

IOWA 811

ONE CALLSM

The Official Newsletter of Iowa One Call

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Excavator

QUARTERLY

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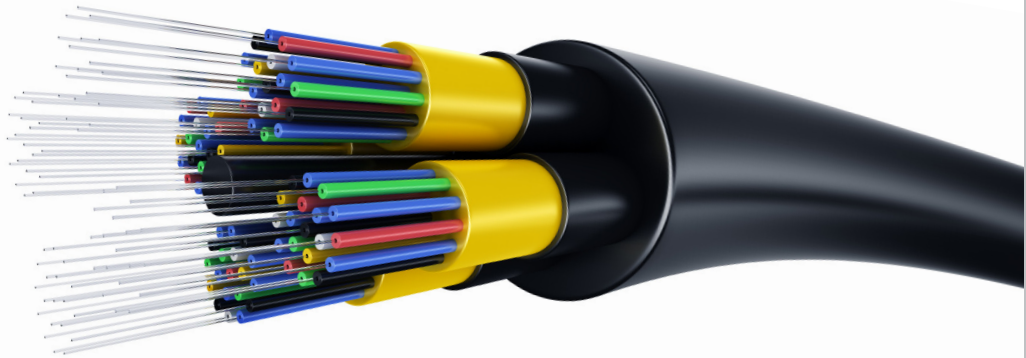
WHAT'S UP BELOW



Fiber-Optics: Tomorrow's Technology Today

The growing fiber-optic infrastructure, much of which is – and will continue to be – installed underground, creates greater challenges for the professional excavator. As if the vast array of underground wires, conduits, pipes and cables already in place isn't challenging enough for excavators, the high demand for new underground fiber-optic facilities will only increase potential conflicts. Excavators who inadvertently damage underground fiber-optic cables may be shocked at the high costs associated with repairing the damages. The dollar amount to repair a high-capacity fiber-optic main cable could be well into five, even six-figures, and beyond. Excavators need to understand what's at stake when working in the vicinity of fiber-optic cables.

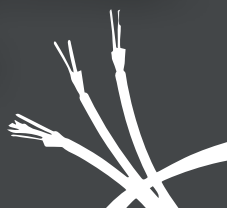
As of today, no credible alternatives to fiber-optic cable technology are within sight; since fiber-optic technology provides far superior transmission capacity than any other



existing cable-based technology – i.e.: copper and coaxial cables. Even wireless technology is no match for fiber-optics; currently, fiber-optic technology is up to 250,000 times faster than wireless ("Two-Hundred, Fifty-Thousand" times faster!). Today's users of wireless telephones and mobile devices actually rely on fiber (and other cable types) to complete their connections. Basically, when a call from a cell phone 'hits' a cell tower, that call is then routed via cable connections to the tower nearest the cell phone the call is being sent to. In fact, much of a cell-phone call or data connection is carried over a land-based network, while the signal typically only travels a short distance 'wirelessly' (in the air). This is why cellular providers are racing to replace their outdated cabling with fiber-optics.

DID YOU KNOW?

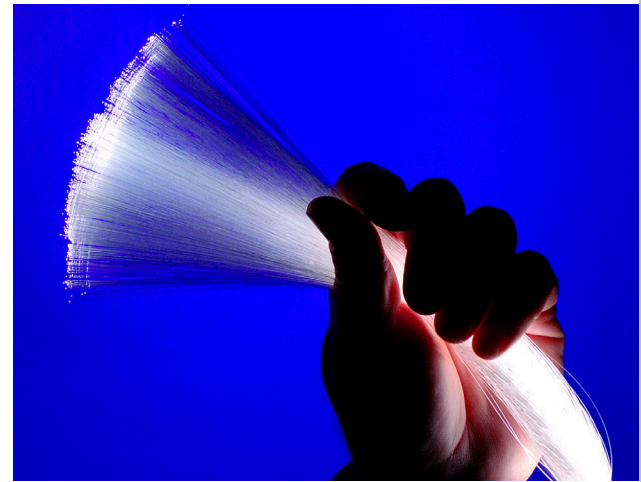
- Corning Glass Works became the world's leading manufacturer of optical fiber after successfully developing it in 1970.
- Fiber-optic technology can be up to 250,000 times faster than wireless.
- In 2011, the country of Armenia lost internet for five hours after a 75-year-old woman cut through a fiber optic cable.
- Fiber-optic cables transmit data entirely by light pulses.



Although the basic concept and design of fiber-optic technology for communications dates back to the early 1950's, it wasn't until optical fiber was successfully developed by Corning Glass Works in 1970 that research began in earnest to develop a commercial fiber-optic communications system. By the early 1980s the second generation of fiber-optic communications was developed and deployed. Prior to that time, and throughout much of the 20th century, the telecommunications industry depended on unshielded copper twisted pair wire. Since the advent and deployment of the Internet, demand for increased bandwidth has lead these telcom providers to adapt their copper infrastructure to create new protocols with greater bandwidth capabilities – e.g.: DSL (Digital Subscriber Line) technology. But compared to fiber-optic technology, DSL technology is severely limited in terms of data rate, and is susceptible to high attenuation and crosstalk issues.

Coaxial cable technology, like twisted pair wire, utilizes copper as a conductor, but is heavily insulated with shielding that provides for the transmission of high-frequency signals with low losses. Originally used for 'TV' distribution, coaxial cables are now used to transmit broadband services. Coaxial technology, however, offers only slightly more opportunities to deliver higher speeds and broadband capabilities than DSL and twisted copper lines. It's easy to understand why today's telcom companies, cable TV providers, and Internet providers are all rebuilding their networks and infrastructure utilizing fiber-optics.

There are new copper-based technologies, such as "vectoring" and "G.fast" that can now deliver fast broadband, but these technologies are typically only effective over limited distances, and suffer from the same limitations as DSL – e.g.: limited data rate, high attenuation and crosstalk. Compared to fiber-optic technology, even these newer copper-based technologies pale by comparison.



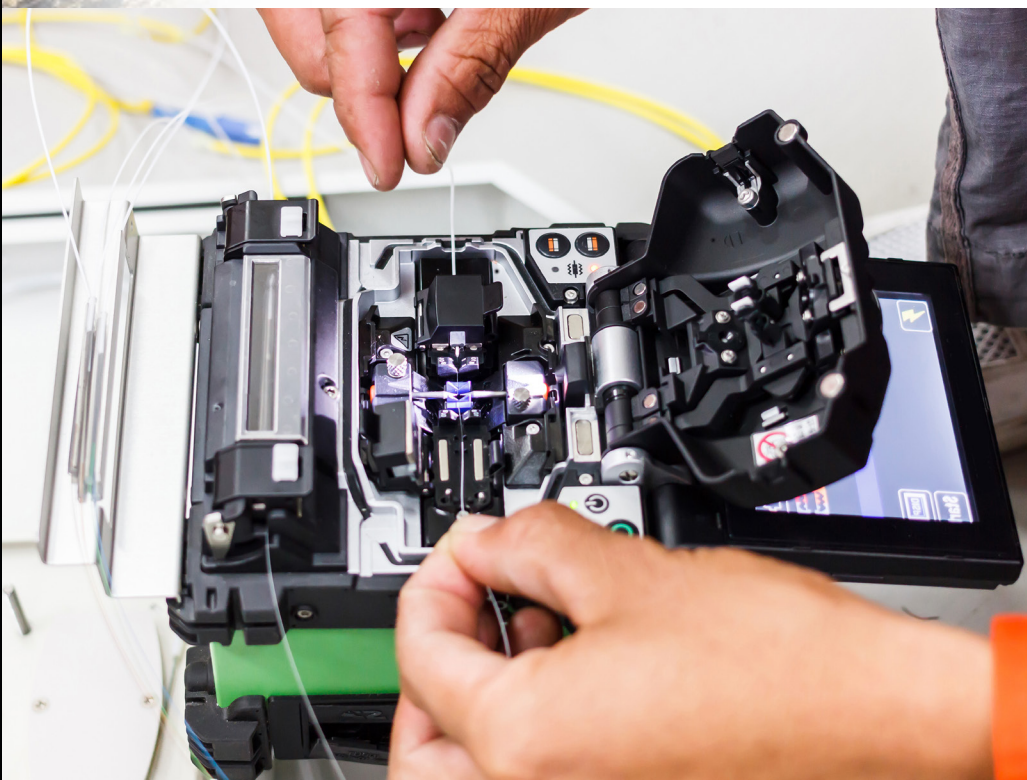
A Different Way of Transmitting Signals

Fiber-optic cabling consists of tiny glass or plastic strands (fibers) that are literally only one-tenth the thickness as a human hair. Just one of these tiny fibers can carry the equivalent of 25,000 telephone calls. An entire fiber-optic cable that houses multiple fiber strands (one cable may house as few as two strands or as many as several hundred strands) can easily carry several million calls. The data transmission capabilities of fiber-optic cables is astonishing. They solve the problems associated with sending signals over long distances, eliminate attenuation and crosstalk issues, and allow for unprecedented bandwidth capabilities (optical fiber has virtually unlimited capacity).

Fiber-optic cables transmit data entirely by light pulses. As the light particles (photons) travel down a strand of fiber, they repeatedly bounce off the walls of the strand, but without any 'leakage' of light. What keeps the light inside the strand is a phenomenon known as "total internal reflection." Because the photons hit the sides of the fiber at shallow angles (less than 42-degrees), they simply reflect back

in again – similar to light reflecting off a mirror. This is why the light stays inside the fiber, and therefore eliminates any loss of data. Currently, fiber-optic cables are being used commercially to transmit data at speeds of about 2 terabits per second (that's two million megabits per second).

Putting this all in perspective, from an excavator's point of view, this means one damaged fiber-optic cable could have far-reaching consequences impacting thousands of end users, including hospitals and emergency responders, banking and commerce, corporate and retail business, schools



and municipalities, and the countless private citizens who rely on all forms of telecommunications. Today's commercial fiber-optic networks involve countless miles of fiber-optic cables used to connect long distance switches, central offices and SLCs (subscriber loop carriers) servicing subdivisions, office parks, businesses, municipalities, etc. In many instances, a single fiber-optic cable will feed a hub – a switching point, typically a small building or structure containing a mass of switches used to route the flow of data – from which the transmission of data may be routed to 911 emergency services, major wireless cell phone networks, local government agencies, airports, mass media outlets, weather services and emergency management services; and then there's the private sector consisting of small and large businesses, and the vast private and commercial Internet-users base. If damage were to occur to a fiber-optic cable feeding a main hub the end results could mean a total loss of connectivity to all of the intended endpoints, impacting thousands, even hundreds-of-thousands of users; the ramifications of which would be considerable. Given a situation like this it's difficult to image, but the 'damager' (the party responsible for causing the damage) may be held liable not only for the cost of repairing the fiber network, but for any costs associated with the loss of connectivity. This could be devastating for any company large or small.

Modern society has come to rely on 'connectivity' as more and more people's everyday lives involve going online; in order to communicate via e-mail, shop online, stream video content, or utilize cloud-based computing. The ever growing demand for this type of transmitted data, in conjunction with all the aforementioned services and technologies that require immense bandwidth, will depend on extraordinary broadband capabilities. Fiber-optic communications is the extraordinary technology that provides these capabilities today, and will continue to provide the broadband needs well into the 21st century.

In the meantime, excavators must adhere to the strictest damage prevention policies and the safest excavating practices throughout all phases of planning and operations.

Please dig safe and respect the essential underground facilities infrastructure.



2019

EXCAVATION SAFETY AWARENESS PROGRAM

IOWA **811**
ONE CALL SM

JANUARY

8 JOHNSTON
10 AMES
15 CEDAR FALLS
17 CARROLL
22 FORT DODGE
23 MASON CITY
29 COUNCIL BLUFFS
30 SIOUX CITY
31 SPENCER

FEBRUARY

5 CRESTON
7 OTTUMWA
14 CEDAR RAPIDS
20 DECORAH
21 DUBUQUE
26 RIVERSIDE
27 BETTENDORF
28 BURLINGTON

THE SCHEDULE IS SET FOR THE 2019 EXCAVATION SAFETY AWARENESS PROGRAM.

The ESAP is an annual event put on by Iowa One Call. The program serves to educate excavators, facility operators and locators on any changes to the Iowa One Call system. The meetings serve as a platform to address system-wide concerns from stakeholders. In 2019 we will focus heavily on the locating process and the communication that must happen to effectively and efficiently locate underground facilities.

SPECIFIC TOPICS WILL INCLUDE:

- **WHITE-LINING**
- **HOW AND WHEN TO CALL FOR RELOCATES**
- **HOW TO ADDRESS LOCATING DELAYS**
- **PROPER USE OF THE NEXTGEN SYSTEM**
- **VERIFYING THE LOCATE MARKINGS ARE COMPLETE**

We had nearly 2500 attendees at 17 meeting locations in Iowa in 2018. We strongly encourage you and your coworkers to join us in 2019 – the event is free and comes with a hot lunch!

Please review the schedule and register online [HERE](#). Registration is free and will close one week before the respective event.

If you have questions, you may contact Seth Hale at sethhale@netins.net or 515-577-2368.





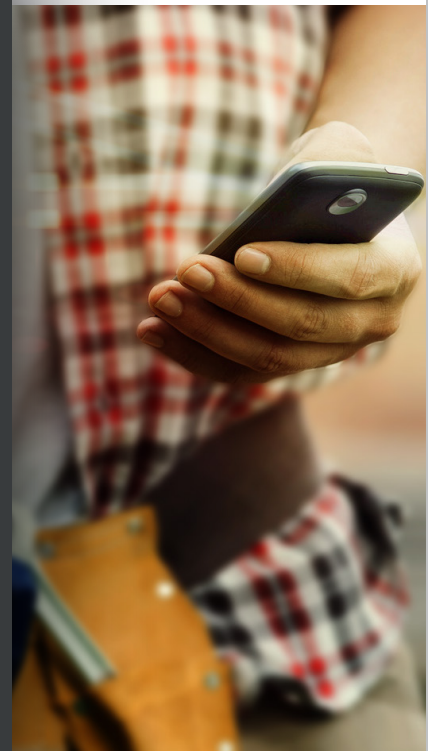
I'VE DAMAGED A UTILITY LINE. NOW WHAT?

With tens of thousands of miles of underground infrastructure in our state, there is a chance you may come into contact with a utility line – even if you've notified Iowa One Call and implemented safe digging practices. Knowing how to properly respond is important to your safety and the ability for communities to have access to essential resources.

Iowa Code Chapter 480.5 states: "An excavator shall as soon as practical notify the operator when any damage occurs to an underground facility as a result of an excavation."

EXCAVATORS SHOULD FOLLOW THESE STEPS AFTER CONTACTING A UTILITY LINE

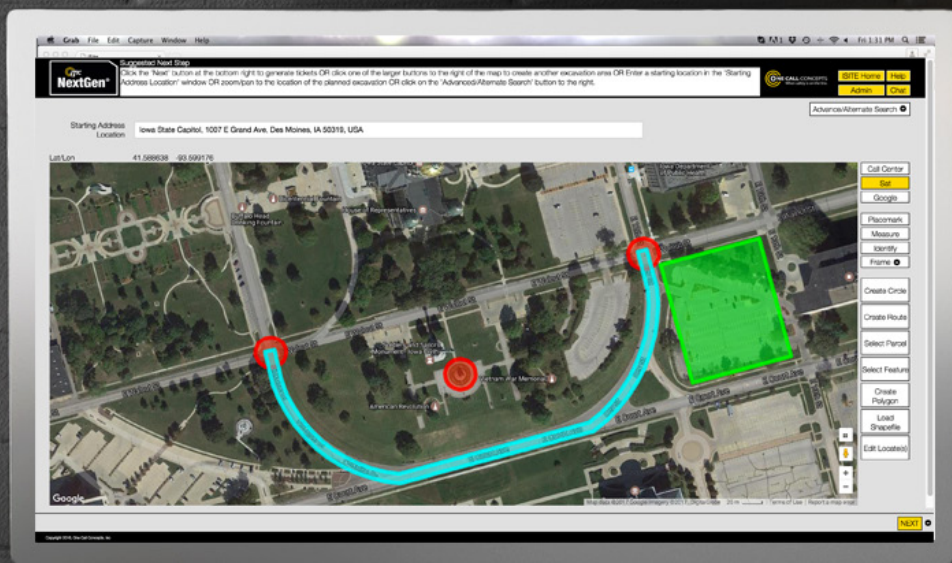
- Federal and state laws require all persons to immediately Notify 911 if any damage to underground facilities results in the escape of any flammable, toxic, or corrosive gas/liquid or if the damage results in a situation that endangers life, health, or property.
- Notify Iowa One Call. A dig-in ticket or emergency ticket can be submitted. Emergency tickets should only be used if the situation endangers life, health or property.
- Minimize the hazard until emergency responders arrive and complete their assessment of the situation. That may require the excavator to secure the scene or evacuate people from the hazard area.
- Notify the underground facility operator as soon as practical. Many facility operators list phone numbers on their permanent utility markers.
- Take pictures of the site if it is safe to do. This documentation may be useful for future reference.



The excavator must determine whether the damage has resulted in any risk to the public and take necessary action until representative(s) from the underground facility operator take control of the situation. Repairs should only be performed by qualified personnel authorized by the facility operator. Never backfill or bury a damaged underground line.

Breaking through the protective coating of a fiber line qualifies as a damage as it may compromise the line down the road. A nick to a gas line could cause a slow leak and serious problems long after your project is complete. **Whether it's a clean cut or breaking the surface, please contact Iowa One Call and the facility operator so they can assess the damage.**

TIPS FOR MAPPING PRECISELY AND ACCURATELY



CHECK OUT THE NEXTGEN ONLINE TICKETING TUTORIAL [HERE!](#)

1. Use the right tool for the job – ITIC NextGen offers a diverse array of mapping options to fit every scenario.
2. Don't over-map – ITIC NextGen builds the locate request from the mapping. Over-mapping a work area can result in wasted time and resources.
3. Double-Check your work – use the different map views and/or google street view to help ensure you've mapped accurately and completely.



COMMON GROUND IOWA HOSTS ANNUAL MEMBERSHIP MEETING

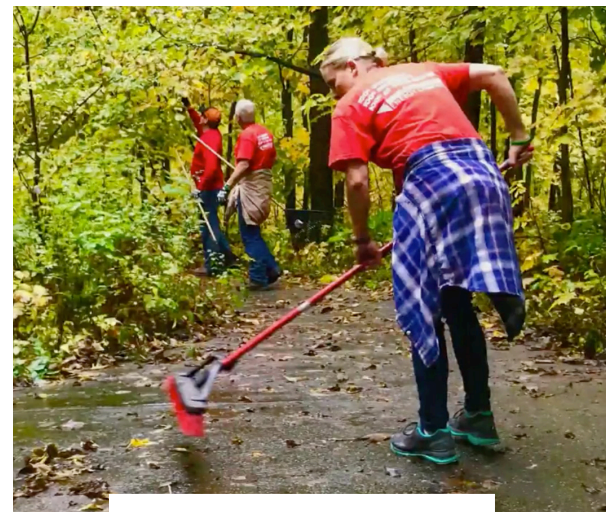
On Friday, December 7, 2018, Common Ground Iowa (CGI) held their annual membership meeting at the Iowa Association of Municipal Utilities (IAMU) facility in Ankeny. The meeting had representatives from the CGI board of directors and a group of industry professionals and damage prevention stakeholders. Common Ground Iowa is the regional partner of the Common Ground Alliance (CGA). The mission of CGI is to “promote safety through damage prevention and shared responsibility while utilizing the Common Ground Alliance’s Best Practices for advancing underground utility safety in the State of Iowa.”

Iowa One Call has collaborated with the Common Ground Iowa on many damage prevention partnerships over the years, implementing and promoting the annual signing of the “April Is Safe Digging Month” proclamation in conjunction with the Governor’s Office, implementing collaborative educational/promotional events in conjunction with the Iowa State Fair and Farm Progress Show, and promoting the CGA Best Practices via a variety of educational and outreach programs. In addition to collaborations with Iowa One Call, the CGI has partnered with other stakeholder groups, most recently with MidAmerican Energy Company to promote the “Plant Some Shade” program that provided homeowners with free white flags in conjunction with the purchase of a tree; to encourage pre-marking (“white-lining”) in conjunction with notifying Iowa One Call prior to any tree planting.

During the meeting, MidAmerican Energy Company’s (MEC), Deric McLaren, presented an overview of MEC’s 2018 damage prevention outreach and educational pilot program. The focus of which has been to start a conversation via safety meetings before contractors take the field instead of reprimanding the contractor after a damage occurs. As a result, MEC has seen a 23% decrease in damages from June to September of 2018 in the group of heavy hitters that were targeted.

Iowa One Call’s, Ben Booth, provided an update on Iowa One Call activities. He stressed the importance of stakeholders communicating effectively – providing quality mapping detail, verbal and written correspondence between excavator and locator, and always checking the status of a dig ticket before breaking ground.

Dave Hraha, vice chairperson of CGI, stressed the importance of knowing and implementing the Best Practices as outlined by the CGA. The most updated version of Best Practices were available for attendees and can be downloaded [HERE](#).



INTRODUCING THE Safe Excavator App



State laws pertaining to excavation (or digging) vary – and finding the specific information you’re looking for quickly can be a challenge.

The **Safe Excavator App** makes it easy to find state-specific excavation information including the following requirements or events:

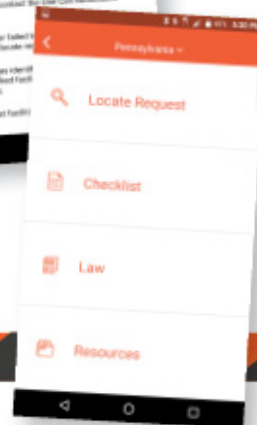
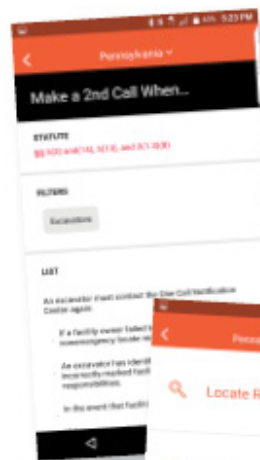
- ▼ Advance notice or wait time
- ▼ Pre-marking ('whitelining')
- ▼ 811 ticket information
- ▼ Names of local enforcement agencies and 811 call centers, also connecting you electronically to submit a locate request
- ▼ Includes safe digging tips + checklist

PLEASE CONTACT
Lindsay Sander
713.208.0273
LNS@SanderResources.com
WITH ANY QUESTIONS.



FREE to download in the App store (Apple) and Google Play (Android)!

Search "safe excavator" or "safeexcavator" and look for the orange shovel



As simple as...
1...2...3!

- 1 Select a state
- 2 Pick an activity
- 3 Research your topic

www.safeexcavator.com



Know what's below.
811 before you dig.

The National Excavator Initiative is an effort to raise the awareness of a critically important program 811.

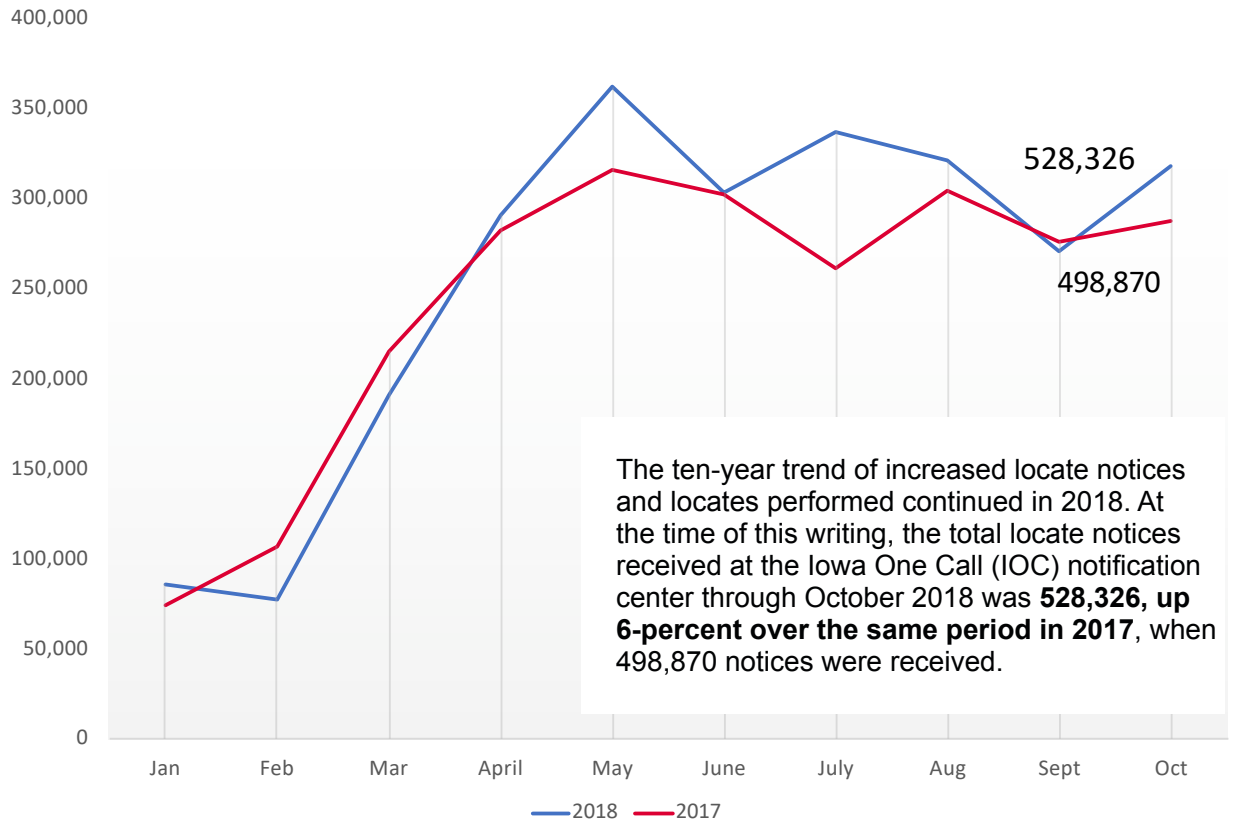
Contacting 811 before digging is the single most critical action an excavator can take to help ensure their health and safety are protected, while at the same time preventing financial harm and environmental impact.



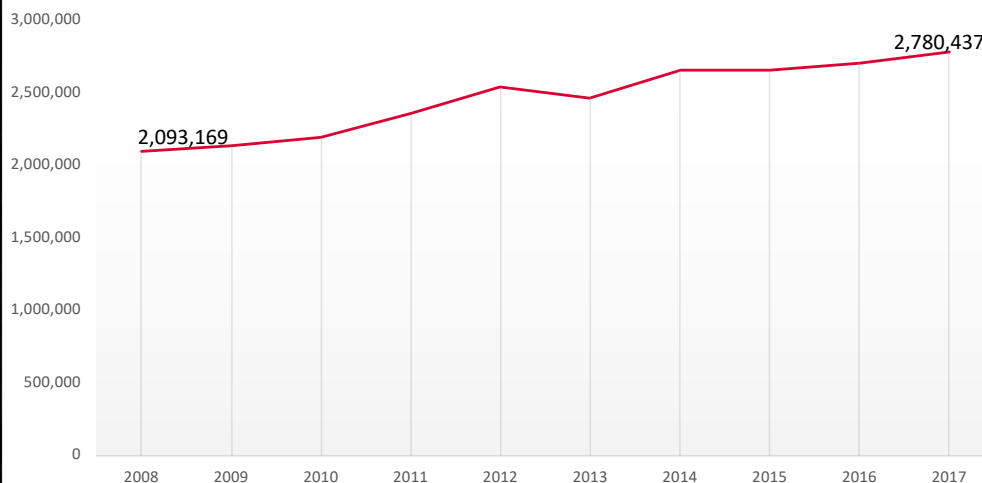
INCREASES IN LOCATING CONTINUED IN 2018

2018 On Track For Another Record Year

Incoming Notices



Approaching 3 Million 33-Percent Increase Since 2008



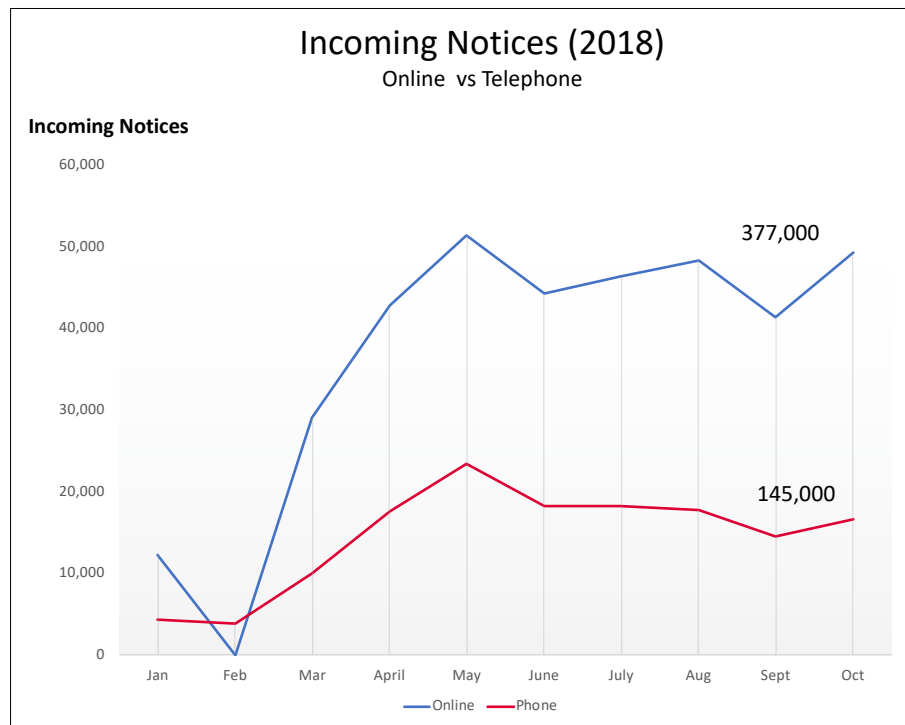
Between January 2008 and December 2017 there has been a **33-percent increase in total tickets transmitted** (tickets sent from the IOC center to underground facility operators). Whereas total ticket transmissions in 2008 just surpassed the 2 million mark (at 2,096,169) the current trend shows the 3 million mark is fast approaching (total transmissions in 2017 at 2,780,437); and transmissions through October 2018 (2,561,118) are on track to surpass 2017 transmissions.

Incoming Notices (2018)

ONLINE



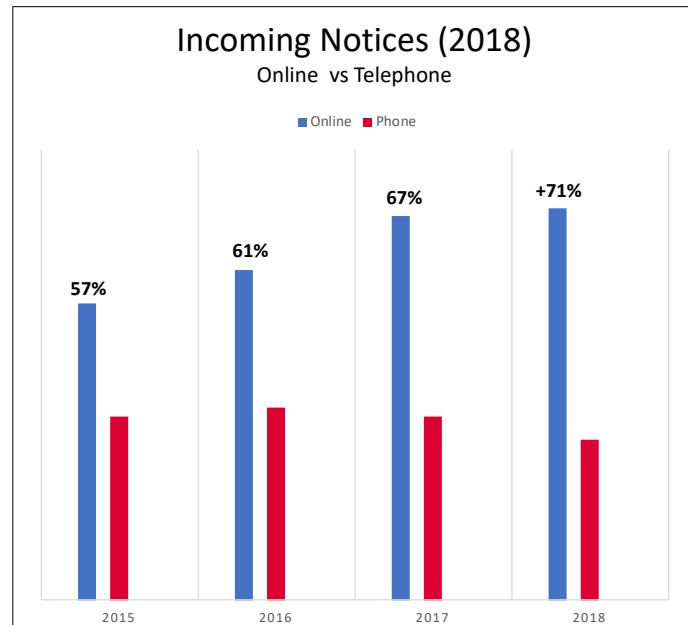
The trend of submitting locate notices to the IOC notification center via the online ticketing system is also on the rise. Through October 2018, **notices submitted online accounted for 71-percent of the total notices received at the center** (377,000 online notices received vs 145,000 noticed phoned in).



Since 2015, when total ‘online ticketing’ accounted for 57-percent of the noticed received, that figure has **increased by 14-percent**, with **online ticking at 71-percent** through October 2018. The latest version of the ITIC online ticketing system – known as NEXTGEN – has provided online users with a state-of-the-art electronic notification process featuring precision mapping tools capable of defining precise geographic mapping details, and includes satellite imaging capabilities and a program that auto-populates mapping geodata.

There are multiple factors that account for the rise in locate notices, many of which have to do with the demand for increased excavating operations. Overall, the building industry is still strong, with total engineering and construction spending for the U.S. forecast to end up +6-percent in 2018. The need for increased bandwidth is something that the telecommunications industry has been addressing by increasing fiber-optic installations and coaxial overbuilds – something – which, unless engineered as ‘overhead’ infrastructure, means underground installation by way of excavation. Additionally, the resources that the damage prevention industry puts forth to promote “calling (or clicking) before you dig” is not to be overlooked.

Iowa One Call directs a significant amount of resources towards outreach and communications efforts designed to educate professional excavators and the general population. Other damage prevention organizations and agencies implement dedicated outreach efforts to address excavation safety and underground damage prevention. Iowa One Call values the dedicated efforts of these important damage prevention stakeholder groups (including the Common Ground Alliance, Common Ground Iowa, Iowa Attorney General’s Office, Iowa Utilities Board, Iowa Pipeline Association, Iowa Land Improvement Contractors Assoc., Associated General Contractors of Iowa, National Utility Contractors Association, the Federal Pipeline Hazardous Materials Safety Administration, and all of the Iowa One Call member underground facility operators).



More than ever before, excavators must embrace the importance of proper excavation safety and underground damage prevention practices, while adhering to the rules, regulations, and industry standards designed to safeguard the underground facilities infrastructure. Things aren’t getting any easier out there... ***Please be careful, stay alert, and dig safe!***

IN THE NEWS



Local Excavation and Safety News From Around the Web



Join Iowa One Call at the 2018 Northern Midwest Users' Group Meeting!

[REGISTER TODAY](#)

Don't miss this opportunity to network with your peers from Iowa One Call, Gopher State One Call, and North Dakota One Call.

DATE AND TIME

Thu, Jan 24, 2019, 1:00PM
Fri, Jan 25, 2019 8:00AM

LOCATION

Sheraton Bloomington Hotel
5601 West 78th Street
Bloomington, MN 55439



Come check out our special guests, the Peterson Farm Bros! These home-grown musicians and agriculture advocates have been taking the internet by storm with music videos like "Call Before Ya Dig," and "Farmer Rock Anthem," spreading the 811 message far and wide! Come and enjoy an exclusive performance from the creative cultivators.

[\[Click HERE for more info\]](#)

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www.IOWAONECALL.com

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