

National Report on Damage to underground infrastructure

Highlights 2012 and 2013

The *Common Ground Alliance (CGA)* created the Damage Information Reporting Tool (DIRT) in 2003 to document damages to underground infrastructure. Four Canadian provinces currently report damages into the DIRT database. This document presents and analyzes the main data from these provinces.

Alberta
British Columbia
Ontario
Quebec



Interpreting the Data

- Reporting in DIRT is voluntary; therefore, the data analyzed is not representative of all damages that have occurred.
- A significant number of queries were left unanswered in the damage reports completed by DIRT users. Despite those questions left blank, this report provides aggregate data from the participating provinces.
- The term “damage” refers to damages to underground infrastructure and near misses (there are few near miss reports in DIRT).

29 damages per business day

	Number of damages		Damages per business day*		Population 2013**	Damages per 1,000 locate requests	Damages per 1,000 notifications***
	2012	2013	2012	2013			
Alberta	32	30	-	-	4,025,100	-	0.02
British Columbia	1,227	1,188	5	5	4,582,000	9.33	2.03
Ontario	5,149	4,836	20	19	13,538,000	6.12	1.01
Quebec	1,421	1,240	6	5	8,155,300	6.31	1.65
Total	7,829	7,294	31	29	30,300,400	6.54	0.93

* 254 business days per year **Source: Statistics Canada

*** Following a locate request, if need be, one or more notifications are sent to inform each utility owner present in the work zone.

Compared with 2012, the overall number of damages decreased in 2013, from 31 to 29 events per business day. Quebec and Ontario contributed to the decrease by reducing damages by one per business day in their respective regions.

Alberta only recently began entering data into DIRT and the Alberta Common Ground Alliance is working to promote the benefits of DIRT Reporting to industry stakeholders. While it is unlikely that Alberta data reflects

actual damages in the province, the CCGA chose to provide Alberta data for information purposes only.

The number of damages in each province is determined by a variety of contributing factors such as the level of economic activity and population. In that light, it isn't surprising that the majority of damages occur primarily in Ontario, the most populated province. It is also noteworthy that the frequency of damages in Quebec is similar to British Colum-

bia, even though Quebec has a greater population.

Ratios are also compared between the reporting provinces. One reference criteria used for the comparison (locate requests) relates to the Damage Prevention Best Practices and the other one (notification) relates to the real risk to damage an underground infrastructure. Despite the damage number is higher in Ontario; its ratios are at the Quebec ones.

87% of damages cause a service interruption (2013)

The proportion of damages to underground infrastructure causing a service disruption is high. Beyond the cost of repairing damaged infrastructure, societal costs can range from minor inconveniences caused by service disruption to elevated risk of injury and environmental damage. An example of societal costs is the cost of First Responders (firefighters and police officers) reporting to the scene of damaged infrastructure which represent 32% of the damages in Quebec, 48% in Ontario and 15% in British Columbia. When First Responders are deployed to an incident,

it initiates a cost to the community tax base.

The damages reported in Alberta Virtual DIRT mostly consist of near misses and primarily occurred in the vicinity of transmission pipelines.

Damage causing a line break to a high-pressure transmission pipeline could result in high consequence, costs and substantial impacts. In this context, the CCGA finds it important to note that federally-regulated transmission pipelines across Canada (under the jurisdiction of the National Energy Board), as well as provincially-regulated transmission pipelines in Alberta and British Columbia, are protected by a 30 metre safety zone. Any ground disturbance activity in this 30 metre safety zone or pipeline right of way is governed by regulatory damage prevention requirements and in many cases, cross-

	2013
Alberta	17 %
British Columbia	93 %
Ontario	85 %
Quebec	85 %
4 provinces	87 %

sing agreement conditions imposed on the ground disturber by the pipeline company.

Be Part of the Damage Prevention Solution

The Canadian Common Ground Alliance (CCGA) invites you to register with Regional Partner Virtual DIRT and complete the online field form to report damages to Canada's buried infrastructure. Doing so will allow more thorough analysis and enable damage prevention and safety solutions that will benefit all Canadians.

Alberta:
www.cga-dirt.com/ab

British Columbia:
www.cga-dirt.com/bc

Ontario:
www.cga-dirt.com/orcga

Quebec:
www.cga-dirt.com/qcvpd

The more information we have on damages, the more effectively we can target our damage prevention efforts.

40% of damages are caused by failure to make a locate request (2013)

72% of damages in British Columbia were caused by failure to request a locate while insufficient excavation practices represented the most frequent cause of damage in Quebec and Ontario (58% and 42% respectively).

In the Miscellaneous root causes category, the most frequent cause of damage in Ontario is Notification to

	Alberta	British Columbia	Ontario	Quebec	4 provinces
Locate Request not made	40 %	72 %	33 %	33 %	40 %
Excavation practices not sufficient	20%	26 %	42 %	58 %	41 %
Locating practices not sufficient	10 %	0 %	6 %	7 %	5 %
Miscellaneous root causes	30 %	2 %	19 %	2 %	14 %

one-call center made, but not sufficient, which means requesters must provide better information to the one-call centre.

For Alberta, the causes of damage are known for only about 20 events and are not necessarily representative of all damages in the province.

30% of damages occur during work on sewer and water systems (2013)

In British Columbia, damages occur more frequently during green work (fencing, landscaping and irrigation) and construction. In Quebec, work related to streets and roads has about the same damage rate as work on sewer and water systems. In Ontario, damage occurs mainly during work on sewer and water systems.

For Alberta, the causes of damage are known for only about 20 events and are not necessarily representative of all damages in the province.

Regardless of the type of work,

	Alberta	British Columbia	Ontario	Quebec	4 provinces
Green	21 %	32 %	19 %	15 %	20 %
Construction	21 %	45 %	18 %	13 %	22 %
Sewer & water	26 %	13 %	33 %	37 %	30 %
Utility	11 %	3 %	20 %	10 %	15 %
Street & road	21 %	7 %	11 %	25 %	13 %

backhoes and trackhoes is the excavation equipment most often used in all provinces when damage occurs (75%). In Ontario, hand tools represent the second most often used ex-

cavation tool when damage occurs (22%). In the remaining provinces, data is too low to clearly identify the second most frequent equipment used.