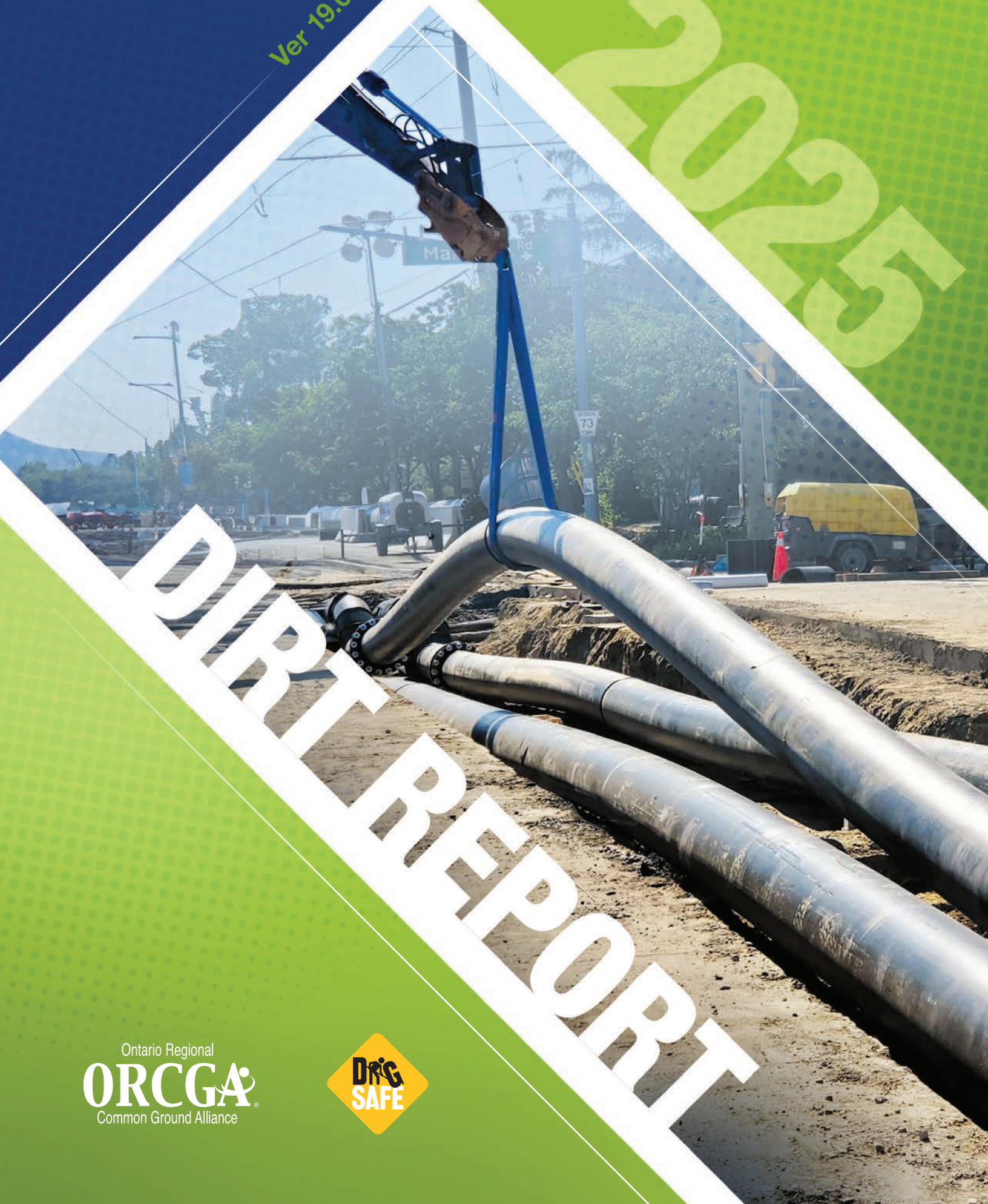
Ver 19.0

2025

DIRT REPORT



Ontario Regional
ORCGA
Common Ground Alliance

DIG SAFE

Blocked sewer?

Always call before you clear.

Sewer drain emergencies and flooded basements can be stressful. But before you or a plumber attempt to clear a blocked sewer or septic line, be sure to call **Ontario One Call** toll free at **1-800-400-2255** for a free sewer safety inspection.

Resolve clogs quickly and safely

- Blockages in pipes that run inside your home typically can be cleared safely on your own.
- If the clog is in sewer or septic pipes that run outside the walls of your home, call **Ontario One Call** before you or a plumber attempt to clear it.
- Never use motorized or water-jetting equipment to clear a blocked sewer line without an inspection.

What is a cross bore?

In rare cases, underground natural gas pipelines could unintentionally run through sewer or septic pipes—this is called a cross bore. Left undisturbed, cross bores aren't an immediate safety risk. However, using motorized or water-jetting equipment to clear a blocked sewer line could damage the natural gas line, resulting in a real and immediate risk to public safety, including a gas leak, fire or explosion.

Smell gas? Act fast!

Natural gas smells like rotten eggs or sulphur. If you smell gas or think you have a gas leak, leave the area immediately and call Enbridge Gas at 1-866-763-5427 or 911 from a safe distance (like a neighbour's home).

To request an inspection, contact Ontario One Call at 1-800-400-2255. These inspections are available 24/7 and are treated as emergencies. If a cross bore is found, the sewer line will be fixed at no cost to you.

ENBRIDGE
Life Takes Energy®

Visit **enbridgegas.com/sewersafety** for more safety information and videos.

Douglas Lapp,
President & CEO

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 these vital services exists every day, and at every excavation job site.

To provide the best defence against underground strikes, the understanding and analysis of infrastructure damages 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. To continually improve this analysis, the ORCGA, with the help of its' members must actively encourage the ongoing collection of data from a broader cross section of industry stakeholders, particularly municipal infrastructure owners of water, sewer and street lighting as well as local electrical utility distribution companies (LDCs).

The overall number of damages in 2025 decreased from 2024 by approximately 5%, bringing the number of recorded damages to 3,836, the lowest annual number of damages in over 10 years!

The number of inbound locate requests were virtually identical from 2024 to 2025, with a corresponding decrease in One Call outbound notifications of 5%. These results show an improvement in the Damages/1,000 Requests ratio of 5%, with the Damages/1,000 Notifications ratio unchanged at 0.76, likely due to improved mapping and concerted efforts for office clears. Decreases in damage events were noted in most areas across Ontario, with sizable decreases in the Ontario East at 14.8% or 54 and Toronto-York-Peel area of over 7.8% or 116.

The key analysis tool for users of the DIRT report is the Root Cause Analysis. Analyzing the root causes of damages is the most effective way to identify targeted areas for vigilance and improvement, including excavation, notification, and locate-related issues. A useful tool to identify root causes is the "Root Cause Determination Flow Chart" which is included at Appendix A. This tool follows a "yes" or "No" format to narrow down and identify the most appropriate root cause for damages.

For 2025, the most prevalent root cause for underground utility damages continues to be Excavation Issues at 41%. Notification issues remained fairly steady compared with 2024 but continues to be a concern as close to 100% of these are with No notification request to Ontario One Call prior to excavation activity (33% of damages).

Clearly, there continues to be ongoing work ahead to educate on safe digging practices and the need to "Click Before You Dig".

The 2025 DIRT Report is the result of the dedicated volunteers on the ORCGA Reporting and Evaluation Committee (R&E), led by Co-Chairs Amanda Gillis, Gtel and Sean Adkins, Endvr Energy.

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 2025 DIRT report is posted on the ORCGA website as well as distributed to all members in April, which marks the start of the 2026 Dig Season.

The ORCGA values your feedback as part of our ongoing efforts to improve the DIRT report. By completing this quick survey you will help guide future editions.

Ontario Regional ORCGA Common Ground Alliance

The Reporting & Evaluation (R&E) Committee is a group of diverse stakeholders who are responsible for analyzing the data submitted into the Damage Information Reporting Tool (DIRT), identifying trends, making recommendations based on the data, and ensuring that the annual DIRT Report is created and published in a timely manner. The R&E Committee also determines the ORCGA Excavator of the Year award winners. We welcome any new industry members to get involved; your voice matters. Contact us at **office@orcga.com** or **(866) 446-4493**.

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Cover photo on behalf of North Rock Group

Ontario Regional ORCGA Common Ground Alliance

The Ontario Regional Common Ground Alliance (ORCGA) is a non-profit organization dedicated to driving Safe Excavation for workers, the public and underground infrastructure through advocacy, education and engagement.

With more than 500 active members and sponsors, the ORCGA represents a broad and diverse cross section of industry stakeholders, including:

Electrical Distribution	Insurance	Railways
Electrical Transmission	Land Surveying	Regulator
Engineering	Landscape/Fencing	Road Builders
Equipment and Supplies	Locator	Safety Organization
Excavator	Municipal & Public Works	Telecommunications
Homebuilder	Oil & Gas Distribution	Transmission Pipelines

The ORCGA is committed to fostering a culture of safety throughout the province. This is achieved by providing practical tools, promoting public awareness and encouraging adherence to industry best practices for underground infrastructure and ground disturbance activities.

The ORCGA encourages open participation on its committees and Board of Directors.

To learn more about the scope and work of each committee, please visit **www.orcga.com**.

Every Dig, a Safe Dig

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

1.1 Data Collection & Methodology

The Damage Information Reporting Tool (DIRT) is an international database used across all Canadian provinces and US states to collect data on facility damages and near misses.

The underground damage data submitted within Ontario enables the ORCGA to analyze contributing factors and trends to identify educational opportunities for reducing damages and increasing safety.

The annual DIRT Report summarizes damages submitted during the prior year and monitors trends. The 2025 report analyzes data from Ontario between 2021-2025, providing stakeholders with damage prevention performance benchmarks and enabling Common Ground Alliance organizations to compare metrics.

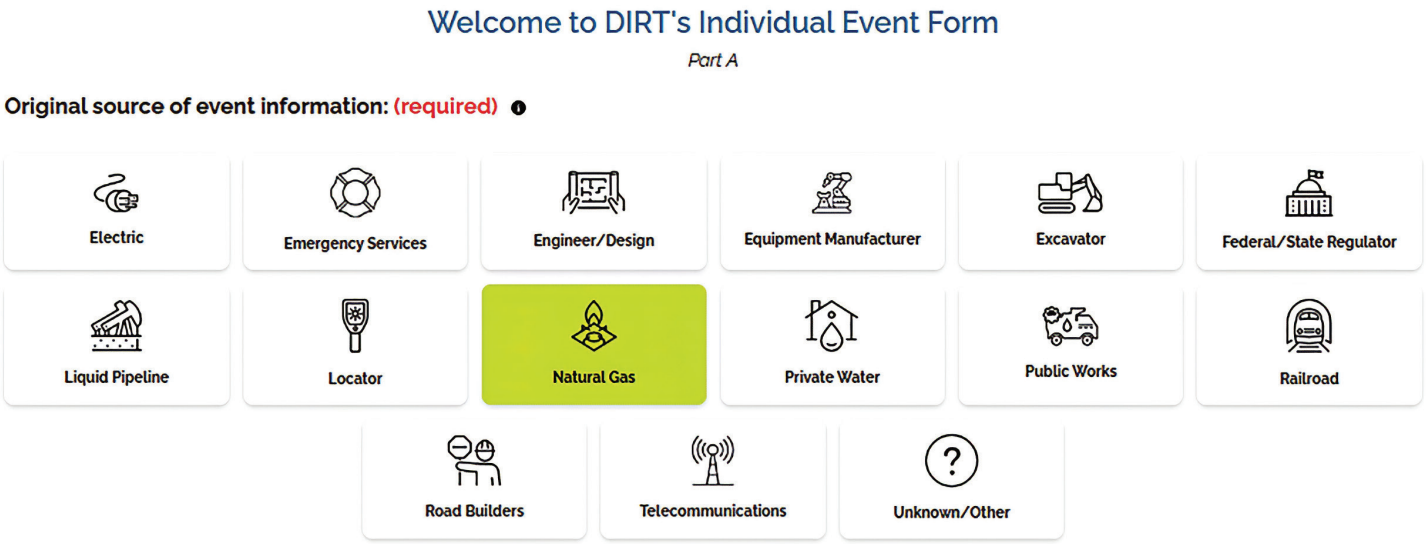
The submitted data represents only voluntarily submitted damages from industry stakeholders and is not comprehensive of all facility damages that occurred during the reporting year. Contributors may submit retroactive damage data which can cause volume variations between reports. The Data Quality Index on Page 26 illustrates the overall quality of submitted data.

The Damage Information Reporting Tool (DIRT) is ORCGA's secure platform for collecting and analyzing underground facility damage and near-miss data. By anonymously submitting your organization's data, you help the entire industry understand **where, how, and why damages** occur.

DIRT is an extremely powerful tool. The data represented in this report is voluntarily submitted by stakeholders, and does not fully represent all damages or utility strikes that occur within Ontario.

Your participation makes a difference!

Inputting into DIRT is easy, see Appendix B.



1.2 Data Highlights 2025

There were **3,836** reported damages in 2025

There were **16** damages per working day in Ontario

53% of No Locate damages involved hazardous infrastructure

That the amount of damages without Locates totaled **41%**

41% of damages are due to improper excavation practices

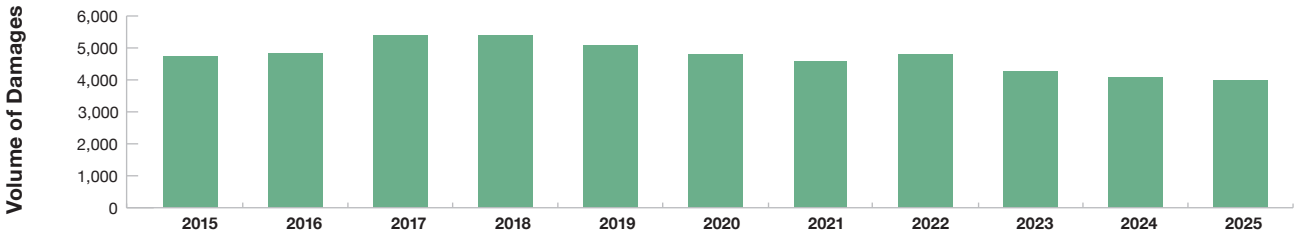
36% of damages involved telecommunications

2.0 | Data Analysis

2.1 Damage Analysis

In 2025, damages decreased by 5% from 2024, to 3,836 damages This marks the lowest volume since 2015. This report examines the data to highlight where targeted actions can sustain and accelerate future damage reduction.

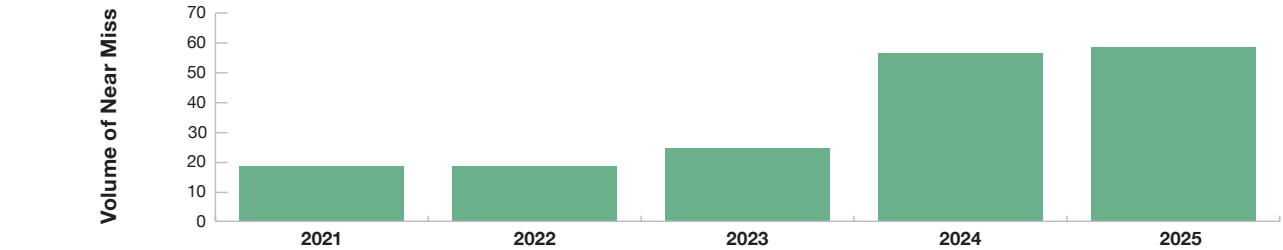
Figure 1: Damages Submitted by Year



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Volume of Damages	4,695	4,806	5,367	5,388	5,061	4,783	4,554	4,829	4,251	4,035	3,836

Figure 1a illustrates reported underground near miss instances where underground infrastructure is exposed but not damaged during excavation. Near miss reporting is valuable for the industry, as it captures opportunities to learn from close calls and refine damage prevention strategies before actual damages occur. The significant increase from 24 near misses in 2023 to 59 in 2025 likely reflects improved reporting practices rather than deteriorating safety performance.

Figure 1a: Reported Underground Near Miss



	2021	2022	2023	2024	2025
Underground Near Miss	19	19	24	57	59

2.2 ORCGA Geographic Areas

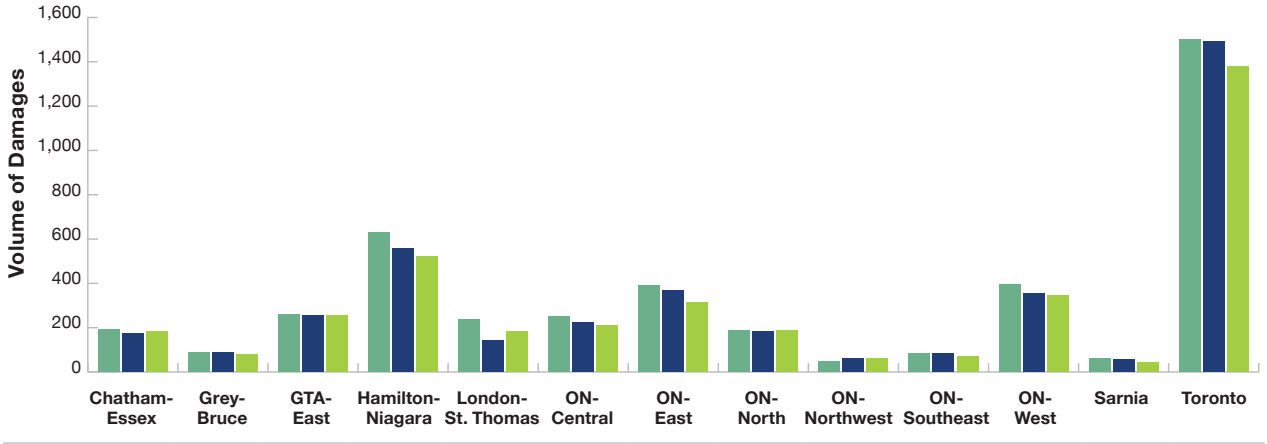
Table 1 outlines the ORCGA geographic areas and the constituent municipalities/cities.

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

Geographic Area	Region/Municipality/City
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 damages for each geographic area over the past three years. The data reveals a consistent downward trend across most geographic areas, showing notable improvements in damage prevention across Ontario.

Figure 2: Damages by Geographic Area



	Chatham-Essex	Grey-Bruce	GTA-East	Hamilton-Niagara	London-St. Thomas	ON-Central	ON-East	ON-North	ON-Northwest	ON-Southeast	ON-West	Sarnia	Toronto
2023	191	87	260	630	236	251	391	186	47	85	394	62	1,501
2024	172	89	256	557	141	222	366	184	62	84	353	56	1,493
2025	185	79	254	523	183	211	312	189	61	71	347	44	1,377

Table 2 provides a detailed breakdown of notifications by geographic area.

Total notifications decreased by 5% in 2025 compared to 2024. Notifications indicate the number of utilities at risk for each project. This divergence between notification trends and construction activity levels highlights an ongoing challenge: ensuring that all excavation work is preceded by a locate request. This data reinforces the continued value of industry-wide education and awareness efforts to promote safe excavation practices across all sectors.

Table 2: Notifications by Geographic Area

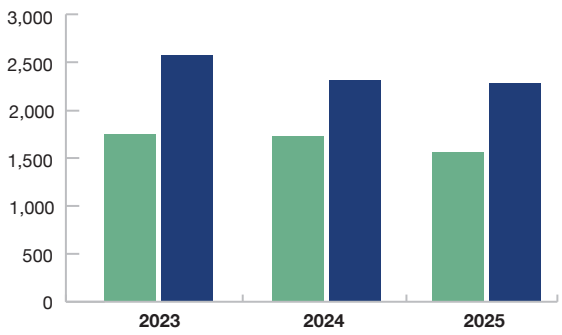
Geographical Area	2020	2021	2022	2023	2024	2025
ON-Central	206,678	241,198	253,699	259,667	225,463	230,707
Chatham-Essex	299,473	313,816	286,483	227,905	226,862	261,190
ON-East	613,616	678,522	632,810	565,838	532,593	506,999
Grey-Bruce	87,449	103,032	110,792	106,177	91,527	109,259
GTA-East	428,078	473,380	462,862	445,433	398,779	378,456
Hamilton-Niagara	882,364	909,844	914,040	898,509	789,244	688,612
London-St. Thomas	244,691	284,812	267,477	256,234	239,254	209,418
ON-North	193,942	195,532	180,318	182,530	188,247	180,341
ON-Northwest	70,736	70,264	64,981	63,719	62,365	61,524
Sarnia	86,089	104,735	93,172	80,416	93,778	79,265
ON-Southeast	123,212	134,991	131,355	132,430	131,757	121,772
Toronto	1,970,221	2,044,766	1,978,923	2,003,031	1,891,788	1,780,677
ON-West	539,783	586,820	571,122	519,374	471,608	469,873
GRAND TOTAL	**5,746,332**	**6,141,712**	**5,948,034**	**5,741,263**	**5,343,265**	**5,078,093**

As shown in Figure 3 and Figure 3A, damages occurring without a locate request decreased to 1,560 in 2025, a 10% reduction from 2024 and the lowest level in the three-year period.

This improvement is particularly encouraging given that no-locate incidents represent 41% of all damages, down from 43% in 2024. Meanwhile, damages where a locate was requested remained relatively stable at 2,276 damages.

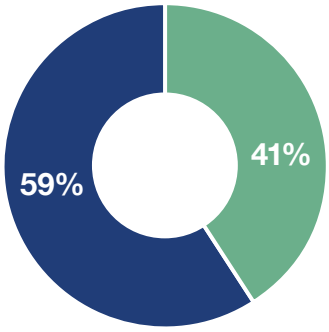
The faster rate of decline in no-locate damages suggests that 'Click Before You Dig' awareness campaigns and outreach efforts are reaching more excavators.

Figure 3: Locate versus No-Locate Request



	2023	2024	2025
No-Locate	1,746	1,726	1,560
Locate	2,575	2,309	2,276

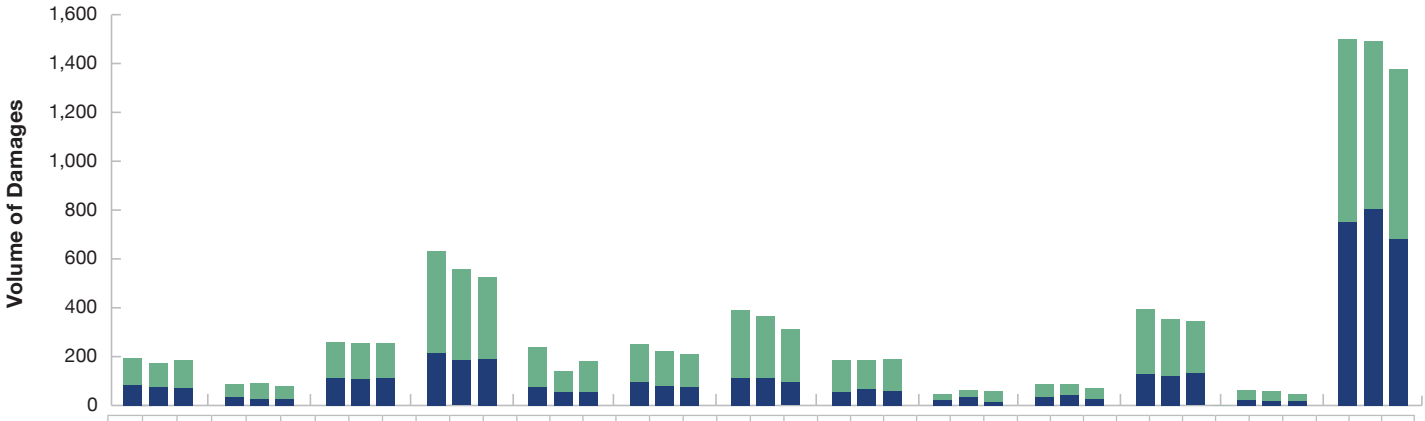
Figure 3a: 2025 Locate versus No-Locate Request



	2025
No-Locate	1,560
Locate	2,276

Figure 3b provides a three-year comparative analysis of damages, categorized by geographic areas, where a locate request versus a no-locate request was submitted to Ontario One Call (OOC). This analysis can help identify areas where targeted education and outreach efforts may be most beneficial for improving damage prevention practices.

Figure 3b: Locate Request Versus No-Locate Request Damages by Geographic Area



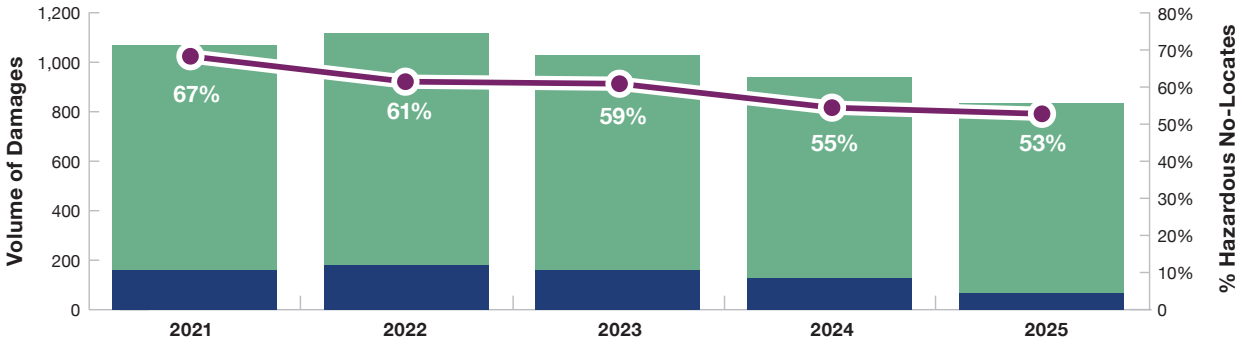
	'23	'24	'25	'23	'24	'25	'23	'24	'25	'23	'24	'25	'23	'24	'25	'23	'24	'25	'23	'24	'25	'23	'24	'25	'23	'24	'25	'23	'24	'25	'23	'24	'25	'23	'24	'25
	Chatham-Essex			Grey-Bruce			GTA-East			Hamilton-Niagara			London-St. Thomas			ON-Central			ON-East			ON-North			ON-Northwest			ON-Southeast			ON-West			Sarnia			Toronto		
Locate	107	98	115	53	62	52	148	149	141	416	373	332	160	85	129	153	142	135	278	255	218	131	116	128	25	28	45	51	41	43	265	232	216	40	38	26	748	690	696
No-Locate	84	74	70	34	27	27	112	107	113	214	184	191	76	56	54	98	80	76	113	111	94	55	68	61	22	34	16	34	43	28	129	121	131	22	18	18	753	803	681

Geographic Area/Year

When excavation proceeds without a locate request, the consequences can be particularly severe. Figure 4 shows that in 2025, 53% of no-locate damages involved hazardous infrastructure—768 incidents involving Natural Gas and 66 affecting Electrical facilities. These aren't just property damages or services disruptions; they represent direct threats to public safety, worker safety, and essential service continuity. This data reinforces a fundamental principle: obtaining a complete locate package before breaking ground isn't just best practice—it's a critical safety measure.

CCGA Best Practice 3-14 (Locate Report) describes a Locate Report through a Practice Statement and a Practice Description. A complete Locate package includes a Locate Report from every utility owner identified through the One Call Service, and any private locates required to complete the proposed work safely.

Figure 4: No-Locate Damages with Hazardous Infrastructure



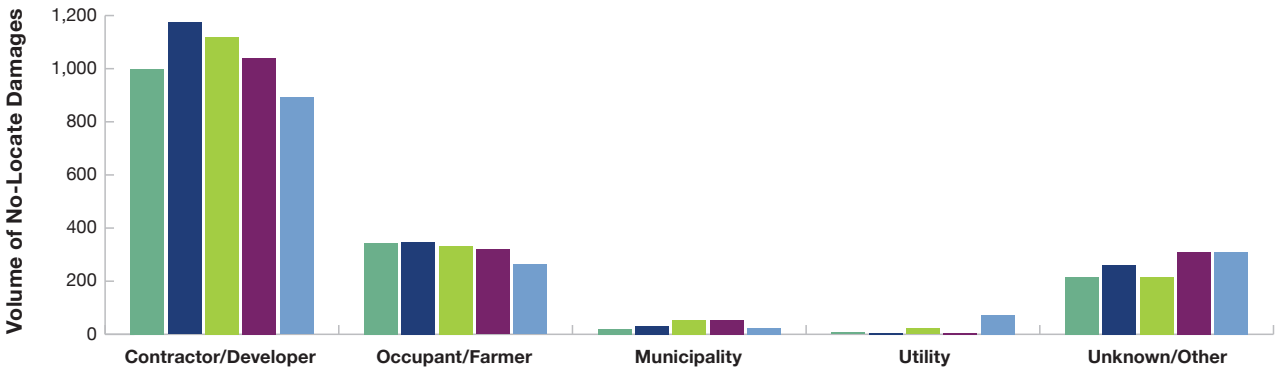
	2021	2022	2023	2024	2025
Natural Gas	907	936	866	812	768
Electric	161	180	160	129	66
% No-Locates with Hazardous Infrastructure	67%	61%	59%	55%	53%

Year

Figure 5 reveals encouraging progress in the Contractor/Developer sector. No-locate damages from this group decreased to 891 damages in 2025—a 14% reduction from 2024 and a 24% decline since 2022. This continues a positive four-year trend and suggests that education and outreach efforts are reaching their intended audience. While Contractor/Developers still represent the majority of no-locate incidents, the sustained year-over-year reductions demonstrate meaningful progress. Continued focus on awareness of proper notification procedures and the importance of obtaining a complete locate package before excavation will help build on this positive momentum.

CCGA Best Practice 2-27 (Excavators Contact the Notification Service Before Excavating) establishes the fundamental requirement for Excavators to Contact the Notification Service Before Excavating. Adherence to this practice plays a crucial role in damage prevention, promoting safety, efficiency, and cost-effectiveness for all stakeholders.

Figure 5: Damages with No-Locate Request by Excavator Group



	Contractor/Developer	Occupant/Farmer	Municipality	Utility	Unknown/Other
2021	999	343	21	7	215
2022	1,174	347	31	5	261
2023	1,120	333	55	22	216
2024	1,040	319	53	5	309
2025	891	263	24	73	309

Excavator Group

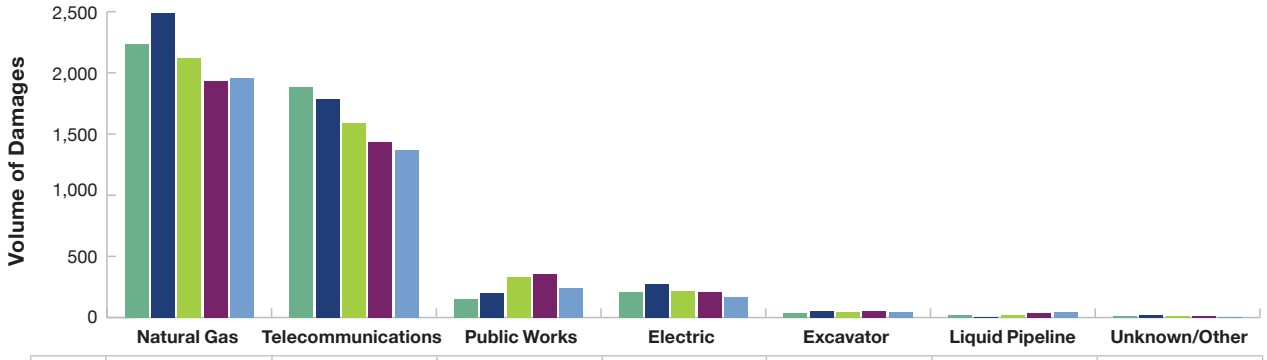
2.3 Damages by Stakeholder Group

Figure 6 presents a five-year analysis of damages categorized by stakeholder groups, providing insight into reporting patterns and trends across different infrastructure sectors.

Natural Gas and Telecommunications stakeholders continue to be the most active reporters in the DIRT system, accounting for 3,328 of the 3,836 total damages reported in 2025. Year-over-year reporting showed decreases across most sectors, with Electric reporting down 21% (212 to 167 damages) and Public Works down 33% (358 to 241 damages).

The ORCGA encourages all infrastructure sectors to maintain robust reporting practices, as complete and consistent data from all stakeholders enables more effective identification of patterns and opportunities for improvement across the industry.

Figure 6: Damages Submitted by Stakeholder Group



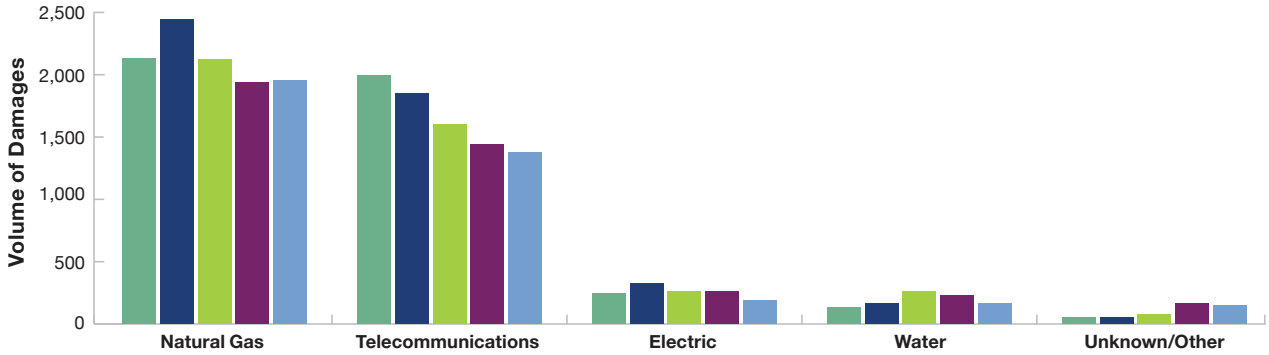
	Natural Gas	Telecommunications	Public Works	Electric	Excavator	Liquid Pipeline	Unknown/Other
2021	2,233	1,888	150	209	40	23	11
2022	2,489	1,788	201	275	54	4	18
2023	2,118	1,586	328	216	46	17	10
2024	1,934	1,437	358	212	51	33	10
2025	1,956	1,372	241	167	48	44	8

Stakeholder Group

2.4 Damages by Type of Facility

Figure 7 demonstrates the distribution of damages by facility type, with Natural Gas and Telecommunications infrastructure experiencing the highest frequency of reported damages. This pattern correlates with these sectors' comprehensive reporting practices and extensive underground infrastructure networks, providing valuable benchmark data for understanding damage prevention trends.

Figure 7: Damages by Type of Facility



	Natural Gas	Telecommunications	Electric	Water	Unknown/Other
2021	2,127	1,994	246	132	55
2022	2,443	1,849	323	165	49
2023	2,121	1,601	262	264	73
2024	1,938	1,443	257	230	167
2025	1,956	1,377	190	161	152

Type of Facility

2.5 Excavation Equipment Group and Type

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

Table 3: Excavation Equipment Group and Type

Excavation Equipment 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	Unknown/Other
	Farm Equipment	

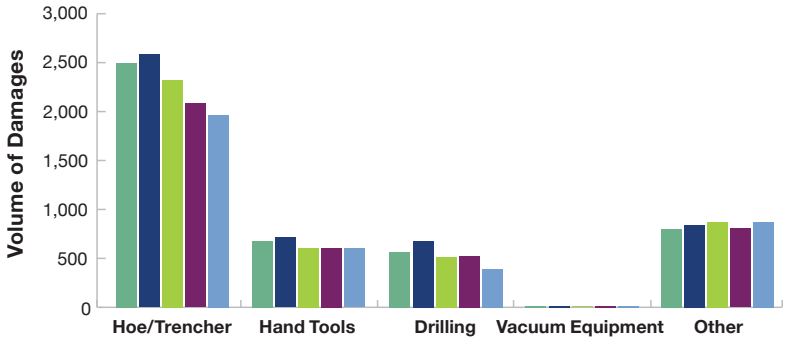
Table 4: Damages by Excavation Equipment Group and Type

Table 4 presents a detailed analysis of damages categorized by excavation equipment type, offering insights into how different excavation methods correlate with underground damages.

Group & Type of Work	2021	2022	2023	2024	2025
Hoe/Trencher	**2,498**	**2,583**	**2,322**	**2,084**	**1,963**
Backhoe/Trackhoe	2,475	2,557	2,292	2,049	1,934
Trencher	23	26	30	35	29
Hand Tools	**675**	**713**	**605**	**607**	**599**
Hand Tools	660	691	601	601	582
Probing Device	15	22	4	6	17
Drilling	**566**	**677**	**515**	**526**	**389**
Auger	278	281	210	229	179
Boring	173	218	164	95	83
Directional Drilling	97	151	114	177	77
Drilling	18	27	27	25	50
Vacuum Equipment	**13**	**13**	**10**	**12**	**11**
Vacuum Equipment	13	13	10	12	11
Other	**802**	**843**	**869**	**806**	**874**
Bulldozer	4	10	3	20	16
Explosives	0	0	0	1	3
Farm Equipment	3	5	6	4	4
Grader/Scraper	78	85	94	59	56
Milling Equipment	3	2	1	5	0
Unknown/Other	714	741	765	717	795

Figure 8 provides a breakdown of damages by different categories of excavation equipment. The Hoe/Trencher category remained the predominant equipment group associated with damages in 2025, accounting for 51% of all equipment-related incidents. The Drilling category showed significant improvement, with damages decreasing 26% from 526 damages in 2024 to 389 in 2025—the lowest level in the five-year period. However, the Unknown/Other category increased from 806 to 874 damages. This uptick in unclassified equipment types highlights an opportunity to improve the level of detail in data collection, which would enable more targeted damage prevention strategies for equipment groups.

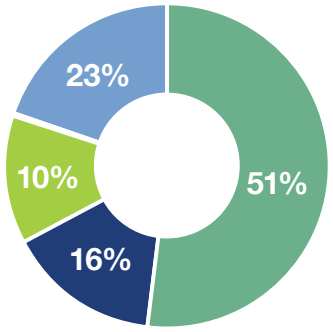
Figure 8: Damages by Excavation Equipment Group



	Hoe/Trencher	Hand Tools	Drilling	Vacuum Equipment	Other
2021	2,498	675	566	13	802
2022	2,583	713	677	13	843
2023	2,322	605	515	10	869
2024	2,084	607	526	12	806
2025	1,963	599	389	11	874

Excavation Equipment Group

Figure 8a: 2025 Damages by Excavation Equipment Group



Hoe/Trencher	1,963
Hand Tools	599
Drilling	389
Vacuum Equipment	11
Other	874

2.6 Damages by Root Cause and Subcategory

Table 5 provides a comprehensive breakdown of Root Causes and their associated subcategories, offering valuable insights into why damages occur. This detailed categorization supports the identification of patterns and trends in the factors contributing to underground damages.

Over the past five years, reporting practices have improved, resulting in greater data consistency and reliability. The data shows a reduction in the use of generic subcategories—"Improper excavation practice not listed above" and "Root Cause not listed above (comment required)"—and an increase in more specific classifications, reflecting improved precision in root cause reporting.

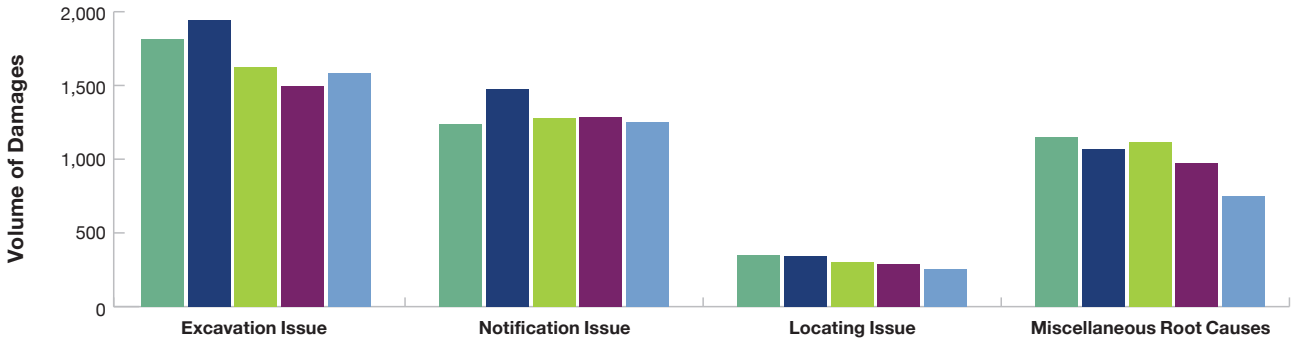
Table 5: Root Cause and Subcategory

Root Cause	2021	2022	2023	2024	2025
Excavation Issue	**1,817**	**1,943**	**1,622**	**1,493**	**1,582**
Excavator failed to maintain clearance after verifying marks	56	88	755	961	1,021
Improper excavation practice not listed above	1,447	1,400	537	191	207
Excavator failed to protect/shore/support facilities	58	66	81	89	96
Excavator dug prior to verifying marks by test-hole (pot-hole)	39	60	35	79	91
Excavator dug after valid ticket expired	98	143	132	79	66
Excavator dug outside area described on ticket	82	77	69	68	72
Marks faded, lost or not maintained	11	5	6	13	17
Improper backfilling	3	2	3	8	5
Excavator dug prior to valid start date/time	23	102	4	5	7
Notification Issue	**1,239**	**1,477**	**1,281**	**1,284**	**1,254**
No notification made to One Call Center / 811	1,235	1,474	1,278	1,279	1,246
Excavator provided incorrect notification information	4	3	3	5	8
Locating Issue	**348**	**340**	**300**	**286**	**252**
Marked inaccurately due to locator error	101	127	106	101	94
Not marked due to locator error	140	101	70	57	62
Unlocatable facility	34	41	54	42	35
Marked inaccurately due to incorrect facility record/maps	35	35	3	35	30
Not marked due to incorrect facility records/maps	9	23	21	32	21
Not marked due to abandoned facility	6	2	5	6	3
Site marked but incomplete at damage location	0	1	26	4	2
Marked inaccurately due to tracer wire issue	5	6	10	4	2
Marked inaccurately due to abandoned facility	16	0	0	3	1
No response from operator/contract locator	2	4	0	1	2
Not marked due to tracer wire issue	0	0	5	1	0
Miscellaneous Root Causes	**1,150**	**1,069**	**1,118**	**972**	**748**
Root cause not listed above (comment required)	1,147	1,061	1,115	970	745
Deteriorated facility	1	3	2	1	0
One Call Center error	1	1	0	1	2
Previous damage	1	4	1	0	1

Figure 9 analyzes the distribution of damages by Root Cause, revealing that Excavation Issues and Notification Issues remain the primary contributing factors to underground damages. This analysis highlights two key areas where enhanced damage prevention efforts could have the most significant impact:

- Excavation Issues: These damages typically involve deviations from safe digging practices or failure to maintain clearances around marked facilities
- Notification Issues: These damages commonly result from failure to notify Ontario One Call or proceeding without a valid locate

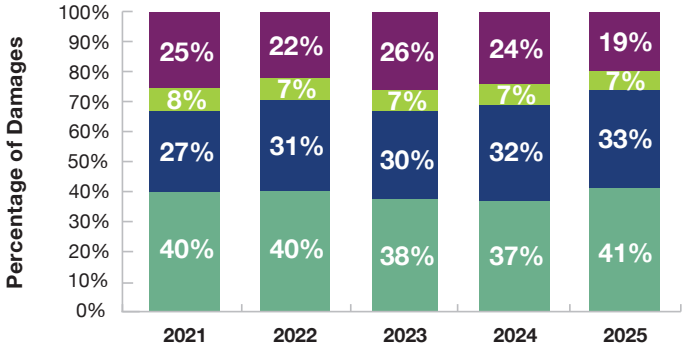
Figure 9: Damages by Root Cause



	Excavation Issue	Notification Issue	Locating Issue	Miscellaneous Root Causes
2021	1,817	1,239	348	1,150
2022	1,943	1,477	340	1,069
2023	1,622	1,281	300	1,118
2024	1,493	1,284	286	972
2025	1,582	1,254	252	748

Root Cause

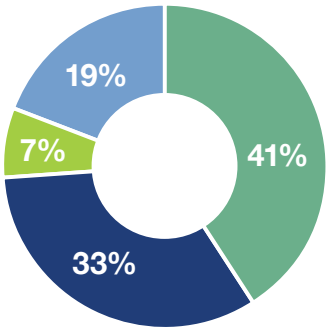
Figure 9a: Percentage of Root Cause by Year



	2021	2022	2023	2024	2025
Excavation Issue	1,817	1,943	1,622	1,493	1,582
Notification Issue	1,239	1,477	1,281	1,284	1,254
Locating Issue	348	340	300	286	252
Miscellaneous Root Causes	1,150	1,069	1,118	972	748

Year

Figure 9b: 2025 Damages by Root Cause

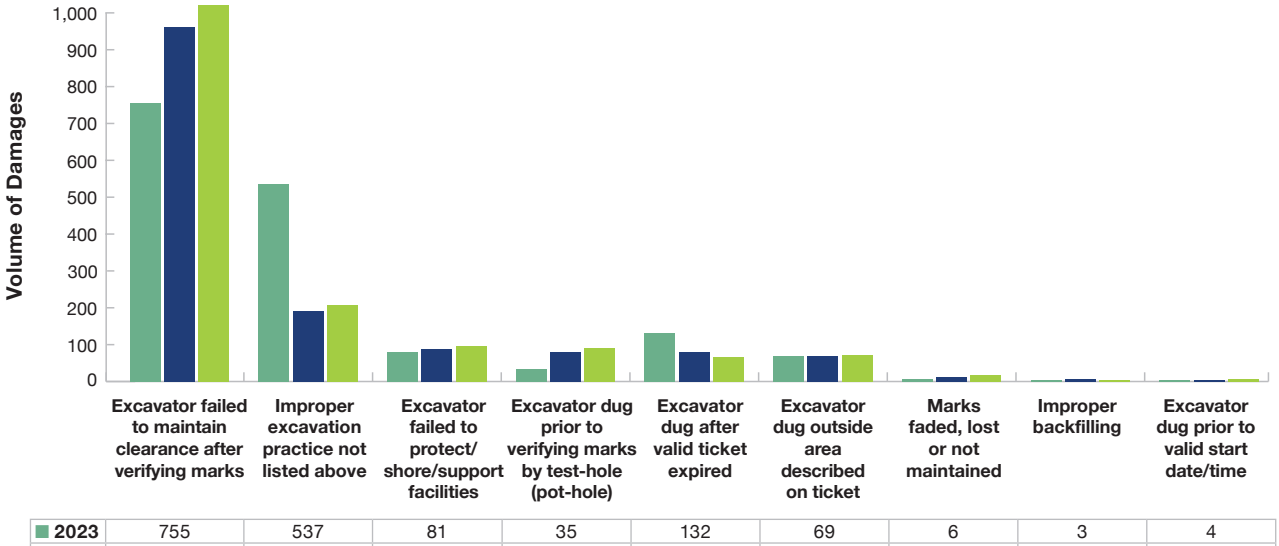


Excavation Issue	1,582
Notification Issue	1,254
Locating Issue	252
Miscellaneous Root Causes	748

Figure 10 presents a three-year trend analysis of Root Cause subcategories specifically related to Excavation Issues. The data consistently identifies failure to maintain proper clearance as the leading factor in excavation-related damages.

CCGA Best Practice 4-19 (Excavation within Tolerance Zone) describes the methods to consider when exposing any underground facility.

Figure 10: Damages by Root Cause: Excavation Issue



	Excavator failed to maintain clearance after verifying marks	Improper excavation practice not listed above	Excavator failed to protect/ shore/support facilities	Excavator dug prior to verifying marks by test-hole (pot-hole)	Excavator dug after valid ticket expired	Excavator dug outside area described on ticket	Marks faded, lost or not maintained	Improper backfilling	Excavator dug prior to valid start date/time
2023	755	537	81	35	132	69	6	3	4
2024	961	191	89	79	79	68	13	8	5
2025	1,021	207	96	91	66	72	17	5	7

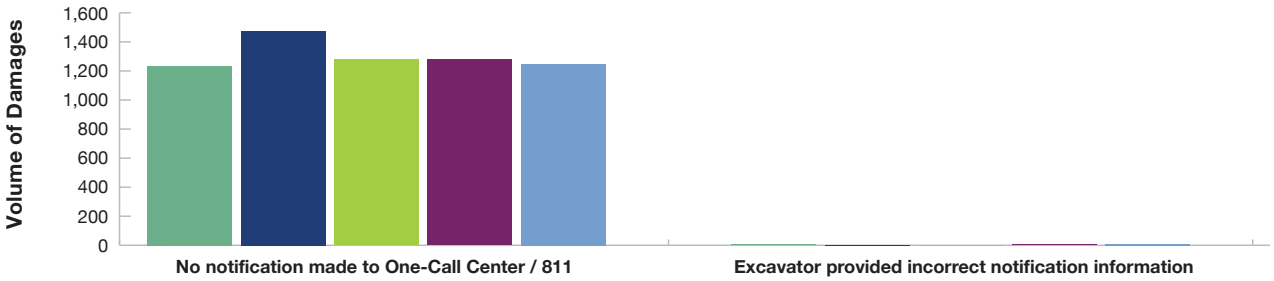
Excavation Issue by Root Cause Subcategory

Figure 11 illustrates a five-year breakdown of the Root Cause subcategories for Notification Issues. No Notification represents damages caused by no-locate request being submitted to the One Call Service.

This trend emphasizes a critical opportunity to enhance damage prevention through increased awareness of the notification process. The data consistently shows that many damages could be mitigated by requesting a locate and having a complete locate package on site before beginning excavation work.

CCGA Best Practice 4-1 (The Notification Service Facility Locate Request) states the excavator requests the location of underground facilities at each site by notifying the owner through the Notification Service. By adhering to these guidelines, we can collectively contribute to safer and more efficient excavation practices.

Figure 11: Damages by Root Cause: Notification Issue



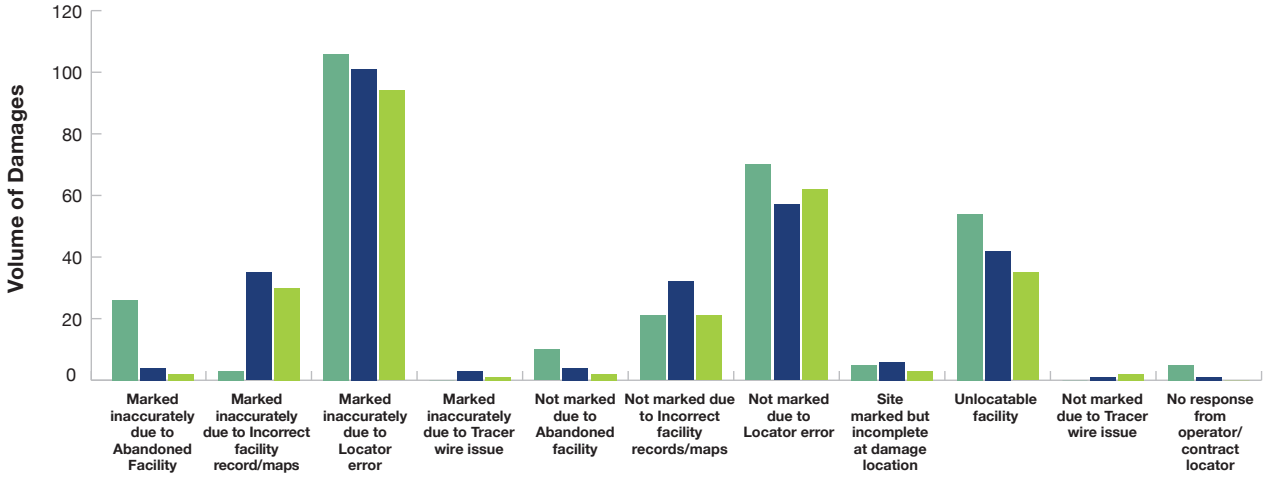
	No notification made to One-Call Center / 811	Excavator provided incorrect notification information
2021	1,235	4
2022	1,474	3
2023	1,278	3
2024	1,279	5
2025	1,246	8

Notification Issue by Root Cause Subcategory

Figure 12 presents a three-year analysis of Root Cause subcategories related to Locating Issues, providing insight into challenges and opportunities within the locating process. The trend highlights specific areas where locating practices can be strengthened through consistent application of industry-proven methods.

CCGA Best Practice Manual Section 3 (Locate and Marking) provides a wealth of best practices specifically designed to assist in Locating and Marking. Implementation of these established best practices by all stakeholders can lead to more accurate locates, reduced damage incidents, and enhanced safety for workers and the public.

Figure 12: Damages by Root Cause: Locating Issue



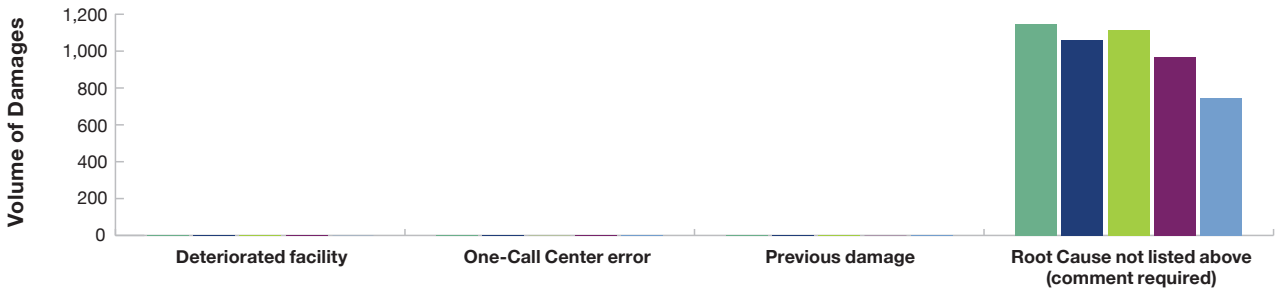
	Marked inaccurately due to Abandoned Facility	Marked inaccurately due to Incorrect facility record/maps	Marked inaccurately due to Locator error	Marked inaccurately due to Tracer wire issue	Not marked due to Abandoned facility	Not marked due to Incorrect facility records/maps	Not marked due to Locator error	Site marked but incomplete at damage location	Unlocatable facility	Not marked due to Tracer wire issue	No response from operator/ contract locator
2023	26	3	106	0	10	21	70	5	54	0	5
2024	4	35	101	3	4	32	57	6	42	1	1
2025	2	30	94	1	2	21	62	3	35	2	0

Locating Issue by Root Cause Subcategory

Figure 13 highlights meaningful progress in damage reporting quality. In 2025, the category 'Root Cause Not Listed Above' declined by 23% from 2024 and 35% from 2021.

This reflects increased use of specific root cause categories by reporters. More precise root cause identification supports better-targeted prevention strategies and more focused industry education efforts.

Figure 13: Damages by Root Cause: Miscellaneous



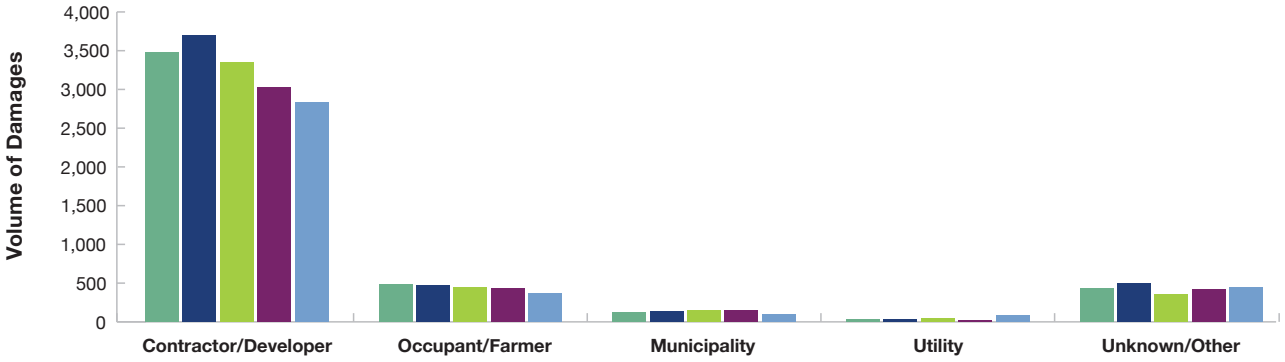
	Deteriorated facility	One-Call Center error	Previous damage	Root Cause not listed above (comment required)
2021	1	1	1	1147
2022	3	1	4	1061
2023	2	0	1	1115
2024	1	1	0	970
2025	0	2	1	745

Miscellaneous Root Cause by Subcategory

2.7 Damages by Excavator Group

Figure 14 shows continued improvement across excavator groups. Contractor/Developer damages declined 6% in 2025 compared to 2024, marking the third consecutive year of reduction and a 15% decrease since 2023. Both the absolute numbers and proportion of total damages (74% in 2025, down from 77% in 2023) demonstrate sustained progress. Occupant/Farmer and Municipality sectors also showed year-over-year reductions, with all groups benefiting from targeted education and awareness initiatives.

Figure 14: Damages by Excavator Group



	Contractor/Developer	Occupant/Farmer	Municipality	Utility	Unknown/Other
2021	3,474	485	129	32	434
2022	3,698	470	132	37	492
2023	3,343	440	145	43	350
2024	3,030	430	145	15	415
2025	2,833	365	102	86	450

Excavator Group

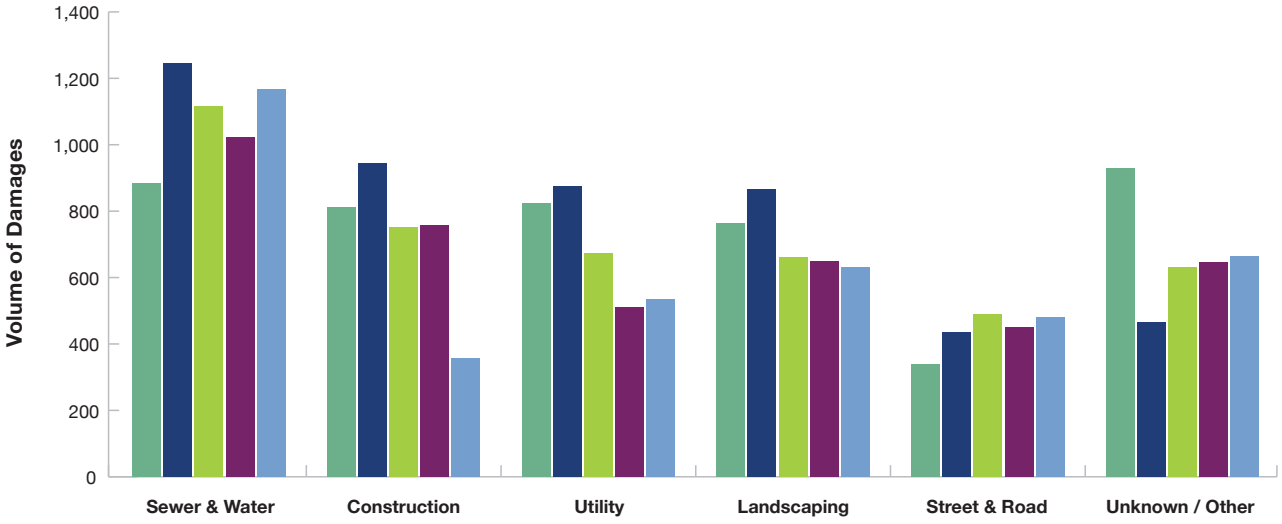
2.8 Damages by Work Group and Type of Work

Table 6 and Figure 15 provide a comprehensive five-year analysis of damages by work type, revealing key patterns in facility damages. The Unknown/Other category increased slightly by 3% to 664 damages, representing 17% of total damages. More detailed work classification in this category would enable better-targeted prevention strategies and help identify emerging trends in specific sectors.

Table 6: Work Group and Type of Work

WORK GROUP & TYPE OF WORK	2021	2022	2023	2024	2025
Sewer & Water	**884**	**1,246**	**1,115**	**1,022**	**1,168**
Sewer	602	718	653	544	644
Drainage	28	293	263	269	263
Water	254	235	199	209	261
Construction	**813**	**944**	**752**	**758**	**357**
Bldg. Construction	553	683	512	559	168
Driveway	141	165	149	101	114
Site Development	85	58	54	56	47
Bldg. Demolition	13	23	13	26	18
Grading	21	15	24	16	10
Utility	**825**	**875**	**672**	**510**	**536**
Telecommunications	403	502	348	260	280
Electric	233	231	197	162	177
Natural Gas	189	136	75	53	58
Liquid Pipeline	0	6	0	0	2
Landscaping	**0**	**0**	**52**	**35**	**19**
Fencing	413	481	335	369	332
Landscaping	332	358	300	255	286
Waterway Improvement	6	15	7	6	2
Irrigation	10	6	13	14	9
Agriculture	2	5	5	5	2
Street & Road	**340**	**435**	**490**	**449**	**480**
Road Work	193	197	252	190	168
Curb/Sidewalk	58	114	103	84	153
Storm Drain/Culvert	63	95	111	132	104
Pole	8	6	9	18	30
Traffic Sign	5	6	7	6	3
Street Light	3	6	4	4	11
Traffic Signal	6	5	3	7	7
Public Transit Authority	1	5	0	3	3
Railroad	3	1	1	4	1
Milling	0	0	0	1	0
Unknown / Other	**929**	**464**	**632**	**647**	**664**
Unknown/Other	928	459	629	645	662
Engineering/Surveying	1	5	3	2	2

Figure 15: Damages by Work Group



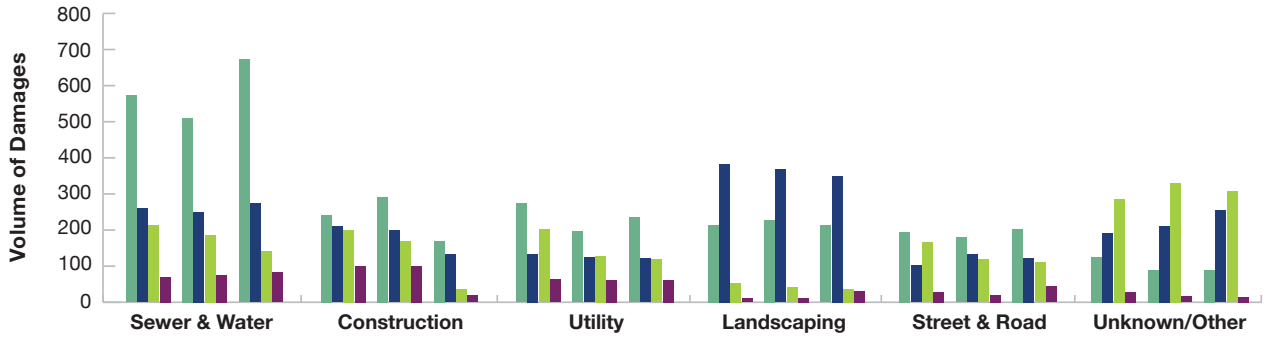
	Sewer & Water	Construction	Utility	Landscaping	Street & Road	Unknown / Other
2021	884	813	825	763	340	929
2022	1,246	944	875	865	435	464
2023	1,115	752	672	660	490	632
2024	1,022	758	510	649	449	647
2025	1,168	357	536	631	480	664

Work Group

3.1 Analysis of Damages by Root Cause and Work Group

Figure 16 delivers a multi-year analysis of root causes across six major work groups which represent a broad spectrum of operations. Our three-year analysis (2023-2025) reveals distinct patterns within each sector, highlighting how different types of work present unique damage prevention challenges allowing for informed decision-making and strategic planning.

Figure 16: Damages by Root Cause and Work Group

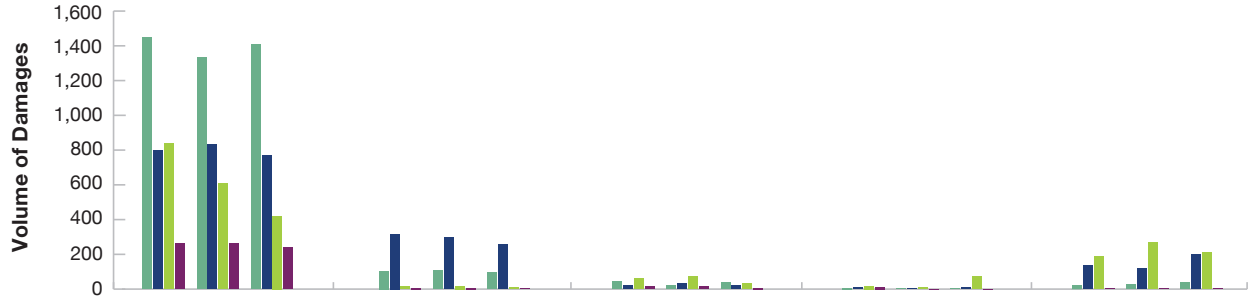


	Sewer & Water			Construction			Utility			Landscaping			Street & Road			Unknown/Other		
	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025
Excavation Issue	573	510	672	242	291	170	273	196	235	214	228	213	194	179	203	126	89	89
Notification Issue	260	250	274	210	199	132	134	124	121	383	368	350	102	132	123	192	211	254
Miscellaneous Root Causes	212	186	140	200	168	36	202	128	118	53	41	37	165	118	110	286	331	307
Locating Issue	70	76	82	100	100	19	63	62	62	10	12	31	29	20	44	28	16	14

Work Group

Figure 17 shows continued improvement in Contractor/Developer damages, declining 6% in 2025 from the previous year. This marks the third consecutive year of reduction, with damages down 15% since 2023. The sustained downward trend across multiple root cause categories indicates that targeted safety and education initiatives are having a positive impact. These results support continued investment in sector-specific prevention strategies across all excavator groups.

Figure 17: Damages by Root Cause and Excavator Group



	Contractor/Developer			Occupant/Farmer			Municipality			Utility			Unknown/Other		
	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025
Excavation Issue	1,448	1,332	1,406	104	108	96	42	23	39	6	4	5	22	26	36
Notification Issue	796	831	768	317	298	255	23	34	23	7	2	8	138	119	200
Miscellaneous Root Causes	837	606	421	13	18	10	63	74	34	18	8	72	187	266	211
Locating Issue	262	261	238	6	6	4	17	14	6	12	1	1	3	4	3

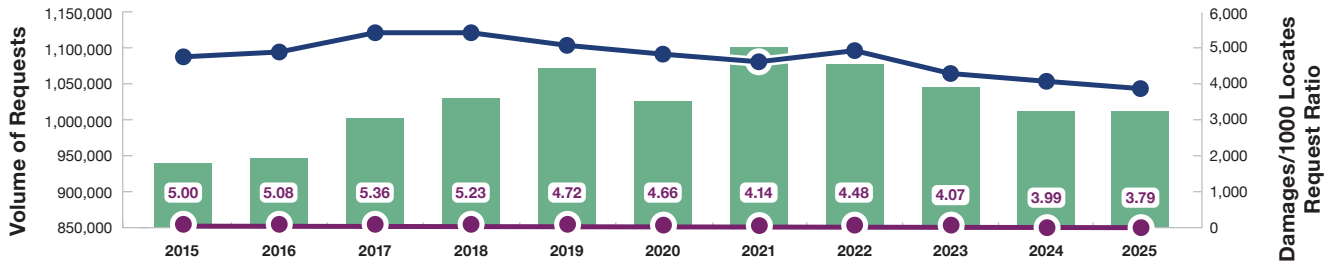
Excavator Group

3.2 Damages/1000 Locate Request & Damages/1000 Locate Notifications

Figure 18 provides a decade-long view of damage rates per 1,000 locate requests, offering valuable perspective on how performance metrics shift over time. The 10-year trend demonstrates that damage rates respond to multiple influences—construction activity levels, economic conditions, and the reach of industry education efforts.

This historical perspective enables us to recognize patterns and anticipate challenges during periods of increased activity. Sustained investment in education, consistent stakeholder participation, and regular evaluation of prevention strategies remain essential to continued progress across the industry.

Figure 18: Damages/1000 Locate Requests

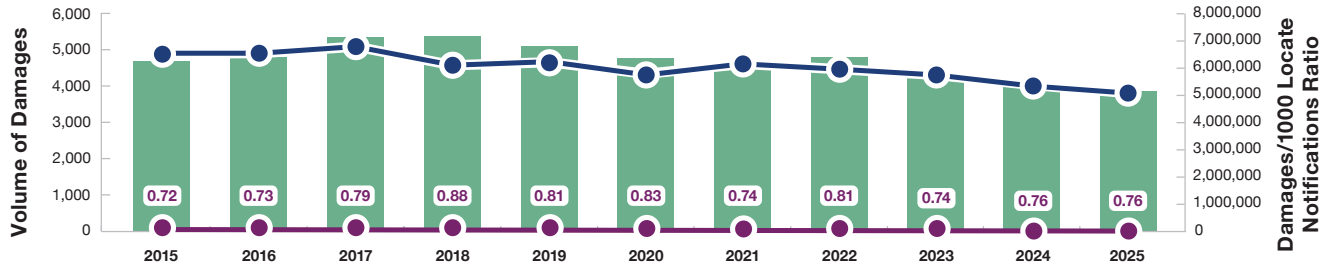


	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Requests	939,682	946,494	1,002,173	1,029,592	1,071,928	1,025,432	1,101,025	1,077,779	1,045,578	1,012,207	1,012,200
Damages	4,695	4,806	5,367	5,388	5,061	4,783	4,554	4,829	4,251	4,035	3,836
Damages/ 1000 Locates Request Ratio	5.00	5.08	5.36	5.23	4.72	4.66	4.14	4.48	4.07	3.99	3.79

Year

Figure 19 visualizes the relationship between damage volume and damage ratio over the past decade, complementing Figure 18. The industry standard metric—damages per 1,000 notifications—normalizes performance across varying construction activity levels, enabling meaningful comparisons over time. Ontario One Call data captures both outbound notifications (utilities at risk per project) and inbound request volumes reflecting **'Click Before You Dig'** awareness and construction activity. Together, these metrics provide context that raw damage numbers alone cannot reveal.

Figure 19: Damages/1000 Locate Notifications



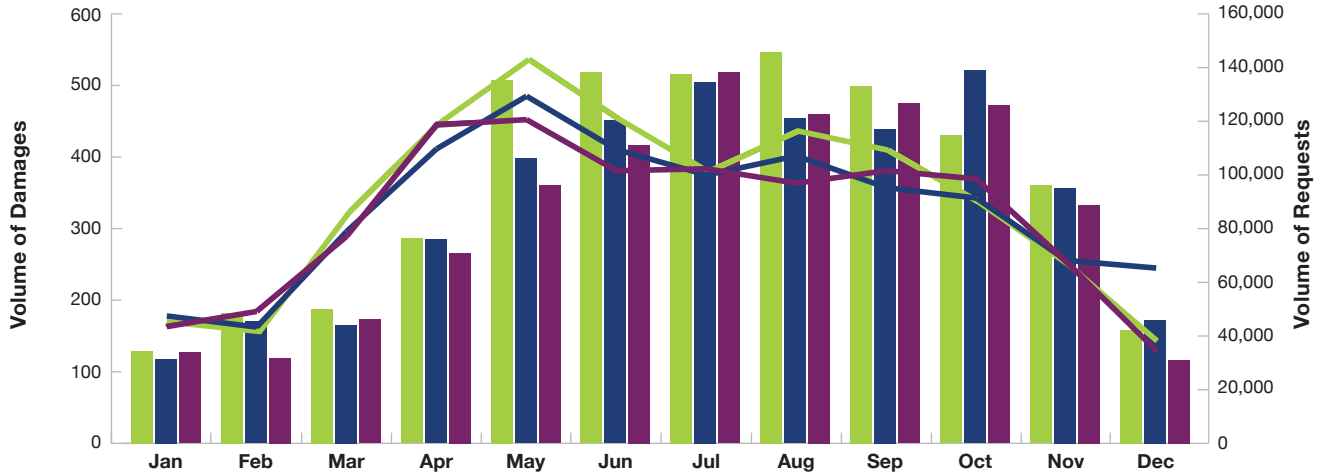
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Damages	4,695	4,806	5,367	5,388	5,061	4,783	4,554	4,829	4,251	4,035	3,836
Notifications	6,534,582	6,560,690	6,778,240	6,101,299	6,227,227	5,746,332	6,141,712	5,948,034	5,741,263	5,343,265	5,078,093
Damages/ 1000 Locate Notifications Ratio	0.72	0.73	0.79	0.88	0.81	0.83	0.74	0.81	0.74	0.76	0.76

Year

3.3 Damages vs Requests by Month, Day of Week and Excavator Group

Figure 20 illustrates seasonal patterns in locate requests and damages. Locate requests peaked in May (120,622), while damages peaked in July (518). Understanding these seasonal trends helps the industry anticipate high-activity periods and focus prevention resources when and where they're needed most.

Figure 20: Damages Versus Requests by Month

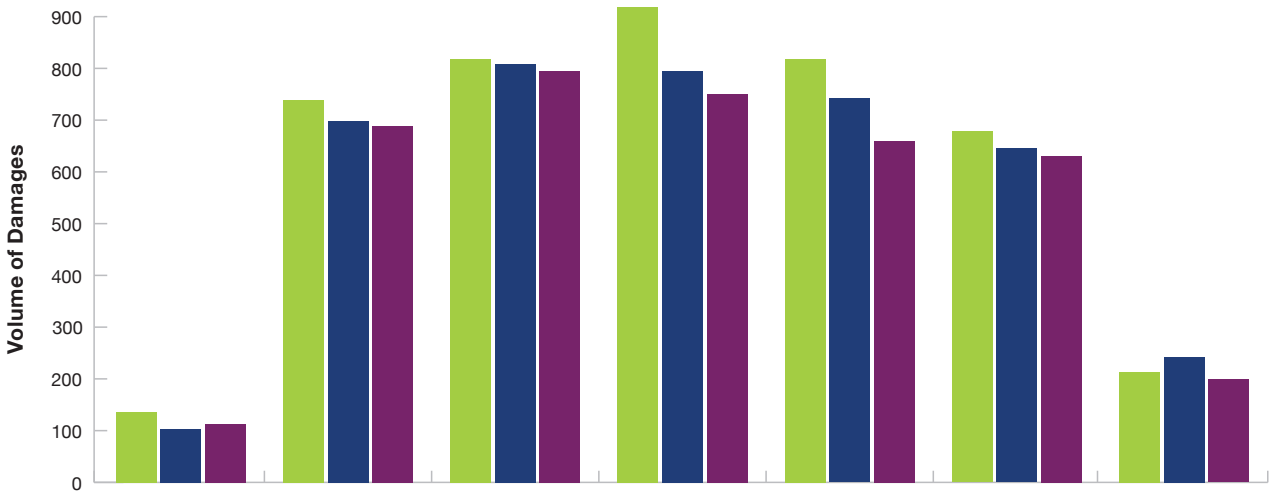


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2023 Damages	129	182	188	286	508	518	516	547	499	430	360	158
2024 Damages	118	170	165	285	398	451	505	454	439	521	357	172
2025 Damages	127	119	173	266	360	417	518	460	475	472	333	116
2023 Requests	44,772	41,706	86,199	119,258	143,027	120,864	101,199	116,365	109,252	90,141	66,862	38,134
2024 Requests	47,465	43,336	78,952	109,729	129,356	109,493	99,957	107,111	95,287	91,389	68,191	65,312
2025 Requests	43,486	49,150	77,128	118,612	120,622	101,555	102,315	96,922	101,610	98,530	67,705	34,565

Month

Through examination of damage data, we uncovered a significant trend in occurrence patterns across different days of the week. As shown in Figure 21, our analysis reveals that Tuesday and Wednesday continue to stand out with the most pronounced frequency of damages.

Figure 21: Damages by Day of Week



	Sun	Mon	Tues	Wed	Thur	Fri	Sat
2023	136	739	818	919	818	678	213
2024	103	699	809	795	742	645	242
2025	113	688	795	751	659	631	199

Day of the Week

Table 7 illustrates the percentage of damages by day of the week broken out by Excavator Group over a five-year period. The data reveals distinct patterns: Contractor/Developer activity dominates weekdays (76-80% of damages), while Occupant/Farmer activity surges on weekends (31-37% of damages). These patterns help inform when and how to target damage prevention education to specific audiences.

Table 7: Percentage of Damages by Day of the Week by Excavator Group

Day of Week	Contractor / Developer	Occupant / Farmer	Municipality	Utility	Unknown / Other
Sunday	45%	37%	3%	1%	15%
Monday	78%	9%	3%	1%	9%
Tuesday	80%	6%	4%	1%	9%
Wednesday	80%	7%	3%	1%	9%
Thursday	80%	8%	3%	1%	8%
Friday	76%	10%	3%	1%	10%
Saturday	55%	31%	2%	0%	12%

3.4 Data Quality Index (DQI)

Table 8 shows the Data Quality Index (DQI) for each part of the DIRT Field Form. The DQI evaluates both the organizations submitting records and the individual records themselves. Weight assigned to each part varies based on its value in analyzing the event for damage prevention, with Root Cause receiving the largest weight at 30%. The “2025 DQI” column represents the average of all 3,836 submitted damages, with an overall average DQI of 76%.

Table 8: DIRT Submission Parts and DQI

DIRT Parts	Relative Weight	2023 DQI	2024 DQI	2025 DQI
A: Who is submitting this information?	5%	100.0	100.0	100.0
B: Date and Location of the Damage	10%	77.9	80.3	79.7
C: Affected Facility Information	20%	78.2	78.4	79.4
D: Excavation Information	20%	86.6	85.4	83.5
E&F: Notification, Locating, Marking	5%	100.0	100.0	100.0
G: Excavator Downtime	5%	16.6	23.2	20.5
H: Description of Damage	5%	33.0	35.3	34.3
I: Description of the Root Cause	30%	74.2	76.0	80.6
Total Weighted DQI	**100%**	**74.0**	**75.1**	**76.0**

Accurate and detailed reporting enables more effective damage prevention strategies across the industry. Parts G and H (Excavator Downtime and Description of the Damage) show lower completion rates, as many organizations do not routinely collect this information. However, the more significant opportunity lies in Root Cause identification. Figure 13 shows encouraging progress, with “Root Cause Not Listed Above” decreasing 23% in 2025 — demonstrating that reporters are increasingly selecting specific root cause categories rather than defaulting to UNKNOWN/OTHER. The ORCGA encourages all stakeholders to continue this trend by selecting the most specific applicable root cause when submitting DIRT data.

4.1 | CCGA Regional Partner Data

The DIRT system tracked 8335 damage reports across Canada in 2024, averaging 33.2 damages per workday nationally. Table 9 details damage occurrences by Province/Region, illustrating how Ontario's trends compare to other Canadian jurisdictions. This national perspective strengthens damage prevention efforts by enabling regional partners to learn from each other's successes and identify common challenges requiring coordinated solutions.

Table 9

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	14%	895	11%	3.6	235,835	3.8	763,292	1.17
Alberta	12%	2,035	24%	8.1	426,112	4.78	1,592,989	1.28
Saskatchewan	3%	522	6%	2.1	145,250	3.59	423,699	1.23
Manitoba	4%	155	2%	0.6	79,544	1.95	216,711	0.72
Ontario	39%	3,976	48%	15.8	1,066,867	3.73	6,003,764	0.66
Quebec	22%	724	9%	2.9	324,073	2.23	502,334	1.44
Atlantic	6%	28	0%	0.1	74,442	0.38	78,405	0.36
Canada	**100%**	**9,994**	**100%**	**33.2**	**2,352,123**	**3.54**	**9,581,194**	**0.87**

‡ Stats Can (Estimated Q4 2023).

* 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.

**** Ontario contributors may submit retroactive damage data which can cause volume variations between reports.

REMINDER

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

Submit Damages/Near Misses 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 damages/near misses are fresh in your memory and details are easy to recall.

Unknown/Other

It is the goal of this report to provide as much insight as possible for all stakeholders. Usage of the "Unknown/Other category limits our ability to provide clear measurable data.

Your Feedback Matters!

The ORCGA values your feedback as part of our ongoing efforts to improve the DIRT report. By completing this quick survey you will help guide future editions.

1 The Locate Quality Gap: Why Accuracy Matters as Much as Response Time

By Gordon Campbell, Operations Manager, R&B Locating Inc.

Introduction

Over the last few years, utilities and service providers have made remarkable progress in addressing locate response times. Regulatory pressure, operational strategies, and mapping improvements have shortened the wait between a locate request and marks appearing on the ground. This is a genuine achievement worth celebrating.

However, as we examine the 2025 DIRT Report data more closely, a troubling pattern emerges. While we've become faster at getting locators to the site, we haven't given equal attention to what happens once they arrive. The quality and accuracy of the locate itself—the very information excavators rely on to dig safely—deserves the same scrutiny we've applied to response times.

What the Data Tells Us

The 2025 DIRT Report recorded 3,836 facility damages in Ontario, the lowest annual total in over ten years. This is encouraging progress. Yet when we examine the root causes, a more nuanced picture emerges.

Excavation Issues accounted for 41% of all damages, with "Failure to Maintain Clearance" identified as the leading subcategory. An excavator following best practices still needs to expose the facility to confirm its exact location before working within the tolerance zone. For routine excavation, hand digging or hydrovac within that zone addresses the gap. For complex projects with deep excavation or multiple facilities at varying depths, more comprehensive information upfront would reduce reliance on field discovery.

Locating Issues represented 7% of reported events—252 incidents where the locate itself was the root cause. This includes 94 cases where facilities were marked inaccurately due to locator error, 62 where facilities weren't marked at all due to locator error, and 35 involving unlocatable facilities. Another 51 cases stemmed from incorrect facility records or maps.

Locating issues at 7% may even overstate locator error. When a damage occurs, it's easy to point at the marks on the ground, but electromagnetic locating in congested corridors or challenging soil conditions is inherently difficult. This is precisely where SUE adds value.

The Quality Gap

The industry has developed robust metrics for tracking response time. Ontario One Call tracks data on how quickly locates are completed and which geographic areas face the longest delays. The ORCGA collects this data through the DIRT Report and analyzes it to identify patterns and opportunities for improvement. This analysis gives stakeholders the insight they need to drive meaningful change.

Where are the equivalent metrics for locate quality? How do we measure whether the marks on the ground accurately reflect what's buried beneath them? In most cases, we don't discover a locate was inaccurate until after a strike occurs—the most expensive and dangerous form of quality control imaginable.

This gap matters because accuracy and speed are not the same thing. A rushed locate completed in 5 days that places a gas main two metres from its actual position is worse than a locate that takes longer but accurately depicts the facility's location. Yet our current systems reward the former and penalize the latter.

Why Accuracy Suffers

Several factors contribute to locate quality issues, and understanding them is the first step toward improvement.

Production pressure: When locators are measured primarily on ticket completion volume, thoroughness becomes a casualty. Taking extra time to verify a difficult signal or document unusual conditions isn't rewarded—it's punished through reduced productivity numbers.

Training and certification: The skills required to accurately locate underground facilities are significant. Electromagnetic principles, signal interpretation, and equipment limitations all require substantial training and demonstrated competency. The ORCGA's Damage Prevention Technician (DPT) program provides a solid foundation, offering in-depth standardized training that covers the knowledge and skills locators need to perform quality work. Yet industry-wide adoption remains limited—certification isn't mandatory and the investment required means only a fraction of locators get to pursue it. The ORCGA's DPT program includes a comprehensive competency assessment, verified by the employer, connecting certification directly to workplace accountability and verifying not just knowledge but practical skill. Increasing the percentage of certified locators—through employer support, incentive programs, or regulatory requirements—would raise the bar for locate quality across the industry.

Equipment limitations: No-locate technology works perfectly in all conditions. Congested utility corridors, non-conductive pipe materials, damaged tracer wires, and soil conditions can all affect accuracy. Experienced locators understand these limitations; less experienced ones may not.

Documentation gaps: Even when a locator identifies uncertainty—perhaps a signal that fades unexpectedly or conflicting target information—there's often no systematic way to communicate this to the excavator. The marks on the ground look the same whether the locator was confident or uncertain.

A Path Forward

Addressing the locate quality gap requires effort from multiple stakeholders.

For facility owners and locate service providers: Consider implementing quality assurance programs that go beyond ticket completion metrics. Random field audits and comparison of locate marks against as-built records can identify issues before they result in strikes. Tracking locate-related damages by an individual locator can reveal patterns that point to training gaps or equipment issues.

For excavators: Recognize that a locate is information, not a guarantee. CCGA Best Practice 4-19 describes methods for excavating within the tolerance zone precisely because marks represent approximate—not exact—facility positions. When marks don't match what you're finding in the ground, stop and seek clarification rather than assuming the marks are correct.

For regulators and industry associations: Develop and promote quality standards alongside response time requirements. The CSA Z247 standard provides a framework for utility locating practices, but broader adoption and enforcement would help establish consistent quality expectations.

For the industry collectively: Support better data collection. Reducing the number of damages with root causes categorized as 'unknown' or 'other' and moving them into defined categories strengthens our analysis. More granular root cause analysis would help us understand the true scope of locate quality issues.

Conclusion

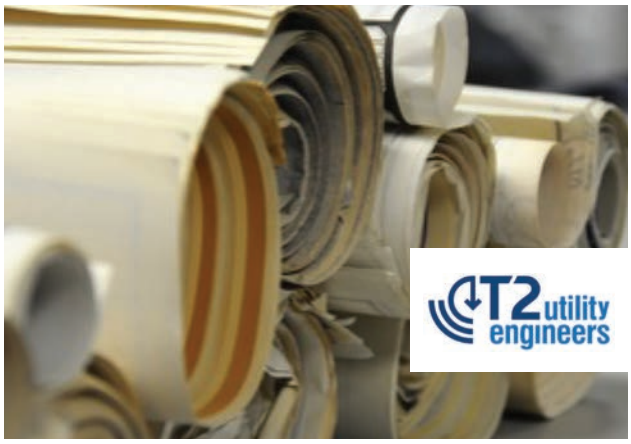
None of this diminishes the importance of timely locates. Excavators facing project deadlines need locate information promptly, and delays create pressure that can lead to digging without a complete locate package.

But speed and quality aren't mutually exclusive. The same operational discipline that improved response times can improve accuracy. The same investment in technology that accelerated ticket processing can enhance locate precision. The same regulatory attention that drove faster turnaround can establish quality standards.

The 2025 DIRT Report shows we're making progress on damage prevention. To continue that progress, we need to ensure that when locates arrive quickly, they also arrive accurately. The excavators relying on that information—and the public we all serve—deserve nothing less.

2 Utility Engineering, the First Step in Damage Prevention

Laurie LeBlanc,
Director of Business Development-Canada,
T2 Utility Engineers Inc.



Why Utility Engineering Is Damage Prevention

In the infrastructure sector, utility engineering and damage prevention are often viewed as two separate activities that occur at different stages of a project. In reality, they are interconnected, complementary disciplines that work together across the entire project lifecycle. Utility engineering is damage prevention; its work simply begins much earlier, during planning and design, rather than at the construction stage where traditional utility locates take place.

Traditional Damage Prevention vs. Early Stage Utility Engineering

Traditional damage prevention typically revolves around locate work performed immediately before construction. Locators arrive on site, identify the buried utilities, and apply paint marks to guide excavation. Utility engineering, however, begins long before construction. It is introduced at the earliest stages of planning and conceptual design, where the primary objective is to understand the utility environment well enough to influence alignment, design decisions, and risk mitigation strategies.

Setting the Foundation

Imagine any type of capital works project within a public right of way, (I like to use watermain replacement projects for my examples). Utility engineering begins at the Environmental Assessment (EA) stage, often when the design is only 5–10% complete. At this point, engineers conduct a desk top study. This process involves gathering all available utility records from various owners and consolidating them into a preliminary base plan.

Although the desk top study provides a general understanding of what utilities may exist, it comes with limitations. Records may be outdated or incomplete, and installations may have been performed decades ago with little documentation. Landscapes evolve and human interpretation of record drawings can introduce errors. Despite these challenges, the desk top study establishes an essential framework for developing an initial, workable concept design.

Progressing to Greater Accuracy

As a project progresses to roughly 30% design, accuracy must increase. At this stage, a professional engineer competent in subsurface utility engineering is typically brought into the process. Under their guidance, appropriate surface geophysical technologies are selected, field investigations are planned, and the horizontal positions of utilities are verified, which replaces earlier assumptions and significantly improves the reliability of the base plan. Through this engineered approach, field-validated information is developed and assigned a quality level based on the engineer's professional judgment, with the objective of being Quality Level B (QL B) per the ASCE 38-22. With accurate horizontal alignment of the existing utility infrastructure, designers can make informed revisions and decisions at the guidance of the utility coordinator.

It is at this stage utility conflicts become apparent and are flagged for more intensive investigation. These critical areas often require visual confirmation through hydro excavation, which moves the project from relying on horizontal accuracy to vertical accuracy.

Achieving the Highest Accuracy

Test holes are performed precisely where surface geophysics indicated utilities are located. Once exposed, the utilities are measured and documented, and a substantial amount of metadata is collected, including elevation, material type, diameter, depth, and other key attributes. This data returns to the office for processing and is incorporated into an expanded deliverable that elevates the utility depiction to Quality Level A (QL A), the highest level of accuracy defined by ASCE 38-22.

The resulting drawings clearly show verified utility positions and associated test hole locations. They are usually accompanied by detailed metadata tables placed in appendices of supplementary reports. These QL A and QL B materials serve as essential references for designers, project managers, and construction teams throughout the lifecycle of the project.

The Utility Coordinator: The Engine Behind It All

At the core of the utility engineering process is the utility coordinator, who oversees the project's utility management strategy from the earliest concept stage through tender. During the 5% design stage, the coordinator compares the QL D desk top study with the concept design to identify high-level conflicts. As the project moves toward 30% design, the coordinator develops composite utility plans and conflict matrices that depict increasingly detailed utility challenges.

The coordinator also facilitates the communication with clients, municipalities, utility owners, and other stakeholders. Their role involves validating risks, resolving discrepancies, and formulating mitigation strategies. These may take the form of utility relocations, protective measures for existing infrastructure, or adjustments to the design itself. Each option is evaluated through a cost-benefit lens to ensure that decisions are efficient, practical, and technically justified.

Pre Tender vs. Post Tender: The Transition Point

In an ideal scenario, all utility investigations, coordination activities, and conflict mitigation efforts occur before the project is tendered. This pre tender period is where utility engineering is most active, and where the majority of risk mitigation occurs. By the time tender documents are issued, most conflicts have already been identified and either resolved or accounted for in the design.

Once a project reaches tender, responsibility shifts toward traditional damage prevention. Contractors examine drawings that ideally reflect extensive SUE work and prepare bids based on a design that has already been refined to minimize utility conflicts.

Construction Stage: The Final Layer of Protection

During construction, the One Call system becomes the primary mechanism for preventing utility strikes. Locators mark the horizontal position of utilities with paint, flags, or stakes, following the instructions provided on each locate ticket. These tickets outline horizontal tolerance zones, identify when hand digging or vacuum excavation is required, and highlight any special considerations for sensitive or high-risk infrastructure.

Although this stage often receives the most attention, it is only as effective as the quality of the work performed during planning and design. The accuracy of the locates, the predictability of field conditions, and the overall risk level are directly influenced by the Utility Engineering efforts completed beforehand.

The Key Message: Utility Engineering Is Damage Prevention

Utility Engineering is not a separate discipline operating before "real" damage prevention begins. It is damage prevention-just earlier, broader, and more proactive. By the time locators arrive on site, the most significant risk reduction work has already been completed. Conflicts have been minimized, designs have been optimized, and uncertainties have been reduced.

When utility engineering and damage prevention are recognized as a unified, end-to-end process, projects benefit from fewer utility strikes, reduced delays, lower costs, improved safety, and more predictable construction outcomes.

3 Top 10 Canadian construction trends to watch in 2026

By Rodrigue Gilbert, President,
Canadian Construction Association

Canada's construction sector enters 2026 amid labour shortages, trade uncertainty and rising innovation, setting the stage for transformative change across the industry.

As we prepare to enter 2026, the Canadian construction industry is beginning a period of profound transition – one shaped by economic uncertainty, shifting trade dynamics and an urgent need for modern infrastructure. The past year exposed the pressures facing builders, from volatile supply chains and labour shortages to rising expectations for sustainability, innovation and digital integration. Yet 2025 also delivered key milestones: new federal initiatives, technological breakthroughs and a renewed focus on professional excellence, safety and workforce development. Together, these forces are redefining how projects are planned, procured and delivered, while challenging industry leaders to adapt rapidly to an evolving landscape. Here are the top 10 trends poised to shape the industry in 2026, and what they mean for builders nationwide.

1. Resilient infrastructure and supply chain

Canada's construction sector is on the front lines of global trade volatility. From steel tariffs to material shortages, every disruption adds costs and delays to projects Canadians are counting on. As a result, building resilient infrastructure also means building resilient supply chains in order to ensure stable access to the essential materials and equipment needed to keep projects moving. Diversification, trade alignment and forward-looking procurement policies are critical to safeguarding delivery. Resilience is about planning for the unexpected. Whether it's geopolitical instability, climate events or shifting trade rules, predictability matters. Governments must work with industry to strengthen supply chains, modernize procurement and reduce regulatory bottlenecks. When supply chains are stable, Canada can deliver infrastructure that not only meets today's needs but endures for generations.

2. Canada-U.S. trade and CUSMA renegotiations

It's no surprise that the current state of Canada-United States (U.S.) trade and the renegotiation of the Canada-United States-Mexico Agreement (CUSMA) will be top of mind for our industry. 2025 brought significant challenges for our industry due to the uncertainty of Canada-U.S. trade, caused by President Donald Trump's senseless tariffs and isolationist mentality.

As a result, Canada responded with targeted retaliatory tariffs on U.S. goods. But without a construction exemption under the United States Surtax Remission Order, our industry was hit hard. As an importing sector, construction bears the brunt of these trade disputes. In 2026, our industry hopes to see a return to complete free trade throughout North America. CCA has always advocated for open, free trade and will continue to do so. Our industry depends on it.

3. Labour shortages: bold government actions are still needed

In our 2025 submission to the government's consultations on the federal budget, we sounded the alarm, yet again, on the construction workforce shortage. Canada's construction industry is projected to face a shortfall of 108,000 workers over the next decade, with 21 per cent of the current workforce set to retire. It's time for bold action. We need targeted efforts from the federal government to help correct those shortages and attract new workers into the skilled workforce. And it's also time for industry stakeholders and government to work together to find better solutions to promote careers in construction.

We all need to work together to inspire and incentivize new generations of workers to join the Canadian construction industry and reform our federal immigration policies so that immigrants and temporary foreign workers can help to alleviate retirements and address skills shortages.

4. Construction excellence

In 2025, our team achieved several exciting milestones in our promotion of professional excellence in construction. Our Gold Seal Certification team launched their new portal to make it easier for more professionals to become Gold Seal certified. And our Best Practices Services team organized the first-ever **Best Practices in Construction Symposium** which was attended by many of construction's operational leaders. We believe that professional excellence will, and ought to, be a priority for construction professionals in 2026. These excellence programs are a great way for professionals to distinguish themselves and demonstrate a commitment to professional development and standards of excellence.

5. Housing acceleration and housing-enabled infrastructure

Canada's housing crisis remains a defining challenge for Canada in 2026. Hitting ambitious housing targets isn't just about building more homes – it's about delivering the enabling infrastructure that makes communities livable: roads, transit, utilities, schools and health facilities. Without these supports, housing supply cannot keep pace with population growth or meet the needs of Canadians. The construction sector is ready to deliver, but success depends on removing bottlenecks and aligning investment. Governments must streamline approvals, commit to predictable funding and partner with builders early in the process to ensure housing projects are supported by the infrastructure that sustains them. Done right, housing acceleration is nation-building in its purest form, laying the foundations for thriving communities across the country.

6. Major Projects Office takes shape

Announced in September, Prime Minister Mark Carney's **Major Projects Office** (MPO) is something that the entire construction industry is closely watching. We were encouraged to see the federal government's prioritization of "shovel-worthy" projects, not just shovel-ready projects. In our industry, there's no shortage of potential projects. The real value lies in carefully selecting those that will deliver the greatest economic impact, especially in light of recent global trade disruptions. The MPO is a major win for the **Canadian Construction Association** (CCA), which has long advocated for the **Canadian Trade Infrastructure Plan** (CTIP) – a long-term strategy aimed at driving the next generation of economic growth in Canada through investment in road, rail, air, port and marine assets. The prioritization of several trade infrastructure projects by the MPO is a step in the right direction towards that reality.

7. Innovation in construction: from top to bottom

Technology and innovation are hot topics for Canada's construction industry. In June, our team released a **report** with KPMG, which noted that 9 in 10 construction leaders say digital tools are needed to boost productivity to build more, faster. The fact is that technology doesn't take away jobs – it helps workers operate at a higher level of efficiency, productivity and safety. Many construction companies are already seeing the benefits of leveraging new and emerging technologies, and this is definitely something we will be watching in 2026.

8. The green imperative

Canada's path to net zero runs directly through construction. From low-carbon materials like mass timber to energy-efficient building systems and carbon capture integration, the industry is advancing solutions that reduce emissions while delivering the infrastructure Canadians need. The green imperative isn't a trend – it's now a baseline expectation for how we design, build and operate. But ambition requires alignment.

Builders are ready to innovate, yet success depends on supportive policy, consistent standards and investment in research and new technologies. With the right partnerships, Canada's construction sector can help achieve climate goals while strengthening communities and ensuring our infrastructure stands the test of time.

9. Data-driven decision-making

Data is becoming as essential to construction as concrete and steel. From predictive analytics and digital twins to real-time site monitoring, data-driven tools are improving safety, boosting productivity and helping projects stay on time and on budget. These technologies allow decision-makers to see risks before they materialize and optimize how resources are deployed across projects of every scale. But technology is only as powerful as the policies that support its adoption. Governments and owners must embrace data transparency, set consistent standards and create procurement models that reward innovation. By putting data at the core of how we build, Canada's construction industry can deliver smarter, safer and more sustainable infrastructure – laying not just foundations, but foresight.

10. Public procurement overhaul

The way Canada procures infrastructure is as important as the projects themselves. Outdated lowest-bid models too often lead to cost overruns, delays and adversarial relationships that undermine value for taxpayers. A modern procurement approach means focusing on value,

not just price. Collaborative delivery models, fair risk-sharing and contracts that reward innovation will enable projects to be built right the first time. By overhauling public procurement, governments can unlock efficiency, strengthen industry partnerships and deliver infrastructure that truly serves Canadians for the long term. In 2026, procurement reform is no longer optional – it is central to ensuring that ambitious infrastructure plans succeed.

With 2026 just around the corner, Canada's construction industry stands at an important juncture – facing real pressures but also unprecedented opportunities to lead national progress. The trends shaping the year ahead demand collaboration, adaptability and a renewed commitment to innovation and excellence. Whether strengthening supply chains, modernizing procurement or embracing technology and sustainability, the choices made now will define the sector's future resilience. By working together, industry and government can build an environment where construction thrives – supporting economic growth, enabling housing and infrastructure delivery and ensuring Canada is prepared for the challenges and possibilities in the decade ahead.

*Rodrigue Gilbert is the President of the **Canadian Construction Association**, the national voice for Canada's construction industry, representing more than 18,000 member firms in an integrated structure of 57 local and provincial construction associations.*

6.0 | Excavator of the Year

Excavator of the Year

Congratulations to our 2025 Recipients

ORCGA Celebrates Excavators Demonstrating Best-in-Class Safe Digging Practices

The Ontario Regional Common Ground Alliance (ORCGA) proudly recognizes excavators who demonstrate exceptional commitment to safe digging practices.

These awards honour the companies that strengthen the safety of Ontario's underground infrastructure through their dedication to excellence and adherence to industry's best practices.

Awards are presented across nine categories to excavators that have submitted a minimum of 500 locate requests to Ontario One Call within the calendar year. A tenth category is reserved as an Honourable Mention for excavators who submit 250-499 locate requests but clearly demonstrate a strong commitment to safety.

ELECTRIC	GAS	HOMEBUILDER	LANDSCAPE	ROAD BUILDING
AINSWORTH	VALLEY UTILITIES LTD.	Jacques Bédard Excavation Ltd. Since 1969	The Gordon Company	AZUL CONCRETE & CURB LTD

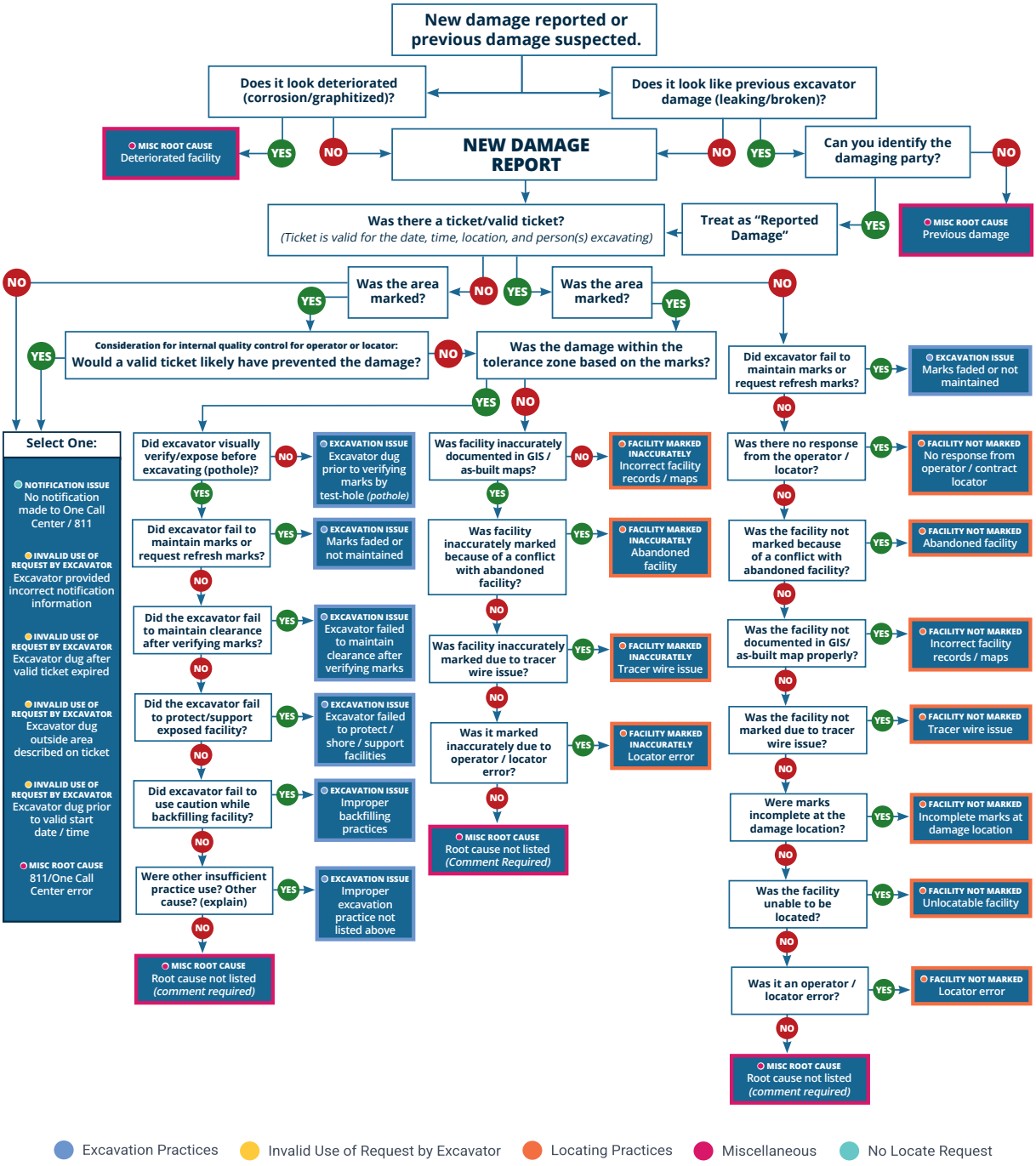
SEWER/WATER	TELECOMMUNICATIONS	HYDROVAC	MOST IMPROVED	HONOURABLE RECOGNITION
BEI Bonnechere Excavating Inc.	40 Telcon Datvox network cabling	SOLOCABLE SOLUTIONS INC.	EXTREME DRILLING	W

Appendix A: Root Cause Determination Flow Chart

DIRT Damage Information Reporting Tool

DAMAGE INFORMATION REPORTING TOOL
ROOT CAUSE DETERMINATION FLOW CHART

Root Cause: The predominant reason that the event occurred. (Best Practices) For purposes of the DIRT, the point where a change in behavior would reasonably be expected to lead to a change in the outcome, i.e. avoidance of the event. *For definitions and further explanation, please see Part I of the DIRT Users Guide.*



CGA Common Ground Alliance

Appendix B: Damage Information Reporting Tool (DIRT) - Field Form

CGA DIRT Damage Information Reporting Tool

FIELD FORM

Rev: 10/6/25
* Indicates a Required Field

PART A – ORIGINAL SOURCE OF EVENT INFORMATION

Who is providing the information?

☐ Electric ☐ Engineer/Design ☐ Emergency Services ☐ Equipment Manufacturer ☐ Excavator
☐ Federal / State Regulator ☐ Liquid Pipeline ☐ Locator ☐ Natural Gas ☐ Private Water
☐ Public Works ☐ Railroad ☐ Road Builders ☐ Telecommunications ☐ Unknown/Other

Name of person providing the information:

PART B – TYPE, DATE, AND LOCATION OF EVENT

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

Street Address:
Nearest Intersection:
City: ***County:** ***State:** ***Country:**
Latitude: **Longitude:** ☐ Decimal Degrees ☐ D M S

***Right-of-way where the 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

Did this event involve a Cross Bore? ☐ 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

***What type of facility was affected?** ☐ Distribution ☐ Gathering ☐ Service/Drop ☐ Transmission ☐ Unknown/Other

Was the facility part of a joint trench? ☐ Yes ☐ No ☐ Unknown

Was facility owner a member of the 811/One Call Center? ☐ Yes ☐ No ☐ Unknown

If no, is facility owner exempt from 811/One Call Center membership? ☐ Yes ☐ No ☐ Unknown

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

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Appendix B: Damage Information Reporting Tool (DIRT) - Field Form

PART E – NOTIFICATION AND LOCATING

***Was the 811/One Call Center notified of intent to excavate?** ☐ Yes ☐ No **Ticket Number:**
***If yes, type of locator:** ☐ Facility Owner ☐ Contract Locator
If no, is excavation activity and/or excavator type exempt from notification? ☐ Yes ☐ No
Was work area white-lined? ☐ Yes ☐ No ☐ Unknown

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 ☐ Unknown **Exact duration in hours:**
Estimated cost of down time? ☐ $0 ☐ $1-1000 ☐ $1,001-5,000 ☐ $5,001-25,000 ☐ $25,001-50,000 ☐ >$50,000 ☐ Unknown
Exact estimated cost:

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 ☐ Unknown
Exact duration in hours:
Approximately how many customers were affected? ☐ 0 ☐ 1 ☐ 2-10 ☐ 11-50 ☐ 51+ ☐ Unknown **Exact #:**
Estimated cost of damage/repair/restoration: ☐ $0 ☐ $1 - 1,000 ☐ $1,001- 5,000 ☐ $5,001 - 25,000 ☐ $25,001 - 50,000 ☐ > $50,000 ☐ Unknown **Exact estimated cost:**

*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 (pot-hole)
- ☐ 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
- ☐ Incomplete marks at damage location
- ☐ Tracer wire issue
- ☐ Unlocatable Facility

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

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

PART J – ADDITIONAL COMMENTS

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Appendix C: Glossary of Terms & Definitions

Abandoned: With reference to underground infrastructure, taken out of service permanently but left in place.

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.

Damage Reporting: The immediate reporting to appropriate authorities and the owner of any damage made or discovered in the course of excavation or demolition work.

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.

Depth: The vertical distance below grade.

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.

Hand Digging: Any movement of earth using a hand shovel*. The preference is to use an insulated or wooden-handled shovel.

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

Appendix C: Glossary of Terms & Definitions

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

Locate (verb): The process of an underground plant owner 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 owner or their agent (usually the notification service) in which a request for locating underground facilities is processed.

Locate Ticket: A locate request document created by the notification service or an owner marked with a unique identification number.

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

LSP: Locate Service Provider - a person authorized by the owner to locate and mark its underground facilities.

Marks or Markings: Surface marking indicating the presence of underground infrastructure including but not limited to highly visible paint and/or labeled stakes or flags to indicate the approximate location of buried facilities within the Located area.

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 owner

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

Tolerance Zone: The space in which a 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: A private, publicly, or cooperatively owned entity whose purpose is to deliver a commodity or service such as communications, television/internet, power, electricity, light, heat, gas, oil, water, steam, and waste collection.

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.

** This does not include picks, bars, stakes, or other earth-piercing devices.*

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