

Utility Damage Prevention is a Shared Responsibility

By Michael Twohig, Subject Matter Expert, Surface Search

Winston Churchill once said “Those who fail to learn from history are condemned to repeat history’s mistakes.”¹ In recent years industry stakeholders have witnessed a steady decline in utility accidents; however, with hundreds of thousand of accidents and incidents each year there is still a long way to go to mitigate the risk on job sites, and it is too soon to become complacent.

National organizations, such as the Common Ground Alliance (CGA) have done a great job creating industry awareness through the national 811 campaign, and by publishing a Best Practices guidebook to educate all parties on the appropriate actions that should be taken to keep our job sites safe. Underground stakeholders have done their part and invested in advertising and public awareness commercials to engage the public regarding utility safety and the need to call 811 when doing any excavation that may impact utilities; either on public or private property.

Protecting underground utilities and utility damage prevention is a shared responsibility. So what can we do to not repeat history’s mistakes and minimize the risk to workers and the general public?

The Project Owner’s Responsibility

A culture of safety comes from the top down, not from the trenches up. Project owners, public or private, have a responsibility to contract a project team to not only design and build a project within budget and on schedule, but also to plan a safe project. Today,

contract language clearly specifies the terms and conditions of the project.

In each project, the expectations for good workmanship include a safe work site in accordance with state and federal laws. Contained in the contract is the requirement for a project health and safety plan ensuring compliance with the normal protocols such as federal OSHA regulations and state laws. However there is still an unknown risk associated with underground utilities unless the design team has invested in a subsurface utility investigation to fully document the underground existing site conditions. The only way for the owner and the engineer to do a proper risk assessment relating to underground utilities is by implementing a Subsurface Utility Mapping (SUM) program. By implementation of SUM programs the owner has acted responsibly and clearly communicated accurate and reliable subsurface utility information.



The Design Engineer’s Responsibility

Design and construction managers are responsible for representing the owner and developing the plans and

specifications needed to successfully complete the project. Often selected on their qualifications and experience, and expected to advise and represent the owner in all matters, these professionals are responsible for preparing a set of plans and specifications for contractors to bid, win, build and complete on time, within budget, safely; and to make a profit.



Today these designers contract and hire environmental, geotechnical and land surveyors to prepare the existing site condition documents, which are the basis for design documents. All too often the designers overlook, or decline the need for, a subsurface utility investigation to document the location of buried utilities and structures.

Ironically, surprise discoveries relating to utilities are frequently the cause of costly construction claims and change orders; often referred to as “unforeseen site conditions”. Maybe these issues would not be “unforeseen” if a Subsurface Utility Mapping program were instituted in a timely manner. Owners and engineers that contract SUM professionals have a very successful track record in identifying all the underground

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facilities and hazards and show a positive return of investment in SUM program.

The Subsurface Utility Mapping Professional’s Responsibility

Over the past 30 years the growing awareness of the need for a specialized expert in utility mapping became apparent. The decline of investment by owners and engineers to survey locate newly constructed utilities and structures created an environment where the placement of utilities was always in question.

Although many believe that Geographic Information System (GIS) would be of great assistance with utility damage prevention programs, it is merely a source of information, not a solution. In 2002 the American Society of Civil Engineers published a guideline that can be adopted as the standard of care for any project with regard to mapping utilities. This document, known as ASCE 38-02, has become the foundation for hundreds of public and private organizations nationwide, such as the majority of state highway agencies, the FAA, the FHWA and the CGA. It has been so successful that countries around

the world are now developing their own standards based on ASCE 38-02. The Canadian Standard S250 in just one example of the international trend.

The responsibility of every SUM firm is to provide expert advice, apply the appropriate geophysical investigation systems, survey and plot the results of a site survey on a set of contract documents. The essence of a Subsurface Utility Plan in a set of construction documents is to augment the land surveyors topographic and boundary surveys with highly reliable utility data which depict the utilities and subsurface structures in a manner where all team members can easily recognize the type, location, size, material, characterization and reliability of all subsurface systems.

The Contractor’s Responsibility

The contractor’s responsibility in making projects safer, in addition to adopting a comprehensive health and safety program such as the CGA Best Practices, is to look at every project and ask how good the utility information on the construction plan is.

It is standard practice to have owners and engineers provide an “Existing Conditions Plan” that represents a site survey which contains the topographic and utility information depicting the site conditions prior to the beginning of work. Contractors and estimators have the responsibility to inspect and review the project to prepare a bona fide bid. A thorough look at the



underground site conditions is critical to a safe, successful project and can only be accomplished if there is a plan depicting the underground utilities prepared by a SUM professional. It will be easily recognizable as all the utility line work depicted on the plan will be labeled and annotated with the ASCE 38-02 Quality Levels previously mentioned.

In the event the owner has not done any subsurface utility investigation, i.e. the utility lines on the contract bid documents are all labeled ASCE 38-02 Quality Level C and D, the contractor should assume that the owner and the engineer have decided to transfer the project risk associated with underground utilities to the contractors and the bid by the contractor should reflect the added efforts to identify the utilities prior to ground breaking.

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For more information

The Federal Highway Administration provides an in-depth look at SUE online. Visit www.fhwa.dot.gov/program-admin/sueindex.cfm

The Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data (38-02) is available from the American Society of Civil Engineers by visiting www.asce.org

Reducing Excavator Insurance Premiums

By Wayne Jensen and Hoyt G. Lowder, Representatives for Excavators

Reducing excavator insurance premiums is totally a function of lowering risk levels of work being performed as compared to every other excavator doing the same work activities. Insurance is very much a “results” oriented business. Insurance companies collect the loss run histories of many thousands of “like businesses” and use that data in making determinations of expected losses on which premiums are based for all similar companies. While it is helpful for excavators to make the case with underwriters that they have “great work practices” the only thing that really matters is the “history of losses” found on loss runs. Every excavator that has been in business longer than 4 years completely understands that their insurance bill is a function of their losses in every line of insurance.

Since “history” drives insurance premiums it is critical for excavators to evaluate and apply means and methods that have been determined to dramatically lower the risk of their operations “today” and going forward because today begins tomorrow’s history. Publications like the Excavation Safety Guide and the Damage Prevention Professional Magazines are providing excavators with a tremendous amount of value in describing best practices for dramatically lowering the risk of work activities involving excavation and work around buried facilities. The Common Ground Alliance has developed and published many best practices that, if used by excavators, would dramatically reduce the risk associated with the work being done.

The single “best practice” that is the most effective in helping excavators lower risks associated with excavations, and therefore lower lower insurance premiums by reducing losses, is “Call before you dig”. It has been proven that 99% of excavations that are preceded by a call for locates to the One Call



system are done without damage. Since utility damage can result in a loss for both General Liability and Workers Compensation insurance policies, preventing damage is critical to lowering insurance premiums.

Call before you dig is also the law in all the states. The question to ask: “is legislation requiring excavators to call before you dig a governmental strategy to lower insurance premiums” or is it an “unintended consequence?”. Government does not establish laws to assist excavators in reducing insurance premiums but compliance with laws governing excavations dramatically lowers the level of risk of all work activities and reduces losses which in turn lowers insurance premiums.

Sadly, there are hundreds more published “best practices” that never get considered by excavators to be used in the field because it is not “required” by governmental regulation. The primary reason the “utility damage prevention world” is constantly lobbying for increased regulation governing the practices of excavators is because everybody believes that “government” is the only entity that can gain compliance to what amounts to “best practices”.

A good reason for running an article on “Reducing Excavator Insurance Premiums” is to give us the opportunity

to talk about what motivates excavators to prevent damage to buried facilities. If our only approach to motivate excavators to prevent damage is enforcement action resulting from legislation, the damage prevention industry will be forever stuck in a 20 year cycle of first determining a need for legislation to finally have laws in place that require the use of a “best practice”. Think about how long it took to get One Call laws in place. It is critical for the Damage Prevention Industry to realize that legislative approaches cannot address “today’s” needs and we need to focus on what will solve problems today.

In an effort to find new and better methods to solve problems today, Sunshine 811 recently asked the Underground Utility Contractors of Florida (UUCF) and its member associations what they could do to address the needs of their member excavators. This UUCF body of excavators told Sunshine 811 that it would be helpful for them to have their own “Excavation Safety Guide” that had content that addressed their specific needs. Sunshine 811 quickly agreed to give the UUCF space for content in their custom edition of the 2013 Excavation Safety Guide. UUCF has a distribution of approximately 5,000 employees who are the people physically digging every day. UUCF was concerned that the outreach materials of the One Call systems was not getting to their people who need the information the most. Excavation safety events rarely reach the worker and a lot of the content of damage prevention publications only target company owners and people who purchase products. It was UUCF member who are owners of excavation companies that expressed the desire to have targeted educational materials that they could distribute to their people. Sunshine 811 and UUCF have agreed to continue collaboration efforts on providing outreach materials that targets workers in

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the field. UUCF will establish a database of its field workers that will allow tracking of a stream of information that can be distributed over time and allow them to begin to measure the success of this information transfer on reducing damage.

One of the most magical moments a “damage prevention professional” can ever experience is to ask a backhoe operator or pipelayer what they do to prevent damaging buried facilities. Their “personal techniques” and what they do as a team of people on a field crew to prevent damage is astounding. They know more about preventing damage on a day-to-day basis than we could ever imagine. While UUCF and Sunshine 811 are opening up new avenues to pass on damage prevention information to field workers, they will also be collecting the best practices of each excavator so they can be shared with others. Asking excavators what they do to prevent damage and

documenting their best practices is a way of showing respect for their efforts. Excavators who are shown “respect” for their efforts will be much more motivated to listen to what the damage prevention industry has to say. It is important to give credit to the excavator community for being “successful” at preventing damage 99% of the time.

Talking about the value for the excavator for using “best practices” to reduce insurance premiums addresses their needs. We want excavators “calling before they dig” because it lowers their insurance premiums, protects their people and protects the public. If we can define best practices for damage prevention in terms of the value it brings to excavators I believe we will find new and better ways to get best practices adopted without the force of law.



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In this case, I always suggest that the contractor request confirmation of the utility information, or lack thereof, in writing as it may be very important in resolving claims, change orders and or legal action in the future event of accidents. I also suggest contractors use the pre bid conference to explore the reliability of the utility information, as “unforeseen site conditions” may have a less than favorable outcome as many facilities are difficult to relocate in the given time frame. The underground stake-holders’ responsibility is an



integral part of the contractor’s work which begins with the One Call Ticket request, meeting with the facility owner’s representatives on site, waiting the appropriate amount of time, respecting the marks and protecting the mark-outs through all phases of construction.

To truly make a difference in mitigating utility accidents, a shared responsibility is required by all parties. To make projects safer, and more profitable, we need a paradigm shift in project planning that demonstrates that we all have learned from tragic utility accidents that have claimed the lives of so many. Winston Churchill was correct in his quote many years ago and we should learn from our industry history - both the good and the bad. “Those who fail to learn from history are condemned to repeat history’s mistakes.”