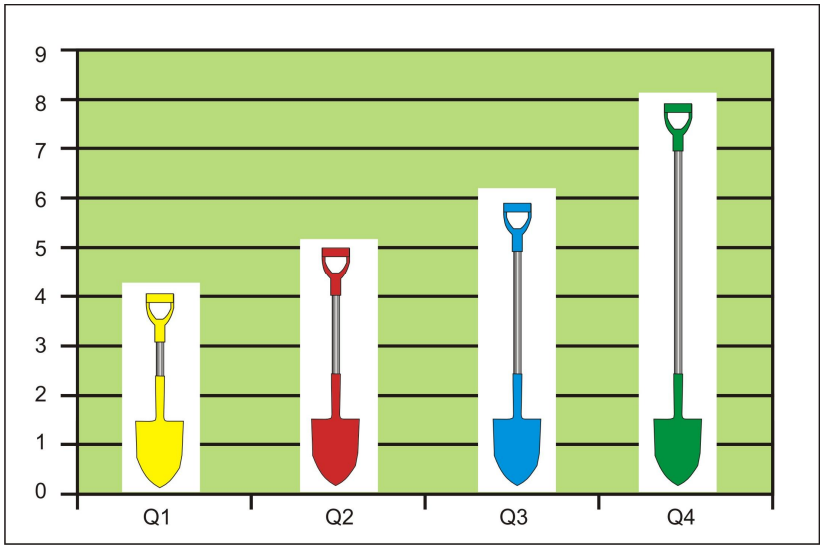
Ontario Regional

ORCGA©

Common Ground Alliance

Damage Information Reporting Tool (DIRT)



Report on Damage Data
2005 - 2007

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Summary

The Common Ground Alliance developed the Damage Information Reporting Tool, which is an on-line database application used to capture information pertaining to underground infrastructure damage. In 2005, the tool was modified to accept information in Canadian provinces, and the Ontario Regional Common Ground Alliance (ORCGA) has promoted the use of DIRT among its stakeholders.

This report summarizes the information that has been submitted by ORCGA stakeholders for damage events occurring from 2005 to 2007.

The data shows that damage events have declined in this time period. Root causes of damages have been categorized by stakeholder group, but no-locate continues to be a primary root cause, attributed to 30-40% of damages.

This report is the first attempt by the ORCGA to review the DIRT damage information, and the ORCGA commits to on-going review and analysis of data as well as continued promotion of DIRT utilization among its stakeholders.

What is the ORCGA?

The Ontario Regional Common Ground Alliance (ORCGA) is a non-profit organization promoting efficient and effective damage prevention for Ontarioôs vital underground infrastructure. Through a unified approach and stakeholder consensus, the ORCGA fulfils its motto of ñWorking Together for a Safer Ontarioò.

We are a growing organization with over 250 organizations as active members and sponsors, and represent a wide cross section of stakeholders including:

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

For over a decade these stakeholder groups have been active in promoting ñCall Before You Digò and other good damage prevention practices individually, or through smaller separate organizations. In 2003, these groups amalgamated under the ORCGA name to provide a single voice representing the damage prevention community in the province. The ORCGA is a regional chapter of the Common Ground Alliance (CGA) based in Alexandria, Virginia, which was formed in 2000 to further damage prevention efforts in North America.

The ORCGA welcomes comments and new members on its various committees. In order to submit a suggestion, or to join a meeting, please visit *www.orcga.com* to learn about the scope of the various committees. General inquiries about the ORCGA can be made at:

Ontario Regional Common Ground Alliance (ORCGA)
195 King Street, Suite 105
St Catharines, Ontario
L2R 3J6

Tel: 1-866-446-4493
Fax: 1-866-838-6739
Email: orcga@cogeco.ca

To learn more about ORCGA visit: *www.orcga.com*, and to learn more about the CGA, visit: *www.commongroundalliance.com*.

DIRT and the Role of the Reporting and Evaluation Committee

The Reporting and Evaluation Committee is one of four Committees of the ORCGA. This committee is responsible for the collection, development and management of damage information. A list of the members of the 2008 Reporting and Evaluation Committee is available in Appendix section of this report.

In 2003, the CGA developed DIRT, the Damage Information Reporting Tool, which is a secure web application designed to collect and report underground facility damage event information on a US and Canada-wide basis.

The objective of DIRT is to provide a resource to capture damage event information and to identify the root causes of events, with the underlying goal of reducing the number of events through public education, focused damage prevention programs and improved practices in industry.

For additional detail on the specifications of DIRT, or to use DIRT to report underground damages for your organization, visit: www.cga-dirt.com.

About This Report

Stakeholders throughout the US and Canada have voluntarily submitted facility events data into DIRT. An analysis of the data is available on a calendar year basis through www.cga-dirt.com.

This report pertains to that data submitted strictly within the province of Ontario, for the study period, calendar years 2005-2007.

This report provides a limited and high-level analysis of the 19,403 damage events that occurred in the study period. While many stakeholders did provide data, it should be noted that it is highly likely that there are damages not accounted for, and therefore the data herein can not represent 100% of events that actually occurred in Ontario in the study period.

It must be stressed that the data in DIRT is:

- Submitted by stakeholders voluntarily
- Reported on an aggregate basis
- Anonymous and confidential with respect to detailed events and identities of parties
- Not intended to be used for enforcement purposes or to determine liabilities

With this in mind, the ORCGA anticipates that stakeholders will utilize DIRT information to create positive transformation within their damage prevention efforts. The ORCGA also commits to continued promotion of DIRT utilization among stakeholders and an on-going review of the data submitted by contributors.

Damage Findings 2005-2007

Who Submitted Data?

Understanding where the DIRT data comes from is key to providing the context for data analysis. As data submission is voluntary, and the majority of data is being provided by the natural gas, telecommunications and excavator groups, it is reasonable to surmise that the entire population of damage events in Ontario is not being captured within DIRT. The following chart demonstrates the number of damage events that were submitted by these stakeholders for the study period.

Figure 1: Damage Events Submitted by Stakeholder Groups

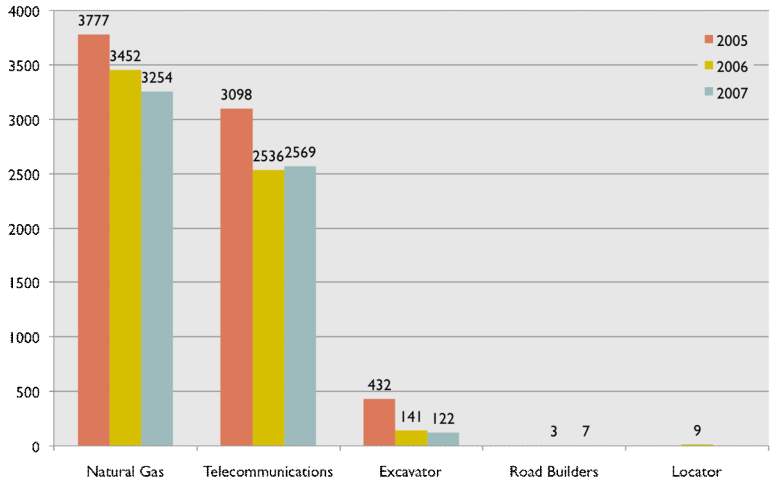
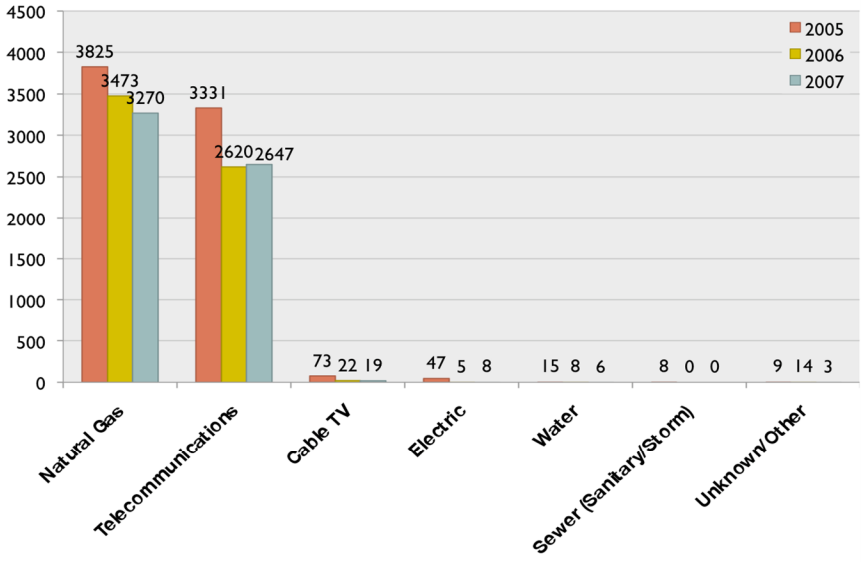


Figure 2, Damages by Facility Type, demonstrates what facilities were damaged in the study period, but it should be noted again that these may or may not represent the actual number of damages occurring to all the facility types listed.

Figure 2: Damages by Facility Type 2005-2007



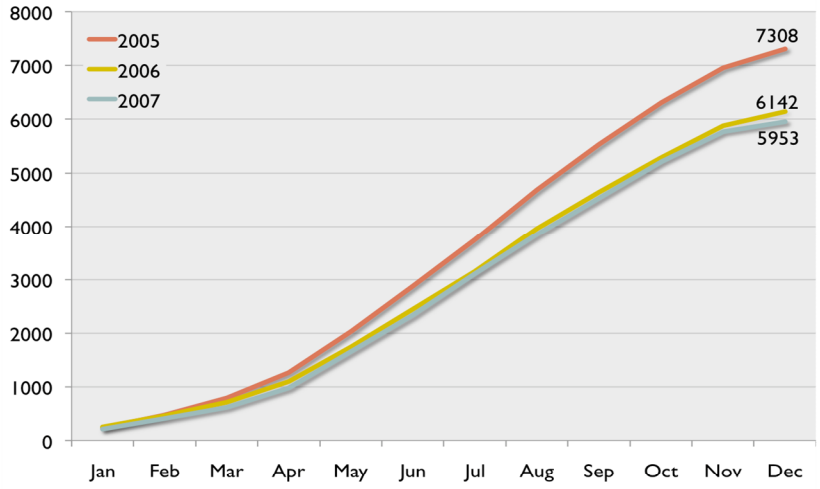
Comparing the ORCGA data versus the CGA-wide data, there is consistency demonstrated in that Natural Gas facility operation accounted for the largest portion of events submitted. In 2005, the Natural Gas industry submitted 52% of the ORCGA DIRT data, and CGA-wide, this number was 65%. ORCGAôs Natural Gas events for 2005, 3825 events, constitute 11% of the 33,393 events reported by the CGA.[1]

The Telecommunications facility events represent 46% of the ORCGAôs 2005 events, but only 20% for the CGA. It is possible that the Telecommunications category may contain some Cable TV events, as there is a convergence of these two types of facilities in the industry as well as new companies emerging and installing facilities. Also, the disparity is an indicator that other facility types (ie. Electric, water, etc), could be largely under-reported in Ontario.

Emerging Trends

Figure 3 demonstrates the total damages reported by end of calendar year and shows a decrease in the time period, which is an 18.5% decrease.

Figure 3: Cumulative Damages 2005-2007



[1] The 2004 and 2005 DIRT report published by the CGA

Figure 4: Facility Damages by Month 2005-2007

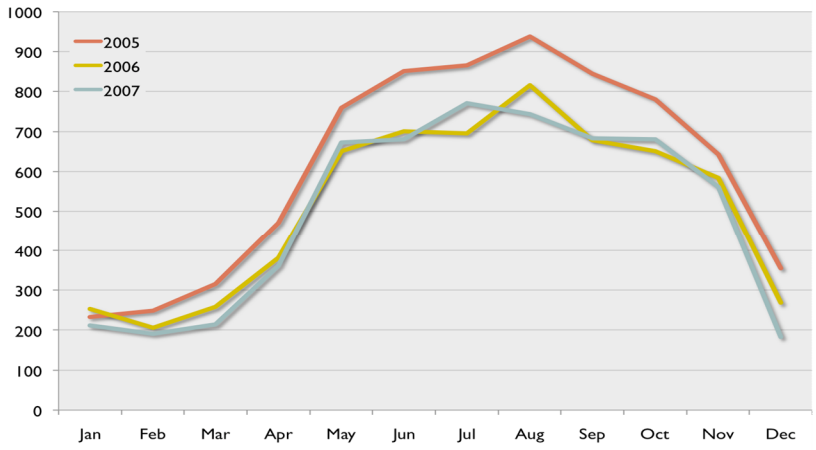
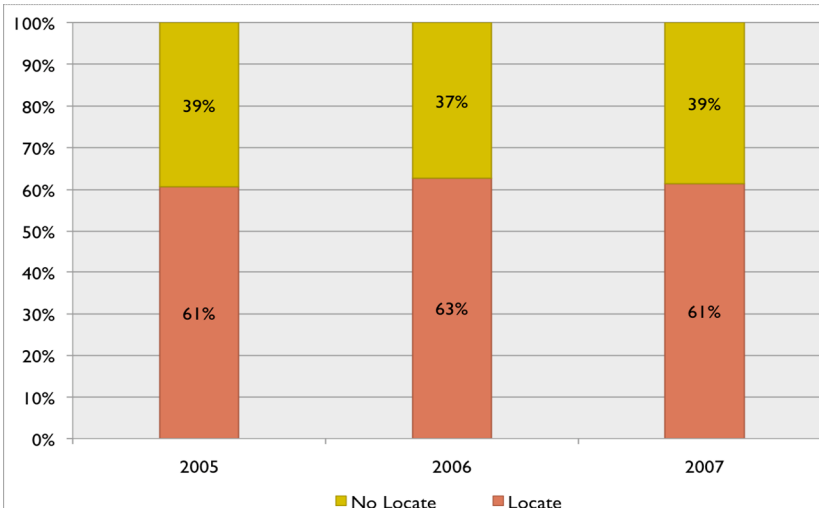


Figure 4 demonstrates the seasonality of damages reported, with events peaking in the summer months, consistent with the construction season in Ontario.

Damages Due to No Locate

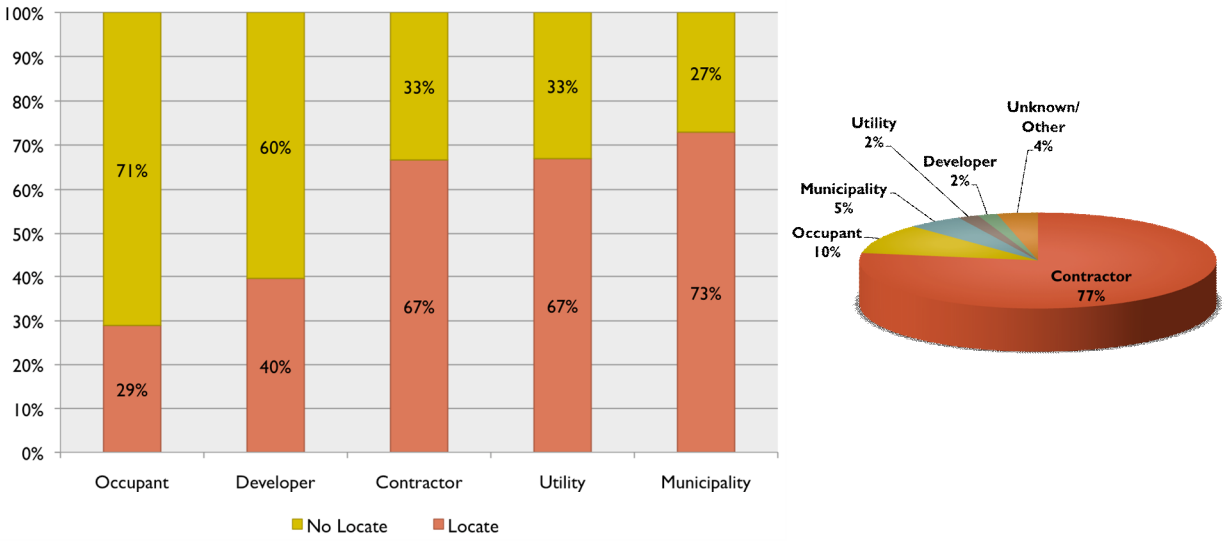
At a high level view, the percent of damages reported where no locate had been requested has been flat during the study period, with non-located damages being 37-39% of the damages reported. However, a deeper look into the no-locate damages by excavator type reveals some differences among the excavator types.

Figure 5: Locate vs. No-Locate Damages 2005-2007



The following demonstrates the breakout of non-located damages for various excavator types for the 2007 calendar year. The contractor, utility and municipality excavator types are at below the 39% ñ2007 system averageò for damages without locates, and these groups represent 84% of damage events (77% contractor, 5% municipality, 2% utility).

Figure 6: Locate vs. No-Locate Damages and Total Events by Excavator Type (2007)



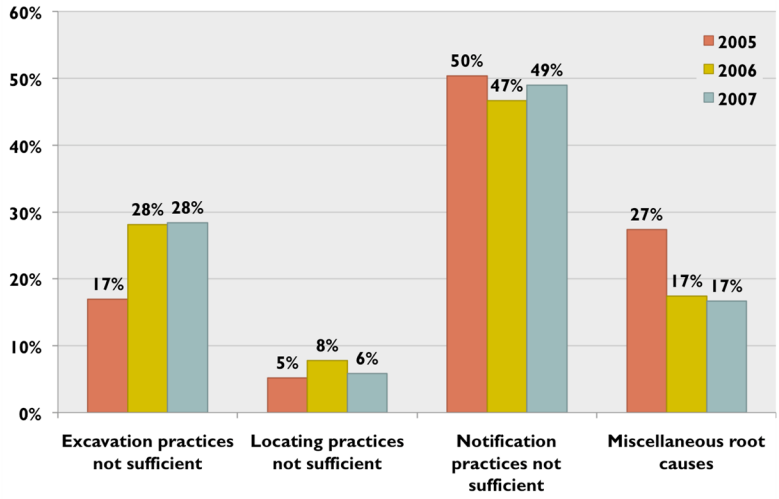
Despite better than average performance of these groups, a no-locate percentage in the neighbourhood of 30% is still high and unacceptable, as these groups are responsible for 84% of the damage events (Contractors highest at 77%) and they ought to be the best players in the industry. Digging is a fundamental part of the work that these entities conduct, and as such there really should be few to no damages resulting from a no-locate situation. These groups are encouraged to improve their performance.

By contrast, no-locate damages represented 60% or greater for the occupant and developer excavator groups. Particularly with Occupants representing 10% of damages, it continues to be necessary to reinforce the ñCall Before You Digò message to the community at large.

Damages Resulting from Other Root Causes

DIRT captures approximately 20 different root cause entries for damage events, as demonstrated in Appendix B. To simplify the analysis, the root cause types have been aggregated into groups as per the following chart.

Figure 7: Aggregate Root Causes for 2007



ñExcavation practices not sufficientò grouping represents a broad set of excavation-based root cause categories. Within this category, ñfailure to use hand tools where requiredò had a sizeable number of events, at 466 events. Another sizeable category with 1189 events was the generic ñexcavation practices not sufficientò, and this appears to be a category selected in many cases where the reporter did not define what specifically the excavation issue was.

Overall, the excavation grouping had a marked increase in total percentage of events, from 17% in 2005 to 28% in 2007. There is a corresponding decrease in the ñmiscellaneousò root cause category in the time period which indicates that data contributors improved their accuracy in describing the damage events.

Through 2005-2007, the Locating and Notification practices categories had fairly flat trends. Approximately 12% of the Locating root cause grouping were issues associated with infrastructure records, and the remaining percentage associated with issues of the locate itself. Changes in the locating industry, such as more rigour in locator training programs could potentially improve the numbers of damages in this category.

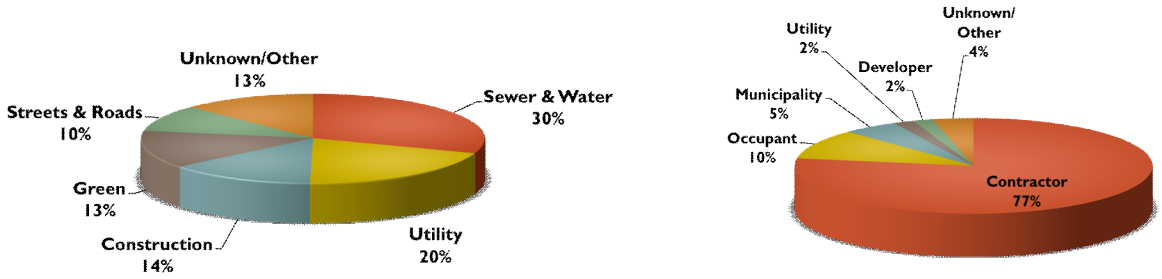
ñNotification practices not sufficientò includes those damages for which no locate was requested, but also includes a generic ñinsufficient notification practiceò category that is not a very definitive descriptor, and appears to be utilized by data contributors as another ñcatch allò category. The miscellaneous category is largely damage events where root cause data was not collected, representing just under a thousand damage events.

Over time, DIRT reporting becomes more widespread and data reporters become more familiar with DIRT input screens, it is anticipated that the miscellaneous categories should decrease in the volume of events and that data reporters will provide more definitive descriptions of root causes.

Who Are the Heavy Hitters?

The following chart breaks down the types of work being completed for 2007 damage events.

Figure 8: Damages by Industry and Damages by Excavator Type (2007)



In addition to describing what percent of damages are attributable to industry and excavators, the two pie charts side by side provide a visual insight on the major role of contractors in industry.

The Green industry represents various types of excavation work for landscaping, fencing, irrigation and agriculture.

The Sewer & Water industry segment is the one accounting for the highest portion of damages, at 30%, and this has been consistent from 2005 through 2007. This segmentation has not varied substantially over the study period, with the exception that the Construction industry has gone from 5% to 14% of damages between 2005 and 2007. However, this corresponds to and is offset by a similar sized decrease in the Unknown/Other category, which has gone from 24% to 13% in the time period, which is an indicator of better classification practices by DIRT reporters.

For each industry root causes were reviewed, and No Locate continues to be the top reason for each of the industry segments varying from 24% for the Sewer and Water industry to 64% for the Green industry.

The second most prevalent root cause in the 2007 data after No Locate was Excavation Practices Not Sufficient, which is consistent with the 28% shown in Figure 7.

The Role of Equipment

In 2007 66% of damage events occurred by backhoe, 18% by hand tools and 7 % by drilling equipment. These percentages are fairly flat year over year in the study period. The root cause category ñfailure to use hand tools where requiredò (466 damages in 2007) is likely linked to the high percentage of backhoe equipment damages, and demonstrates an opportunity for improvement.

Conclusions and Recommendations

In developing concluding statements on the 2005-2007 DIRT information, a corresponding set of recommendations is provided.

	Conclusion	Recommendation
1	Primary contributors of DIRT data were the natural gas, telecommunications and excavator stakeholder groups.	More wide-spread participation by other stakeholder groups is preferable. In as far as infrastructure owners are concerned, perhaps a ñsign-offò list of facility owners can be created to better understand what infrastructure groups could be underreported.
2	Damage events decreased in the 2005-2007 study period.	Continue to monitor this trend.
3	No Locate Damages continue to represent 30-40% of damages.	Continue efforts to promote Call Before You Dig and One Call Legislation to reduce this percentage.
4	DIRT data contributors continue to utilize the ñcatch allò categories for describing excavation, locating and notification practices when describing their damage events.	Additional training to data contributors, as well as in-field staff making the assessments of damage root cause so that the other specific categories of root cause are better utilized.
5	The Green Industry had the highest percentage of no-locate damages (64%) among all industry types. Occupants had the highest percentage of no-locate damages among all excavators.	Improved engagement of the green industry (landscaping, fencing, irrigation and agriculture) and occupants (largely homeowners) through targeted programs or promotion of Call Before You Dig.
6	A large number of damages were caused by backhoe, and many of these were in situations where hand tools should have been used.	Greater training on the appropriate use of hand tools for digging and enforcement of this requirement where dictated by law.
7	There are 3 years of data present in DIRT, some of which may or may not be fully representative. However, trends are starting to emerge.	Continued review and analysis of DIRT information for longer time periods.
8	DIRT is somewhat limited in its description of damage events.	Aspects not well covered in DIRT include: • Number of damages occurring to service lines (private property) versus main lines (public right of ways) • Impact statements of occurring damages, e.g. Number of customers affected or dollar value of repair

Appendix A - Reporting & Evaluation Committee Members 2008

Member	Organization
Chris Flood	Bell Canada (Co-chair)
Biké Balkanci	Enbridge Gas Distribution (Co-chair)
Cora Cheng	Enbridge Gas Distribution
Adrienne Clarke	AECON Utilities
Ron Gibbon	Region of Niagara
Brad Gowan	G-Tel Engineering
John Harris	Union Gas Limited
Wendy Lebskin	CGI
Ian Mitchell	Hydro One Telecom
Dwight Reid	Technical Standards and Safety Authority
Bill Welch	Hydro One Networks

Appendix B – Root Causes for 2007 Damages