



The Training Issue

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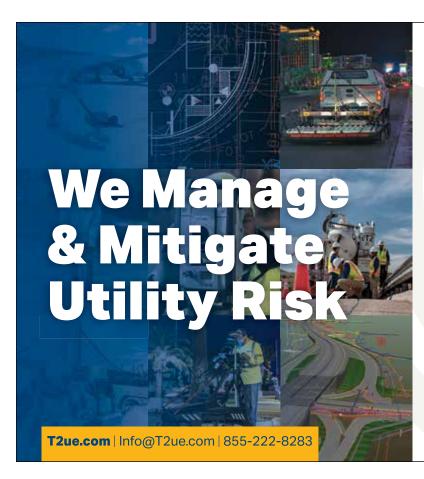
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The Ontario Regional Common Ground Alliance (ORCGA) is an organization promoting efficient and effective damage prevention for Ontario's vital underground infrastructure. Through a unified approach and stakeholder consensus, ORCGA fulfills its motto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

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THE IHSA ROOT CAUSE ANALYSIS **REPORT: UNDERGROUND UTILITY STRIKES**

By Doug Lapp, President & CEO, ORCGA

t is not until we lose vital utility services that we realize how impactful and crucial underground infrastructure is to our community and realize the potential harm to workplace safety, the wellbeing of workers, infrastructure, and the community.

In June of 2021, industry stakeholders comprised of Labour, Management and Industry System Partners had a unique opportunity to take positive steps to reduce the frequency and severity of underground strikes. The IHSA initiated a utility strike Root Cause Analysis and evaluation workshop.

The workshop utilized a "by the industry, for the industry" approach ensuring an open, transparent, and collaborative process involving peer-recognized industry/system experts.

Using the "Fishbone" Diagram method, the stakeholders determined the contributing factors in underground utility strikes, which fell into these categories: People, Processes, Tools and Machines, Measures, Environment, Culture.

The workshop members then, through a voting process, created a priority Top 10 list of the primary causal factors. Only Labour and Management representatives were allowed to vote.

After much analysis, the workshop identified the following key industry systemic weaknesses:

- 1. Lack of Quality Procedures
- 2. Lack of Clear and Standardized Locates
- 3. Lack of Education (Reading Locates)
- 4. Lack of Accountability

- 5. Lack of Health and Safety Management Systems and Workplace Safety Culture IHSA summarized the following recommendations to address the systemic weaknesses:
- 1. Identify best practice guideline for planning and working in the vicinity of underground utilities
 - Including roles and responsibilities to promote accountability among employers, supervisors, and workers as well as Ontario One Call, utility owners and municipalities.
- 2. Review and promote standardized and clear utility locate ground markings and documentation
 - Including utilization of a digital portal to access locates, digitized locate forms and clearer icons.
- 3. Develop and provide education on reading locates
 - · Including required training to ensure workers and supervisors (i.e. supervisors) have the knowledge to determine where identified underground utilities are located accurately.
- 4. Review and enhance practices, procedures and regulations to foster accountability
 - · Including policies, procedures, and regulations relating to the completion and review of locates prior to excavating and the overall planning and execution of work in the vicinity of underground utilities.
- 5. Develop a framework to improve organization workplace safety culture
 - · Including procedures to assess and improve leading and lagging indicators to improve workplace safety culture at all levels of the organization, promote management buy-in on developing and enforcing safe work practices, and reward and recognition programs.

The IHSA will be releasing its full report in Q2, 2022 which will include a full listing of the solutions and controls from the identified Top 10 primary causal factors. Contact slaing@ihsa.ca for further details.

The ORCGA participated in this workshop and continues to work towards effectively eliminating damages to underground infrastructure through influential advocacy, meaningful education and impactful engagement, in part, through channels such as Ear to the Ground. For this reason, the ORCGA has dedicated this issue of Ear to the Ground to its new training initiatives:

Safe Excavation Training is based on the latest research and resources on excavation best practices, legislation and standards. It provides instruction on the fundamentals of compliance, planning and design, notification service, locating and marking, and excavation.

Damage Prevention Technician Training (DPT 100 and 200) is provided at various locations throughout the province and is focused on a combination of in-depth review of techniques used to locate all utility types, safety, map reading, report preparation, liabilities, industry practices, emerging technologies, etc. Training is also comprised of in-class and field work, interspersed with guizzes, and ending with a closed book exam.

ORCGA Tailboard Talks are based on the CCGA Excavation Best Practices and provide guidance for informal safety meetings that highlights safety topics related to the specific job, such as safe work practices and excavation workplace hazards.

The ORCGA would be interested in receiving your feedback on these articles and its training courses. Please email your comments to office@orcga.com.

DAMAGE PREVENTION **TECHNICIAN TRAINING PROGRAM**



By Dave Wulff, Senior DPT Instructor

he Ontario Regional Common Ground Alliance (ORCGA) first formed in 1997 and later registered as a formal chapter of the Common Ground Alliance in the US. in 2003.

On April 24, 2003, a construction backhoe at a site on Bloor Street West near Kipling Avenue in the west end of Toronto, ruptured a gas line that had not been properly marked. Gas escaped into the basement of the building and ignited.

The explosion levelled a strip mall, destroying three businesses and several homes and killed seven people.

This tragedy underscored the need for advanced training and the adoption of industry accepted excavation best practices in addition to educating locators so that they have a basic level of knowledge and skill base and are

Locate Service Providers (LSPs) hire technicians to locate utilities in both the

private and public domains, each having internal training and processes that vary widely amongst firms.

Various stakeholder group such as excavators, utilities, regulator, the insurance industry and the public have an expectation that the locate information is reasonably accurate and that staff are trained and capable.

A subcommittee was struck and was comprised of 16 Subject Matter Experts from ORCGA's stakeholder groups,

DPT 100

This 40-hour (5 day) combined theory and technical training program will be of interest to existing utility locators, as well as those entering the locating business.

DPT 200

The DPT 200 course is an advanced 24-hour (3 day) combined theory and technical training program designed specifically for utility locators with a minimum of three years direct industry locating experience. In order to qualify for this course, applicants must supply a signed letter from their employer, on company letterhead confirming that they have the required practical locating experience. This accelerated program covers the same material as the DPT 100 but with a large portion of pre-work completed prior to class. Module 1: Introduction

Module 2: Introduction to Locating

Module 3: Utility Locate Requests

Module 4: Utilities Infrastructure

Module 5: Safety

Module 6: Utility Prints and Records

Module 7: Locating Fundamentals

Module 8: Locating Techniques -

Power

Module 9: Locating Techniques -Telecom

Module 10: Locating Techniques -Gas

Module 11: Locating Techniques -Water and Sewer

Module 12: Methods and Procedures

Module 13: Liabilities

Module 14: Alternative Emerging Locate Technologies

Module 15: CCGA Best Practices Review

representing a wide range of skills and experience. The initial aim in developing the Damage Prevention Technician (DPT) Training Program was to standardize the fundamentals. The primary focus was centered on LSPs, and then later included Private Locators.



The subcommittee focused first on core curriculum - what education is needed to reduce damages - followed by addressing those who had already been locating for years in the field. This meant creating two training streams for those new to the industry and for experienced locators.

DPT 100 and 200 course training is provided at various locations throughout the province and classes are typically held in the winter/spring to avoid impact on operations. The training is focused on a combination of in-depth review of techniques used to locate all utility types, safety, map reading, report preparation, liabilities, industry practices, emerging technologies, etc.

Training is also comprised of in-class and field work, interspersed with quizzes, and ending with a closed book exam with an 80% score to pass. This training was followed by the most important Observed Competency Assessment Tool which addresses proficiency and aptitude on the job.

For each category of certification sought, a comprehensive skill capability checklist is completed by an internal assessor and a manager/owner to confirm the applicants' complete knowledge and ability, as well as a successful

The DPT Program began in

2200

students have been trained as of December 31, 2021.

DPT classes have been held since the start of the program.

Currently, there are Active (certified) Damage Prevention Technicians.

completion of a minimum of 6 months of satisfactory field experience in each category being applied for. This application is submitted and reviewed by the DPT Education and Training Committee, formerly the DPT Certification and Advisory Board.

If you have any questions or require more information, please contact Kim Sheppard kim@orcga.com or visit the ORCGA website at www.ORCGA.com.

THE SAFE **EXCAVATION TRAINING PROGRAM**

By The Ontario Regional Common Ground Alliance

ORCGA Board of Directors and membership identified that there is a gap in available training for safe excavation around underground infrastructure. The ORCGA Board of Directors set up a steering committee on how to address this gap and establish a training program. First, the IHSA facilitated the development of the

Project Charter including identifying the "Learning Outcomes". Secondly, the committee identified that the Canadian Common Ground Alliance Underground Infrastructure Damage Prevention Best Practices manual is the best framework on which to build a new course and selected the topics that were most applicable and compatible to Ontario regulatory and safety agencies.



The Safe Excavation Training (SET) Program Course Curriculum is based on modules that follow the different chapters within the Best Practices.

The target audience for this program is the front-line workers, the labourers, the swampers and the machine operators. In addition, training also needs to occur for the front-line supervisors and managers on the core content. Beyond the core content, there is additional material that the Steering Committee felt was needed specifically for the front-line supervisors and managers.

COURSE MATERIALS

The course materials that have been developed for the SET Program contain three guides:

The Facilitator Guide contains step by step instructions for those that are leading training. The Facilitator Guide has the course content which follows the PowerPoint presentation and instructs the facilitator on tasks as they walk through the program, such as group questions, quizzes, etc.

The Participant Guide is given to anyone taking the program. The primary purpose of this guide is to give the



participants the written documentation of the training materials. Also, within are the Best Practices clause numbers for future reference in the field. post training. Lastly, there is a space for participants to jot down notes during training.

Virtual Instructor Led Training (VILT) Manual was developed to run SET program virtually and provides direction for the instructor how and when to utilize the common online platforms needed to run the course online.

QUIZZES AND FINAL TEST

Intermittent quizzing is a way to test the participant's material comprehension before the final test. like the method used in the Damage Prevention Technician Training Program (DPT).

There are two ways to test participants: If the SET Program is held in-person, the instructor can go through the quizzes and review the answers with everyone. The alternative is Mentimeter, an online polling tool where participants can access guizzes - and then provide the answers - through their smart phones.

The final test format is multiple choice or true or false questions and an open book format.

There is a general knowledge section, followed by scenario testing, and ending with general utility locate sheets where the participants have to find different things on the locate sheets such as the Excavation Date or Description of the Dig Area.

PROGRAM DELIVERY

Instructor Led Training (ILT) was originally believed to be the preferred method for in-class, in-person training for front-line workers, as opposed to self-paced online training.

Pricing models (to be finalized) are based on the following factors:

- ORCGA member vs non-member
- ORCGA instructor vs company instructor
- Rented facility vs company facility
- Number of participants

The Safe Excavation Training (SET) Program Course Curriculum is based on modules that follow the different chapters within the Best Practices.

Module 1: Compliance

Agencies and their jurisdictions MoLTSD, TSSA, ESA, etc.

Module 2: Planning and Design As-Built drawings, documentation

Module 3: Notification Service

Ontario One Call System Ontario One Call - verification Public vs Private locates Notification limitations Locate status (360 feedback)

Module 4: Locating and Marking

APWA Unified Colour Code Ground markings Requirements of a valid locate Alternate Locate Agreements (ALA's)

Module 5: Excavation

Excavation risk scenarios Excavation hazards & minimizing risks Requesting public/private infrastructure locates Pre-excavation site meetings Purpose of locate forms How to understand & read locate forms Valid locate packages Verification of locate vs request Locate preservation Excavation observer (swamper) Excavation within the Tolerance Zone Unmarked or unidentified infrastructure Protecting exposed facilities Damaging underground infrastructure Survey infrastructure Demolitions - isolation/ disconnection Protecting buried infrastructure during backfilling

Vacuum Excavation (Hydrovac)

Vacuum excavation competencies, hazards, safety Tolerance Zone, frozen ground Trenchless excavation competencies, hazards, safety Trenchless excavation methods Directional drilling

Additional Content for Supervisors/Managers

Cancelling, deferring altering locate requests Significance of locate ticket notifications Facility owners contact information Projects with multiple users of single locate Infrastructure owners failing to deliver timely locates

Virtual Instructor Led Training

(VILT) is now the preferred method for training online not only due to pandemic restrictions, but for those companies who have staff located throughout the province, VILT assists in closing the distance gap.

Pricing models (to be finalized) are based on the following factors:

ORCGA member vs non-member

- ORCGA instructor vs company instructor
- Number of participants

IHSA RESEARCH REPORT

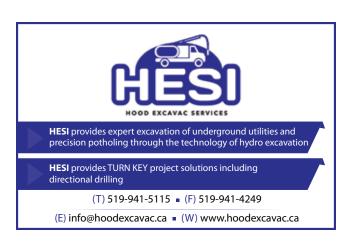
Of note, the IHSA recently concluded a research report entitled the Root Cause Analysis of Underground Utility Strikes. The report found that the top casual

The Jim Douglas Award of Excellence in Damage Prevention



Jeremy Cook R&B Construction Services









TESTIMONIALS

"It looks great, this is a fantastic idea" – TC Energy

"The program and formatting that they are going to do looks good" – Powell Contracting

"I have gone through the storyboard. I believe it is very well done" – Tbay Tel

"It's all good" – OSWCA
"Looks good from my
perspective, no additional
comments" – Enbridge Gas
"I think it was very good
training" – Goldie-Mohr

...regarding the "How to read a locate" section...."We need to thoroughly go through to understand what we are looking at – particularly the sketches"

"We need to emphasize – don't make assumptions!"

factors in underground utility strikes are valid and accurate locates, locates not present before excavation, ability to read locates, marking of locates, lack of review of locates, mapping of utilities, training workers, lack of knowledge.

Some recommendations coming out of this report are:

- Identify Best Practice guidelines for working in the vicinity of underground utilities
- Develop and provide education on reading locates
- Review and enhance practices to foster accountability

The SET Program addresses many of the root causes of underground utility strikes!

CITY OF TORONTO INITIATIVE

Finally, an initiative at the City of Toronto that began in 2020, due to an ever-growing concern over contractors repeatedly damaging high risk assets, such as natural gas and hydro lines, required a collective industry corrective action.

The City of Toronto is currently considering a requirement for contractors, such as Operators, Swampers/Labourers, Crew Leaders, and Supervisors to successfully complete the ORCGA Safe Excavator Training and to adhere to the CCGA Best Practices for excavation.









EXCAVATOR OF THE YEAR AWARDS

ORCGA recognizes ongoing achievement in our industry through our Awards Program.

These awards recognize excavators with the best in-class safe digging practices. Excavator of the Year is determined by each contractor's individual damage rate. A damage rate is a calculation dependent on the volume of locates requests, measured against the number of digging related damages to underground infrastructure. Input from infrastructure owners is also used in the determination. To qualify, excavators must have a minimum of 500 locate requests to Ontario One Call in the previous year.

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MOST IMPROVED







ORCGA TAILBOARD

By The Ontario Regional Common Ground Alliance



Excavation Within Tolerance Zone

CCGA Underground Infrastructure Damage Prevention Best Practices Version 3.0 - 4-19



orker safety should always be the number one priority as workers are often involved with different types of equipment and different

A Tailboard Talk can go by other names such as Toolbox Talk, Tailgate Meetings or Safety Briefings, but whatever the name they all focus on holding an informal safety meeting that highlights safety topics related to the specific job, such as safe work practices and workplace hazards.

Tailboard Talks are normally short in duration and are generally conducted at the job site prior to the commencement of a job or work shift.

DEVELOPMENT

The Tailboard Talks were developed from member and ORCGA Board of Directors input, as well as from the DIRT Report and its identification of root causes.

4 Tailboard Talks have been developed, with another 11 in progress. The release date for this training information is set for the beginning of the 2022 dig season.

FORMAT

The Tailboard Talks format states the Excavation Best Practice Statement and its clause number, as well as explaining the risks and factors and their controls.

Then there is a portion were the instructor can demonstrate the lesson.

On the back of each Tailboard Talk in a sign in sheet and room for comments which can be kept as a permanent record of material covered.

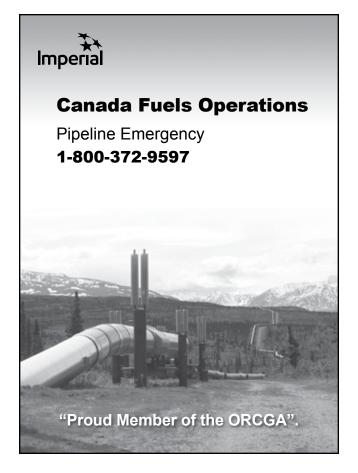
ADDING TO ORCGA **MEMBERSHIP VALUE**

The Tailboard Talks are being developed on behalf of our members and will be accessed through our Member-Only section of the ORCGA website. •















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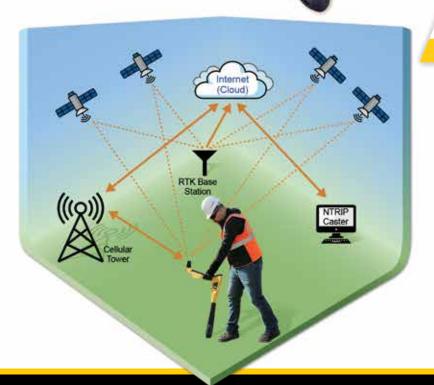
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