



DIRT

CCGA



Energy
Nexus

Annual Technical
Conference

Fuelling the Future

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April 24, 2003 - Bloor Street W.






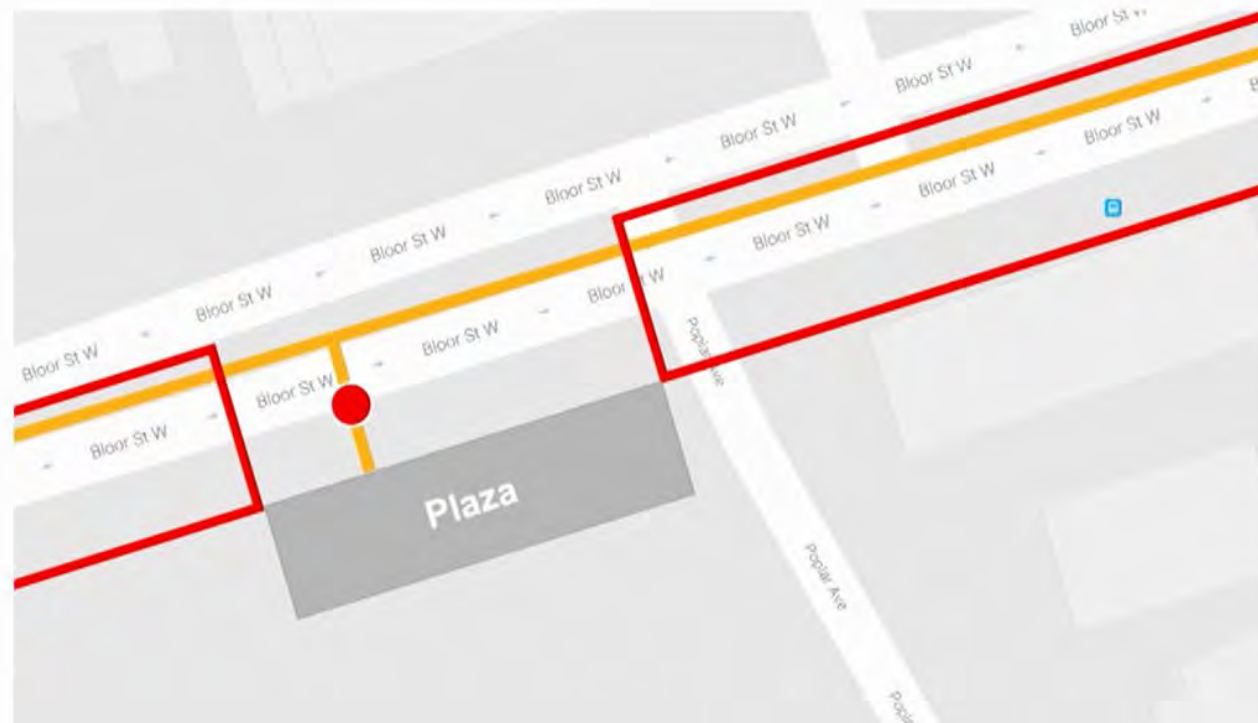
April 24, 2003 - Bloor Street W.

Safety is our #1 Priority

Locates Provided for Excavator



-  Locates provided
-  Gas Line
-  Line Strike Location
-  Plaza



A yellow excavator bucket filled with brown soil, positioned in the top left corner of the slide.

Common Ground Alliance

Established in 2000, the Common Ground Alliance (CGA), based in Virginia, is committed to saving lives and preventing damage to North American underground infrastructure by promoting effective damage prevention practices of today and tomorrow.



The Common Ground Alliance expanded into Canada in 2003, following the Bloor Street incident in Toronto, with the first chapter established in Ontario in 2003. Through the next few years provincial chapters were launched across Canada. The provincial chapters or “Regional Partners”, in addition to representatives from associations of National interest make up the Board of Directors for the CCGA. This makes the CCGA “an Association of Associations”.





Common Ground Alliance Stakeholders

Each of the Regional Partners across Canada comprise members and representatives of all stakeholders in the excavation community...

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





CCGA Regional Partners



A close-up photograph of a yellow excavator bucket filled with dark brown soil, positioned in the upper left corner of the slide.

CCGA Best Practices Ver 5.0 - 2024

The **CCGA Best Practices** have been developed through the commitment and consensus of a significant number of stakeholders to serve as an educational guide to promote damage prevention in Canada.

The CCGA Best Practices manual is an educational guide and a general purpose tool which is not meant to replace existing standards, policies, or provincial/federal regulations or laws.

The practice statements and descriptions outlined in each chapter of the guide represent activities that are currently followed by industry to promote damage prevention to underground infrastructure. Not all stakeholders are in a position to adopt these best practices but it is hoped that they will become universal over time.

The **CCGA Best Practices** is referenced throughout this presentation as a reminder of the resources and measures that are available to prevent underground infrastructure damages.



What is DIRT??



Table 3 - Damages by Year by Province/Region, 2019 - 2023

Incident Types by Province	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
	Number of Damages					Percentage of Damages				
British Columbia	1,276	1,228	1,280	1,101	1,065	11%	11%	11%	10%	11%
Alberta	3,597	3,789	3,713	3,030	3,173	30%	32%	32%	28%	32%
Saskatchewan	660	689	722	600	615	6%	6%	6%	6%	6%
Manitoba	196	220	197	264	202	2%	2%	2%	2%	2%
Ontario	4,998	4,782	4,553	4,799	4,225	42%	41%	40%	45%	42%
Quebec	1,101	954	924	843	696	9%	8%	8%	8%	7%
Atlantic	60	15	47	15	18	1%	0%	0.4%	0.1%	0%
National Totals	11,888	11,677	11,436	10,652	9,994	100%	100%	100%	100%	100%

2023 DIRT: National Overview



Table 20 - Summary by Province\Region, 2023

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%	1,065	11%	4	229,121	4.65	668,968	1.59
Alberta	12%	3,173	32%	13	447,482	7.09	1,514,605	2.09
Saskatchewan	3%	615	6%	3	147,555	4.17	406,524	1.51
Manitoba	4%	202	2%	1	81,619	2.47	200,868	1.01
Ontario	39%	4,225	42%	17	1,098,999	3.84	6,486,733	0.65
Quebec	22%	696	7%	3	306,184	2.27	518,016	1.34
Atlantic	6%	18	0%	<1	68,450	0.26	71,307	0.25
Canada	100%	9,994	100%	40	2,379,410	4.2	9,867,021	1.01

2023 DIRT:
National
Statistics





Damage Ratios 2019-2023

British Columbia

Alberta

Saskatchewan

Manitoba

Ontario

Quebec

Atlantic Canada

	2019	2020	2021	2022	2023
Damage ratio per 1,000 notifications	1.88	2.02	1.86	1.66	1.59
Damage ratio per 1,000 locate requests	6.32	5.79	5.3	4.7	4.65
Damage ratio per 1,000 notifications	2.46	2.58	2.32	1.95	2.09
Damage ratio per 1,000 locate requests	8.92	8.89	7.92	6.59	7.09
Damage ratio per 1,000 notifications	1.47	1.53	1.54	1.45	1.51
Damage ratio per 1,000 locate requests	4.66	4.55	4.34	4.04	4.17
Damage ratio per 1,000 notifications	1.02	1.2	0.95	1.37	1.01
Damage ratio per 1,000 locate requests	2.62	2.88	2.4	3.47	2.47
Damage ratio per 1,000 notifications	0.74	0.76	0.68	0.72	0.65
Damage ratio per 1,000 locate requests	4.46	4.44	3.88	4.17	3.84
Damage ratio per 1,000 notifications	1.76	1.6	1.5	1.52	1.34
Damage ratio per 1,000 locate requests	3.82	3.23	2.76	2.69	2.27
Damage ratio per 1,000 notifications	0.87	0.23	0.65	0.21	0.25
Damage ratio per 1,000 locate requests	1.15	0.27	0.75	0.24	0.26



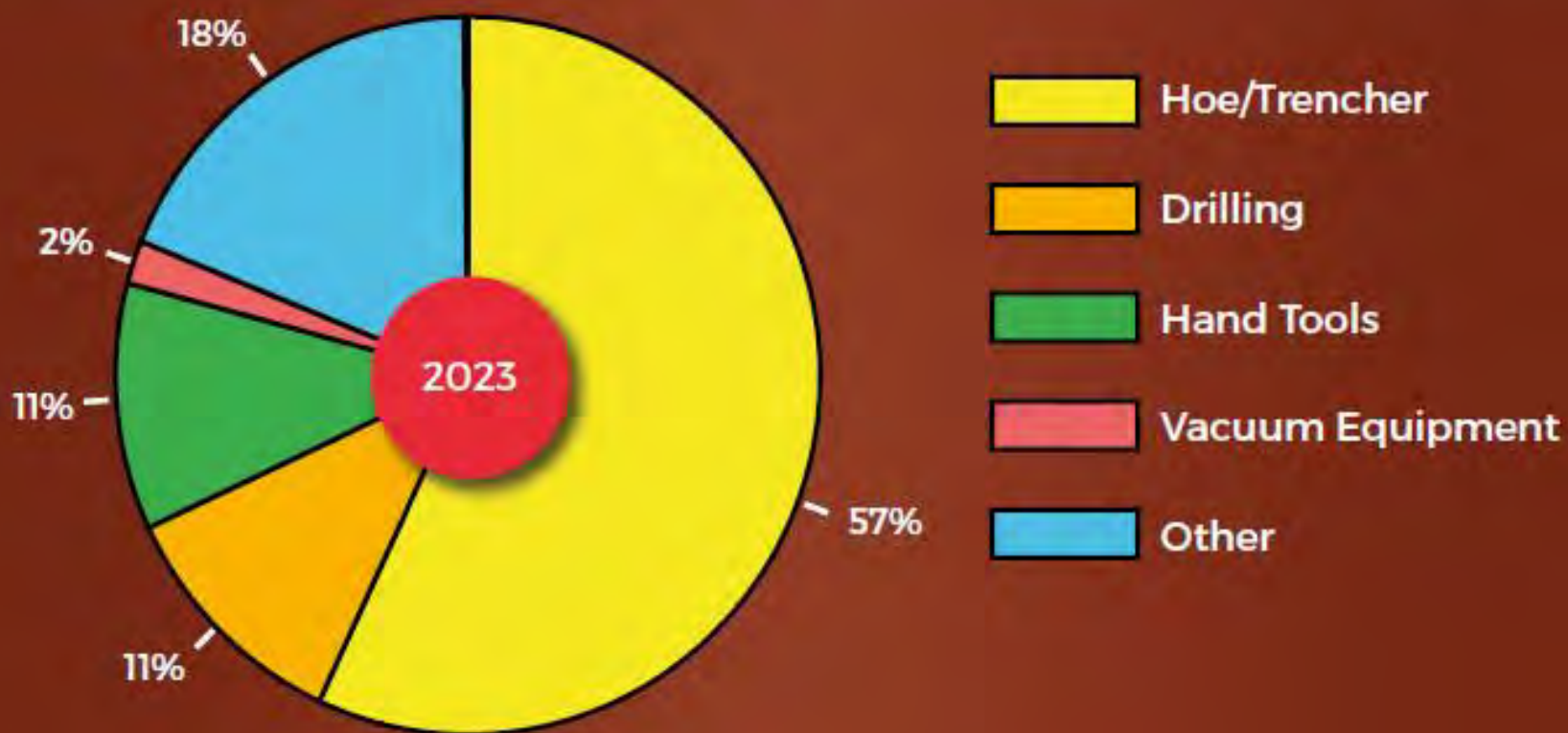
**Table 7 - Percentage of Damages by Facility Affected by Province/Region 2023**

Province/Region	Natural Gas	Telecommu- nications	Electric	Water/Sewer	Liquid Pipeline	Unknown/ Other
British Columbia	85%	7%	0%	0%	1%	6%
Alberta	19%	52%	7%	1%	0%	21%
Saskatchewan	34%	28%	36%	0%	1%	0%
Manitoba	52%	0%	48%	0%	0%	0%
Ontario	49%	38%	6%	6%	0%	0%
Quebec	38%	46%	9%	0%	0%	7%
Atlantic	61%	0%	33%	6%	0%	0%
National Totals	42%	38%	9%	3%	0%	8%

**2023 DIRT:
Facilities
Affected
by Province**



Figure 7 - Percentage of Damage Reports by Excavator Equipment Group, 2023



**2023 DIRT:
Excavators**

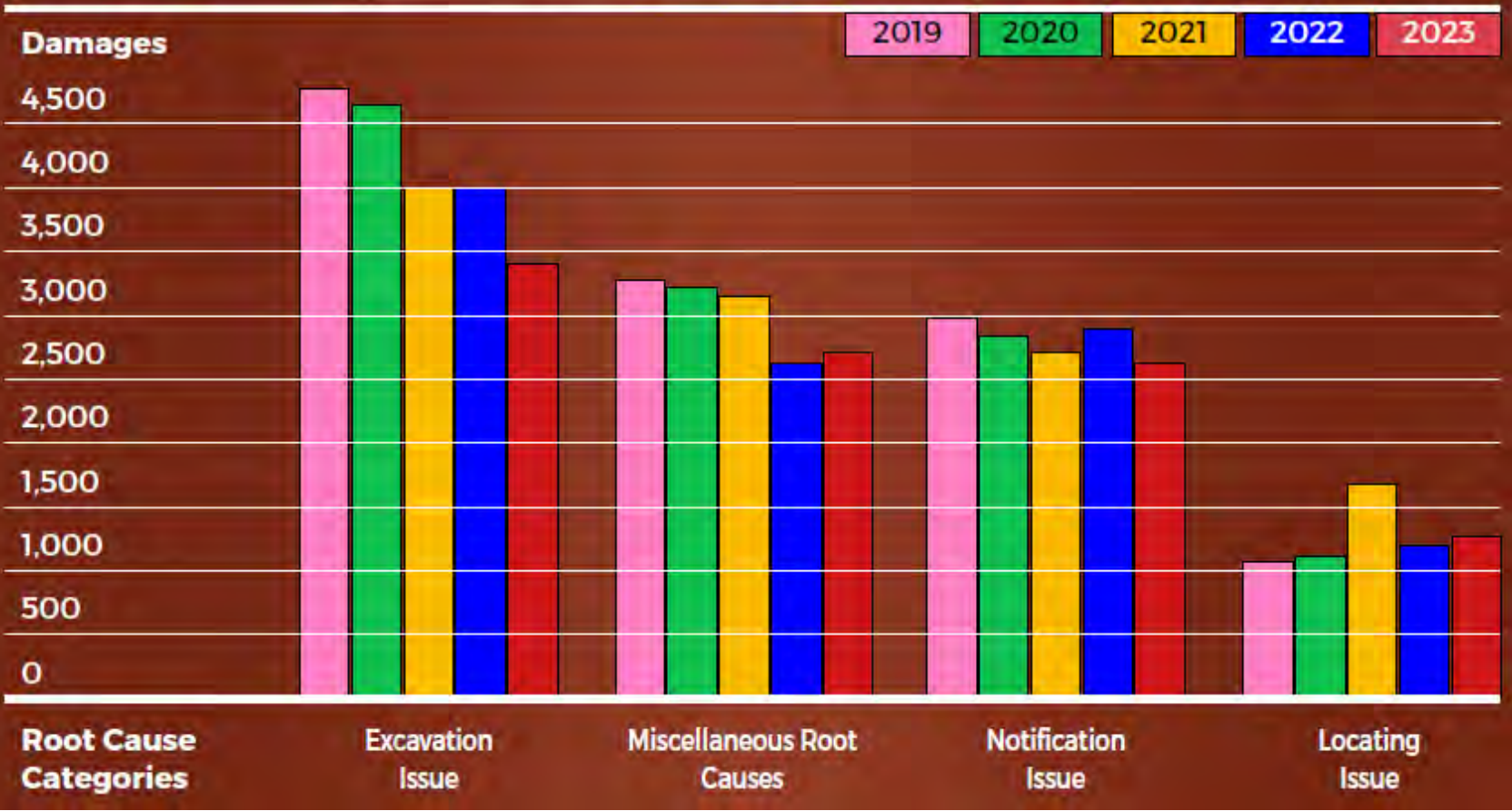
**Table 13 - Damages by Work Group by Province/Region, 2023**

Work Group	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Atlantic
Sewer & Water	270	815	146	39	1 112	257	4
Utility	121	564	127	64	668	47	1
Construction	182	427	54	8	737	84	4
Landscaping	249	344	108	34	645	62	3
Unknown / Other	177	430	122	11	577	106	1
Street & Road	66	593	58	46	486	140	5
National Totals	1,065	3,173	615	202	4,225	696	18

**2023 DIRT:
Work Type
by Province**



Figure 11 - Damages by Known Root Causes, 2019 - 2023



2023 DIRT:
Root Causes



Table 16 - No Locate Damages and Percentage of Damages with Hazardous Utilities, 2023

Province/Region	No Locate Request Damages	No Locate Request Electric	No Locate Request Natural Gas	"Percent of Total No Locate Electric & Natural Gas "
British Columbia	589	0	575	98%
Alberta	341	19	196	63%
Saskatchewan	140	65	33	70%
Manitoba	119	59	60	100%
Ontario	1 249	63	812	70%
Quebec	133	1	61	47%
Atlantic	17	6	10	94%
National Totals	2,588	213	1,747	76%

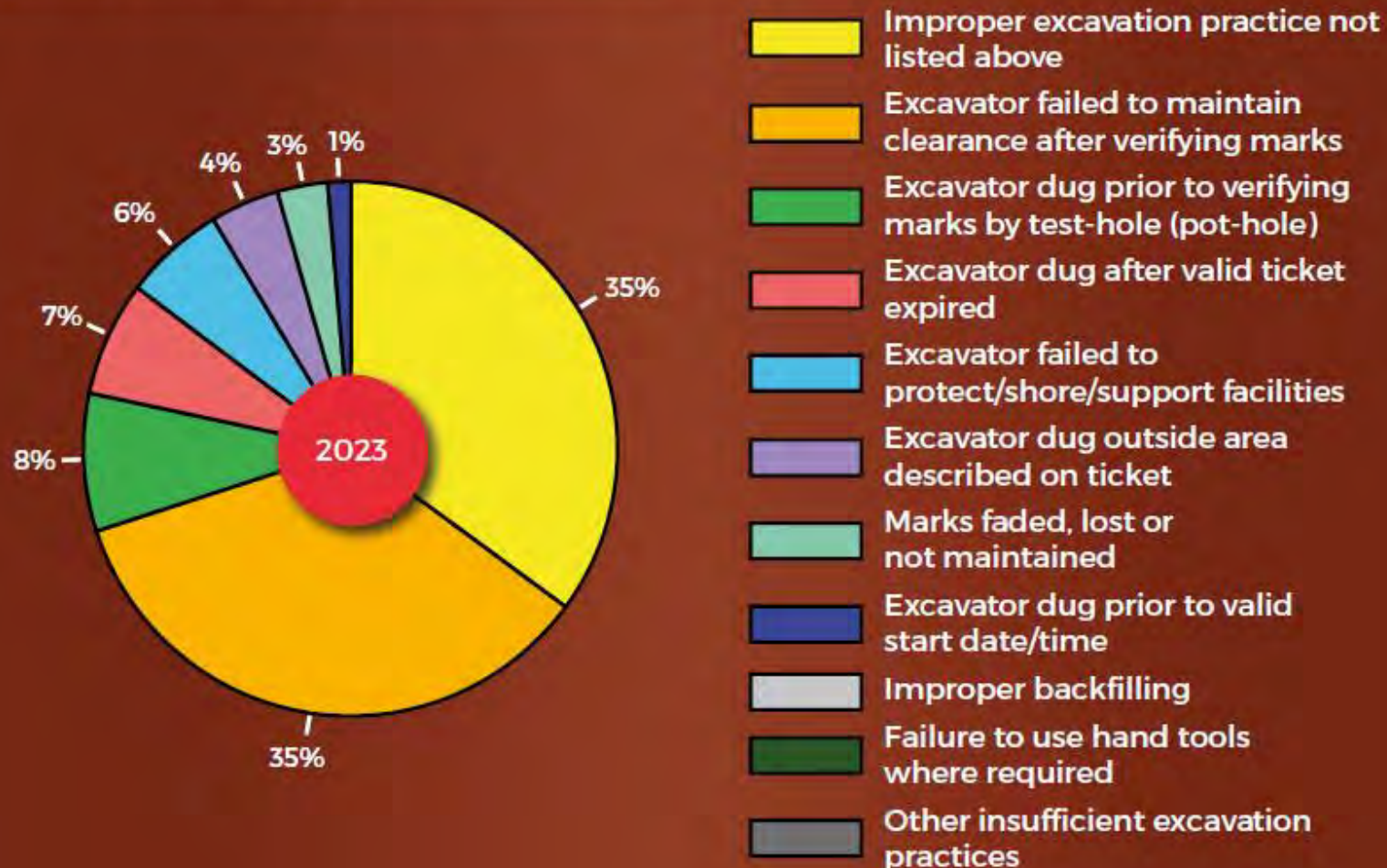
CCGA Best Practice 2-27:

Recommends that excavators contact the Notification Service before excavating.

By following this practice, we can significantly reduce the number of no locate damages and improve safety, efficiency, and cost-effectiveness for everyone involved.

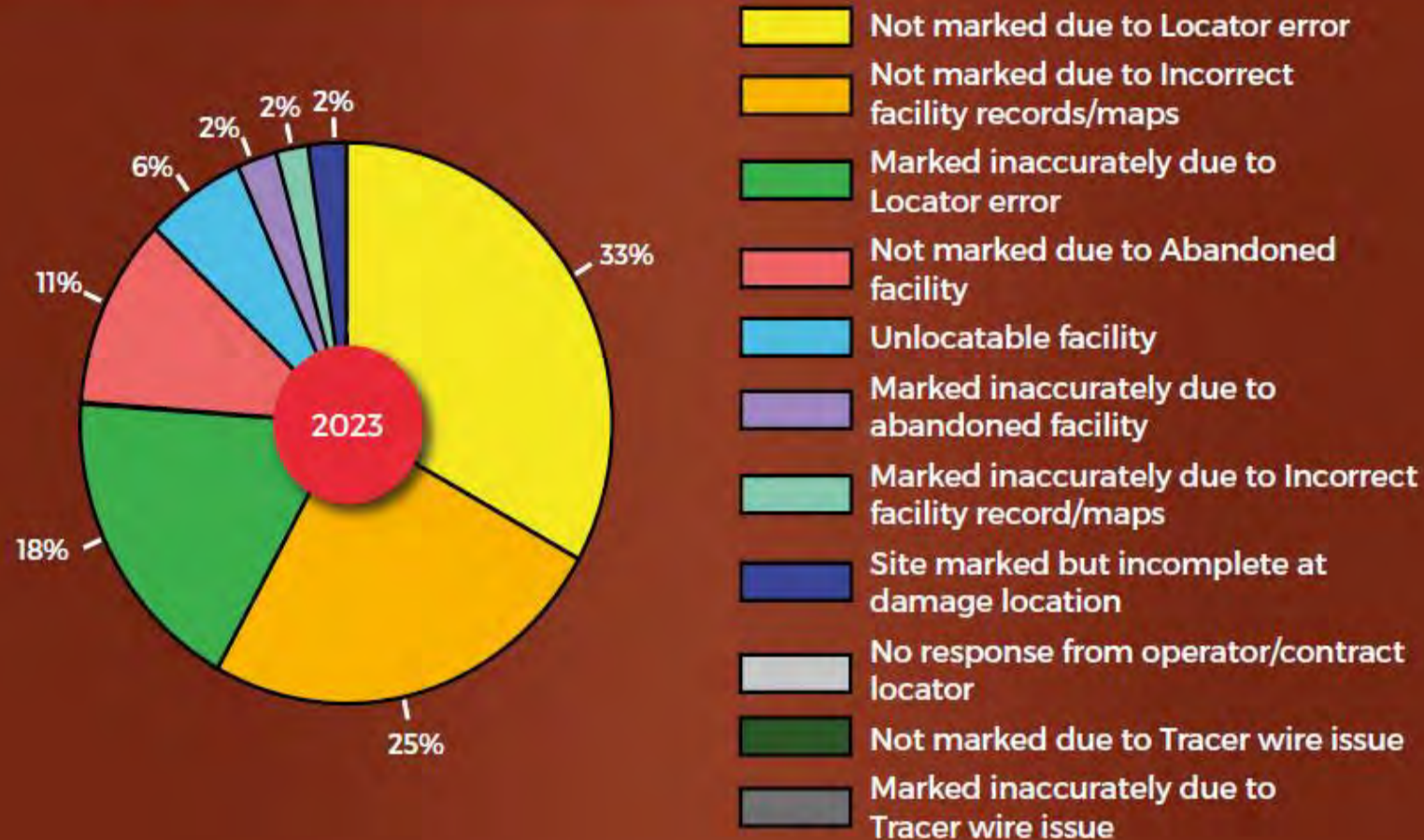


Figure 14 - Percentage of Known Root Cause by Excavation Issue, 2023



CCGA Best Practice 4-1 (Excavation within Tolerance Zone) describes the methods to consider when exposing any underground facility.

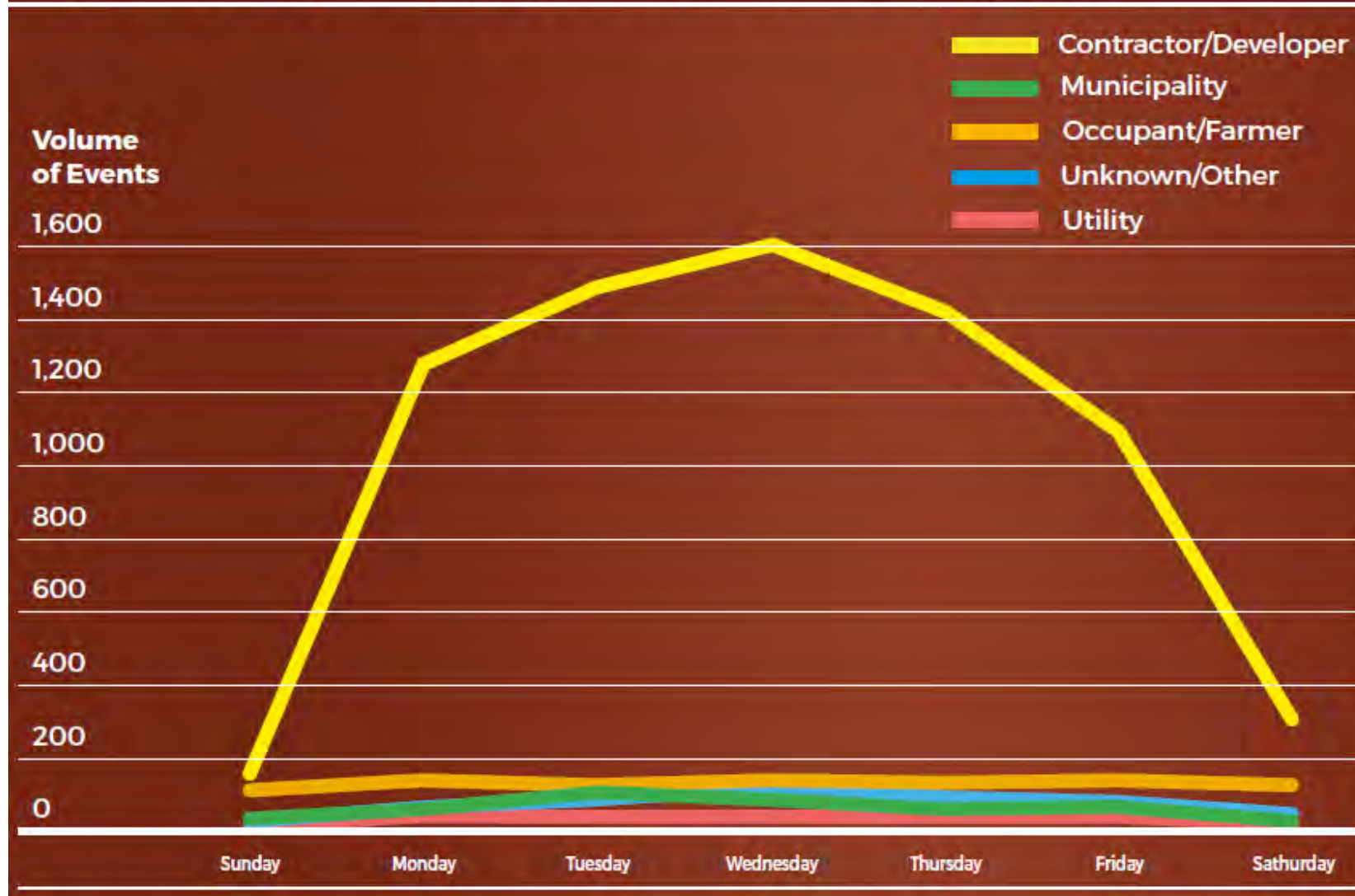
Figure 16 - Percentage of Known Root Cause by Locating Issue, 2023



CCGA Best Practice Manual Section 3, provides a wealth of best practices specifically designed to assist in Locating and Marking.



Figure 19 - Facility Events by Day of the Week by Excavator Type, 2023





Societal Costs

20%
Direct Costs

80%
Indirect Costs



The Cost of damage to underground infrastructures is estimated to be over \$1 billion per year.

Societal cost study was last conducted by CIRANO in 2015; Revised study using current data is currently underway, expected in 2025

Sample Indirect Costs:

- Service disruptions
- Intervention of emergency services
- Evacuation of residents and businesses
- Risk for the workers' health and safety
- Loss of product
- Environmental impacts
- Economic impacts on businesses and firms
- Work delays
- Administrative and legal costs
- Tarnished reputation of infrastructure owners
- Soil disturbances to surrounding infrastructure
- Traffic disturbances

A yellow excavator bucket filled with brown soil, positioned in the top left corner.

DIRT Committee Recommendations:

1. DIRT is an extremely powerful, but limited tool. The data represented in this report is voluntarily submitted by stakeholders within each Regional CGA and does not fully represent all damages or utility strikes that occur within each Region.
2. The conclusions drawn here are meant to help drive both public policymaking and shape best practices in the interest of reducing risk and injury for excavators and overall public safety.
3. **No Notification to the One-Call Centre:** accounts for 26% of the identifiable Known Root Causes. Steps have been taken to increase usage of the various One-Call services, such as “Click Before You Dig”. Simplifying the process, increasing accessibility via software and online services, promotion of ease of use and reliable locator turnarounds.
4. **Increasing Data Quality in DIRT:** Each region tends to take a different approach to DIRT; some are relatively hands-off, while others work closely with submitters. Each region is focused on increasing their submitters into the DIRT tool. With this increase in submitters, we are finding a continual decrease in data quality due to the overuse of Unknown/Other. In the Root Cause Category we notice that 38% of submissions use Unknown/Other which make actionable items difficult.



Questions?

