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Contents

FEATURES
16 ON THE COVER
Weathering the Storm
Torrential rain and flash flooding tested Boulder, Colo.’s preparedness and mitigation initiatives, but lessons from previous disasters kept the community afloat.

26 Boston Social
Experience with social media played a key role in the response to the bombings and other crises.

30 Cyberattack
The possibilities emergency managers need to consider.

DEPARTMENTS
TECHNOLOGY AND TRENDS
36 Raising the Bar
Utah collaborates to develop a multi-node, IP-based 911 call handling solution.

38 The One-Person Shop
Most rural emergency managers lack resources and staff but still must prepare for the worst.

Weathering the Storm
Torrential rain and flash flooding tested Boulder, Colo.’s preparedness and mitigation initiatives, but lessons from previous disasters kept the community afloat.

Boston Social
Experience with social media played a key role in the response to the bombings and other crises.

Cyberattack
The possibilities emergency managers need to consider.

Raising the Bar
Utah collaborates to develop a multi-node, IP-based 911 call handling solution.

The One-Person Shop
Most rural emergency managers lack resources and staff but still must prepare for the worst.
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A California school will be among the first to deploy a gunshot monitoring system.

The Sandy Hook school shooting prompts legislating to collaborate.

CAMPUS SECURITY

DEPARTMENTS CONTINUED

43 Legislating School Safety
The Sandy Hook school shooting prompts Louisiana to require schools and law enforcement to collaborate.

TECHNOLOGY AND TRENDS

44 Gunshot Detection on Campus
A California school will be among the first to deploy a gunshot monitoring system.
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I was in the fire service for over 15 years. I am now an emergency planner and working on my fire and emergency management degree. I found this article to be a great read. I agree that having a person with field experience and a degree to be more marketable than a person with just one of those assets. I have a different outlook than I did before due to the education I am receiving. Kudos to all the educational facilities that offer programs for emergency management.

— HG in response to The Job Market in the November/December issue

I have 30 years of field experience in emergency services and a master’s in emergency management. I agree that the best candidate is the one with both field experience and a degree to go along with it. Separately both provide important skills and knowledge but when combined, the profession gains a well-rounded and effective practitioner.

— Bob Heintzelman in response to The Job Market in the November/December issue

I have 30 years of law enforcement experience in Southern California. We have had lots of emergencies. I wrote a bachelor’s and master’s degree curricula in emergency management. My experience shows most companies will not hire anyone who knows more than the person who will be in charge of them.

— Loren Zimmerman in response to The Job Market in the November/December issue

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— Loren Zimmerman in response to The Job Market in the November/December issue

There is a problem with police officers and firefighters trying to enter a new career field as emergency managers — they are not qualified. Being a first responder makes you a “response” expert only. Emergency management is 5 percent or less about response, and primarily about mitigation, disaster recovery, writing comprehensive emergency plans, coordinating grants, and training in every aspect of the emergency operations center, and those skills take about 10 years on average to perfect.

— TB in response to The Job Market in the November/December issue

I tell you straight up that education means absolutely nothing. If a person, like me, has no paid experience in the emergency management field, you’re not getting a job. Look at Facebook, other blogs, and you’ll see thousands of people making the same comment. You can’t get a job in the field without experience, but you can’t get experience without a job. I’ve seen “entry” level positions requiring 10 years of experience. I think they misunderstand the definition of entry level. I’ve got an A.A. in general studies, B.A. in homeland security and a class from an M.A. in public administration in disaster management. For more than three years, I’ve not even had a call back on one application.

— Bryant Dillard in response to The Job Market in the November/December issue

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After the Columbine massacre, law enforcement changed its strategy to a more aggressive one where the first officers on the scene of a shooting immediately move to confront the shooter, instead of waiting, as was the approach previously. At Columbine High School, police waited a half-hour for SWAT to arrive before entering the school.

And now, medical personnel are following suit and not waiting for the scene to be cleared before entering. The approach has and will save lives. During a shooting at a Sparks, Nev., middle school, a paramedic donned a bulletproof vest and a helmet and entered the fray seven minutes into the chaos and before the shooting had ended to look for victims. He found two and got them to ambulances.

That approach, one that experts think will save lives by getting wounded patients out of the line of fire quicker, will occur more often per new FEMA guidelines released in September. According to a New York Times report, medical experts studied the Boston Marathon bombing and several mass shootings and found that sending first responders into “warm zones” to help bleeding victims will cut down on deaths.

First responders are to be accompanied by police and wear body armor. Although the events themselves are usually over in minutes, it can take an hour or more to get victims stabilized by medical personnel. The report said the U.S. military has saved thousands of lives in recent conflicts by responding quickly in combat, and that many lives were saved after the Boston Marathon bombings because of the immediate medical attention given to victims.

Another recent report acknowledged that Newtown, Conn., police arrived on the scene of the school massacre less than three minutes after the 911 call and entered the school six minutes later. By that time, shooter Adam Lanza had done his damage and killed himself as well. Tragically 20 kids and six others died, but it’s possible that the police’s quick response pushed Lanza to end it all and thus saved others.

That’s why it’s considered imperative that law enforcement officers engage the shooter as quickly as possible. And that’s why at least one school is deploying a gunshot detection system on campus. The technology detects the gunshot, someone off campus presses a button, and police in the area are notified with information on the type of gun used, where in the school the shots came from and floor plans of the school. In effect, police know almost instantly the exact location of the shots fired. It’s intriguing and could save lives, but it’s expensive.

The good news is that school shootings are still not common. The sad news is that they are becoming common enough for schools to consider spending precious dollars on something like this.
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Collaboration begins here and continues here...
Super Typhoon Haiyan ravaged the Philippines in November, killing at least 6,000 people. It was being called the worst disaster the Philippines has faced. Rescuers met with blocked roads, damaged airports and corpses hanging from trees.
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The nation’s aging, vulnerable power grid and the threat of disasters make a long-term collapse that could leave millions of Americans in the dark a growing likelihood. To experts, it’s not a matter of if, but when. Parts of the nation’s system have gone down before. In 2003, human error and a computer bug plunged 50 million people into darkness for up to two days after high-voltage lines brushed against foliage in northern Ohio. Multiple interconnected systems went down as one failure led to another in a cascade of collapse that sparked about $6 billion in economic damages in the northern U.S. and Canada. Eleven deaths were attributed in part to the failure. No system is immune.

**Massive Grid Shutdown?**

The nation’s aging, vulnerable power grid and the threat of disasters make a long-term collapse that could leave millions of Americans in the dark a growing likelihood. To experts, it’s not a matter of if, but when. Parts of the nation’s system have gone down before. In 2003, human error and a computer bug plunged 50 million people into darkness for up to two days after high-voltage lines brushed against foliage in northern Ohio. Multiple interconnected systems went down as one failure led to another in a cascade of collapse that sparked about $6 billion in economic damages in the northern U.S. and Canada. Eleven deaths were attributed in part to the failure. No system is immune.

**BY THE NUMBERS**

**Philippine Typhoon Haiyan**

- 6,057: Dead
- 18,557: Injured
- >1,700: Still missing
- 929,893: Families displaced
- 1.1 million: Houses damaged

*As of Dec. 17*

**SYSTEM FAILED**

Right after the July 6 crash landing of a Boeing 777 that killed three teenage girls, San Francisco International Airport’s (SFO) staff emergency notification system failed to work as designed and the airport’s website crashed, frustrating people seeking information about survivors and victims, according to a recent report.

But according to the independent analysis commissioned by SFO, airport officials relied on a backup telephone notification system and more than 100 employees responded within an hour of the crash of Asiana Airlines Flight 214 as it tried to land at SFO.

Airport officials and the public primarily relied on Twitter as the main source of social media information, according to a summary of the report by consulting firm ICF SH&E that was released by airport officials.

**USING SCIENCE FOR LONG-TERM STRATEGY**

In late October 2012, Hurricane Sandy was finishing up a one-week tour that consisted of killing (at least) 286 people and causing an estimated $68 billion in damage, making it the second costliest hurricane in U.S. history.

On Oct. 24, Secretary of the Interior Sally Jewell announced $162 million in funding that will be distributed among 45 restoration and research projects aimed at protecting the Atlantic coast from future storms. The projects were chosen based partially on the work of a new organization called the Strategic Sciences Group (SSG). Formally established in January 2012, the SSG is a small, adaptable group of scientists charged with visiting live disaster sites and providing decision-makers with information that allows them to make better long-term strategic choices, such as deciding which research projects will be most helpful when the next storm comes.
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TORRENTIAL RAIN AND FLASH FLOODING TESTED BOULDER, COLO.'S PREPAREDNESS AND MITIGATION INITIATIVES, BUT LESSONS FROM PREVIOUS DISASTERS KEPT THE COMMUNITY AFLOAT.

WEATHER THE STORY

Brother and sister Patrick Tinsley and Mary Kerns walk into Boulder, Colo., from their mountain community Magnolia, whose road access was shut off by debris from days of record rain and flooding, at the base of Boulder Canyon. People in Boulder were ordered to evacuate as water rose to dangerous levels.

ELAINE PITTMAN  ASSOCIATE EDITOR
It's no secret that Boulder, Colo., was likely to experience a major flash flood at some point. Located at the base of the Rocky Mountains, the city rests up against a canyon from which a creek runs through Boulder, nearly cutting it in half. The Boulder Creek has been called the No. 1 flash flood risk in Colorado, and 15 creeks with flood plains affect more than 15 percent of the city. Cementing the likelihood of a major event, in 2004, the University of Colorado at Boulder’s Natural Hazards Center listed a flash flood in Boulder as one of six “disasters waiting to happen” in the U.S.

And though few may have expected what the National Weather Service described as “biblical rainfall amounts” in the second week of September, Boulder was prepared for the flash flooding that followed the torrential rainfall — the city and county’s engineers, scientists and emergency managers had been preparing for decades. Mitigation and preparedness efforts can be traced back to a series of events: The flood of 1969 led the city to adopt flood plain regulations after four days of rainfall drenched the area with more than nine inches of water. Then in 1976, the Big Thompson flood served as a lesson for all Colorado communities that are at risk of flash flooding. Over a four-hour period, up to 12 inches of rain came down in the mountains near Estes Park, causing the state’s deadliest flash flood — 143 people were killed and another 180 injured. And in 2010, to the west of Boulder, the Fourmile Canyon fire burned 169 homes and 6,181 acres, leaving a burn scar that greatly increased the likelihood of flash flooding because of a lack of plants and undergrowth to trap moisture. These natural disasters created a more prepared city and county, and while four lives were lost in Boulder during the 2013 flooding, the lessons and initiatives from past disasters proved immeasurably valuable.

“Since the Fourmile fire, a tremendous amount of community education and also government preparedness went into flooding because the burn scar created a very unique flash flooding risk that normally isn’t there,” said Mike Chard, director of the Boulder Office of Emergency Management.

In early September, the National Weather Service told Boulder’s emergency managers that monsoon season was coming and it could affect the area. Then the weather pattern developed and heavy saturation was headed for Colorado’s Front Range. “The scenario was set for the 11th with what the Weather Service says is our worst-case scenario, which is an upslope storm where it’s piling up against the mountains,” said Dan Barber, deputy director of Boulder’s Emergency Management Office.

As the emergency situation played out, so did the city and county’s strategies. Here’s a look at how Boulder weathered the storm.

Internal policies have shifted the city and county Emergency Management Office from a planning and preparatory function into also a predictive function, Chard said, so when there’s a possibility for an intense storm, the emergency management staff follows the severe weather protocol and mans the EOC to maintain situational awareness. This allows the office to be prepared to supply first responders with vital information in case the situation gets to the point where they need to step in and make public safety-related decisions like whether to evacuate an area.

This is key because one of the most dangerous aspects of a flash flood is that it doesn’t allow for much lead time. “We have to shift operations from identifying and gathering information to making decisions about public safety all within about an hour,” Chard said. “If peak flow is achieved in about 20 to 30 minutes, flooding will start about 20 minutes after that. So we have a very narrow window of time. And that’s what was done on Sept. 11.

The severe weather protocol was implemented at 11 a.m. and by 4 p.m., “we knew we were in trouble,” Chard said. “The more than nine inches of rain that fell on Sept. 12 was a record for a single day; instead of issuing evacuation orders, alerts told residents to climb to safety.

Numerous alerting methods were used to get the message out — sirens blared; the Everbridge mass notification system sent tests, calls and emails to residents; the Emergency Alert System and Wireless Emergency Alerts were used; and messages were distributed via social media. In this case, the flooding was widespread so messaging wasn’t needed for just select groups of at-risk residents. But if the flooding had been threatening specific areas, Boulder was prepared with
FEMA's Urban Search and Rescue teams head out to conduct a search in Left Hand Canyon in Boulder.
WEATHERING THE STORM

water and we were able to see it happening online,” said Amy Danzl, an emergency management specialist with the office. “What was really good for us was we could see the levels of water immediately.” Watching social media posts about the flood also helped the EOC follow the public sentiment. Danzl said the same time the e-sponder observed that messages were becoming negative on Twitter and people were getting scared, hazard-specific alerting polygons. Chard said that in many cases, people draw a large polygon on a map and alert people within that polygon, into the thousands in some cases, and getting the message to that large of an audience can cause a delay in the system.

“We created polygons with residents that were specific to high flood-prone areas with crafted messaging that was unique to that area,” he said. “So the fire chief or sheriff could say, ‘Give me polygon 17 with message two,’ and the dispatcher would pull it up and off it would go.”

Aside from sending information out to residents, a new role in the EOC was created to provide situational awareness based on what people were posting online. The E-Sponder monitors, filters and disseminates social media information in Boulder’s EOC.

“For example, college kids were playing in the

The University of Colorado [CU] Boulder isn’t a stranger to large events. With nearly 30,000 students, the public research university holds everything from athletic events to commencement ceremonies and even had three presidential visits in 2012. “We work really closely with the community, city and county of Boulder, as well as some private partners to work these events, train for them and make sure we’re all on the same page,” said Deon Pfenning, program manager of public safety for CU’s Division of Emergency Management.

Those strong relationships, coupled with ongoing mitigation efforts, paid off during the flooding in September. Flood gates on East Campus managed the flood waters, porous pavers in sections of the Main Campus allowed rainwater to soak through the stones and into the ground, avoiding runoff; and landscaping around buildings gave the water a place to go. Student housing located near Boulder Creek was evacuated, and while water surrounded some of the buildings, it did not get into them.

One of the biggest surprises came not from the floodwaters, but from the rain, as it led to flooded basements in some of the buildings. “We had always been paying very close attention to the creek and the flash flood risk there, but to have water seeping through the basements due to the rain caught some of us off guard,” said Pfenning, who was acting director of the division during the flooding. The facility management team worked nonstop throughout the event to put pumps in place and remediate damages, he added.

An incident command structure dealt with the on-campus incidents, and while CU didn’t activate its EOC, it worked closely with the Boulder Office of Emergency Management, staffing its public schools and higher education ESF16 chair. Pfenning said that helped CU coordinate better with the city and county, allowing them to share information and issues. It also kept them on the same page regarding public messaging. CU has its own alert system, so it was able to ensure that its messages and information aligned with what residents outside of the university were receiving.
Lessons from previous floods provided education for improved mitigation efforts.
WEATHERING THE STORM

the EOC received information that the situation was getting worse. “Knowing the tempo of the public gives us and our public information officers a better idea on how to respond and frame the message,” she said.

Building situational awareness using social media also helps to push information to first responders about what’s happening on the ground. They look for trends, Chard said, instead of responding to every post. He said the model is to triangulate data — if a topic is seen three or more times, they start to track and verify the information before moving forward on it.

Another tool aiding awareness is a network of rain and stream gauges that was installed by the Urban Drainage and Flood Control District, an independent agency that has been assisting Colorado local governments with drainage and flood control programs since 1969. The gauges feed real-time information to officials and also send an alarm if the water reaches predetermined levels. Chard said they read the rain gauges for homes that are at the bottom of the canyons to help determine peak flow and if residents need to be warned about a possible flash flood.

“We also use the stream gauges to verify the flow that will be happening in the creek and then that is good information to give to our city of Boulder partners and stakeholders to say, ‘Here’s what we are predicting will come your way,’” he said.

The collaboration with the National Weather Service, Urban Drainage’s meteorological firm, and city and county hydrologists all create a coordinated and informed response. Another entity that plays into this is the Multi-Agency Coordination group, Composed of government, nonprofit and private organizations, Denzl said the group has been meeting for many years and the participants are depth trained to work in the EOC. The group organized into sections, like infrastructure and community services, and its members were advised on Sept. 9 that because of the ground saturation and weather predictions to be available in case the situation escalated — they are the ‘foundation of the EOC,” according to the office’s website.

Another group that aids coordination was developed after the Fourmile Canyon Fire. The Intermountain Alliance ties together six mountain communities with the Boulder Emergency Management Office, and the planning effort for the past two years has been around an event that cuts the cities off from the plains where the resources are, said Chard. And that’s what happened during the September flooding. The town of Lyons was widely publicized for being cut off from outside aid after roads and highways were washed out. The same situation happened in Jamestown, and the mountain communities supported one another as they had been training to do. Chard said they were able to open shelters, deal with unmet needs and provide safe sites for people who were coming out of the valleys and to the high points.

The mountain community leaders also partnered with the Boulder County Amateur Radio Emergency Services, and 80 people have been trained in ham radio operation in the last two years. The flooding took out telephone poles but communication links remained between the ham radio operators and Boulder EOC.

“We were able to maintain effective communications back and forth from the hills to the valley, which was critical in being able to tell people what’s happening and what we can get you and find out what they needed,” Chard said. “We were able to air drop in resources and coordinate that with the people who were up there through ham radio — it was a pretty incredible coordination effort.”

Having a scalable logistics and resource mobilization system also proved to be key. Boulder Emergency Management was in the process of building the system before the 2010 Fourmile fire, and many lessons learned from that event helped improve processes, helping it to be able to scale to the level needed during the flooding. Denzl, the resource mobilization and logistics section...
Chief filled 422 orders, many of which requested multiple resources. The outside aid agencies were accustomed to working on large-scale events and were ordering hundreds of port-a-potties, thousands of pallets of water and even a circus tent (to be a briefing room for the incident management team).

"From a local level, our system has to be very scalable to order everything from ink pens for our EOC to multimillion dollar orders for equipment and staff," Denzl said.

Within Boulder, a flood management program has been in place for more than 30 years, and since 1997, the city has spent about $45 million on mitigation projects, which include floodgates, underpasses and storm sewer improvements.

Going further back, floodplain regulations were adopted in response to the flood of 1969, said Katie Knapp, the city’s engineering project manager. In addition, Boulder joined the National Flood Insurance Program in 1978, and its regulations exceed the program’s minimum standards. The city requires, for example, that residential structures are elevated two feet above the base flood water elevation, whereas the national standard is to be at the base flood elevation.

Boulder also is in class six in the program’s Community Rating System, an incentive program that lowers flood insurance premiums. And those efforts seem to be paying off. “The city has more flood insurance policies than any other community in the state,” Knapp said, but she didn’t have exact numbers.

The area within the 100-year floodplain at the greatest risk for life and property damage was established as a high hazard zone. The city doesn’t allow any structures that are intended for human occupancy in that zone, and it looks to acquire property there when possible. The buildings are removed and overbank grading allows additional capacity for floodwaters, said Knapp.

### Boulder’s Rainfall

<table>
<thead>
<tr>
<th>Sept. 9</th>
<th>Sept. 10</th>
<th>Sept. 11</th>
<th>Sept. 12</th>
<th>Sept. 13</th>
<th>Sept. 14</th>
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<td>1.37 inch</td>
<td>2.06 inch</td>
<td>0.31 inch</td>
<td>1.14 inch</td>
<td>0.01 inch</td>
<td>0.14 inch</td>
</tr>
</tbody>
</table>

Eight-day total: 17.15 inches

Source: Meteorologist Matt Kelsch

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Knapp would like to incorporate stations to provide people information on how they can protect their property as well as help them with personal emergency planning. “In the past it was a challenge to try to explain to people that even though we haven’t had a big flood recently, we do have flood plains, there is a high risk and we do have regulations that you have to follow,” she said. People would build their homes just outside of the 100-year flood plain so they could have a basement, and they would push back against the building elevation requirements. “Now that we’ve actually experienced a big flood event, I have had a few people come up to me and say, ‘I didn’t want to comply with these flood plain regulations at the time, but I am glad I did; the measures I put in helped save my house,’” Knapp said. “I think now that we’ve had this flood, people are going to take it more seriously than they did in the past.”

Another mitigation project is a system of multiuse trails that run along the creek corridors kind of like a linear park area. Called the Greenways, the trail system allows the creek area to have additional water capacity while also providing recreation areas, improving storm water drainage and protecting resources. Being multiuse allows for numerous funding opportunities, Knapp said, adding underpasses, for example, crosses into transportation, so multiple objectives can be met by each Greenways project.

Boulder’s combination of projects and initiatives through the decades proved invaluable to the city during the flooding. “You have many bridges and roadways that may have overtopped or were cut off at some point but are standing today because of those mitigation efforts,” Chard said. “The mitigation efforts were paramount to response and recovery.”

As the city and county move forward with recovery, lessons learned will continue to shape a better prepared community. As of press time, the Boulder Office of Emergency Management had not completed an after-action report, but “things went well for us,” said Chard. The office will examine the early warning systems, operational command structures, how the EOC interfaced, and the quality of communication and information sharing.

One issue that stuck out was the need for communities to have their own sheltering and unmet needs plan. During this event, the American Red Cross was strapped for resources and, along with other aid organizations, couldn’t get into the affected areas for a some time. “We have been working to build that into our response plan,” Chard said.

In addition, some of the stream and rain gauges were washed away. Barber said they will look into replacing them and determining if they need to be in different locations as well as the possibility of adding them farther up the canyons.

The city has been holding open houses in different neighborhoods to show residents the flood plain maps and identify where flooding occurred. At future meetings, Knapp would like to incorporate stations to provide people information on how they can protect their property as well as help them with personal emergency planning. “In the past it was a challenge to try to explain to people that even though we haven’t had a big flood recently, we do have flood plains, there is a high risk and we do have regulations that you have to follow,” she said. People would build their homes just outside of the 100-year flood plain so they could have a basement, and they would push back against the building elevation requirements. “Now that we’ve actually experienced a big flood event, I have had a few people come up to me and say, ‘I didn’t want to comply with these flood plain regulations at the time, but I am glad I did; the measures I put in helped save my house,’” Knapp said. “I think now that we’ve had this flood, people are going to take it more seriously than they did in the past.”
Q&A: Ensuring Critical Communications during Emergencies and Disasters

Responding to the Needs of First Responders

Wireless circuits under water. Hardware damaged in hurricanes. Medical devices rendered useless due to damage in tornadoes. These are just a few of the scenarios Sprint’s seasoned Emergency Response Team (ERT) has encountered during natural disaster and emergency situations. Tanya M. Jones, manager of operations for the team, talks to Emergency Management about what happens next when traditional communications have been wiped out, first responders can’t talk to one another and public safety is at stake.

Q: What challenges do modern emergency response agencies face when trying to communicate through a disaster?

TANYA JONES: Here are a few: Emergency response funding often gets pulled because of dwindling budgets and resources year over year. Agencies frequently have disparate technologies that don’t always talk to one another during an incident. Society is so reliant on the Internet, cellular services and copper/ethernet coming into buildings that when terrestrial networks go down, redundant plans haven’t been built in and first responders can’t effectively respond.

When we talk about the power of communication, it means being prepared, working with other agencies, understanding what resources are available and collaborating with these agencies and companies that can provide these resources. Ensure that your communications systems are interoperable during an incident and build relationships now before the earthquake or hurricane hits, so you know what resources are available and how your vendors may be able to assist you.

Q: How is Sprint helping emergency responders address these challenges?

TANYA JONES: In the case of terrestrial network failure, Sprint can offer multiple assets. We backhaul through satellites for instant redundancy, or deploy to more remote areas that don’t have terrestrial or microwave networks. We can set up a satellite or cellular network anywhere. The ability to bring cellular communications into an area and provide a bubble of communications coverage so first responders can assist the public is critical. Sprint cellular, push-to-talk, 3G data, 4G LTE and mobile IP data services give the ability to communicate when it’s critical and connect back to email servers or send situational reports. In emergency situations, being able to send/receive situational reports from the field is key. Communications is the foundation of response and recovery.

Q: Can you provide some real-life scenarios where Sprint has helped ensure communication during an emergency?

TANYA JONES: One of the most important things we do is participate in field training exercises across the U.S. with local, state and federal enterprise or general business — anybody having business continuity or disaster recovery drills with multiple agencies.

In 2011, we took part in a multi-state exercise on the New Madrid Fault line partnering with Missouri. We provided assets to medical assistance teams, operational command and control, and the state capital. We brought in SatCOLT (Satellite Coll on Light Trucks); provided bubbles of coverage for communications; set up a Wi-Fi pipe; and distributed cellular handsets to help coordinate operations, evacuations and establish a hospital communications system. After the exercise concluded, we all shook hands and went home.

Two days later, an EF5-level tornado leveled the town of Joplin, Mo. We drove all night and repeated everything we had just executed in the exercise. A hospital tent was set up in the parking lot outside the nearly destroyed Medical Center. Our assets allowed disparate agencies and non-governmental organizations to communicate with one another, hundreds of patients were treated each day, medical staff could monitor medical devices with telemetry and send big files like MRIs and medical records — all encrypted and in complete HIPAA compliance.

The hospital was badly damaged, but it was able to help an injured community during a terrible disaster — and communications was the key to making all that happen.
During the immediate aftermath of the Boston Marathon bombings and subsequent search for the perpetrators, Boston Police Department tweets in effect became the official source of information for everyone, including the media, especially after numerous reports by the press turned out to be false. By the time suspect Dzhokhar Tsarnaev was holed up in a boat, the media had turned to Boston police tweets as an official source of information.
The police department's work with Twitter didn't happen just as a consequence of the event, but was a continuation of a community policing policy, so Twitter was a familiar avenue for the department. Response via social media to the bombings, the February 2013 blizzard and other events were products of an already-engaged following and further cemented the city's proclivity toward social media.

In May 2012, the city established its social media office within the Department of Innovation and Technology (DoIT) and a team that extends to 100 social media liaisons across 51 departments. A "lengthy" internal policy for Boston social media liaison conduct was developed (along with an external one) to change the way liaisons conduct was developed (along with an internal and external one) to change the way people exchange information in the city.

THE BOMBINGS
When the bombs went off on Boylston Street near the finish line of the marathon, traditional means of communication were quickly overwhelmed and to communicate with citizens, the police department immediately went to Twitter. "People thought that we had jammed signals with concerns about bombs, but that's not what happened," said Cheryl Fiandaca, bureau chief of public information for the Boston Police Department. "It was a volume of calls. You would get a call, but it would drop off. There was just too much for the towers to handle."

Police immediately began requesting via Twitter that people evacuate the finish line area, that there were injured people who needed assistance and that if there were video and photos taken in the area to please send them in. When the bombs went off, the police Twitter account had 35,000 followers. Three hours later, that number had grown to 100,000. At the end of the ordeal, the total was close to 300,000.

"We took a leadership role in letting people know what was happening, which helped reduce the fear because people were engaged following and further cemented the department's tweets for official information. "We corrected misinformation; we asked people to look at pictures and let us know if they'd seen those folks," Fiandaca said. "We tried to be as careful as we could with the information we were putting out and to correct inaccuracies."

During the manhunt, they also asked citizens to not give away the locations where law enforcement was searching and asked people to shelter in place. It was received with vast cooperation as residents began to rely on the police department's tweets for official information.

One of the keys was the department's familiarity with the social media following it had already developed. "We realized that we were fortunate that we already had the infrastructure set up, so we already had a Twitter account, a blog and a Facebook page," Fiandaca said. "If we hadn't had that in place and hadn't been using it in a substantial way, I think we would have been at a terrible loss during that time."

During the marathon, Twitter donated a promoted campaign, where designated tweets were elevated as a global trend to extend their reach. Such promotion is usually used for advertising. Also during this time, the city launched The One Fund Boston to assist victims and received $5 million in individual donations digitally.

ALREADY ENGAGED
Having that infrastructure in place citywide has allowed Boston to get ahead of events, including severe weather like the blizzard. Even before the storm hit, about 48 hours before, Lindsay Crudele, community and social technology strategist for DoIT, started developing a social media kit — including an official hashtag — and began to outline just didn't know," Fiandaca said. "They didn't know if it was a terrorist attack or a chemical explosion, no one knew."

Obviously there were volumes of information on social media, some of it accurate and some of it not even close to accurate. "That was a challenge," Fiandaca said. "It was one of those situations where it's impossible to figure out how you can handle a situation like it until it happens."

Boston worked with the FBI to manage all the information, photos and videos being sent in and to correct inaccuracies. "We corrected misinformation; we asked people to look at pictures and let us know if they'd seen these folks," Fiandaca said. "We tried to be as careful as we could with the information we were putting out and everything we didn't make mistakes."

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value for the city in creating more consis-
tency and professionalism around our use
of social media,” said Bill Oates, then Boston
CIO. “It really helps on day-to-day issues.
All of that was made easier by the
fact that there was already a social media
footprint left by DoIT and that was born
from a strategy to engage constituents
every day in a two-way conversation.
The creation of the social media office
was an acknowledgment that social media
was a viable way to reach constituents where
they were. “We found quickly there was real
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Every day with all the things that are going on
in the city, social media is a critical compo-
nent of how we talk to our constituents at
different levels and how we listen.”

“We work hard on this every day,” said
Oates who was recently named Massa-
chusetts’ state CIO. “We do interesting,
engaging initiatives through social media.
Every time you do it, you’re adding followers
and participants so that when something
happens and you have to take it to the next
level, we know how to have a conversation.”
An example is the city’s archaeologist
who posts visual updates of his digs and the
key tenet of my social media strategy is daily
engagement. It’s a daily two-way engagement
so that we don’t have to work in the midst
of an emergency to bring people aboard;
they’ve already been a part of the conversa-
tion,” Crudele said. “Whether you’re talking
about your internal social liaison team or how
we educate the public about how to engage
with us and reach us, in the middle of the
emergency is not the time to work on this.”
In addition to the daily interaction,
Crudele conducts weekly meetings she calls
the City Hall social club. They’re in-depth,
one-hour group training sessions. The meet-
ings cover Twitter and Facebook best practices
and understanding social media policies to
make sure the liaisons are on the same page.
The trainings expand on the official poli-
cies that were unveiled in May 2012 when the
social media office emerged. Those policies
include the process of setting up accounts
that are officially branded and linked to the
Boston city website; ensuring the accounts are
easily accessible to the public so they’re not
confused during an emergency. The trainings
also cover how to break news, constituent
relations and best practices. “During the
marathon, there was a lot of mixed informa-
tion out there and it was really important
that we were clearly identified as an offi-
cial city of Boston source.” Crudele said.
In fact, early in the hunt for the bombing
suspects, news outlets were falsely announcing
that suspects had been brought into custody,
which the police department corrected via
Twitter. “That was a big turnaround from the
beginning of the week,” Fiandaca said. “Early
in the week, everyone was trying to report and
put out information as best they could. We all
know these situations are fluid, you get misin-
formation and things are not as they appear.”
That solidified, in the minds of Boston
residents, the police department’s tweets as
official word. It carried over into the World
Series and the parade that followed. After
Game 6, Boston police knew the situation
outside of Fenway Park could get dangerous
as scores of people left the stadium and
others congregated outside to celebrate.
Seven people were arrested after Game 6,
and the police tweeted out, “Seven people
arrested, don’t be number eight.”
“Social media can be a two-edge sword.
There were no arrests during the parade.”

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THE POSSIBILITIES EMERGENCY CYBERA
MANAGERS NEED TO CONSIDER.

BY ADAM STONE

ATTACK
Emergency planners routinely think about the outside world. What if that building fell in a natural disaster or man-made attack, or that neighborhood flooded? What if hackers disabled that water plant or took out the power grid? Now turn that same question inward. What if they struck against you?

Consider cybercrime, one of the fastest-growing forms of social malice. Victims in the news typically include banks, online commerce and political targets. But hackers have taken aim against government institutions as well, and it’s not a far leap from there to imagine an attack against first responders themselves. It’s no sci-fi scenario to posit an attack against a 911 system, an emergency response center or police resources. In fact, the threat is very real, and today’s emergency managers are tasked with ensuring not just that their systems are rock-solid, but also that their response plans are in place.

The Ohio Emergency Management Agency gives credence to the possibility that its own systems could someday come under cyberattack. The agency actively plans for such an incursion and thinks hard about remediation, said spokesperson Tamara McBride.

“We’re sitting down with our cybersecurity group and discussing just that question. We’re very focused on the consequences of those threats,” she said. Suppose the department’s own communications systems were sabotaged, leaving no ready route to connect with citizens. “Do we go door to door? Do we go up the street with a bullhorn or reach out to ham radio volunteers? Those are all the things that are on the table.”

Maybe the bullhorn sounds excessive, but a range of experts say it would be hard to be too prepared for an attack that went to the core of emergency operations.

First of all, let’s admit there’s a threat. Starting at the top of the pyramid, the number of significant cybersecurity events against the U.S. government increased 680 percent over a five-year period, from 5,503 in 2006 to 42,887 in 2011, according to the U.S. Government Accountability Office.

So there’s clearly vulnerability within government. But does that trickle down to the state and local levels, specifically to emergency operations?

In Spartanburg County, S.C., a recent cyberattack flooded nonemergency phone lines, pushing calls over onto the 911 system, potentially jamming the emergency system and slowing dispatchers’ ability to respond to crisis calls.

Indianapolis Public Safety Director Troy Riggs paints an even grimmer picture. Speaking with local reporters after a forum on cybercrime, he offered a scenario in which an attack on first responder systems coincided with a terror attack. Essentially the idea is to detonate a bomb, then flood 911 call systems or cripple essential computers to stop responders from heading to the scene. It’s a techno-driven version of a common terror scenario in which a second bomb goes off just as ambulances arrive to treat the victims of a first explosion.

Such a scenario is not beyond the imagination. If a physical attack is possible, and a cyberattack is plausible, it would take little creativity to coordinate the two events, punching a hole in the center of response efforts.

Why is this possible? Ironically the steady improvements in emergency communication have made those systems more vulnerable to attack. In short, it’s all about the Internet.

Starting with connectivity, with shared infrastructure controls, with inname components and phone systems all increasingly routed through the Internet. “Everything these days is built out of Web technologies, even systems you would not expect to be connected to the Internet,” said Shuman Ghosemajumder, vice president of strategy at Shape Security in Mountain View, Calif.

Connectivity in turn creates ubiquity. Suddenly all our information assets are available through our physical assets: police cars with video recorders and fire trucks with their own Wi-Fi access points. “We have a lot of IT moving around in incident response,” said J.R. Cunningham, director of the state, local and education practice at security program provider Accuvant.

The company has successfully poked holes in that IT, for testing purposes, and Cunningham has concerns about the fundamental stability of the IT components that underlie emergency service systems. “These systems were not designed to be highly secure,” he said. “Generically they’ve evolved over time, with security often brought in as an afterthought.”

While the risk runs through any Internet-connected system, the threat may be particularly visible in the realm of 911. Where news coverage looks at cyberattacks on institutional networks, it often overlooks the threat to telephony, and yet that threat...
looms large in the emergency management world, where phone systems often are the link in the chain of incidence response. “As our 911 centers move into a more fully digital world, those 911 centers are going to be vulnerable to those same attacks that have been plaguing other networks, whether they are financial or commercial,” said Neal Puff, senior security solutions architect for the public sector at Verizon Terremark.

For those looking to spur cybermayhem among emergency responders, 911 is an especially attractive target. First, because the emergency phone system offers a single entry point. An attack on a police station may disrupt that station, but a denial-of-service (DOS) assault on 911 could impact literally every emergency responder. It goes deeper than this. Because 911 now connects to the Internet, an enterprising hacker could in theory get inside the system and feed it bad information, dispatching responders unnecessarily or diverting rescuers to the wrong destination. While a DOS could hold up response, this kind of insider attack — in which a hacker achieves total control over the system — could have more devastating consequences.

Ultimately 911 is critical infrastructure, “and that’s what makes it a possible target,” said Jay English, director of Communications Center and 911 Services at APCO International. While 911 has for years been a “closed loop,” virtually self-contained and therefore highly secure, “it is still public telephony, public switched networks, and we know there are potential vectors by which bad guys can get to those 911 trunks.”

The potential for damage is significant, Puff said. A hacker intercepting 911 calls could glean names and addresses, maybe personal data about police officers and judges. “The location of emergency command centers or the activities of first responders could be disclosed, which could be used as compromising information, depending on the type of emergency.”

Puff takes it back to Reggie’s double-plot scenario. “You could set off an explosive device and then if you know in advance where the command center is going to be set up, you can plant another device there and potentially do real harm to law enforcement,” he said.

For cybercriminals, 911 presents a tempting target: A single portal through which considerable destruction could be wrought. Emergency managers can take steps to mitigate the severity, should an event occur, said Jay English, director of Communications Center and 911 Services at APCO International.

“Contact your local phone provider and find out who your dedicated contact is for emergency and nonemergency lines serving your facilities. Find out in advance what you are supposed to do in case of some kind of attack.”

Emergency managers need to communicate with their 911 systems vendors. In case of a cyberevent, the vendor will need to know certain things. What trunks are being hit? From where do denial-of-service calls appear to be originating? Fall in advance what information will be needed.

Know your federal friends, in this case the FBI portal www.ic3.gov, where cybercrime victims can file complaints. Identify your attack as related to public safety telephony or data centers, and you’ll be plugged into the care of a special agent versed in such matters.

For many emergency managers, an ironic touch here will come in knowing that the perpetual budget shortfalls against which they’ve struggled for so long, now may be saving their bacon. Vulnerability here comes via the Internet, and widespread Internet connectivity is only a product of the additional management tools and telephone systems. In many cases, the legacy systems you’ve been too broke to replace are probably far less susceptible to attack. Hardly a resounding win, but some comfort nonetheless.

Another safeguard: Don’t assume that connectivity is always a necessity. While it often helps to have an Internet backbone joining systems together, “you need to ensure that every system that doesn’t need to be connected to the Internet is not connected to the Internet,” Ghosemajumder said.

It helps to have redundancy (think of McBride’s ham radio operators) and training is essential. “People need to know not to use their Gmail password on mission-critical systems. If they’re not given proper training, the odds are that a lot of them will,” Ghosemajumder said.

In any case, there’s no one right way to safeguard emergency systems against cyberattack. “It has to be a holistic approach,” Puff said. “You can’t just say, ‘We will train people.’ And you can’t just say, ‘We will buy firewalls and great security services.’ Those things are all good, but you need to look at the big picture, rather than one specific thing or another.”

Whatever approach one takes, the prospect of a cyberattack on emergency management is one that must be faced. “If it hasn’t happened yet, it’s coming. It has to,” Puff said. “If there’s a data network, if there’s information that people will find valuable or useful, some attempt will clearly happen at some point. It’s just the law of averages.”

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Emily Rahimi, the New York City Fire Department's social media manager, was chained to her desk from Oct. 29, 2012, until 6 p.m. the next day. Hurricane Sandy had created havoc and Rahimi was using the department’s Twitter account to calm citizens and dispense information. The Twitter account wasn’t initially intended for such use, but that all changed after those two days. “Once the emergency calls started coming in, I was surprised and it took a second to figure out how I was going to handle it,” Rahimi told Emergency Management after the storm. “I didn’t think about the fact that with cell service down, they’d still have access to Twitter.” People were panicked, in shock and many found solace in the understanding and direct information from Rahimi’s tweets for which she was recognized nationally. We caught up with her again to see how things have changed in the social media department since Sandy.

By Jim McKay | Editor

Tweeting for Citizen Safety
Emily Rahimi remembers Sandy and how it changed the New York City Fire Department’s social media strategies.
How have things changed as far as social media use since those two days during Sandy?
The hurricane really got people to understand a little bit more, at least around here, how social media can be very important in terms of communications. They had been hesitant about it because if you're not familiar with social media, you might focus on what could go wrong with it or how it can be used improperly. But I think that really opened people's eyes as to how we can use social media as a great tool to communicate with the public, let them know what's going on within the department as well as how to prepare for emergencies. That's been helpful because it's enabled me to get a lot more cooperation and maybe open more doors in terms of finding ways to use social media to help more groups in the department. It's growing and great to see.

How is it being used differently both within your department and overall?
Overall the past year has really been big in terms of social media for emergencies. There was Sandy, which was kind of small in comparison to the others. Boston was huge; the police department there used it in an innovative way to inform the public. The Red Cross in Kenya during the mall attack. Philip Ogola [who runs Kenya Red Cross' social media command center] was doing incredible things, whether he was giving people first aid information via social media or finding missing people, he was so crucial to saving lives there. It was really showing that social media is a way to get people information in a very instant way that we didn't have before.

And then within the department, we have communication with a lot more people who are trying to communicate information from each of their units, right now using our social media platform, but maybe in the future we'll find other ways to communicate. Our operation center is looking for ways to use video and photos posted on social media for situational awareness in the field for firefighters and EMS.

Is it becoming a two-way conversation or had it already been that?
I had always tried to make it a two-way communication tool because otherwise I think it just looks like you're using it as a means for pushing out press releases. Now -- especially within the last few months -- it's people asking questions about different events, different jobs, ways they can get information or help in a certain situation. It's really become a way for people to have a conversation.

How has your job changed?
It's become busier; I've always tried to keep it in a realm that I can manage. But when you're getting more followers and more questions and people interested in what you're saying, you're always trying to think of new ways of saying things. You want to keep people interested and let them know that you're interested and trying to give them the information they're looking for.

You said people had concerns about the negatives around social media. What are those concerns and how do you manage them?
The negative concerns are about the negatives around social media: What if we tweet something out that's super-sensitive that we shouldn't be tweeting? There are lots of concerns, but mostly putting out information that we shouldn't. The press office here teaches a class to all of our chiefs about how they should be talking to the media. Now I'm kind of a part of that talking about social media. I don't want to tell people that it's bad overall and bad things can happen. I want people to know that bad things can happen if you use it improperly, but if you use it correctly it's a great way for us to get messages out that we might not be able to get out otherwise in terms of safety and security. People are starting to see that side of it.

Talk about standards and how you develop them.
We have a policy for all of our members. We also have a customer use policy from NYC Digital — that's part of City Hall and kind of the overseer of city agency social media managers. Their policy helps us determine how we should or shouldn't interact with people.

Can you talk about the policies that are in place and how you develop those?
They're really just to ensure that we don't have to worry that our members don't understand what they should be sending out. There are a lot of members who are proud of where they work and have individual Facebook pages and Twitter accounts for their units, and it's basically a customer use policy for them so they all stay in compliance and are uniform. That was developed over a span of time with many lawyers.

What does the future look like for expanding social media use?
I've started doing a lot more projects that are photo and video related because I noticed people love that. I was just recently issued a device that will allow me to do Instagram, Vine and things like that so I can even put those out. And then internally just trying to figure out better means of communication in case Sandy happens again — ways that I'll be able to communicate within the department a little easier and thinking ahead to some of the issues that might come up.

What are your long-term reflections from those two crazy days during Sandy?
It was such organized chaos that night that I don't necessarily know that at the time I was thinking about what was going on. Looking back, I'm trying to stay on top of what other social media managers have experienced and tried to put together a plan. We never know what's going to happen in an emergency; there's always something that surprises us. But just to understand ways that I'll be able to help people, whether it's like Sandy or something that another agency has experienced — ways to pass information more easily and more quickly.
Raising the Bar
Utah collaborates to develop a multi-node, IP-based 911 call-handling solution.

By Justine Brown | Contributing Writer

When the technology in several of Utah’s 911 centers was nearing obsolescence simultaneously, three of the state’s public safety directors decided to get creative.

“We thought, why not work together?” said Tina Scarlet, executive director of the Weber County, Utah, Emergency Services District. “Why not implement a shared model that various public safety answering points could use and that would be more efficient?”

In November 2011, Scarlet and two others — former Salt Lake Valley Emergency Communications Center (VECC) Executive Director William Harry and Utah Department of Public Safety Dispatch Center Manager Chris Rueckert — submitted a request for information for a multi-node, IP-based 911 call-handling solution.

“We wanted a system with advanced call-routing capabilities that could give us greater efficiencies and ultimately cost less than our various on-premise solutions,” Scarlet said. “The upgrade to an Internet-based system would also allow us to spread 911 calls around so that no one center had to put off a call when it was too busy.”

Today, the Greater Wasatch Multi-Node Project is the first IP-capable 911 call delivery system in Utah.

Multi-Node Advantages

Once the trio decided to explore the new strategy, they compared their current vendor’s solution to alternatives offered by Intrado and CenturyLink. Both companies offered key features they desired, including an emergency service number-based ESInet for all 911 wireline and wireless call handling and routing.

“We decided on the Intrado solution because it would allow both servers to be up and operational at the same time,” said Kevin Rose, statewide interoperability coordinator for the Utah Department of Technology Services. “Redundancy was paramount.”

The IP-based Intrado VIPER call processing equipment provides quadruple redundancy at VECC and Weber County, as well as a common database for call routing and mapping systems that displays the caller’s location.

In January 2013, VECC, Weber Area 911 and the Utah Department of Public Safety/Salt Lake Communications Center went live on the new ESInet and the Greater Wasatch Multi-Node Project was officially launched.

“About that time, several of the other public safety answering points (PSAPs) became intrigued about the direction this was going,” said Mark Whetsel, technical services manager at VECC.

The original three partners realized that the new system would allow them to host much of the new technology at two centers — VECC and Weber Area Dispatch — and give other centers that got smaller upgrades access to the full system via the Internet. That would allow them to combine resources and share the cost of fully upgrading the two centers instead of spending the same amount of money on all of them, Rose said.

“As we heard of other agencies getting ready to switch out their equipment, we asked if they wanted to join. We liked the fact that it reduced costs, but it was also about the ability to back each other up,” Scarlet said. “We are all large entities, and with the capabilities of the system and the way we can have the roaming login, we felt it would be a good fit to have others join in. Before we knew it we were adding additional members.”

Today, the Greater Wasatch Multi-Node Project supports six state-level and local PSAPs covering four counties in Utah, including the Bountiful City Police Department, Greater Salt...
Lake Unified Police Department and Salt Lake City Police Department. The Multi-Node Project has two servers, one in Weber County and one in Salt Lake VEC. “The servers are synchronized images of each other connected with T1 circuits,” Whetsel said. “Because we have a major fault line that runs over half the state, we wanted to create a geo-diverse network that would enable redundancy and resilience.”

Whetsel said that because Weber County is about 60 miles north of Salt Lake City, it was a logical place to put the second node. “If a major earthquake should hit, the chances of both of those centers being affected simultaneously is relatively remote,” he said. “And with the multi-node system, if one server goes down, the second server can pick up without missing a beat.”

Collaboration among the partners also generates cost savings through shared resources and equipment. “Anytime you have multiple PSAPs working together it is a huge benefit because we can share information, training, etc.,” Scarlet said. The Multi-Node Project also enables “agent roaming,” which lets users share call-taking positions across different PSAPs during times of high-call volume. “A 911 call taker or dispatcher can log into any shared workstation, at any location, and receive and dispatch emergency calls as if they were at their own PSAP,” Scarlet said. “This collaboration of individual PSAPs and sharing of resources is unprecedented in Utah.”

Challenges and Unknowns

Naturally, forging new ground also came with challenges. “There were a lot of unknowns because this was the first time such a system has been done in Utah,” Scarlet said. “There was a lot of pressure to ensure it succeeded. We had a great deal of confidence in the vendors, but the pressure was there.”

Scarlet said the partners agreed early on that this was a long-term relationship and it was imperative they were all on the same page. The team put together memos of understanding to establish how all system components would work and formed a governance structure including representatives from each partner agency.

In all, the system took 18 months from initialization to launch. A significant portion of that time was spent establishing network facilities and formalizing contacts with vendors. The three original partners also stipulated that the new system must be cost neutral, which threw another wrench into the plan. “We couldn’t put new equipment in and have it cost the agencies more than their current budgetary allotment for that service,” Whetsel said. “Trying to manage cost neutrality and keeping within those fiscal boundaries with the new equipment coming in was a challenge.”

Once the system went live, with a staggered start for each partner, the new dispatcher interface took some adjustment as well. “Trying to coordinate training was time consuming,” Whetsel said. “Because it was a new deployment in Utah, we had to work closely with support technicians on the ground. We are still trying to muddle through the governance structure. We put together a panel of representatives from all the respective agencies, and we meet at least monthly and discuss what’s going on, direction, etc. We are working on formalizing the group, but it’s still in its infancy.”

Looking Forward

In addition to its other advantages, the IP capability of the Greater Wasatch Multi-Node Project has set the foundation for other next-gen 911 data services and applications, such as text-to-911. “There has been some discussion about applying this model throughout the state — to other regional or shared systems, so it’s given us some different options to explore,” Rose said. “We’d like to see if this model could work in other areas of the state and look at different options for the future that could save the state money and provide us more flexibility.”

Scarlet said she’s not sure how many other PSAPs in the state might emulate the Multi-Node Project. “In terms of how many others would do combined systems, that will be up to the PSAPs,” Scarlet said. “But I have heard that other PSAPs are talking about doing something similar. Anytime you can maximize your support and interoperability, it makes sense operationally and it makes sense for the citizens.”

While the project was the first of its kind in Utah, it could help set the stage for future initiatives. “This was definitely something new to the state of Utah, but we got a lot of support for it from the surrounding areas,” Rose said. “Because it was so new we had to do quite a bit of educating to get buy-in. It was an eye-opener, and I think it will possibly influence other types of projects in the state down the road.”

“try to coordinate training was time consuming,”
The One-Person Shop

Most rural emergency managers lack resources and staff but still must prepare for the worst.

By Brian Heaton | Senior Writer

From drawing up emergency plans and coordinating projects to establishing relationships with first responders, the tasks of preparing and educating a county population about what to do when disaster strikes can be overwhelming, even with the resources and staff to do it. But in most small jurisdictions in remote areas of the U.S., one person is commonly charged with doing all of that and with very few resources.

But these emergency managers survive and even thrive by embracing collaboration and taking the challenge of doing more with less in rural communities head-on. For example, in Wilkin County, Minn., which has a population of just under 6,600, Emergency Management Director Breeanna Koval depends on her colleagues in surrounding counties for all facets of her job. She explained that because of her location in west central Minnesota, almost all the counties are one-person shops and they stay in constant contact with one another.

"On a daily basis we’re always asking one another questions on how we do things," Koval said. "What agencies we’re talking to, contacts for agencies, how things were accomplished."

That sense of togetherness seems to echo throughout many of the one-person emergency management offices in remote areas. The general sentiment among emergency managers in those situations is one of resolve to get the job done and lean on one another for support.

Dave Rogness, emergency services coordinator of Cass County, N.D., called his job "all about relationships." He’s responsible for emergency plans and response activities for 27 incorporated cities and 52 townships in Cass County. The only city not in Rogness’ purview is Fargo, which has its own emergency manager. The two operate under a joint powers agreement, so when one person is out of town, the other is on call.

Rogness coordinates with 37 fire departments, along with a variety of ambulance units and law enforcement personnel.

"We try to involve as many of those entities as we can, because frankly, I have no staff," Rogness said. "It’s me and a secretary that I share with some other folks, and I really have no resources either. I have no equipment to be able to train or respond or do any of those kinds of things."

Establishing Priorities

Resource-challenged emergency managers must find alternative means to get projects done. From establishing volunteer groups to prioritizing the workload, many said it’s a balancing act to keep a location as prepared for a disaster as it should be.

Tricia Kriel, emergency manager of Ransom County, N.D., which has a population of approximately 8,400, keeps it simple. What she works on during a week depends on what’s the most pressing need at the time. If there’s a flood, everything else gets pushed to the side until the entire emergency period is over. Her approach is mimicked by many of her colleagues in one-person shops.

Doug McGillivray, former emergency manager of Yamhill County, Ore., took an organized but basic approach to his job. He kept a simple white board in his office listing all the projects he was working on in one column, and all the activities he wanted to be involved in, in another column.

McGillivray said people would be amazed by how many items from each column switched places during a year. He retired last October, but called his old job a “tap dance” regarding priorities. Koval agreed with that assessment and said that like McGillivray, she’s big on lists. At any given time, she has a checklist of tasks she’s identified as her priorities for a week, month or quarter, and works off of it.

"What’s a priority this afternoon may not be tomorrow morning. Things change," McGillivray said. “The important [projects] get done; those of less importance, they languish, but we pay attention to them as we can.”

Outreach Activities

Community engagement is a critical factor for preparedness in small jurisdictions. From coordinating volunteer groups to connecting with the public through online social media, getting people to sit up and take notice about what needs to be done in their neighborhoods could make a big difference in the event of a disaster.

Rickey Jaggers, director of the Pontotoc County Emergency Management Agency in Mississippi, (population of nearly 30,000) draws heavily on volunteers throughout his jurisdiction. While Jaggers is responsible...
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Disaster Preparedness

for drafting all the emergency management plans for the municipalities and schools in the county, when an emergency happens, people are ready to pitch in and help.

The county operates off 15 specific functions to staff its EOC, and Jaggers has volunteers for all of them. He’s currently training new people to be backups, so that the county is two-deep for every position.

McGillivray has found enormous success with volunteers as well. When he took the job with Yamhill County in December 2008, he placed a priority on building up the county’s Community Emergency Response Team. It now has more than 400 members, including 25 volunteers that are licensed amateur radio operators.

According to Rogness, one of the advantages when working in a small or remote county is citizens realize that during an emergency, everyone is expected to lend a helping hand. He said his biggest priorities are behind-the-scenes tasks and networking to make sure everyone is on the same page about what to do during a disaster.

From business owners to schools and nonprofit organizations, Rogness said all entities have a role to play. While it’s still primarily a volunteer-based system, it works and helps Rogness get his job done before, during, and after an emergency.

For example, during flooding, the county’s universities, high schools and junior high schools are activated to fill and place sandbags. That stems from Rogness’ relationships with school superintendents. The schools provide the students, transportation and staff members to assist and coordinate the groups.

Outreach also can extend in the opposite direction. Jaggers recalled when an F3 tornado ripped through parts of Mississippi and Alabama a few years ago, he jumped in his own vehicle as a citizen and went to Tuscaloosa to help the area. Jaggers said it was a way to “pay it back” when others come up to assist him, and he believes most emergency managers in smaller areas would do the same.

“Go and help one another,” he added. “We don’t really care about the money.”

Technology also plays a part in preparing a community for a disaster. Kriel and Koval use social media to spread the word to residents about preparedness activities and important news regarding emergency planning. Both managers primarily use social media to remind people about severe weather expected in their respective counties. But it helps let people know what they should be doing, particularly if there’s going to be a flood.

In addition, old-fashioned newspaper advertisements and mailings have also been helpful, particularly for Koval during National Preparedness Month in September.

“We’ll send something to the paper, or I send packets of information to day cares, schools and group homes to target those more at-risk populations,” Koval said. “I try to be present at larger events like National Night Out or some of the senior events in town where they have information fairs.”
Challenges

Like many public-sector offices, money is always a difficult obstacle. Most of the one-person emergency management departments operate on small budgets that are significantly supplemented by funding from FEMA’s Emergency Management Performance Grants (EMPG) program.

While Yamhill and Cass counties have budgets of approximately $300,000 and $200,000, respectively, much of that comes from EMPG. By way of comparison, Ransom, Wilkin and Pontotoc counties are all well under $100,000. Most of those budgets are used to pay the emergency manager’s salary, administrative staff costs and program implementation. There isn’t a lot left over for extensive marketing campaigns or training. “EMPG is vital for my department because it pays to have me here,” Koval said. “But it doesn’t pay all of it. We get a small allocation, so it means I can only use so much. It pays a portion of my salary and that’s about it. The county is responsible for covering the rest.”

Jaggers is in a similar boat. His fiscal 2013 budget was $63,000, which covers his salary, costs to operate the office and half the salary of an administrative assistant he shares with another department. Jaggers said if EMPG funding disappears, his job would end because the county can’t afford to keep him full-time.

Koval is most concerned with a lack of equipment and responders. EMPG funding is based on population, and because Wilkin County is small, there just isn’t enough money to adequately stock up resources in case of an emergency. If something happens, she’ll pull in equipment from the state or ask another county, but the lag time could result in loss of life or further property damage.

Another concern is the increasing frequency of school shootings. The risk of a shooter infiltrating an educational institution is real, and emergency managers are concerned.

From a lack of time to not having the authority, preparing a community for this threat can be difficult, particularly since not every county government is responsible for the emergency plans in educational facilities.

For example, Kriel said that although the schools in Ransom County are responsible for their own emergency details, she’s still in the midst of planning an “active shooter” exercise using some contractors – just so she and colleagues from other counties are prepared.

McGillivray thought that minimally, emergency management should be a presence in schools twice a year and that general preparedness information should be institutionalized in Yamhill County academic institutions.

“I don’t have time to do all this, and I’ve been squawking about it for 15 years,” McGillivray said.
Legislating School Safety

The Sandy Hook school shooting prompts Louisiana to require schools and law enforcement to collaborate.

By Sarah Rich | Contributing Writer

The events that surrounded the shooting at Sandy Hook Elementary School on Dec. 14, 2012, served as another wake-up call for education administrators and law enforcement to ramp up emergency preparedness plans in the event of a crisis like a school shooter.

On what may have appeared as a typical Friday in suburban Newtown, Conn., a single, active shooter made his way onto the Sandy Hook Elementary School grounds and killed 26. It was another reminder that planning for the worst — at schools, businesses, everywhere — is an essential part of keeping a community safe. The Sandy Hook tragedy was the catalyst for the state of Louisiana to require that schools plan along with local law enforcement for this type of scenario.

Six months after the school shooting in Newtown, Louisiana Gov. Bobby Jindal signed House Bill 718 into law. Schools in the state have been prepared for such incidents even before the law was passed.

“The real key I think for Louisiana and a lot of other states is they’ve already had these kinds of crisis management plans in place and the legislation actually was more of a reaction to the Newtown [shooting],” Walker-Jones said.

Yet, whether or not schools have drafted crisis management plans in the past, the law specifies requirements that must be fulfilled each year. According to HB 718, Louisiana schools must have a "crisis management and response plan" to address safety and any incident regarding a shooting or other violence on campus. Each plan must be prepared in collaboration by each school's principal and with law enforcement, fire, public safety and emergency preparedness officials.

Every year, school principals are then required to meet with those same emergency responders to review the plan and revise it if necessary. In addition to a series of other requirements drafted into the law, schools must also perform live-shooter drills within 30 days prior to the start of the new academic year.

"We're Prepared"

Louisiana law enforcement officials have expressed confidence that schools in the state are prepared for following through on their crisis management plans. Col. Mike Edmonson, superintendent of the Louisiana State Police, said he thinks the schools are prepared, yet proper assessment of the nearly 1,800 public and private schools in the state is key.

For school superintendents, principals and teachers, it's critical to communicate with law enforcement about their emergency plans and if they've conducted drills for situations like active shooters. During an assessment performed by the State Police, Edmonson said officials surveyed the schools by asking certain questions to ensure that their incident prevention plans were up to speed.

To get the facts they needed, Edmonson said it was critical to turn to the students for information, for example, about what on the school grounds malfunctioned.

“Sometimes the locks didn’t work,” Edmonson said. “We discovered that by listening to the kids. [We asked], ‘What is not working at the school? What are some safety concerns?’"

He said the State Police hope to move forward with a comprehensive checklist schools can use to ensure the safety of local law enforcement, fire, public safety and emergency preparedness officials.

Were Schools Already Prepared?

The Louisiana Department of Education surveyed school districts and released a report that said schools in the state have made several efforts to develop plans, even prior to HB 718, which focuses on preparing for active shooters. These were some of the findings:

- 98% of school districts that responded have crisis plans in place for all schools;
- 81% updated their plans in the past year;
- 56% have rehearsed plans at all schools this academic year;
- 52% have made changes since the Sandy Hook shooting;
their campuses. The idea is for officials to determine their school’s strengths and weaknesses so they can focus on areas that need improvement. As of November, the police had not released official checklists, but were in the final stages of creating a more permanent list of safety factors.

“We may not have a final product,” Edmonson said. “It will always be a work in progress.”

All-Hazards Planning?

Although Louisiana law enforcement officers are confident that school districts have adequately prepared for worst-case scenarios like an active shooter, some acknowledge that they haven’t done enough to prepare their schools. Bo Mitchell, a former police commissioner, thinks the new Louisiana law could be construed as ambiguous since it focuses on active shooters and not overall school safety.

Mitchell, who is also the founder and president of 911 Consulting, has spent the greater portion of his career reviewing emergency preparedness plans. He said schools, like all workplaces, should not focus solely on shooter preparedness – they must be ready for any type of disaster. He said the new Louisiana law is not comprehensive enough to cover all those bases since the law mostly emphasizes active shooter preparedness.

“So what you’re seeing in the [Louisiana] law is, ‘Let’s get prepared for shooting incidences,’” Mitchell said. “But what about the all-hazards?”

Preparing for all hazards doesn’t mean reinventing the wheel on crisis management. Because national standards on preparedness already exist, Mitchell said schools should be integrating such standards into their safety plans. To target all-hazards preparedness, Mitchell said schools should look to the National Fire Protection Association (NFPA) for its nationalized standards, specifically NFPA 1600. The document, which has been adopted by the U.S. DHS and state fire codes, establishes a common set of criteria for about 300 worst-case scenarios like active shooters and natural disasters.

“The NFPA is the platinum-plated standards-making association in the world,” Mitchell said.

Other national, standardized requirements like from the Occupational Safety and Health Administration (OSHA) should also be considered for school emergency preparedness, Mitchell said.

According to OSHA’s website, Louisiana doesn’t have an official state plan regarding occupational safety and health, but the administration provides information and resources for employers to learn about regulations regarding workplace violence.

“Schools are employers and workplaces before they are anything else,” Mitchell said. “Generally speaking, most workplaces aren’t well prepared.”
Technology and Trends

Gunshot Detection on Campus

A California school will be among the first to deploy a gunshot monitoring system.

By Jill Tucker | Contributing Writer

A gunman walks into a school and starts shooting. It’s that rare, worst-case scenario, one that all police prepare for and every parent prays will never happen.

But if it happens at one Oakland, Calif., charter school, a person 25 miles away, sitting in a small, dark room on the second floor of a building in a Newark business park, will hear the gunshots and — within seconds — push a button to notify police.

The information will hit police car computer screens instantly and include a floor plan of the school showing which classroom the shots were fired in, the type of gun used, and which direction the shooter or shooters appear to be moving.

If more shots are fired, police almost instantly will know the exact location. Classroom teachers and staff can also get instant messages advising them to lock down their rooms — or run.

The technology brings gunshot detection systems — already used on the streets in Oakland, San Francisco and dozens of cities across the country — into schools.

Expensive Set-up

The Oakland charter school, which officials declined to identify, will be among the first in the country to use the new technology.

“Thanks reality is that preparing for an active shooter is the new normal,” said Ralph Clark, CEO and president of ShotSpotter, the company that makes and monitors the system. “We must ensure that we do everything within our power to provide an enhanced notification and response capability to first responders so that they can effectively engage determined mass killers who are willing to lose their lives and limit their ability to wreak havoc.”

The warning system could indeed save lives. But it comes at a price.

For a $15,000 set-up fee and about $10,000 per year in fees, any school in the country can have the eyes and ears of a ShotSpotter employee at a bank of computer screens keeping tabs on classrooms.

It will be up to school districts, individual schools and perhaps PTAs to decide if they want to spend the money to shave seconds or minutes off police response time.

At the Oakland charter school, the service will be free, at least in the short term. Clark declined to identify the specific school until the details of the pilot program are completed, but an announcement and the installation were expected by the end of 2013.

A sensor about the size of a light switch will be placed in every room in the school, including open areas and hallways. The sensors are designed to
detect the pressure changes and infrared heat associated with gunshots.

"It gets down to how we think about mitigating a risk," Clark said. "Although not frequent, when it does happen, minutes matter."

There are more than 140,000 K-12 schools and colleges across the country, and over the past five years, there have been more than 80 cases of school shootings, according to the Joint Regional Intelligence Center, a coalition of Southern California law enforcement agencies. Tragedies like the deaths of 20 children and six adults in 2012 by a shooter at Sandy Hook Elementary School in Newtown, Conn., have created demand for better prevention efforts and stronger school security.

"These incidents are relatively rare," said Ann Harkins, president of the National Crime Prevention Council. "That makes them no less horrifying."

Tough Sell

For-profit companies have jumped into the school safety market, including one, International Armoring Corp., that offers bulletproof shields made to look like whiteboards, shelves or other classroom objects.

School communities need to ask what they need to keep their children safe, Harkins said. "Each school has to make decisions for itself." Harkins said. "What's important is that people are making these assessments."

Still, this new tool will be a tough sell to some school officials.

"It's not an investment that makes sense," said Jody London, an Oakland school board member, adding that it would be a huge expense to outfit the 90 district schools, given how rare school shootings are. "What is a problem are guns on the streets and kids not being able to get home safely."

Spending $1 million a year to listen for unlikely gunshots doesn't make sense, she said. "My response to that is my response after Sandy Hook: I don't want my schools to be fortresses," London said, adding that she'd rather spend the money on counselors. "At the end of the day, the person who has positive interactions with the students is ultimately going to be a better long-term deterrent."

Yet, even though 100 percent of school shootings are reported, the information is inaccurate or confusing. And there are delays — gunshots one room over can sound a lot like a door slamming or chair falling. For law enforcement, the more quickly first responders get accurate information, the better, Alameda County Sheriff Gregory Ahern said in a statement regarding Site Secure technology, which is the indoor product of ShotSpotter. "Knowing information like the number of shooters, where the shots were actually fired, and the information of where the suspects currently may be, as well as the possible type of weapons being fired, is critical to how to respond quickly and put an end to the threat," he said.

ShotSpotter officials see a market for the indoor sensors in malls, college campuses, airports and on military bases as well. But K-12 schools are their first focus. Clark compares it to school fire alarms, which have smoke and heat detection systems and automatic notification to emergency responders.

"It might make sense for some schools to adopt a fire alarm for gunshots," he said. "Some percentage of schools are going to want this capability."
HOW AND WHEN TO BRIEF

Briefings in an activated EOC come in all shapes and sizes. In truth, there are more bad briefings than there are good ones. Briefings are not meetings, facilitated discussions or roundtables. If you hear a good briefing, you will recognize it immediately.

Most of what I share here will apply to almost every briefing scenario, but admittedly there can be exceptions to the rule.

First and foremost, a briefing must provide the information that everyone needs to know to set the stage for what has happened and is happening. It allows everyone hearing the briefing to get the “world picture” of the event and then act accordingly within their role.

First and foremost, a briefing must provide the information that everyone needs to know to set the stage for what has happened and is happening.

Personally I like to have briefings take place using a map. This provides a visual sense of space and timing to what is being said.

Start the briefing with the national situation. I’ve found this idea to be confusing to some. What else is happening in the country that might impact your event and the resources that are available? If your disaster isn’t the No. 1 priority, then knowing that and sharing it allows people to have a better expectation for what resources might be coming or being withheld. The same applies to telling everyone what is happening in your state.

Then address what is happening in adjacent jurisdictions. We live in an interconnected world, and to understand the size and scope of an event, you need to include those cities, counties and states you call neighbors. It also means that the map you are briefing from needs to extend beyond the borders of your jurisdiction.

Next, I believe in briefing the weather, no matter what type of event you are dealing with. The weather is a variable that can significantly impact your response and recovery operation.

Two more key elements must always be covered when briefing an operation: logistics and the supply of resources. Much of a disaster response is about moving people and things to where they are needed, so it’s critical that the location (map) and routes (map) of logistics be covered.

The other element to always cover is communications. First of all, address the status of communications with all parties engaged in the disaster response. If everyone has good communications — great! If there are problems, point them out, and of course review what communications channels are being used for the various aspects of the operation.

For most disasters briefings might take 10 minutes at most. For more complicated and extensive ones you may need a bit more time to cover everything. To accomplish the above you need to have just one person doing the briefing. Do not do a round robin around the room for people to add in details.

Frequency of briefings is another matter. Early in a disaster you might have a very quick briefing every hour as the details of what has happened become known. Once a rhythm is established, these can be cut back depending on the circumstances and how dynamic the event and circumstances dictate.

Last, I believe in a “ring the bell” briefing when something significant has just happened that everyone needs to know about. These are quick announcements, e.g., “The second tower has collapsed.” And don’t forget to point to the map so people know where events are happening.
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Your True Role

One of the common misconceptions I find is confusing the emergency manager's role with the function of an emergency management program. This misconception has been with us for some time and has been reinforced by its appearance in many documents and books. It also has contributed to our focus on response at the expense of other emergency management strategies.

As near as I can tell, this misconception started with a misinterpretation of material in Tom Drabek and Gerard Hoetmer's excellent 1991 book Emergency Management: Principles and Practice for Local Government. (A new version was published in 2007 by Bill Waugh and Kathleen Tierney.) The book identifies a number of emergency management functions that should be performed by governments (warning, evacuation, sheltering) and is clear about these being collective rather than discrete tasks. That is, they are the responsibility of the government and not a single individual. Unfortunately, FEMA courses and subsequent publications identified these functions as those for the emergency manager.

Why is this a bad thing? First, it misses the point of what emergency managers really do. Each of the common functions ascribed to emergency managers is actually performed by someone else. For example, evacuation is generally the responsibility of law enforcement agencies and sheltering is normally handled by human services departments with support from volunteer organizations. Emergency managers don't usually perform these functions; we make sure they get done.

Second, accepting responsibility for functions over which we have no control or direct resources sets us up for failure since we really can't perform all these tasks alone. It lets other agencies off the hook for response planning. This is not consistent with our standards, such as the Emergency Management Accreditation Program standard, which espouse an enterprisewide approach and ultimately is detrimental to the communities we serve.

Finally, identifying solely with these functions makes it easy to appear redundant. If our sole mission is response planning and other agencies really do all the heavy lifting, why are we even necessary? Emergency management programs are chronically underfunded as it is. Do you really want to provide this type of ammunition to those seeking further cuts? If we are to avoid this, we need to accept that our role as emergency managers is not to do the work but, as noted in the definition adopted in 2007 by most national emergency management organizations is to create the framework within which communities reduce vulnerability to hazards and cope with disasters.
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