



## Editorial

>> Marc Cheves, LS

www.amerisurv.com

2010 Vol. 7 No. 4  
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*The American Surveyor* (ISSN 1548-2669) is published monthly by Cheves Media LLC. Editorial mailing address: 905 W. 7th St., #331, Frederick, MD 21701. Tel: (301) 620-0784.

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Subscriptions prices in the U.S.: Free for qualified professionals. Canada: 1 year \$56.00 US; international subscriptions \$72.00 per year (Airmail), U.S. funds prepaid. Back issues (subject to sufficient stock) are available for \$4.95 + S/H.

New subscription inquiries and all other address changes should be sent to *The American Surveyor*, P.O. Box 4162, Frederick, MD 21705-4162. Fax: 301-695-1538. Subscribe online @ [www.amerisurv.com](http://www.amerisurv.com)

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# Having the Right Tools

**E**arthquakes, blizzards, floods, tornadoes, erupting volcanoes, an oil spill in the Gulf of Mexico, financial and economic instability, political upheaval and thwarted terrorist plots—the theme song for the first half of 2010 could well be “Whole Lotta Shakin’ Goin’ On.” USGS records show that since 1900, an average of 16 earthquakes of magnitude-7 or greater have occurred worldwide each year. While their devastating effects vary greatly according to population centers, statistically speaking, there don’t appear to be more earthquakes than usual.

The FEMA website maintains a page titled “Declared Disasters by Year or State.” At the time of this writing, major disasters resulting from weather had been declared in 28 states across the country.

Tennessee is one of the states on the list. Between the time that we visited with Clifton Ogden at Civic Engineering & Information Technology in Nashville, (the subject of this month’s cover feature) and the time of publication, Civic employees and businesses across the middle portion of the state were forced into high gear.

Throughout the weekend of May 1st, 2010, Nashville experienced the greatest 24-hour rainfall ever recorded. Most areas experienced inundation only predicted during a 500-year event. Nashville’s Grand Ole Opry, County Music Hall of Fame, NFL Titan’s Stadium, as well as a significant portion of downtown Nashville were under water for days as the Cumberland River crested at more than 50 feet (typical flow is 15 feet).

While the rise of the Cumberland River caused severe inundation flooding, it was the flash flooding of local streams and creeks that caused road and culvert washouts and severe undermining across Nashville and Davidson County. Ogden and his team found themselves working until midnight every day as Civic assisted Metro Nashville with emergency safety assessments, the organization of inspection data, and what was referred to as “infrastructure triage”—where bridges, culverts and roadways were inspected and closed for safety or patched and cleared to be reopened. At the peak of the disaster, 115 roads were closed due to infrastructure failure. Amazingly, within one week Metro Nashville Public Works had performed emergency repairs and reopened all but five of the roads.

Additionally, Civic assisted Metro in the determination of the water levels at various locations throughout downtown. Because the waters receded rather quickly, “pumping wars” occurred as basements of these large buildings—some with more than 40 feet of water, equating to millions of gallons—were simultaneously pumped out in the downtown streets. This was potentially creating a second flood for neighboring businesses. Measurements had to be taken periodically to compare orthometric elevations of water levels in local areas with the USGS river gauge elevation on the Cumberland River to verify that the stormwater system was able to handle the water from the basements.

## A Profession or a Trade?

For the most part, Clifton Ogden’s company has fared well during the current recession by diversifying its services. In this issue, surveying Professor Dave Gibson states his case for surveying education. While I agree with his position, there is no getting around the importance of OJT, mentoring, and apprenticing to learn boundary surveying and how to examine evidence. Sure, there’s a huge amount of book learnin’ that can and should be done in a classroom setting. But there’s no replacement for having been on the ground. *A*