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WINTER 2021 • VOLUME 12 • NUMBER 4

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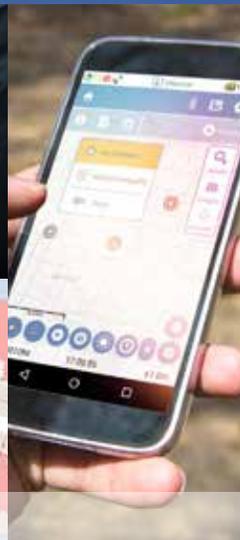
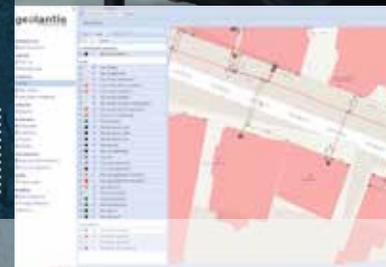
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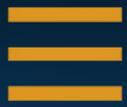
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FROM THE
PUBLISHER



BY SCOTT LANDES

Saving Lives through Education

In the pages of this issue, you'll find several articles written by organizations dedicated to providing education and training to their particular stakeholder group. As the publisher of *dp-PRO*, I salute these organizations and their efforts to ensure safe digging. As sure as safe digging is a shared responsibility, so too is educating our clients, users, members, and colleagues to build a community of safe digging experts.

Many of our readers are aware that I recently sold Infrastructure Resources' sister company, Rhino Marking and Protection Systems. While Rhino truly supports my vision of Saving Lives, selling the company has given me the freedom to refocus my energies on my personal passion of saving lives through education. Infrastructure Resources (IR) is that focus. Our goal here at IR is helping you save lives, and everything we do is dedicated to that premise.

Whether it is in the pages of this magazine, for which our editors tirelessly scour industry news feeds, attend meetings and events, and confer with industry experts to provide up-to-date and compelling articles, or through our live events, where we gather industry experts and professional speakers together to share knowledge and expertise, or our Excavation Safety Alliance online community which makes digital education readily available to all users, Infrastructure Resources has one simple primary directive – Saving Lives through Education®.

The term is deceptively simple. In today's world, people want to learn in the style that suits them (visual, aural, hands-on) and in the format they prefer (live, digital, or written). Learners represent everyone from Boomers to Gen Z, with all the differences inherent to those designations. We've also found in recent years that today's learner isn't satisfied with just knowing what they need to do to function in their role. They want to know more about the functions of the roles that intersect with theirs and the new tools and technologies that are on the horizon that will impact them down the road.

As the producers of the world's premier excavation safety conference for almost two decades, welcoming thousands of delegates from around the world, we have learned that people love face-to-face learning and networking. We also know this type of learning has benefits that can't be found through other resources, so our event remains of primary importance.

We also realize that due to budget limitations, company policies, and (these days) travel concerns, there are thousands of stakeholders who do not have the opportunity to attend the Global Excavation Safety Conference. For that reason, new ways of making education accessible to all remains a priority.

We here at IR take our commitment to meeting these needs seriously and continue to explore new and exciting opportunities that open educational doors to all stakeholders in the damage prevention community, and provide a platform for them to share their message and add their voice to the conversation.

I invite you to open a conversation with us on how we can help you reach your audience. From publishing initiative-based articles designed to share new solutions to working together to present training courses through Damage Prevention Week, IR looks forward to the opportunity to help you create solutions that are geared towards Saving Lives through Education®. 



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Digging Up Britain

• RICHARD BROOME •

LineSearch BeforeUDig (LSBUD) is the UK's leading online safe digging service, producing the annual Digging up Britain report which examines the state of the digging industry in the UK. This year's edition reveals plenty of interesting insights, particularly into the "digging boom" taking place.

Search Before You Dig

In 2020, more than three million enquiries were made for projects involving excavation; a search passed through the LSBUD service every 10 seconds. This is a nine percent increase on 2019, and 73 percent up from just four years ago. Clearly, this shows a strong improvement amongst those responsible for digging works with an increased awareness of the benefits that searching brings.

The Digging Boom

Given the impact of COVID-19 on every aspect of life in 2020, with lockdowns affecting the ability to do work during certain periods, it is no surprise to see that search enquiries for future projects were significantly up – by 35 percent. This highlights that many people were forced into preparation mode, thinking about where home improvements could be made and planning for the digging boom that we're now seeing, but more on this later.

This effect was seen across the industry with the promoters of large scale infrastructure projects seemingly waiting to pounce and get to work once Government restrictions were eased.

Industry and Safe Digging

As has been the case over the last few years, the majority of digging work is being done on behalf of the telecom sector, closely followed by the water industry. Interestingly, both saw their overall share of total searches increase in 2020 after a few years in decline, collectively making up 63 percent of all searches.

The other key digging trend to note is that the number of farmers searching via LSBUD increased by 63 percent. This reflects both the amount of farm diversification taking place and the awareness of safe digging practices growing rapidly amongst this audience.

Against the backdrop of all this digging activity, the good news is that the UK's underground pipes and cables have never been more visible, with more than 100 asset owners now registered on LSBUD.

The water sector remains most vulnerable to asset strikes. Just 15 percent of asset owners from the water industry share their information via the LSBUD portal, which makes for bleak reading compared to the gas and electricity sectors which each boast over 90 percent representation on the portal.



Is the UK Prepared for the Digging Boom?

LSBUD's service provides the location of underground pipes and cables across the UK, helping to protect infrastructure from accidental third-party damage and helping keep workers safe. Members (asset owners who provide their network information through the service) benefit from the "safety of the herd" effect – the more asset owners who share their information through LSBUD, the more users use the service. This means each member receives more enquiries near their network, increasing third-party awareness of how to work safely near their networks.

The number of searches running through LSBUD's service gives us confidence that industry is very much getting the message about the importance of safe digging. Indeed, for the majority, performing a search for pipes and cables is now default before digging. But it remains the case that 25 percent of Brits do not search before digging.

Given that our research finds that homeowners are taking on 126,246 digging projects this year, such as extensions, renovations, and landscape gardening, this means that 31,562 projects are happening "blind." In other words, 86 new projects are starting every day where people are simply digging and hoping. The worry is that thousands of Brits are at risk of cutting off power to their neighborhood, being unable to work due to broadband outages or being seriously injured.

This needs to change and we're on a mission to get not just industry but everybody searching before digging.

Now Isn't the Time for Complacency

As our research shows, the UK's underground infrastructure, and those working near it, are better protected than ever. This is reason to celebrate but with a ramping up of excavation activity, now is not the time to get complacent.

This is why we'd like the remaining asset owners to subscribe to the LSBUD portal and start sharing their information more readily. It's only by collaborating with the other utility companies to give all those digging a full picture of what lies beneath the ground, that needless strikes will be minimized and accidents avoided.

It's also essential that everyone searches for underground pipes and cables before digging to avoid the myriad of consequences that can come with striking such assets. The movement we have seen is very positive, but we can still be better by asset owners following the adage – subscribe, share, and search. 

For more information about the state of the UK's safe digging industry and to read LSBUD's Digging up Britain report in full, visit lsbud.co.uk/digging-up-britain-report.

WEB

WINTER 2021

EXCLUSIVE

BONUS CONTENT:

Visit dp-pro.com/current-issue to enjoy these additional articles

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It's all about the Outlet. The Main Outlet we've been Looking for all this Time is not One Electrically Charged, but One Emotionally Fulfilling.

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COOPERATIVE RELATIONSHIPS ESTABLISHED TO ADDRESS UNDERGROUND INFRASTRUCTURE SAFETY

By Dr. Tom Iseley & Saleh Behbahani

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HEAT STRESS ON THE JOB

By Phillip Davis

Hot Work is Unavoidable, but 21st Century Solutions for keeping Workers Safe in these Conditions are Evolving.

PAGE I

A 21st Century Solution for Heat Stress on the Job

BY PHILLIP DAVIS

It's no secret that summers and average seasonal temperatures are getting hotter. According to the Bureau of Labor Statistics, 11 workers are seriously injured or die from heat stress every day in the United States alone. The often-overlooked part of this statistic is that almost 17 percent of all heat stress-related injuries occur outside of what is considered hot seasons. Harsh indoor environmental work conditions cause heat stress on workers, as can heavy personal protective clothing.

Hot work is unavoidable, but solutions for keeping workers safe in these conditions are evolving. Difficulties and dangers of hot work shouldn't just "come with the territory" when they can be proactively monitored and managed successfully.

Under the National Institute of Occupational Safety and Health (NIOSH) criteria for a recommended standard with occupational exposure to heat and hot environments, employers are strongly encouraged to develop and implement effective work-rest cycles that account for the following:

1. **Types of Personal Protective Equipment (PPE)**
2. **Length of time PPE can be worn**
3. **Individual work rate, fitness level, acclimatization, and hydration levels**
4. **Environmental conditions (heat and humidity levels, radiant heat from sunlight outdoors, and wind speed if outdoors or if a fan is being used indoors)**

To most, these criteria sound like common sense. The more layers worn in a warmer environment, whether it be in the presence of a blast furnace, generator, or even a facility with no climate control and little airflow ventilation, the more buttoned up policy and procedures need to be for heat stress management programs.

What is being done upfront to curb incidences of heat stress injury remain procedural: rest when it's needed, hydrate, and use methods



to keep cool. Environmental health and safety (EHS) professionals worldwide have also implemented wearable PPE that protects industrial workers from heat exposure with the use of auxiliary and personal cooling systems, such as water and air-cooled garments and clothing, cool packs, cooling vests, and damp outer garments, many of which are used during worker rest periods when the individual is not actively working. These solutions have a wide span in user scalability, maintenance, and cost. While they are practical tools for prevention, none are

used to actively predict if and when a worker is at risk for a heat-stress event.

The composition of the industrial workforce globally is as deep as it is wide. Age, gender, physiological makeup, previous medical history, and tenure are significant variables in an industrial worker's ability to effectively manage heat. Everyone is different and so is their body's response to heat. Heat risk prevention needs to be custom-tailored to every individual's physical characteristics. While this makes sense, it is



often not put into practice when it comes to heat safety.

Most heat stress management programs are broad in nature with a “one size fits all” application. When heat prevention is universally the same for all, workers can be exposed to the dangers of not knowing, or choosing to dismiss, potential recommendations to care for their body during daily work in hot and humid conditions. In addition, the pressure to maintain or surpass productivity quotas or “push through” discomfort so as not to disappoint team members, further exacerbate the dangers of working in the heat. These tendencies to overachieve can quickly turn to catastrophe on the job should an individual ignore the warning signs of the onset of heat injury, which endanger the worker as well as the rest of the team, and the employer.

Projects, and entire companies, can suffer when heat risks aren’t managed effectively. According to OSHA estimates, the approximate cost

for a singular occupational heat prostration injury for a manufacturer, as an example, operating at a 20 percent profit margin, leads to a direct cost of close to \$38,000 and indirect cost of \$41,000. The estimated revenue to offset these costs can easily surpass \$200,000. Most organizations in both the private and public sector operate on slim margins as is, so the magnitude of heat risk related events can be devastating to the bottom line.

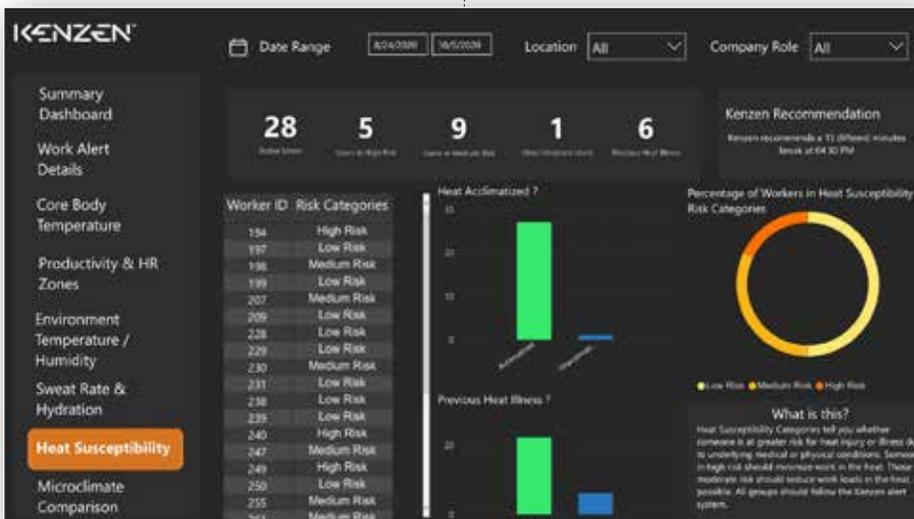
There are a few solutions to curb the frequency and severity of heat-related incidents. Environmental health and safety management, innovation teams, and even C-Level executives in industrial and government segments are constantly researching ways to improve their approach to heat stress monitoring, not only consider-

ing prevention methods, but prediction techniques as well. Several organizations have incorporated and adopted the use of wearable, smart PPE devices with the goal of 100 percent heat risk prevention.

While a 100 percent goal may seem lofty, it is fully attainable with the right safety solutions and policies. Currently, there are a handful of options that monitor worker physiological readings to warn both workers and health and safety managers if there is risk for a heat-related incident involving a worker. Many wearable solutions require users and other personnel to manually check physiological readings, which can be helpful on the job but often cumbersome to implement at scale in day-to-day workflow with a large workforce. Others provide an alert tree system that trigger warnings to both the user and managers if a worker meets the criteria for being at risk of heat stress, such as the worker’s elevated heart rate or core body temperature.

The effective deployment of a wearable device in the industrial workspace is determined by the willingness of workers to adopt technology as a standard part of their work preparation, the EHS team’s enforcement of device use, and the reliability of the overall solution. Many EHS professionals are also looking beyond the day-to-day use of devices to gather data over the long term to gain deeper insight into ways to bolster worker health and productivity. As more industries start onboarding smart PPE into their daily workflow, expect to see wearable devices monitoring physiological wellness commonplace in the 21st century workplace, where heat stress will be an increasingly important challenge to manage. Soon, monitoring devices will be as much of a best practice in safety as steel-toed work boots, hard hats, and protective eyewear on the job. **DP**

Phillip Davis is a manager on the team at Kenzen, the smart PPE innovator focused on physiological monitoring and the prevention of heat injury and death among workers. Davis has a decade of research experience in industry and academia related to human physiology and wearable devices, and advises companies on heat stress physiology and dehydration.





HOT #TAGS



#UtilityExpo21

Notification Centers and stakeholders across the country are launching creative campaigns to promote safe digging for 811 Day, August 11. A few standout efforts this year include a \$3,000 landscaping makeover offered by Texas811, a virtual scavenger hunt by Arizona 811, and a locally brewed "811 Pilsner" being rolled out by Okie 811!



#UtilityExpo21

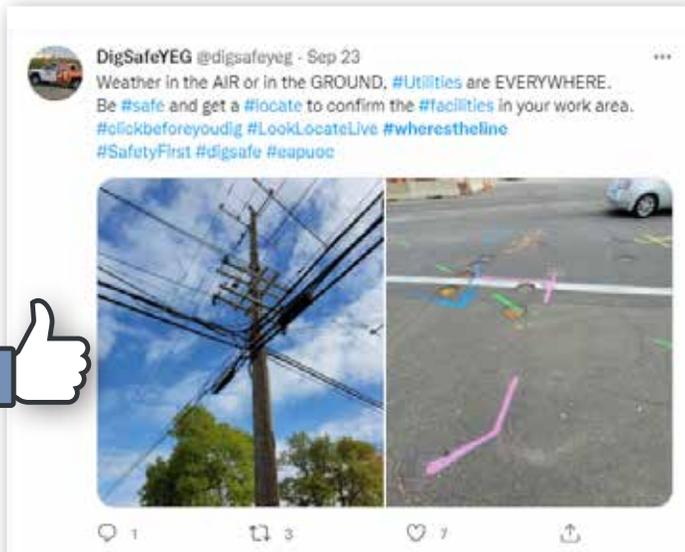


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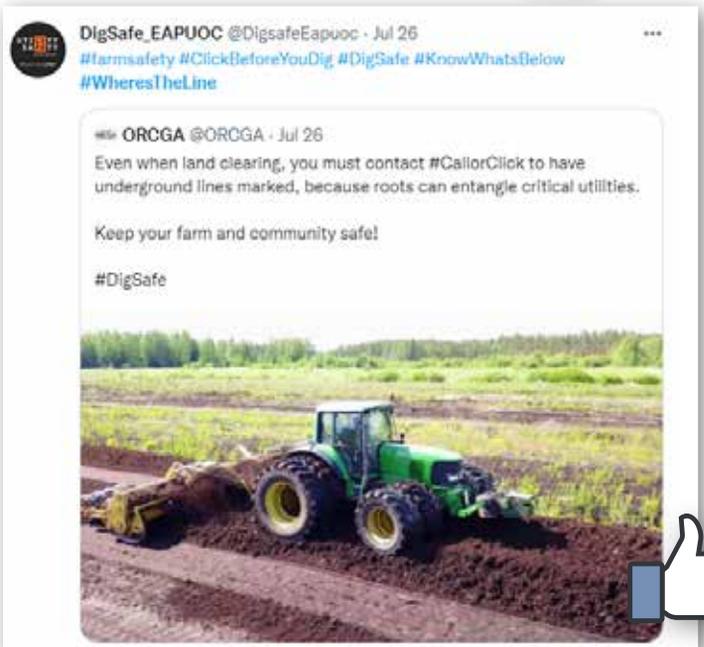
WHAT'S TRENDING



Follow these companies on Facebook



Safety starts with a locate, and "#WheresTheLine" reminds contractors and homeowners alike to call for a locate and look for the signs of buried utilities before digging.





The #IMakeAmerica hashtag, led by The Association of Equipment Manufacturers (AEM)

The Association of Equipment Manufacturers is a trade association representing equipment manufacturers in agriculture, construction, forestry, mining, and utilities. The #IMakeAmerica hashtag is one piece of AEM's campaign to support U.S. manufacturing through awareness. Along with a robust social push, large 'I Make America' decals were placed on many American manufactured machines at The 2021 Utility Expo.

Learn more about #IMakeAmerica at [IMakeAmerica.com](https://www.imakeamerica.com)



WHAT DO YOU THINK?

This issue's question:

Do you see augmented reality being used in your field within the next 10 years?

- A) Yes
- B) No

(Learn more: dp-pro.com/augmented-reality-becomes-a-reality-in-oil-and-gas)

To answer click **HERE**

<https://dp-pro.com/survey/>



Fall Issue Results:

Will the potential upcoming boom in national infrastructure spending spark proportional investment in damage prevention?

- A) Yes, (80%)
- B) No, (20%)



Pipeline Leak Detection

With 2,559 members, the Leak Detection Group's main purpose is to discuss every aspect of oil & gas pipeline leak detection. [DP](#)



LEADING PEOPLE



BY MONICA WOFFORD, CSP

It Is All About the OUTLET

CONNECTED. A word providing instant relief when in need of a Wi-Fi signal. Yet, with us humans, we seem to have forgotten that connected and connections are not synonyms.

In times before we spoke of ourselves in tech terms, as those in need of disconnecting, unplugging, or finding a way to recharge, as if we were pieces of equipment, we referred to ourselves as human. In fact, at one time, we craved a true and genuine connection, and no one meant connected to something electronic. The craving hasn't ceased, just the effort to fulfill it. They have become way less. Now we fight to find a signal but spend little time in signaling interest in relationships. We're losing the skillsets to connect with a human. We get less fulfillment and find ourselves looking for more escape routes than plate covered receptacles. But one week of vaca-

"We're losing the skillsets to connect with a human."

tion doesn't fix it. The void just keeps growing, but these options over time will increase your chances of plugging into people and finding a bit more fulfillment.

Check your Habits

Technology has shifted from optional to required. Literally surrounded in our cars, stores, and lives, it is getting harder and harder to escape it. In the grand timeline of human existence, the challenge is how we manage it. We're still new at it and the habits exist with very little awareness. A check-in is warranted. If you are craving fresh air and nature, go get it. If you're more up to speed on the news than an anchor person, give yourself a time out in the tech department. Want to feel less disconnected and isolated? Drag yourself away from your habitual viewing of screens and grab a meal in person with a fellow human.

Build the Muscles

Discipline, stamina, and awareness are states and skills, not natural attributes. They rely on practice and get better with repeated attempts at maintenance. Great biceps don't come from one push-up, but we fall for instant gratification ads to the tune of billions of dollars for those producing the commercials. Same for technology. Building the muscles of making human connections won't happen in the one day you left your phone at home by accident. They happen on the after-

noons you put the phone on its charger and teach your kids how to throw the best pitch ever. No social media ad is vying for you to build human connections, but every post on every medium wants you to

"Building the muscles of making human connections won't happen in the one day you left your phone at home by accident."

spend money in their smart hotel, on their wi-fi equipped vehicle, or on a drug to instantly numb lonely feelings. Would you prefer to build the muscles that reach for that wallet or those that connect you to another really cool human?

Find the Balance

Our world has become one in which technology is not a phase but embedded in all daily activities. The pendulum of innovation has swung wide in the tech direction, and you'll need conscious effort to bring it toward the middle. Spend as much time calling friends as you have on Zoom meetings. Spend as much time chatting in the hall at the conference in Phoenix, as you've spent waiting on a graphic card replacement for your laptop. Strike a conscious and purposeful balance between the outlets you plug into and the outlets you create to disconnect from them.

It really is all about the outlet. Those created by technology are easy and dangerously tempting. We scan our feed when bored. We buy what we feel is missing and we spend endless hours of fear and frustration when electronically disconnected. The main outlet we've been looking for all this time is not one electrically charged, but one emotionally fulfilling. Perhaps it's time we put forth the effort to find it. **DP**

Monica Wofford, CSP is a leadership development specialist, keynote speaker, and executive coach. For more information on her books, training firm or coaching services, call 1-866-382-0121, or go to www.ContagiousCompanies.com.

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CHOOSING

that are Right for You

BY MICHELE MOE

HOTELS ARE FILLING, air traffic is increasing, and live conferences and events are on the rise again! Everyone who includes these important gatherings in their business strategem are happy to see that the world is opening back up. Of course, as more and more live event invitations cross our inbox, that age-old question arises... Which events are the best ones for you – or your team – to participate in?

Unless you're Mark Zuckerberg or Warren Buffett, chances are your travel budget isn't going to allow you to participate in every event that looks interesting (and let's face it, even if you are Mark or Warren, your schedule probably isn't going to allow it either). So how do you decide which events are worth your time and money? Answering these questions will help you get the most bang out of your hard-working buck.

► What are your goals?

It's important to know what you want the event producers to deliver before you decide which events to attend. Do you want to meet and connect with like-minded colleagues? Do you want to grow your network? Do you want to attract potential customers? Do you want to learn about new technology or industry trends?

Take some time to write down your top goals for a conference and then spend time exploring the event website (or even call the event producers) to see how what they offer aligns with the deliverables you want to receive. (BTW, any event producer who doesn't give you direct access to a live voice who knows what's going on when you have a question should probably get a checkmark in the "nope" column.)

Keep in mind, that you may not find everything you need at a single event. An event produced by an association you are a member of is likely to help you connect with people who have the same interests and passions you do. These events are great opportunities for deep dives into well-known topics and should be embraced if you are looking to explore nuances of your field(s) of expertise. An industry event is more likely to expose you to the newest tools and technology available as well as broaden your network and expose you to creative and interesting solutions presented by different stakeholder perspectives. A symposium is often a smaller event where experts gather to discuss a very focused topic while a conference often offers a broad range of topics with a specific overlying theme.

The best value is most often found by combining several of your top event picks to give you well-rounded exposure to your area of interest and the industry in general.

► What is your budget?

While the price of an event should never be the sole determinant for participation, let's be honest, you want your money's worth. Don't just look at the price of admission! Make sure you understand what all is included in that ticket. What meals, if any, are covered? Are networking activities part of the package? Do you have to be a member to attend or get the best price? Is there early-bird pricing you should be aware of?

Don't forget to think about travel and accommodations. What is the room rate for hotels in the event block? How close is the hotel to the event? Is transportation to and from the hotel and the convention center provided?

What about the location? Is it easy to fly (or drive) to? What will the flight cost? How long will it take to get there? How many layovers are involved? How does time-change affect your travel?

Finally, consider add-on expenses you may not have thought of. Will you need to invest in a professional wardrobe? Will you have clients attending that you should socialize with? Often, the true cost of an event isn't the price of the ticket, but all the incidentals you need to pay for beyond the price of admission.

EVENTS



► Who else is attending?

This is a surprisingly important question to ask yourself. Are the people you want to connect with going to be there? Can you meet with those who will provide future business, help you expand your network, or provide you with the social interaction live events promise?

You should take into consideration the size and format of the conference. An international event will often bring out all the major industry players, an association event often has fewer people, and a more intimate environment. Which better suits your needs or interests?

► Who is speaking?

Pay attention to the keynotes, educational providers, panelists, and other organized speakers at the event. Are they people who have a message that will help you in your role? Are they industry experts who can speak knowledgeably on the topics you want to learn about? Are they service providers who offer the solutions you need?

► What topics are being talked about?

It's important to know the right people are speaking about the right topics at the event you are attending. Peruse the educational content offered carefully. Are they topics you are interested in? Are the speakers respected in their field and in a position to offer information that will support your needs?

► What did past attendees think?

For any event, the proof is in the pudding. Did they live up to the promises they made in their advertising? Be sure to check the website of the event for statistics, endorsements, and quotes from past events. Be skeptical of any event that doesn't willingly provide documentation of the claims they made.

Most events have their own social accounts and hashtags. Review them so you can get an idea of who's interacting. This is important information. Are they the people you want to connect with? Are they well known in your industry? Are they making comments that drive you to learn more?

► What are you missing if you do (or don't) attend?

Let's be real. FOMO exists. Are the "movers and shakers" of your industry present? Will decisions get made in your absence if you aren't there? Is this an event people will be talking about all year, and you won't be able to contribute to the conversation?

Almost every event that meets your needs will also impact your ability to participate. Is the event taking place at a time when being away from the office will be a big mistake? Are there important decisions that may need to be made in the office while you're away? Is it the busiest time of the year? Will the boss frown on you being "out" while important things are happening?

It is crucial to begin planning for attendance at an event months in advance to make sure your schedule works for you – not against you.

► Finally...

There are many events out there that want your attention (and attendance). Be smart about which ones you attend. Make sure they deliver on their promises, provide the value you expect, and open doors that will advance your goals. Those events are the right ones for you! **DP**

Michele Moe is Managing Director of Infrastructure Resources, producers of the Global Excavation Safety Conference. To learn more about this event, visit GlobalExcavationSafetyConference.com, or contact Michele direct at Michele@IR-SavingLives.com or 651.242.8976.

COOPERATIVE RELATIONSHIPS ESTABLISHED TO ADDRESS UNDERGROUND INFRASTRUCTURE SAFETY

BY DR. TOM ISELEY & SALEH BEHBAHANI



Existing utilities are at varied depths, in varied soils, made of varied materials, are varied sizes and have varied access. The importance of accurately locating and depicting existing underground utilities comes more obvious each day to ensure successful construction projects. It has been reported that at least 70% of projects experience delays and/or budget overruns due to utility conflicts. Inaccurate utility information means increased risk of utility hits. It is important that the underground infrastructure industry realize that the continued increase in the number of subsurface utility hits is unacceptable. Late utility relocation raises public safety risks due to longer-lasting work zones, and exposure to worker strikes and striking a utility line occurs every minute somewhere in the USA.

While at Purdue University, Dr. Tom Iseley has established a cooperative relationship with the Buried Asset Management Institute-International (BAMI-I), Utility Engineering and Surveying Institute (UESI) and Trenchless Technology Center (TTC) to address the issue.

Purdue University and the BAMI-I teamed up with the ASCE'S Utility Engineering and Surveying Institute (UESI) and conducted a five-day Utility Investigation School at the Lawrence Technological University in Southfield, MI in August. A total of 20 students attended this school from the Michigan Department of Transportation, Somat Engineering of Ohio, Inc., Utility Mapping Services, Inc., Colliers Engineering & Design, Kim Engineering, City of Kalamazoo, Ground Penetrating Radar Systems, LLC, OHM Advisors, NTH Consultants, Ltd, Lina T Ramey & Associates, Cobb, Fendley & Associates, Inc., Costello, Inc., HKS Utility Services, LLC, and NTH Consultants, Ltd.

Also, the Construction Engineering & Management (CEM) at the College of Engineering Purdue University & the ASCE'S Utility Engineering and Surveying Institute (UESI) conducted the 10th ASCE UESI / Purdue UIS School in 2021. This five-day School was held in September in West Lafayette, IN. One of Purdue CEM faculty (Prof. Hubo Cai), along with his graduate students, participated in the course and did the demo with their GPR unit. Prof. Cai made a presentation on his research projects regarding locating underground utility with GPR, which was directly related to the scope of this five-day school. People from six states participated in this short course. The class was intended to address the two performance goals of ASCE 38: How can a project be designed so as to have minimal utility issues during project development, and how can the professionals protect themselves against utility-related claims. The next UIS will be conducted on December 13-16, 2021 at the Colorado School of Mines (CSM) in Golden, Colorado.

The Trenchless Technology Center (TTC) at Louisiana Tech University (LA Tech) hosted it's 4th Auger Boring School at its campus in Ruston, LA on Oct 25-29. For the second time, TTC partnered with the Construction Engineering and Management Department at Purdue University. The event was held at the BERT (Barbera Education, Research & Training) Facility. The BERT facility honors the past through the recognition of the contributions of the Barbera family (Leo & Jim) to the trenchless industry. It drives the future of the industry through the establishment of a world-class field training and research facility. This facility is available for the research, development, and training for the entire

trenchless technology industry including TTC Specialty Schools such as Auger Boring School and Utility Investigation School. In addition, it is available for international equipment and material manufactures and technology providers for R&D and technology validation.

The five-day ABS provided attendees with the knowledge and background needed to understand the important components of Auger Boring (AB) operations required to produce successful projects. In addition to the classroom lectures, practical sessions were held where participants were offered hands-on experience with the AB equipment.

Most industry leaders agree that one of our underground industries greatest challenges today is a work force skilled and knowledgeable in disciplines related to our underground infrastructure. Construction Engineering & Management (CEM) at College of Engineering Purdue University has risen to the forefront to aggressively meet this challenge through the commitment to construct the first state-of-the-art underground field training facility at the Steel Bridge Research, Inspection, Training, and Engineering Center (S-BRITE) in West Lafayette, IN. The S-BRITE Center is part of the larger Center for Aging Infrastructure (CAI) which is almost 22 acres. This facility will be the industry's resource to provide dedicated programs for:

- **Work force development**
- **Professional development**
- **Undergraduate & graduate students**
- **Train the professors/instructors (2 & 4 year programs)**
- **Industry-University Cooperative Research Projects.** 

For more information regarding the S-BRITE Center, please contact Dr. Tom Iseley, diseley@purdue.edu or visit: <https://engineering.purdue.edu/CAI/SBRITE/Facilities/CAI-Construction>.



Global Locate MASTERS

Celebrating Locate Technician Excellence

Championship Competition

Wednesday, March 2, 2022

Phoenix Convention Center • Phoenix, Arizona

GlobalLocateMasters.com

-Hosted by



Global Locate Masters pits top locate technicians from around the world against UTTO's Virtual Locate Simulator. Held in front of a live audience of

peers and industry leaders, Global Locate Masters evaluates your performance against other competitors and recognizes, rewards, and shines a spotlight on the best of the world's utility locating professionals.

2022 Global Locate Masters Champion: \$1,000 Cash Prize

- Name inscribed on the Global Locate Masters Perpetual Cup on display annually at Global Excavation Safety Conference.
 - Individual recognition through magazine features, publicity quotes on social media to promote excellence in locating, and recognition of achievement in all 2022 Global Locate Masters media coverage.
 - Company recognition through 2022 Global Locate Masters media coverage.
- 2nd Place:** \$750 Cash Prize
3rd Place: \$500 Cash Prize
Top 10: Commemorative plaque and recognition in dp-PRO

How to be crowned the 2022 Global Locate Masters Champion & Spokesperson

► Step 1: Qualify

Choose the qualifier that works best for you!

- Employer Nomination: Employers can nominate employees who exemplify excellence in locating here: GlobalLocateMasters.com.
- Regional GLM Qualifying Event: Compete in a regional Global Locate Masters qualifying event (FREE) and be a top finisher.
- Locate Rodeo (National or Regional, Top Finisher): Compete in a National or Regional Locate Rodeo competition.
- Companywide Competition: Contact Jeanne at UTTO for details on hosting a Qualifier in your area: 239.313.9350 | jeanne@utto.com
- None of these options right for you? Don't worry! Pre-qualify for FREE onsite Tuesday, March 1 at the Phoenix Convention Center. Pre-qualification required to participate in Championship on Wednesday, March 2.

► Step 2: Register

- For Employer Nominations, registration is completed at the time of nomination.
- All others register at GlobalLocateMasters.com by selecting 'Register.'

► Step 3: Compete

- Details on your competition time and other pertinent information will be sent to you after your registration.
- Check in at Global Excavation Safety Conference registration at the Phoenix Convention Center any time Tuesday or Wednesday prior to your competition time.
- Be on the expo floor ready to compete when it is your scheduled time.

Access to Global ESC Exhibit Hall included!
Expand your experience by upgrading your registration to include the Global Excavation Safety Conference education for \$811



Gopher State One Call Launches Statewide Pilot Program (Barbara Cederberg, Fall 2021)

“Great article”
- Tyler Bristow, Centerline Mapping

Editor’s Note: GSOC is offering a session at the Global Excavation Safety Conference, March 1-3, 2022, in Phoenix, AZ, addressing this topic and offering insight and advice on setting up a local chapter in your area.

Five Tips to Address Risk Normalization (Dr. Lindsay Jenkins, Fall 2021)

“Well said 👍”
- Scott Henley, retired from Canadian Standards Association



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Calendar of Events

Due to COVID-19, many events have rescheduled or transitioned to a virtual environment. Be sure to verify the status of all events you are planning to attend. (V = Virtual Event)

December 2021

- 9 NACE FMS Product Showcase 2021 (Kuala Lumpur, Malaysia)
- 13-17 23rd Annual NACE New Orleans EDUCATION WEEK (New Orleans, LA)

January 2022

- 11-13 North Green Expo (Minneapolis, MN)
- 12 Louisiana Ground Water Association Convention (Marksville, LA)
- 17-20 World of Concrete (Las Vegas, NV)
- 19,20 Wisconsin Broadband Association 2022 Broadband Forum (Stevens Point, WI)
- 21-23 Inspections Conference (Houston, TX)
- 23-26 APGA Winter Board & Committee Meetings (Washington, DC)
- 24-28 API 2022 Exploration and Production Winter Standards Meeting (Dallas, TX)
- 25-27 Underground Construction Technology (Fort Worth, TX)
- 26-28 DistribuTECH International (Dallas, TX)
- J31-F2 Louisiana Damage Prevention Summit (Baton Rouge, LA)
- J31-F4 Pipeline Pigging and Integrity Management (Houston, TX)

February 2022

- 8-10 ORCGA Damage Prevention Symposium (Niagara Falls, Ontario)
- 9,10 Liberty Bell Corrosion Course (Blue Bell, PA)
- 13-16 NTCA – The Rural Broadband Association Event (San Diego, CA)
- 17-22 DCA's 61st Annual Convention (Phoenix, AZ)

- 21-24 AWWA | WEF – The Utility Management Conference (Orlando, FL)
- 23 Nebraska Excavation Safety Summit (Lincoln, NE)
- F25-M2 PCCA 77th Annual Convention (TBD)
- F28-M5 2022 DCA Convention (Cancun, Mexico)
- F28-M6 Damage Prevention Week
- 28 Utility Locator Skills Enhancement Workshop (Phoenix, AZ)
- F28,M1 Global GPR Congress (Phoenix, AZ)
- F28-M2 Global Locate Masters (Phoenix, AZ)

March 2022

- 1 Leading Practices for Cross Bore Safety Course (Phoenix, AZ)
- 1 Damage Investigation & Claims Resolution Workshop (Phoenix, AZ)
- 2 Combining Electromagnetic Locators and GPR for a Complete Locate Workshop (Phoenix, AZ)
- 1-3 Global Excavation Safety Conference (Phoenix, AZ) **DP**

Abstract Submissions Now Being Accepted:

- Global Excavation Safety Conference
[IR-SavingLives.com/submissions](https://www.ir-savinglives.com/submissions)
- Global GPR Congress • [GPRcongress.com](https://www.gprcongress.com)
- Leading Practices on Cross Bore Safety •
[CrossBoreSafetyCourse.com](https://www.crossboresafetycourse.com)

To include your event in an upcoming Calendar of Events schedule, email karin@IR-SavingLives.com.



Utility Training Academy (UTA) specializes in damage prevention training programs designed to build and advance the knowledge and skills needed for accurate line locating and excavation safety.

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- Pipeline Locator Training
- Excavation Safety Training

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Richard Broome

Driving Safe Digging in the UK

RICHARD BROOME WAS INSTRUMENTAL IN THE DEVELOPMENT OF LINESEARCH BEFOREUDIG (LSBUD), A JOINT VENTURE BETWEEN HIS EMPLOYER, FISHER GERMAN LLP, AND PELICANCORP.

As the Managing Director of the online service, Richard has been responsible for the provision of over three million safe digging searches per annum and helps protect over 900,000 km of LSBUD members' assets including gas, electricity, high pressure oil, water and fiber optic networks. Phil Cornforth, Damage Prevention Specialist UK/EMEA, PelicanCorp, notes, "With no legislation in the UK requiring a utility owner to use a notification service, these numbers represent a phenomenal achievement." Recently, Richard was instrumental in enabling National Grid and Cadent Gas (two of the biggest asset owners in the UK) to facilitate their record data through the LSBUD website. John Robinson, CEO and Chief Surveyor of John Robinson and Associates, believes, "Richard should be recognized for being the voice of calm, reason, and integrity when dealing with commercially sensitive clients and data."

Richard, on behalf of LSBUD, attends just about every regional and national exhibition in the UK connected with utilities and land management. He organizes an annual National Damage Prevention Day which is well attended nationally and internationally. His passion for damage prevention in the UK has led to him being invited to speak at international Damage Prevention conferences including the Oceania Damage Prevention Conference, held on the Gold Coast in Australia, and the prestigious Excavation Safety Conference in the USA.

Richard organizes monthly breakfast meetings where a different expert is showcased to explain their roles, services, products, and experience followed by Q&A sessions.

He gives up his own free time to promote damage prevention via trade groups and government initiatives for the good of the industry.

As a member of the Utility Strike Avoidance Group's Steering Group, he promotes collaborated learning on utility strikes across the UK and innovative solutions to promote excavation safety. Richard has been the driving force behind USAG's biannual Utility Strike Damages Report. This important document is the only reliable source of third-party damage data in the UK.

A fully qualified RICS Chartered Surveyor, CAAV Ag-



ricultural Valuer & APC Assessor, Richard provides consistent delivery of high-quality land agency management and maintenance services in the utilities and infrastructure sector through various roles.

Richard contributes heavily to LSBUD's annual Digging Up Britain Report and is a valued contributor to *dp-PRO* and other utility press, writing on safe digging, asset protection, and constructively challenging government to better support the UK's damage prevention efforts.

Richard has given his time to join working groups, writing and re-writing PAS128 (the British Standard for specification for underground utility detection, verification, and location) and PAS256 (the British Standard code of practice for capturing, recording, maintaining, and sharing location information and data for buried assets).

According to Jack Quinney, Sr Account Executive, Energy PR, "Richard lives and breathes the subject [of damage prevention]. When I first heard him describe LSBUD he said, 'We do the right thing, even when no one is watching.' Five years on and these words are still the firm basis on which he runs LSBUD, protecting people and assets from third-party damage."

Richard Broome definitely deserves the title of Damage Prevention Hero. 

“Richard should be recognized for being the voice of calm, reason, and integrity when dealing with commercially sensitive clients and data.”





We listen. We adapt. We dig in.



“I really enjoyed the webinar, and I was glad to speak. It’s a big topic in our county and I just presented your farm and ranch guide to my county commission stating I’m going to be handing it out during future training and pesticide applicators renewals in the spring.”

- *Extension Agent, Dunn County, NDSU*

Enhance your public awareness efforts with a unique, engaging approach to rural outreach. The Pipeline Ag Safety Alliance works closely with the National Association of County Agricultural Agents to help deliver safe digging education to farmers and ranchers across the nation. Tracking our “educate the educator” approach with annual documentation, we realize there is no one size fits all.

“Thanks for a great presentation last week! It was very good, and as the Farm & Ranch Safety Coordinator for NDSU Extension, I look forward to resources like this to help our Extension staff across the state!”

-*Extension Agent, Steele County, NDSU*

Learn more at PipelineAgSafetyAlliance.com

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Safety Together





2021

• STAFF REPORT •

Damage Prevention Hero of the Year

Kelley Heinz (Spring, 2021)

A Damage Prevention Hero Who goes Above and Beyond her Responsibilities to Promote Safety and Damage Prevention Outreach! Kelley is the brainchild behind the Ready, Respond, Recover Program (learn more in *dp-PRO*, Spring 2021). She brings more than 20 years of experience to her current role as Damage Prevention Manager and Claims Investigator with ComEd. She has served as an active member of JULIE's Public Education Committee for more than five years. Dedicated to damage prevention and safety, Kelley has written powerful articles for *dp-PRO* and is a highly rated speaker at the Global Excavation Safety Conference. She led the campaign to have Call Before You Dig decals represented on all ComEd vehicles.

Read the full article here: dp-pro.com/damage-prevention-hero-kelley-heinz



Dora Parks (Special Locate, 2021)

Just call her "Miss Utility." Dora Parks is passionate about damage prevention. She has tirelessly promoted the dig safe message to people of all ages, including professional excavators, contractors, utility owners, homeowners, and even children – generally, anyone who might excavate, demolish, or disturb the earth. As Secretary of the Maryland/DC Damage Prevention Committee, Dora and the Committee developed a Damage Protection Training Program. Dora is the first female board member of the AUC of MD and belongs to the PWC of MD, the Anne Arundel Contractors Association, and NUCA of DC. Dora is instrumental in the execution of the GCDPTC, Locator Achievement Awards, and Touch-a-Truck program.

Read the full article here: dp-pro.com/damage-prevention-hero-dora-parks-just-call-her-miss-utility

George Kemp (Summer, 2021)

Definitely Not Someone Afraid of a Challenge. Along with his "day job" as VP Safety, Government Affairs & Quality Assurance with MetroNet, George is currently serving as Chairman of the Board for Indiana 811, during which time he led them through both a software and leadership change. He also serves as Alternate Trustee for OHIO 811, Secretary for NTDPCC, and is a member of both the CGA Education and Best Practices Committees. George is a big advocate for getting suppliers involved in exercising a partnership for damage prevention/best practice guidelines. He not only trains associates and subcontractors, but he gets out in the field to ensure accountability and monitors the work being done.

Read the full article here: dp-pro.com/damage-prevention-hero-george-kemp



Bruce Campbell (Fall, 2021)

Bringing New Ideas and Processes to Damage Prevention. Bruce Campbell has brought new ideas and processes to Michigan, and the One Call industry, since the early 2000s when he was named the first excavator representative on the MISS DIG 811 Board. Bruce's gift for bringing differing viewpoints together to have difficult conversations has led to the creation of the MDPB (Michigan Damage Prevention Board), TIME (Ticket Initiation Management Execution), and LAC (Locator Action Committee), which all focus on improving the MISS DIG 811 processes for stakeholders. Currently, Bruce is committed to the continued development of the Facility Notification Center Association (FNCA), which he believes is the evolution of the One Call System.

Read the full article here: dp-pro.com/damage-prevention-hero-bruce-campbell



Richard Broome (Winter, 2021)

Driving Safe Digging in the UK. Instrumental in the development of LSBUD, the UK notification service, Richard actively recruits facility owners to participate in this entirely voluntary system. Richard regularly attends local, national, and international damage prevention events, and is a frequent contributor to publications, speaking out tirelessly for damage prevention. He organizes an annual National Damage Prevention Day, contributes heavily to LSBUD's annual Digging Up Britain Report, has been the driving force behind USAG's biannual Utility Strike Damages Report, the only reliable source of third-party damage data in the UK, and has given his time to re-writing PAS128 and PAS256.

Read the full article on page 10.

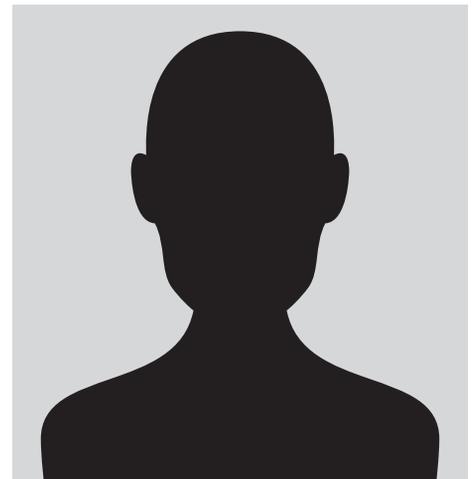
2021 Damage Prevention Hero of the Year

- Kelly Heinz
- Dora Parks
- George Kemp
- Bruce Campbell
- Richard Broome

Snap a pic of your vote and email it to info@emailir.com or go to dp-pro.com/dp-pro-hero-of-the-year-voting to vote online. 

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Winner
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NEWS



CALIFORNIA WILDFIRES Make Underground Utilities a Priority

(ASU Newswire) – Despite years of declaring that conversion of high-voltage, long-distance electrical transmission lines to underground installation was cost prohibitive, Pacific Gas & Electric (PG&E) recently announced plans to spend \$20 billion over the next 10 years to bury 10,000 miles of power lines in wildfire-prone areas of California.

The move comes after PG&E filed a preliminary report with the California Utilities Commission noting that this summer's Dixie Fire, which decimated over 460,000 acres in Northern California, may have been ignited by a blown fuse on one of its utility poles. The company has been linked to multiple fires in California.

"This action taken by PG&E, while motivated by tragic circumstances, highlights the importance of adopting advanced new technologies," said Samuel Ariaratnam, a nationally-recognized expert in trenchless technology. "Over time, these upfront expenses will pay dividends in diminished maintenance, repair and replacement costs and, most importantly, it will save communities and lives, not only from wildfires but also from other catastrophic events like ice storms, hurricanes and tornadoes."

Ariaratnam also indicated that some other key professional organizations will look at what PG&E is doing with much interest, including the Power & Communications Contractors Association, the Distribution Contractors Association, the National Utility Contractors Association, the American Society of Civil Engineers, and the North American Society of Trenchless Technology.



MICHELS CANADA Completes Canada's Longest HDD Installation

Michels Canada used horizontal directional drilling (HDD) to complete a 3,540 meter crossing in Burlington, Ontario, under the Hidden Lake Golf Club. The installation is part of Imperial's Waterdown to Finch Project, a proactive replacement of approximately 63 km of the Sarnia Products Pipeline.

The Hidden Lake HDD is the longest successful HDD installation in Canada to date, surpassing the previous record of 2,195 meters.

"The completion of record-length trenchless projects like this one demonstrates our capabilities for safe, environmentally sound ways of constructing new or replacing existing utility lines," said Gary Ziehr, Vice President, Energy, Michels Canada. "When HDD and other trenchless methods are used to complement traditional open cut utility methods, we are able to support our clients in safely delivering needed energy supplies to their customers."

A Smart System for Mapping Underground Infrastructure

(Globes) - 4M Analytics is a company based in Israel that is the brainchild of military buddies Itzik Malka and Nir Cohen. 4M Analytics started as a subcontractor clearing mines and eventually became the main contractor of the Ministry of Defense. Eventually, Malka met Yoav Cohen, who had experience in geographical intelligence gathering. With their military experience and knowing how to map the subsurface in detecting land mines, the three entrepreneurs have decided to turn their attention to another industry.

About a year ago, 4M Analytics changed direction and decided to apply the same technology it developed for a new use. Instead of land mines, it is now developing a smart system for mapping underground infrastructure such as gas, oil, sewage, electricity and communications pipelines.

“We knew we provided data about the upper layer of substructure, the first few meters below ground,” Yoav said. “Some companies map what’s happening aboveground and mineral companies map deep underground, but no one has focused on that top layer.”

Their new product integrates data from existing maps and blueprints with data from satellite images and aerial photographs. 4M is already working with Electra and Israel Electric Corporation. “We are conducting pilot projects abroad with large infrastructure companies. Our goal is to map all the infrastructure in the United States in less than three years and turn it into the underground Google Maps, centralizing all available data about the subsurface.”

AMEREN IMPLEMENTS “GAS SNIFFING” VEHICLE THAT DETECTS LEAKS

The Ameren mobile leak detecting unit, aka “gas sniffer”, is rolling around the St. Louis metro-east in search of gas leaks. Technicians walk along the ground with a survey device that finds leaks much quicker and is more sensitive than previous technologies.

There are several components integrated into the hybrid vehicle. The unit in front pulls in particles from the atmosphere. A sonic and monitor on the roof detects wind speed and direction. A GPS unit on the roof sends all this information back to the analyzer in the truck. The analyzer uses laser-based technology to sense methane in the atmosphere.

Ameren officials say the vehicle will allow them to find leaks quicker and spend more time fixing leaks instead of looking for them. Testing on the “gas sniffer” is ongoing, but early results are positive.

Oil Spill off California Coast Causes Environment Harm

A 13-square-mile oil spill off the coast of Southern California forced the closure of a pipeline and prompted officials to close beaches. The source for the leak was a pipeline owned by Amplify Energy, a Houston-based company.

Investigators have determined that the underwater oil pipeline was likely damaged by a ship’s anchor several months to a year before it ruptured. Coast Guard Captain Jason Neubauer, chief of the office of investigations and analysis, said it’s possible other ships’ anchors subsequently struck the pipe that brings oil to shore from three platforms out at sea. It now appears that many factors played a role in the pipe’s leak, including possible anchor strikes, stresses from being dragged along the seafloor and the corrosive forces of seawater. Neubauer said investigators have narrowed their search to large cargo vessels that would be powerful enough to move a 4,000-foot section of pipeline 105 feet across the ocean floor.

The exact size of the leak isn’t known, but the Coast Guard estimates at least 25,000 gallons and no more than 132,000 gallons. As of this printing, the Coast Guard has recovered 5,500 gallons of crude.

COLORADO CONTRACTOR GIVEN JAIL SENTENCE

A Colorado contractor was sentenced to 10 months in jail after one of his workers died in a trench collapse in 2018.

Bryan D. Johnson, president of residential and commercial general contractor ContractOne of Avon, pleaded guilty in June to two counts of reckless endangerment and one count of third degree assault. His sentence also included three years of probation, up to \$25,000 in restitution to the worker’s family, donations to local charities and safety training.

The employee was working in an eight-foot-deep trench attaching a copper water pipe to a main line when the trench collapsed and buried him. The trench had previously collapsed the day before the incident, “but Johnson ignored obvious signs to change his procedure,” OSHA says. The worker was also not trained in trenching; he was hired to install drywall and for carpentry work.

OSHA later cited ContractOne with one willful violation for not having a protective system to prevent a cave-in, and other serious violations including no worker hard hat or eye protection, no ladder or other means to exit the trench, working in a trench with accumulated water, and the trench had not been inspected by a competent person before workers entered. **DP**

DIRT FACTS CGA

EXCERPTED FROM THE 2020 DIRT ANNUAL REPORT

Reported Events

	2018	2019	2020
TOTAL EVENTS ENTERED	440,749	534,151	475,770
NEAR MISSES	4,198	2,525	2,329
DAMAGES	341,609	453,766	385,381

WANT TO KNOW MORE? WANT TO KNOW MORE? ACCESS THE ENTIRE 2020 REPORT AT CGA-DIRT.COM

3D Visualization of Utilities using Ground Penetrating Radar

BY DR. MICHAEL ARVANITIS

Ground Penetrating Radar (GPR) is an important tool for utility locators around the world as it detects both metallic and nonmetallic targets at different depths. The method itself has been around for more than 50 years, but most systems in the market offer limited visualization, both on-site and offsite.

GPR is a compact device that scans the subsurface in a non-destructive way. It can penetrate the surface from just a few centimeters down to tens or hundreds of meters, based on soil conditions and antenna characteristics. GPR emits electromagnetic (EM) waves into the subsurface and calculates the time these waves need to travel through the various subsurface material and return to the GPR receiver. This two-way travel time, along with a few other parameters such as the dielectric, provide the user an estimate of the target depth.

Currently, two different GPR technologies exist in the market - pulsed systems and stepped frequency devices. The pulsed systems send tiny pulses of EM wave down to the subsurface during periodic intervals, while the stepped frequency devices send continuous parcels of wave at different frequencies at the same time. In the past, due to computing limitations, pulsed systems were the preferred choice in the market. Despite their popularity, they have several drawbacks, like the frequency dilemma, where a user has to select multiple antennas at different frequencies to carry on different applications. Pulsed systems are limited by the central frequency of the antenna, so they have specific limitations in terms of depth and resolution.

Nowadays, stepped frequency is gaining popularity because with a single device you can sweep through the complete frequency spectrum, from low to high frequencies, so you can see depth and resolve small objects at the same time.



Figure 1
Google Earth View showing subsurface utilities (white tags on green scanning route).

A typical workflow for a utility locator includes the following steps:

- a. Quick subsurface scan using electromagnetic locators (EML)**
- b. Identify areas of interest**
- c. Pass over these areas with a GPR to locate the targets**
- d. Identify coordinates of the targets with a GPS or GNSS**
- e. Post process data on computer offsite**
- f. Export data on maps (typically linear graphics that represent pipes)**

We are working hard to make the workflow shorter and more effective.

Many utility locators, especially in North America, use EML as a quick and easy tool to scan large areas and get a rough image of what is beneath the surface. This gives an initial estimation of what is happening in the subsurface (step a), al-

lowing you to pick smaller sub-areas where GPR will provide validation and accurate information (step b).

EML detect targets made from conductive materials and will need to energize non-conductive targets to trace them, which is not easy, nor flexible. Typically, GPR can detect almost all types of targets, gives a deeper penetration, can provide B-Scans of the subsurface, and export this info into maps. With traditional GPR technology, it is not feasible to eliminate step a or step b. However, when GPR is equipped with mapping capabilities, these steps can be eliminated.

If a GPR user can collect data in real-time and visualize a subsurface map in 3D without the need for grids or post processing, there will be no need to scan areas with both EML and GPR, as the latter will be an all-in-one tool for the subsurface mapping professional.



The software is an iPad application that allows users fast and easy 3D visualization on site. Steps d, e, and f are eliminated or shortened significantly. Here is why.

With built-in GNSS capabilities, the software assigns every target on the screen very accurate coordinates, so step d is gone from your workflow. You must do nothing other than turn on the integrated GNSS received and off you go. Since every target has accurate geographical co-

ordinates, it is very easy to automatically export this data on GIS maps or CAD software, without the need to manually assign these coordinates. It is evident, that step f now takes less time.

Being able to see data on a linescan and on a map adds to the understanding of what lays beneath. You can skip any hyperbolas that are adding to the noise and concentrate only on hyperbolas that are repeating over the different linescans. You can annotate and determine the

type of targets with a simple click so that you visualize different targets with different colors (**Figure 1**).

Knowing your exact position during a survey offers a plethora of benefits including easier target interpretations, better understanding of where the quality of data is good or bad offering on the spot adjustments of your parameters.

Data can be post-processed onsite easily and fast with the powerful application, all without exporting data first to a computer. Step e is almost eliminated.

The most interesting aspect of the software is the visualization of targets using augmented reality onsite.

The software gives you the option to augment the subsurface data in the real world (**Figure 2**), exactly on the place where they are, making your job easier and safer. You know exactly what the subsurface looks like, and you can show it to others too. These tools of visualization ensure that digging is now safer. 

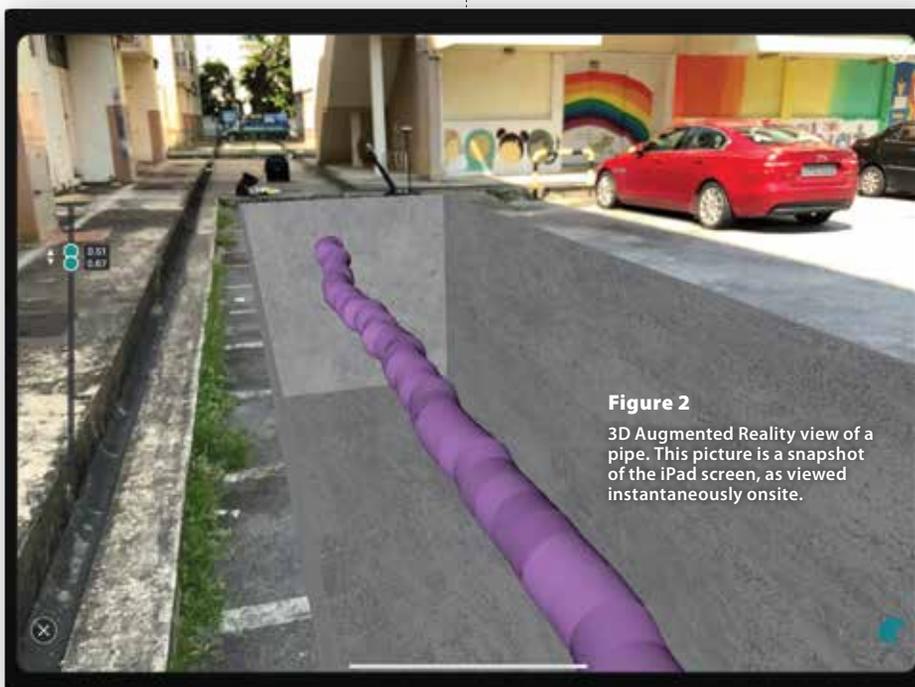


Figure 2

3D Augmented Reality view of a pipe. This picture is a snapshot of the iPad screen, as viewed instantaneously onsite.

Dr. Michael Arvanitis is Head of Product Strategy and Marketing GPR for Screening Eagle Technologies. He holds a bachelor's degree in mathematics and a PhD in Geophysics. Learn more at screeningeagle.com/en/products/260.



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For more details



Evolving The Construction Workforce

BY MARK SCHWARTZ

Today's construction site looks a lot different than it did 10 or 20 years ago. While there is still a plethora of heavy equipment and laborers, technology drives much of the process today - from virtual reality and lasers to robots and autonomy - enabling projects to be built better, faster, safer, cheaper, and greener.

Just as construction sites have changed, so, too, have the job titles that spearhead them. Now it's not uncommon to have a director of construction technology or an advanced technology manager onsite, helping to power the technology that connects the physical and digital worlds for today's agriculture, construction, transportation, and geospatial projects.

These jobs require a unique skill set that differs from the person who can successfully operate a front-end loader or excavator, as they must be able to efficiently connect hardware with software and know how to read, share and optimize the data that emerges. While this data is much easier to digest than before, it still requires a person with strong analytical and comprehension skills, capable of seeing patterns and knowing how to optimize data for the most productive and efficient results.

Given the new focus on technology, the construction industry has a unique opportunity to attract a different type of person, one who may have never considered construction in the past. This article offers a snapshot of who may be suited best for these roles and a look into whether the industry can reach and retain them.



UNDERSTANDING TODAY'S EMERGING WORKFORCE

The workforce that's emerging from college and trade schools is vastly different from the workforce of the past. According to the Lumina Foundation, 37% of college students are 25 or older and 42% are students of color, with college enrollment growing exponentially for minorities. Between 1996 and 2000, enrollment for African Americans grew 72% while Hispanic enrollment grew 240%. There are also more female than male graduates than in year's past.

Technology is also much more inherent in today's youth. They understand it, having grown up with computers, tablets, social media, and video games. Responding to and learning from digital platforms comes easily for them. This

makes technical degrees at universities, vocational and trade schools a great option because they provide immediate technical skills to make them "job-ready" from day one requiring less money and less time.

While the construction industry has the tech-focused jobs that would appeal to this generation, it still has a ways to go before it matches the diversity of today's emerging workforce. The industry currently has a significant Hispanic population (30.7% in 2018), but only 6.2% of construction professionals are African American, while 2% are Asian. In the same vein, the construction workforce is only about 10% women, despite making up 47% of the general workforce.

Significant efforts are underway to recruit more

ISSUESPOTLIGHT

WINTER 2021



women and people of color, but more needs to be done to reduce the gap, which is often compounded by negative perceptions of the industry. The incorporation of technology and technical roles is helping to change that as it appeals to more people with different and more diverse skill sets.

ATTRACTING NEW TALENT

Luckily, a lot is being done to help the emerging workforce become more aware of the technological focus of the construction industry. Trimble, a global construction technology leader, has been working to equip the next generation of leaders with the technology skills they need to succeed on the job by providing students and educators with the latest hardware and software tools.

This includes gifting state-of-the-art technology labs to universities worldwide, complete with a customized set of hardware and software solutions. The technology labs also come with ongoing support and training, with regular visits to each campus and granting new technologies as

they become available, helping expose students to the technology that's driving the industry forward and making them "job ready" on day one.

Many educational institutions have recently added new degrees that seek to provide students with the technical skills they would otherwise have to learn on the job, helping make them more attractive to employers. Purdue University and Georgia Highlands College in Rome, Georgia have begun offering Building Information Modeling (BIM) and Virtual Design and Construction (VDC) degrees, which provide students with a wide range of construction-related classes and regularly incorporate 3D modeling technologies. Meanwhile Vancouver Community College provides students with a structural steel detailing degree, which is the only educational provider in North America to do so. The program is so popular that it added staff this year to accommodate the large influx of students, some of whom attend remote classes from as far away as Scotland and Hong Kong.

THE ROAD AHEAD

Technology is clearly changing how we construct, enabling projects to be built much more efficiently and effectively than ever before. But just as it's changing the industry, it must also change the makeup of the workforce that employs this technology on a day-to-day basis.

It's clear that the emerging workforce has the right skill set to take on the new technology roles now inherent to the industry, but more work remains to be done to ensure these roles are given the right technology skills to succeed starting on day one. Various players in the industry and academia have made major inroads to-date. The passage of The American Jobs Plan by the Biden administration could help further the cause by highlighting the major projects and technological advances that will likely result from it. **DP**

Mark Schwartz is Chief Digital Officer at Trimble, responsible for transforming the company's systems, processes, and infrastructure. Learn more at trimble.com.

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through Education[®]



LIVE

Phoenix, Arizona

March 1-3, 2022 • GlobalExcavationSafetyConference.com



The premiere international event dedicated to providing educational content and resources to help protect buried assets. The largest event in the underground damage prevention industry since 2004, the Conference traditionally draws over 1,500 participants from around the world.

Multiple industry associations hold meetings in conjunction with this event, and with **80+ conference sessions**, numerous networking events, and **120+ exhibitors**, including an outdoor demo fair for hands-on access to equipment, it is the place to be if you are committed to the mission of reducing damages.



GRAND PRIZE Trip to Australia!



PelicanCorp

is offering a once-in-a-lifetime trip to Australia for one lucky delegate at the Global Excavation Safety Conference! Drawing held during Dueling Decades at The Duce* Wednesday night. You must be present to win. Enter onsite at PelicanCorp's booth 501 for your chance to WIN!

**Ticket included with Conference and Exhibitor badges, additional tickets are available for purchase.*

Benefits of Attending

- Connect with industry leaders and develop relationships that will help you grow your network and your career.
- Engage in peer-to-peer exchanges during sessions, meals, and networking events.
- Attend panel discussions and industry summits for insight into all industry perspectives.
- Expand your areas of expertise by attending a session on a topic new to you.
- Act as an advocate for your entire work group by bringing what you've learned back to the office.
- Our full complement of exhibitors makes this a one-stop shop to learn about advancing technologies and tools that are redefining the industry.
- Add your voice to the conversations that drive the future of the industry.

Owned and Produced by Infrastructure Resources, LLC



80% of surveyed attendees stated that information obtained will help them implement change at work.

2022 Mentorship Program

Share your knowledge and expertise with an upcoming professional within the industry who has never had the opportunity to attend the Excavation Safety Conference and would benefit from the education and experiences that are only available here. Help them connect with other industry professionals and build their network; guide them as they expand their knowledge base and develop core skills and best practices. With your Conference registration, you can mentor a future leader with a deeply discounted rate for them of ONLY \$811! Learn more at GlobalExcavationSafetyConference.com/mentorship.



Our Guarantees

No Risk COVID-19 Guarantee: Your registration is protected! In the event of cancellation due to COVID-19-related concerns, your registration will be rolled over to the 2023 event in Tampa, Florida.

We understand you may have some concerns regarding social gatherings in light of the current pandemic. Visit GlobalExcavationSafetyConference.com/Covid19-2021 to learn what we are doing to ensure your health and safety.



100% Money-Back Satisfaction Guarantee

Infrastructure Resources, LLC strives for 100% delegate satisfaction. If you attend the Global Excavation Safety Conference with a CONFERENCE registration, and are dissatisfied with your experience for any reason, we will make it right. We PROMISE if you check in onsite and participate in a minimum of eight (8) hours of available education, and at the end of the Conference you do not agree that this event met your expectations, we will REFUND* your original fee to attend.

**Attendee must claim refund within ten (10) days of Conference end date. Refund to original payor. Guarantee does not cover cost of travel or accommodations. Any earned CEUs will not be awarded.*





With education, networking and exhibits designed for all industry stakeholders, we are transforming the damage prevention industry on understanding and staying mindful of procedures and best practices that significantly reduce the risk of damages while protecting our workplaces, communities, environment and lives.

Schedule of Events¹

Monday, February 28

7:00 am - 6:00 pm

8:00 am - 3:30 pm

8:00 am - 4:00 pm

8:00 am - 4:30 pm

Sponsors

Registration/Information



Utility Locator Skills Enhancement

Workshop^{2,3} FLAGSHOOTER
The Best Way to Find, Flag and Profile - Guaranteed!

Global Locate Masters

Onsite Qualifiers^{2,3} USIC
US INFRASTRUCTURE COMPANY

Global GPR Congress^{2,3}



9:00 am - 2:00 pm

9:30 am - 12:00 pm

11:00 am - 12:30 pm

12:00 pm - 12:45 pm

1:00 pm - 1:45 pm

2:00 pm - 2:45 pm

3:00 pm - 3:45 pm

4:00 pm - 4:45 pm

6:00 pm - 10:00 pm

Exhibits

Networking Chats and Tech Talks

Grab 'n Go Lunch on Exhibit Floor



Education Sessions

Education Sessions

Education Sessions

Education Sessions

Education Sessions

Dueling Decades at The Duce!

Tuesday, March 1

7:00 am - 6:00 pm

7:30 am - 11:30 am

8:00 am - 12:30 pm

8:00 am - 1:00 pm

9:00 am - 9:45 am

10:00 am - 10:45 am

11:00 am - 11:45 am

12:30 pm - 1:15 pm

1:30 pm - 2:45 pm

3:00 pm - 6:00 pm

Sponsors

Registration/Information



Leading Practices for Cross Bore
Safety Course^{2,3}

Damage Investigation

Workshop^{2,3} INR TCC

Global GPR Congress^{2,3}



Vendor Outreach Sessions

Vendor Outreach Sessions

Education Sessions

Education Sessions

Plenary Session

Welcome Reception

Thursday, March 3

7:00 am - 2:00 pm

7:30 am - 9:00 am

8:00 am - 9:00 am

9:00 am - 11:00 am

9:00 am - 9:45 am

10:00 am - 10:45 am

11:00 am - 12:15 pm

12:30 pm - 2:00 pm

1:30 pm - 2:15 pm

2:30 pm - 3:15 pm

3:30 pm - 4:15 pm

Sponsors

Registration/Information



Grab 'n Go Breakfast on
Exhibit Floor Urbint

Networking Chats and Tech Talks

Exhibits

Education Sessions

Education Sessions

Plenary Session

Outdoor Demo Fair & Picnic Lunch



Education Sessions

Education Sessions

Education Sessions

Wednesday, March 2

7:00 am - 5:00 pm

7:30 am - 9:00 am

8:00 am - 9:15 am

8:00 am - 2:00 pm

Sponsors

Registration/Information



Grab 'n Go Breakfast on
Exhibit Floor Urbint

Plenary Session

Global Locate Masters^{2,3}



Friday, March 4

8:30 am - 12:30 pm

Sponsors

Click Before You Dig Golf Scramble³



¹ All times and dates subject to change

² Damage Prevention Week event

³ Pre-registration required. Additional fees apply.



Thank You!

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Media Partners



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- American Gas Association
- Associated General Contractors
- American Public Gas Association
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- Arizona811
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- beforeUdig
- beforeUdig NZ
- Bigman Geophysical
- Blue Stakes of Utah 811
- Coastal and Marine Operators
- CAPULC
- Call Before You Dig, Inc.
- Cross Bore Safety Association
- Centerline Mapping
- Chicago 811
- Click Before You Dig
- Colorado 811
- Colorado Pipeline Association
- CommTech
- Construction Angels
- Damage Prevention Council of Texas
- Dial Before You Dig
- DIGLINE Inc.
- Distribution Contractors Association
- Distribution Public Awareness Council
- Facility Notification Center
- Fiber Optic Association
- Georgia811
- Global GPR Congress
- GPR Consortium
- Gold Shovel Association
- Gopher State One Call
- Iowa One Call
- JULIE, Inc.
- Kansas 811
- KorTerra
- Leading Women of Damage Prevention
- Learn GPR
- Linesearch Beforeudig
- Mark-It Madness
- MEA Energy Association
- MISS DIG 811
- Mississippi 811
- Miss Utility 811
- Minnesota Rural Electric Association
- NACE International
- National Association of Landscape Professionals
- National Association of State Fire Marshals
- NASTT
- New York 811
- North Carolina 811
- NRCGA
- NTDPC
- National Utility Contractors Association
- Ohio 811
- OKIE 811
- PelicanCorp
- Pennsylvania 811
- Pipeline Ag Safety Alliance
- Pipeline Association for Public Awareness
- Sunshine 811
- Texas811
- UESI
- Utility Safety Partners
- Wyoming 811



Providing critical information and education for all stakeholders within the damage prevention and excavation safety industry. With education specific to industries and roles, as well as education with a cross-industry appeal, this is the premiere event to network with industry peers, learn safe practices, and lower costs associated with excavation damages. If your role involves any aspect of utility damage prevention, Global Excavation Safety Conference is the right event for you.

Education

— DAILY PLENARIES —

An industrywide message delivered to all Conference delegates dedicated to safe digging.

Tuesday:

Say What?! Communicate Your Message to Anyone!

Communication is key. Learn what type of communicator you are and how to reach across that divide to reach people who communicate in a different way. A combination of communication skills will provide you with new skills and understanding to make sure your message is heard, effective and productive.

- Dr. Kathy Gruver, Speaker, Author, Coach

Wednesday:

Global Locate Summit

What is the best approach for attracting and keeping good locate technicians?

A panel of industry leaders address this growing concern as they discuss the pitfalls and look for solutions in this interactive panel discussion.

- Moderated by Ron Peterson, Executive Director, Nulca

Thursday:

Critical Learnings of Damage Prevention Legislation from Around the World

An international panel gathers to discuss the positive and negative aspects of legislation in their countries. Learn what to focus on (or avoid) when looking at proposed legislation. Panelist provide oversight on when their legislation began, its purpose and function, and how it has helped to reduce damages.

— SESSIONS —

With over 80 sessions to choose from, there is something for everyone!

Educational sessions are offered by professional speakers and industry experts who share their time and experience to increase industry knowledge on damage prevention, public awareness, and other related topics. In addition, interactive industry-focused summits impanel industry leaders to address major issues and explore potential solutions.

New sessions added regularly. Visit GlobalExcavationSafetyConference.com for the most up-to-date options, session descriptions and speaker biographies.

10 Feet Tall and Bullet Proof

Jack Jackson, SafeStart

Adapt and Overcome

John Brix, Professional Speaker

Bad Side of Town

Jack Jackson, SafeStart

Believe in Safety

Brandon Schroeder

Buried Alive: A Survivor's Story

Joe Tantarelli, Implementation Specialist, SafeStart

Damage Happens, What Comes Next? Steps to Claims Resolution

Taylor Fudge, Claims Management Resources

Damage Prevention the Chicago Way

Jai Kalayil, Supervising Engineer, Chicago Department of Transportation

De-Escalating Volatile Situations in the Field

Jim Willis, CEO, In-Dev Specialists, Inc.

Distribution Public Awareness Council (DPAC) Natural Gas Distribution Safety Benchmarking

DPAC Members

How New Mexico's Damage Reporting and Enforcement Tracking System Improves Efficiencies and Accountabilities

Thomas Hall, KorTerra

Jason Montoya, New Mexico Public Regulation Commission

How To Create a Successful Statewide DPC

John Sparks, Texas 811

Innovations Target Reducing Underground Utility Damage During Construction

Geoff Zeiss, Principal, Between the Poles

IRS Interest in Good Corporate Governance Practices (IRS Form 990)

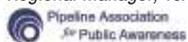
Kevin Moore, Partner, Hinshaw & Culbertson LLP

Leaving a Safety Legacy

Wylie Davidson, Wylie Davidson, LLC

Leading Women of Damage Prevention

Ketha Molina, Regional Manager, Texas 811

*Endorsed by 

Managing the Change

Jack Jackson, SafeStar



Excavation SAFETY

Minnesota's Groundbreaking Project: Underground Utilities Mapping Project Team

Barbara Cederberg, Chief Operating Officer, Gopher State One Call

Next Generation of Underground Mapping Best Practices

Moderator: Michael Twohig, DGT Associates

One Call Systems: Big Changes Below the Horizon. The Impact of Changing Technology on One Call Systems

Duane Rodgers, CEO, PelicanCorp

Online Locate Requests vs Phone Submissions: Why Go Virtual and Is It Safer?

Josef Rosenberg, Contact Centre Manager, Utility Safety Partners

Paying Attention Could Make All the Difference

Jim Willis, CEO, In-Dev Specialists, Inc.

Preventing Electric Utility Damage

Kelley Heinz, Damage Prevention Manager, ComEd

RP1162 Update

Terri Larson, Principal, Larson Communications

*Endorsed by  Pipeline Association
for Public Awareness

Reducing the Consequences of Gas Line Damage

David Heldenbrand, President, Bison Engineering
Daniel Saavedra, Forensic Civil Engineer, Bison Engineering

Standardized Ticket Formats

Sher Kirk, Operations Director, Utility Safety Partners

Stress Management: Go from Worrier to Warrior

Moderator: Dr. Kathy Gruver

The Locate Tech... The Real Assets in the Damage Prevention Cycle

VR-SIM for New York 811

Moderator: Roger Sampson, New York 811
Annie Burns, UTTO

The Day We Will Remember

Ricky Rollins, Motivational Safety Speaker

The Pink Cow

John Brix, Professional Speaker

*Endorsed by  Pipeline Association
for Public Awareness

The Power of Don't

John Brix, Professional Speaker

The Power of Safety First

Cliff Meidl, Cliff Meidl Enterprises

The Use and Effects of a Standard Damage Prevention Safety Management System

Mel Christopher, Executive Director, Gold Shovel Standard

Two Confined Space Standards: Which one is for you?

Bruce Magee, Region Product Development Manager, United Rentals

Underground Damages Case Study: Use of Comprehensive Data Analysis

Louis Panzer, Executive Director, North Carolina 811
Dr. Ahmed Al-Bayati, Assistant Professor: Civil and Architectural Engineering, Lawrence Technical University

What Will They Say About You?

Moderator: Wylie Davidson, Wylie Davidson LLC

Write it Down! Processes and Benefits of Collecting "Locate Data"

Moderator: AJ Clark, Locate Manager, Badger Daylighting 

Why BBS is Not Enough

Joe Tantarelli, Implementation Specialist, SafeStart

— INDUSTRY SUMMITS —

Panels of industry leaders address major issues within their industry and explore potential solutions for these concerns in these interactive summits.

Electric Safety Summit: What are the best practices for damage prevention after a disaster?

Moderator: Cliff Meidl, Cliff Meidl Enterprises

Sponsored by  KorTerra

Excavator Perspective Summit: What steps can be taken to improve communication?

Sponsored by 

Fiber Optic Asset Protection Summit: Should we be looking up as well as looking down?

Moderator: Christopher McDermott, AT&T

Sponsored by 

Pipeline Safety & Awareness Summit: How can field data be used to drive actions across the company?

Notification Center Summit: What is the role of a Notification Center in impacting legislation and education? Does it improve damage prevention?

Moderator: Bruce Campbell, MISS DIG 811

Sponsored by  ENCA  KorTerra

Global Locate Summit: What is the best approach for attracting and keeping good locators?

Sponsored by  KorTerra

Water & Sewer Infrastructure Protection Summit: What does responsible potholing look like?

Moderator: Erin Hays, Kingsbrook Rural Water

Sponsored by  KorTerra

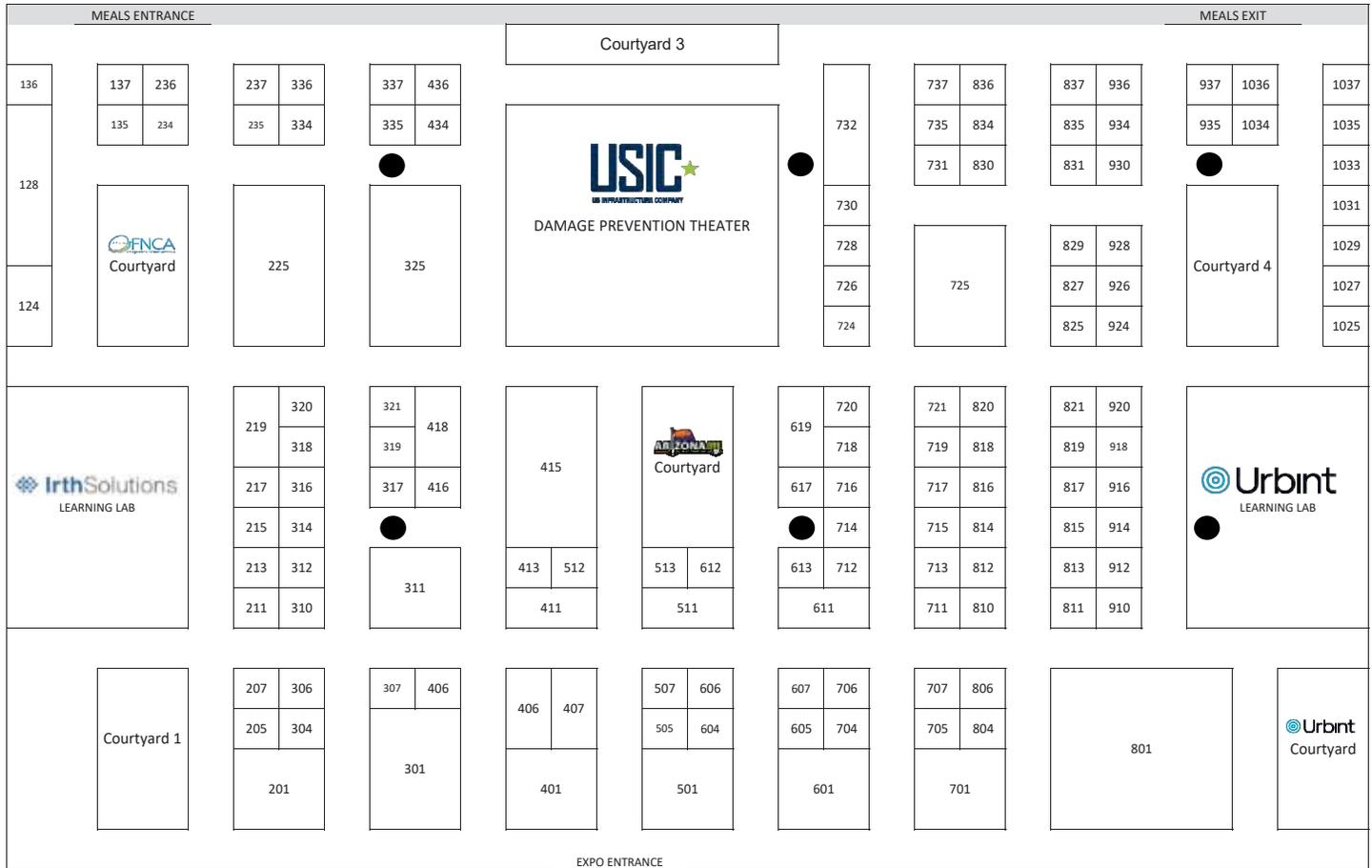
For speaking opportunities, contact Karin@IR-SavingLives.com.



Learn about the newest trends and technologies for the damage prevention industry. Every year our exhibitors premiere new products and services that put you in the perfect position to bring your team information on the equipment and knowledge needed to run at peak efficiency and effectiveness.

Whether visiting booths or participating in vendor-provided education, time spent on the exhibit floor is a great way to increase your knowledge on industry advancements.

Exhibits



- | | | |
|---|---|--|
| 701 4iQ Solutions | 721 Guideline Geo Americas Inc. | 725 Norfield Development Partners |
| 924 AIMS Companies | 607 Heath Consultants Incorporated | 128 North American Telecommunications Damage Prevention Council |
| 811 Arizona 811 | 219 Hi-Vac Corporation | 301 One Call Concepts |
| 407 Badger Daylighting Corporation | 511 Hydromax USA | 501 PelicanCorp |
| 918 Damage Prevention Council of Texas | 405 ImpulseRadar US | 234 Perma-Patch, LLC |
| 732 DGT Associates | 711 Irth Solutions | 401 Rhino Marking & Protection Systems |
| 321 Draeger Inc. | 611 JNR/The Claims Center | 724 Southern Cross |
| 619 Enertech | 601 KorTerra | 434 Talygen |
| 411 FlagShooter | 604 Motivational Speakers | 801 Urbint |
| 418 Garlock Safety Systems | 225 New York 811 | 415 USIC |
| 707 Geophysical Survey Systems, Inc. | 604 Motivational Speakers | 325 UTTO |
| | 505 Northern Lights Locating and Inspection Services | 136 Verizon |





Vendor Education

VENDOR OUTREACH SESSIONS

Held Tuesday morning before the official open of the Conference, these 45-minute classroom sessions showcase the solutions and services our exhibitors and sponsors offer the damage prevention community. Open to ALL registration types.

NETWORKING CHATS

Held in exhibit hall courtyards during expo hours, these 30-minute informal conversations are led by speakers and exhibitors.

TECH TALKS

Held in exhibit hall courtyards during expo hours, these 30-minute sessions offer interactive discussions with select exhibitors.

NEW PRODUCT FORUM

Held in the **USIC** Damage Prevention Theater, this session offers a rapid-fire introduction to the new products and services introduced by our exhibitors within the past year.

Networking

A variety of networking events create the opportunity to connect with other industry professionals, grow your network and move your career to the next level!

WELCOME RECEPTION

Come together and celebrate the kickoff of the 2022 Global Excavation Safety Conference! The perfect opportunity to network with colleagues and explore solutions and new technologies with vendors who add value to your experience. Complimentary hors d'oeuvres and cash bar available.

Don't be late! Ceremonial ribbon cutting begins promptly at 3:00 pm!

COURTYARDS

Take advantage of these casual seating areas scattered throughout the exhibit hall to gather with peers for a meal or just great conversation between visits to our exhibitors.



COURTYARD CHATS

30-minute informal discussions led by speakers and exhibitors on industry topics held in courtyards throughout the exhibit hall during expo hours. Open to all badge types.

OUTDOOR DEMO FAIR & PICNIC LUNCH

Enjoy your lunch in the sun as you explore exhibitor equipment displays and demonstrations. Gain live, hands-on experience with the newest tools in the damage prevention industry.

CLICK BEFORE YOU DIG GOLF SCRAMBLE

Wrap up your week in Phoenix with a day on the links and get one last chance to network with your peers. This 18-hole par 71 championship course at Legacy Golf Club is a perfect reward after a full week of education and networking!

The shotgun, best ball tournament starts at 8:00 am and includes lunch.



DUELING DECADES AT THE DUCE!

From classic hits to current pop, sing along with dueling pianos that span the generations at The Duce, a retro-chic venue featured on Diners, Drive-Ins & Dives! Turn up the volume by representing YOUR favorite artist and join the duel for bragging rights to the BEST decade for music!

Tune in for fun, food, cocktails and prizes at this prime-time networking event of Global Excavation Safety Conference! Your ticket is INCLUDED with your Conference or Exhibitor badge! Tickets are available for purchase for all other badge types.



For exhibit or sponsor opportunities, contact **Vicki@IR-SavingLives.com**.



Because the damage prevention industry is in a state of constant evolution, continuous improvement is an integral foundation of Global Excavation Safety Conference. Every year we implement change from small improvements to major enhancements based on your feedback, as well as industry needs and expectations. We welcome your suggestions and use them to build an event that offers world-class education, networking and access to resources. Contact us at info@IR-SavingLives.com to share your ideas, thoughts and opinions. We look forward to hearing from you!

NEW This Year

SELF-CHECK-IN

Keeping in mind a higher concern for safety, Global Excavation Safety Conference has moved to a hands-free onsite check-in process. Don't worry! Full-service registration stations are still available if you have questions or need help. 

GRAB 'N GO MEALS

Meals will look a little different this year. All provided meals are served in self-contained grab 'n go packaging on the expo floor. Provided meals include breakfast and lunch on Wednesday and Thursday, hors d'oeuvres during the Welcome Reception, and meal stations Wednesday night at The Duce. Meals are included with Conference and Exhibitor badges. Other badge types can purchase meal tickets at registration. 

TECH TALKS

Held in exhibit hall courtyards during expo hours, tech talks offer interactive discussions with select exhibitors. Open to all badge types.

COURTYARDS

Courtyards are casual seating areas scattered throughout the exhibit hall. Tech talks and networking chats are held in these courtyards. These are also great places to gather with peers for lunch or just great conversation!



NETWORKING CHATS

Informal discussions led by speakers and exhibitors held in courtyards during expo hours. Open to all badge types.

PLENARIES

A daily industrywide message is delivered to all Conference delegates dedicated to safe digging.

BAG CHECK

Checking out of the hotel Thursday morning and don't know what to do with your luggage? We've got you covered! Secure bag check is available Thursday at the Convention Center!

By the Numbers

▶ **97%** of surveyed delegates rated the ROI of attending Global Excavation Safety Conference as "excellent" or "very good."

of surveyed delegates would recommend this Conference to an industry peer. **91%** ◀

▶ **89%** of surveyed delegates stated that information obtained will help them implement change at work.

of surveyed delegates stated their company will further explore products or services found here. **94%** ◀



Excavation SAFETY



Don't Take Our Word for it!

It is the #1 opportunity for education and networking for our industry as a whole.

-Bruce Campbell, MISS DIG System Inc.

Building these relationships is so important to sharing best practices and helping my company and the industry as a whole continue to make progress in damage prevention.

-Matt Miceli, Nisource

Extremely well done, most of the breakout sessions I attended were excellent. Everyone was extremely helpful and informative.

-Kelly Roy, Maricopa County Department of Transportation

If you have a genuine thirst for knowledge, this is the place to be. The educational opportunities available to you are simply unparalleled.

-Bob Nighswonger, Utility Training Academy, Inc.

There [are] just so many things to see, so many people to visit with, so many great sessions. I would totally recommend this conference to anybody.

-Andrea Stainback, CenturyLink

This is a place where I can come and get valuable information that I'll be able to bring back to my organization and help me do what I do every day better.

-Matt Miceli, NiSource

There is a variety of sessions, demos and trainings happening throughout the conference that are beneficial to every industry.

-Robert Edwards, Citizens Energy Group

The Excavation Safety Conference is an awesome opportunity to network with peers from around the world! The [event] offers fantastic exposure to industry trends and vendors.

-Derek Brown, Call Before You Dig CT





Monday, February 28 – Friday, March 4, 2022

Dedicated to bringing together industry stakeholders to discuss new ideas, Damage Prevention Week™ has one agenda – a yearly forum focused on ways of reducing damages and improving excavation safety. All views and stakeholders are welcome and encouraged to participate.

While stakeholders are encouraged to visit DamagePreventionWeek.com to download and use the logo to promote their local event, many organizations are hosting events in Phoenix during Damage Prevention Week. Registration for any of these Damage Prevention Week events includes access to the Global Excavation Safety Conference exhibit hall.



\$595 • Monday-Tuesday

Endorsed by **GPRCONSORTIUM**

This two-day global GPR event brings together new and experienced users from both the academic and private sector for accelerated learning opportunities and open discussion on user-critical topics. Upgrades to include Global Excavation Safety Conference available!

-Sponsored by **Geolitix** **3D Radar**



\$495 • Tuesday

Created to provide underground utility operators, contractors, and service providers guidance for minimizing utility conflicts due to cross bore strikes, this course covers a wide range of cross bore safety topics, from the evaluation of existing cross cores to regulatory requirements. Upgrades to include Global Excavation Safety Conference available!



\$300 • Monday: Onsite pre-qualifiers (no fee to pre-qualify)

Tuesday: Masters Competition

Wednesday: Masters Competition continues. Awards Ceremony during Dueling Decades at the Duce (ticket included in registration)

Compete for the title of 2022 Global Locate Masters Champion and Spokesperson! Award includes interviews for magazine features, publicity quotes in social media to promote excellence in locating, and recognition of this achievement, along with company recognition, in all 2022 media coverage associated with Global Locate Masters.

This unique competition, held in VR simulators, creates complex locate experiences in an immersive environment to challenge training, skill, experience, and the attention to detail required for a successful locate.

With the unprecedented opportunity to perform before a live audience of peers and industry leaders, the Masters recognizes, rewards, and shines a spotlight on the world's best utility locating professionals!



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Excavation SAFETY



Damage Investigation and Claims Resolution

WORKSHOP ✂

\$255 • Tuesday

Ron Peterson, President, Ron Peterson Consulting, LLC

This workshop focuses on the required elements of a successful damage investigation. Setting the stage for a valid root cause investigation and following standard investigative procedures are vital to an effective analysis of a damage. Topics covered include asset protection, revenue / loss recovery, ethics and other ingredients needed to perform accurate and timely root cause investigations. Box lunch included.

-Refreshments sponsored by



Utility Locator Skills Enhancement

WORKSHOP ✂

\$395 • Monday

Bob Nighswonger, President, Utility Training Academy

This skills training workshop is a great introductory session for the novice locator and a valuable career-building tool designed to challenge even seasoned professionals on underground line locating. This workshop begins with classroom training followed by hands-on instruction performed outdoors with a variety of conventional and unconventional equipment. Training credits available. Box lunch included.

-Refreshments sponsored by



WORKSHOP ✂

\$195 • Wednesday • Combining Electromagnetic Locators and GPR for a Complete Locate

Craig Reed, US National Sales Manager, Radiodetection

Meeting NULCA "competencies for the GPR Technician" curriculum, course objectives require user to demonstrate knowledge, skill, and an understanding of GPR use. Topics include GPR theory, factors affective target detection, how GPR complements traditional EM locating, application of Line Scan and Grid Scan, hands-on equipment setup and data collection, data interpretation, and case studies.

Visit DamagePreventionWeek.com to:

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- Register for an event
- Submit an abstract to participate as a speaker
- Learn about sponsorship opportunities
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- Become an endorsing organization

Enriching Field Data Collection and Utility Mapping

BY ROB MARTINDALE



Today, with GPS and mobile technology, we can easily understand that knowing the position of points of interest and objects makes for faster and more confident decisions. This includes both day-to-day activities and professional services. Transportation departments and construction companies in the USA have long been asking these all-important questions: "Can we leverage GPS and mobile technology to easily access and view critical information in order to improve all of our business processes and workflows and comply with subsurface utility engineering (SUE) mapping standards like ASCE 38-02?" "Can this technology also be used to survey, locate, and document the precise location and depth of existing buried utilities during highway construction to identify any discrepancies and reduce damages that often occur during ground-breaking activities?" "How much efficiency could be gained by connecting data collected in the field

to other systems of record like ERP, GIS, and CAD systems in real-time to improve all aspects of asset management business processes?"

In January of this year, the Colorado Department of Transportation (CDOT) implemented the use of a modern cloud and mobile utility mapping solution to meet their requirements to:

- 1) **Improve the collection, storage, and visualization of utilities buried along state right of ways.**
- 2) **Provide the ability for real-time automated bi-directional exchange of data between the field data collection devices and the enterprise's existing GIS and CAD.**

The application fulfilled a key requirement to support SUE business practices and meet ASCE 38 data collection standards during construc-

tion, repair, and/or maintenance activities. Part of this requirement was for the mobile application to be compatible with a wide variety of survey data collection devices and GPS/GNSS receivers. The solution was flexible enough to support DOT-specific workflows and the addition of data layers and attributes from various external source systems as well as allow for attributing, editing, and displaying the data collected. It was chosen to meet the needs of CDOT for its ease of use, ability to integrate with existing systems, offline and online field data collection capability, survey quality data, ease in comparing/validating existing vs. new data, and finally, any other relevant criteria determined during the solution's setup, implementation, and testing.

The application consists of two highly integrated commercial software products: (1) a desktop application and (2) a mobile application. Its desktop application is offered on the cloud and is



used to manage and display the data. Its application is a mobile data collection and display application. The cloud solution provides the ability to communicate and share data in real-time with both internal and external business or spatial source systems such as GIS and CAD applications in addition to being fully integrated with the mobile data collection app. Any data imported to the cloud can be displayed, searched for, sorted, filtered, and shared on both desktop and mobile applications. It can also export data collected in the field to external systems. When working completely offline, the data will sync when cellular or Wi-Fi connectivity is available. Furthermore, it can run on any modern Android or iOS device and can be coupled via Bluetooth to an external GPS/GNSS receiver to allow the user to capture and record mapping grade or survey grade data in real-time.

INTEGRATION OF GPS/GNSS RECEIVERS

Many DOT, construction, and municipal clients are already embedded into positioning systems that allow users to leverage a common hardware positioning source with the application, which provides a more future-proof solution. The ability to integrate high precision receivers enables clients to leverage existing hardware investments and allows them to seamlessly embed software solutions within their organizations.

The application includes tools and features for survey, photo, sketch, and form creation workflows. In order to utilize these tools inside the data collector, there are two connections needed for GPS/GNSS receivers to bring in location data:

- Bluetooth is standard for all tools
- A Wi-Fi connection is required for receivers such as the R10 and SPS985

THE OUTCOMES OF INTEGRATING WITH BACKEND GIS AND CAD

The implementation with CDOT, infrastructure companies, and SUE firms has resulted in several key findings. The ability to draw survey grade lines while in the field eliminates the need for post processing in the office. The applications provided full mobile capabilities, which may be used in real-time from the office or from the field. DOTs and other construction and engineering companies may leverage their existing GIS databases in the system for reference, including their UAV imagery. The applications provide the ability to easily attribute the utilities while in the field. The application provides the users with the ability to use existing receivers to collect the survey grade data. It has proven that real-time precision data collection and sharing of geospatial data amongst all users provide for better business decisions and reduces delays and costs associated with infrastructure construction projects. Better data quality serves the intent of identifying areas of conflict to

mitigate catastrophic accidents, disruption of services, and project slow-downs that result from a lack of adequate utility data and delays in delivery of DOT's capital programs. The benefit of the software includes the migration and sharing with cloud environments. This integration will make the most advantageous use of the available software services to the benefit of DOT's construction and engineering projects as well as to the benefit of its consultants and contractors who are able to use the tools in the software to perform all the basic survey and data collection functions that they need to successfully deliver the project to the client. **DP**

Rob Martindale is program manager of utilities and railroads at CDOT. To learn more about ProStar's PointMan, a modern cloud and mobile utility mapping solution, visit pointman.com.

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MY NEW YEAR RESOLUTIONS

BY LARRY COLE, PH.D.

How to Stop Lying to Yourself

'Tis the season to be jolly! But it would be interesting to know the number of lies that people tell this time of the year. You've heard them and may have even said something like, "Starting January 2, I'm going on a diet to lose twenty pounds and implement an exercise program."

True enough, on January 2 the diet begins (after New Year's celebrations) and you enroll in a gym. During the next couple honeymoon weeks, the euphoria fuels the new diet and exercise. But then the euphoria begins to crack when you tell yourself, "Eating just one piece of cake will be okay." Once the standard is lowered, we're setting a new standard and more easily fall to other food-sourced temptations. The "what the heck" syndrome takes control and sabotages the self-control necessary to maintain the goal to lose weight.

Sometime during the decaying euphoria, interruptions begin to emerge that side-track your gym performance, and soon you're back to your "normal" pre-January status. But first you've got to forgive yourself for yet again failing to lose that extra twenty pounds as you regain the five pounds that were lost. You may have walked this road before with the same end result and concluded, "I'm not good enough to..."

The fact is you are good enough when you use the right tools.

The required self-discipline to change habits is a challenging, daunting task. Our bodies want to do exactly what Newton's Laws predicted - a body at rests tends to remain in that position. So, let's discuss the tools.

- 1. NEED:** Prepare by listing the disadvantages/advantages of staying as you are. You want the disadvantages to help make the decision: remaining as-is is not an option.
- 2. WANT:** Prepare the disadvantages/advantages of your desired behavior. This time you want the advantages to magnetize your body: I just have to have it.
- 3. IMAGE:** Create a positive image of you crossing the finish line. Only do what you see yourself doing (I don't see myself picking up a snake!)
- 4. BELIEVE:** Establish a firm belief that you can exert the necessary self-discipline to achieve your desired goal.
- 5. EXPECT:** Expect to be successful. Think and talk positively in terms of achieving your goal. You can even place reminders on achieving your goal that can be seen throughout the day.

6. LAUNCH: Begin the change process and enjoy the euphoria of finally making your desired change. Create a schedule. For example, my schedule when working out of my home office is to be in the workout room by 11:30 to participate in the schedule of activities to maintain good health. Personal systems support your change efforts so put this accountability tool to work.

7. MONITOR PROGRESS: At the end of the day, answer this question: Did I do my best today? Use a seven-point Likert Scale to rate yourself and put the score in your calendar to easily monitor progress over time. Remember the cliché, what gets measured gets done.

8. PRACTICE: Change is hard work! Neuroscience tells us a new neuropathway must be strongly established through focused practice before the desired behavior change becomes a habit. Use every day as a practice day.

Robert Schuler famously said, "when the going gets tough, the tough get going." If you're like most people, success is not a straight-line function and the temptation to say, "Oh, what the heck...," can be strong. Keep your eyes locked onto where you want your body to go as your body tends to follow your eyes. Looking back to your starting point increases the temptation for your body to do the same. Now is the time to study the ratio of disadvantages/advantages that you've created to help you reignite the excitement to stay on track. **DP**

DESPITE BEST EFFORTS, accidents happen. It is inevitable that underground utility assets will sustain damage at some point. An immediate response to these accidents is critical in terms of public safety, as well as protecting assets, and determining who is at fault. As with any investigation, the information gathered on the scene is key to resolving any claims that ensue.

There are four key points to remember:

Secure the Site

When excavation accidents occur, it is important to make the site as safe as possible. Securing the site is paramount as leaks or other exposure may endanger property owners, onsite contractors, or utility personnel. This also will ensure any evidence regarding the cause of the accident - and the responsible party - remains intact. After securing the site, it is imperative to notify the owner of the damaged facility and call 811. In the event an excavator causes damage resulting in the release of flammable, toxic, or corrosive gas or liquid, the excavator must immediately call 911.



Collect Onsite Information

Critical to the claims resolution process is proper collection of information from the site in a thorough, timely manner. While regulations may vary regarding notification and safety, there are key principles governing information gathering that can ensure those responsible for the accident are held financially accountable – so you don't foot the bill.

- Take photographs using the “clock method” best practice.
- Measure distances and dimensions.
- Obtain names and contact information of witnesses on the scene.
- Record other evidence like police report numbers, incident numbers, and tag numbers.

Information gathered during this crucial time is used by investigators and insurance representatives to determine liability and resolve claims. Failure to follow these principles can prove costly for your organization and affect your bottom line.

Determine Liability

With a properly secured site and information collected at the scene in hand, a case can be made to determine liability for the accident. Working with insurance companies and, if necessary, law enforcement agencies, the party financially responsible for the accident can be identified and held accountable.

Outside Assistance

Determining liability is one thing, but recovering money can be a frustrating and time-consuming process. Many utilities find it advantageous to seek outside assistance in recouping their accident-related expenses. Outside firms with expertise in recovering utility claims quickly and efficiently have proven to be well worth the investment.

Accidents happen and remembering these points and following these guidelines can ensure resolution can be achieved, assets can be restored, and budgets protected. 

Jonathan Musgrove is Vice President, Operations of Claims Management Resources, Inc. (CMR), a property damage claims recovery company for governmental agencies and self-insured organizations in the utility industry. More information is available at CMRclaims.com.

DAMAGE HAPPENS

What Comes Next? The Steps to Claim Resolution

BY JONATHAN MUSGROVE

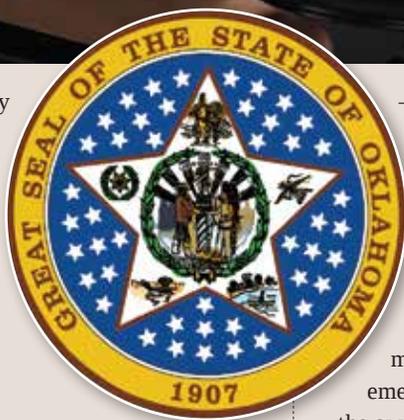
OKIE811 ONE CALL LAW CHANGES

BY SUSAN BOHL

Underground facility operators in Oklahoma are continuously looking to improve the Oklahoma Underground Damage Prevention Act to ensure the safety of those digging around their underground lines and to help mitigate damages when possible. The most recent changes that went into effect November 1, 2021, help further this mission.

Here is an outline of the changes taking place:

- **Life of a Ticket is 14 Calendar Days. Ticket Start Time changed from 7:00 am to 12:00 am.**
- **Positive Response is now mandatory for all stakeholders**
 - An excavator must check for positive response at the notification center prior to excavating or demolishing to ensure that all operators have responded.
 - Each operator shall provide a positive response. This response shall indicate the status of the required activities of the operator.
- **Provisions for State of Emergency Declaration**
 - During any state of emergency that impacts the area of excavation or demolition, the time limitations on tickets is not applicable.
- **Damage Reporting to OKIE811**
 - In addition to reporting damages to the Underground Facility Operator, the caller must also report the damage to OKIE811.
- **Excavator Responsibilities around Hazardous Pipelines**
 - When an excavator has actual knowledge that an operator has unmarked hydrocarbon and hazardous liquid underground facilities within the area of proposed excavation, the excavator shall not commence excavation or demolition until notice has been given and such facilities have been marked. The excavator shall maintain and preserve all hydrocarbon and hazardous liquid markings for the duration of the excavation or demolition and shall notify the notification center if such marks are no longer visible or are removed and underground facilities have not been exposed.
- **Excessive requests with no excavation and fraudulent emergency requests**



- If excessive and unreasonable requests for marking are made by an excavator when no excavation is taking place within fourteen (14) calendar days, the excavator may be liable to the owner or operator for the reasonable cost of such marking.
- If requests for emergency locates are made by an excavator when there is no emergency, the excavator may be liable to the owner or operator for the reasonable cost of emergency response

These changes are intended to help strengthen the One Call law and further cooperation between underground facility operators and excavators doing business in Oklahoma. OKIE811 is proud to be a stakeholder in promoting safety and helping prevent damages and interruptions to vital services provided by operators in Oklahoma. 

For more information and details on these changes, go to legiscan.com/OK/bill/HB2028/2021. For Operator Education Video, see youtube.com/watch?v=PbdnTJLuQ0I. For Excavator Education, please visit our website - okie811.org/excavatoreducation.

Susan Bohl is Executive Director of OKIE811. She can be reached at sbohl@okie811.org.

Tom Iseley Receives the Civil Engineering Wall of Fame Award



The Louisiana Section of ASCE hosted a Virtual Awards Ceremony in late September. Dr. Tom Iseley was recognized for his outstanding contributions to the Civil Engineering Profession. As a Wall of Fame recipient, Dr. Iseley will be listed on a plaque on the wall at the Louisiana Engineering Foundation Building in Baton Rouge.

Iseley began as an assistant professor with Louisiana Tech University in 1988. He advanced to a full tenured professor where he established the Trenchless Technology Center (TTC) in 1989. He was also one of the five founding directors of the North American Society of Trenchless Technology (NASTT).

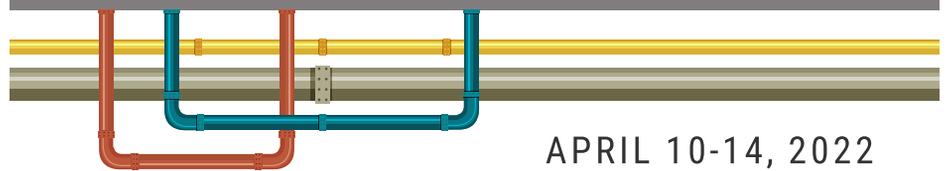
As a result of his efforts at Louisiana Tech, Dr. Iseley has received the highest awards in the construction industry: inducted into the National Academy of Construction, inducted as a Distinguished Member into ASCE, inducted into the NASTT Hall of Fame, and receiving the 1993 Trenchless Person of the Year.

In 2020, Dr. Iseley returned to Purdue University having been appointed a Distinguished Fellow with academic rank of full Professor of Engineering Practice. While Dr. Iseley has been at Purdue, he has established the cooperative relationships with BAMI-I, UESI, and TTC through conducting such programs as Utility Investigation Schools, Auger Boring School and Certification of Training in Asset Management. **DP**

Learn more about these programs on page IX in the Digital Edition of Winter dp-PRO.



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EXHIBIT HALL

OKIE811 Pilsner Beer Can-paign

• BY M.G. GOVIA •

AUGUST 11 WAS National 811 Day. To celebrate 811 and promote using 811 before digging, OKIE811 partnered with a local Oklahoma City brewery to produce a limited release craft pilsner beer. Thanks to this partnership, in addition to enjoying a great tasting beer, Oklahomans over 21 years old could enter the OKIE811 Pilsner Sweepstakes, sponsored by Energy Worldnet, for a chance to win \$811!

Why beer? Here in Oklahoma, the craft beer industry is booming. Our state has gone from less than ten to over forty breweries in five years. It doesn't take long to see a trend in craft beer that consistently works is a limited release. Craft beer drinkers like to collect beer experiences and try many styles and varieties. We wanted to produce a beer that the non-craft beer drinker would find approachable, so we went with a pilsner style. Pilsner is a pale lager that is refreshing, palate-cleansing, and thirst-quenching. Pilsners are usually lighter in color, ranging from light straw to golden.

We reached out to a local brewery about doing a contract brew for us. After negotiating pricing to cover ingredients, brewing, cans, labeling, and putting the cans into distribution, we used marketing dollars to cover this unique "can-paign." We designed the label to both describe the beer and give the consumer the basics of why and how to put in a locate request before digging. We also placed a QR code on the label to take the consumer to our sweepstakes entry form and inspired the consumer with a backdrop of the downtown Oklahoma City skyline. An OKIE811 beer is the excavators reward for completing a digging project safely.

Our staff worked with the brewery on brew day and was involved in every step, from brewing to canning of the beer. We produced 100 cases (2,400 cans) that went into Oklahoma City metro area stores for sale at \$8.11 per 4 pack. The experience culminated with a kickoff mixer happy hour event



on August 11 where we supplied beer to raise funds for OKC Pipeliners' Scholarship Fund.

Our goal with this can-paign was to reach more people with awareness of 811 and contacting us before digging, and we feel we achieved that goal in a new and unique way. 

M.G. Govia is an Education & Outreach Liaison at OKIE811. Learn more about safe digging in Oklahoma at Okie811.org.



Vocational Training as a Path to Careers in Underground Utility Locating

USIC IS NORTH AMERICA'S largest provider of underground utility locating services with a team of more than 11,000 locate technicians performing over 80 million locates each year to protect infrastructure and communities throughout the U.S. and Canada.

This growing company is exploring a new path for recruiting qualified candidates for the utility locating profession by providing vocational underground utility locating training to high school seniors in partnership with the Hinds Career Center, located in Elwood, Indiana. Elwood is about 50 miles north of USIC's Indianapolis headquarters, and serves seven school districts.

The course, taught by USIC Vocational Education Coordinator Darrin Haynes, incorporates classroom and field instruction. Two classes meet daily in a Hinds Career Center classroom which USIC has renovated and equipped with training materials, including state-of-the-art virtual reality technology simulating real-world locating. The program has the capacity to train and certify up to 40 students each year for careers as locate technicians with USIC or within the industry. USIC will pay students' relocation costs to any of the 48 states in which it operates.

"USIC is proud to partner with the Hinds Career Center to provide vocational training which makes students eligible to be hired as a locate technician immediately following high school graduation. This program is their first step toward a long-term career which offers competitive pay, comprehensive benefits and significant potential for career advancement," USIC President and CEO Mike Ryan stated. "The damage prevention industry offers tremendous career potential and the ability to make a difference every day by protecting critical infrastructure and keeping your community safe. We are actively exploring partnerships with other vocational education institutions throughout our operating network. It's a win-win situation, with the program providing a steady stream of fully trained, certified locate technicians ready to begin a career."

"Most of our students seem to recognize very quickly that utility locating is a profession that will keep them challenged while not being so complex that it is out of their reach," Haynes added.

Students have expressed excitement about the program and the opportunity to become a professional locate technician:

- "I'm starting to really get into it and think it is something I would like to be doing – being outside and not stuck in an office."
- "I know that this is a job that is always going to be here, unlike some



vocations where jobs are being replaced by robotics and automation."

- "I like that utility locating offers more opportunities and has more of a career style than other jobs."
- "This has been way better than I expected. We have already had a lot of opportunity to be hands on."
- "It's not as intimidating as I thought it would be. The instructor is hands-on and very helpful."
- "It's challenging – not too challenging and not overly easy. I like to have some adversity to work through." 

To learn more about USIC's vocational underground utility locating training program, contact Darrin Haynes at darrinhaynes@usicllc.com

Changing the Way Stakeholders Get Trained Online

• BY BRYAN HARRIS •

MORE AND MORE ASPECTS of daily life are moving to an online space, and the convenience and practicality of that has borne some beneficial fruit. Sometimes it's hard to remember this shift towards online workplaces, virtual meetings, and the work-anywhere mentality was being put into practice long before a certain virus came to town.

In 2019, Underground Service Alert partnered with Damage Prevention Academy to develop and implement a comprehensive online training platform for stakeholders in California and Nevada. With damage prevention

Introduced and hosted by Special Forces sniper, personal safety instructor, and TV host Tim Kennedy, the Pro Course puts the learner on the job site. This fully immersive, 360-degree learning environment allows users to move through virtual space, learning important information as they go. The course can be completed in 60-90 minutes on average. All the relevant and important info that working pros need to be successful, safe digging partners is presented in easy-to-understand language, with very little legalese or confusing terminology.

After each module, the learner completes a multiple-choice quiz. After



being their leading goal and mission, and education a big part of that, Underground Service Alert needed an easy way to reach stakeholders spread out over 210,000 square miles. With over 2,700 learners enrolled in state-specific education courses, the online training was a moderate success. The education is extremely thorough, detailed in its comprehension, and designed to keep the learner engaged. The Damage Prevention Academy partners built out an excellent training program... but there was room to grow.

Enter 2020, when “going online” became a way of life rather than a distraction to pass the time. Underground Service Alert recognized the challenges in delivering not only valuable damage prevention training, but physical resources, helpful guides, and education in general to an online world. How do you learn from other professionals in the industry when you can't interact in the field? How do you deliver meaningful, engaging education material to thousands of “boots on the ground” workers who can't afford to spend three to four hours in front of a computer? After many discussions and hours of development, 811Pro.com was born.

Once again partnering with Damage Prevention Academy, 811 Pro is more than just a new education course. 811Pro.com offers resources, downloadable content, “Stories from the Field,” and everything someone needs to know about digging safely. But the real power behind 811 Pro, is the Pro Training Course.

completing all four modules, the learner is awarded a Gold Shovel Standard certificate, valid for one year.

Maintaining the safety of our communities, workers on the job, and underground facilities starts with good education. 811 Pro aims to make that education as accessible and as easy to understand as possible. If at any time during the course a learner wants to dive deeper into the state law, there

is a convenient info button for relevant state codes and regulations related to the topic they're learning about. The interactive experience includes making white pre-marks (or delineations) around a dig site, surveying facility markings onsite, and selecting the right day on a calendar to comply with legal minimum notice. The course is mobile friendly, allowing

the learner to move their device and watch the 360-degree environment move with them in real time (although fingers work too).

The Pro Course is the first of its kind, and 811Pro.com is growing, with more modules, add-on courses, and a Spanish language version. 811Pro.com is a one-stop shop for education related to damage prevention professionals in California and Nevada. Online education is here to stay and 811 Pro has helped keep it from getting stale. **DP**

UNDERGROUND SERVICE ALERT

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Bryan Harris is an Outreach Specialist with Underground Service Alert. Learn more at 811Pro.com.



When a Rebrand is More Than a Rebrand

• BY SHER KIRK •

MOST OF THE TIME a rebrand is a way of refreshing a corporate image - like throwing a new coat of paint on the tired, old house to give it a more modern, up-to-date feel. Sometimes, though, a rebrand means gutting the old house to rebuild something completely new.

When Alberta One-Call rebranded in 2012, we used that new coat of paint to update our look and draw attention to a new call to action - Click Before You Dig. We wanted to shift the conversation away from the phone, but no one was ready to walk away from the equity built into almost 30 years of messaging. We needed stakeholders to recognize the old One Call name and the familiar Call Before You Dig brand. So, we put new paint on the old familiar frame.

We managed to get almost ten good years out of that 2012 paint job. We successfully changed the conversation, and now over 85% of all locate requests in Alberta are placed online. Mission accomplished.

With the unification of Alberta One-Call, Where's the Line, and Alberta Common Ground Alliance (ABCGA), we recognized the opportunity for real change. It was time not just to re-think how we process locate requests, but to re-think our role in the damage prevention process. We have always been much more than a contact center. We are enhanced member services, advocates, educators, promoters, communicators, and participants at the table for best practices, industry standards, regulation, and legislation. These vital activities have been going on in the back rooms of our old house for forty years. It is time to open the floor plan to let the light shine on every aspect of our involvement in damage prevention. Not just open it up, but make the room bigger so every stakeholder has space for a seat at the table.

With the creation of Utility Safety Partners, we are positioning ourselves to be a part of great changes and improvements in our industry. When we started the rebranding journey, we interviewed stakeholders in the damage prevention industry about who they thought we were, and who they wanted us to be once we unified with ABCGA and Where's the Line. From

those interviews, we came away with a vision of a new kind of damage prevention organization, where safety was the priority, and more stakeholders could have a voice in the conversation. We identified the values this new organization needed to have:

- **Safety is always first.** If people are safe, they keep utilities safe.
- **Transparency.** We must be an open book to build trust.



- **Inclusion and collaboration.** Every stakeholder's voice is valuable. Stronger together.
- **Empathy.** No one wants to be unsafe or damage a utility. We are here to help each other reach a common goal.

That is why the change to Utility Safety Partners is more than just a rebrand. It is a new identity. A renewed purpose. A new chapter in our organization's 38-year history. A new house. Come on in and look around. The coffee is on, and you are invited to join us at the table. **DP**

Sher Kirk is Operations Director, Utility Safety Partners (operated by Alberta One-Call Corporation). She can be reached at slkirk@utilityofsafety.ca or on Twitter @Utility_Safety.

Virginia 811 Announces **SCHOLARSHIP WINNERS**

THIS YEAR'S RECIPIENTS are Charlotte Rose and Emma Lindley. Each winner receives a \$1,500 scholarship towards their freshman year college tuition. If their collective academic performance and passion for learning are any indicator, we're leaving the future of excavation safety in good hands. Congratulations to this year's winners!

Charlotte Rose Vinton, Virginia

Charlotte is a graduating senior from William Byrd High School in Vinton, Virginia and currently holds a 4.07 GPA. She studied criminal justice at the Burton Center for Arts and Technology for three consecutive years and is active with Youth of Virginia Speak Out About Traffic Safety. She has applied to several colleges including Virginia Tech and Hollins University.



Charlotte Rose

Emma Lindley Mechanicsville, Virginia

Emma is a graduate of Maggie L. Walker Governor's School in Richmond, Virginia. She currently holds a 4.77 GPA. She is a member of National Honor Society, Girl Scouts of the Commonwealth of Virginia and is part of the cross country and indoor/outdoor track team. She plans to attend Tulane University's School of Architecture this fall. [dp](#)



Emma Lindley

Learn more about the Virginia 811 scholarship program in the Fall 2021 digital edition of dp-PRO.

WHEN THE SHOW MUST GO ON...

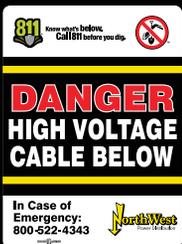


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ATSSA Advances Roadway Safety

Collaboration is key to protecting lives on the nation's roadways

The American Traffic Safety Services Association (ATSSA) began more than a half-century ago with a simple mission - to advance roadway safety.

And while the mission is unchanged, the Association's work is evolving rapidly to keep pace with ongoing advances within the roadway safety infrastructure industry. ATSSA's staff and members are part of deliberations as federal guidelines are reviewed and are actively evaluating and employing the latest technology and innovations while keeping a laser focus on finding the best ways to prevent injuries and deaths on the nation's roadways.

From the high-tech world of connected and automated vehicles to the fine details of pavement markings to the precise regulations for traffic control, ATSSA members are immersed in the conversations and helping chart the course.

"Saving lives is a 24-7 job that ATSSA and its members take seriously," said President & CEO Stacy Tetschner. "We are continually working with industry experts and state and federal agencies to find the best ways to protect drivers, their passengers and the men and women employed in work zones. We are deeply invested in the tools and technology and the people they're meant to protect."

That is why ATSSA holds its Annual Convention & Traffic Expo, and why its 16 councils and committees work throughout the year. The committees focus on topics such as guardrails, innovations, high friction surface treatment, traffic signals and temporary traffic control.

The councils now include the Roadway Worker Protection Council, which is working to be more proactive on two fronts: preventing roadway worker injuries and preparing resources to assist members if tragedy occurs.

ATSSA is also a key player in National Work Zone Awareness Week, an annual event held to raise awareness about the importance of work zone safety. In 2019, 135 roadway workers were killed in 762 fatal work zone crashes, according to the latest statistics from the National Work Zone Safety Information Clearinghouse. Those crashes took the lives of 842 people, meaning most fatalities occur to drivers and pedestrians.

Throughout its history, ATSSA training has set the standard for the road-



way safety arena. It addresses federal guidelines while also providing individualized courses to meet the distinct requirements of every state in the nation. Its emphasis on continually looking for the best ways to meet industry needs meant ATSSA was well-positioned when the pandemic hit the nation, enabling ATSSA to shift training to alternative delivery formats so members—who were considered essential—could continue operating.



ATSSA also employs a Government Relations Team devoted to legislative advocacy on both the state and federal levels. The team makes direct contact with legislators and helps equip ATSSA members with grassroots advocacy skills through an annual Legislative Briefing & Fly-In. At both levels, the focus is on furthering roadway safety and advancing the national strategy "Toward Zero Deaths" on the nation's roadways.

The American Traffic Safety Services (ATSS) Foundation is the charitable arm of ATSSA and promotes roadway safety through charitable giving and public awareness programs. Two key efforts are the National Work Zone Memorial and Roadway Worker Memorial Scholarships.

The National Work Zone Memorial, unveiled in 2002, honors the lives lost in work zones. The traveling memorial is available for hosting at events. The Foundation also has a virtual memorial. Information on hosting the memorial and submitting a name for inclusion on the memorial is available online. Also, Roadway Worker Memorial Scholarships were established to help dependents of roadway workers killed or permanently disabled in roadway work zones continue to pursue their dreams. **DP**



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LOCATING



BY CHRISTOPHER KOCH

Divine Intervention

In November of 2017, NPR picked up an unusual story out of the United Kingdom. It seems that a scientist, Dr. Sally Le Page, learned about a water company technician using two bent tent pegs while working in front of her parents' home. Incredulous, Le Page began an informal survey of a dozen regional water and sewer utilities, ten of whom confirmed that although they have modern equipment, they sometimes resort to using divining rods (or witching sticks) to help find underground structures and voids. South West Water, which services some two-million Brits, noted that although they do use the process for locating their water mains, it's "not accurate 100% of the time," while Anglian Water ("love every drop"), initially offered to take Dr. Le Page out to give her an on-camera demonstration and then backtracked, claiming that they were actually aiming to prove that witching doesn't work.

A quick online search turns up multiple YouTube tutorials including one that demonstrates how to locate a variety of residential facilities using a couple of old metal hangers. In another, the narrator demonstrates not only how to locate with a couple of L-shaped wires, but also how to find the depth of what you're locating ("to make it even weirder... start stomping really hard"). Before you roll your eyes, that foot-stomper isn't alone. A September 2017 profile of a local dowser from The Kansan also features someone who measures depth by stomping his feet and then counting how many seconds it takes for his dowsing rods to react with every second that passes equaling one foot of cover.

Apparently not only can water, water leaks, water lines, and a variety of utility structures be located using dowsing - regardless of their composition, it's also good for finding precious metals, unmarked graves (including the sex of the occupant), and even old game trails. Bizarrely, psychics and mediums have gotten in on the act, using the familiar L-shaped rods to communicate with the dead. There are multiple YouTube videos on that theme as well, including one on how to calibrate your dowsing rods (Step One: Take a shower).

It's all sort of good-natured fun... up until it isn't. In 2010, the UK government banned the export of the ADE-651, a plastic-handled dowsing device with a telescoping rod whose manufacturer sold thousands to Iraqi security forces as a bomb detection tool. While you can get a pair of dowsing rods on Amazon.com for less than \$20, the ADE-651 sold for up to \$60,000, its manufacturer fleecing the Iraqi government for tens of millions of dollars on a worthless device before

the company's founder was convicted on three counts of fraud and sentenced to ten years in prison.

As Dr. Le Page points out, "there is no scientifically rigorous, double blind evidence that divining rods work." Instead, most scientists credit the rod's movement to something called the ideomotor effect (the same



"I won't always be able to find everything I want, but at least I won't accidentally open a portal to the spirit realm."

subconscious manipulation behind Ouija boards) and note that in controlled settings, practitioners fare no better than random chance.

That won't stop people from believing in them though. As one commenter on an engineering forum said, "I've seen utility company locators find underground utilities with their dowsing sticks, where their expensive electronic equipment couldn't." Fair enough. As for me, I'll stick to electromagnetic induction. I won't always be able to find everything I want, but at least I won't accidentally open a portal to the spirit realm. **DP**

Christopher Koch is a training consultant and President of ZoneOne Locating. He is past president of Nulca and worked on both the 2009 and 2015 revisions to the Nulca Professional Competency Standard. He can be reached by email at Christopherkoch@live.com or on Twitter @kochauthor.

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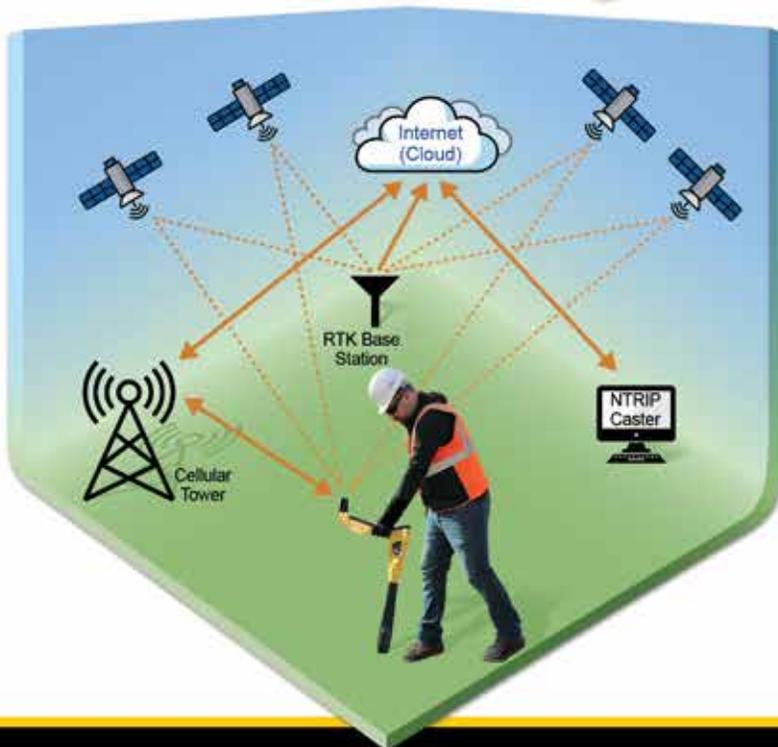
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