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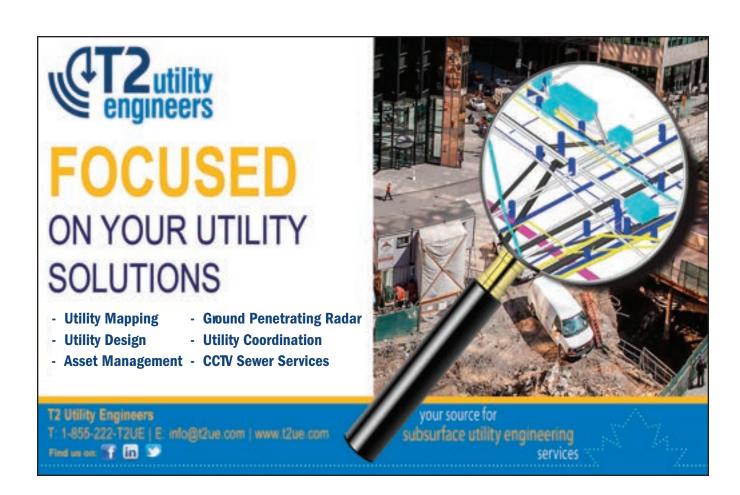




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The Ontario Regional Common Ground Alliance (ORCGA) is an organization promoting efficient and effective damage prevention for Ontario's vital underground infrastructure. Through a unified approach and stakeholder consensus, ORCGA fulfills its motto of "Working Together to Build a Safer Ontario."

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STRATEGIC DRIVING

By Ian Munro, President & CEO



hen we get in our vehicles to make the commute to and from work, there is a real potential for a collision – or worse. Should we completely stop driving to eliminate collision risks? Or, is the better strategy to drive defensively, follow the speed limits and regularly maintain our brakes and tires?

This same idea carries forward to the hundreds of excavations that occur across Ontario every day. Each time someone digs, there is potential for damage to underground infrastructure. Excavators **cannot** stop digging, but they **can** employ effective strategies to reduce risk.

The Ontario Regional Common Ground Alliance, supported by the 36 Damage Prevention Thought Leaders on the opposite page and over 500 members, strives to produce effective programs designed to aid excavation decisions to prevent, or control, potential harm:

- Each article in this issue of Ear to the Ground has been dedicated to mitigating risk;
- The Best Practices Manual describes Dig Safe practices that prevent damage to underground infrastructure;
- The Damage Information Reporting Tool (DIRT) Report, provides information on

the root causes of utility strikes and details which mechanical tools and sectors that are causing damages;

- The Geographic Councils focus on safe work practices, damage prevention training, and sharing information on local and developing issues;
- The Damage Prevention Symposium focuses on critical issues specific to the Ontario Damage Prevention community;
- The Damage Prevention Technician® Program provides fundamental instruction on locating for specific industries; and,
- The Locate Rodeo, through competition, promotes the Locator industry and skill-set excellence for Damage Prevention Technicians[®].

No program, no matter how robust, will eliminate all potential for underground infrastructure damage. But by participating in the ORCGA programs, and by adhering to Dig Safe practices, together, we can Reduce Risk ... Right Now.





Membership in the ORCGA: UNCOVERING VALUE

Have you ever tried to explain the highly complex world of utility infrastructure to someone who was unaware of what lay below their feet?

Imagine if you could easily peel back the layers of earth, exposing Ontario's underground world, to reveal how thousands of kilometers of unseen oil, gas, electrical, telecommunications, water and sewage infrastructure was working to keep homes and businesses supplied with warmth, power, communications, computer data and water.

> By uncovering the layers, it would be simple to demonstrate the intangible and tangible value of critical infrastructure that powers the lives of Ontarians.

INTANGIBLE BENEFITS

On the surface, the ORCGA membership value is not always easily seen; especially with the intangible aspects, the "hard to see" benefits of our association, as below:



BUSINESS SOLUTIONS

ORCGA membership offers business managers access to peer-to-peer support information. Issues can often be resolved by linking you to experts who can cut through red tape delays.



PROFESSIONAL DEVELOPMENT

ORCGA volunteers gain experiential knowledge by participating in leadership positions, become subject matter experts, become confident leaders and speakers, and skilled and valuable employees.



NETWORKING

By attending ORCGA's many in-person meetings that occur throughout the year, participants can expand their contact network and business development opportunities, accessing market segments at both the local and provincial levels.



SAFER COMMUNITIES

ORCGA members can gain satisfaction in knowing that their support has made, and will continue to make, communities and infrastructure assets across Ontario safer.



Some ORCGA benefits are easily quantified. By investing in membership with the ORCGA your organization will receive:

		6 6 6	\$
Membership Feature	Description	Benefits	\$ Value
Ear to the Ground	Exclusive member publication published twice annually	Keep abreast of updates from utilities, industry, regulators and government on new safety regulations and pertinent damage prevention education articles	\$10
Best Practices Manual	This manual describes the types of activities that prevent damage to underground infrastructure	Developed by industry practitioners, this manual covers all standard Dig Safe practices, with proven successful results. The Best Practices manual was adopted nationally in 2014	\$30
Damage Information Reporting Tool (DIRT) Report	This annual report paints a picture of safety and damage prevention in Ontario, as well as comparisons to other provinces.	Provides industry insight by detailing the root causes of utility strikes and the sectors that are causing damages	\$30
Geographic Councils	13 meetings meeting held across the province, twice yearly	Connect and network with local communities to discuss safe work practices, damage prevention training and developing issues. The Geographic Councils are free of charge and includes a meal	\$200+
Damage Prevention Symposium	An invitation to the Damage Prevention Symposium as an delegate or exhibitor	Delegates will learn from national and provincial damage prevention experts, attend presentations on emerging trends and network with decision makers Exhibitors have the opportunity to exhibit their latest products and services to delegates from across the province	\$500+
Damage Prevention Technician® Program	Access to instruction on the fundamentals of locating employed by specific industries.	Tangibly demonstrates your individual or organization's position on damage prevention by attending this recognized program	\$600+
Locate Rodeo	Canada's only Locator competition that celebrates first-in-class locating skills	Contribute to the promotion and importance of the locating industry, both at the provincial and international level	\$200+
ORCGA Annual Golf Tournament	A well-attended double tournament in support of a charitable cause	Day long opportunity to host clients and prospects in an informal environment and to personally forward brand messaging with decision makers	\$250+
Dig Safe Events	Province wide events promoting damage prevention awareness	A tangible way in which to demonstrate safety due diligence to government, the media and the public at large	\$200+
Sponsorship	Promotion of your organization through event, print, web and social media channels	Develop year-round touchpoints positioning your organization as a damage prevention thought leader and to drive awareness of your brand	\$300+
Member Value Program	Exclusive pricing opportunities, from a variety of businesses, available only to ORCGA members	Benefit Partners Employee Benefits Program St. John Ambulance First Aid Training Discounts Grand & Toy Discounts Landscape Ontario Winter Courses Discounts Purolator Courier Discounts Vubiz online business and H&S training	Could potentially save your business thousands of dollars!
Total Value	Membership costs on	ly \$125 for companies with less than 50 employees	\$3500+

It is easy to see the value received more than pays for the cost of membership!

Come out to the Geographic Councils, participate as a volunteer, secure a booth at Symposium, or take advantage of our many opportunities and personally uncover the rich value of ORCGA membership.

For more information about membership, please call 866.446.4493





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According to a recent study the HydroVac unit effectively replaced the hand digging required in a third of the time, with half the crew.

The reality is natural gas and telecommunication stakeholders continue to submit the majority of thousands of damaging events, followed by electrical, cable and water incidents. The most common cause of events is because "One Call Notification Practices Not Sufficient" and "Excavation Practices Not Sufficient". The results can be catastrophic.

EFFICIENCY

Not only is it safer to use HydroVac trucks to dig, they can increase the speed of completion of projects and are less labor intensive.

According to a recent study, the HydroVac unit effectively replaced the hand digging required in a third of the time, with half the crew. The study concluded the cost of using a mechanical shovel and backhoe was 4.1 times greater than the identical job using a HydroVac unit. Using that as a multiplier, the study estimated that without HydroVac technology the cost of infrastructure development in Ontario would increase by \$360 million to \$400 million per year.

On building projects and repairs HydroVac trucks compliment mechanical excavation by safely exposing sensitive underground infrastructure or digging in tight quarters, where conventional methods are impractical or the potential damage is high.

One metre on either side of a marked utility is designated as a "no dig zone" for mechanical equipment, so the jobs have to be either hand dug or use hydro excavation, regardless of the utilities expected depth. Hydro excavation is really the only practical option for

excavations deeper than four feet, as shoring may be required for hand digging anything deeper than that.

PROFESSIONAL

With more than 30 members, the HydroVac Alliance of Ontario (HVAO) collectively solves problems and seeks solutions to serve the industry more effectively. HVAO members are engaged, informed, professional hydro excavation business owners working

together to build and serve the industry for the long-term.

The HVAO has spearheaded consultations with various levels of governments. The group has been involved in frank, informed discussion about the HydroVac business, how it works and how potential legislation will impact this industry and infrastructure building in the future.

The HVAO is engaged to find collaborative solutions and push the industry to higher standards. 🥌





ar to the Ground sat down with four different people to discuss the DIRT Report from their damage preventionperspectives: International, National, Currently inputting into the DIRT Report and Considering inputting into the DIRT Report. Here is what they had to say:

INTERNATIONAL

Damage prevention is a shared responsibility; and, so is data reporting.

The Common Ground Alliance, based out of Arlington, Virginia, launched the Damage Information Reporting Tool (DIRT) in late 2003.

The DIRT program collects critical damage data submitted anonymously and voluntarily by facility operators, utility locate companies, one call centers, contractors and regulators through a completely secure, private web application.

Bob Kipp, President of the Common Ground Alliance, says that "the basic DIRT application is actually called CGA DIRT North America, and since the launch of DIRT, Canadian stakeholders have shown steadily increasing contributions, both in terms of reports submitted, and provinces represented."

"When aggregated with the U.S. data, DIRT provides valuable insights into factors that contribute to, and help reduce damages to buried facilities."

"The ability to tease out differences and commonalities in the data between Canada and the U.S. enables more meaningful analysis of the data, so that stakeholders in each country can learn from each other."

To learn more about the DIRT program, please visit www.cga-dirt.com.

Sher Kirk is the Operations Director of Alberta One-Call and her work with DIRT is primarily part of her role as a Board Member of the CCGA.

Sher also represents Canadian One-Call Centres on the Canadian Common Ground Alliance Board of Directors and is currently the Chair of the National DIRT and Statistics Committee.

Describe your role as the Chair of the DIRT Committee

I work with the Regional Partners to standardize data collected by individual provinces so we can amalgamate and analyze the data in a way that informs national activities in damage prevention.

We can use the national damage statistics to identify trends over time, to educate the public, to measure success in our attempts to reduce damages, to calculate the societal cost of underground damages and to plan advertising or education campaigns to address areas of concern.

How were damages tracked before DIRT?

In Alberta, the One-Call centre has been collecting damage reports from our members for almost 20 years.

However, before DIRT, the information collected was rarely used, and was not reported by enough of a cross-section of industry to be really valuable.

DIRT allows for more participation and standardization of data. It is a tool that gives us real numbers to work with instead of trying to base damage prevention efforts on anecdotal evidence.

Are there any national damage trends that have been identified?

Overall, we are seeing a slight increase in use of the one-call process and a slow decline in the number and severity of damages.

The number of damages as a result of excavators using equipment inside the hand-digging zone continues to be a national issue and points to the need for more education and awareness of how to proceed once locates have been performed.

In a perfect world, what would you want to see come out of the **DIRT Report?**

In a perfect world, we need to see 100% reporting of damages into DIRT, and a high quality of data collected. Simplifying the data collection, increasing participation and educating industry on the value of submitting complete and accurate data must be a priority. Solid data is an effective tool in achieving our goal of reducing or eliminating costly damages to our critical underground infrastructure.

CONSIDERING INPUTTING INTO DIRT

CURRENTLY INPUTS INTO DIRT

Chris Van Daele is the Damage Prevention Field Manager (SW Ontario).

In this busy role, Chris:

- Provides resolution to daily locate issues;
- Monitors performance levels of locate service providers to ensure timely, safe, and accurate locate services;
- Acts as local liaison with TSSA, field operations employees, locate service providers, and insurance services with respect to excavation damages and locate issues;
- Leads local damage prevention awareness sessions for the excavating community; and,
- Promotes and is involved with the Ontario Regional Common Ground Alliance, Ontario One Call, and the Locate Alliance Consortium.

At Union Gas, we pride ourselves on safe excavation practices. We ensure our contractors are held to the same high standard of safe excavation.

Currently the majority of our damages are due to imprudent excavation. Most commonly, projects that require deep excavations such as sewer and water work lead to gas plant damages.

Union Gas tracks all of our damages internally, as well as in DIRT. We are able to run data reports which enable us to identify trends as well as areas needing attention.

We receive and review annual copies of the ORCGA DIRT Report which enables us to see the big picture. We wanted to participate in a database that tracked province-wide damage stats from multiple stakeholders.

Union Gas can identify if other utilities are experiencing the same types of damages that we are and can collaborate on new ideas to mitigate re-occurrence. In a perfect world it would be mandatory for all utilities to input into DIRT, as this would give us the full picture of damages in Ontario.

THE CITY OF PORT COLBORNE DOES NOT ENTER DATA INTO THE DIRT REPORT, AT THIS TIME.

What is your title at work?

Darlene Suddard, Environmental Compliance Supervisor, City of Port Colborne

How did you find out about the ORCGA and the DIRT Report?

Our municipal locator is a certified Damage Prevention Technician (DPT), trained through the courses offered by the ORCGA.

What issues are you experiencing locally that has you considering inputting into DIRT for the first time?

Recently, an excavator damaged a 2" water service because they assumed the water line was much deeper.

Excavation practices were not sufficient, as the excavator:

- Failed to maintain clearance;
- · Failed to maintain the marks;
- Failed to use hand tools where required; and,
- Failed to verify location by test hole/pot holing.
 Excavators consistently demonstrate recklessness when it comes to water infrastructure.

While it's true that there are no immediate dangers when damaging a water main (unless the main is under pressure) there are a number of consequences that result from this mindset:

- Homeowner property damage and subsequent insurance claims;
- · Costs incurred to shut off water service;
- Coloured particulates might now appear in the homeowner's water, or even more troubling, potential drinking water contamination might occur, resulting in the issuance of a Boil Water Advisory by the Medical Officer of Health;
- A whole neighbourhood is now impacted for several days (think laundry, bathing, meal preparation, those requiring medical care):
- Water has to be run off from a fire hydrant for several days, the cost of which will be absorbed by the water customers;
- Water samples now have to obtained and tested;
- A licensed operator is required to repair the broken water main:
- Asphalt repairs both temporary and permanent have to be made; and,
- A poor (and incorrect!) reflection on safety and reliability of the city's drinking water.

Scenarios, as above, have led the department to consider tracking and analyzing damages.

What are the root causes of these damages? Is it only reckless excavators to blame, or is it old municipal records, or are there other causes that haven't been identified yet?

We need to obtain hard data on the root causes to take to senior management and city council to determine mitigation strategies to prevent future damages. The municipality is very serious about the correct use of its citizen's tax dollars and maintaining the infrastructure they have entrusted to us.

FEATURE



MIAKIO OPENS NEW CONTACT CENTRE

By Jeff Hitchcock, Education and Training Manager, Ontario One Call

ntario One Call has been through a lot of changes since the passage of the Ontario Underground Infrastructure Notification System Act in 2012. From the establishment of a Member's Bill of Rights into bylaw, to regulations, to reducing One Call fees, the road has been long.

By far, the biggest change is to the establishment of our own contact centre.

To pay tribute to these changes, we celebrated the Grand Opening of the new contact centre on June 16, 2016 with a new logo and an open house.

Located at 104 Cooper Drive in Guelph, Ontario, this space allows Ontario One Call to keep a 50 seat contact centre alongside its other departments: Finance; Member Services; Contractor Services; Quality Assurance; Training & Education; Compliance; and Operations. This allows for greater collaboration of ideas and coordination of projects.

The event was attended by representatives from our membership and excavators alike, it was followed by Ontario One Call's AGM.



The green represents the forests, grass and other green spaces that bring Ontario to life. The grey represents the concrete, asphalt and machinery with which we build our province. The colours also mirror the colour schemes of Alberta One Call and other US One Call centres.

The focus on the one in green, highlights the goal of One call. The pending federal legislation puts us all one step closer to one call for all infrastructures in the public right of way.

We retained the swoosh and shovel to preserve our original theme and guiding principles; that is to help our stakeholders break ground safely.

Ontario One Call's Board of Directors, after a brief photo-op, met to continue steering the corporation into the future.





Front: Karen Marner (Treasurer, Aecon); Corrine Gabriele (Director, Town of Kingsville); Enrico Scalera (Director, Town of Oakville); Shelly Cunningham (Director, Powerstream); Len McMillan (Chair, Hydro One, Retired); Scott Mudie (Director, Oakville Enterprises Corporation).

Back: Pierre Fontaine (Director, Laurentian University); Dan Moulton (Director, Telecom Sector); Tony DiPede (Director, North Rock Group); Tony Faccia (Director, Rogers Communications); Michael Fiorini (Director, Cable Cable); William Shea (Director, City of Toronto); Ben Hamilton (Executive Director, Ontario One Call).

WHAT DOES **ONTARIO ONE CALL'S FUTURE HOLD?**

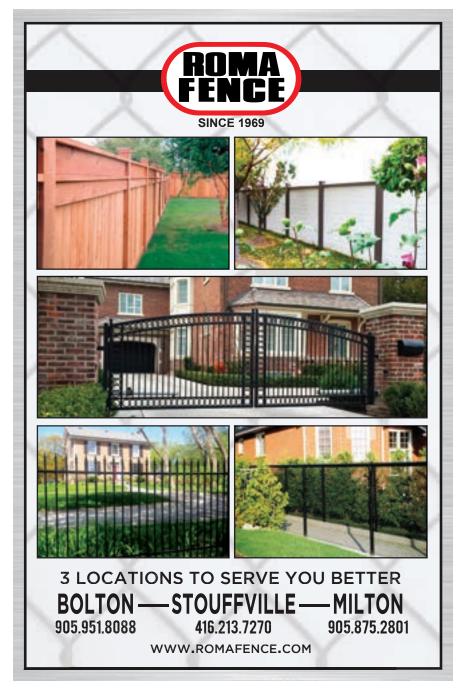
A map selection, dig depth and a description of the work area will become mandatory by the end of 2016. Training for these improvements will be held November 2016, with a targeted release date in December 2016.

These improvements are designed to set us all up for success with further changes planned in 2017/2018.

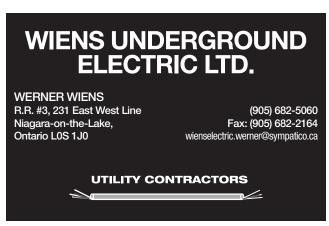
For greater transparency, the minutes of the Operations Committee and Compliance Committee meetings are now posted online for public view. Additional moves toward transparency will likely occur in 2016 and 2017.

An advertising budget for Ontario One Call has been secured as we strive for public awareness and the participation of all Ontarians in calling before they dig. \$3 million over three years will be spent to inform the public about safe excavation.

Join the conversation or contact us for a tour at solutions@on1call.com or visit us at facebook.com/on1call.



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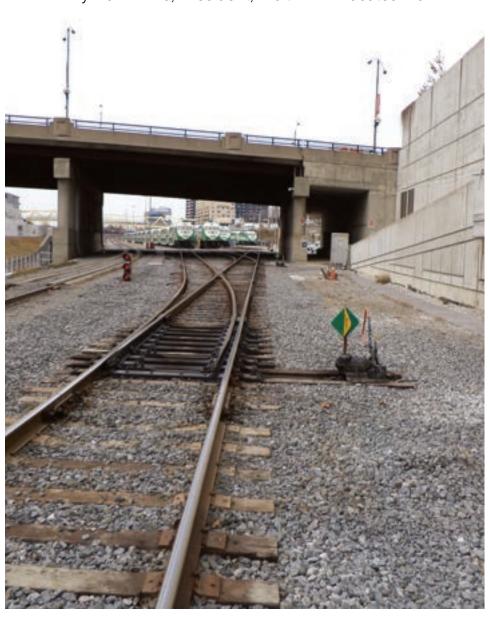






Our Hidden Infrastructure

By Kevin Vine, President, multiVIEW Locates Inc.



n 2014, the Damage Information Reporting Tool (DIRT) reported more than 273,000 incidents of underground utility damage during excavations across Canada and the United States - an increase of over 48,000 incidents from 2013. The report also found that 17% of these events were caused by insufficient locating practices and another 25% caused by locates not being requested.

The integrity of utility infrastructure and utility data has never been more critical; a drop in communications for even a short period could be catastrophic for many corporations, not to mention the utility owner.

During the design phase of an infrastructure project, it is often difficult to get an accurate picture of subsurface utilities, which can create unnecessary risk and liability for project stakeholders. Data provided to project managers, engineers, and designers are frequently outdated, inaccurate, or unavailable. Adding to the problem is the fact that, historically, there has been a lack of regulation around collecting, recording, and managing subsurface data.

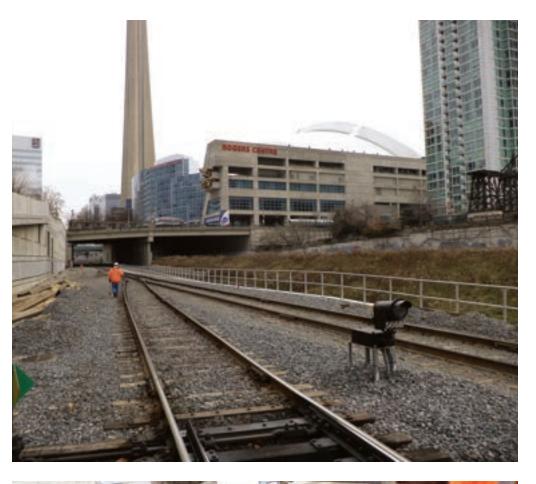
In response to these challenges, the American Society of Civil Engineers (ASCE) formed a committee in 1996 to create the first national consensus standard in the world, defining the quality of utility location and attributing information included on plans. Known as ASCE 38-02, Guideline for the Collection and Depiction of Existing Subsurface Utility Data, the standard defined the concept of subsurface utility engineering (SUE): a process for managing risk by identifying and controlling the quality of













underground utility infrastructure data used in the design, development, and construction of a project. Many countries have followed the United States' lead by creating similar standards, including Malaysia, Canada, Australia, and most recently, Great Britain.

Developed and refined over the past 20 years, SUE is a branch of engineering practice that classifies information according to quality levels with an objective to vastly improve data reliability. This provides project owners and engineers with a benchmark to determine the integrity of utility data at the outset of an infrastructure project. Once collected, data is typically presented in CAD format or a GIS-compatible map. A conflict matrix is also created to evaluate and compare collected utility information with project plans, identify conflicts, and propose solutions.

THE CANADIAN REGULATORY **FRAMEWORK**

Though SUE is not officially legislated in Canada, in 2011, the Canadian Standards Association (CSA) released S250, Mapping of Underground Utility Infrastructure, which builds upon ASCE 38-02 and outlines best practice for mapping and managing records for underground infrastructure. The standard developed out of a recognized need by utility owners, the Federation of Canadian Municipalities, contractors, and locators to improve data collection processes and clean up existing records.

CSA S250 complements and extends ASCE 38-02 by setting out requirements for generating, storing, distributing, and using mapping records to ensure underground utilities are readily identifiable and locatable. Accuracy levels expand upon SUE Quality Level A, prescribing a finer level of detail to define the positional location of the infrastructure. The standard also defines accuracy parameters for as-built records and specifies the utility attributes to be used for describing and depicting newly built underground utility infrastructure. This promotes a consistent, effective approach to data collection that ensures the quality of utility records well into the future.



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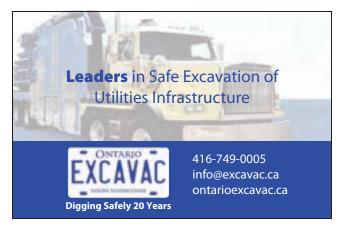
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Though relatively new, the standard has already been integrated by several authorities including the City of Toronto. Utility and right of way owners such as Union Gas and the Ontario Ministry of Transportation are also looking to improve their current records practices based on guidance provided by CSA S250. The CSA is encouraging all organizations to leverage S250 as a records management framework going forward since it could quickly become a facet of municipal construction contracts and eventually be legislated in Canada.

SUE IN INFRASTRUCTURE DESIGN

As the need for SUE becomes more apparent both nationally and worldwide, many cities and municipalities are implementing SUE either directly in the design phase or completing SUE projects ahead of engineering RFP's. The latter practice controls the SUE data and reduces interpretation risks and higher costs associated with outsourcing as a component of the design RFP.

SUE played an integral role in the recent Union Station Revitalization project, designed to bring many new enhancements to riders such as a roof and glass atrium over passenger platforms and railway tracks, new staircases, additional vertical access points, and an overhaul of the platforms

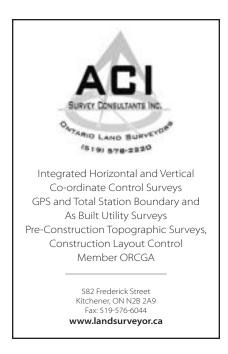


and station concourses. This project included significant analysis and review for reconfiguration of track between the Don River and Strachan Avenue.

Because the track had been subject to change and resurveyed multiple times over the years, concerns arose over the accuracy of existing data, particularly for subsurface assets. "We're dealing with infrastructure that is 50 to 70 years old," said Florin Doru Merauta, senior project engineer and electrical lead with Hatch Mott MacDonald, "We were uncertain of the location of underground utilities and were working with disparate datasets

that were scattered across multiple platforms. Adding to the challenge was the fact that GO Transit's interlocking track system is considered one of the most complex in North America."

The SUE process was implemented to get an accurate depiction of all existing public and privately owned utility services including gas, hydro, water, fibre optics, telecommunications, and signal cabling. Non-destructive geophysical inspection methods - including groundpenetrating radar and electromagnetic induction - were leveraged to detect buried cables and utilities that crossed





the rail corridor. Collected data were referenced against existing maps to reveal inconsistencies, and information was then stored in a central database.

Property boundary and topographic data was also gathered and overlaid on a map to generate a 3D topographic survey. The study resulted in a documented understanding of the Union Station Rail Corridor (USRC) ownership and easements, detailed knowledge of surface infrastructure, and the inferred spatial position of all underground utilities targeted by the investigation.

"We used to rely on older records and would need to resurvey a project area every time there was a change, which would drive up costs," Merauta said. "Surveyors would bring their own tools and data would be stored disparately after every survey. We now have a consistent database of accurate information that conforms to GO Transit standards and can be leveraged by contractors for years to come."

SUE was also leveraged to identify underground utilities during the QEW Credit River environmental assessment (EA) study, completed to inform a longterm strategy for addressing the rehabilitation needs of the QEW Credit River Bridge. During the EA and the preliminary design stage, quality levels A and B were implemented to identify potential impediments to the design and construction of underground installations. Using non-destructive inspection methods, locatable underground utilities were targeted for further investigation. Quality Level A was completed to establish the precise vertical and horizontal positions of select buried utilities. This allowed for better design and utility coordination while minimizing the potential for conflict.

"This type of investigation is typically not completed during the preliminary design stages," said Dana Glofcheskie, project engineer with transportation planning at MMM Group. "However, SUE provides a much better level of accuracy than plans from utility companies coupled with aerial photos, allowing us to more confidently identify utility conflicts and develop a more detailed utility relocation plan. This in turn reduces risk for our client during future phases of the project."

Kevin Vine is President of multiVIEW Locates Inc., where he oversees a team of geoscientists, engineers, and technical experts.

















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