

National Report on Damage to Underground Infrastructure

Highlights 2012, 2013 and 2014

Alberta
British Columbia
Ontario
Quebec
Saskatchewan



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

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).

40 reported damages per business day

	Number of damages			Damages per business day*			Population 2014**	Damages per 1,000 locate requests	Damages per 1,000 notifications
	2012	2013	2014	2012	2013	2014			
Alberta	32	30	2,934	-	-	12	4,121,700	7.0	1.6
British Columbia	1,227	1,188	1,315	5	5	5	4,631,300	8.9	1.9
Ontario	5,149	4,836	3,809	20	19	15	13,678,700	4.4	0.7
Quebec	1,421	1,240	1,198	6	5	5	8,214,700	6.1	2.3
Saskatchewan	1,110	1,037	682	4	4	3	1,125,400	5.0	1.9
Total	8,939	8,331	9,938	35	33	40	31,771,800	6.28	1.7

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

Compared with 2013, the overall number of damages appears to increase, from 33 to 40 events per business day. However, the addition of Alberta data to the report skews that number. In effect, comparing only the three provinces reporting since 2012 indicates a decrease from 29 to 25 events per business day. Ontario contributed to the decrease by reducing their number of damages by four per business day while Quebec and British Columbia remained static.

CCGA provided 2012 and 2013 Alberta data for information purposes only, and 2014 should be considered the first year that Alberta’s data is representative. Saskatchewan is included in the national report for the first time. Because the data

was collected directly by the SCGA rather than through DIRT, there was some variation in the type of data available for comparison in this report. This data should be considered for information purposes only until the DIRT reporting process is fully established in that region.

The breakdown of the number of damages in each province is determined by a variety of contributing factors such as level of economic activity and population. In that light, it isn’t surprising 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 Columbia, even though Quebec has a greater population.

The ratio of the number of damages per 1,000 notifications can be compared between the reporting provinces. The reference criteria used for the comparison (locate requests and notifications to members) illustrates, for example, that while the number of damages are higher in Ontario, the ratio of damages to activity is lower than that of other provinces.

85% of damages cause a service interruption

	Yes		
	2012	2013	2014
Alberta	0%	17%	84%
British Columbia	92%	93%	89%
Ontario	85%	85%	84%
Quebec	82%	85%	84%
4 provinces	86%	87%	85%

Damages to underground infrastructure causing a service disruption remained high in 2014. Beyond the cost of repairing the damaged infrastructure, there are costs related to the inconvenience that bring about and the risk of injury and environmental damage. Significant impact of damage to underground infrastructure relates to societal costs. An example of those societal costs is the costs of First Responders. Damage to natural gas infrastructure requiring de-

ployment of First Responders (firefighters, police officers and ambulance), represent 32% of the damages in Quebec, 48% in Ontario, 47% in Alberta and 15% in British Columbia. In each case, Responders are deployed to the incident initiating a cost to the community tax base.



39% damages were the result of insufficient excavation practices

Failure to request a locate and insufficient excavation practices remain the most common root causes for damage to occur during excavation.

British Columbia continues to stand out sharply with 60% of damages caused by failure to request a locate. The most frequent cause of damage in Quebec, Ontario and Saskatchewan is insufficient excavation practices (58%, 43% and 39% respectively).

In the *Excavation Practices Not Sufficient* category, the most frequent cause of damage in Quebec is *Failure to use hand tools where required* which indicates that more education around safely hand-exposing facilities may be beneficial.

For Alberta, the causes are known for only 23% of events and are not necessarily representative of all damages in the province. The focus in Alberta should be on gathering more specific data around root cause before any conclusions can be made.

		Locate Request Not Made	Excavation Practices Not Sufficient	Locating Practices Not Sufficient	Miscellaneous Root Causes
Alberta	2012	44%	6%	3%	47%
	2013	40%	20%	10%	30%
	2014	15%	20%	63%	1%
British Columbia	2012	71%	28%	0%	1%
	2013	72%	26%	0%	2%
	2014	60%	37%	1%	1%
Ontario	2012	31%	41%	5%	23%
	2013	33%	42%	6%	19%
	2014	33%	43%	3%	1%
Quebec	2012	37%	54%	8%	1%
	2013	33%	58%	7%	2%
	2014	34%	58%	5%	3%
Saskatchewan	2012	34%	43%	22%	1%
	2013	28%	33%	23%	17%
	2014	28%	39%	22%	11%
5 Provinces		34%	39%	19%	3%

34% of damages occur during work on sewer and water systems

Water and Sewer work continues to show the highest percentage of damages reported in all provinces but one. In British Columbia, damages occur more frequently during Construction work, with Water and Sewer work being the second highest percentage. In Quebec, work related to streets and roads showed a decline in damage rate, while the rate of damage for work on sewer and water systems has steadily increased.

Regardless of the type of work, backhoes and trackhoes remain the excavation equipment most often used in all provinces when damage occurs (Quebec 88%, Ontario 64%) In Ontario, hand tools represent the second most often used excavation tool when damage occurs (25%).

In the remaining provinces, data is too low to clearly identify the second most frequent cause.

		Green Work	Construction	Sewer & Water	Utility	Street & Road Work
Alberta	2012	14%	45%	9%	0%	32%
	2013	21%	21%	26%	11%	21%
	2014	14%	16%	31%	25%	14%
British Columbia	2012	60%	5%	27%	3%	5%
	2013	32%	45%	13%	3%	7%
	2014	10%	38%	30%	13%	9%
Ontario	2012	19%	18%	31%	19%	13%
	2013	19%	18%	33%	20%	11%
	2014	17%	18%	33%	22%	10%
Quebec	2012	15%	10%	29%	14%	32%
	2013	15%	13%	37%	10%	25%
	2014	14%	19%	40%	10%	19%

Register with DIRT and 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

Saskatchewan: www.cga-dirt.com/scga

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

