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Support PSAPs

I applaud Elaine Pittman for raising awareness about issues related to our nation’s 911 call centers in her May/June 2010 article (911: A National Plight!). She is correct to point out that these aspects of the profession vary widely from one public safety answering point (PSAP) to another. I was surprised to find that Pittman didn’t mention another characteristic that further contributes to the national plight of emergency communications in the United States: call-center staffing. Even if all funding collected for 911 services was appropriately distributed to PSAPs and call-center technology was upgraded accordingly, adequate staffing is central to operating a PSAP effectively.

I think the public would likely be astonished to discover how many of our nation’s PSAPs are grossly understaffed. In today’s economic climate, even some 911 call-takers and dispatchers have faced layoffs. However, you’ll notice that these layoffs are far rarer than those involving police officers, firefighters and paramedics. Even in this economic climate, most PSAPs simply cannot lay off employees because they already operate at their bare minimum.

A key principle of the Incident Command System, the span of control, should be adopted and applied to the 911 communications environment. This principle limits the number of personnel and responsibilities managed by any one individual at the scene of a fire from three to seven people. Individual dispatchers and call-takers can only manage a limited number of responsibilities simultaneously before becoming overwhelmed. By increasing staff, eliminating nonessential job functions and mandating a span of control for PSAP personnel, we will come closer to achieving a national standard that will improve performance.

Such changes will only occur when federal regulations mandate that PSAPs meet certain standards. Although Ken Lowden, executive director of the Indiana Wireless Enhanced 911 Advisory Board, makes a good point about government’s success with large projects, he also correctly points out that broad federal regulation could be beneficial. Leaving too many regulations up to local authorities won’t accomplish much. As Pittman wrote, leaving local authorities in control has led to the renaming of fees once meant strictly for PSAPs alone. Local oversight has led largely to what we already have, which isn’t good enough. We can do much better.

— Brian Cisna
Police 911 Telecommunicator, University of Akron Police Department, Ohio

Emergency Management Events

10 December
SOCIAL MEDIA FOR GOVERNMENT
Las Vegas
Flamingo Hotel and Casino
Learn why using social media should be embraced by your organization, along with helpful tools, tips and techniques to get started.
WWW.LAICONFERENCES.COM

10 December
NATIONAL BIO-THREAT CONFERENCE
New Orleans
The conference provides a forum for dialogue between government, industry, academia and first responders to address critical issues in environmental sampling and biosurveillance, as well as special sessions on hazardous waste and microbial forensics.
WWW.SANDBPEX.COM

13-16 December
SHARED STRATEGIES FOR HOMELAND SECURITY CONFERENCES
Denver
Sheraton Downtown Denver
The conference presents speakers covering health and medical first responders, business and critical infrastructures and community resilience.
WWW.SANDBPEX.COM

CERT Programs Work

Scott Phelps commented on Raising the Bar in March/April 2010, noting that thousands of groups helping disaster victims now is better than organized sanctioned help later from government. I know his information is accurate and works. Sacramento, Calif., Los Angeles, and other cities nationwide have had the help of government grants from FEMA and the U.S. DHS to institute the Community Emergency Response Team (CERT) training, usually through local fire departments. This training is organized, and teaches standardized and consistent safety response to private citizens. These citizens are then available to assist in some cases with specific needs of emergency assistance for radio communications, searches, traffic control, wildland fires and almost every conceivable type of accident or disaster. At least, these trained persons will know what to do to keep themselves, their families and neighbors from becoming victims and further straining the limited emergency resources and personnel.

The relative minor costs to train large numbers of private citizens can be justified when these same persons can assist emergency workers to protect lives or property of their own communities, where they are always more knowledgeable about local conditions and resources than workers who may have been brought in to assist. When supporters of CERT and other response groups express support to their elected officials that this type of funding is available to designated first responder training groups of local fire departments and law enforcement, there’s a greater probability of success that these programs will go forward. I am part of Sacramento City CERT and assist other agencies by training their instructors and individual classes as a volunteer. I feel that strongly about the CERT programs because I know they work.

— Franklin Dale Tilley
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Connect to the future:
We’ve written extensively about interoperability, mostly about the nuts and bolts of a system being deployed and the grant process that allowed said deployment to happen.

If there’s collaboration among the agencies or jurisdictions involved, we jump all over it, because that’s the name of the game these days.

A common refrain years ago was that agency or jurisdiction A couldn’t communicate with agency or jurisdiction B — or even within its own agency or jurisdiction. That was said to be an operability problem — not an interoperability problem.

Billions of dollars have been spent on interoperability since 9/11 and genuine progress has been made, but it seems that emergency managers view interoperability as something still to be attained.

For the most part, if agency A wants to talk to agency B, it can be achieved; the technology to facilitate this is available. And still interoperability is a problem. We heard so at a recent roundtable discussion involving several emergency managers.

Everybody at the table agreed: It’s a cultural problem. Agency A doesn’t talk to agency B because the two aren’t really familiar with each other — or maybe they just don’t want to talk. "Everybody talks about the quantifiable parts of interoperability — the money, the hardware — but not enough about the behavior part of it," one emergency manager said. "How much effort is being put into the cultural aspect of it?"

Even where there’s a new, multimillion-dollar system, agency personnel revert to previous behavior. "Everything happens the way it did before, even after getting this new system," another emergency manager said. "The police guy calls the dispatcher and he calls the fire guy; they still talk in silos. Unless we address this behavior, we’ll have a $100 million doorstop."

There’s also the issue of language. We know different jurisdictions and agencies use different codes to communicate. Coming up with a common language has to be the first part of the cultural change, said an emergency manager.

And emergency managers can play key roles in this quest by hosting planning calls and conference calls — getting people to communicate regularly. "The best thing to do is have commanders sit next to each other in the operations centers."

Another thing about interoperability that people stub their toes on is the notion that everyone must be able to talk to everyone, one participant said. "Everybody on the ground doesn’t have to talk to each other. When you bring people from other jurisdictions, you can plug people into your system. That to me is true interoperability."

I wonder if in 10 years we’ll still be writing about interoperability as we do today — that it’s something that’s desired but still needs to be attained. Or will agencies and local governments move outside of their comfort zones and take advantage of the technology that’s readily available — will they open the door with their neighbors, making interoperability yesterday’s news?
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You were the Washington state emergency management director from 1998 to 2004. What was the biggest lesson you learned in that position?

Actually, it’s difficult to distinguish between what I may have learned during my tenure versus what I learned in retrospect in the years since. Regardless, one of the lessons is a key to how success in emergency management is really achieved most of the time. I believe success is not so much a matter of ample resources and the “right” hierarchy or organizational design. Rather, the people, and therefore the agencies that are successful, are the ones that are most effective in collaboration, communication skills and the ability to lead in complex environments. Those are nice buzzwords, but in reality, they are three difficult skills to master at both the individual and organizational levels.

Success in the emergency management field is much more about the people than it is about a structure or organizational chart or even, dare I say it, external grant funding. Relationships are more important than positions. Collaboration is more important than money. And learning how to “lead from where you are” is more important than any well-crafted hierarchical chart or multi-volume response plan.

The proof of this can be seen in any organization. Look at your people. Are they all equal in the impacts they make? Do they all equal in the impacts they make? Do you find some that seem to always exceed expectations and achieve levels of service well beyond the norm? These are the people that emergency management leaders should be identifying, creating and providing great freedom of action and independence. I remember a large number of them working in the Washington state emergency management community while I was director. They did some incredible things when given the liberty to do so. I guess my big lesson was discovering the ways to encourage these individuals and helping others to emulate them.

You’ve had the opportunity to tour the nation and see state and local emergency management programs up close. What do you see being done right, and where can improvements be made?

I have seen things going well at emergency management agencies or communities that place a high priority on thinking strategically, and then resourcing what flows from that effort. In other words, if an agency or community is trying to describe its future worth creating and then organizing to achieve it rather than engaging in endless debates about “how” without knowing the “why,” they have been more successful in the long run. Successful organizations ask these types of questions: What are we trying to accomplish? What are we trying to accomplish? What are we trying to accomplish? What are the desired outcomes? What is the environment we’re trying to create? What will the environment look like regardless of what we do or don’t do? What does success look like? Is what we’re doing having a positive impact on the people we’re serving?

The organizations and people that spend time examining these questions are generally the most successful, in my opinion. The next part of that is how these things get done. What are the ways we can achieve those outcomes, those objectives? And then finally, it’s about what resources are needed in terms of people, money, partners, etc.

Glen Woodbury
Director, Naval Postgraduate School’s Center for Homeland Defense and Security

Glen Woodbury leads the center’s commitment to servicing the homeland security priorities of the U.S. departments of Homeland Security (DHS) and Defense, as well as local, state, tribal and federal agencies. As the center’s associate director from 2004 to 2007, he worked on the development of executive education workshops, seminars and training for senior state and local officials, as well as military leaders.

Woodbury also serves on the DHS’ Quadrennial Review Advisory Committee. From 1998 through 2004, he served as the director of the Emergency Management Division for Washington state. He also served as president of the National Emergency Management Association (NEMA), a professional organization that represents all state and territorial emergency management directors.

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Public-private partnerships are talked about a lot. What does it take to initiate and sustain those types of partnerships?

The first thing you have to answer is: What is wanted from a public-private partnership? The term “public-private partnership” has been an interesting government catchphrase for some time. At least as long as I’ve been involved in or observing emergency management, I’ve heard colleagues say things like, “We want to establish/maintain/strengthen our public-private partnerships.” What do they mean? Do they know what they are trying to achieve when they make these claims? Some probably do, but overall, I bet we are unclear.

As far as emergency management is concerned, there may be opportunities where one sector will aid or contribute to the objectives of the other. There may be opportunities where one sector will when the desired outcomes of one sector conflict with those of the other. This is the box where frank discussion to see if there are areas for coordination or synchronization. Leadership, collaboration and, most importantly, communication, are needed when the desired outcomes of one sector conflict with those of the other.

So what would success look like if we had great public-private partnerships? If we don’t know the answer, stop trying to justify sustainment opportunities just to keep a tired, old slogan alive. But if we do have a good and worthy response to that question, consider at least the three potential relationships listed above — common, symbiotic and opposing — and how each of those might be treated and at what levels of effort.

You’ve met with many metropolitan areas in the nation as you conducted executive education seminars. What’s your advice to emergency managers for working with elected and senior-appointed officials based on what you’ve learned?

How people talk about emergency management has changed quite a bit over the past 10 years. The profession at the end the 20th century was often only a topic of public and executive discussion when needed. But they need to be sure their words are backed up by performance. It. But they need to be sure their words are backed up by performance.

Emergency managers and the senior officials they work with and for. Emergency managers are more seriously recognized for the function they serve in terms of public health and safety, therefore the expectations have risen as well. Senior-appointed and elected officials are looking for professional, candid and fact-based advice delivered objectively and clearly. They are looking for and expecting levels of proficiency and professional competence that are often observed in their police, fire and military counterparts. Based on observations from our executive education seminars, I would advise emergency managers to be open, candid and honest, but also to avoid hazard hyperbole and implicit threats for failing to heed their advice. I believe the days are gone when emergency managers felt the need to exaggerate or discuss worst-case consequences just to get a fair hearing. Also, they should not be intimidated by this new and elevated role. Emergency management leaders have as much influence on the health, safety and security of their citizens as any of their professional partners; it’s OK to act like it. But they need to be sure their words are backed up by performance.
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What are some trends you see coming in the future of emergency management?

The trends I see include a continuing move toward the professionalization of emergency management. Professionalization, as I interpret it, means that there are accepted standards, a knowledge base, and educational and training opportunities — more than we have now or maybe at least more coordinated. I know that FEMA, NEMA and the International Association of Emergency Managers are all currently accelerating their efforts in these areas.

I also think emergency management is evolving more into a network type of system or organization rather than the hierarchical heavy structure that we have now. When I say hierarchy, I’m talking about a pseudo-military type response structure in which the local level gets exhausted, it goes to state level, and the state level goes to the federal level. I think we have already begun to evolve into a more networked approach so that when some entity has a gap or capacity that needs to be filled, it won’t necessarily be from the bottom up — it may be from the side or the private sector. It will be more of a network where links and nodes are established, where you can see where strengths and weaknesses are. The system may respond from the side, or vertically, rather than horizontally.

Another trend is that emergency management is becoming more youthful. Emergency management has customarily been a gathering of people from other disciplines, especially the military, fire and police services, who have retired from those services and are looking for their second career. Because of educational programs, greater interest and the awareness of a way to serve the public, emergency management is going to attract younger people. Because of the advantages of using Web 2.0 (and beyond) technologies and other advances, emergency management will need to attract younger people who actually know how these things work. That is a great thing.

Generational diversity in emergency management is going to make it stronger.

How do you think the influx of new emergency managers who are graduates of college and university emergency management programs will change the discipline in the future?

First of all, it will advance the professionalization of the discipline. Undergraduate, graduate and postdoctoral education programs are critical to the basic infrastructure of most professions that we recognize and value. Frankly without an educational underpinning to the next evolution of emergency management, the discipline will continue to be a profession predominantly populated by second careerists, or those having already finished one public safety tenure but still want to dedicate their time to public service and public safety. This shouldn’t be taken as a criticism of all the individuals who dedicate their second careers to emergency management, but more an argument that the profession would be healthier and more innovative with an infusion of employees who are starting their professional careers in emergency management, not ending them there.

Our latest generations learn differently, communicate exponentially and create solutions in nontraditional ways. The fact that they are coming from institutions that actually study the activity of emergency management offices around the country. Emergency management has sorely missed the healthy “college boy” versus “old timer” arguments that have energized and generated thought and knowledge in so many other professions.

Finally, institutions of higher learning are as much about the creation of knowledge as they are the sharing of it. Who’s to say that the evolution of the emergency management doctrine so far has gotten it right? Have we even evolved a doctrine yet? Undergraduate and especially graduate-level study, much like we attempt to do at the Center for Homeland Defense and Security, are designed to test policies and strategies, and generate individuals who can create, articulate and advance a position objectively, yet passionately. Let the creative disruption begin.

See the Emergency Management cover story, “Major Player” on page 36.
Hotline is Key to Being Prepared

When a crisis strikes, who will answer your call for help? Now is the time to prepare for an emergency by building a network of first responders. TCPN is a national governmental purchasing cooperative with competitively bid, awarded contracts for disaster restoration & recovery, claim recovery & risk services, MRO supplies, roofing services, HVAC, and modular buildings all ready to be a part of your hotline to help when a disaster hits. With the peace of mind of knowing who to call and set contract pricing already in place, you can stay focused on your community during their time of need.

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In the News

A new addition to the U.S. Navy’s fleet, the USS Makin Island combines transporting Marines with humanitarian aid capabilities. On Oct. 6, as part of San Francisco Fleet Week, representatives from some of California’s state and local government agencies toured the ship to see how it could benefit them following a large-scale disaster. “We’re showing the city what capabilities we can provide in case there is a natural disaster and their local and federal emergency teams aren’t able to react to take care of the entire disaster,” said Lt. j.g. Laura Dempsey, a public affairs officer for the USS Makin Island.

Photos and text by Elaine Pittman
1. The ship’s four reverse osmosis water purification systems can purify 200,000 gallons of water per day.

2. The USS Makin Island is the first of the Navy’s ships to run off gas turbines and an electric drive system instead of steam boilers. Dempsey said when the ship was transported from Pascagoula, Miss., to its home port of San Diego, the new technology saved $2.3 million and 900,000 gallons of gas.

3. In addition to the ship’s primary medical ward that contains 15 beds, an overflow room provides 300 beds for additional patient care. During response to a large-scale disaster, victims would be triaged in the berthing area before being moved to the overflow ward. The ship’s medical facility also includes two isolation rooms should a sailor or Marine get an airborne infectious disease.

4. The well deck, located at the ship’s stern, allows water to enter the USS Makin Island so other crafts can enter or leave the ship. The ship points into the sea allowing it to take the brunt of the waves to make the process easier for the smaller craft. In these images, a landing craft utility exits the ship to transport equipment and Marines to shore.

5. The USS Makin Island features the largest medical capabilities of the Navy’s nonhospital ships — only the USNS Comfort and USNS Mercy have superior facilities. The ship has six operating rooms onboard and can provide everything from brain surgery to chest and abdominal surgery. The ship’s company doesn’t include a surgeon, but a 20-person medical staff resides onboard when it’s at sea for long periods of time.

6. The new technology used on the ship is expected to save the Navy $250 million during its 40-year life cycle.
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- Modeling incidents and analyzing consequences
- Providing dynamic situational awareness and a common operating picture
- Supplying mobile situational awareness to remote field teams

GIS is used to model the spread and intensity of a chemical spill. Real-time weather data is used to determine the plume’s spread, direction, and speed.

Discover more public safety case studies at www.esri.com/publicsafety.
The Executive View service can consume disparate data sources. This service was tailored for use during response to and recovery from past floods. A screen shot from the Emergency Operations Center depicts a quick assessment of total possible damages. The extents of the affected area are shown in red. Parcel information is brought into the map with the damages overlaid to determine property damage.

Large-scale emergencies—floods, earthquakes, hurricanes, wildfires, terrorist attacks—are multifaceted events that impact tens of thousands of lives. Response to these major incidents involves multiple agencies. The key to a successful response—to get people, equipment, and supplies where they are needed as quickly as possible—is establishing a communication network that provides a complete picture of what’s happening in real time. It also requires bringing together all necessary parties, from private entities to city, county, and federal agencies, to share information and resources and work in an effective, integrated fashion.

The Indiana Department of Homeland Security (IDHS) embarked on an ambitious campaign that provides just such a communication network based on server, desktop, and Web geographic information system (GIS) technologies. It provides a two-way stream of information flow among local, county, state, and federal agencies that is vital to disaster response.

“We wanted to leverage resources already in place with other state agencies and in the universities across the state,” says Roger Koelpin, GIS/critical infrastructure planner, IDHS. “We are able to work with those partners as resources for our internal disaster recovery strategy and continuity of operations planning. Ultimately, we hope to turn this into a viable process for bottom-up reporting of data to meet federal data calls and keep our federal partners informed as part of our routine, authoritative, common operating picture.”

The Indiana Department of Homeland Security Implements Advanced Response System

Case Study

A Common Operating Picture Using Web-Based GIS Services

The enterprise disaster response system provides several functions. First, it can be used for mitigation, with state agencies identifying high-risk populations, infrastructure, natural resources, and other assets. Second, it can provide instant response capabilities. When a disaster strikes, real-time situational awareness can be achieved. Using GIS, commanders can make quick decisions on where to send law enforcement, fire personnel, emergency medical services staff, and other responders. They can instantly see available resources, prioritize activities, and monitor events in real time. This capability also helps with long-term recovery.

A major component of the system comes from Indiana University partners, who are already using GIS and related technologies to publish IndianaMap, a singular, statewide geospatial resource for Indiana that includes a wide variety of information in a format accessible to both expert GIS users and the general public. The strategy of working with universities allows IDHS to leverage the databases and tools these academic institutions use in their individual GIS work. It also provides a decentralized information network that can supply data and applications should state government information systems be disrupted or become inaccessible.

www.esri.com/publicsafety
HAVING INFORMATION READILY AVAILABLE before a disaster or storm can be invaluable for first responders and emergency managers tasked with organizing the response. The Florida Coastal Mapping project combines data collection with disaster preparedness by collecting light detection and ranging (lidar) data for coastal counties; running the data through a computerized model to estimate storm surge depths from hurricanes; and using the information to develop new regional evacuation plans.

In Florida, many hurricane evacuation studies haven’t been updated since the ‘90s, according to the Florida Division of Emergency Management’s (FDEM) website. The agency plans to use the new information gathered from the mapping project to refresh the State Regional Evacuation Studies by year’s end.

“The State Regional Evacuation Studies will be used by every emergency management entity in Florida as the basis for developing evacuation and protective measure plans, shelter planning and identifying coastal high hazards zones,” said FDEM spokeswoman Lauren McKeague. “Additionally the studies will be used by all the state’s growth management agencies to identify impacts to public safety plans and address growth management standards put in place by the Florida Legislature, including traffic and other future land use planning.”

Read more at: www.emergencymgmt.com/floridamapping

An American Red Cross survey of 1,058 people ages 18 and older provides insight into how the public gets and disseminates information during emergencies.

Have you ever experienced an emergency or witnessed a newsworthy event and posted information or photos about that event to a social media site? On which site(s) did you post this event?

<table>
<thead>
<tr>
<th>Site</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>22%</td>
</tr>
<tr>
<td>Twitter</td>
<td>21%</td>
</tr>
<tr>
<td>Flickr</td>
<td>13%</td>
</tr>
<tr>
<td>Professor or Tumblr-Blog</td>
<td>11%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
</tr>
</tbody>
</table>

75% of respondents indicated they posted content about an emergency or newsworthy event to one or more of these social sites.

If 911 was busy, who would you try to reach?

<table>
<thead>
<tr>
<th>Contact</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family, friends, or neighbors</td>
<td>16%</td>
</tr>
<tr>
<td>Police</td>
<td>39%</td>
</tr>
<tr>
<td>Fire department</td>
<td>19%</td>
</tr>
<tr>
<td>Hospital</td>
<td>10%</td>
</tr>
</tbody>
</table>

How would you try to reach them?

<table>
<thead>
<tr>
<th>Method</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone</td>
<td>42%</td>
</tr>
<tr>
<td>Digit media</td>
<td>18%</td>
</tr>
<tr>
<td>Walk or drive</td>
<td>16%</td>
</tr>
<tr>
<td>Text message</td>
<td>4%</td>
</tr>
<tr>
<td>None of these</td>
<td>2%</td>
</tr>
</tbody>
</table>

EM Bulletin

Updated Evacuation Studies

An American Red Cross survey of 1,058 people ages 18 and older provides insight into how the public gets and disseminates information during emergencies.
Revolutionize your agency’s efficiency with the touch of a smartphone.

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Location-Based Alerts

CALIFORNIA IS IMPLEMENTING a statewide mass mobile alert system that will send alerts to people’s cell phones based on their location.

The California Emergency Management Agency and Sprint announced in August plans to deploy a Commercial Mobile Alert System (CMAS), a public safety tool that uses technology to deliver warnings and safety information via text alerts to wireless phones in specified areas without requiring individuals to subscribe to the service. The state’s CMAS pilot program, a partnership with San Diego County’s Office of Emergency Services (OES), will begin in the county this fall.

The CMAS technology works much like the emergency alerts broadcast on television or through land line phones. But the main difference is that emergency text messages will be sent to all mobile phones in a defined geographic area, which could be as large as a county or city or as small as a few blocks.

“In San Diego, a number of people come to visit us and go to the beach or come from out of state,” said Leslie Luke, group program manager of the OES. “If they don’t have a hard line phone, we cannot reach them through normal channels and they may not have registered their cell phones. With this new system, we’ll be able to geocode a particular area and reach people based on cell towers, including tourists who may be here for business or pleasure.”

Read more at: www.emergencymgmt.com/caalert

39 New Jersey Towns Linked

IN MARCH, A POWERFUL STORM pummeled New Jersey, forcing police, utility and emergency crews to scramble as the severe weather cut power, delayed trains and triggered floods. But information about the storm’s effects was scarce, and citizens searching for updates were left high and dry.

To avert such communication failures in the future, Morris County, N.J., has activated a shared emergency information network, using social media tools — Facebook and Twitter — to deliver crucial updates around the clock.

Dubbed MCUrgent, the system enables the county Office of Emergency Management to issue notifications and warnings to residents. Ultimately the shared network will provide a platform for each of the county’s 39 towns to quickly share and disseminate emergency information when disaster strikes.

“It’s a shared service,” said Carol Spencer, the county’s IT department webmaster. “Our goal right now is multi-jurisdictional emergency management.”

Despite concerns that Web 2.0 can blur personal and professional boundaries, social media tools help governments share important information in a few keystrokes. Users can access that data immediately.

Read more at: www.emergencymgmt.com/njalert
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AN ATTACK ON THE UNITED STATES using weaponized anthrax — although considered a low-probability event — would have a high impact on the affected communities. If left untreated, the death rate for those who inhale anthrax is more than 99 percent, according to the Military Vaccine Agency.

Anthrax, an acute infectious disease caused by spore-forming bacteria, can be used for biological warfare because the spores can be spread using missiles, artillery, aerial bombs and other methods, making it easily airborne. The good news is that oral medications can be used to treat people who have been exposed; however, the medication must be administered within 48 hours of infection. A bioterrorist attack would likely take place in a large, metropolitan area, and depending on wind speed and direction, the spores could travel hundreds of miles.

In response, state and local health departments are prepared to set up mass dispensing sites to distribute medication from the Centers for Disease Control and Prevention’s (CDC) Strategic National Stockpile to people who may have been infected. But the federal government sought additional methods to dispense the medical countermeasures, and in its planning found a partner in a program that visits nearly all U.S. residences Monday through Saturday — the U.S. Postal Service (USPS).

The plan was put on the federal front burner in December 2009 when President Barack Obama signed an executive order stating: “The U.S. Postal Service has the capacity for rapid residential delivery of medical countermeasures for self-administration across all communities in the United States.” The order gave the USPS and U.S. Department of Health and Human Services (HHS) 180 days to create a national dispensing model for U.S. cities to respond to a large-scale anthrax attack.

The result was a program — the postal plan — that uses the nation’s letter carriers to deliver medical countermeasures. “The postal plan puts letter carriers on the street to deliver medications in the event of such an attack,” said Peter Nowacki, a USPS spokesman in Minneapolis. “Mail delivery would be curtailed, and they would just be going house to house delivering the medication along with information sheets telling people how to take the medication or whether they could take the medication.”

The postal plan was identified as a viable delivery method following an anthrax attack, because postal workers would be doing their everyday job, but with a different material. “It’s something that enhances the existing capabilities to do the distribution and goes further to helping protect our American people in the event of this kind of crisis,” said John Koerner, chief of the Chemical, Biological, Radiological, Nuclear and Explosives Branch within the HHS’ Division of Preparedness Planning.
The “postal plan,” as people working on the initiative call it, is being tested in the Minneapolis/St. Paul area for locations within the ZIP codes beginning with 551 and 554. The plan is part of the CDC’s Cities Readiness Initiative (CRI), which enhances preparedness in the nation’s largest metropolitan areas and has developed a set of strategies for the rapid delivery of preventive medication to people living in major metropolitan areas following a biological attack. Although the executive order was issued in late 2009, the CRI began in 2004. Cities are selected based on criteria, including population and potential vulnerability to a bioterrorism threat.

Preparing the Nation

The question that comes to many minds is why focus on anthrax when there’s a broad spectrum of potential biological weapons. “The CDC has identified a criteria list of certain agents that we could anticipate being used for such purposes,” Koerner said, “and some of the intelligence and other information we have suggest that if one is going to be used, anthrax is, for a number of reasons, probably the likeliest agent.”

Before the president called for the creation of a national dispensing model in 2009, proof-of-concept exercises had been conducted in Boston, Philadelphia and Seattle. During the exercises, letter carriers delivered mock antimicrobial agents to 20,000, 40,000 and 50,000 separate housing units in each jurisdiction, Koerner said.

“The process went well, and it took only about six to nine hours for them to cover their route and make sure all those folks — the 20, 40 and 50 thousand — received their mock antibiotics in a timely fashion,” he said. “The proof of concept showed that it can work.”

The planning regimen that was used in the drills was applied to the Minneapolis/St. Paul area’s postal plan. USPS representatives visited some post offices within the 551 and 554 ZIP codes and spoke with managers, letter carriers and delegates from the letter carriers’ union to outline the program and its expectations, as well as enlist volunteers to participate in the pilot, Nowacki said.

Before the volunteer postal workers began training, they completed a medical screening to ensure that they could ingest the antibiotics and were fitted for safety equipment. Volunteers were trained on what types of safety equipment to wear; where they’d report if called upon to distribute the medication; what their specific assignments would be; and the procedures for obtaining the medication, loading it into their vehicles and how to deliver it.

About 400 people — including letter carriers, USPS supervisors and public health representatives — in the Minneapolis/St. Paul area are participating in the pilot program, Nowacki said.

Collaboration Is Key

Jude Plessas, executive manager of countermeasures delivery and distribution at USPS Headquarters, stressed that this project requires collaboration and participation from all the

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Modeling Preparedness

Jurisdictions that aren’t included in the Centers for Disease Control and Prevention’s Cities Readiness Initiative, which develops preparedness programs in large cities and metropolitan areas, can still actively equip their agencies for a bioterrorist event like an anthrax attack. John Koerner, chief of the U.S. Health and Human Services’ Chemical, Biological, Radiological, Nuclear and Explosives Branch, said the first piece in preparing for such an emergency is to ensure that jurisdictions’ planning is evidence-based by using existing experience and expertise to inform plans and processes.

He recommends the department’s Public Health Emergency website, www.phe.gov, as a reference for planning and preparedness. An anthrax playbook on the website offers a high-level description of what the federal response to an anthrax attack looks like and planning factors that must be identified.
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THE THREE TYPES OF ANTHRAX

Inhalation anthrax can occur if an individual inhales 5,000 to 6,000 spores, which can be in one deep breath. Initial symptoms may develop in one to six days, and resemble the common cold. If left untreated, the death rate exceeds 99 percent.

Cutaneous anthrax can occur when bacteria enters a break in the skin. This is the most common naturally occurring type of anthrax and comes from handling contaminated animal products.

Gastrointestinal anthrax can occur if an individual eats raw or undercooked contaminated meat. There hasn’t been any documented cases in the U.S. of this type of anthrax in the 20th or 21st centuries.

Source: The Military Vaccine Agency

WHY PLAN FOR AN ANTHRAX ATTACK?

✓ Anthrax bacteria produce spores that can be processed to become easily airborne.
✓ Anthrax spores remain dangerous for decades.
✓ It can be produced in large quantities using basic technology.

Source: The Military Vaccine Agency

A Bridge to the Future

Before the postal program is expanded to other cities, another pilot will take place in Louisville, Ky. Plessas said the city, like the Minneapolis/St. Paul area, completed a strategic security plan, and the USPS is working with Louisville officials on the initiative.

“We would like to take some lessons learned from what we went through in Minneapolis/St. Paul and tweak a few things when it comes to the solicitation process, screening process and overall planning process,” he said. “So Louisville will probably be our bridge between the pilot and full program implementation.”

However, as with all initiatives during this economic climate, the program’s future depends on funding. There’s very little funding available for the postal program, Plessas said, and it costs money to screen and train volunteers, equip delivery units with supplies, and exercise the plan. It should also be noted that none of the funding for this initiative comes from stamp sales — it’s funded through HHS appropriations in the annual budget. “If they continue to show up and we can continue to put together that selection process,” Plessas said, “we should be able to expand it to other cities.”

Many major municipalities already have contacted the HHS about the postal program, Koerner said, and he urged interested localities that want to participate to do the same.

“The idea is that over the next couple of years we’ll expand this particular program to help supplement, augment and enhance whatever is already in a locality,” Koerner said.

The cities approached the USPS about participating in the postal plan when the concept was floating around, Plessas said, adding that the Minnesota Department of Health looked at its dispensing network and determined it needed methods to supplement its primary distribution model: mass dispensing sites.

In an anthrax attack in the area, most residents would receive antibiotics by visiting a mass dispensing site, which will be located throughout the metropolitan area, according to Buddy Ferguson, a risk communication specialist with the Minnesota Department of Health. “However, initially we also may activate the postal plan and have postal personnel deliver antibiotics to addresses in selected high-density, highly populated ZIP codes,” he said, “basically so we can take some of the pressure off the mass dispensing sites.”

Although some people will receive the pills through the mail service, affected individuals will need to visit a dispensing site at some point. Each household will initially receive 20 pills, Ferguson said, but individuals exposed to anthrax must take the medication for 60 days. Also, people who cannot take doxycycline — the first-choice antibiotic, according to Ferguson — will have to visit a mass dispensing site to obtain alternative medication.

“If we can get everyone started within 48 hours, that’s the goal,” he said. “That’s what we would need to do to prevent the very serious outcome that we would see if there were a mass attack using airborne anthrax.”

As of press time, the Minneapolis/St. Paul area had yet to complete an on-the-ground test of putting letter carriers on the street delivering mock antibiotics, but the plan is in place and ready for execution. “Right now in Minneapolis/St. Paul, the plan — at least for the first sector in 20 ZIP codes — is operational,” Plessas said. “If we received the call from the Minnesota Department of Health and the governor made the request, we would follow through on bringing carriers in and we would perform the mission.”
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SAFEGUARDING THE RAILS

RAIL SECURITY HAS ALWAYS BEEN CHALLENGING, BUT THE STAKES ARE GROWING.

BY MARGARET STEEN | CONTRIBUTING WRITER
Railroads have been vulnerable since the first Continental Railroad was built in 1869. Then and now, teenagers armed with rocks or guns see boxcars as tempting targets. Derailment, from both deliberate acts and accidents, is a constant threat — and sabotage, trains have a long history as part of warfare.

"We've been doing rail security since Jesse James was robbing trains," said Thomas L. Farmer, assistant vice president of security for the Association of American Railroads, which represents major freight carriers and Amtrak.

For a long time, the primary concern was people wanting to steal a freight train's contents, shoot the crew or rob the passengers. Derailment, from both deliberate acts and sabotage, is a constant threat — and sabotage, from both deliberate acts and accidents, is a constant threat — and sabotaging trains has a long history of warfare.

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“You have to balance these things [with] what the customer is willing to put up with.”

Second, reinforce trains. Windows of locomotives and passenger trains are required to be bulletproof, but only for .22-caliber rifles. “Major damage can be done with high-caliber arms,” Mann said.

Efforts also are under way to improve tanker cars so they’re more resistant to attacks and accidents.

Third, air condition locomotives. When locomotives aren’t air conditioned, crews in hot areas have no choice but to ride with windows and even doors open, said James Stem Jr., national legislative director of the United Transportation Union, which represents transit, rail and other workers. “It’s impossible to secure the cab when it’s 100 degrees outside,” Stem said. “That is probably the most outrageous rail security issue today.”

Fourth, safeguard hazardous materials during transport. Much of the attention in rail security has focused on passenger trains and subway systems — with good reason. Attacks on heavily populated passenger systems allow terrorists to achieve “casualties, damage and the laserlike attention of the international media,” Farmer said. They make rail passengers worldwide worry if such an attack could happen to them.

Attacks on freight trains also can potentially be deadly and attention-getting, especially if they hit trains transporting hazardous material through a heavily populated area. “Throughout the country, hazardous materials are transported more on trains than any other mode of transportation,” Mann said. “That’s a major problem.”

But freight trains’ schedules and cargo are unpredictable, Farmer said, making such an attack “not nearly so easy.” Some attacks on freight

“PASSENGERS AS A ‘FORCE MULTIPLIER’
As chief of the New Jersey Metropolitan Transit (NJ Transit) Police Department, Chris Trucillo is charged with securing a transportation system that spans 116 municipalities, includes more than 18,000 bus stops and transports nearly 1 million passengers across three states each weekday.

Like police chiefs in other cities that have adopted the U.S. Department of Homeland Security’s “See Something, Say Something” campaign, he sees passengers as a potential force multiplier in the effort to secure an expansive open transit system. “In most cases, they take the same bus or train at the same time every day,” Trucillo said. “They know what is normal and what is not normal on their route on their train or bus.”

To facilitate public participation, NJ Transit is running ads inside transit facilities and flyers on train seats that encourage passengers to report suspicious activity as well as reaching out to businesses near transit facilities to educate employees on the signs of terrorism. The transit authority also is planning to run TV, radio and internet ads to spread the message.

Soon passengers will be able to anonymously text suspicious activity reports to authorities. NJ Transit is also looking at ways to increase internal information sharing with its 11,000 employees and provide training to help them recognize suspicious behavior.

— COREY McKENNA, STAFF WRITER
trains turn out to be fairly similar to an accidental derailment — a problem, but not the sort of catastrophe that gets international headlines.

Although freight trains may not be as attractive targets as passenger trains, “the freight railroads have been very attentive to the new realities after 9/11,” Farmer said.

Within weeks of the attacks, safety and security officials assessed the risks and created a security plan. The transport of hazardous materials got particular attention, both from railroads and government.

Focusing particularly on transported material that can be toxic when inhaled, the Transportation Security Administration (TSA) created a plan to ensure that those materials are kept secure, especially in heavily populated areas.

A PARTNERSHIP

Because securing both freight and passenger rail systems is so complex, those in charge are turning to an old strategy: enlisting the public to report suspicious activity.

“Terrorists are looking for what’s easy to do,” Peña said.

If security efforts and the sharp eyes of the public make it more difficult, terrorists are less likely to try in the first place.

In July, DHS Secretary Janet Napolitano announced an expansion of the department’s “See Something, Say Something” campaign, as well as a partnership with Amtrak to share information as part of the department’s Suspicious Activity Reporting program.

“See Something, Say Something” teaches the public what types of activities law enforcement would like to know about. The DHS is creating educational materials and advertisements to nationally expand the program, which started with New York’s Metropolitan Transit Authority.

The basic idea behind the program is sound and old — think of Neighborhood Watch programs, for example, Goodrich said. “They’re looking for a new way of getting through to people that this is an issue and they need to be aware of it,” he said.
The idea is that terrorist plots require planning, surveillance and information-gathering in advance. If alert citizens call law enforcement when they see something suspicious, it will be much more difficult for plots to form.

The government has numerous other programs as well. Although it’s not always easy to calculate how much money goes specifically to rail — since rail is one component of larger programs like port security — the federal government has given grants to transit systems nationwide to enhance their security, Farmer said. This includes canine teams, intrusion detection technology and expanded police forces.

"Working together, the government, railroads, subways and local law enforcement are expanding their capabilities to do random, unpredictable security activities that are essential to deterrence," Farmer said.

However, some say even more could be done. "Rail security has taken a backseat to the security of other modes of transportation," Mann said.

Stem said he sees a stronger role for the federal government. "When you deal with transit and rail security, those issues are national in scope."

Stem also said although he understands that the TSA needed to focus first on the airline industry, it’s past time for the TSA to work with other parties to improve training for rail employees.

In addition to training employees who deal with the public so they can better look for suspicious activities, Stem said the government also should work with railroads to establish better perimeter criteria — ensuring the cars are shielded and access is restricted when there’s hazardous cargo.

A BALANCING ACT

Any security program requires trade-offs. How much are passengers and taxpayers willing to pay to secure the railways? How much are passengers willing to be inconvenienced and have their privacy invaded?

"Security versus accessibility: Invariably it’s going to be a compromise between the two," Goodrich said.

"You must have a certain degree of anonymity for a lot of security programs to function effectively," Goodrich said. "The more people know about them, the more difficult it is for them to do their jobs. But we live in an open society: Where are my tax dollars going? How do I know it’s successful, appropriate and not violating my rights or anybody else’s?"

The unpleasant fact, Peña said, is that "at some point, you have to accept risk. But politicians don’t get re-elected and government bureaucrats don’t advance their careers by telling the public there’s a certain amount of risk you have to take.”

And even the most robust security systems aren’t perfect. "Hindsight is 20/20 when it comes to security," Goodrich said. "In reality, there are gaps in all security programs.

Margaret Steen is a writer in Los Altos, Calif., who writes frequently about business and management.
Emergency management is a growing profession and is projected to continue growing at a rate of 20 percent or more, according to O*NET OnLine (created for the U.S. Department of Labor), which rates emergency management specialists as a “bright outlook occupation” in the labor market.

That growth is reflected in the increasing number of higher education programs offering degrees or certificates in emergency management.

More than 180 emergency management programs dot the country’s higher education landscape, and approximately 100 more colleges and universities are investigating, proposing or developing some sort of hazard, disaster and emergency management program, according to background information provided for FEMA’s 13th Annual Emergency Management Higher Education Conference held in June.

Just as the number of emergency management higher education programs is growing, the number of graduates from those programs is increasing, and expectations about what those degrees mean is often overstated.

Students expect an emergency management degree to give them the skills and knowledge they need to walk out of school and into a good job in the field. And employers expect an emergency management degree to give those job applicants skills and knowledge to make up for their lack of experience.

Neither expectation is very realistic.

The reality is that an emergency management degree helps the job seeker in a competitive environment, and it assures an employer that the applicants are up-to-date on the latest developments in the field. An emergency management degree doesn’t replace experience.

For the job seeker, a college degree really doesn’t guarantee anything — to which anyone with an English literature degree can testify. These days, degrees are used to eliminate candidates in job pools. Anyone looking for employment in a professional field can find herself at a real disadvantage without one — especially in a fledgling and popular field like emergency management.

“Right now, emergency management is a really competitive environment. There are not a lot of jobs and qualified people,” said Lucien Canton, a private consultant with 30 years of experience in local and federal government.

A degree will “bump you up” in the application process, Canton said. It assumes the applicant has college-level academic skills: He or she can write well, conduct research, synthesize information, analyze and interpret regulations, and formulate and follow plans through from beginning to end. He described a degree as “sort of a finishing school.”

Understanding the Nuances

Certainly emergency management is becoming more complicated and demanding. The numbers and consequences of both natural and man-made disasters are increasing, and public- and private-sector agencies are being taken to task for failing to mitigate or prevent the effects of those disasters. Employers are looking for emergency management professionals who understand the political and socio-economic nuances of disasters, as well as how to write a continuity of operations plan and maintain an emergency operations center.

“On the practical side, a degree gives you exposure to areas you don’t have experience in,” said Daryl Spiewak, the emergency, safety and compliance program manager for the Brazos River Authority in Waco, Texas. “It gives you an immersion into the field without going through the years of hard knocks and learning it all the hard way. It means you are more
up-to-date on current policy, theory and regula-
tions than someone with just experience.”

Think of it as a shortcut, in a way. Spiewak
suggested that an emergency management degree
can significantly shorten the learn-
ing curve most emergency managers went
through to get where they are today.

However, an emergency management
degree doesn’t provide the experience employ-
ers are seeking, Spiewak said. ”The degree says
you can do things by the book; it doesn’t say
you can apply it yet.”

If you deconstruct any profession — from
an engineer to an attorney to a plumber — it
breaks down into a predictable progression. In
the 14th century, the time of Geoffrey Chau-
cer’s Canterbury Tales, careers developed
through the apprentice-journeyman-master
model that still exists today in education and
many trades. For emergency management,
that progression is the triad expressed as train-
ing, education and experience.

The traditional emergency manager role
was planning and response, and most emer-
gency managers came from response-oriented
backgrounds — like fire, law and military —
with strong training and field experience.
It’s important to remember that emergency
management is moving from a narrowly
focused occupation to a multilevel profession.
As it’s grown into a profession, education has
asserted itself, linking training and experi-
ence, and creating a new paradigm for the well
rounded emergency manager.

But training isn’t the same as experience;
education can’t replace experience. And
employers are looking for applicants with all
three: training, experience and education.
Even if you already have training and expe-
rience, it will be harder to follow the tradi-
tional path of a lateral move from a response
organization into emergency management
without a college degree. On the flip side: It
also will be hard to get that first job out of col-
lege without some experience.

Scott Preston returned to school to get a
master’s degree in emergency management
after working long enough to get his Certified
Emergency Manager (CEM) certification. He
is currently the business continuity manager
(located within the Emergency Management
Department) at the University of Washington
in Seattle.

When Preston earned his political science
bachelor’s degree in the mid-1990s, emergency
management degrees weren’t available. His first
job in emergency management was as a full-
time volunteer helping the local emergency
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Get Competitive
There will be increasing requirements for
emergency managers, and the field is going to
get more crowded so “it pays to be competi-
tive,” Preston said.

“Scott speaks from direct experience and
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In help, Preston wrote a guide, Suggested
Career Tips for Emergency Management, that
is posted on the university’s website and outlines
how to start a career in the field. “If this is the
career you want,” he said, “you have to make
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“There’s no substitute for experience,” Pres-
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of response experience and nothing else.”

Higher education is the balance between
experience and an emergency management
career. “The time will come when you aren’t
an emergency manager if you don’t have that degree,”
Canton said. “You can’t just say you are an engi-
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The new paradigm for emergency manag-
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Lindsey Holman embraces. She’s a client exec-
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Holman says her degree helped her land
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school was more helpful. “I participated in con-
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some disasters while I was in school,” she said.

The degree gave Holman the basics, but
much of the practical side was outside the
classroom — she was required to do an extern-
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Response Team.

The transition hasn’t been as difficult as she
expected. “You learn how things should work
in school, and then you get into the real world
and learn how things really do work,” Holman
said. “So much of it revolves around a bureau-
cracy, you have to understand that.”

There’s another, more altruistic, reason to get
an emergency management degree. According to
Canton, it goes toward making emergency man-
gement a profession and not an occupation.
A degree shows interest in all phases of emergency
management and isn’t limited to emergency
response or a second retirement career.

Career Tips
University of Washington Business
Continuity Manager Scott Preston
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• TAKE INDEPENDENT COURSES IN
  EMERGENCY MANAGEMENT TO LEARN
  ABOUT THE FIELD — FEMA offers
  a variety of online self-study
courses.

• V olunteer — Volunteer with your
  state, county or local emergency
  management office.

• TAKE ADVANTAGE OF FREE
  PROFESSIONAL MAGAZINES AND
  PUBLICATIONS — Natural Hazards
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• JOIN A PROFESSIONAL ASSOCIATION
  AND GET CERTIFIED — The
  International Association of
  Emergency Managers offers the
  Certified Emergency Manager and
  Associate Emergency Manager
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• BE CREATIVE! — An emergency
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Right now, however, “the degree thing is more future-oriented than today-oriented,” according to Eric Holdeman, former director of the King County, Wash., Office of Emergency Management. He said, however, that even today a degree gives the applicant an advantage.

Mike Kelly is working that advantage. Kelly, a senior at American Military University, is about to graduate with a degree in emergency management with a specialty in chemical, biological, radiological and nuclear hazards. He was a U.S. Marine air traffic controller during 9/11 and wasn’t sure what he wanted to do when he left the service.

“Then I stumbled onto the FEMA Independent Study courses, and that is what sank the hook in,” Kelly said. The benefit of the degree for Kelly is being regarded as a professional, not just from his peers, but to himself.

On a recent trip to Washington, D.C., Kelly talked to an emergency manager from a rural Midwest county. The man had never heard of the International Association of Emergency Managers, didn’t know what a CEM was and didn’t see a degree as necessary. He wears many hats, Kelly admitted, and it’s more difficult to stay involved and current in that kind of setting, but “it was frightening” to realize what the man didn’t know.

The areas common to all these professionals is a shared vision of where emergency management is going. That vision includes degrees in emergency management, the need for experience after leaving school, and professional certification like the CEM and Certified Business Continuity Professional.

Most position announcements posted now for emergency managers say a degree or certification is preferred, but Canton and Holdeman expect that to change in the next 10 years.

“I don’t know a professional certification that doesn’t require a degree,” Canton said. “You won’t be taken seriously if you didn’t.”

The bottom line is that if current emergency managers want to be taken seriously, they’ll be wise to start working on that bachelors’ or masters’ degree now. And if future emergency managers want to take their place, they should be boosting their marketability by looking for experience opportunities while they’re still in school.

— Scott Preston, business continuity manager, Emergency Management Department, University of Washington

If this is the career you want, you have to make your own luck, find your own opportunities.” — Scott Preston, business continuity manager, Emergency Management Department, University of Washington.

Emergency Management Triad

Any good, senior emergency manager comes from a background that includes all three parts of the Emergency Management Triad.

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2. Experience adds proficiency to emergency management.
3. Training isn’t the same as experience. Education can’t replace experience.

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Valerie Lucus-McEwen is a CEM, Certified Business Continuity Professional and an instructor/lecturer for California State University, Long Beach. She also writes the Disaster Academia blog for Emergency Management’s website at www.emergencymgmt.com/academia.
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<tbody>
<tr>
<td>American University of Puerto Rico</td>
<td>Rosabel Vazquez</td>
<td>(787) 620-1032</td>
<td><a href="mailto:rosabel@aupr.edu">rosabel@aupr.edu</a></td>
</tr>
<tr>
<td>Barton Community College</td>
<td>Bill Nash</td>
<td>(785) 238-8550</td>
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<td>Blair College</td>
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<td>(408) 246-4171</td>
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<tr>
<td>California University of Pennsylvania</td>
<td>Charles P. Nemeth</td>
<td>(724) 597-7400</td>
<td><a href="mailto:nemeth@calu.edu">nemeth@calu.edu</a></td>
</tr>
<tr>
<td>Columbus State Community College</td>
<td>Tracy Lamer-Nickoli</td>
<td>(614) 287-2681</td>
<td><a href="mailto:jtahima10@cocc.edu">jtahima10@cocc.edu</a></td>
</tr>
<tr>
<td>Columbus State Community College</td>
<td>J.R. Thomas</td>
<td>(614) 287-2681</td>
<td><a href="mailto:jtahima10@cocc.edu">jtahima10@cocc.edu</a></td>
</tr>
<tr>
<td>Community College of Denver Public Security Management</td>
<td>John Belcastro</td>
<td>(303) 356-2485</td>
<td><a href="mailto:john.belcastro@ccd.edu">john.belcastro@ccd.edu</a></td>
</tr>
<tr>
<td>Corinthian Colleges Inc. Academic Affairs</td>
<td>Daniel Byram</td>
<td>(760) 627-3050 ext. 201</td>
<td><a href="mailto:dbymam@cci.edu">dbymam@cci.edu</a></td>
</tr>
<tr>
<td>Columbus State Community College</td>
<td>Tracy Lamer-Nickoli</td>
<td>(614) 287-2681</td>
<td><a href="mailto:jtahima10@cocc.edu">jtahima10@cocc.edu</a></td>
</tr>
<tr>
<td>Curry College</td>
<td>Steve Beraief</td>
<td>(617) 333-0100</td>
<td><a href="mailto:sberaief@tufts.edu">sberaief@tufts.edu</a></td>
</tr>
<tr>
<td>Delgado Community College</td>
<td>Patrick Cote</td>
<td>(504) 365-6246</td>
<td><a href="mailto:pjcote@dccc.edu">pjcote@dccc.edu</a></td>
</tr>
<tr>
<td>Fairleigh Dickinson University Off-Campus Credit Program</td>
<td>Ronald Calissi</td>
<td>(202) 692-0520</td>
<td><a href="mailto:calissi@fdu.edu">calissi@fdu.edu</a></td>
</tr>
<tr>
<td>George Washington University</td>
<td>Greg Shaw</td>
<td>(202) 991-6736</td>
<td><a href="mailto:gshawn@gwu.edu">gshawn@gwu.edu</a></td>
</tr>
<tr>
<td>Georgetown Public Policy Institute</td>
<td>Virginia Amundsen</td>
<td>(202) 687-2269</td>
<td><a href="mailto:vam@georgetown.edu">vam@georgetown.edu</a></td>
</tr>
<tr>
<td>Georgetown Public Policy Institute</td>
<td>Eugenia Pyntikova</td>
<td>(202) 687-3422</td>
<td><a href="mailto:ep72@georgetown.edu">ep72@georgetown.edu</a></td>
</tr>
<tr>
<td>Indiana University School of Public &amp; Environmental Affairs</td>
<td>Kelly Brown</td>
<td>(765) 455-2328</td>
<td><a href="mailto:kelkreb@iuuk.edu">kelkreb@iuuk.edu</a></td>
</tr>
<tr>
<td>Iowa Central Community College Homeland Security Training Center</td>
<td>Michael Burke</td>
<td>(760) 362-2913 ext. 2226</td>
<td><a href="mailto:burkem@iacciccc.ia.us">burkem@iacciccc.ia.us</a></td>
</tr>
<tr>
<td>John Jay College of Criminal Justice</td>
<td>Julie O’Brien</td>
<td>(212) 237-8433</td>
<td><a href="mailto:terrorism@jjay.cuny.edu">terrorism@jjay.cuny.edu</a></td>
</tr>
<tr>
<td>Johns Hopkins University</td>
<td>Steven David</td>
<td>(410) 516-7530</td>
<td><a href="mailto:sadavid@jhu.edu">sadavid@jhu.edu</a></td>
</tr>
<tr>
<td>Johns Hopkins University</td>
<td>Dorothy Wolfson</td>
<td>(202) 554-2123</td>
<td><a href="mailto:dorothywolfson@jhu.edu">dorothywolfson@jhu.edu</a></td>
</tr>
<tr>
<td>Johns Hopkins University Paul H. Nitze School of Advanced International Studies</td>
<td>Thomas Matrake</td>
<td>(202) 633-9047</td>
<td><a href="mailto:tmatrake@jhu.edu">tmatrake@jhu.edu</a></td>
</tr>
<tr>
<td>Kaplan College</td>
<td>Frank Desena</td>
<td>(616) 523-3070 ext. 4163</td>
<td><a href="mailto:fdesena@kaplancollege.edu">fdesena@kaplancollege.edu</a></td>
</tr>
<tr>
<td>Lakeland Community College Fire Science &amp; Emergency Management Department</td>
<td>Lee Silvis</td>
<td>(410) 555-2170</td>
<td><a href="mailto:leesilvis@lcc.com">leesilvis@lcc.com</a></td>
</tr>
<tr>
<td>Lamar Institute of Technology</td>
<td>Jim Osane</td>
<td>(409) 880-8093</td>
<td><a href="mailto:dosame@lrr.edu">dosame@lrr.edu</a></td>
</tr>
<tr>
<td>Long Island University at Riverhead Homeland Security Management Institute</td>
<td>Vincent Henry</td>
<td>(631) 297-8010</td>
<td><a href="mailto:vincent.henry@liu.edu">vincent.henry@liu.edu</a></td>
</tr>
<tr>
<td>Michigan State University School of Criminal Justice</td>
<td>Phillip Schertzing</td>
<td>(517) 433-3156</td>
<td><a href="mailto:schertz@msu.edu">schertz@msu.edu</a></td>
</tr>
<tr>
<td>Missouri State University</td>
<td>Bernard McCarthy</td>
<td>(417) 836-8290</td>
<td><a href="mailto:bernardmccarthy@missouristate.edu">bernardmccarthy@missouristate.edu</a></td>
</tr>
<tr>
<td>Northern Virginia Community College</td>
<td>Linda Malamis</td>
<td>(703) 257-6634</td>
<td><a href="mailto:lmalamis@nvcc.edu">lmalamis@nvcc.edu</a></td>
</tr>
<tr>
<td>Ohio Dominican University</td>
<td>Renee Atkin</td>
<td>(614) 251-4741</td>
<td><a href="mailto:ratkine@ohiodominican.edu">ratkine@ohiodominican.edu</a></td>
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<td>Parks College</td>
<td>Stuart Goldman</td>
<td>(303) 745-6444</td>
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<td>Peter Forster</td>
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<td>Lonnie Inzer</td>
<td>(719) 520-3195</td>
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<td>Dennis Engi</td>
<td>(765) 496-7757</td>
<td><a href="mailto:engi@ecn-purdue.edu">engi@ecn-purdue.edu</a></td>
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<td><a href="mailto:bombmarl@slu.edu">bombmarl@slu.edu</a></td>
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<td>Kevin Farlow</td>
<td>(316) 684-5335</td>
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<td>Southwestern College</td>
<td>Kelley Krahm</td>
<td>(888) 684-5335 ext. 124</td>
<td><a href="mailto:online@ackansas.edu">online@ackansas.edu</a></td>
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<td>Southwestern College</td>
<td>Mike Packard</td>
<td>(316) 684-5335</td>
<td><a href="mailto:mpackard@ackansas.edu">mpackard@ackansas.edu</a></td>
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<tr>
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<td>Tracy DeWitt</td>
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<td>Harold Huffman</td>
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<td>Laura N. DiPado-Stocks</td>
<td>(815) 421-1125</td>
<td><a href="mailto:ldiPadovstock@park.edu">ldiPadovstock@park.edu</a></td>
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<td>Saint Leo University</td>
<td>Criminal Justice</td>
<td>Randy Matteson</td>
<td>(352) 588-8848</td>
<td>randy.matteson@ saintleo.edu</td>
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<td>Larry Bommarito</td>
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<td>Young-Deo Wang</td>
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In a recent survey conducted by this publication, respondents overwhelmingly listed funding as the major obstacle to accomplishing their missions. But some are finding creative and collaborative ways to obtain the funding they need for their mission-critical projects. In Framingham, Mass., Deputy Police Chief and Emergency Management Director Steven Trask felt that the town would benefit greatly from an alert notification system but had no way to fund it. He eventually convinced the MetroWest Community Health Care Foundation to help, and everyone is glad he did.

In Boston, Emergency Preparedness Director Don McGough and his team were looking at solar energy as a way to enhance emergency preparedness and specifically as a backup to the evacuation system. A $1.3 million grant from the U.S. Department of Energy (DOE) is helping them follow through.

And in Northern California, a simple public-private partnership has provided 21st-century radio communications where it was badly needed.

A GOOD PARTNER

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MetroPCS approached the county five years ago about building a tower in the county because it needed to place some of its equipment there. But the 120-foot tower that initially resulted was insufficient for the new microwave equipment the county needed for its new radio communication system. Negotiations took place and MetroPCS agreed to erect a new, 180-foot tower for its use and the county's new system.

It saved the county about $90,000 or about half the tower's cost.

"It was a big benefit that MetroPCS participated in this project with us," said Patricia Williams, executive director of the Yolo Emergency Communications Agency. "It could have been a more tedious process, but they've been generous and cooperative, and it's made a huge difference for public safety to have a partner like that!"

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Trask first convinced the department heads of the local Police, Fire and Public Works departments how valuable the system could be and persuaded each to chip in $5,000 or $10,000. Then he went to the MetroWest Community Health Care Foundation and inquired about health and wellness grants. The tie-in was that children or Alzheimer's patients would frequently become lost and the notification system would help locate and return them to safety.

"When Steve first approached us, he was a little skeptical," said MetroWest Executive Director Martin Cohen. "We're a health-care foundation and our clear interest is health and wellness."

Trask continued to pitch the system, and it eventually became clear to Cohen and those at MetroWest that it might be a worthwhile investment.

"We're all finding ourselves in a position where funding is harder to come by, and a couple of things happen with that: We need to be more creative in the way we identify available resources, and we need to be more collaborative."

-- Don McGough, Director, Boston Office of Emergency Preparedness

In Boston, Emergency Preparedness Director Don McGough and his team were looking at solar energy as a way to enhance emergency preparedness and specifically as a backup to the evacuation system. A $1.3 million grant from the U.S. Department of Energy (DOE) is helping them follow through.

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Trask uses that feedback to tally his yearly reports, a requirement of keeping the system going. "One of the requirements of the grant is year-end reporting," he said. "At the end of the year, we send out a phone call to our residents that's a single question survey, they just press a button."

The question asks if residents feel safer now that the system is in place. Trask said he gets a 30 to 40 percent response rate and of those, about 95 percent say they feel safer.

"People appreciate getting a message from someone they know or at least recognize," he said. The messages go to land line phones, cell phones or a computer portal if the resident requested that route.

"I start the messages off with, 'This is Deputy Chief Trask, and this is an important message,'" he said. "They know it's me and I'm not trying to sell them anything."

The system has been in place for four years and the budget is tighter now, Trask said. "It hasn't come up on the radar to be put on the chopping block, and that speaks volumes."

**GOING SOLAR**

In 2007, Boston became one of 13 Solar America Cities under the DOE's Solar American Initiative, and subsequently launched Solar Boston, a program aimed at encouraging solar-energy adoption in the city.

So it was natural to look at solar energy as a way of backing up the city's evacuation plans. McGough convened a group to look at redundancy and how solar energy fit in.

He said the team — consisting of the Office of Emergency Preparedness and public safety agencies — identified about 15 different applications for solar energy that could enhance emergency preparedness and lend some redundancy to the evacuation system. The workshop also included a DOE presence.

"We identified a number of different things like radio repeaters, traffic signals, lighting along [the evacuation] routes and fueling stations — all things important to allowing us to do an evacuation even if there was an interruption to our electrical source of power," McGough said.

Then an American Recovery and Reinvestment Act grant for $1.3 million became available through the DOE. McGough learned of the grant from the city's Department of Environment. "We had formed a relationship with them. We had worked with them previously, and when they were notified of the grant, we were at the forefront of their minds," McGough said. "It was really a collective approach and not from learning of the grant directly but indirectly from our city partners."

From there it was full speed ahead on developing the projects. "We've come up with a pilot initiative for a solar evacuation route," he said. "Because so many of those things we identified could be applicable, from fuel pumps to traffic signals to lighting and emergency communications."

McGough said a lesson learned from evacuation planning was that there must be the capacity to keep vehicles moving. A stalled vehicle means a dead evacuation route, whether it's an evacuee or first responder vehicle. One of the initiatives is to ensure that fueling stations have solar-powered canopies that would be used as a backup during a power disruption.

Another obstacle to an efficient evacuation would be a traffic signal outage. "That's one of the applications we had previously identified and we're looking to provide solar power, so even if at a minimum it's a blinking yellow and red light, that's better than nothing," McGough said.

Solar power also could help keep the camera systems at various intersections operational during a power outage. And the radio repeaters that support voice and data traffic in the region are critical during a crisis. "If we had [solar] nodes that we can maintain, that helps provide a more redundant and reliable system, we could continue to communicate across the area," McGough said.

He said this is the tip of the iceberg with what can happen with solar energy and emergency preparedness. "All the stars are aligned that this is something that's great for emergency response and preparedness."

And it happened as a result of a partnership and a little bit of creative thinking, which might be the recipe for funding projects in the current budget climate.

"We're all finding ourselves in a position where funding is harder to come by," McGough said, "and a couple of things happen with that: We need to be more creative in the way we identify available resources, and we need to be more collaborative. I think this is a good example of both."
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Virtual Virginia

An information-sharing system provides the state with a common operating picture during disasters while aiding a national pilot to capitalize on the power of GIS data.

By Jessica Hughes | Contributing Writer

It’s easy to quantify success more than two years after the Virginia Interoperability Picture for Emergency Response (VIPER) system first made its mark in the information-sharing world — just look at the handful of innovation awards, its role as a model for a national interoperability initiative, and even VIPER on YouTube.

But the real story is how VIPER, which displays real-time geospatial information, has changed the not-so-easily quantifiable — essentially altering how the Virginia Department of Emergency Management (VDEM) manages emergencies.

VIPER is more than just a moving map. Its data scope and analytics capabilities present operational questions — and agile and creative minds are needed to answer them, said Harry Colestock III, the department’s director of operations.

Department operators use VIPER at the state’s Emergency Operations Center to monitor a day-to-day standard picture, and also during disasters to assess unfolding events, deploy personnel and equipment, and update data from the field or command center.

VIPER has encouraged its users to make important connections: staff scaling up and down during an incident, assessing vulnerable infrastructure and finding shelter for people. Through VIPER, responders assess the wider situation and its link to people, places and the environment.

In the Community

VIPER is a Web-based GIS enterprise platform that uses existing information — such as live feeds from diverse sources like traffic cameras, social networking sites, photographs and National Weather Service data — to display dynamic relationships in context. VIPER brings emergency commanders and first responders, as well as local, state and federal stakeholders, before the same geospatial images and information.

“When you’re looking at real pieces of information, you’re able to adjust how to respond,” said Brian Crumpler, GIS manager for VDEM. “How you respond is based on those other real-time events that happen.”

In creating VIPER, the department partnered with Esri, a Redlands, Calif.-based GIS company; department users were familiar with the company’s GIS platform.

Crumpler said VIPER was one of the first systems in the nation to use Esri’s Flex API (application programming interface), which provided users with a simpler method of creating and modifying applications.

“They gave us a lot of time and effort in the process,” Colestock said, though he emphasized that Virginia’s efforts are vendor neutral. “The principles with which VIPER is made can be done with any viewer.” The ArcGIS platform that VIPER uses is intended for interoperability and conforms to open standards, according to Esri documents.

VIPER helps the state’s Emergency Operations Center in its mission to support state agencies and localities during disaster events, but has also proven helpful as a template to share with interested parties, including other states, through the national Virtual USA initiative, which promotes GIS information sharing among states and others.

VDEM also shares technical information with counties so they can create their own GIS information-sharing systems that cater to their data interests.

“It gives them the flexibility to really control their own data,” Crumpler said.

Colestock emphasized the importance of leaving information control in the hands of originating parties. Partnering with hospitals and private associations to access their data — and also share VIPER — has required the department to respect proprietary concerns by drafting agreements to set limits and foster trust.

“[VIPER has] helped us to not only look at the map, but also to work with the data parties we need to work with,” Crumpler said.

Additionally anyone can appeal for a VIPER pass-word and user name through its Web portal (https://cap.vdem.virginia.gov/viper), though the VIPER team uses discretion when granting varying levels of access.

User-Defined Operating Picture

Some 250 data layers regularly flow into VIPER’s maps, which presents the challenge of organizing and assigning value to data so users are empowered, not bombarded.

“In some cases it does overwhelm the user,” Colestock said. VDEM is continually refining ways to “quickly and rationally sort information for the multiple levels of decision-making we have.”

Instead of the standard “common operating picture” terminology (referring to shared access of
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PAGE
Technology and Trends

the same GIS image), Colestock said the VIPER team now thinks of the system's capabilities as how the user defines them. A user-first philosophy helps tether the technology to user needs. "Although the data flowing into the system is the same, the actual geography of the situations that you're going to look at are different because you have a different question," Colestock said.

VIPER has been used to track the spin of tornadoes, spread of the H1N1 virus, spread of traffic accidents, and aftermath of earthquakes and floods, to plan the response to terrorist threats, and chemical and nuclear disasters, and even to scan for anomalies during President Barack Obama's 2009 inauguration ceremony. As an example of VIPER in action, emergency responders used the system to watch storm movements and track traffic accidents in early 2010 after snow had blanketed the northeast. Responders followed the Virginia Department of Transportation traffic accident alerts, allocated resources among the many stakeholders and monitored the unfolding events as close as on-scene cameras.

"It helped us to make decisions by having a better picture of what was going on," Colestock said. "And then having that same picture for the State Police, Department of Transportation and National Guard. They can look at that same thing and say, 'We've got to do something about that — we understand the situation because we can actually see it.'"

The system combines GIS and database analytics to display certain information when thresholds are met. "This is particularly helpful since users have identified the criteria," Crumpler said. In a hazardous materials event, he said responders want to know the proximity of traffic cameras, schools and hospitals, so VIPER displays this information every time a similar incident occurs. Colestock said VIPER's ability to find, analyze and incorporate such data is powerful, but that a dynamic and motivated staff asking the right questions and using the system to find answers is just as essential.

"When I say, 'I need to know what the snowplows are doing in West Virginia,' I don't know if there is data to tell me the answer to the question. I just need to know the answer," Colestock explained. "With an agile staff and system, I can hopefully answer that question."

FROM VIRTUAL VIRGINIA TO VIRTUAL USA

Almost since its beginnings, the Virginia Interoperability Picture for Emergency Response (VIPER) system has been a model for other GIS sharing systems through the U.S. Department of Homeland Security's (DHS) information-sharing initiative Virtual USA, which is part of the White House's Open Government Initiative.

In December 2009, the DHS' Science and Technology Directorate's Command, Control and Interoperability (CCID) Division launched the initiative to promote real-time emergency response collaboration among states, and ultimately among all levels of government.

It has since expanded quickly, with several collaborative, regional pilots testing prototype generations: in less than two years it has grown from two to 20 participating states. Through the initiative, states share information through and about their technology solutions, capitalizing on the power of GIS to present data in a contextual format.

David Boyd, director of the CCID Division, said the initiative avoided the resistance characterized by other national information-sharing efforts by keeping states in control of their data and emphasizing the use of existing technologies. This is a welcome departure, Boyd said, from expensive one-size-fits-all approaches.

"The reality is that 'nobody can ever afford to throw out their plans and start over,'" he said.

The ease of sharing basic information between two similar visualization systems supported by different platforms — Virtual Alabama with its Google Earth platform and Virginia's VIPER with its Envi platform — cemented the idea in February 2009 of creating a national initiative that encourages information sharing in an environment that's comfortable for states. With the Virtual USA network, states initiate information exchanges, deciding when and with whom to share their information.

"What is most important is that it brings together commonly accepted standards in this field, making it much, much easier to share information," Boyd said.

Brian Crumpler, GIS manager for the Virginia Department of Emergency Management, sees the Virtual USA community as important to the success of technologies like VIPER. "When you have an environment where people can interact with one another, you not only see that there may be solutions that already exist, but you also discover that when you take parts of different people's solutions, you can come up with something that addresses an unmet need in a way that nobody else has done before."

Crumpler added, "When we are able to discover potentially relevant data and incorporate it into our situational awareness, many times we begin to see new patterns that we had never anticipated."

From the Ashes

Several events culminated in VIPER, which was first released in August 2008. Seven months prior, wildfires that had spread to 60 of Virginia's 115 counties left the department scrambling for real-time on-the-ground information, and coming up short. VDEM needed a clearer understanding of situational awareness.

Such context questions have plagued emergency responders for ages. "We always had the questions but it was like, OK, what do I do about it?" Colestock said. A former employee had the vision of creating an interactive GIS system, much like the one he had used in the Navy. "He thought this should be simple to solve," Colestock said, "Well, it wasn't exactly simple, but it was solvable."

VIPER's first version presented the department's emergency management system, WebEOC, information alongside traditional GIS data. But in December 2008, the department made a significant breakthrough by discovering how — in addition to feeding VIPER live data — to download and perform additional analysis on outside information, Crumpler said. The change meant VIPER could automatically transform all kinds of information, such as National Weather Service temperature and wind information, published in scientific units, into relevant language using mph and degrees Fahrenheit. From there, VIPER can calculate wind chill and alert operators to icy roads and areas of gusty winds.

VIPER has continued to evolve. It's integrated Twitter, Flicker and a new iPhone application that shows real-time data from WebEOC, local computer-aided design systems, traffic and National Weather Service radar.

"That isn't to say the essence of VIPER doesn't still rest at that magical nexus between people and the information they need to make decisions."

"At the very center of any emergency activity, the single most important thing is information," said Virtual USA Program Manager David Boyd. "Because if I don't know what's happening and I don't know where folks are, then I can't effectively manage the emergency."
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Creating a common operating picture for all responders in an emergency is essential to taking appropriate action and keeping everyone safe. Hazardous materials incidents, however, create unique problems for response teams because their protective suits often make it difficult to read instrument screens, and if subject-matter experts aren’t on scene, responders must find ways to relay the information back to them.

The U.S. Department of Homeland Security (DHS) Science and Technology (S&T) Directorate partnered with private and public organizations to build a device that can connect to a HAZMAT instrument and wirelessly send its information to the command station, as well as to subject-matter experts and others who need the data. More than two years ago, the Los Angeles County operational area—which includes 88 cities, 137 unincorporated areas and 288 special districts—began a pilot of the Integrated Chemical, Biological, Radiological, Nuclear and Explosive (ICBRNE, pronounced “I C Bernie”) program, which uses sensors to monitor, report, display and alert officials if such materials are detected.

The project began as a way to improve the safety of first responders going into hazardous environments, said David Lamensdorf, an ICBRNE subject-matter expert for the S&T. To detect chemicals and other hazardous materials, “they bring instrumentation…with tiny little displays, and trying to view this data in the field can be a little bit challenging, especially as it goes through fogged-up face masks and such,” he said. To address this problem and the need for interoperable data sharing, the ICBRNE system works with off-the-shelf HAZMAT sensors to wirelessly send live readings to subject-matter experts and other first responders a safe distance away from the incident.

“We were trying to take their existing equipment and information systems and use open standards and communications protocols to allow them to share that data and information seamlessly with whoever needed it — and with the right amount of information so they could respond appropriately,” said S&T Program Manager Teresa Lustig.

Lamensdorf, also the president of Safe Environment Engineering, which makes wireless data transmitters, said three parts constitute the system:

1. A Lifeline Interoperable Network Communicator, called a dongle, connects to the first responder’s instrument and sends the raw data to a computer application that emulates the instrument’s screen.
2. A gateway allows the data to be transmitted over the Internet. The gateway takes a local area network and puts it onto a wide area network, which lets people who aren’t at the scene view the information online.
3. The data is transmitted through global standards so it can be shared using an agency’s tool of choice. "If a response organization has a specific tool display mechanism they want to view the data in, as long as it can work to these standards, it can take the data and present it," he said. “We like to think we’ve created a common operating picture of data; everybody’s working off the same data.”

Putting it to the Test

In December 2009, the Pacific Northwest National Laboratory approached the Naval Postgraduate School’s Center for Asymmetric Warfare (CAW) about a DHS project to test the ICBRNE program. Testing a system that spans a large area isn’t an easy undertaking, and CAW has experience conducting multiagency, large-scale training and exercise events. Los Angeles, with its ongoing ICBRNE pilot, was declared the drill’s venue, and the exercise would focus on the detonation of an improvised nuclear device.

Nuclear Reaction

To test a federal program that monitors hazardous materials, Los Angeles County responds to the mock detonation of an improvised nuclear device.
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Although the DHS S&T sponsored the exercise, dubbed Operation Golden Phoenix (OGP), L.A. County led the project, Lustig said. “They selected the scenario themselves,” she said. “They wanted to choose this improvised nuclear detonation, which I think is the most challenging.”

CAW took on the planning and facilitating role, and began by creating a planning team that comprised the exercise’s key players, including L.A. County’s Office of Emergency Management and its Public Health Department’s Radiation Planning Group, and the L.A. city Emergency Management Department, according to Brendan Applegate, an exercise manager with CAW.

“We got those agencies together, asked if they were interested in participating in such an exercise, and developed objectives for the effort,” Applegate said. “We developed an exercise plan that would test the ICBRNE system and also allow these other agencies to achieve some of their own training and exercise objectives.”

Scott Brewer, an emergency manager for CAW, said one of the difficult things with involving so many agencies — more than 135 participated — is compelling them to play. Including their objectives and helping them accomplish some of their annual exercise requirements and training goals is important, he said.

The OGP was more expansive than a one-day exercise; it took place over about two months and involved a seminar hosted by L.A. County on radiation management and nuclear weapons tabletop exercises, a communications exercise, an ICBRNE demonstration; outreach presentations to the county’s cities and agencies; and a functional exercise.

A major benefit of exercises like the OGP is that they help identify people’s roles during an emergency and “expected surprises,” said John Fernandes, administrator of the L.A. County Office of Emergency Management. “There are a lot of unexpected and expected surprises in a lot of ways, because that’s what emergencies are,” he said. “Emergencies are going to give you expected surprises with respect to a certain number of casualties, a certain number of problems with reaching people who have problems getting water in the aftermath or shelter if they need immediate shelter.”

Nuclear Response

In late July, the functional exercise began when participants were notified that a 10-kiloton improvised nuclear device was detonated in L.A. It was quickly deemed an act of terrorism, and a mock newscast reported that there was a massive number of casualties. Emergency operations centers (EOC) were filled with players from various agencies in preparation for the drill, and the exercise’s emergency response was under way.

Brewer explained that during the function exercise, numerous EOCs and department operations centers were activated and everyone took on their emergency management role. However, there wasn’t any field play; he said, meaning a CAW-run control cell supplied situational awareness to the participants, as did mock news reports and field incident action reports to paint a picture of what would be happening outside building walls following a nuclear explosion.

“They don’t really have a good view of what’s going on in the outside world, so they rely on information coming in through news reports, TV, phone, e-mail, other agencies talking with them on the phone or via liaisons to get information,” Applegate said. “They’re not actually in the field looking at all these things going on.”

The control cell also simulated the agencies that weren’t participating. For example, FEMA wasn’t participating, so if someone needed to contact it during the drill, he or she would call the control cell where the agency’s role was simulated.

The ICBRNE system was used during the drill to provide a common operating picture to all the participating agencies. However, incorporating it into the drill was a challenge, Brewer said, because the first responders who work with it in the field were already familiar with the system, but this was a chance to give emergency management and...
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—Christine Gregoire, Governor, State of Washington
public health officials a chance to learn about it. “They got a good opportunity to work with the product [and] the technology,” he said. “I think everybody went away with some good ideas about how they can benefit from that program and project.”

The system’s effectiveness during the drill was evaluated through the DHS’ process, and Lustig said the S&T will receive a report card on it. But it isn’t the only aspect that was assessed. An evaluation team examined the actions performed during the drill and checked them against the exercise objectives and the Homeland Security Exercise and Evaluation Program’s national standards.

As of press time, the after-action report wasn’t available, but Brewer identified two key findings:

• No. 1: The response to this type of incident will be regional. “No matter where this occurs, it will be a regional, multiagency response,” he said. “There’s no one agency that’s going to have the resources, and it’s never going to stay within the jurisdiction of one agency.”

• No. 2: Although the response will initially be to a terrorist attack, long term it will be a public health emergency because of the management of radiation exposure, contaminated areas and responder safety.

Forging Partnerships

The OPG allowed the L.A. area to enhance its regional relationships and information sharing techniques by also testing its Operational Area Response and Recovery System, a Web-based system that allows them to wirelessly share situational response information. “Whether I am here at the office, at home or in the field and we have an incident take place, I’m able to access the system and see what the situation is in various cities,” said Ken Kondo, public information officer for the county’s Office of Emergency Management. “It provides information to the emergency responders and managers so they can start to plan what the next steps are going to be.”

In addition to creating partnerships with the different governments within the county’s operation area, Kondo also stressed the importance of working with local media, because people will turn to news outlets for information on a disaster. Educating reporters and producers on the recommended actions people should take following a disaster will allow them to repeat the county’s messages to the public following an emergency.

The Golden State is well known for earthquakes and has spread prescribed messages like “drop, cover and hold on,” and Kondo would like to establish similar messages for other potential disasters.

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This free first-of-its-kind online training covers the development and maintenance of collaborative planning relationships, the sharing and tracking of information, patients, and resources, and examples of disaster preparedness and response via a large scenario case study.

Each of the four training modules is approximately one hour in length and features pre-filmed streaming video with synchronized transcript and slides. Additional materials are available for download. Upon registration, each participant is placed into a state-specific virtual community to foster increased collaboration.

This training is available nationwide with registration information at http://www.tinyurl.com/acep-cdp. There will be live Q&A sessions for each state, featuring a panel of subject matter experts from within each state who will address state-specific implementation of general ideas presented.

For questions, contact Linda Becker at lbecker@acep.org.

This program is supported by Cooperative Agreement Number 2007-GT-T-0020, administered by the U.S. Department of Homeland Security/FEMA. Points of view or opinions in this program are those of the author(s) and do not represent the position or policies of the U.S. Department of Homeland Security/FEMA.
Vulnerable small businesses find the answers to surviving a disaster.

Diana McClure wants small businesses to ask themselves a few simple questions in the face of a possible disaster: "What is it we do as a company? What would be the most important things for us to do to survive a disaster? And what would we need to get up and running again?"

As the business resiliency program manager at the Institute for Business and Home Safety (IBHS) in Tampa, Fla., McClure is helping small businesses find answers and shape them into meaningful action plans. She oversees Open for Business, a program designed to assist small businesses in their efforts to prepare for and mitigate the effects of a disaster.

The free program offers a template that probes deeply into all facets of disaster preparedness, along with an eight-session online series addressing diverse areas related to planning and recovery. Although many business owners may have an inkling of what disaster planning entails — like backing up the computer and compiling a detailed phone list — Open for Business goes considerably further.

13 forms help business owners understand how to manage critical supplies, maintain voice and data communications, and identify and preserve key business functions. The list goes on.

Open for Business began as an interactive Web tool available to insurance agents and policyholders. More recently, the IBHS produced a print version that's free to the general public.

The program came to life in the wake of the 9/11, when Congress declared disaster preparation in the private sector a vital national interest. From that grew FEMA's Voluntary Private Sector Preparedness Accreditation and Certification Program (PS-Prep), a collection of standards for companies to follow to ensure business continuity in the event of a natural or man-made disaster.

PS-Prep in turn became the foundation of the Open for Business effort. "We are trying to follow that process very closely and think about that in terms of small business," McClure said.

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“So when someone says, ‘What have you done about backup?’ That’s just not on their radar. They focus on their core competency.”

Tom Phelan, president, Strategic Teaching Associates Inc.

For users who delve into Open for Business, the most immediate impact is to create not just a plan, but also a formal process whereby business owners can analyze their company’s needs.

“A lot of the value lies in going through the process, especially if you have a team,” McClure said. “Even a small team composed of people representing different job responsibilities can benefit because you are thinking things through [and] learning what it is you [must] have in place to recover your business.”

The planning process itself becomes a vital piece of a business’s ability to address continuity questions. Through identifying and understanding aspects of the business, owners and managers can find that improvements can be made not only to their disaster plans, but also to the enterprise’s ongoing operations.

“When people start going through this process, if they are talking with each other across departments and across job responsibilities, they start to learn how they depend on each other,” McClure said. “They may find there are things they can do right now to streamline their business operations to address some weak area they had not identified before. So there can be some real benefits operationally in the present.”

Turning a Blind Eye

Small businesses may be especially vulnerable in a crisis, simply because they’re never devoted appropriate attention to the need to prepare. Some may feel they are (or in fact may be) unqualified to address the subject, said Tom Phelan, president of Strategic Teaching Associates Inc. and program director for Emergency and Disaster Management and Fire Science at the American Public University System in Charles Town, W.Va.

“They are subject-matter experts. They know how to make pizza or repair computers. They may spend 80 to 120 hours a week just trying to work within that subject-matter expertise,” Phelan said. “So when someone says, ‘What have you done about backup?’ That’s just not on their radar. They focus on their core competency.”

As a result, such entrepreneurs may have a general sense that a fire or flood would be a bad thing, but they may miss many of the more subtle threats. “Suppose you have a street repair in front of your coffee shop,” Phelan said. “If the street is closed for weeks because of that, you’re out of business. They think about floods and hurricanes. No one thinks about it, but a parade can shut your business down for a whole day!”

Sometimes the threats are overlooked. In other cases, the problem is simply a lack of time because business owners are stretched too thin to give much thought to disaster planning. And then there’s another common malady: turning a blind eye. “It’s human nature to be in denial, to say, ‘It’s not going to happen to me,’” McClure said.

Perils and Patches

There are many ways small businesses can get trounced by hurricanes, fires or floods. There also are multiple fixes and precautions that are surprisingly easy to implement.

Take for instance the case of a small print shop. When the lights go out, the owner still needs a command center to keep in touch with employees, customers and vendors, and that isn’t hard. “All you need is call forwarding to your uncle’s house,” Phelan said. “The call-forwarding apparatus is in the phone company’s central switch; it is not in your location.”

Some solutions are efficient, inexpensive and ultimately good for the business. Suppose a restaurant’s kitchen floods. Rather than wait for a contractor to mop up, Phelan said, you can use your own sink and wastewater. Not only does the job get done, typically at less cost, but it also keeps your people employed, thus preventing them from skipping to other jobs the next town over.
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said Tim Lovell, executive director of Tulsa Partners Inc., a nonprofit enterprise in Oklahoma that’s working to build disaster-resistant communities.

“One of the key things about this, from the community perspective, is that first responders should be aware that small businesses play a critical role in the recovery of a community,” Lovell said. The faster small businesses get better, the faster the community as a whole can recover, “which means less work for the first responders.”

For first responders looking to be proactive, there will be challenges, as usual, in the form of limited resources. “In some communities, there may be just one emergency manager, and for them to go out to all these business and nonprofit groups is just not feasible,” Lovell said.

“This can be avoided, however. ‘They need to work with those groups where the businesses come together,’ Lovell said. ‘You can work, for example, through the local chamber of commerce to get the word out about this. That is helpful, particularly if you can get the chamber of commerce to actively promote that message.’

Then there are the micro-groups. Tulsa has an American Indian Chamber of Commerce, a Hispanic Chamber of Commerce, and as in most cities, a range of business organizations representing geographic areas.

Plenty of Resources
There are numerous resources for small businesses wishing to investigate preparedness, including:

• the Red Cross offers a detailed contingency planning guide through its Ready Rating Program, www.readyrating.org.
• the U.S. Small Business Administration offers disaster planning assistance and also has a range of financial assistance products for small businesses impacted by a disaster.
• Business Physical Disaster Loans up to $2 million can be used to repair or replace damaged real estate, equipment, inventory and fixtures. The Economic Injury Disaster Loan Program provides up to $2 million to help businesses pay the standard bills they would have paid if the disaster had not occurred. Both have low interest rates.

Ultimately small businesses will serve themselves well by planning in advance of any catastrophic event. “They don’t have deep pockets,” McClure said, “so whatever happens, they really can’t afford to not be in operation for a very long period of time.”

Adam Stone writes on business and technology from Annapolis, Md. He also contributes to Government Technology magazine.
Berkly Trumbo, Siemens Industry Inc.

**Functional Requirements for Next Generation MNS**

While the latest update to NFPA redefines Mass Notification as "Emergency Communications Systems (ECS)", the end user community is formulating expectations related to the future functionality of today's alerting solutions.

Numerous best practices have surfaced since alerting technology began its rapid, mainstream adoption and the NFPA is looking to incorporate pressure tested protocols in the new code. The latest updates refer to "wide-area" and "distributed recipient notification" in addition to building notifications. Wide area being the geography surrounding a building on a particular campus and distributed recipient notification as "expanded beyond the facility and the area, to be accomplished through means such as telephone calls, text messaging, and emails".

So far, colleges, corporations and government entities have made significant investments in technology platforms and end point devices towards a goal of safer, more secure campus environments but still have not solved all critical messaging challenges. As an industry, emergency communications has vaulted forward from the days of single tone sirens but new gaps in functionality are appearing when considering a holistic approach to mass notification. Emergency Management professionals have been left with a complex array of disparate systems to use when seconds count the most.

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**Communication is the backbone of effective emergency management. Being able to reach everyone in a timely matter with the proper information is the key to making the right decisions and mitigating negative outcomes.**

-Lt. M. Smith Tennyson Commander, Governmental Security St Johns County Sheriffs Office

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**Leveraging the Network for Premise Based Solutions**

A popular model which comprises the foundation of most Mass Notification Systems currently deployed is a web-based, multi modal offering residing completely outside of the IT infrastructure of a business or campus. This model is based on sound logic considering continuity of operations planning but many times, the IT network on-campus is one of the institution's greatest IT assets. It is common for CIOs to invest a large percentage of their overall budget into the infrastructure and oftentimes buildings are so "wired" that the degree of functionality end users are getting from their emergency communications systems is but a fraction of the capability, the whole truly being greater than the sum of its parts.

A managed systems approach to emergency communications systems is becoming a popular topic between IT, Facilities, and Public Safety stakeholders. A site audit of a campus footprint can reveal a wealth of network devices that are capable of delivering an emergency message but are not configured to do so. Thinking of a variety of end point devices as underutilized assets, one can ask the crucial question "how do I make marginal adjustments that will yield exponential returns related to functionality?" LCDs, sirens, LEDs, desktop computers, and the ever-present fire panel are but a few examples of devices that are only serving in a fraction of their capacity.

The response which serves this question best is to use a premise based solution, bundling all end point devices under a single managed emergency communications architecture effectively creating a system of systems.

**Consolidating Command and Control Communications**

A managed emergency communications system can include web based alerting as one part of a holistic approach to critical messaging. To date, volume has been the underlying theme of mass notification...
but we are moving towards a blended requirement of scalable functionality to include accuracy and granularity in campus communications. Emergency Management professionals have identified the need to have a laser focus after delivering the first wave of warnings. Pinpointing a building, floor, or office/classroom offers a unique value proposition when considering scenarios wherein conditions affecting the people inside a structure are changing or are different for one location versus another. Having a single user interface which manages all end point devices and allows direct communications with predefined groups or one particular modality will prove to be an invaluable feature of future message management.

Conclusion
Experts agree that the right technology mix can act as a force multiplier in incident management. Well constructed plans and highly capable individuals are doubly effective when given the correct tools to utilize during an emergency.

Emergency communications systems are evolving towards a managed system model as opposed to a collection of disjointed, boutique applications. Advances in technology are affording end users more options regarding a consolidated approach to critical communications and incident management professionals are seeking scalable solutions which will make the most of past and future investments.

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About the Author
Berkly Trumbo is a Mass Notification Systems (MNS) specialist with responsibility for Florida and the Caribbean related to emergency communications technologies. Mr. Trumbo can be reached at berkly.trumbo@siemens.com or 954/ 364-6820.

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Answers for infrastructure.
Beverly Hills, the glitzy Los Angeles suburb, is known by most as a haven for Southern California’s rich and famous. But beyond Rodeo Drive and the jet-setting “teens” depicted by the soap opera sharing the same name, Beverly Hills must grapple with reality just like every other city.

Beverly Hills also has needs that sometimes transcend the ordinary. Celebrities, politicians and dignitaries from around the globe demand that the city performs above and beyond when it comes to public safety. In addition, the city is nestled near Southern California mountains that are infamous for bursting into infernos. Add to that the fact of life that besets all of Southern California — the potential for catastrophic earthquakes — and it becomes clear that the goings-on behind the scenes in Beverly Hills can be anything but glamorous.

To help city officials and public safety agencies better prepare for and react to emergencies, the City Council and Mayor Jimmy Delshad tasked CIO David Schirmer with developing a system that would allow users to visualize on a map, real-time resource data, disaster information, traffic conditions or anything else they imagined would be helpful. What resulted is a cutting-edge GIS application known as Virtual Beverly Hills.

**More Than a Map**

“Virtual Beverly Hills was developed to meet the needs of emergency responders and public safety of Beverly Hills with the intention to expand for regional use,” explained Lema Kebede, the city’s GIS systems integrator/program coordinator. “It has a major mapping component that is the central point of this application. But we took it beyond just basic mapping.”

The program is built atop GIS software from Esri, which is based in Redlands, Calif. A Virtual Beverly Hills user is presented with an aerial map of the city, similar to those one would find using Google, Yahoo or Bing maps. But that’s where the
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similarity ends and the power of Virtual Beverly Hills begins.

Virtual Beverly Hills incorporates a vast array of data sets from internal and external sources. U.S. Geological Survey (USGS) data sets, for example, let users accurately map potential damage from an earthquake while internal computer-aided design data sets provide emergency responders with precision detail about structures that might be affected in a disaster. With the click of a mouse, users can even access real-time video feeds from city closed-circuit TV cameras, which could be invaluable in an emergency.

All this data is stored in the city’s geo-database, into which Virtual Beverly Hills is integrated. External data can be processed and layered on the map in near real time, providing public safety officials with the latest details should an emergency arise. The database also stores information as it’s being received in case a disaster sever network connections. For example, Kebede said that Virtual Beverly Hills receives live data from the USGS during an earthquake. If the network connection is lost, the data is stored locally, allowing emergency responders to keep using the system.

While that’s impressive, Virtual Beverly Hills is not just an earthquake-mapping tool — its capabilities go further. In this modern era of terror, other disaster scenarios beyond just the natural variety must be considered. For this reason, Virtual Beverly Hills also can map the potential damage areas produced by an explosive device or a chemical spill. The system also shows emergency personnel where evacuations might be required and even provides easy access to homeowner contact information.

For situational awareness, the emergency responders can add data layers based on the type of event,” Kebede said. “If there is a report of an explosive, first responders could automatically calculate the potential area to be evacuated.”

To accomplish this, a user would simply select a point on the map, and using a drop-down menu, select from a variety of explosives, each displaying values unique to their type. TNT, for example, has distinct destructive capabilities that differ from C4 or a simple pipe bomb. The values are also changeable if emergency personnel find themselves dealing with an unorthodox explosive.

With the appropriate explosive selected, Virtual Beverly Hills then shows where the affected population resides and can display the results by age if officials need to evacuate those requiring assistance. The system also identifies critical infrastructure that would be affected by a blast.

“The process is similar for other kinds of localized threats,” Kebede said. “Users can select what type of chemical it is, whether it’s day or night. It will identify the area to be evacuated and where the potential damage will be.”

Past, Present and Future

Work on building Virtual Beverly Hills began more than a year ago. CIO Schirmer said Mayor Delshad was enthusiastic about building a next-generation mapping tool that could be used by the city, regional governments and eventually the state. “We knew that we needed a new application to support our EOC [Emergency Operations Center], which was new as well,” Schirmer said. “But we wanted to do more, to bring in lots of different data sources and create this common operating platform so that all the members [and] different branches of the EOC could be on the same platform.”

So with the blessing of the mayor and City Council — who lobbied for and won $800,000 from the U.S. Department of Justice’s Edward Byrne Memorial Justice Assistance Grant Program — Schirmer and his staff consulted with other agencies and states. The U.S. Department of Homeland Security (DHS) was an obvious first stop, but the city also worked with Maryland to learn about its mapping application, StateStat.

With their research complete, work on a prototype system began in 2009. Schirmer was careful not to neglect the end-users while the system was in development. “It was a group effort,” he said. “Our application development team was involved with it. But really working in conjunction with our end-users — the first responders, police and fire — they helped determine the functionality that would be important to them. We then did our own research and looked at what other states and municipalities are doing and tried to build upon that.”

Though to date the city has been fortunate to avoid any real emergency scenarios that would have put Virtual Beverly Hills to the test, Schirmer and the city took the system for a test drive during this year’s Los Angeles Marathon. The annual race also served as a platform for testing another virtual Beverly Hills’ capabilities — facilitating integrated communications.

“We actually mobilized an EOC as if it were an event. And really it was just to exercise it and see how well these things worked,” Schirmer said. “That involved Los Angeles, the L.A. County Sheriff’s Department and other municipalities like Santa Monica. So it really had this regional context to it. We had a lot of mobile video out there that was ingested into the system. We had a lot of ad hoc wireless set up to facilitate communications, as well as our standard RF [radio frequency] police and fire radio. All of that was interoperable, and it seemed to work very well. We got a lot of praise from the people who saw it in action.”

Going forward, Schirmer said he plans to extend the technology to other jurisdictions in the region and eventually deem the entire system to California. Virtual Beverly Hills didn’t come cheap despite the grant money and some in-kind services from the DHS. But, Schirmer said, “The good news is, for our partners, it’s effectively free.”

And like any good emergency response tool, everyone hopes that Virtual Beverly Hills will never really be needed. But if a disaster strikes the real Beverly Hills, it’ll be nice to know the virtual version is ready to help.
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Philips’ HeartStart FRx Defibrillator was built to withstand the real-world environment it may face: jetting water, crushing loads up to 500 pounds and a one-meter drop onto concrete. To help the user, the defibrillator also features on-demand CPR coaching through voice instructions and visual icons that are timed to the user’s actions. An infant/child key turns it into a pediatric defibrillator, so users only need to carry one device. The HeartStart FRx measures 2.4x7.1x8.9 inches and weighs 3.5 pounds with the battery and pads case. [www.healthcare.philips.com](http://www.healthcare.philips.com)

**Personal Protection**

In the event of potential exposure to pathogens when complete post-event protocols cannot be immediately followed, Union Springs Pharmaceuticals’ MyClyns Personal Spray may help the situation. It’s a one-time-use, penlike device containing medical solution that’s been cleared by the U.S. Food and Drug Administration as a wound cleanser. Users spray the germ-fighting solution on their face, eyes, mouth, nose, ears and in open wounds for immediate protection. Once available, normal post-exposure procedures need to be followed, but MyClyns can lower the chances of infection. [www.myclyns.com](http://www.myclyns.com)
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Mobile Storage, Command Post
Rescue 42 unleashed its newest product line, the VAULT (Vehicle Attached Utility Load Transporter), which provides storage for emergency preparedness equipment, food, water, etc., and doubles as a mobile workstation. The general-purpose box offers safe storage and the incident command post serves as a central hub to coordinate people and resources. The VAULT is easily transported with any class III or IV trailer hitch and needs no licensing or registration because it’s suspended off the ground during transport. www.rescue42.com

Mass Registry
The Special Needs Assistance Program Everywhere (SNAPev) is an online and phone registry that stores and maps basic medical and personal information related to special needs and elderly populations. It also gives government and public safety agencies around-the-clock access to the information before, during and after an emergency or disaster. This information can be used in emergency management and alert systems, such as 911, E Team, WebEOC, Reverse911 and CodeRED. www.snapev.com

Information Aggregator
Resiligence Inc’s EONNow aggregates near real-time information from crowdsourcing, social media and online media sources. This helps emergency managers prioritize the allocation of manpower and resources in emergencies, improving response efforts and optimizing resource utilization. EONNow facilitates the reporting of emergency-related incidents via text, voice or e-mail to an entity’s designated authorities, such as first responders and emergency operations center personnel. It also facilitates two-way communication with the person providing the emergency notification, thereby possibly helping those who are in danger. www.resiligence.com

Call Tracker
Oaisys’ Tracer call recording and contact center management software provides live call and auto call monitoring and detailed reporting to support public safety’s unique communications requirements. The software lets 911 call centers: accurately record phone and radio communications; analyze and evaluate interactions; ensure compliance with industry regulations and standards; and minimize liability risk with a verifiable record of communications. It also leverages the Oaisys Portable Voice Document technology, which provides a secure means of reviewing, sharing and adding notes to call recordings. www.oaisys.com
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If Gophers Were Terrorists

I’ve recently read several stories about burrowing animals weakening levee systems to the point of failure both in the United States and abroad. I thought about this new hazard I hadn’t previously considered. As with any new “threat,” it must be addressed, so envision what would happen if we discovered that these animals were, in fact, trained terrorist operatives attacking one element of our critical infrastructure.

First, there would be the predictable congressional hearings by multiple committees in both the U.S. House of Representatives and Senate. Since there isn’t a designated Gopher Committee, these legislative bodies would have many committees that viewed this issue as part of their legislative domain. Testimony would come from newly minted gopher experts.

Well learn that gopher issues exist in Europe and the U.S. This then makes it a classic, international terrorist threat. As an international and domestic issue, the FBI and CIA would each claim jurisdictional authority. Self-appointed experts would point out that there’s not one central figure directing all gopher activity, but “bands of rodent terrorists” classified as moles, beavers and the like that have a history of attacking critical infrastructure.

Congress would do what it does best: appropriate large quantities of money to address this emerging threat. The amount of appropriated funds would have a direct correlation to the media coverage of the precipitating critical infrastructure failure — since we’re not motivated to do anything before an event actually occurs.

There’d be lots of lobbying during the process; rural and urban states would compete for funding. Cities and counties would proclaim that, “All gophers are local.” Fire, law enforcement, public health, hospitals and other disciplines would lobby for funding for their field. They’ll argue that animal control should not be getting all of the funds. For years, each would make the case that they should have dedicated funds for equipment.

Gopher Centers of Excellence would be established at numerous universities to study the social dynamics of gophers and their cousins. We’d learn that gophers live in colonies, and indoctrination in the technique of burrowing is passed down from parents to their pups. The culture of burrowing would be recognized as one that will take decades to eliminate.

The nation’s borders would become areas of concern. There would be calls for underground fences along the Canadian and Mexican borders that need to be patrolled 24/7. The National Guard would receive another mission: augmenting civilian anti-gopher efforts.

Eventually someone would want to flush the burrowing creatures out of their dens. This water method would be compared to waterboarding and called inhumane. People for the Ethical Treatment of Animals would rise up in arms pointing out that not all gophers are terrorists. There would be accusation of gopher profiling. If you burrow, then you are a terrorist.

Media coverage would be intense and a Southwest state would pass a law allowing Gopher Enforcement Officers to stop and detain unsuspecting gophers.

After years of intense spending, highlighted by federal civilian contractors raking in millions of dollars in consulting fees, the funding gravy train would trail off. Without another catastrophic infrastructure failure, the nation would tire of the energy and time it takes to maintain a high level of anti-gopher activity.

A new threat might capture our attention. Take pigeons for instance: Have you ever noticed how they seem to be everywhere, listening to our conversations and monitoring our movements? ✉
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The Sept. 16 murder of a patient, shooting of a doctor and subsequent suicide by an emotionally distraught visitor at the Johns Hopkins Hospital in Baltimore has renewed discussions about the growing danger posed by crazed individuals having access to the nation’s most vulnerable public and private institutions.

The quest to find an appropriate balance between reasonable security mechanisms and what might be termed intrusive measures continues to ignite debate after this most recent incident. Despite immediate calls for additional security and installation of magnetometers, a Johns Hopkins spokesperson put the situation in perspective when he discussed the hospital’s unique security problem citing 80 different entrances and 80,000 visitors a week.

The cost of equipment and armed operators to run the equipment, for example, would be prohibitive in an area of 53.4 acres. Currently more than 300 uniformed, unarmed security personnel and 100 supplemental off-duty Baltimore city police officers patrol the complex.

In this case, the Baltimore Police Department was a first responder and acted in concert with established emergency protocols. Whether all the emergency protocols were successful in isolating the shooter, protecting hospital personnel, and communicating the incident appropriately with hospital workers and emergency responders is yet to be determined. What’s known is that after the shooting, the suspect was confined to a single room on the eighth floor, surrounded by the Baltimore SWAT team and no further injuries to workers or visitors were sustained.

Unlike most security systems, the dichotomy for hospital security personnel is to design a system that’s unpredictable in its random crime prevention and suppression activities yet predictable in its day-to-day basic building security duties in an open environment. Johns Hopkins is a city in microcosm with the potential for all the problems, crime and stresses that one might expect in an urban environment.

In the aftermath of the shooting, Baltimore Police Commissioner Frederick Bealefeld quickly assembled senior executives from all the universities in the Baltimore area to discuss response and communication issues. Given the territorial nature of police agencies, this could go a long way toward establishing a framework for cooperation and ongoing communication, including intelligence sharing.

Although the deaths of two individuals and shooting of a doctor shocks the conscience of most Americans, it’s worthwhile to remember that the incident was caused by the suspect’s personal choices and not policies, procedures and plans made by first responders.

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