



2014 DIRT Report

For The Year 2013

Damage Information Reporting Tool

Analysis & Recommendations for the Province of British Columbia



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Introduction

I. Damage Information Reporting Tool

This report provides a high-level snapshot of damage statistics related to BC's underground infrastructure. The goal of this report is to help improve worker safety, public safety and protect underground infrastructure in BC. A comprehensive picture of contributing issues is vital to the creation of a stronger culture of underground safety.

This report utilizes information collected using the Common Ground Alliance USA's (CGA) Damage Information Reporting Tool (DIRT). Since 2003, DIRT has been the North American standard for data collection and reporting of underground damage information. It is a secure web application that allows users to remain anonymous and submit damage/ near miss reports, browse files by the user's organization, and submit feedback and questions. Anyone involved in underground facilities can contribute to and generate information from the DIRT tool.

In 2011, the BC Common Ground Alliance (BCCGA) purchased a license to manage its own Virtual Private DIRT. This has allowed the Alliance to collect information that is specific to British Columbia.

The BCCGA encourages all interested parties to help us in our efforts by submitting their damage reports to the BC Virtual Private DIRT. To participate, simply go to www.cga-dirt.com and register as a user. Once your registration is confirmed, you can begin submitting damage information or generate reports on the existing data.

III. Limitations

In presenting this report, it is important to note its limitations:

- While every effort has been made to ensure we have collected the most up to date information for this report, the voluntary nature of DIRT reporting means that this report does not include all of the events that occurred in British Columbia in 2013.
- It is clear that not all stakeholders in BC have chosen to report in this edition. The information is statically relevant for the purposes of a high-level analysis.
- As the BC Virtual Private DIRT has been adopted only recently, some of the data has been converted from internal databases maintained by independent operators. As a result, it appears that some operators did not collect information pertaining to certain prescribed DIRT fields. As such, in a number of cases some fields have not been completed. In the future, the BCCGA hopes to improve the quality of data by educating users on what information is most valuable to collect.

- A year-over-year comparison is difficult to present in this report due to external variables that affect the data (i.e. housing starts, construction activity, economic growth, etc.) For this reason, only limited comparison has been included in this report. The BCCGA is continuing to explore a suitable methodology for year-over-year comparison.

As a principle the BCCGA is committed to improving the data collection process.

IV. British Columbia Common Ground Alliance

The BCCGA is a non-profit organization established to lead development of consistent practices and coordination of activities to ensure the highest possible standards of worker safety, public safety and damage prevention in connection with underground infrastructure.

The BCCGA is a unique consensus-driven organization with a direct conduit to regulatory innovation. It is open to any individual or organization with an interest in safety and underground infrastructure. The BC Common Ground Alliance considers that all involved with underground infrastructure or disturbance are responsible and accountable for the safety of their own procedures. It acknowledges, however, that it is in everyone's best interest to work together to develop safe and consistent practices.

The BCCGA has over 400 members and reaches a network of over 2,500 excavators throughout the province.

The BCCGA works to offer practical tools and to foster an environment in which anyone residing or doing business in British Columbia is aware of and compliant with best practices in regard to underground infrastructure or disturbance in order to ensure the safest possible environment for the workers and citizens of the province.

For more information please visit our website at: www.commongroundbc.ca.

Section 1 – The Data

In 2013, 1,188 events were reported to BC Virtual Private DIRT. This is a slight decrease from the 1,222 events reported in 2012.

1.A – Reporting Stakeholders

The data in this report comes from a variety of stakeholders. While some of BC's reporting stakeholders report directly to the BC Virtual Private DIRT, others give us access to their data through an anonymous data grant. Due to the anonymity of the data grant system, we do not know exactly how many stakeholders reported incidents in 2013. We estimate that we received data from nine major stakeholders in 2013, a slight increase from 2012.

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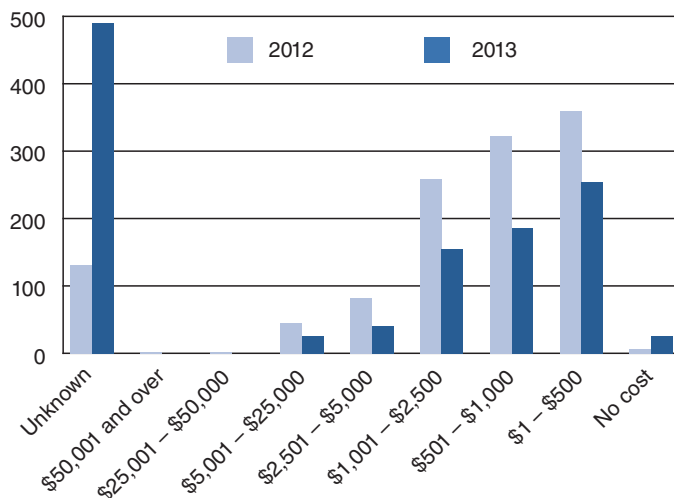
As in previous reports, the vast majority of damage events were submitted by natural gas stakeholders. BC's natural gas infrastructure overlays the province, consisting of both distribution and transmission lines. Given the scale and geographical distribution we feel this is a statistically valid indicator of damages throughout the province.

Stakeholder Reporting				
Stakeholder Group	2013		2012	
	Events	%	Events	%
Electric	79	7%	64	5%
Liquid Pipeline	51	4%	53	4%
Natural Gas	1,055	89%	1,104	90%
Public Works	2	0%	1	0%
Telecommunications	1	0%	0	0%
Total	1,188	100%	1,222	100%

1.B – Cost of Damage

Where the cost of damage was reported, 90% of events had a cost below \$2,500. High-cost events were relatively rare, with only 4% of events costing over \$5,000 and no events costing over \$25,000. The data does show a year-over-year decrease in high-cost events. In 2012, when cost was reported, 19% of all events had a cost above \$2,501, with two events costing more than \$25,000 and a further two events costing more than \$50,000. One can conclude that regulators, utilities and the excavation community have been successful in avoiding these types of damages.

Cost of Damage



1.C – Regional Districts

Greater Vancouver Regional District is the largest Regional District, so it is logical that they would experience more hits than Districts with fewer residents. One possible explanation is that smaller Districts typically have fewer construction and excavation activities. However, when we compare hits to overall population levels, we find that the two largest Regional Districts, Greater Vancouver and Capital, have low hits relative to population level, while Fraser Valley, our third largest District, has proportionately higher hits per population.

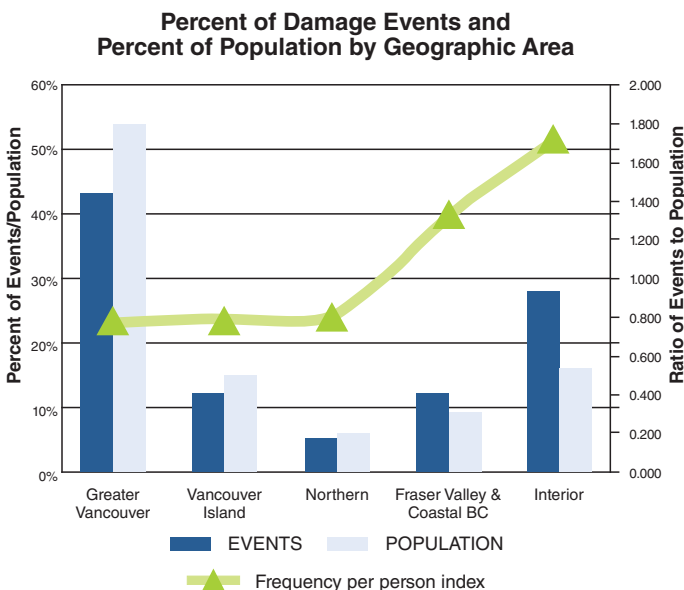
It should be noted five Regional Districts did not have reported damages in 2013. Many of these Districts have very low population, so it is possible that there were very few hits in these regions.

Regional District	Events		Population 2013*	
	Count	%	Count	%
Alberni-Clayoquot	6	0.51%	30,712	0.68%
Bulkley-Nechako	0	0.00%	39,589	0.87%
Capital	71	5.98%	370,912	8.17%
Cariboo	23	1.94%	62,685	1.38%
Central Coast	0	0.00%	3,208	0.07%
Central Kootenay	26	2.19%	58,543	1.29%
Central Okanagan	72	6.06%	184,595	4.07%
Columbia-Shuswap	27	2.27%	50,684	1.12%
Comox-Strathcona	23	1.94%	63,895	1.41%
Cowichan Valley	13	1.09%	81,704	1.80%
East Kootenay	36	3.03%	56,833	1.25%
Fraser-Fort George	41	3.45%	94,351	2.08%
Fraser Valley	96	8.08%	287,688	6.34%
Greater Vancouver	509	42.85%	2,451,783	54.02%
Kitimat-Stikine	1	0.08%	37,745	0.83%
Kootenay Boundary	11	0.93%	30,523	0.67%
Mount Waddington	0	0.00%	11,546	0.25%
Nanaimo	31	2.61%	149,244	3.29%
North Okanagan	58	4.88%	81,436	1.79%
Northern Rockies	7	0.59%	6,076	0.13%
Okanagan-Similkameen	36	3.03%	80,781	1.78%
Peace River	9	0.76%	63,553	1.40%
Powell River	3	0.25%	20,493	0.45%
Skeena-Queen Charlotte	0	0.00%	18,561	0.41%
Squamish-Lillooet	16	1.35%	40,344	0.89%
Stikine	0	0.00%	626	0.01%
Sunshine Coast	17	1.43%	29,017	0.64%
Thompson-Nicola	56	4.71%	131,166	2.89%

*Population estimates from BCStats

When these Districts are combined into larger geographical areas, some clear trends emerge in the data. As noted earlier, Greater Vancouver has the fewest events relative to population. Vancouver Island also carries a larger portion of the population than damages incurred. Despite its success in reducing damages when compared to population, Greater Vancouver still registers the largest number of damages. Thus, regulators and educators can reach the largest number of excavators causing damage by focusing efforts in Greater Vancouver.

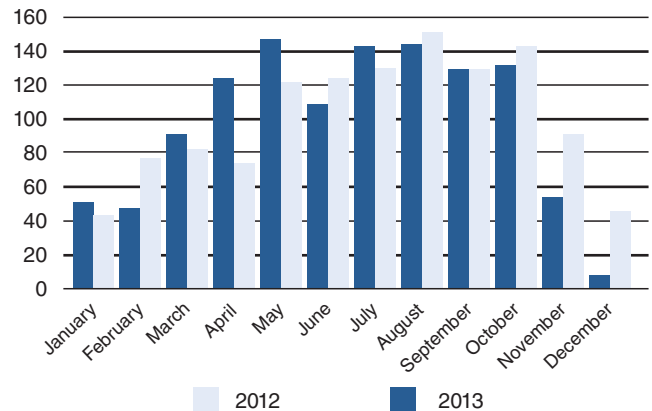
As in previous years, the Interior has the highest ratio of damages to population. In spite of representing only 16% of the population, the Interior registered 28% of damages. This is reflected in the frequency per person index. One could speculate that this may be caused by lack of awareness, increased excavation work, or some combination of the two. Utilities, regulators and educational organizations should look into why this is occurring as means to generate solutions. In addition, targeting damage prevention initiatives in this area may have proportionately more impact than in other areas of the province.



1.D – Months

The distribution of DIRT events throughout the year is fairly consistent with previous reports. Damages increased in the broader summer months (dig season) and decrease in winter (off season). This makes sense as it reflects the busier months for construction and excavation activities. The exception is a significant drop in events in June. Many factors could have caused this drop. While it is out of scope for this report, it would be useful to examine construction activity in this month to understand whether this drop reflects a temporary improvement in safe practice or a temporary drop in excavation activity.

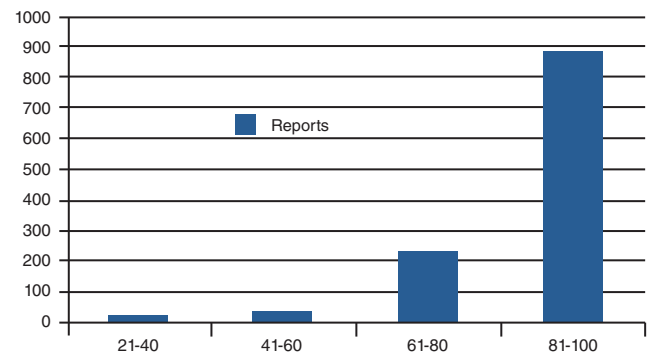
Events by Month



1.E – Data Quality Index

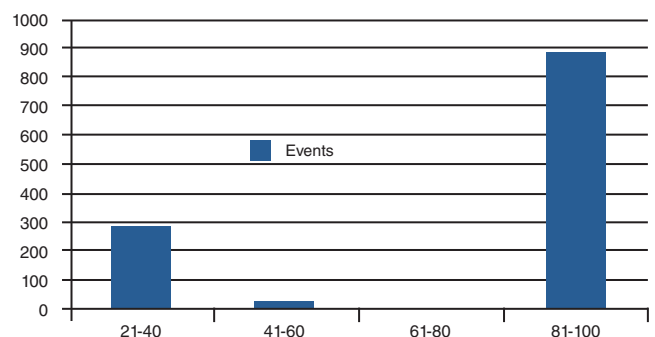
The Data Quality Index (DQI) reflects the quality of the reports entered into DIRT. A higher DQI reflects a report where all or most of the fields have been completed. It is essential that we receive quality data, so that we can generate effective conclusions.

DQI of Reports



In general, the DQI for 2013 was fairly high, with most reports having a DQI over 81 and very few having a DQI below 60. However, we do have two specific areas where reports require some improvement.

DQI Part E/F

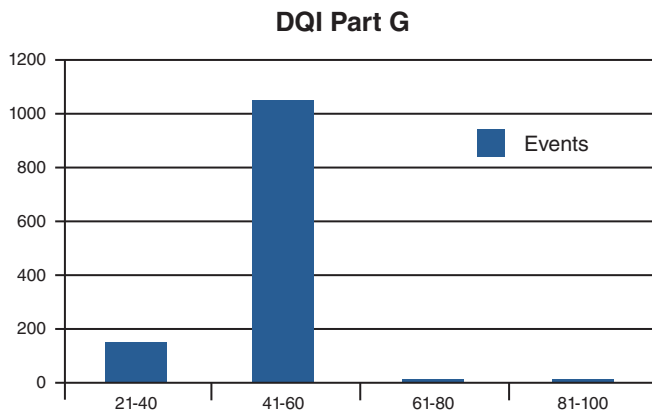


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The DQI for parts E and F show that nearly 300 reports provided minimal information. These are the sections of the report where, if the reporting stakeholder has indicated that a one-call Centre was notified, questions are posed about the locator and facility marks. It seems that most reports that scored between 81-100 DQI indicated that a one-call centre was not notified, and thus did not need to fill out the remainder of these sections. Reporters who indicate that a one-call Centre was notified are, in the majority of cases, not recording information about the visibility or accuracy of facility marks.

It is important that reporting stakeholders report on facility marks, because this can give important insight into the use of safety practice in the field. It should be noted that one of the questions in part F asks what type of locator marked the site. This question reflects the fact that one-call tickets trigger mandatory locates in other jurisdictions. Though this is not the case in BC, reporters should answer this question in cases where a locator or utility owner located or marked the site.



The DQI for part G was very low, with almost all reports scoring 60 or under in this section. This section discusses excavator downtime and the cost of downtime. Many of our reporting stakeholders are infrastructure owners who do not record this information.

1.F – Summary of Data

- The majority of reports come from natural gas stakeholders and reflect hits to natural gas infrastructure.
- 90% of hits had a cost below \$2,500. This represents an improvement over 2012.
- Greater Vancouver had the largest number of hits overall, but the smallest number of hits relative to population.
- The Interior had both the second-highest number of hits overall and the largest number of hits relative to population.
- The DQI is high, with weakness in parts E, F, and G.

Section 2 – The Facilities

A number of questions in DIRT discuss the facilities involved in the damage event. It is important to understand which facilities are most likely to be hit, so that utilities, regulators and educational organizations can focus on the excavators that work around these facilities.

2.A – Facility Damaged

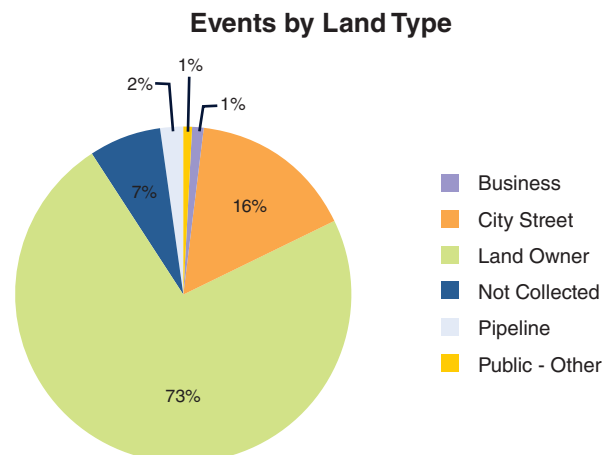
In 94% of reported events, the facility was damaged. Damaged utilities pose a risk to workers and the public, but it is important to include near miss events in our analysis. Though 6% of reports involve a facility that was not damaged, these events still represent a threat to infrastructure. By analyzing near miss events, we are able to understand the circumstances that lead to unplanned contact with underground infrastructure.

2.B – Operation Affected

89% of reported events affected natural gas infrastructure. As noted in section 1.A, this is a reflection of the reporting stakeholders. In 2013, at least three major reporters owned significant natural gas plant. This infrastructure is spread throughout the province and thus the hits reported are likely a reflection of the hits to all underground infrastructure in the province. We anticipate that increased reporting will show consistency between damages to natural gas lines and events affecting other facilities.

2.C – Land Type

The chart below reflects responses to the DIRT field 'Right of Way Type' in Part B. In some industries the term 'Right of Way' indicates a specific zone around plant, with designated legal and regulatory rules guiding excavation within that area. It is important to note this DIRT field uses the term 'Right of Way' to label the type of land the event occurred on. As such, this report refers to the 'Right of Way' field as 'Land Type.'



In 2013, most events occurred on privately owned land, with significant numbers of events also occurring on city streets. It may be useful to target educational efforts towards the types of excavations that occur in these two locations.

2.D – Facility Affected

93.5% of events affected distribution facilities, and 5.7% affected transmission facilities. Distribution facilities make up the majority of infrastructure in residential and business areas where construction, landscaping, and other excavation is most likely to occur. The frequency of hits to distribution facilities is likely a result of the high rates of excavation around this type of infrastructure.

2.E – Service Interruption

Service was interrupted in 93% of all reported events. Service interruptions are costly to the service provider and dangerous to the customers affected by the interruption. Essential services such as heat and emergency telephone contact can be blocked due to a hit line. This means that hits involving service interruption can pose danger to many people away from the dig site. Excavators should understand these risks when they dig around electric, natural gas, and telecommunication lines.

2.F – Summary of Facilities

- Nearly all reported events (94%) involved damage to the plant, with 6% of events involving near misses.
- 73% of events occurred on privately owned land.
- 16% of events occurred on city streets.
- Events largely affected distribution or transmission facilities, possibly due to the fact that most reporting stakeholders were in the natural gas industry.
- Service was interrupted in 93% of events.

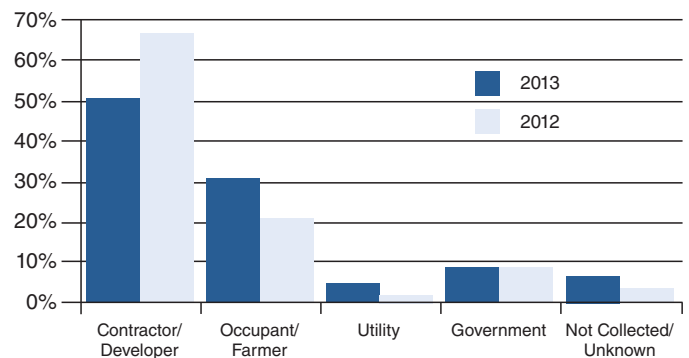
Part 3 – The Excavation

Understanding the type of excavation is essential to understanding the circumstances leading to the damage. This section is indispensable to regulators, infrastructure owners, and educators trying to reduce damage events. By understanding the breakdown, we can directly target damage reduction efforts in these areas.

3.A – Excavator

Understanding who is hitting underground infrastructure allows safety educators to create initiatives that are visible and effective for the specific types of excavators using unsafe practice that result in damages to underground infrastructure.

Events by Excavator Type



50% of reported events occurred when a contractor or developer performed the work, down from 66% in 2012. The number of hits by contractors and developers indicates that educational efforts are having an impact and should continue to be focused on creating and maintaining a culture of safety around excavation in the construction industry.

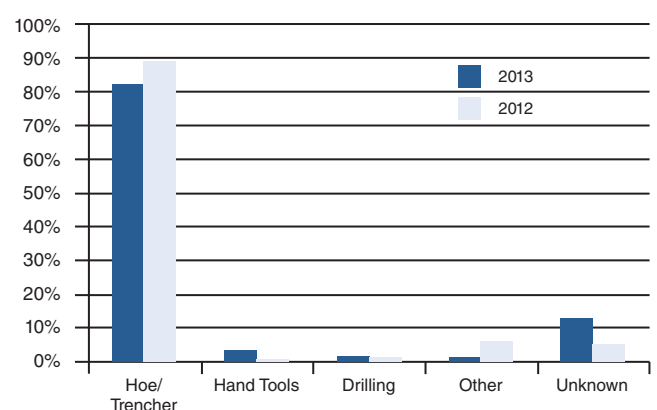
The next largest group of excavators was the occupant/farmer category, with most of these hits attributed to occupants. It is likely that occupants are largely unaware of safe excavation practice and the dangers of digging. Public campaigns, such as BC One Call's television ads, may help to reduce hits for this type of excavator.

It is notable that 9% of events involved an excavator employed by a city or regional district. Anecdotally, we know that government entities in BC rely heavily on contractors for excavation work. It is essential that public works departments understand the risks involved in excavation. The introduction of simple policy based on safety practice could be very effective in protecting worker and public safety while helping to protect underground infrastructure.

3.B – Excavation Equipment

The 'Excavation Type' DIRT field identifies the equipment used in the excavation.

Events by Excavator Type



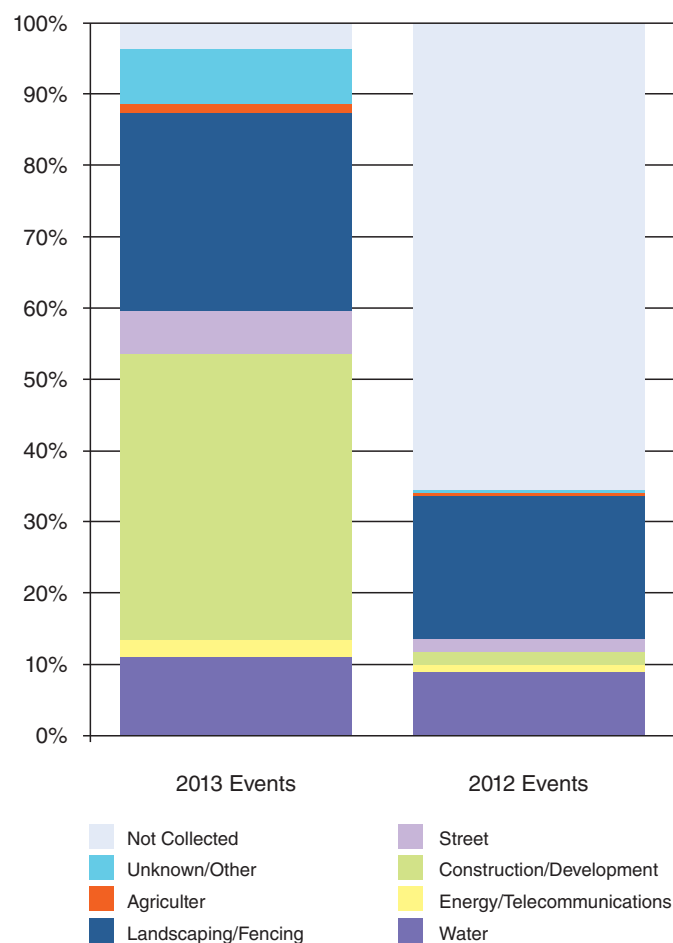
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Nearly all events involved a hoe or trencher. This reflects the frequency of use of this equipment, and is consistent with previous DIRT Reports in BC and other regions. Operators of hoes and trenchers could be targeted through safety initiatives in rental shops or by incorporating safe excavation practice into Heavy Equipment Operator courses.

3.C – Work Performed

If we know which types of excavation projects present the largest risk of damage, regulators and educational agencies can target safety initiatives at groups that perform these types of work.



Two groupings of work types dominated the 'Work Performed' field in 2013: construction/development and landscaping/fencing. This is fairly consistent with the findings from the 'Excavator Type' field in section 3.A. Construction likely represents a large percentage of excavation in the province, leading to a high percentage of hits in that industry. As noted throughout this report, increasing safe practice in the construction industry would significantly reduce damage events.

About one-third of events listed landscaping or fencing in work performed, with most of those being landscaping events. Occupants and professional landscapers usually perform landscaping activities. These two groups tend not consider these activities as forms of excavation. Educational initiatives targeted to these groups may be effective in reducing damages.

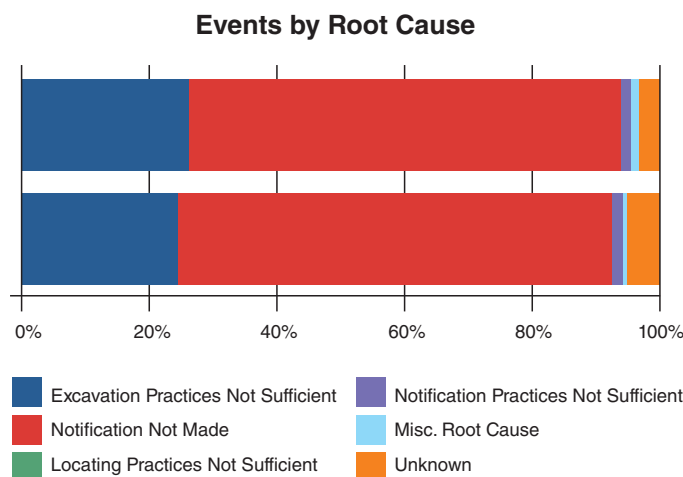
3.D – Summary of Excavation

- 54% of events involved a contractor or developer.
- 32% of events involved occupants or farmers.
- Nearly all reported events involved a hoe or trencher.
- The largest number of events occurred during construction or development work, followed by landscaping/fencing and water projects.

Section 4 – The Causes

Understanding the root cause of damage events allows us to know which specific practices are causing damages to underground infrastructure in BC. This allows regulators and educators to create messaging about the specific factors that lead to damage events.

4.A – Root Cause

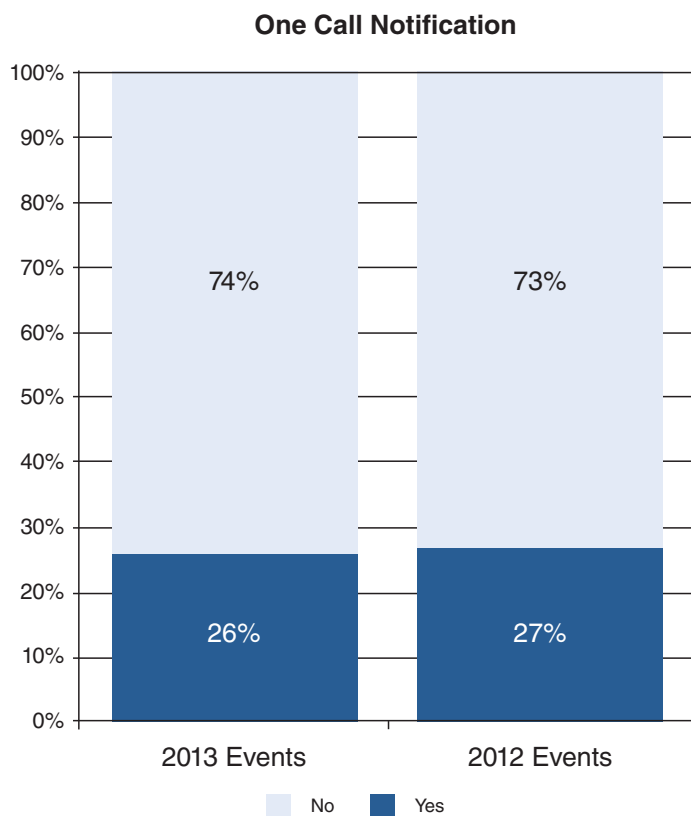


	2013 Events	2012 Events
Excavation Practices Not Sufficient	291	318
Notification Not Made	807	836
Locating Practices Not Sufficient	2	5
Notification Practices Not Sufficient	15	9
Misc. Root Cause	11	5
Unknown	62	49
Total	1,188	1,222

Where a root cause was listed, 74% of all reported events listed 'Notification Not Made.' This means that 74% of reported events were due to the excavator not calling BC One Call. Educating excavators about the existence and importance of BC One Call is essential to reducing hits in BC.

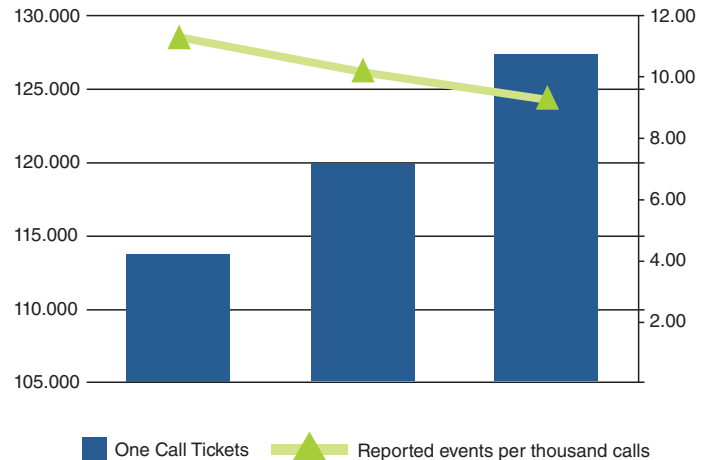
Insufficient excavation practices were responsible for 26% of hits. It is important that educators continue to teach the excavating community about the importance of safe digging practice. Information on safe excavation can be found in the BCCGA Best Practices, available at www.commongroundbc.ca.

4.B – One-Call Notification



BC One Call was notified in only 26% of reported events. This is consistent with the findings in section 4.A – Root Cause and with the prior year. By calling BC One Call at least three days before digging, excavators notify the companies with plant where they intent to dig, and also receive information about the location of infrastructure on their dig site. This service is free to use, and dramatically reduces the risk of hitting underground infrastructure and improves overall safety.

Reported Events per Thousand One Call Tickets



Since 2011, BC One Call has seen year-over-year increases in the number of tickets processed. DIRT's notification field shows that many excavators do not call before excavating. The majority of hits in BC could be prevented if the excavator called BC One Call. However, many excavators are not aware of the service, or are not aware that it is free to use. It is universally acknowledged that excavators contacting the one-call system is the single most effective action towards reducing damages to infrastructure in BC.

It is noteworthy that infrastructure owners are not required to be members of BC One Call. Mandatory one-call membership in other jurisdictions has been shown to reduce hits dramatically. A truly all-inclusive one call system in BC would improve the user experience and could lead to and increase in use.

If you are planning a dig, please contact BC One Call at least three days before you dig. Some infrastructure owners may require more notice.

By Phone: 1-800-474-6886
On Telus or Rogers mobility: *6886
Online: bconecall.bc.ca

4.C – Summary of Causes

- 72% of events were caused by a failure to notify BC One Call.
- 26% of events were caused by insufficient excavation practices.
- BC One Call was notified in only 26% of all reported events.

Conclusion and Recommendations

Since 2011, the BC Common Ground Alliance has used the Damage Information Reporting Tool to collect data on damages to underground infrastructure in British Columbia.

This document is a valuable tool for regulators, educators, or any other stakeholder working to reduce damage to underground infrastructure. The conclusions and recommendations below reflect some of the ways that information in this report can be used when designing or reviewing safety initiatives.

1. BC ONE CALL

Conclusion:

Failure to contact BC One Call was the cause of 74% of events, and BC One Call was called in only 26% of events. This appears to be the most significant factor in why damages occur to underground infrastructure in BC.

Recommendation:

It is imperative that the excavation community, including homeowners and workers outside of the construction industry, understand and use the one-call System. Information about BC One Call should be included in all excavation-related safety messaging. Additionally, mandatory membership for all utility owners would improve the user experience and increase the scope of BC One Call.

2. LOCATION OF EVENTS – GREATER VANCOUVER & VANCOUVER ISLAND

Conclusion:

Greater Vancouver and Vancouver Island continue to have fewer hits relative to population than other geographical areas.

Recommendation:

It would be beneficial to study why this is the case in order to determine possible solutions.

3. LOCATION OF EVENTS – THE INTERIOR

Conclusion:

The Interior Region has very high incidence of damage events relative to population.

Recommendation:

Regulators and educators should increase safety messaging and educational initiatives in the Interior, in order to increase safe practice in this region.

4. LOCATION OF EVENTS – TIMING OF EVENTS

Conclusion:

Most events occurred in the broader summer months, which tend to be the busiest months for excavation activity in BC.

Recommendation:

Educational initiatives should be focused on the spring and summer in order to teach safe practice before excavation work increases, and increased safety messaging should be carried through the summer months to reinforce safe practice.

5. LAND TYPE

Conclusion:

Most reported events occurred on private residential land, with significant numbers of events also occurring on private business land or city streets.

Recommendation:

Safety messaging should make clear that dangerous underground infrastructure can be found on private land and under city streets.

6. EXCAVATOR TYPE – CONTRACTOR

Conclusion:

Contractors and developers were responsible for over half of all reported events. This is likely due in part to the fact that these stakeholders do a large portion of the digging in this province.

Recommendation:

Regulators and educators should continue to target contractors with education and safety messaging.

7. EXCAVATOR TYPE – LANDOWNER

Conclusion:

32% of events were caused by a landowner or occupant.

Recommendation:

It is important to target messaging to landowners, so that they understand their responsibilities as part of the excavation community.



8. EXCAVATOR TYPE – GOVERNMENT

Conclusion:

Government workers were responsible for 9% of all events. It is likely that some of the excavators listed as ‘contractors’ may also have been hired by government offices.

Recommendation:

Municipal, regional, and provincial entities should create policies that ensure safe practices are being used by all employees and contractors.

9. EXCAVATION EQUIPMENT

Conclusion:

Almost all reported events involved a hoe or trencher, likely due to the prevalence of these tools in the excavation industries.

Recommendation:

Safety messaging could be distributed through equipment rental shops, and during training for heavy equipment operators.



10. WORK PERFORMED – CONSTRUCTION

Conclusion:

About half of all reported events happened during construction work.

Recommendation:

As noted in conclusion number 6, the construction industry and contractors should continue to be targeted in educational initiatives.

11. WORK PERFORMED – LANDSCAPING

Conclusion:

Landscaping was the second most common type of work being performed when a damage occurred.

Recommendation:

Landscapers and homeowners need to understand that digging during landscaping is a type of excavation. This group should be targeted with appropriate safety messaging.

12. INCREASED REPORTING

Conclusion:

Stakeholders have steadily increased reporting since the BCCGA began using DIRT. There is room for improvement in both the number and variety of stakeholders reporting.

Recommendation:

The BCCGA, in collaboration with our partners, will work to increase stakeholder engagement for infrastructure owners and excavators.

13. IMPROVED REPORTING

Conclusion:

The Data Quality Index shows that many reports were incomplete, especially in the areas discussing facility marks and excavator downtime.

Recommendation:

The BCCGA will work with reporting stakeholders to increase reporting in these areas by focusing on the importance of this information in determining the cause and cost of damage events.

To participate in DIRT, simply go to www.cga-dirt.com and register as a user. Once your registration is confirmed, you can begin submitting damage information or generate reports on the existing data. Should you require more information, please call the BCCGA office at 604-683-0556.

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APPENDIX A – SUMMARY TABLE OF DIRT DATA ELEMENTS

Data Summary Table		
Events Submitted		1,188
Stakeholder Group Submission	Events with Known Data	1,188
Part A	Known Share of Total Events	100%
Electric	79	6.6%
Liquid Pipeline	51	4.3%
Natural Gas	1055	88.8%
Public Works	2	0.2%
Telecommunications	1	0.1%
Right of Way Type	Events with Known Data	1,110
Part B	Known Share of Total events	92.6%
Business	10	0.9%
City Street	185	16.8%
Land Owner	869	79.0%
Pipeline	21	1.9%
Public - Other	15	1.4%
Type of Facility Operation	Events with Known Data	1,187
Part C	Known Share of Total events	99.9%
Electric	79	6.7%
Liquid Pipeline	51	4.3%
Natural Gas	1055	88.9%
Sewer	1	0.1%
Telecom	1	0.1%

Type of Facility Affected	Events with Known Data	1,187
Part C	Known Share of Total events	0.25%
Distribution	111	93.6%
Gathering	6	0.5%
Service/Drop	2	0.2%
Transmission	68	5.7%
Excavation Equipment Group	Events with Known Data	1038
Part D	Known Share of Total events	87.4%
Hoe/Trencher	976	94.0%
Hand Tools	37	3.6%
Drilling	13	1.3%
Other	12	1.2%
Excavator Group	Events with Known Data	1,115
Part D	Known Share of Total events	93.9%
Contractor/Developer	600	53.8%
Occupant/Farmer	360	32.3%
Utility	5.3	4.8%
Government	102	9.1%
Root Cause Group	Events with Known Data	1,118
Part I	Known Share of Total events	94.1%
Excavation Practices Not Sufficient	291	26.0%
Notification Not Made	807	72.2%
Locating Practices Not Sufficient	2	0.2%
Notification Practices Not Sufficient	15	1.3%
Misc. Root Cause	3	0.3%

APPENDIX B – GROUPINGS USED IN REPORT

Geographic Area

Group

Greater Vancouver
Fraser Valley and Coastal BC
Interior

Northern
Vancouver Island

Administrative Region

Greater Vancouver
Central Kootenay, Fraser Valley, Powell River, Sunshine Coast
Cariboo, Central Okanagan, Columbia-Shuswap, East Kootenay, Kootenay Boundary, North Okanagan, Okanagan-Similkameen, Squamish-Lillooet, Thompson-Nicola
Fraser-Fort George, Northern Rockies, Peace River
Alberni-Clayquot, Capital, Comox-Strathcona, Cowichan Valley, Nanaimo

Excavator Grouping

Group

Contractor / Developer
Occupant / Farmer
Utility
Government
Other

Type of Excavator

Contractor, Developer
Occupant, Farmer
Utility
Province, Regional District, Municipality
Railroad

Excavation Equipment Grouping

Group

Hoe / Trencher
Hand Tools
Drilling
Other

Type of Excavation Equipment

Backhoe, Trackhoe, Trencher
Hand Tools, Probe
Auger, Bore, Directional Drill, Drill
Grader, Scraper, Road Milling Equipment, Explosives, Vacuum Equipment, Farm Implement

Work Performed Grouping

Group

Water
Energy / Telecommunication
Construction / Development

Street

Landscaping / Fencing
Agriculture

Type of Work Performed

Sewer, Water
Natural Gas, Electric, Steam, Liquid Pipe, Telecom, Cable TV
Construction, Site Development, Grading, Drainage, Driveway, Demolition, Engineering, Railroad, Waterway
Roadwork, Curb / Sidewalk, Storm Drainage, Milling, Pole, Traffic Signals, Traffic Signs, Streetlight, Public Transit
Landscaping, Fencing
Agriculture, Irrigation

Root Cause Grouping

Group

Excavation Practices Not Sufficient

Notification Not Made
Locating Practices Not Sufficient

Notification Practices Not Sufficient

Misc. Root Cause

Root Cause

Failure to maintain clearance, Failure to support exposed facilities, Failure to use hand tools where required, Failure to test hole (pot-hole), Improper Backfill practices, Failure to maintain marks, excavation practices not sufficient (other)
No notification made to one call centre
Incorrect facility records / maps, Facility marking or location not sufficient, Facility was not located or marked, Facility could not be found or located
Notification of one call centre made but not sufficient, Wrong information provided to one call centre
Abandoned, One call centre error, Deteriorated, Previous damage

2014 DIRT Report For 2013

Damage Information Reporting Tool Analysis & Recommendations for the Province of British Columbia

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