related information including, for example, topography, physical features, road/street networks, and buried facility networks obtained from a variety of sources including, for example, aerial photographs, satellite photographs, road maps, survey plans, and buried facility records.

DIY suppliers: Hardware stores are sometimes known as a Do-it-yourself store. They sell household hardware for home improvement including: fasteners, building materials, hand tools, power tools, keys, locks, hinges, chains, plumbing supplies, electrical supplies, cleaning products, housewares, utensils, paint and lawn and garden products directly to consumers for use at home or for business.

Downtime: Lost time reported by a stakeholder on the Damage Information Reporting Tool (DIRT) field form for an excavation project due to failure of one or more stakeholders to comply with applicable damage prevention regulations.

Drillers: A driller is a team leader in charge during the process of well drilling. The term is commonly used in the context of an oil well drilling rig. The driller is in charge of the crew and running the rig itself.

Electronic Positive Response: Communication by telephone, fax, e-mail or Internet from a facility owner/operator to an excavator providing the status of an owner/operator's statutorily required response to a notice of intent to excavate.

Emergency Notice: A communication to the one call center to alert the involved underground facility owners/operators of the need to excavate as a result of a sudden or unforeseen occurrence or national emergency involving a clear and imminent danger to life, health, environment, or property (including the interruption of essential utility services or the blockage of transportation facilities) that requires immediate excavation.

Emergency Responders: An emergency responder is an Emergency Medical Responder with an EMS certification level used to describe a level of EMS provider below that of an emergency medical technician and paramedic. Broadly used, a first responder is the first medically trained personnel who comes in contact with a patient. Their role is to provide immediate, lifesaving, medical care before the arrival of further medical help. An emergency responder can be a police officer or firefighter, or any other profession that requires supplemental medical training beyond standard first aid.

Emergency Response: A facility owner/operator's response to an emergency notice.

Emergency: A sudden or unforeseen occurrence involving a clear and imminent danger to life, health, or property; the interruption of essential utility services; or the blockage of transportation facilities that requires immediate action.

Enforcement agencies: A law enforcement agency is a government agency that is responsible for the enforcement of the laws.

Equipment manufacturer: An equipment manufacturer is a company whose goods are used as components in the products of another company, which then sells the finished item to users.

Equipment suppliers: Serves the information needs of dealers, distributors, consultants and multi-unit operators who specify and purchase equipment.

Event: The occurrence of facility damage, near miss, or downtime.

Excavate or Excavation: Any operation using non-mechanized or mechanized equipment, demolition, or explosives in the movement of earth, rock, or other material below existing grade.

Excavator: Any person who or which performs excavation or demolition work for himself or another person. An Excavator is a key stakeholder group for Pennsylvania 811.

Excavator: Any person proposing to or engaging in excavation or demolition work for himself or for another person.

Facility Owner/Operator: Any person, utility, municipality, authority, political subdivision, or other person or entity who owns, operates, or controls the operation of an underground line/facility.

Facility Owners: An entity who owns or operates underground utilities in the Commonwealth of PA. Facility Owners are a key stakeholder group for Pennsylvania 811.

Facility: An underground or submerged conductor, pipe, or structure used to provide electric or communications service (including, but not limited to, traffic control loops and similar underground or submerged devices); or an underground or submerged pipe used in carrying, providing, or gathering (typically between the wellhead and transmission line) gas, oil or oil product, sewage, storm drainage, water, or other liquid service (including, but not limited to, irrigation systems) and appurtenances thereto.

Farmers: A person who owns and manages a farm.

Gathering line owners: A pipeline, usually within an oilfield which gathers produced oil and/or gas to bring it to a more common point for further transmission.

Geographic Information System (GIS): An organized collection of computer hardware, software, and geographic data used to capture, store, update, maintain, analyze, and display all forms of geographically referenced information.

Geospatial Data: Data that identifies the geographic location and characteristics of natural or constructed features and boundaries on the earth.

Global Positioning System (GPS): A system consisting of 25 satellites used to provide precise position, velocity, and time information to users anywhere on earth. Location information can be received using a GPS receiver. The GPS receiver helps determine locations on the earth's surface by collecting signals from three or more satellites through a process called triangulation. Simple and inexpensive hand-held receivers provide an accuracy of ± 100 meters of a true position. More sophisticated receivers that use additional technologies or that post-process the original GPS data can provide sub-meter accuracy.

Governmental agencies: A government or state agency, often an appointed commission, is a permanent or semi-permanent organization in the machinery of government that is responsible for the oversight and administration of specific functions, such as an intelligence agency. Agencies can be established by legislation or by executive powers.

Grade: The surface of the earth (i.e., ground level) upon which a structure is built or prepared.

Grounding Systems: A system of one or more ground conductors or ground rods providing a low-resistance path-to-earth ground potential through a mechanical connection to structures, conductors, and equipment.

Homeowner Associations (HOAs)/Property Management Companies: An organization of homeowners of a particular subdivision, condominium or planned unit development. The purpose of a home owners association is to provide a common basis for preserving maintaining and enhancing their homes and property. A property management company is the operation, control and oversight of real estate as used in the broad terms. Management indicates a need to be cared for, monitored and accountability given for its useful life and condition.

Homeowners: A person who owns their own home.

Insurance Companies: The company pools clients' risks to make payments more affordable for the insured.

Joint Trench: A trench containing two or more facilities that are buried together by design or agreement.

Land Base: Mapped data that depicts features of the surface of the earth and is tied to real-world geographic coordinates, such as latitude and longitude.

Landowners: A person who owns land, especially a large amount of land.

Landscapers: A gardener who does landscape gardening.

Large/Complex Project: A single project, or a series of repetitive, small, short-term projects that are related in scope, that impact facilities over a long period of time or a large area.^{30/}

Latitude (Lat): Distance measured north or south of the equator.

Line: See "Geographic Information System (GIS)"

Local Elected Officials: an elected official is a person who is an official by virtue of an election. Officials may also be appointed ex officio (by virtue of another office, often in a specified capacity, such as presiding, advisory, secretary).

Locate Request: A communication between an excavator and one call center personnel in which a request for locating underground facilities is processed.

Locate: To indicate the existence of a line or facility by establishing a mark through the use of stakes, paint, flagging, whiskers, or some other customary manner that approximately determines the location of that line or facility.

Locator: A person whose job is to locate lines or facilities.

Longitude (Long): Distance measured east or west from a reference meridian (Greenwich).

Manufactured Home: a mobile home.

Marking Standards: The methods by which a facility owner/operator indicates its line or facility in accordance with the APWA guidelines. (See Appendix B, "Uniform Color Code and Marking Guidelines.")

Master Meter (Facility Owner): owns/operates underground facilities on its own property, buys and resells *electric, communication service, natural or artificial gas, petroleum, propane, oil or petroleum and production product, sewage, water or other service* to one or more customers residing on its property.

Examples: Homeowner Associations, and Apartment Complexes

Member Database: Structured collection of data defined for a particular use, user, system, or program; it may be sequential, network, hierarchical, relational, or semantic.

Membership: Persons who participate voluntarily in a one call center because they have an interest in the protection of lines or facilities or because they have a statutory responsibility to protect lines or facilities.

Micro (Facility Owner): Owns/operates underground facilities on its own property to serve itself and DOES NOT have billable customers. Examples: Hospitals and University/Schools. This does not include producers of a product, who provide that product to another company for distribution, i.e. gas gathering companies or Marcellus Shale companies.

Military and Federal facilities: A military base is a facility directly owned and operated by or for the military or one of its branches that shelters military equipment and personnel, and facilitates training and operations. Federal facilities are buildings, installations, structures, land, public works, equipment, aircraft, vessels, other vehicles, and property, owned, constructed or manufactured for leasing to the Federal Government.

Mining Companies: A company that owns and manages mines.

Minor or Routine Maintenance of Transportation Facilities: The adding of granular material to unpaved roads, road shoulders, airport runways, airport taxiways, and railroad roadbeds; removal and application

of patches to the surface of paved roads, runways, and taxiways; cleaning and sealing road, airport, and canal lock facility cracks or joints; replacing railroad ties and related appliances excluding road crossings; adjusting ballast on top of railroad roadbed; cleaning of paved drainage inlets and paved ditches or pipes.

Near Miss: An event where damage did not occur, but a clear potential for damage was identified.

Notice: The timely communication by the excavator/designer to the one call center that alerts the involved underground facility owners/operators of the intent to excavate.

Notification Period: The time beginning when notice is given and ending when the work may begin.

One Call Center: An entity that administers a system through which a person can notify owners/operators of lines or facilities of proposed excavations.

Orthophoto: An aerial photograph of a site that has been differentially rectified to correct the distortion caused by the terrain and attitude (tip, tilt, and yaw) of the camera. A multicolored, distortion-free, photographic image.

PennDOT: The Pennsylvania Department of Transportation.

Person: Any individual or legal entity, public or private.

Planning: An activity at the beginning of a project where information is gathered and decisions are made regarding the route or location of a proposed excavation based on constraints, including the locations of existing facilities, anticipated conflicts and the relative costs of relocating existing facilities, or more expensive construction for the proposed facility.

Plat: A map or representation on paper of a piece of land subdivided into lots, with streets, alleys, etc., usually drawn to a scale.

Plumbers/Drain Clearing Contractors: A plumber is a person who installs and repairs the pipes and fittings of water supply, sanitation or heating systems. A drain clearing contractor will use equipment to clear sewer lines.

Positive Response: Communication with the excavator prior to excavation to ensure that all contacted (typically via the one call centers) owner/operators have located their underground facilities and have appropriately marked any potential conflicts with the areas of planned excavation.

Pre-marking or Positive Site Identification: The marking of the proposed excavation site/work area consistent with APWA guidelines.

Project Owner: Any person who or which engages an excavator for construction or any other project which requires excavation or demolition work. A Project Owner is a key stakeholder group for Pennsylvania 811.

Project Owner: The person financially responsible for the undertaking of a project that involves excavation or demolition.

Public: The general population or community at large.

PUC: The Public Utility Commission. The PUC is the agency responsible for enforcement of Act 50 and is a key stakeholder.

Railroad Operating Corridor: The property that is essential to a railroad company to enable it to discharge its function and duties as a common carrier by rail. It includes the road bed, right of way, tracks, bridges, stations, and such like property.

Railroad: A track or set of tracks made of steel rails along which passenger and freight trains run.

Rental equipment agencies: A rental agency charges a customer for a rental of a piece of equipment.

Root Cause: The primary reason an event occurred.

Seismic contractors: A company who specializes in work related to earthquakes or other vibrations of the earth and its crust.

Steam: A small, narrow river.

Subsurface Utility Engineering (SUE): An engineering process for accurately identifying the quality of underground utility information needed for excavation plans and for acquiring and managing that level of information during the development of a project.

Tanks: Containers that hold liquids, compressed gases or mediums used for the short- or the long-term storage of heat or cold products. Referred as storage tanks.

Test Hole: Exposure of a facility by safe excavation practices used to ascertain the precise horizontal and vertical position of underground lines or facilities.

Thermal: Relating to heat.

Ticket Number: A unique identification number assigned by the one call center to each locate request.

Tolerance Zone: The space in which a line or facility is located and in which special care is to be taken.

Trenchless Technology Installers: A company who installs or replaces underground infrastructure without causing disturbance to the ground above. It requires the use of few or no trenches at a surface or street level.

Vacuum Excavation: A means of soil extraction through vacuum; water or air jet devices are commonly used for breaking the ground.

#####