

Record-breaking flood 'epic'

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MARIETTA - On Thursday, the U.S. Geological Survey confirmed the prediction of a Marietta land surveyor - that this week's tumultuous flooding is record breaking.

"The USGS can reliably say just how bad these floods were. They were epic," said Brian McCallum, assistant director for the USGS Water Science Center in Georgia. "We have all witnessed the devastation caused by these floods, but now we can quantify it," he said.

On Tuesday, crews measured the flow on Sweetwater Creek near Austell at 28,000 cubic feet per second, or, according to the USGS, the "greatest flow ever recorded." According to the USGS, "The flooding around Atlanta this week is one for the record books. The rivers and streams had magnitudes so great that the odds of it happening were less than 0.2 percent in any given year. In other words, there was less than a 1 in 500 chance that parts of Cobb and Douglas counties were going to be hit with such an event," which is often referred to as a "500-year flood." The USGS uses its "streamgages", such as those at Sweetwater Creek, to obtain long-term records, which are used to determine the magnitude of floods. McCallum said the record-breaking flood "far exceeds" the flooding caused by Hurricane Dennis in 2005.

That's not news to Marietta-based GeoSurvey, Ltd. President and CEO Trent Turk, who wrote a dissertation about the floods and Clarkdale Elementary before the USGS released its reports. In which, he writes, "I think we will find out in days to come that this flood will break all records available for Cobb County." Clarkdale Elementary is about a mile north of Sweetwater Creek and was nearly completely under water on Tuesday. It has since been called a "total loss" by officials. Turk, a registered land surveyor, notes that FEMA flood maps indicate that the school is located in an area called "Zone X," which means "it had a 0.2 percent annual chance of flooding. Translated in terms of years, that means a flood would likely occur once every 500 years," he writes. "But, they had water up to the ceilings. My take is this was actually an even more rare flood occurrence than 1 in 500 years, considering it reached as high as it did." Turk added that he only used the Clarkdale school as a "point of reference." "The entire basin would be affected similarly. The water travels without regard to the property lines," he said. "The record flood could be attributed to development in Cobb. As Turks notes, Clarkdale Elementary was built in 1962. "Back then, there were relatively few impervious areas (rooftops, driveways, roads, parking lots, etc.). As we add more and more impervious areas, the flood plain continues to move up, since the water runs off more quickly to the floodways instead of soaking into the ground. Just imagine," Turk writes, "how many roads and other impervious improvements have been built since 1962 in this area."

Cobb Chairman Sam Olens said, when the county does recover from the recent flooding, one question will be whether officials allow rebuilding in flooded areas.

The USGS maintains a network of more than 300 streamgages, which are used by officials for a number of purposes including safety and forecasting. McCallum said the recent findings by the USGS "just highlights the need for these gages and the value of long-term records." He said the streamgages are relayed to the National Weather Services, which uses them in forecasting models.

"Forecasters use this to warn people to get out of the way," he said. A map of gages and graphs for the last seven days are available on the USGS Web site, www.usgs.gov.

Turk posted his dissertation on his facebook page at 9 a.m. Thursday, but the page is not accessible to everyone. Therefore, he said he will place it on his company's public Web site, www.geosurvey.com, this morning.

Other flow measurements the USGS reported Tuesday in the metro area include:

On the Chattahoochee, a 1 percent chance exceedence (100-year) flood at Vinings and Roswell;

The Yellow River streamgages in Gwinnett, DeKalb and Rockdale counties, between the 1 percent chance (100-year) and 0.5 percent chance (200-year) flood magnitude;

At Peachtree Creek in Atlanta were only near the 10 percent chance (10-year) flood magnitude, but the backwater effects from the Chattahoochee River pushed water levels over the 0.2 percent chance (500-year) flood at the gage location.

Since "500-year," "100-year" and "10-year" floods are based on percentages, it is possible, although rare, for two 500-year floods to occur even within weeks or months of each other officials say. Such was the case with the flooding caused from Hurricane Dennis in 2005. That was also called a 500-year flood event, McCallum said.