2021 DIRT REPORT

Ver 15.0

Ontario Regional ORCGA Common Ground Alliance

DIG SAFE

Hydro excavation (hydrovac) has been used in Canada since the early 1970's through a truck mounted system that uses pressurized water to wear away soil, and a powerful vacuum to suction the water and soil into a tank. It can be used to safely expose underground utilities without damaging pipes or conduits. Hydro excavation is also an excellent technology for excavating frozen ground as most hydrovac trucks are equipped with heaters for the water jets to assist the melting process.

Hydro excavation is safer than traditional excavation as it does not use sharp objects such as blades or drills. Because the trucks use a boom and flexible hose, they can be positioned up to 100 ft (or more) away from the point of excavation.

Hydro excavation is a safe and efficient complement to, not a replacement for, traditional excavating techniques (i.e. hydraulic backhoes) and should be used whenever feasible.

Douglas Lapp

Underground infrastructure provides crucial essential services to homes, businesses, public institutions, and communities. Whether it is delivery of natural gas for heating, electric power for lighting, high speed fibre for communications, or water supply; these are all critical for both business and day to day living. The risk of disruption to the delivery of these services through this vital infrastructure exists every day, and at every excavation job site.

The ongoing COVID-19 Pandemic throughout 2021 continued to present challenges to Ontario residents, disrupting their daily lives both personally and professionally. The criticality of this essential infrastructure to individuals has been intensified exponentially with most being forced to not only work from home, but also to stay and remain in their homes to prevent the spread. However, the introduction of vaccines provided hope to control the impacts of the Pandemic on underground infrastructure construction and would assist to move towards the return to “normal”.

To provide the best defence against underground strikes, the understanding and analysis of infrastructure damages or events and drilling down into their root causes will help to determine which aspects of the excavation process should be targeted for awareness, training, and oversight to reduce the frequency and consequences of these events.

The overall number of damages in 2021 decreased from 2020 by approximately 8%, bringing the number of recorded damages below 4,500 to 4,402. However, there was also a 7.4% increase in locate requests overall and a corresponding increase in One Call notifications of 6.9%, likely attributable to the lesser impacts of the Pandemic. Substantial reductions in damage events were noted in several areas across Ontario including 28% or 27 in Sarnia; 15% or 103 in Hamilton-Niagara; and 6.5% or 101 in Toronto-York-Peel.

The most prevalent root cause for underground utility damages continues to be Excavation Practices not being sufficient, although there was over 15% reduction from 2020. Underground utility damages due to notification issues remained fairly constant with 2020 and continues to be a concern as close to 100% of these are due to no call being made to Ontario One Call prior to excavation activity (28% of damages).

Clearly, there continues to be considerable work ahead to educate excavators on safe digging practices and the need to Call or Click Before You Dig.

The chronic issue of late locates in 2021 returned to levels above those seen in 2019 after the temporary lull in this issue in 2020. However, the late locate issue is real, and the new question to explore the relationship between late locates and underground infrastructure strikes was incorporated but needs further engagement by data providers to expand the use of this data.

The 2021 DIRT Report is the result of the dedicated volunteers on the ORCGA Reporting and Evaluation Committee, led by Co-Chairs Leah Borley of Hydro One and Frank Zechner of the Residential Civil & Construction Association of Ontario (RCCAO).

On behalf of the ORCGA Board of Directors, I would like to extend a sincere thank you to the Reporting and Evaluation Committee for ensuring that the 2021 DIRT Report was accessible on the ORCGA website, as well as being distributed to all members before April 1st, the start of the 2022 Dig Season.

1.0 | Introduction

The Ontario Regional Common Ground Alliance (ORCGA) is a non-profit organization that is driving Safe Excavation for workers, the public and underground infrastructure through Advocacy, Education and Engagement.

The ORCGA is a growing organization with over 500 active members and sponsors representing a wide cross section of stakeholders:

- Electrical Distribution
- Electrical Transmission
- Engineering Equipment & Suppliers
- Excavator
- Homebuilder
- Insurance
- Land Surveying
- Landscape/Fencing
- Locator
- Municipal & Public Works
- Oil & Gas Distribution
- One Call
- Railways
- Regulator
- Road Builders Safety Organization
- Telecommunications Transmission
- Pipeline

The ORCGA works to foster an environment of safety throughout Ontario for all workers and the public. This is accomplished by offering practical tools while promoting public awareness and compliance of best practices regarding underground infrastructure and ground disturbance.

The ORCGA welcomes open participation and new members on its various committees. In order to submit a suggestion, or to join a meeting, please visit **www.orcga.com** to learn about the scope of the various committees.

General inquiries about the ORCGA can be made to:

Ontario Regional Common Ground Alliance (ORCGA)
545 North Rivermede Road, Unit 102
Concord, ON L4K 4H1
Telephone: (905) 532-9836
Toll Free: (866) 446-4493
Email: office@ORCGA.com

To learn more about the ORCGA's Dig Safe Program, visit **www.digsafe.ca**.

Like and follow us on your favourite social media sites!

1.1 Reporting and Evaluation Committee Recommendations

#1 Excavation Issues

The ‘’Excavation Issue” category continues to be the largest cause of events. This is when the Excavator notified the One Call centre to have underground utilities marked, but an event still occurred due to the lack of careful excavation practices, such as:

- Excavator failed to maintain clearance after verifying marks
- Marks faded or not maintained
- Excavator dug prior to verifying marks by test-hole (pot-hole)
- Excavator failed to protect/shore/support facilities
- Failure to use hand tools where required

Although 2021 has a seen a decrease in this category, emphasis should be made to further reduce events due to “Excavation Issues”. Targeted outreach and educational information should be provided to excavators to reduce events resulting from this root cause. A particular focus should be placed on the Construction Industry due to this group being a major contributor to these events.

In response to comments received from the membership regarding a gap in training availability, ORCGA has developed a comprehensive Safe Excavation Practices Training program, targeting front line workers and machine operators. This ½ day instructor-led training program is based on key sections of the Canadian Common Ground Alliance Best Practices document.

#2 No Notification to One Call Centre

Excavators not requesting locates has continued to be a significant issue over the last four years.

This must be addressed as a primary focus of ORCGA education and future campaigns. Successes in this area have occurred from Dig Safe efforts but these efforts need to be reinforced and strengthened.

Particular focus should be placed on Dig Safe messaging to geographic areas which show abnormally high percentages of No Locate Request events.

In order to improve the overall completeness of submissions, the committee is advising submitters to:

1. Submit events in a timely manner. It is recommended that Damage Information Reporting Tool (DIRT) data is submitted on a monthly or bi-monthly basis, so the events are still fresh in your memory and details are easy to recall. This will reduce responses in the ‘unknown/other’ categories and improve the data accuracy.
2. Complete the new Late Locate question. The committee saw a significant drop in responses to the Late Locate question in 2021. Although this is not mandatory, it is strongly recommended that submitters answer to the best of their ability in order to gather enough data to determine if there is a relationship between damages and late locates.

Did You Know?

There were 4402 reported damages in 2021?

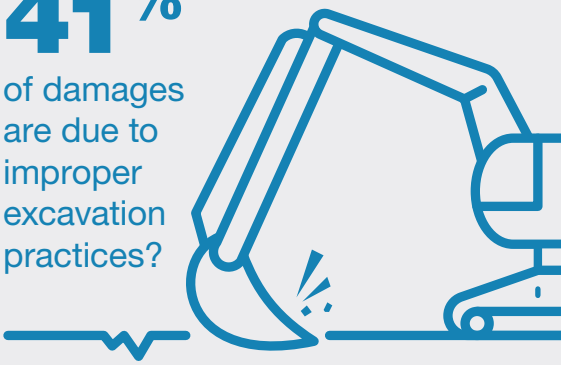
4402

There were **18** damages per working day in Ontario?

That the amount of damages without Locates totaled 35%?

35%

41% of damages are due to improper excavation practices?



68%

In 2021, 68% of No Locate events involved hazardous infrastructure?

43% of damages involved telecommunications?

43%

1.2 Data

The Damage Information Reporting Tool (DIRT) is the result of the efforts made by the ORCGA to gather meaningful data about the occurrence of facility events. An "event" is defined by the DIRT User's Guide as "the occurrence of downtime, damages, and near misses." Gathering information about these types of events gives the ORCGA the opportunity to analyze the contributing factors and recurring trends. This allows the ORCGA to identify potential educational opportunities to meet our overall goals of reducing damages and increasing safety for the public and all stakeholders.

The annual DIRT Report provides a summary and analysis of the known events submitted during the prior year, and as additional years of data are collected, it also provides the ability to monitor trends over time. The 2021 report focuses on the data gathered throughout Ontario during the three-year period between 2019 and 2021. This data can be helpful for all stakeholders to use as a benchmark for their damage prevention performance. It identifies current issues facing the industry, region and province.

Data Analysis Disclaimer: Industry stakeholders have voluntarily submitted their underground facility event data into DIRT. The data submitted is not inclusive of all facility events that occurred during the report year as it represents only the information voluntarily submitted by industry stakeholders.

The information presented in this report is based on current information provided to the ORCGA for events that occurred, or were updated, in 2021.

When reviewing statistics published in this report, it is important to note that contributors perform retroactive submissions for the three-year period. This will cause the volume of facility events submitted by year to change in each report.

In addition to the number of events submitted, an important factor is the completion of the associated information which allows for better overall analysis of the contributing factors. Each submitted record contains numerous data elements that are vital to understanding and interpreting the incidents reported in DIRT. It is important that stakeholders align their data collection and reporting practices with those found on the DIRT Field Form.

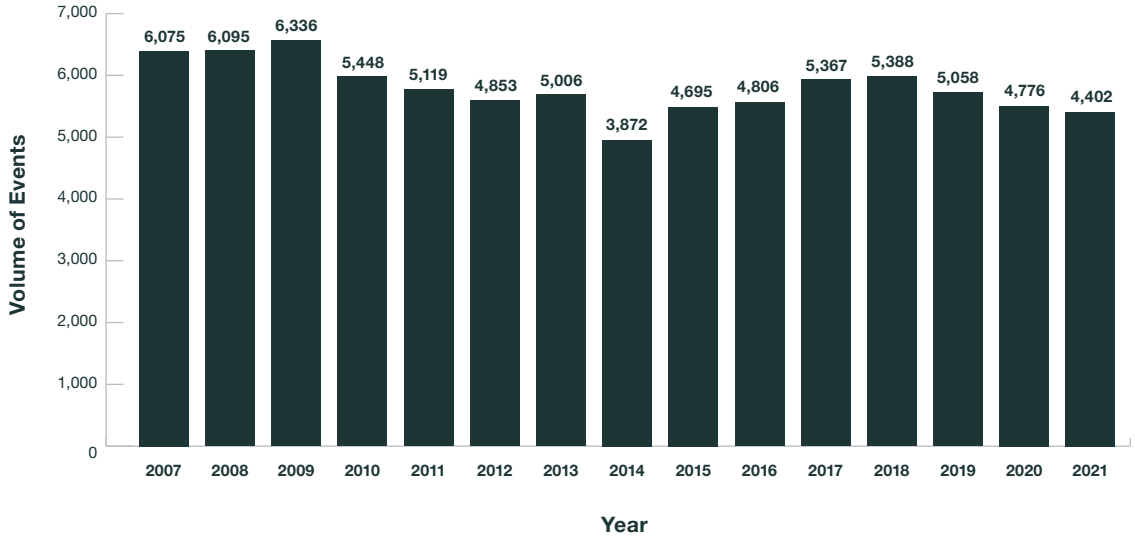
To gauge the overall level of completion of records submitted, the Data Quality Index (DQI) was implemented in 2009. This provides DIRT contributors a way to review the quality of the facility event records they submit.

When reviewing the statistics published in this report, it is important to note that only events with complete data were included; records with missing data were removed from the analysis.

2.1 Facility Event Analysis

2021 saw an overall decrease in facility events, despite an increase in requests. We will break out incidents to gain insight on where attention and efforts are to be made to continue reducing damages in the future.

Figure 1: Facility Events Submitted by Year



2.2 Facility Events Submitted Across Ontario

Table 1 outlines the ORCGA geographic areas and the constituent municipalities/cities.

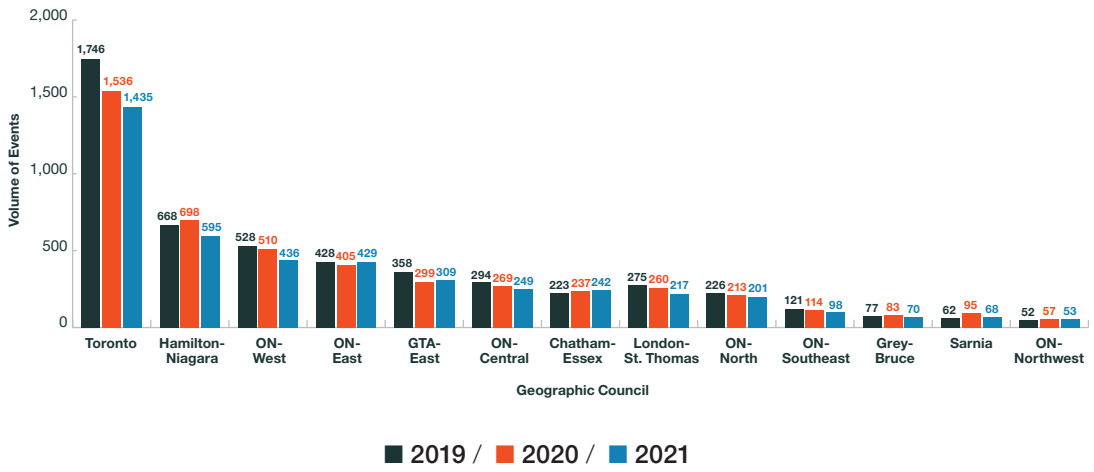
Table 1: Geographic Area Breakdown by Region/Municipality/City

Geographic Area	Cities
Chatham-Essex	Chatham-Kent, Essex
Grey-Bruce	Bruce, Grey
GTA-East	Durham, Kawartha Lakes, Northumberland, Peterborough
Hamilton-Niagara	Haldimand, Halton, Hamilton-Wentworth, Niagara, Norfolk
London-St. Thomas	Elgin, Middlesex
ON-Central	Dufferin, Simcoe
ON-East	Akwesasne, Lanark, Ottawa, Prescott & Russell, Renfrew, Stormont, Dundas & Glengarry
ON-North	Algoma, Cochrane, Greater Sudbury, Haliburton, Manitoulin, Muskoka, Nipissing, Sudbury, Temiscamingue, Timiskaming
ON-Northwest	Kenora, Rainy River, Thunder Bay
ON-Southeast	Frontenac, Hastings, Leeds & Grenville, Lennox & Addington, Prince Edward
ON-West	Brant, Huron, Oxford, Perth, Waterloo, Wellington
Sarnia	Lambton
Toronto	Peel, Toronto, York

Figure 2 illustrates the number of events for each geographic area over the past three years.

There have been minor fluctuations, however the majority of Geographic Councils are seeing a downward trend in events. On a positive note, Toronto's incidents continue to decrease and saw a 7% decline in 2021. The Hamilton Niagara area also saw a significant decrease in events; down 15% compared to 2020.

Figure 2: Volume of Events Submitted Per Geographic Area



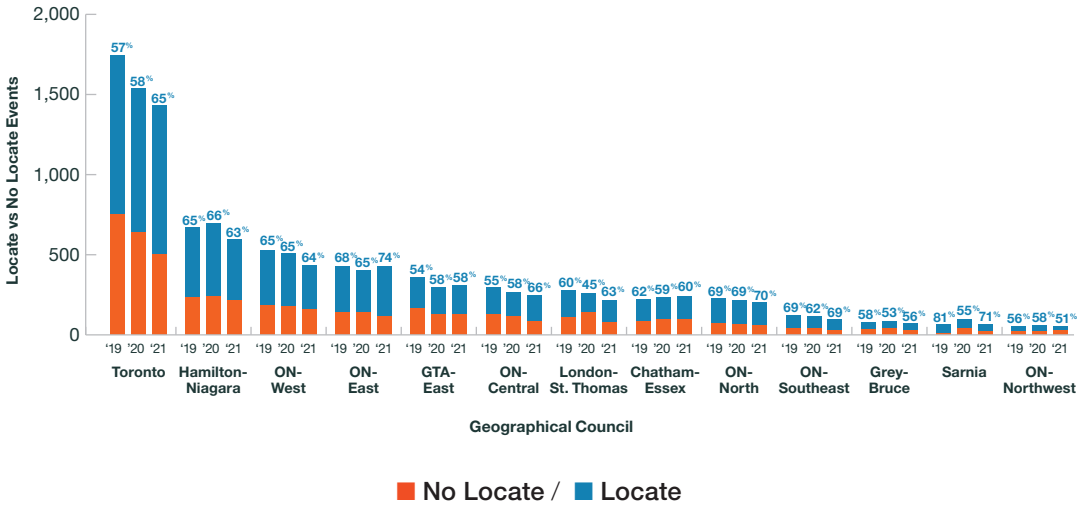
Notifications increased by 6% in 2021 which is largely due to the relaxation of the pandemic restrictions.

Table 2: Notifications Per Geographic Council

Geographical Area	2019	2020	2021
Central	238,444	206,678	241,198
Chatham-Essex	294,729	299,473	313,816
East	655,543	613,616	678,522
Grey-Bruce	68,326	87,449	103,032
GTA-East	466,214	428,078	473,380
Hamilton-Niagara	924,656	882,364	909,844
London-St. Thomas	255,974	244,691	284,812
North	218,310	193,942	195,532
Northwest	71,846	70,736	70,264
Sarnia	84,192	86,089	104,735
Southeast	135,031	123,212	134,991
Toronto	2,266,423	1,970,221	2,044,766
West	547,539	539,783	586,820
GRAND TOTAL	**6,227,227**	**5,746,332**	**6,141,712**

Figure 3 illustrates the number of events in 2021 where Ontario One Call was notified for a locate request versus not being notified for a locate request, broken down by geographic area.

Figure 3: Locate Versus No Locate Events by Geographic Area

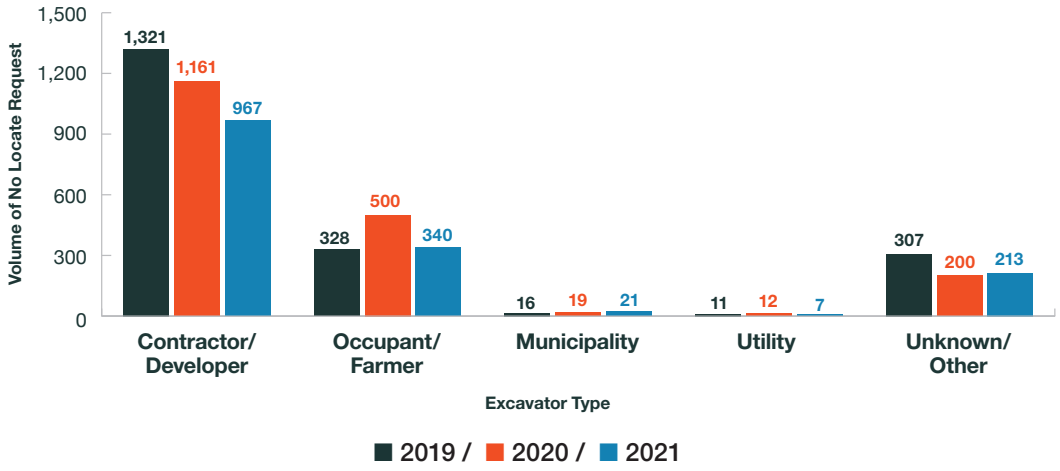


No Locate Damages by Excavator Type

Figure 4 provides further analysis on the categories of excavators that are not submitting locate requests.

Increased education should be targeted towards the Contractor/Developer who were responsible for 62% of the no locate damages in 2021.

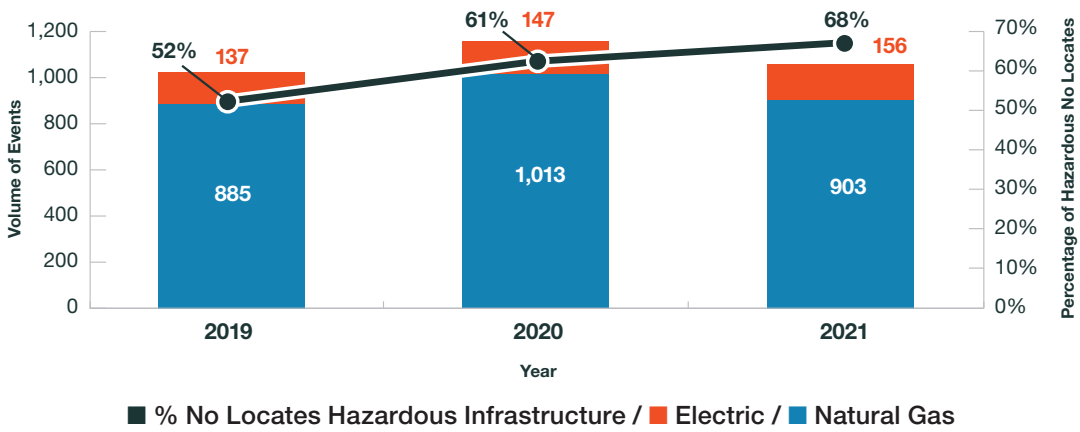
Figure 4: No Locate Damages by Excavator Type



In 2021, 68% of No Locate events involved hazardous infrastructure; 903 Natural Gas and 156 Electrical.

This represents an 7% increase compared to 2020, and a 16% increase compared to 2019.

Figure 5: No Locates with Hazardous Infrastructure



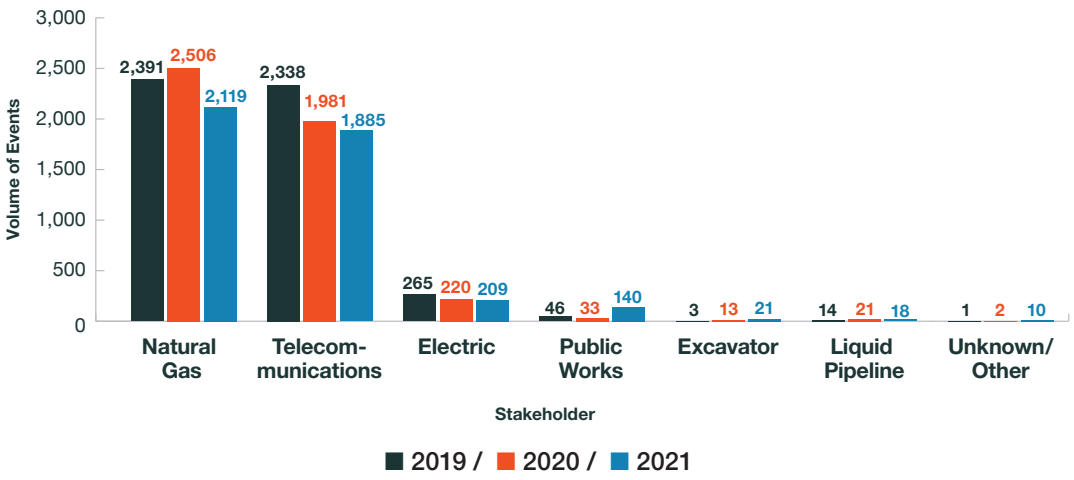
2.3 Submitted Facility Events by Stakeholder Group

Figure 6 illustrates a distribution of events by stakeholder group for the past three years.

Natural Gas and Telecommunications continue to submit the highest volume of events; however, 2021 saw a decrease in events for both stakeholders.

In order to support future trend analysis, additional stakeholders are encouraged to submit their events into DIRT.

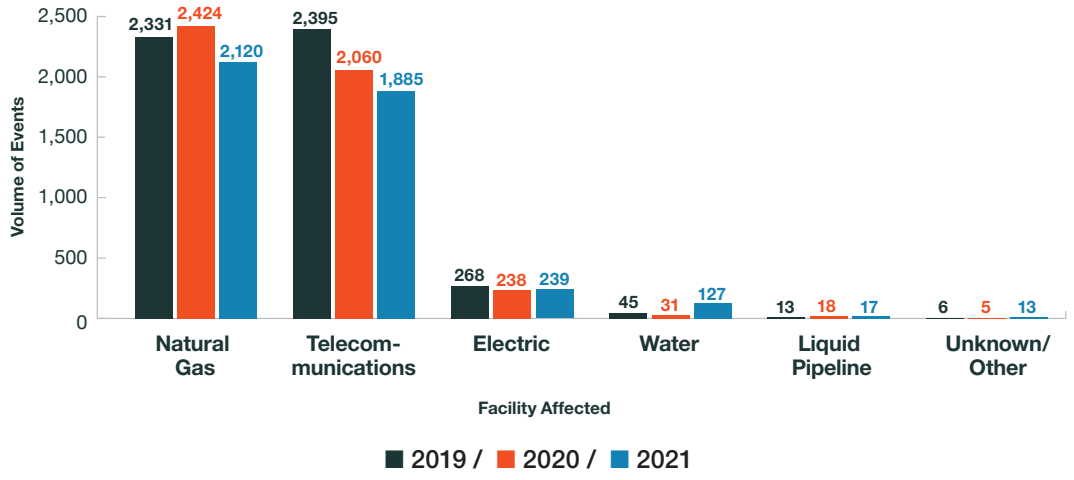
Figure 6: Facility Events Submitted by Stakeholder Group



2.4 Submitted Facility Events by Type of Facility Operation Affected

Figure 7 illustrates that Natural Gas and Telecommunications continue to be the primary facilities affected by events reported in DIRT. This aligns with the high volume of events that the facilities continue to submit.

Figure 7: Submitted Facility Events by Type of Facility Affected



2.5 Volume of Events by Excavation Equipment Group

Table 3 outlines the types of excavation equipment included in each equipment group.

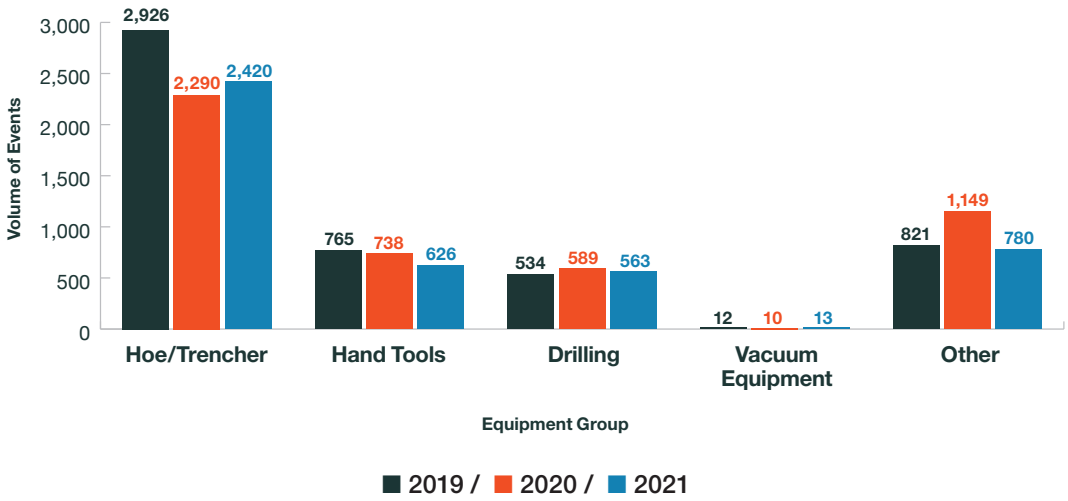
Table 3: List of Equipment Groups

Group	Excavation Equipment Type	
Hoe/Trencher	Backhoe/Trackhoe	Trencher
Hand Tools	Hand Tools	Probing Device
Drilling	Auger	Directional Drilling
	Boring	Drilling
Vacuum Equipment	Vacuum Equipment	
Other	Bulldozer	Grader/Scraper
	Data Not Collected	Milling Equipment
	Explosives	Other
	Farm Equipment	

Figure 8 illustrates a distribution of events caused by various groups of excavation equipment. In 2021, the Hoe/Trencher group continued to account for the largest volume of events and saw an increase in 2021.

Submitters are encouraged to minimize listing equipment as 'other' in order to improve data accuracy.

Figure 8: Submitted Facility Events by Excavation Equipment Group



2.6 Facility Events By Root Cause

Table 4 denotes the breakout of Root Causes and their subcatagories.

Table 4: 2018 Root Cause Category and Subcategory

Root Cause Category	Root Cause Subcategory	
Excavation Issue	Marks faded or not maintained	Excavator failed to protect/shore facilities
	Improper backfilling practices	Excavator dug prior to verifying marks by test-hole (pothole)
	Failure to maintain clearance	Improper excavation practice not listed above
Locating Issue	Facility not marked due to : Abandoned Facility	Facility not marked due to : Unlocatable Facility
	Facility not marked due to : Incorrect Facility records/maps	Facility marked inaccurately due to: Abandoned facility
	Facility not marked due to : Locator error+	Facility marked inaccurately due to: Incorrect facility records/maps
	Facility not marked due to : No response from Operator/ contract locator+	Facility marked inaccurately due to: Locator error
	Facility not marked due to : Tracer wire issue+	Facility marked inaccurately due to: Tracer wire issue
Miscellaneous Root Causes	Deteriorated facility	Root Cause not listed (comment required)+
	One-Call notification center error	Previous damage
Notification Issue	No notification made to the one-call center/811	Excavator dug outside area described on ticket+
	Excavator provided incorrect notification information	Excavator dug prior to valid start date/time+
		Excavator dug after valid ticket expired+

Figure 9 illustrates the distribution of events by Root Cause category. The most common causes of events are a result of Excavation Issues. Although there has been a decrease in this category, emphasis should be made to continue to reduce events by providing targeted outreach and education to the excavator community.

Figure 9: Facility Events by Root Cause Category

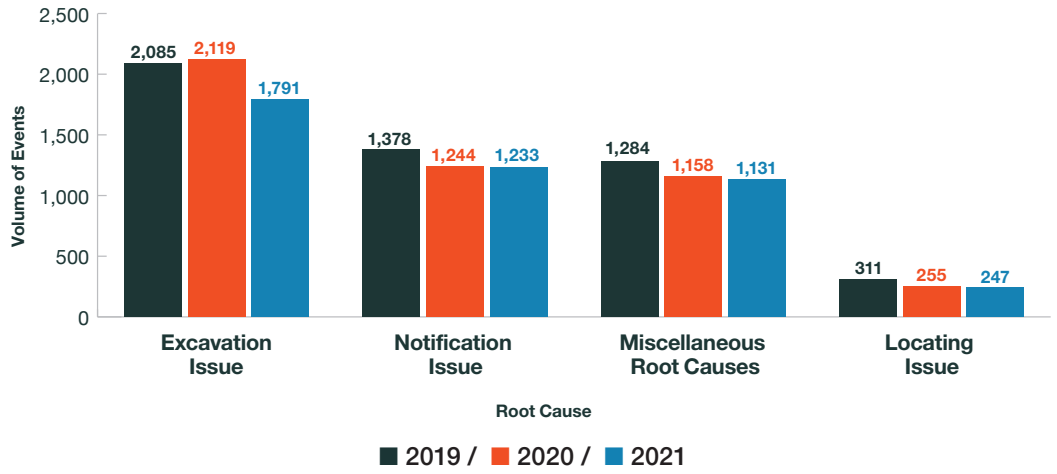


Figure 10 illustrates a three-year breakdown of the Root Cause subcategories for Excavation Issue.

As seen below, Improper Excavation Practice Not Listed Above continues to be one of the main issues. This Root Cause subcategory is defined as any other excavator error, which cannot be classified as one of the other six Root Cause subcategories within Excavation Issues.

The next highest Root Cause subcategory is the excavator digging after their valid ticket had expired.

Figure 10: Facility Events by Excavation Issue

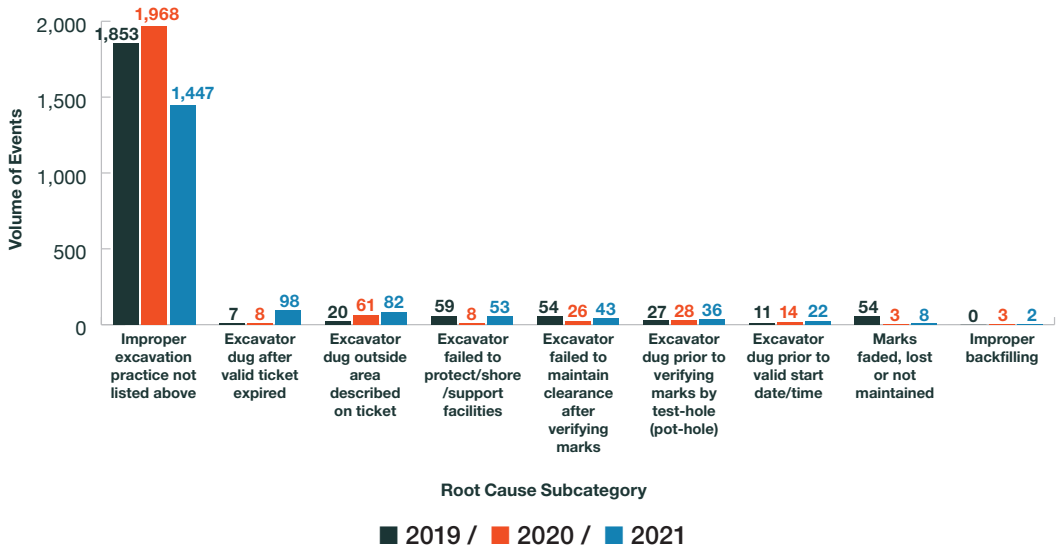


Figure 11 illustrates a three-year breakdown of the Root Cause subcategories for Notification Issues.

This figure illustrates the need to continuously increase excavator and general public awareness about requesting a locate before digging starts.

Figure 11: Facility Events by Notification Issues

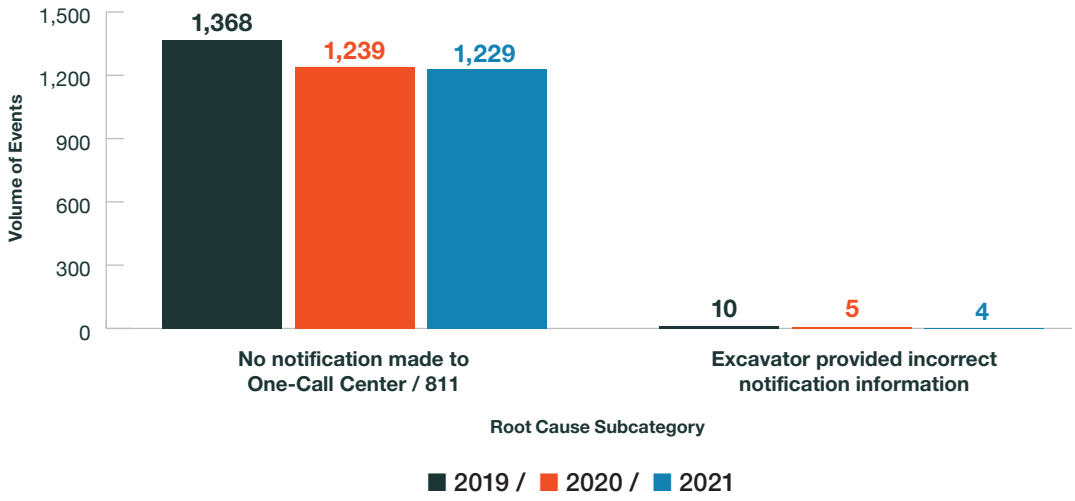


Figure 12 illustrates a three-year breakdown of the Root Cause subcategories for Miscellaneous Root Causes.

The most prevalent Root Cause subcategory is Root Cause Not Listed Above.

Figure 12: Facility Events by Miscellaneous Root Causes

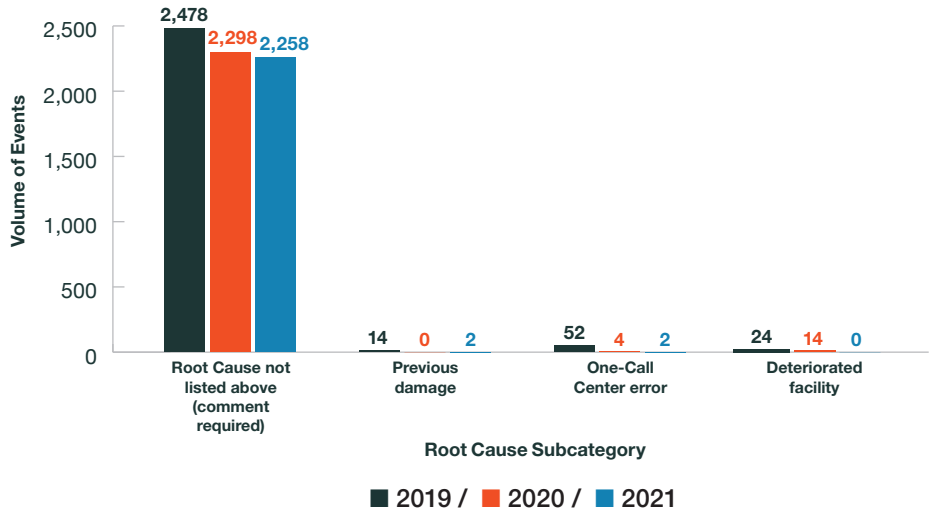
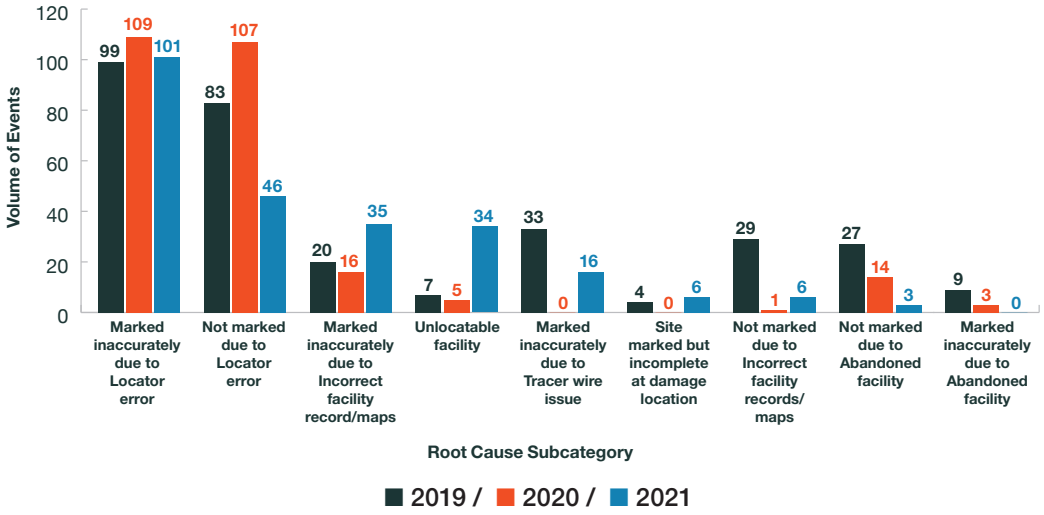


Figure 13 illustrates a three-year breakdown of the Root Cause subcategories for Locating Issues. These subcategories were the most affected in the 2018 update of the DIRT Report with new subcategories added, as well as drill down of the old categories.

We have seen a slight decline in Locating Issues in 2021.

Figure 13: Facility Events by Locating Issues

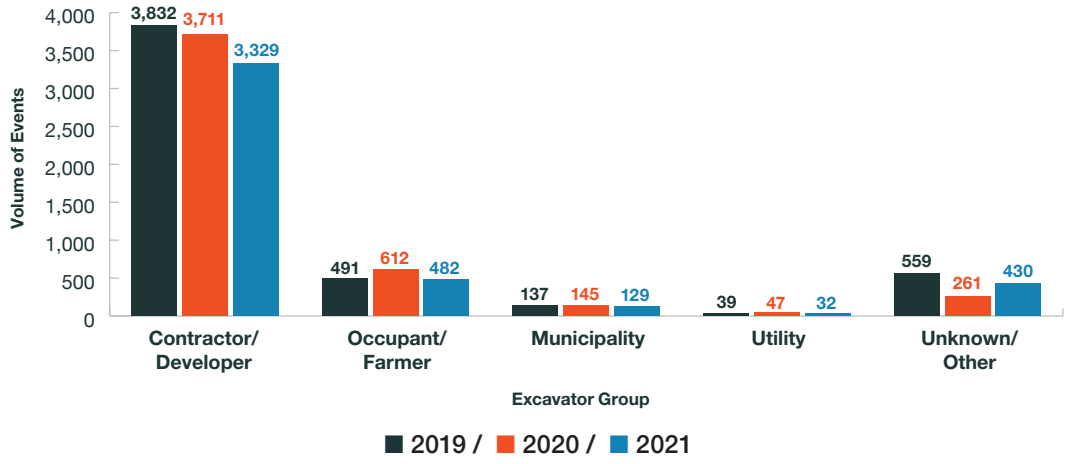


2.7 Facility Events by Excavator Group

Figure 14 illustrates the distribution of events by Type of Excavator showing that Contractor/Developer continues to be involved in the majority of reported events. Although there has been a downward trend since 2019, the Contractor/Developer group were still responsible for 76% of the events in 2021.

In order to develop useful educational tools to improve the damage prevention performance in Ontario, it is important to examine the parties causing reported events. Additional analysis of these groups is provided in the 3.0 Multi-Field Analysis section of this report.

Figure 14: Facility Events by Type of Excavator



2.8 Facility Events by Type of Work Performed

Figure 15 illustrates a distribution of Events by Type of Work Performed. Sewer and Water was the primary type of work causing events in 2021, although volumes saw a 26% decrease. Construction continues to be an area of concern as it was the secondary type of work causing events in 2021 and saw a 28% increase compared to 2020.

In order to improve data accuracy, submitters are encouraged to reduce the use of the Unknown/Other category.

Figure 15: Facility Events by Type of Work Performed

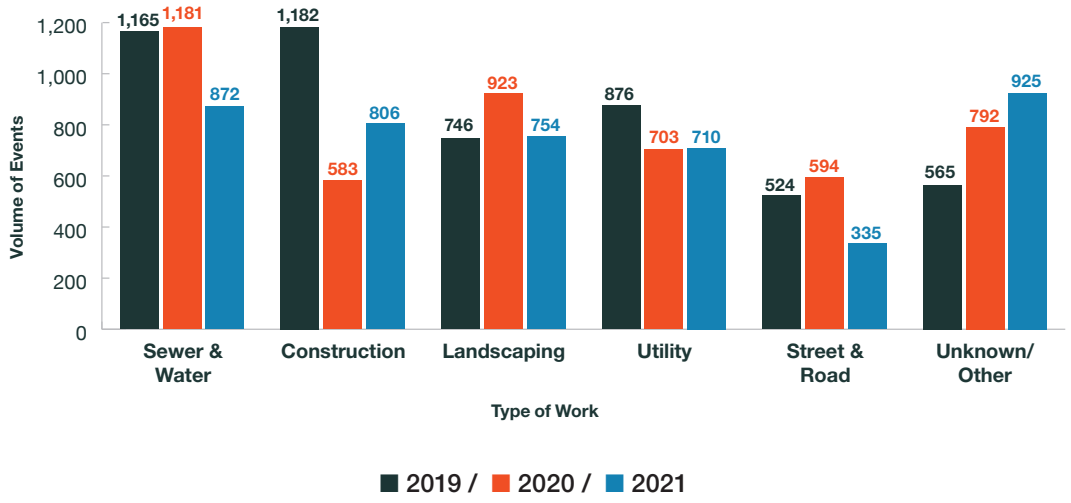


Table 5 illustrates a three-year breakdown of the most common types of work performed. When broken down into identifiable subgroups, Sewer, with 599 events, had the highest volume in 2021 followed by Building Construction with 547 events, and Fencing with 409 events

These work types account for over one third of events and would provide the greatest impact in being reduced.

Unknown/Other with 924 events had the highest volume in 2021.

Table 5: List of Work Included in Each Work Group

GROUP & TYPE OF WORK	2019	2020	2021
Sewer & Water			
Sewer	249	621	599
Water	722	387	247
Drainage	194	173	26
Construction			
Bldg. Construction	902	291	547
Driveway	152	168	141
Site Development	74	70	84
Grading	39	43	21
Bldg. Demolition	15	11	13
Landscaping			
Fencing	375	496	409
Landscaping	354	404	327
Irrigation	8	11	10
Waterway Improvement	5	10	6
Agriculture	4	2	2
Utility			
Telecommunications	446	302	397
Electric	278	255	232
Natural Gas	147	145	81
Liquid Pipeline	5	1	
Street & Road			
Road Work	301	387	191
Storm Drain/Culvert	95	44	63
Curb/Sidewalk	76	114	57
Pole	26	24	8
Traffic Signal	3	1	6
Traffic Sign	10	16	5
Street Light	8	3	3
Railroad		3	1
Public Transit Authority	5	2	1
Unknown / Other			
Unknown/Other	563	791	924
Engineering/Surveying	2	1	1

3.1 Analysis of Root Cause and Facilities Affected by Types of Work

The following charts illustrate the Root Causes of events for the six work groups of Sewer and Water, Construction, Landscaping, Utility, Street & Road, and Unknown/ Other for 2019, 2020, and 2021.

Figure 16: Facility Events by Root Cause and Industry

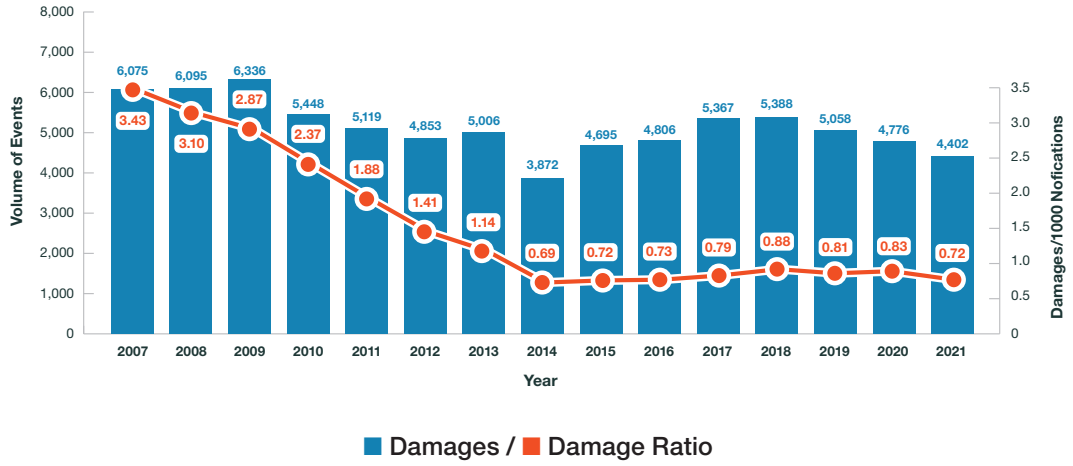
Figure 17 illustrates that the Contractor/Developer excavator type continues to represent the majority of events submitted under the Excavation Issues category, and has seen a decrease in 2021.

Figure 17: Facility Events by Root Cause Category and Excavator Type

Figure 18 illustrates the damage ratio relative to the volume of events over the past 14 years. Industry practice is to measure damage prevention performance by the volume of damages per thousand notifications.

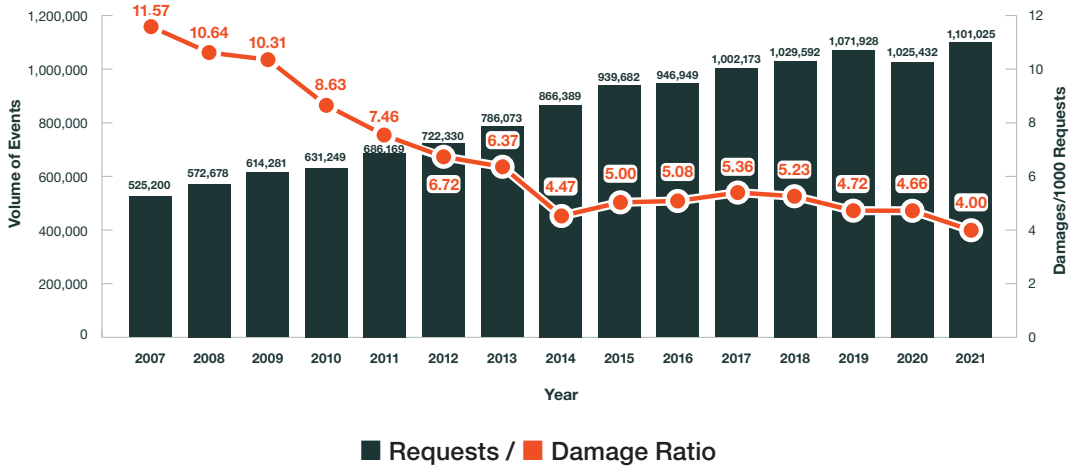
The Damage Ratio saw a significant drop in 2021 due to the combined impact of decreased damages and increased notification volume.

Figure 18: Damage Ratio- Damages/1000 Notifications



In response to the Ontario One Call process changes, Figure 19 was created to show damages per 1000 requests as this has remained consistent and is driven by either public awareness or economic events.

Figure 19: Damages/1000 Requests



Based on many industry articles, presentations, and discussions, it has been identified that Late Utility Locates are problematic in Ontario and that the 2021 DIRT Report should include Late Utility Locates data. A new question has been added to the Ontario DIRT questionnaire to determine if there is a relationship between damages and late locates. The question is: "Was the locate completed within the required timeframe?", and the response consists of selecting "Yes", "No", or "Unknown" as an answer.

Data collection began in November 2020, therefore this graph does not represent a full year of collected information for 2020. Responses to this question significantly decreased in 2021, which shows a need for the committee to reach out to data submitters and further educate them on this newer question.

This issue is a shared concern for all stakeholders. The utilities have a central and vital role in providing data. We cannot find potential solutions if we do not have the data to back them up.

Figure 20: Was the locate completed within the required timeframe?

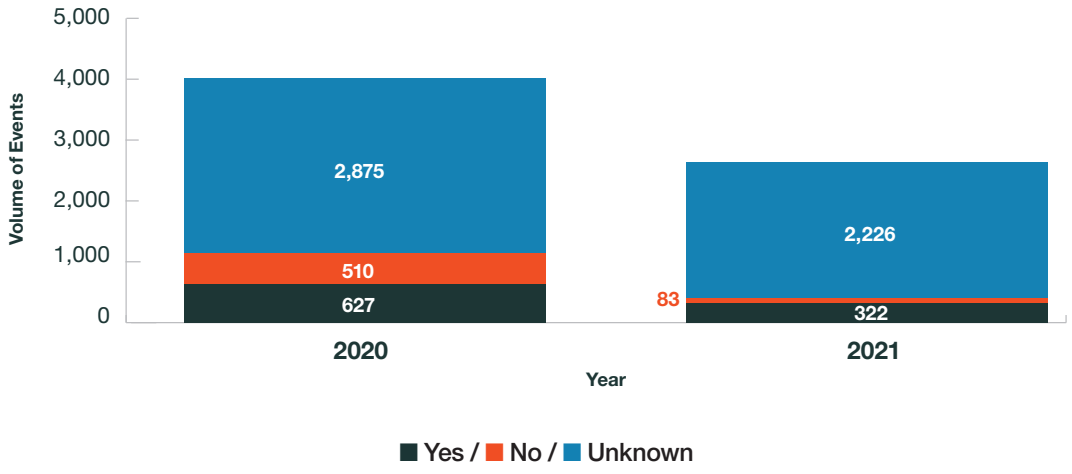
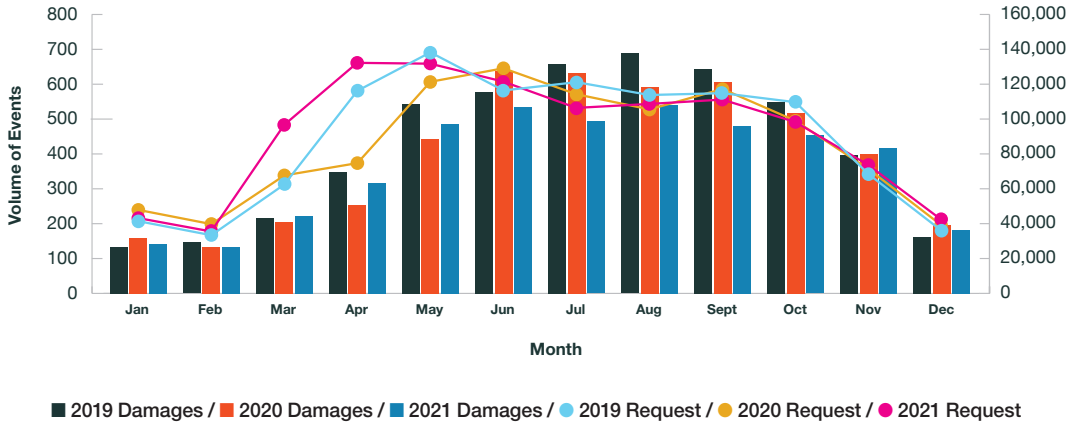


Figure 21 shows that although the peak of locate requests happened in April, the peak of damage incidents occurred in August of 2021.

Figure 21: Damages by Month



In 2020, the number of damages reported via DIRT for Canada totaled 11,573, which is slightly down (3%) from the 11,949 damages reported in 2019. Table 6 shows a summary of key performance indicators related to damages by Province/Region. Canada-wide, there was an average of 46 damages per workday (assuming 251 workdays per year).

Table 6 - Summary by Province\Region, 2020

PROVINCE/ REGION	% of Population ‡	Damages	% of Damages	Damages per Work Day	Locate Requests	Damages per 1,000 Requests*	Locate Notifications	Damages per 1,000 Notifications**
British Columbia	13%	1,241	11%	4.9	212,056	5.85	609,367	2.04
Alberta	11%	3,879	33%	14.8	426,324	9.1	1,470,207	2.64
Saskatchewan	3%	753	7%	3	151,282	4.98	437,685	1.72
Manitoba	4%	208	2%	0.8	76,276	2.73	183,366	1.13
Ontario	39%	4,566	39%	18.1	1,025,432	4.45	5,746,332	0.79
Quebec	23%	911	8%	3.6	293,462	3.27	595,823	1.61
Atlantic	7%	15	<1%	0.06	55,837	0.27	67,725	0.22
Canada	**100%**	**11,573**	**100%**	**45.9**	**2,240,669**	**5.16**	**9,110,505**	**1.27**

‡ StatsCan (2020)

* Locate request is defined as 'communication between an excavator and a staff member of a One-Call Centre in which a request for locating underground facilities is processed.

** Notifications: Ticket data transmitted to underground infrastructure owners.

Ontario is the only province with legislation mandating registration with a One-Call Centre.

Natural Gas Sewer Safety Inspections

Natural gas pipelines installed using trenchless practices may have inadvertently penetrated sewer service lines.

Using motorized or water-jetting equipment to clear the sewer line can damage a natural gas line resulting in a gas leak, fire or explosion.

Before clearing a blocked sewer beyond the outside of a building, take the necessary precautions to protect yourself and others.

Always call Ontario One Call at 1-800-400-2255 to request a free Natural Gas Sewer Safety Inspection.

Enbridge Gas
Damage Prevention Department
1-866-922-3622
enbridgegas.com/sewersafety

ENBRIDGE
Life Takes Energy®

Article 1

Excavation Safety: The Keys to Success at Powell Contracting

By: Rupee Dhillon, Locates Manager – Shared Services

ORCGA Excavator of the Year Awards

Each year, the Ontario Regional Common Ground Alliance (ORGCA) proudly announces the winners for The Excavator of the Year Awards.

Excavators are divided into 8 categories: Electric, Gas, Homebuilder, Landscape, Roadbuilder, Sewer/ Water, Telecommunications, and Most Improved.

The Excavator of the Year winners are determined by reviewing each excavator's individual damage rate for the previous year. A damage rate is a calculation based on the excavator's volume of locate requests, measured against their number of digging related damages to underground infrastructure. The ORCGA also incorporates input from infrastructure owners when determining the winners.

To qualify, excavators must have submitted a minimum of 500 locate requests to Ontario One Call in the previous year.

Powell Contracting was the recipient of the Excavator of the Year Award in 2019, 2017, 2016 & 2015, winning in the Roadbuilder category. No other excavator, in any category, has demonstrated such consistent excellence.

Who is Powell Contracting and what do they do? How did Powell Contracting achieve this exemplary safe digging record? What are their keys to success?

About Powell Contracting

Powell Contracting began as a small family business in 1967, delivering hay and providing a farm fencing service. The company soon realized that there was a need for roadside safety products. They began to evolve into a construction company specializing in roadside safety installations for steel beam guardrails, construction barriers, crash cushions supply, as well as the installation of temporary concrete barriers, noise barriers, guide rails, ground mount signs, overhead signs, and sign structures for private and government projects.

Achieving excavation safety excellence falls across several areas at Powell Contracting; here are their keys to success:

Safety Is a Core Value

Safety is paramount at Powell Contracting and this has been identified as a core value for the business by executive leadership and has become engrained in the company's overall culture. There is zero tolerance when it comes to unsafe work practices, followed by a consistent emphasis on the importance of safety for all workers whether it be in the office or in the field.

Safety Training Support Continuous Improvement

Powell Contracting has been COR certified since 2016. COR is an occupational health and safety accreditation program that ensures companies implement and maintain a health and safety program meeting national standards.

All new hires attend a three-day training course which consists of general onboarding, working at heights and any other department specific training which varies and is dependent on job duties and responsibilities.

Along with the safety training all new hires attend, they must also attend the Locates Procedure training which consists of requesting locates, using locates, and understanding all of the necessary documentation that is legally required before physically being on site. The training is also conducted on a semi-annually basis for all project coordinators and managers to reinforce the importance of this procedure.

Powell also holds an annual safety training event encompassing over 37 topics and courses such as "incident response and investigation" and "hoisting and rigging". The courses are taken online or are instructor-led and in-person.

A Dedicated Utility Locate Department

The dedicated Utility Locate Department maintains locate requests and ensures that all required paperwork has been received. The Locate Department manages all of the locates efficiently from the initial request to the ongoing relocate process. They ensure that all public locates, private locates, MTO locates, unassumed locates and Enbridge Clearances have been requested and received which takes the burden off of the Project Coordinators.

Powell Contracting is known for submitting locate requests that are easy to read and consistent, which in turn helps the locators get their jobs done in a more timely manner.

Having a dedicated Utility Locate Department also keeps things highly organized for the entire Operations Team. Any inconsistencies found in the locate paperwork are questioned by the Project Coordinators and Locate Team. Work will not be scheduled until all locates are received and reviewed thoroughly. In addition, the dedicated Utility Locate Department maintains a healthy working relationship with the Locate Service Providers which helps Powell in delivering excellent client service.

Commitment to Teamwork

Powell has an amazing team environment, collaborating to accomplish a common goal. Teamwork puts the safety of the team first. Through years of experience, Powell understands that safety is always the number one priority.

Developing a safety culture driven by strong leadership, planning, communication, and hazard elimination is all part of building a team. Through teamwork, the message of safety is clearly communicated to all levels of the organization. All injuries and occupational illnesses, as well as safety and environmental incidents, are preventable. Teamwork also enables Powell to have clear and open lines of communication.

Involvement with the ORCGA and Commitment to Dig Safe

Powell Contracting is very involved with the ORCGA as it provides vital business resources and practical damage prevention programs. The ORCGA also offers tools and services for use in the field designed to aid excavation decisions to prevent, or control potential harm. The following damage prevention tools can benefit those just starting out, as well as industry veterans looking to keep their skills up to date:

Excavation In-Field and Planning Tools

- The CCGA 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 on which sectors and types of tools are involved in the events.

Training

- The Damage Prevention Technician® Program provides fundamental instruction on locating for specific industries.
- The Safe Excavation Training Course
- Tailboard Talks

Competitions

- The Locate Rodeo and Excavator Challenge, through competition, promotes the locate industry and skill-set excellence for the Damage Prevention Technicians® and Excavators.

Meetings

- The Geographic Councils focus on safe work practices, damage prevention training, and sharing information on local, current, and developing issues.
- The Damage Prevention Symposium focuses on critical issues specific to the Ontario Damage Prevention community.

Communications

- Ear to the Ground
- The Tolerance Zone
- Social Media

Conclusion

The above keys to success have helped Powell Contracting be a leader in safe excavation practices. Excavation safety excellence should be a priority for any organization and there are a variety of ways to achieve excellence in safety culture within your organization.

Powell Contracting has demonstrated that with safety as a core value, all other functions of the company can and are shaped with safety in mind. Eventually this is woven into the fabric of the organization and creates a shift in the overall culture.

Article 2

High Speed Internet: Convenient Luxury or Essential Necessity?

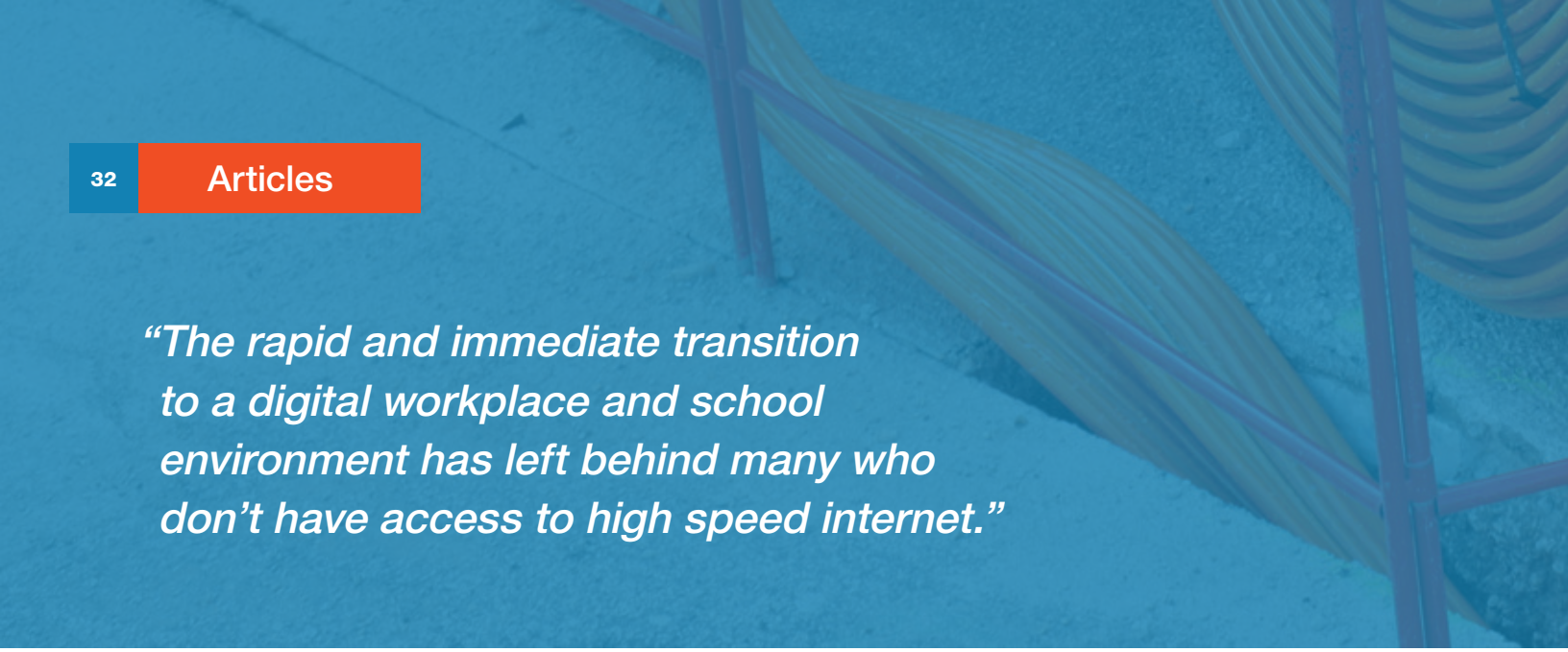
Jennifer Parent, Manager Growth, Councils and Membership Services, ORCGA

SWIFT Introduction

Southwestern Integrated Fibre Technology (SWIFT) is a non-profit, municipality-led, regional broadband project that is delivered in partnership with the government of Ontario and federal government. SWIFT uses funding from county, provincial and federal governments to subsidize the construction of open-access, high-speed networks to encourage service providers to expand broadband infrastructure to underserved communities and rural areas, areas that otherwise would be too costly to serve.

Through SWIFT, 5,221 KM of fibre-optic cable will be laid across Southwestern Ontario by 2023. The project will bring high-speed internet access to 345 communities (including four First Nations communities), and over 60,000 homes.

The Western Ontario Wardens Caucus initiated SWIFT to promote the expansion of high-speed Internet in underserviced areas that have limited to no connectivity to support online learning, increase work-from-home opportunities, and unlock greater economic growth potential for business throughout the region.



"The rapid and immediate transition to a digital workplace and school environment has left behind many who don't have access to high speed internet."

Broadband Deserts in Ontario

The urban versus rural digital divide is due largely to two factors: a lack of high-speed internet infrastructure in rural areas and the expense and limitations of installation of this critical utility service. The cost of stringing miles of cables or optical fiber, to service a few rural users, could not be recovered through affordable rates.

Rural areas are stuck with old digital subscriber lines (DSL), which is internet service over wired telephone lines, or satellite services. Both are too slow to handle how data rich information is currently disseminated.

Impacts of the Pandemic

The rapid and immediate transition to a digital workplace and school environment has left behind many who don't have access to high speed internet. The pandemic was a devastating, disconnecting experience. As many have learned, being unable to access high-speed internet can make working, learning and video conferencing difficult, if not impossible, in rural areas. Children that were unable to connect to online classes, especially in households with brothers or sisters that were doing the same, were left behind.

Today, high speeds are required to access essential tasks such as video conference calls for work, telehealth appointments, schooling, and the downloading and uploading of educational materials.

Indigenous Communities

The pandemic also highlighted the significant infrastructure gaps that exist between Indigenous and non-Indigenous communities.

The health crisis has "impacted overall quality of life for Indigenous communities and contributed to the widening of socio-economic gaps that exist and persist between Indigenous peoples in Canada and continues to reduce the number of opportunities that exist for Indigenous peoples to participate in the economy fully in their own communities," said Minister of Indigenous Services, Marc Miller.

For the most challenging communities to connect, success can only happen with community-led initiatives. It is critical that the communities that are most in need are full partners in the process, driving connectivity solutions that work for them, and gaining access to the resources to make that happen.

This is an opportunity, not only to ensure that everyone has access to this essential service, but to reach that goal through true collaboration.

In Canada, Indigenous communities are vastly underserved. The majority of on-reserve homes (more than two-thirds) do not have access to high-speed internet.

It is vital to work collaboratively with Indigenous communities; empowering Indigenous communities to own and maintain their own infrastructure.

Agricultural Impacts

Technology, via the internet, can boost rural farms and their outputs.

Farms can track weather conditions for improved decision-making; allowing less-experienced farmers to tap into the knowledge and expertise of other individuals. Yield mapping, guidance systems, and soil mapping, provide farmers with data on how much water and fertilizer their crops require.

In addition, agricultural machinery keeps improving, which means computer software updates are inevitable. With broadband, machine software can be updated, accelerating efficiency for the equipment and the farm, as a whole.

Such great potential cannot come without reliable high-speed internet. The agriculture industry can thrive with new technology, but the barrier of internet access is holding it back.

Conclusion

There are several initiatives underway to address internet disparities.

The CRTC is setting up a fund to help ensure standard minimum service levels for broadband internet access across Canada. By the end of 2021, the CRTC expects 90% of Canadian homes and businesses will have access to broadband speeds of at least 50 Mbps for downloads and 10 Mbps for uploads.

In addition, Ontario has announced $2.8 billion in additional broadband funding in its latest budget, saying the funding will ensure every Ontario region will have access to reliable broadband by 2025.

Lastly, The Government of Canada has several programs supporting high-speed Internet access for all Canadians, especially in rural and remote communities. The $2.75 billion Universal Broadband Fund supports high speed internet projects across the country.

These programs seek to further build a utility that is as essential to households as gas, water/wastewater and electricity.

Minister Monsef, Minister of Rural Economic Development of Canada, was correct when she said: “High-speed internet is more than just a convenience.”

Article 3

Get Familiar with New Legislation: The Build Transit Faster Act and Building Broadband Faster Act

By: Frank Zechner, LLB, Residential and Civil Construction Alliance of Ontario

Introduction

Many government supported infrastructure projects cannot be built fast enough to satisfy public needs or expectations. In rare circumstances a government might propose laws to speed up processes, but those laws may be less effective than hoped or create additional risks. Ontario passed two such laws since early 2020.

Ontario Bill 171

On February 18, 2020, the Ontario government introduced legislation to expedite certain transit projects through Bill 171, the **Build Transit Faster Act, 2020 ("BTFA")**. The BTFA authorizes Metrolinx to issue and enforce "obstruction removal" notices for designated transit projects, such as the need for a gas line to be removed and/or relocated. Sections 46 and 48 of the BTFA requires the utility receiving the notice to make reasonable efforts to acquire any necessary permits or approvals. Section 49 authorizes Metrolinx to set a deadline for completion, which can be as short as 60 days after the notice is served.

Many construction contractors in Ontario believe that a significant cause of delays in any project requiring excavation, including an obstruction removal, is the time it takes to obtain locates for all utilities within close proximity of the proposed

excavation. Some Ontario contractors have experienced delays of 40 days or more in obtaining all the required locates.

Section 68 of the BTFA allows for an application to the Superior Court of Justice to impose an order on the recipient of the obstruction removal order to comply or to authorize Metrolinx to perform the obstruction removal. However, if the cause of the delay is the failure of a nearby utility owner to provide a locate response, an order under section 68 would not impact locate responses, and therefore not speed up the obstruction removal.

The BTFA could have better fulfilled its intent and purpose by expanding the scope of impacted parties to include all persons who receive a locate request near a designated transit project and requiring that locate requests triggered by an obstruction removal notice must be completed within a fixed timeline, e.g., 5 business days. The legislation could also have imposed an administrative monetary penalty for late locate responses, either on a fixed dollar value per day or, an escalating amount.

Any measures to reduce delays for locate responses would likely result in an earlier completion of an obstruction removal order.

Ontario Bill 257

On March 4, 2021, the Ontario government introduced Bill 257, which following Royal Assent in April 2021, amended various provisions of the Planning Act and enacted a new statute, the **Building Broadband Faster Act, 2021 ("BBFA")**. The purpose of the BBFA is to expedite the delivery of broadband (internet access) projects designated as being of provincial significance in the regulations (no regulations have yet been passed as of Dec 3, 2021).

The 'first reading' version of the BBFA included the following provisions:

s.21(2) If an Ontario One Call ("**On1Call**") member does not respond to the locate request within 10 business days, the Minister may authorize a person to do the proposed excavation;

s.21(3) If the Minister authorizes a person to excavate under s.21(2), the On1Call member has no cause of action against the excavator for any loss or damage suffered by the On1Call member; and

s.21(4) If the Minister authorizes a person to excavate under s.21(2), the On1Call member has no statutory or other remedy against the excavator for any loss or damage suffered by the On1Call member.

The concept of digging before receiving all locate responses is permitted in a few US jurisdictions, including the State of Texas, but is generally contrary to all Canadian best practices and guidelines dealing with excavation and utility locates.

Several industry associations, including but not limited to, the Residential and Civil Construction Alliance of Ontario (RCCAO), the Canadian Gas Association (CGA) and the Independent Telecommunications Providers Association made submissions to the Standing Committee objecting to the authority being granted to the Minister to authorize persons to excavate without having received all relevant locates. The submissions emphasized that excavating without all the required utility locates posed a significant danger to construction workers, nearby residents and occupants as well as the public at large.

"The final version of the BBFA facilitates faster construction of broadband services without increased risk."

The Legislature's Standing Committee on General Government responded to the submissions by replacing the original s.21(2) with the following:

> "(2) The member of Ontario One Call who received the notification shall do the work required under subsection 6(1) of the Ontario Underground Infrastructure Notification System Act, 2012 within 10 business days after the day the member received the notification."

The Standing Committee also deleted subsections 21(3), (4) and (5) in their entirety as well as all other references to potential excavation without a locate and sent Bill 257 back to the Legislature for third reading and Royal Assent, without further amendments.

Due, in part to the vigilance of several industry stakeholders, the final version of the BBFA facilitates faster construction of broadband services without increased risk.

Article 4

Top 10 Canadian Construction Trends to Watch In 2022

By Mary Van Buren, President, Canadian Construction Association

1. SLINGSHOT OR STOP/START RECOVERY

Private sector and governments flow projects to take advantage of the opportunity to build back better, employ Canadians, and accelerate the economy. This could be constrained by brakes like restrictive workforce quotas, lack of workforce, rising inflation, and continuing challenges in supplies and materials.

2. WILL FEDS DELIVER ON PROMISE TO COLLABORATE ON A LONG-TERM INFRASTRUCTURE STRATEGY?

The CCA, on behalf of the industry, has been advocating for a long-term infrastructure plan and was encouraged by the response of the federal government to industry's feedback on what a national infrastructure assessment should look like. This needs to be a priority for the new Minister of Infrastructure, Dominic LeBlanc.

3. SCALING UP TRADE-ENABLING INFRASTRUCTURE

Economic revival is a top priority for all Canadians. Almost two-thirds of Canada's GDP comes from trade, but we have fallen behind in building the trade infrastructure we need to capitalize on and expand into new global markets. With estimates from the World Bank and World Economic Forum saying the reliability and readiness of Canada's trade infrastructure has fallen from 10th best in the world in 2009 to 26th today, we need a massive scale-up in our country's trade infrastructure.

While the United States remains Canada's most important trading partner, China's strength as an economic power is undeniable. Asia Pacific trade will play a big part in Canada's future economy. Canada will require a long-term strategy including investments in existing trade gateways and corridors, new marine and inland ports as well as road, rail and air transportation that will support the freight and passenger flows required for growing international trade.

4. FOCUS ON APPRENTICESHIPS

While the shortage of skilled workers facing the industry is nothing new, its implications on Canada's swift economic recovery are more dire. Employment growth in Canada is expected to average one per cent annually between the years 2020 and 2024, creating just over 900,000 jobs over the next five years. In the construction sector, the average annual growth outlook suggests employment growth will likely average approximately 0.6 per cent per year between 2020 to 2024.

There is a need for a national strategy to recruit and retain more than 375,000 apprentices in Red Seal trades over the next five years. Skilled tradespeople cannot be created overnight. Poaching from within the industry exacerbates the problem. Now is the time to focus on a national, coordinated workforce capacity strategy and boost skilled training programs.

5. SUPPLY CHAIN INSTABILITY; CALLS FOR MADE IN CANADA

Virtually every material from lumber to steel has gone up in price. The fluctuating cost of building materials and the unpredictability of the supply chain are affecting budgets, estimates, and bids. The industry needs to look long and hard at areas that can be optimized to drive a better bottom line, including modernizing the tendering process.

Canada will be looking harder at the opportunities and the challenges of re-patriating Canadian knowledge and manufacturing.

We also need to reduce delays in granting contracts and address cost escalation so that the sub-contractor isn't left footing the entire bill for soaring material costs. The industry faces challenges with both spiking material prices and labour shortages. Finding skilled labour, managing price volatility, and mitigating the risks that come with rising costs are top priorities.

6. THE DELIVERY MODELS ARE CHANGING

Projects are becoming more complex and there is no one-size-fits-all form for financing, designing and managing them. Current procurement practices have contractors shouldering a disproportionate share of the risk. With productivity and sustainability issues on the rise, including net-zero carbon targets, and shortages in material and labour affecting profit margins, it is high time the government refreshed its approach to procurement.

To build the infrastructure needed across the country and recruit the workforce of the future, federal procurement strategies need to adapt to encourage innovation, account for long-term value and sustainability, promote the use of alternative delivery models, and support shared risk.

7. GREEN OUTCOMES IDENTIFIED IN PROCUREMENT PROJECTS: BUT WILL FUNDING BE SUFFICIENT?

Public interest in sustainable investment has grown significantly over the past 12 months. There is increased activity worldwide to promote greener construction. Reinforced by commitments to the Paris Agreement, a growing number of countries are reaffirming net-zero carbon emission targets, including Canada. At the same time, consumers are demanding socially and environmentally responsible business practices and projects.

During this decade, rising sea levels and rainfall increases can cause flood damage to homes and buildings with costs as high as $13.6 billion annually. Temperature and rainfall-related damage to roads and railways could increase by up to $5.4 billion annually, and heat and rainfall damage to electrical transmission and distribution infrastructure can cost utilities and ratepayers up to $4.1 billion annually. Early investment in adaptation can substantially reduce the impacts and costs to infrastructure of a hotter and increasingly volatile climate by over 90 per cent or $20.79 billion annually.

8. FOCUS ON INCLUSIVE AND COLLABORATIVE CORPORATE CULTURE

Traditionally, construction has been highly siloed, with the ability to drive low cost as the primary driver. As Canadian society is increasingly embracing diversity and inclusivity, these values are being expected of Canadian firms. In a tight labour market, companies who are unable to adapt will be left behind as workers migrate to those where they feel valued.

There will also be some work to do in re-integrating office workers. This could potentially mean re-shaping these roles particularly where some may

seek permanent remote roles or where there is an opportunity to hire from under-served markets or communities. Consideration will need to be given to minimizing potential conflicts between office and site workers who have different, but equal challenges adapting to COVID and a post-COVID world.

9. CYBER SECURITY IS EVERYONE'S BUSINESS

Millions of people moved from their offices to their homes, sharing data over the internet, in record volumes. Completing daily COVID forms became the norm, as did increased use of IoT for safety, productivity, or auditing purposes. All of these transactions became potential portals for cyber-attacks – and many firms, sophisticated or not, became targets, and sometimes, victims.

While the security industry is creating more shields, a significant threat remains. Cyber security can no longer be limited to the CTO or CIO. More training, more controls and more auditing will be necessary to ensure that companies get the benefits of a connected world, while minimizing or eliminating the very real threat to their business from cyber-criminals.

10. DATA SHARING: AN INDUSTRY GAME-CHANGER

Data is king – but only if you can aggregate it and use it to drive decision-making. Each time a project is managed through its milestones it creates a huge amount of data which rarely gets used again. This data can take the form of schedules, financial budgets, workflows, incident reports and lessons learned. There is a lot we can learn from sharing data that is collected on construction sites. Companies are beginning to look at entering into data alliances because the more data collected the better predictive analytics can be leveraged to assess risk, increase safety and improve productivity. Applying advanced data analytics and machine learning to predict how projects will perform in the future will allow companies to focus on problems before they arise and understand the probability of risk involved.

On Site Magazine
December 22, 2021

https://www.on-sitemag.com/features/top-10-canadian-construction-trends-to-watch-in-2022/

EXCAVATOR OF THE YEAR AWARDS

2021

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.

ELECTRIC

PLP POWERLINES PLUS

LANDSCAPE

Royal Oak TREE SERVICES

WATER & SEWER

FER-PAL INFRASTRUCTURE

GAS

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ROAD BUILDER

BEVCON CONSTRUCTION & PAVING LTD.

TELECOMMUNICATIONS

CABLECAN CORP.

HOME BUILDER

SilverLine GROUP INC. 25

MOST IMPROVED

Dufferin Construction A CRH COMPANY

Appendix A:
Report Findings: Data Quality Index Indications

Table 6 indicates the Data Quality Index (DQI) for each individual part of the DIRT Field Form. The DQI is a measure of data quality and consists of the evaluation of each organization that submitted records, in addition to the evaluation of each record submitted to DIRT. The overall average DQI is 73.8%.

The weight assigned to the various DIRT parts varies based upon its value in analyzing the event for damage prevention purposes, with Root Cause receiving the largest weight. The overall DQI for a set of records can be obtained by averaging the individual DQI of each record. The "2021 DQI" column in the table below represents the average of all 4402 submitted events in the 2021 dataset.

Table 6: DIRT Submission Parts and DQI

DIRT Parts	Relative Weight	2019 DQI	2020 DQI	2021 DQI
A: Who is submitting this information?	5%	100.0	100.0	100.0
B: Date and Location of the event	12%	82.5	77.1	77.7
C: Affected Facility Information	12%	77.3	78.2	78.6
D: Excavation Information	14%	87.4	85.4	84.8
E&F: Notification, Locating, Marking	12%	80.8	100.0	100.0
G: Excavator Downtime	6%	32.3	11.5	11.2
H: Description of Damage	14%	49.0	45.0	36.5
I: Description of the Root Cause	25%	74.8	75.9	74.4
Total Weighted DQI	**100%**	**76.8**	**75.3**	**73.8**

Of the various parts of the damage report, Parts G: Excavator Downtime and H: Description of Damage are often not included, as most of the organizations inputting data into DIRT do not track this information.

FRESH DIRT (beginning 2018) Rev: 11/7/2017

'*' indicates a Required Field

Damage Information Reporting Tool (DIRT) - Field Form

Part A – Original Source of Event Information

Who is providing the information? ☐ Electric ☐ Engineer/Design ☐ Equipment Manufacturer
☐ Excavator ☐ Liquid Pipeline ☐ Locator ☐ Natural Gas ☐ Private Water
☐ Public Works ☐ Railroad ☐ Road Builders ☐ Federal / State Regulator
☐ Telecommunications ☐ Unknown/Other

Name of person providing the information:

Part B – Type, Date, and Location of Event

Type of Event: DIRT Event ☐ Underground Damage ☐ Underground Near Miss
Non-DIRT Event ☐ Above Grade ☐ Aerial ☐ Natural Cause ☐ Submarine

***Date of Event:** (MM/DD/YYYY)

***Country** ***State** ***County** **City**

Street address: **Nearest Intersection:**

Latitude/Longitude: Lat: Lon ☐ Decimal Degrees ☐ D M S

***Right-of-Way where event occurred**

Public: ☐ City Street ☐ State Highway ☐ County Road ☐ Interstate Highway ☐ Public-Other
Private: ☐ Private Business ☐ Private Land Owner ☐ Private Easement
☐ Pipeline ☐ Power /Transmission Line ☐ Dedicated Public Utility Easement
☐ Federal Land ☐ Railroad ☐ Unknown/Other

Part C – Affected Facility Information

***What type of facility operation was affected?** ☐ Cable Television ☐ Electric ☐ Liquid Pipeline
☐ Natural Gas ☐ Sewer ☐ Steam ☐ Telecommunications ☐ Water ☐ Unknown/Other

***What type of facility was affected?** ☐ Distribution ☐ Gathering ☐ Service/Drop ☐ Transmission ☐ Unknown/Other
Was the facility part of a joint trench? ☐ Yes ☐ No ☐ Unknown
Did this event involve a Cross Bore? ☐ Yes ☐ No
Was facility owner One Call Center member? ☐ Yes ☐ No ☐ Unknown
If No, is facility owner exempt from One Call Center membership? ☐ Yes ☐ No ☐ Unknown
Measured Depth From Grade ☐ Embedded in concrete/asphalt pavement ☐ <18" / 46 cm ☐ 18" – 36" / 46 - 91 cm ☐ >36" / 91 cm Measured depth from grade _____in/cm

Part D – Excavation Information

***Type of Excavator** ☐ Contractor ☐ County ☐ Developer ☐ Farmer ☐ Municipality
☐ Occupant ☐ Railroad ☐ State ☐ Utility ☐ Unknown/Other

***Type of Excavation Equipment** ☐ Auger ☐ Backhoe/Trackhoe ☐ Boring ☐ Bulldozer
☐ Drilling ☐ Directional Drilling ☐ Explosives ☐ Farm Equipment ☐ Grader/Scraper ☐ Hand Tools
☐ Milling Equipment ☐ Probing Device ☐ Trencher ☐ Vacuum Equipment ☐ Unknown/Other

***Type of Work Performed** ☐ Agriculture ☐ Bldg. Construction ☐ Bldg. Demolition ☐ Cable Television
☐ Curb/Sidewalk ☐ Drainage ☐ Driveway ☐ Electric ☐ Engineering/Survey
☐ Fencing ☐ Grading ☐ Irrigation ☐ Landscaping ☐ Liquid Pipeline ☐ Milling
☐ Natural Gas ☐ Pole ☐ Public Transit Auth. ☐ Railroad ☐ Road Work ☐ Sewer
☐ Site Development ☐ Steam ☐ Storm Drain/Culvert ☐ Street Light ☐ Telecommunication
☐ Traffic Signal ☐ Traffic Sign ☐ Water ☐ Waterway Improvement ☐ Unknown/Other

Part E – Notification and Locating

***Was the One-Call Center notified?** ☐ Yes ☐ No Ticket Number

If Yes, type of locator ☐ Facility Owner ☐ Contract Locator ☐ Unknown/Other

If No, is excavation activity and/or excavator type exempt from notification? ☐ Yes ☐ No ☐ Unknown
Was work area white-lined? ☐ Yes ☐ No ☐ Unknown

Part F – Intentionally left blank

FRESH DIRT (beginning 2018)

Rev: 11/7/2017
'*' indicates a Required Field

Part G – Excavator Downtime

Did Excavator incur down time? ☐ Yes ☐ No

If yes, how much time? ☐ < 1 hr ☐ 1 -<2 hrs ☐ 2-<3 hrs ☐ 3+ hrs Exact Value _____ ☐ Unknown

Estimated cost of down time? ☐ $0 ☐ $1 -1000 ☐ $1,001 - 5,000 ☐ $5,001 - 25,000
☐ $25,001 - 50,000 ☐ >$50,000 Exact Value _____ ☐ Unknown

Part H – Interruption and Restoration

***Did the damage cause an interruption in service?** ☐ Yes ☐ No ☐ Unknown

If yes, duration of interruption ☐ < 1 hr ☐ 1 - <6 hrs ☐ 6 - <12 hrs ☐ 12 - <24 hrs ☐ 24 - <48 hrs
☐ 48+ hrs Exact Value _____hrs ☐ Unknown

Approximately how many customers were affected?
☐ Unknown ☐ 0 ☐ 1 ☐ 2 - 10 ☐ 11 - 50 ☐ 51+ Exact Value _____

Estimated cost of damage / repair/restoration: ☐ $0 ☐ $1 - 1,000 ☐ $1,001- 5,000 ☐ $5,001 - 25,000
☐ $25,001 - 50,000 ☐ > $50,000 Exact Value _____ ☐ Unknown

*Part I – Root Cause Select only one

Notification Issue
- ☐ No notification made to One Call Center/ 811
- ☐ Excavator dug outside area described on ticket
- ☐ Excavator dug prior to valid start date/time
- ☐ Excavator dug after valid ticket expired
- ☐ Excavator provided incorrect notification information

Excavation Issue
- ☐ Excavator dug prior to verifying marks by test-hole (pothole)
- ☐ Excavator failed to maintain clearance after verifying marks
- ☐ Excavator failed to protect/shore support facilities
- ☐ Improper backfilling practices
- ☐ Marks faded or not maintained
- ☐ Improper excavation practice not listed above

Locating Issue

Facility not marked due to:
- ☐ Abandoned facility
- ☐ Incorrect facility records/maps
- ☐ Locator error
- ☐ No response from operator/contract locator
- ☐ Tracer wire issue
- ☐ Unlocatable Facility

Facility marked inaccurately due to
- ☐ Abandoned facility
- ☐ Incorrect facility records/maps
- ☐ Locator error
- ☐ Tracer wire issue

Miscellaneous Root Causes
- ☐ Deteriorated facility
- ☐ One Call Center Error
- ☐ Previous damage
- ☐ Root Cause not listed (comment required)

Part J – Additional Comments

Part Z – Images and Attachments: List the file names of any images and attachments to submit with this report

Appendix C: Glossary of Terms

Abandoned Line or Facility: Any underground or submerged line or facility no longer in use.

Alternate Locate Agreement (ALA): A contractual agreement between a facility owner and an excavator that allows the excavator to proceed with their excavation work without receiving a traditional field locate.

Backfill: The act of filling the void created by excavating or the material used to fill the void.

CCGA: The Canadian Common Ground Alliance's (CCGA) primary role is to manage damage prevention issues of national interest that Regional Partners consider best addressed through a single voice.

CGA: The Common Ground Alliance (CGA) is a member-driven association dedicated to ensuring public safety, environmental protection, and the integrity of services by promoting effective damage prevention practices.

Compliance: Adherence to acts and regulations.

Damage: Any impact, stress and/or exposure that results in the need to repair an underground facility due to a weakening or the partial or complete destruction of the facility, including, but not limited to, the protective coating, lateral support, cathodic protection or the housing for the line, device or facility.

Daylighting: The exposure of underground utility infrastructure by minimally intrusive excavation practices to ascertain precise horizontal and vertical position or other attributes. (Note: may also be referred to as "potholing" or "test pitting".)

Demolition Work: The intentional, partial or complete destruction by any means of a structure served by, or adjacent, to an underground line or facility.

DIRT: Damage Information Reporting Tool.

Downtime: Lost time reported by a stakeholder on the Damage Information Reporting Tool (DIRT) field form for an excavation project due to failure of one or more stakeholders to comply with applicable damage prevention regulations.

DQI: The Data Quality Index (DQI) is a measure of data quality and consists of the evaluation of each organization that submitted records, in addition to the evaluation of each record submitted to DIRT.

Event: The occurrence of an underground infrastructure damage, near miss, or downtime.

Excavate or Excavation: An operation using equipment or explosives to move earth, rock or other material below existing grade. (Note: Excavation can include augering, blasting, boring, coring, digging, ditching, dredging, drilling, driving-in, grading, plowing-in, pulling-in, ripping, scraping, trenching and vacuuming).

Excavator: Any person proposing to or engaging in excavation or demolition work for themselves or for another person.

Facility: See Utility Infrastructure.

Facility Owner/Operator: Any person, utility, municipality, authority, political subdivision, or other person or entity who owns, operates, or controls the operation of an underground line/facility.

Grade (noun): The surface elevation.

Grade (verb): The act of changing the surface elevation.

Joint Trench: A trench containing two or more underground infrastructures that are buried together by design or agreement.

Locate (noun): The provision of location information by an underground facility owner (or their agent) in the form of ground surface markings and/or facility location documentation, such as drawings, mapping, numeric description or other written documentation.

Locate (verb): The process of an underground plant owner/operator or their agent providing information to an excavator which enables them to determine the location of a facility.

Locate Request: A communication between an excavator and the facility owner/operator or their agent (usually the One Call Centre) in which a request for locating underground facilities is processed.

Locator: A person whose job is to locate underground infrastructure.

Near Miss: An event where damage did not occur, but a clear potential for damage was identified.

Notifications: Ticket data transmitted to underground infrastructure owners.

One Call Centre: A system which provides a single point of contact to notify facility owners/operators of proposed excavation activities.

ORCGA: The Ontario Regional Common Ground Alliance (ORCGA) is a Regional Partner of both the Common Ground Alliance (CGA) and the Canadian Common Ground Alliance (CCGA). It is a non-profit organization promoting efficient and effective damage prevention for Ontario's vital underground infrastructure.

Person: Any individual or legal entity, public or private.

Public: The general population or community at large.

Root Cause: The primary reason an event occurred.

Test Hole(s): Exposure of a facility by safe excavation practices used to ascertain the precise horizontal and vertical position of underground lines or facilities.

Ticket: All data required from an excavator to transmit a valid notification to the underground infrastructure owner.

Ticket number: A unique identification number assigned by the one call center to each locate request.

Tolerance Zone: The space in which a line or facility is located and in which special care is to be taken.

Underground: Beneath the ground surface or submerged, including where exposed by temporary excavation.

Utility Infrastructure: a cable, line, pipe, conduit, or structure used to gather, store, or convey products or services. (Note: may also be referred to as “facility” or “plant”.)

Vacuum Excavation: A means of soil extraction through vacuum where water or air jet devices are commonly used for breaking the ground.

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