

Report Provides Insight Into Utility Damage

by Jeff Griffin ■ Senior Editor

The primary cause of accidental damage to underground utility infrastructure is failure to provide notice of intent to excavate prior to beginning excavation and other ground-penetrating construction activities, says a Common Ground Alliance (CGA) statistical study released at the end of December.



The report, based on information gathered by CGA's DIRT (Damage Information Reporting Tool) program, analyzes information about utility damage hits and near misses that occurred in 2005, and were submitted to CGA through its DIRT program.

Leading root causes of utility events that year were:

- 1) Notification practices not sufficient, 33.7 percent (16,098 incidents);
- 2) Locating practices not sufficient, 11.1 percent (5,746 incidents);
- 3) Excavation practices not sufficient, 22.2 percent (11,457 incidents);
- 4) Miscellaneous root causes, 6.7 percent (3,438); and
- 5) Data not collected to identify root causes, 26.3 percent (13,582 incidents).

The first two categories – insufficient one-call practices and insufficient locating practices – accounted for 44.8 percent of the incidents.

When reviewing results of the DIRT report, it is important to keep in mind that the information was submitted primarily by utility owners, in itself a remarkable achievement. Because of liability issues and the potential of costly litigation, parties involved in utility hits always have been reluctant to provide such information.

The CGA DIRT program has attempted to defuse that issue by assuring confidentiality of information provided. That credibility of the confidentiality of the program appears to be clear – 2005's report is based on 51,600 incidents of hits and near misses of buried utilities, more than double the number of incidents reported the previous year (see additional information on how DIRT reporting works in story sidebar).

Data increasing

The number of hits has increased significantly over the last two decades and has ac-

celerated as utility easements become more crowded and old pipe and cable is repaired and replaced, and new infrastructure is placed underground.

Clearly action was needed to reverse the trend. But before solutions can be found to solve any problem, it helps to know and understand what is causing the problem.

Lack of information about the causes of utility strikes has hampered development of effective damage-prevention programs. Only a few states and individual one-call centers have maintained records that include utility strikes and, until CGA took on the task, there had been no effort to establish a national database that could help develop effective measures to reduce the number of utility hits.

CGA's three-year-old DIRT initiative has the ambitious goal of gathering information no one wants to talk about or share, and ultimately develop a national database that identifies trends that can be used to develop programs to significantly reduce utility hits.

To get DIRT started, CGA entered into an agreement with the Utility Notification Center of Colorado (UNCC), the state's one-call agency that already had a reporting system in place and which was based on CGA's Best Practices for avoiding damage to buried utilities. Under the agreement, CGA modified the UNCC program to collect data on a national basis and later expanded to include Canada.

The full 2005 DIRT report and a shorter executive summary can be downloaded from the CGA web site, www.common-groundalliance.com.

When reviewing the report, it is important to understand what it is and what it is not.

First, the information on which it is based was submitted voluntarily. It does not represent all utility service providers in all sections of the country. Also, not all participants submitted complete information – 26.3 percent of the data submitted did not include information about root causes.

In a letter written regarding the release of the 2005 DIRT report, CGA President Robert Kipp notes there are an estimated 680,000 incidents of damage to the underground utility infrastructure in the United States every year. The most-recent DIRT re-

DIRT

How DIRT Works

DIRT (Damage Information Reporting Tool) is a secure web application for reporting and collecting information about damage to underground utilities (facilities in DIRT terminology).

Sponsored by the Common Ground Alliance (CGA), DIRT allows utility service providers, government agencies, contractors and others with a stake in preventing damage to buried pipe and cable to submit damage and near-miss reports to be used to develop programs to protect underground infrastructure.

A key to the success of these programs is that information provided is confidential and records do not document the sources providing the information, preventing data from becoming a part of litigation seeking damages as a result of accidents. Data is housed in a secure location with a comprehensive back-up system and recovery plan.

Data is submitted through the secure web application at www.cga-dirt.com. New participants in the program complete a short registration process and enter a unique user name and password to access the system.

Data is entered directly by completing an on-line form for each incident, utilizing an automatic data loader to input data that already conforms to DIRT specifications, or using DIRT's optional universal front-end loader which helps map information to DIRT specifications for uploading. Summarized information can be found on the CGA/DIRT web site: www.cga-dirt.com.

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port includes information on 51,600 events that occurred in the U.S. and Canada.

Progress

However, from no information in 2003, the DIRT program has made rapid progress. Data submissions for the 2005 report doubled those for the first DIRT report covering 2004, and Kipp says data being collected for 2006 is "even more promising."

In reading the report, keep in mind that facilities is CGA's all-encompassing term for every type of buried utility lines. Excavation represents any soil-disturbing activity: excavations of any kind, trenching, plowing, horizontal directional drilling, auger boring, etc. A stakeholder is any organization, public or private, or individual with a stake in reducing damage to underground facilities.

The 2005 DIRT report includes information from stakeholders in 45 U.S. states and one Canadian province. The natural gas stakeholder group submitted approximately 63 percent of the records and the telecommunications industry about 22 percent. Collectively, underground facility owners/operators submitted information on 91.2 percent of the incidents; state regulatory agencies submitted 4 percent; and excavator, locator, road builder, insurance and other groups submitted 2.8 percent of event information.

Stakeholders reported backhoe/trackhoe equipment was involved in 28.2 percent of events; hand tools, 7.4 percent; trencher, 3.6 percent; auger, 1.8 percent; and grader/scrapper, 1.8 percent. However, equipment was not identified in 55.2 percent of events reported.

Categorizing type of work performed when events occurred shows: sewer accounted for 7.7 percent of events; water, 5.3 percent; landscape, 5 percent; electric, 4 percent; roadwork, 3.2 percent; fence, 3.1 percent; and telecommunications, 2.8 percent. The remaining 58 percent was reported in unknown/other or data not collected categories.

Further, the study recognizes that damage to a utility doesn't necessarily occur on a project for that class of utility – that is telecommunications cable can be cut by a landscape crew, a gas line struck during sewer construction, etc.

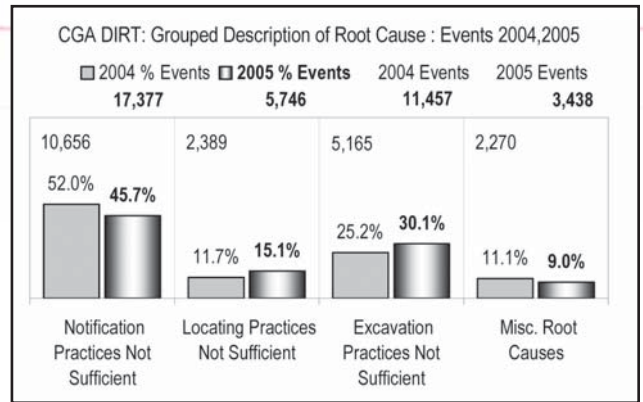
Steve Blaney, utility supervisor, New York State Department of Public Service, is co-chairperson of CGA's Data Reporting and Evaluation Committee, and he recently offered his observations regarding the latest DIRT report.

Have "failure to notify" statistics improved from the 2004 report?

Steve Blaney: Yes. Answers of 'yes' to the question 'Was the One-Call Center Notified?' increased from 51.9 to 56.6 percent in 2005 compared 2004. From root cause data, the 'No notification to One Call Center' responses decreased from 50.9 to 42.3 percent. And keep in mind these numbers are based on the voluntary reports.

Have statistics about other causes changed?

Blaney: The percentages did shift a little (please refer to accompanying chart). Keep in mind they always have to add to 100 percent, so as the percentage of notification practices 'insufficient' goes down, the percentage of locating and excavation practices goes up.



Reports of incidents to DIRT doubled over the previous year. Do you believe the incidents accurately represent national figures?

Blaney: Our statistical consultant, Dr. Susan Aref, advises that we can't say that the data represents national figures with any statistical validity. One factor is that this data is submitted voluntarily, so it's not the same as a random poll such as those conducted during elections. She did perform an estimate of the total number of damages in the U.S., based on statistical data, and came up with about 675,000. We received 51,600 reports. They were not evenly distributed across the U.S. and Canada and were not submitted proportionally for plant in the ground by affected facility operation types. My personal opinion is that looking at it from a big-picture, high-level point of view, the data for root causes, excavation equipment, type of work, type of excavator, is probably not too far off. Although there may be more significant variations if you try to focus in on smaller geographic areas.

Directional drills are widely thought by many to be a primary cause of utility hits. Has HDD been added as a category?

Blaney: For type of excavation equipment, the options include bore, drilling, and directional drilling. Figures reported were for 0.9 percent, 0.2 percent, and 0.5 percent, respectively.

What about industries with low reporting rates? The report says education is the key to participation. What's being done?

Blaney: We are constantly trying to spread the word about the DIRT tool. We have a marketing task group within the committee that works on developing materials. The committee has primary stakeholder representatives for the various stakeholder groups, and they are encouraged to spread the word among their groups. We are making progress but it is an uphill climb. We also believe that when people see our annual reports, they will see how the data is being utilized, possibilities for how it can be used to promote damage prevention, and that we are respecting our commitments to confidentiality. Hopefully, more stakeholders will recognize the value of reporting, misgivings about reporting will be overcome, and they will start contributing data.

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What's in store for DIRT in the coming year?

Blaney: As for the tool itself, we've made a number of revisions to the data fields the last few years. The committee wants to keep it stable now so that stakeholders are not constantly having to revise their field investigations. Our goal is to gather ideas for potential changes, evaluate them, and release revisions on a two-year cycle.

Our software developers are working on some things that will make the tool more useful for reporting entities. One is called Virtual Private DIRT, whereby organization will be able to set up web sites with their customized look, add additional data fields that are unique to them and use that as their individual damage databases. They are also working on improvements to the Query Wizard which allows users to generate reports of their own data. The improvements will allow querying and reporting on multiple fields at once, rather than the current two-field capability like X and Y axis reporting.

Based on analysis of data in the survey, the report writers drew several conclusions. In summary, they include:

- Education is a key to reducing damage to underground facilities, and damage prevention awareness programs are necessary and should be directed to the general public, professional excavators and facility owner/operators;

- Excavation education and training should target contractors, facility owners/operators, personnel of government organizations who perform excavation and to other job-site personnel;

- Best Practice locating and marking education and training programs should be directed to contract locators and government facility locating personnel;

- Root cause data analyzed suggested that some types of facilities incurred a much larger number of events than others under certain circumstances of root cause, combined with type of excavation equipment or type of work being performed. For example, 65 percent of the natural gas facility events for the excavator group occupant/farmer had a root cause of no notification made, while the contractor/developer submitted 35 percent in no notification made for natural gas facility events; and

- Stakeholders did not provide a significant portion of requested data about many of the incidents they submitted. Providing complete and accurate information on all fields will provide the most value in data analysis in future reports.

FOR MORE INFORMATION:

CGA DIRT:
Common Ground Alliance,
(703) 836-1709,
commongroundalliance.com.

About The CGA

The Common Ground Alliance (CGA) is a nonprofit organization that defines its purpose as ensuring public safety and protecting the environment and the integrity of utility services by promoting effective practices to prevent damage to underground pipe and cable.

Based in Alexandria, VA, a small, paid staff coordinates programs that depend on unpaid industry volunteers for their success. Indeed, CGA's shared-responsibility approach to implementing recommendations of the Common Ground Study is credited by President Robert Kipp as a primary reason for the considerable progress CGA has achieved in a relatively short period of time.

Kipp says the CGA and Common Ground Best Practices is recognized and accepted by all stakeholders for developing and implementing effective programs for preventing damage to underground facilities.

The Common Ground Best Practices Study has become the standard for buried facility damage prevention initiatives for the National Transportation Safety Board. Many states have revised one-call legislation to comply with Best Practice recommendations.

These accomplishments and others have happened in a relatively short period of time. The Common Ground Study, authorized by the Transportation Equity Act for the 21st Century (TEA 21), was published in August 1999. CGA's first board of directors meeting was in September 2000.