



SUCCESS STORIES



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Virtual Alabama School Safety System: Using Technology to Bolster Emergency Planning, Response, and Recovery

Over two turbulent weeks in April 2011, 122 tornadoes hit the state of Alabama, killing 247 people and devastating entire communities. Throughout the response and recovery period that followed, however, first responders were able to improve their efforts by using a unique statewide digital mapping system to better view the extent of the damage. Within 36 hours following the tornadoes' impact, the mapping system provided both "before" and "after" pictures of the 40 affected counties, including pictures of hard-hit Tuscaloosa schools where emergency management personnel could see the extent of the destruction, such as the demolition of an entire school building. Thanks to a combination of state and federal funding, the schools across Alabama had recently been mapped into this system through a project known as the Virtual Alabama School Safety System, or Virtual Alabama. The images were used by the Federal Emergency Management Agency (FEMA) and first responders to see the storm damage firsthand, and as a result, enhance their response and recovery phase efforts.

This issue of *Success Stories* describes the features of the Virtual Alabama School Safety System (VASSS) and the process undertaken by the partners involved to develop and implement the program. This document also provides information for local education agencies (LEAs) and institutes

of higher education (IHEs) interested in exploring or executing similar emergency management strategies.

About the Practice

Virtual Alabama is a program that synthesizes existing digital imagery and infrastructure data into three-dimensional maps for the purpose of facilitating emergency management. Originally created from efforts of the Alabama Department of Homeland Security beginning in 2005, this tool was adapted more recently for use in school emergency management planning. VASSS is based on the platform of Virtual Alabama, but is tailored for schools' emergency management planning. The program provides visual layers of information that can be extracted and displayed per user interest. For school safety plans, it maps the placement of 37 different elements, such as hazardous materials, evacuation routes, disaster staging areas, and video cameras, into the Virtual Alabama visualization tool.

Schools and universities have the ability to update their own plans within the system, creating digital versions with comprehensive floor plans of each building, and even enhanced with photos and videos. The end result is a school safety plan enhanced with comprehensive virtual mapping of key risk-related elements. With password access, school personnel, first responders, and even relevant collaborative partners have the ability to utilize this school safety planning visualization tool in a variety of ways.

The benefits of VASSS are numerous. For example:

- Virtual school safety plans can be easily shared with first responders and other relevant collaborative partners.
- Schools regularly update their school safety plans, per an original directive from the governor in 1999, and based on recommendations by the Alabama Department of Education. Being able to do so digitally is faster, cheaper, and more effective than making updates to hard copy plans.
- The system can be used as a tool to respond to and learn from actual disasters as well as to ensure emergency management plans are as practical and efficient as possible.

Lamar Davis, senior project lead with Auburn University at Montgomery's Center for Government and Public Affairs, and project manager for the Virtual Alabama School Safety System initiative, saw the system's greatest benefit as being that it allows schools to share their plans with first responders, and enhances emergency management across all phases, enabling what he described as "robust collaboration." Plans that are virtually installed in the system can be pulled up and reviewed at any time. An entire K-12 district, for example, has the ability to look at each individual school's safety plans at once (see text box).

VASSS in action for K-12 schools: *First responders recently gathered with LEA representatives in an Alabama school to review the school's plans for a fire drill and evacuation. Using virtual tools to project a map of the school onto a screen, first responders were able to visually show how the drill evacuation meeting site was too close to the fire hydrant that would be used by firefighters during an actual fire. All parties who participated in the meeting were able to agree upon a new evacuation meeting site, and the virtual plan was updated during the meeting. With this kind of technology, the plan was assessed and an issue was collaboratively identified and corrected on the spot.*

VASS in action for IHEs: *At the Auburn University campus, over 100,000 visitors come to the campus on any given weekend for fall football games. With the Virtual Alabama School Safety System, the university can map alternate routes for spectators to use to evacuate the stadium if something were to happen. There are also digital applications ("apps") in development that will feed back into the system, allowing students with an iPhone or iPad to link into the safety plan and let them know, based on their campus location, where the closest shelter is located, or the fastest evacuation route.*

Another unique benefit of the system involves the use of security cameras; first responders and dispatchers can actually view live school camera feeds. With the VASSS capabilities, security cameras provide first responders an inside look into events happening in school buildings in real time, or the ability to review footage of past events. If the cameras have a DVR, these feeds can be viewed over the Internet, from anywhere, by anyone with security access. "Even if a police officer is in his car, he can look at the camera as he's responding to the scene," said Davis. In rural areas of the state, where law enforcement departments are relatively small, Davis explained, these cameras can be as beneficial as having extra staff or first responders responding to an incident. In addition, users can use video created by the cameras to gather more information about incidents or to incorporate lessons learned into exercise scenarios, plan revisions, and the like.

Overall, the VASSS project has been such a success, explained Davis, that the Alabama State Department of Education passed a resolution in April 2011 sanctioning the products of this virtual planning system as their school safety plans of record, and requiring all schools to complete their plans online.

Success Through Partnerships and Training

Four partner agencies support the use of this system. These include: the Alabama Department of Homeland Security, which is the proponent of the overarching [Virtual Alabama program](#) and is the sole funding source for Virtual Alabama, and the Virtual Alabama School Safety System, one of its component parts; the Alabama Criminal Justice Information Center, which provides the servers that store the data; the Alabama State Department of Education, which provides subject matter experts and collaborative points of contact for school safety and emergency management planning; and the Alabama Supercomputer Authority, which provides all schools and universities with their Internet connectivity and the control cameras within most schools.

Hands-on training on how to use the VASSS has been delivered by project staff to all 134 Alabama school districts (currently, over 3,200 school personnel have been trained). Online training and instructional videos for first responders and school officials have been developed and are now online to assist any school with training. To use the system proficiently, said Davis, only approximately 90 minutes of training are needed. “We’ve trained football coaches, librarians, and even students on the system. We want it to be as user-friendly as possible.” All that is needed to access the system is a computer with Internet access.

Once the state framework is in place, a school’s designated administrator (e.g., the safety coordinator) receives a password and can then be the one responsible for inputting and updating or editing their school’s safety information. “It is a very simple process,” says Davis. “They go to the website that is school-specific for them, pull up their school’s floor plan, and start entering data. They can only see their own school’s information, and being able to annotate in the system is as easy as

‘dragging and dropping,’” Davis explains. Once complete, the administrator exits the system and pulls up the new, completed plans through the Virtual Alabama platform.

Overcoming Challenges

One of the challenges first faced when implementing the system, according to Davis, was communicating with schools on the role of the system and the value it can offer. The system was developed from scratch, Davis explained, and once they began approaching schools about putting cameras, floor plans, and school safety plans online, they faced initial apprehension from school personnel about privacy concerns. “We had to assure them that this is a secure site, and that no one can view it without expressly being given permission—that’s why we created the system so district superintendents would be the ones to control all the access, usernames, and passwords.” Once that was understood by the schools, they were on board with the system.

The Virtual Alabama School Safety System was created from scratch by Davis’ group from Auburn University at Montgomery. Technical issues arose in the beginning of the project related to managing the database, determining how the system would be accessed, and maintaining updated links to camera feeds and planning materials. Schools were tasked with verifying the accuracy and operability of their entire plan’s internal links, and notifying Davis’ group if a link was broken or wrong. “We bit the bullet and worked out all the bugs and went through all the heartache,” said Davis, “so it would be much easier for another state to replicate this.”

Also important, Davis recommended, is securing buy-in from partners early on in the implementation process, and effectively explaining to them how the system will benefit them. “When we said it was a secure online system where you don’t have to print out your

school safety plans, they were really excited,” he explained. “They’ve been looking for this for a long time.”

Replicating Success

Other states or school systems interested in implementing a system like the Virtual Alabama School Safety System are invited to use the system and lessons learned from Alabama to make their task easier. “We want to share it.” said Davis, “There’s no reason to reinvent the wheel—partner with us to help you get that program off the ground.”

Recently, the Virtual Alabama Team at Auburn University at Montgomery conducted an exercise using the VASSS Headland High School in Alabama to demonstrate the system’s usefulness in an actual emergency (a hostage scenario was utilized). This exercise was filmed to demonstrate the power of the VASSS for schools. The video of this exercise can be accessed at <https://virtual.alabama.gov/Support.aspx>

For More Information

Link to PowerPoint presentation *Improving Emergency Planning, Response and Recovery with Virtual Alabama*, presented at the EMHE FY2010 Final Grantee Meeting in 2011, is on the REMS TA Center website at http://rems.ed.gov/docs/FY10EMHE_FGM_ATGA_ImprovingResponseRecovery.pdf

Link to the presentation *Virtual Alabama School Safety System*, presented at the REMS FY2010 Final Grantee Meeting in August 2011, is on the REMS TA Center website at http://rems.ed.gov/docs/FY10REMS_FGM_NHMD_VirtualAlabama.pdf

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The REMS TA Center was established in October 2007 by the U.S. Department of Education’s Office of Safe and Healthy Students (OSHS), *formerly the Office of Safe and Drug-Free Schools (OSDFS)*. The center supports schools and school districts in developing and implementing comprehensive emergency management plans by providing technical assistance via trainings, publications, and individualized responses to requests. For additional information about school emergency management topics, visit the REMS TA Center at <http://rems.ed.gov> or call 1-866-540-REMS (7367).

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