

Computer catches before-and-after scene, data

By Kenneth Kesner, Times Staff Writer

'Virtual Alabama' handy tool to put pieces back together

Chris Johnson is in her office at the U.S. Space & Rocket Center, a colorful Earth in space on her computer monitor. With a few keyboard clicks and mouse movements the globe turns and she is zooming quickly, smoothly, down from orbit to the United States, her screen filled by the Southeast, then Alabama, then Coffee County and, finally, by a house and yard in Enterprise.

She clicks on a slider at the side of the image and, as she moves it to the right, the house disappears, leaving only a foundation and scattered debris behind. The screen now shows that same bit of Enterprise in the immediate aftermath of the March 1 tornado that killed eight students at the high school and destroyed many homes.

Johnson moves the computer's cursor over the area and a box pops up with information about the lot or parcel number, the property owner's name and data from the Coffee County tax office and other agencies.

"Initially, for response and recovery, it's very helpful if they have these land ownership records," said Johnson, vice president of Geospatial Technologies at the Space Center.

She's demonstrating "Virtual Alabama," a powerful 3D visualization tool being made available for free to governmental agencies by the Alabama Department of Homeland Security.

In Coffee County, just a day after the disaster, recovery teams were using wireless-equipped laptops and other computers to connect to Virtual Alabama and help the Federal Emergency Management Agency, the National Guard, cleanup crews, utility and insurance companies, property owners and everyone else on the scene.

"It can show you what you've got; it can show you what you had," said state Homeland Security Director Jim Walker. And it can do much more.

When he first saw a demonstration of the technology, Walker also saw that Virtual Alabama offers many services.

An authorized user with the required software can log into Virtual Alabama, "fly" to an area and, depending on the level of participation by agencies there, zoom, click and look at property ownership, see where gas pipelines and other utilities run, know the precise status and location of emergency vehicles and resources in an area and even, in some cases, get a live view from cameras on emergency vehicles.

Basically, Virtual Alabama takes two-dimensional images from space, aerial surveys and other sources and wraps them onto a computer-generated three-dimensional globe. They are constantly updated as new images are available, and they are combined with layer upon layer of data provided by the participating counties, cities and agencies.

Anyone who has seen the Google Earth maps and imagery used by CNN, Fox and other TV networks knows what this looks like. Johnson said the state is working with Google and is even using a special version of Google Earth software for the project, but pointed out that Virtual Alabama is working at much higher resolution.

"We're building our own world," Johnson said. "We are the first state to do it."

"It accentuates the art of what's possible," Walker said Friday. He can envision a time when areas of Virtual Alabama are open to public use and someone could, for instance, use cameras mounted in state parks to check on views, weather conditions or to help them pick a campsite for the family.

But that's for the distant future. Johnson, also project manager for Virtual Alabama, said participation in the program is voluntary, but everyone who sees a demonstration is ready to join. It's only been up and running for six months and her goal is to have half of Alabama's counties participating by the end of March. She hopes to have the whole state involved, at some level, by late September.

Johnson was attending a meeting in Washington, D.C., when the tornado hit Enterprise. Her immediate thought was to get back to Huntsville and get to work.

"We knew that Coffee County's data wasn't in there yet, and it was going to be needed," she said.

She quickly secured permission from county officials to have their property tax and title data sent to Huntsville. A company that had taken aerial survey photos of the county in 2005 was able to provide that imagery and, within a day of the disaster, the recovery teams on the ground in Enterprise could tap the information over an Internet connection.

Later, when the Civil Air Patrol had taken post-tornado photographs, those were layered in as well.

"We were very pleased to be able to provide the data the Huntsville people requested," said John Brim, of the Coffee County mapping office. "Within 10 hours of when we'd given them the data, they had it processed and it was turned over to FEMA and the National Guard."

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