

VIRTUAL REALITY ENHANCES TRAINING FOR EMTs. PG. H7 | RESCUE DOG HITS THE BIG SCREEN. PG. H10

CountyNews

# HOT topics

NATIONAL ASSOCIATION *of* COUNTIES

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## PREVENTING DISASTERS

How prepared is your county for an emergency?







# NAILING DOWN YOUR EMERGENCY MANAGEMENT PROGRAM

by **Michael Martinet**

A natural disaster may be the very worst thing that happens to a county and to its elected officials. A community or portions of it are ruined and everyone looks to the elected and appointed leadership to make things right, and make things right, right now.

No matter what has happened in the community before the disaster, the disaster resets the clock and at the very center of the storm are the elected officials. Few elected officials will make it through a disaster response and the following recovery unscathed.

Every citizen wants a problem fixed now, and fixed first, with government support.

Often, perhaps in most cases, there is little or no training for elected officials on their expected roles following a disaster. Disasters come with an entirely different set of rules, and the time demands are relentless and unforgiving whether officials are prepared or not.

Because so many other issues occupy the everyday lives of elected officials, disaster preparedness, like saving for re-

tirement, often gets short shrift. However, there are some questions that a savvy official can ask of their senior elected/appointed officials, the county administrator, the sheriff, the fire chief, the finance director and others. These questions — and the corresponding answers — can help educate county commissioners on the true status of how prepared the county is for disaster response and the often drawn-out recovery, which follows every disaster.

The secret to success in determining the true state of preparedness is to ask the right questions. If the board of county commissioners asks a senior public safety official if the county is prepared, the answer may easily be a dismissive “Yes, we’re good to go.” The alternative answer is “No, we need more funding to get ready.”

Neither answer tells much about the real capabilities of the organization to respond to and recover from a disaster.

The following is a list of questions that elected officials can put to their senior leadership to really establish response and recovery potential.

A word of caution here. With 30 years of experience in emergency management, and 20 years of teaching disaster cost recovery, I find many local government agencies are not only under-prepared, their staffs do not even know how much they don’t know.

Perhaps the best way to pose these questions would be to have a study session with the elected officials and the senior appointed officials. Any “deer in the headlights” look, which may follow a question, may be more telling than the spoken answers provided by staff.

One other note. Disaster response, while primarily the purview of fire, law, EMS and public works, also involves many other county departments. The larger and more devastating the disaster, the more departments that will be involved, particularly in the recovery phase of the disaster. The recovery period especially goes far beyond the law and fire services of any community.

These 20 questions are extracted from a much longer list, but when asked, they should give some answers as to the state of preparedness of your county. Many of these questions will just skim the surface, but they are a good way to start analyzing your preparedness.

**Disaster preparedness?** Typically, emergency management (EM) is assigned to law enforcement or the fire service, although some counties may have it assigned to the chief administrator’s office. If the EM function is located in the sheriff’s office, the fire department may not fully support the EM function and the reverse is true if the EM function is in the fire service. Turf matters. If located in the CAO’s office, this isn’t as much of a problem — and other non-public safety departments may be more supportive of the EM program. Often, particularly in smaller counties, an employee may have a 25 percent or 50 percent time allocation for the EM program. In fact, the actual amount of time they spend on EM may be much less.

**2. Does the county have a strategic plan for disaster preparedness? If so, where is the county in regard to achieving the goals of the strategic plan? When was the strategic plan last revised?** Don’t be surprised at a “no” answer to this question, as very few counties have such a plan. However, EM is like every other important function of a county and should have a long-term strategic plan. It will pay huge benefits when a disaster strikes.

**3. Does the county have an Emergency Operations Plan (EOP)? When was it last revised?** There should absolutely be an EOP, and it should be updated at least every three years. In many

See PREPARE pg H13

## HOT topics

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## QUESTIONS FOR DISASTER PREPAREDNESS ASSESSMENT OF THE COUNTY

**1. Who handles the day-to-day duties associated with disaster preparedness and what percentage of their time is actually devoted to di-**



# FEMA to offer \$250 million for 2020 mitigation grants

by Katherine Fox

The recent devastating tornadoes and floods across the country are a stark reminder of the destruction caused by disasters year after year. In the first six months of 2019, flood claims were filed in over one-third of the nation's counties and more than 18,000 individuals registered with the Federal Emergency Management Agency (FEMA) for federal disaster assistance through June 1.

The increasing frequency, impact and cost of disasters demands that we invest in mitigation and reduce disaster suffering.

We know that mitigation works. Communities that mitigate their risk can reduce the impact of disaster, have a quicker path to recovery and experience less disaster suffering. Mitigation also lessens the financial impact to state, local, tribal and territorial governments and federal agencies. For every \$1 spent, mitigation can save \$6 in future disaster costs, according to a 2017 report published by the National Institute of Building Sciences. Examples of mitigation efforts at work can be found in communities across the country:

- In 2018 after Hurricane Harvey, the city of Houston increased building code regulations to require all new and redeveloped structures be elevated higher than the previous code required. As a result, each newly developed or redeveloped home has the potential to save upwards of \$50,000 in rebuilding costs from potential future flooding.

- In 2012, safe rooms constructed in student dormitories in Creston, Iowa, protected 70 students from an EF2 tornado with winds over 111 miles per hour.

- In 2012, the Waldo Canyon Fire burned more than 18,000 acres across Colorado Springs communities, destroyed more than 340 homes and took two lives. This 19-day fire was the costliest fire in Colorado history with estimated insured losses of \$454 million. For over a decade before the fire, Colorado Springs had implemented a robust community-wide wildfire mitigation program which included vegetation management, chipping, code enforcement and a resident outreach campaign called "Sharing the Responsibility." Thanks in part to these mitigation efforts, the Ce-



Katherine Fox

dar Heights neighborhood was saved, valued at more than \$75 million, and 250 families were able to return to their homes and their lives after the fire. In the aftermath of the fire, Colorado Springs adopted a more resilient building code to protect their city from future wildfires. Today, the community continues to expand and implement a robust wildfire mitigation program.

- In 2000, the city of Birmingham, Ala., acquired more than 700 properties prone to repetitive flooding, saving the city more than \$63 million in losses from subsequent flooding.

- In 1995, after Hurricane Marilyn damaged 75 percent of residences in St. Thomas, United States Virgin Islands (USVI), FEMA and the USVI designed and implemented the Home Protection Roofing Program (HPRP) which mitigated roofs during repair and rebuilding to better withstand future wind. In the wake of Hurricanes Irma and Maria in 2017, there was no visible damage to homes rebuilt through the HPRP.

## Building with BRIC

Even with the successes of these mitigation initiatives nationwide, disaster damages continue to grow. State, territorial, tribal, local and private sector stakeholders must come together to build community resilience and reduce disaster suffering.


FEMA is announcing project selections for fiscal year 2018 pre-disaster mitigation grants. In addition, the application period for next year's mitigation

grants is expected to open in October 2019, with a record-breaking \$250 million available to states, territories and communities for mitigation projects. We look forward to helping move mitigation forward in communities across the country, and we encourage them to identify potential projects now. For more information, please visit [www.fema.gov/pre-disaster-mitigation-grant-program](http://www.fema.gov/pre-disaster-mitigation-grant-program).

A new game-changing tool FEMA is using to build community resilience is the pre-disaster mitigation program called Building Resilient Infrastructure and Communities (BRIC). Authorized by the Disaster Recovery Reform Act, the legislation is an exciting opportunity to work with communities to reduce risks and disaster costs, and increase resilience through investment in mitigation before a disaster strikes.

The program will be funded by setting aside a percentage each year from FEMA's disaster costs for mitigation grants in the following year. If this program had existed in 2017, a record-breaking year for disaster costs, \$3.4 billion would have been available in 2018 for projects to prevent or reduce loss of life and property in future years.

We need your feedback to ensure the program is designed to support meaningful mitigation at the community level. Because a large percent of infrastructure is owned and managed by states, territories, tribes and communities, it is critical that communities have an active role in the development of BRIC.

Through July 15, FEMA is seeking public comment on key areas about the development and implementation of BRIC through Ideascale ([fema.ideascale.com](http://fema.ideascale.com)) or by emailing [buildbric@fema.dhs.gov](mailto:buildbric@fema.dhs.gov). 

*Katherine Fox serves as the Federal Emergency Management Agency's Assistant Administrator for Mitigation within the Federal Insurance and Mitigation Administration. In this role, she oversees the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Grant Program, Flood Mitigation Assistance grants, and the National Flood Insurance Program's Floodplain Management Program and Community Rating System. She also oversees FIMA's Disaster Operations and leads the Hazard Mitigation Disaster Workforce Cadre.*

## LEGISLATION ADDRESSES RISING COSTS OF DISASTERS

by Lindsey Holman

A new law that tweaks Federal Emergency Management Administration programs to better help counties deal with disaster mitigation, preparedness and recovery efforts was signed into law last year by President Trump.

The law, H.R. 302, includes the Disaster Recovery Reform Act of 2018, which is designed to address the rising costs of disasters and reform federal disaster programs by placing a heavy emphasis on improving pre-disaster mitigation, reforming federal disaster recovery assistance and developing disaster preparedness guidance and training.

FEMA is actively working to implement approximately 60 reforms over the next year. FEMA's Mitigation Directorate is responsible for implementing 26 percent of the reforms, over half of which directly impact hazard mitigation assistance programs.

One of the most exciting programs FEMA is working to implement is the Building Resilient Infrastructure and Communities (BRIC) Program which will replace the Pre-Disaster Mitigation Program. FEMA may set aside from the Disaster Relief Fund, with respect to each major disaster, an amount equal to 6 percent of the estimated aggregate amount of FEMA federal assistance. The FEMA Federal Insurance and Mitigation Directorate (FIMA) estimates that annual funds will average \$300 million to \$500 million per year, with significantly greater amounts following years with catastrophic disasters.

Mitigation is the effort to reduce loss of life and property by lessening the impact of disasters. Hazard mitigation can take place before or after a disaster occurs. By focusing on pre-disaster mitigation, counties can take actions to reduce human and financial consequences associated with disasters, large and small. Accord-

**To weigh in on the FEMA program, visit: <https://bit.ly/2KpJuJp>. The comment period concludes July 15.**

See LEGISLATION pg H15



# FIRE SEASON: ARE WE READY?



Sonoma County, Calif. Supervisor James Gore pauses for a photo with local firefighters. Gore chairs NACo's Resilient Counties Advisory Board.

## by James Gore

The words fire, drought and flood are now linked with everyday life in California. And while we responded well to the floods this winter, almost everyone in our community has their gaze set on fire season.

Everywhere I go around Sonoma County people ask me, "Are we ready?"

When I talk to our fire survivors and block captains, they challenge me, "Are we ready?"

When I talk with the communities I represent in the wildland-urban-interface, I'm asked, "Are we ready?" When I drop my kids off at school I think, "Are we ready?"

The true answer is that ready is a verb, not a noun.

As I've learned since the 2017 fire siege, ready is about imperfect, relentless progress. Ready is not a state to achieve, but rather a culture to embrace.

While some assume that ready is about perfect, the reality is that ready is about the constant pursuit of better. At a town hall recently, a good friend and fire chief plainly told the audience, "When you need me the most, I probably won't be there. There are not enough professionals to cover everyone, so I need you all to work with me to prepare yourselves."

This brutal honesty is necessary in our current day and age. There is no system that will save us. Not government, not first responders, not businesses, not nonprofits. Ready is about all of these institutions together, and more so, it's about you and me.

As a community, we have been awoken by experience. Before our fire siege, I never imagined I would be giving speeches on disaster recovery and resilience but there I was, a local county supervisor, testifying before Congress on FEMA policies. There I was keynoting the Governor's first emergency management summit. And the biggest thing I can tell people is what I demand of myself and my staff every day: "Wake up. Wake up others. And stay woke."

From a county government perspective, when I look at how we're more ready than ever, I first look to the institutional changes we've made in how the county does business. That's a \$500,000 investment in fire cameras, \$1.2 million investment into up-staffing the Department of Emergency Management, \$46 million in grants to FEMA on the table with 25 percent coming from us to take rapid action and \$1 million in up-staffing for emergency services during red flag events.

Next, I look at the absolute need to share progress with the community in real time. Last September, we tested our Wireless Emergency Alert system, our electronic broadcast system and our reverse 9-1-1. This allowed us to finally move forward on the necessary, difficult task of managing technology and communications before, during and after tragedy strikes. We reached an agreement with all of our alerting agencies on common verbiage, we have a Memorandum of Understanding on Nixle accounts, a one-stop-shop for critical information at [socoemergency.org](http://socoemergency.org) and all of that has come from the difficult lessons we learned during our catastrophic wildfires.

Ready does not just mean standing on high alert all the time, it means institutionalizing emergency preparedness. To that end we created a Recovery and Resilience Framework that guides our strategic, measurable actions to prepare our community for any and all hazards, may those be natural or man-made. The framework includes 215 actions, a top 10 list which includes alert and warning and evacuation routes, "home hardening" and a robust 2-1-1 system.

With so many efforts ongoing, some initiatives have already shown success,

but there is so much left to do. To truly be ready, community preparedness needs to live in the community itself; we have to expect that during the next earthquake or fire or flood, we will be on our own for 72 hours. State Mutual Aid is a powerful network, but true resilience must come from local and regional self-reliance. To that end, we're partnering with our brothers and sisters in the entire North Bay and North Coast in vegetation management, fuels reduction, and advanced planning for evacuation, sheltering and similar resilience initiatives.

Every time I have an opportunity to talk to one of my peers from another county, I grab them by the shoulders and I shout, "Wake up! Don't wait to get smacked in the face to learn your lesson."

I write this message with the same intention: To shake everyone, to grab each of you who reads it by the shoulders to wake up as well. Manage your land, prepare your family and spread the message that the new normal is here and we're ready for it. Join me in the never-ending campaign for imperfect, relentless progress. **H4**

*James Gore is a county supervisor in Sonoma County, Calif. and chairs NACo's Resilient Counties Advisory Board.*



# BUILDING COASTAL RESILIENCE IN THE GULF OF MEXICO

by Jenna Moran

With a goal of building greater understanding on joint issues of concern, the NACo Gulf States Counties and Parishes Caucus (GSCPC) met for the first time June 11 with the Gulf of Mexico Alliance, a state-led partnership network established by the five Gulf State Governors in 2004, at their 2019 All-Hands Meeting. The two groups discussed their origins, their current priority issue areas, how those priorities align and how they might partner and continue to engage with one another moving forward.

The GSCPC, which is open to all elected county officials in Alabama, Florida, Louisiana, Mississippi and Texas, was established in response to the 2010 Deepwater Horizon Oil Spill. It works to promote a clearer understanding of mutual problems of Gulf Coast counties and parishes and their citizens; to establish a single source of information concerning county and parish governments in the Gulf region; and to advocate on behalf of those residing in Gulf Counties and

parishes before federal and state governments and other county officials.

Similarly, the Gulf of Mexico Alliance (GOMA) works to sustain and enhance the environmental and economic health and resources of the Gulf of Mexico through regional collaboration. They partner with the federal government, the five Gulf state governments, academic organizations, non-profit organizations and businesses, according to their website. To date, local governments have not been recognized as an official partner. The hope of this meeting was to build greater understanding on joint issues of concern and create lasting engagement between GOMA and county governments.

GOMA's six priority issue areas — data and monitoring, education and engagement, habitat resources, water resources and wildlife and fisheries — align with GSCPC's more legislation-focused issue areas — hurricane preparedness, overall health of the Gulf, federal assistance for flood control and coastal erosion mitigation efforts, continued support for the Gulf of Mexico Energy Security Act and

Resources and Ecosystems Sustainability, Tourist Opportunities and Revived Economies of the Gulf Coast States Act and reform of the National Flood Insurance Program, Waters of the U.S., and U.S. Army Corps of Engineers' mitigation program.


GSCPC members shared their stories of collaboration and the importance of engaging local government in state and federal policy discussions. The caucus members stressed:

- Every issue is a local issue and has to be implemented at the local level, therefore state and federal policies need to be clear, understandable and clearly implementable.

- We all share the same body of water and can learn from and help one another by sharing our stories — through science-based communications.

- GSCPC is a powerful lobbying force that could be useful to further any future joint GSCPC-GOMA priorities since most of the partners are state organizations that cannot lobby. All levels of government — and their partners — need work together.

In follow-up, one GOMA partner asked how might funding organizations better share funding opportunities. GSCPC leaders stressed the need to always include a short synopsis at the top that highlights eligibility, funding levels and overall purpose of a grant so county leaders do not spend valuable time exploring a grant for which they are not eligible and/or do not have the capacity to pursue. They also stressed the resource they have in NACo and state associations of counties which can share funding opportunities through their outreach channels, and the need for support in writing a grant for counties who do not have that expertise on staff.

The conversation concluded with the identification of future engagement opportunities and mutual excitement and interest in working together moving forward. 

*Jenna Moran is associate director, Resiliency, Transportation and Infrastructure in NACo's County Solutions and Innovation department.*



Coast Guard Petty Officer 3rd Class Ryan Leonard watches oil and gas flare during the 2010 BP Deepwater Horizon oil disaster. The spill began on April 20, 2010 and was estimated at 210 million gallons. Coast Guard photo by Petty Officer 1st Class Matthew Belson





A washed-out roadway in Orleans Parish, La., after Hurricane Katrina hit in 2005.

**by Shanna Williamson**

Over the past 20 years, natural and man-made disasters have increased in frequency, severity and cost. On average, 24 percent of counties have experienced at least one disaster in each of the last three years. The past three hurricane and wildfire seasons have included six hurricanes that did more than \$330 billion in damage. More than eight wildfires caused over \$40 billion in damages. To decrease the chances of loss of life, and post-disaster recovery costs, county governments are refocusing their efforts on pre-disaster mitigation efforts.

In response to this renewed focus on mitigation and overall resilience, NACo is analyzing how mitigation and preparedness efforts in the coastal counties of Alabama, Florida, Louisiana, Mississippi and Texas have affected long-term resilience within the Gulf of Mexico region.

The counties included in this study are:

- Mississippi: Hancock, Harrison, and Jackson counties.
- Alabama: Baldwin and Mobile counties.
- Louisiana: Calcasieu, Cameron, Iberia, Jefferson, Lafourche, Orleans, St. Bernard, St. Charles, St. Mary, Terrebonne and Vermillion parishes.

Also included in the study are Santa

Rosa County, Fla. and Cameron County, Texas. The first part of this project is an assessment of these counties' hazard mitigation plans to determine the breadth of resilience policies and strategies currently being pursued; this will also enhance our understanding of county resilience and preparedness in coastal counties along the Gulf of Mexico.

The preliminary results of this analysis indicate that the counties included in this assessment tend to employ structure and infrastructure projects, education and awareness efforts and local plans and regulations as their dominant hazard mitigation strategies. Reliance on natural systems and preparedness and response actions typically account for less than 10 percent of the objectives and actions outlined in the hazard mitigation plans.

Here's a look at data from some of the counties in the study:

### **Alabama**

Objectives and action items within the two plans assessed from Alabama reveal relatively equal preference for local plans and regulations, education and awareness efforts and structure and infrastructure projects, as each of these hazard mitigation action types comprise approximately 33 percent of all mitigation actions included in the plans. For those

objectives and action items that have been classified as local plans and regulations, the counties tend to focus on the establishment of zoning and ordinances, building codes and funding sources to reduce risk. Education and awareness actions focus primarily on outreach efforts (50 percent), while the dominant structure and infrastructure method identified is flood control management. Natural systems, specifically natural resource protection and restoration, and preparedness and response actions, specifically the county's involvement in national preparedness programs, represent less than 10 percent of the total action items within the plans.


### **Louisiana**

The Louisiana parishes display an overwhelming preference for structure and infrastructure projects to mitigate against natural hazards. On average 55 percent, and in one plan up to 70 percent, of objectives and action items within these plans are structure or infrastructure projects — and of these projects, most are flood control management projects. The exception is Orleans Parish, which places a heavy focus on education and awareness. Following this, the second most utilized mitigation method across the Louisiana parishes is education and

awareness. These objectives and actions tend to be efforts to collect data or create inventories of data that will help with future risk assessment and community outreach efforts. Of the other three mitigation action types — local plans and regulations, natural systems and preparedness and response — there was no distinct trends across the state.

### **Mississippi**

For the three Mississippi counties included in the assessment, education and awareness in the form of outreach is the predominant method, comprising 32-49 percent of the identified objectives and actions. The second is structure and infrastructure projects. These structure and infrastructure projects focus primarily on the improvement of communication structures — such as hazard warning systems. Similar to Louisiana, the use of local plans and regulations, natural systems and preparedness and response actions all ranked as the bottom three mitigation action methods.

A full report of this analysis, including the results of the comprehensive plans assessment, will be available this fall. 

*Shanna Williamson is a National Oceanic and Atmospheric Administration Digital Coast fellow at NACo.*



# Virtual reality enhances training for county EMTs

by Rachel Looker  
staff writer

Virtual reality can be more than just playing a 3D video game.

"I think it's more than an entertainment technology," said Scott Smith, a professor at Texas State University in San Marcos, Texas and president of Augmented Training Systems, a company that is focusing on developing training for first responders.

Austin-Travis County is using virtual reality to improve training for emergency medical technicians (EMTs) when it comes to their AMBUS, an ambulance bus that is used for mass casualty disasters.

The AMBUS is capable of transporting up to 24 seated patients at a time, according to Keith Noble, who is the commander over the homeland security and emergency management divisions with Austin-Travis County Emergency Medical Services (EMS). The vehicle can go 700 miles before needing to refuel and can remain stationary for up to three days.

There are currently 14 AMBUS units in the state of Texas that are used as part of a statewide response to large disasters, according to Noble. The AMBUS in Austin-Travis County is often used locally and serves as a first aid station at big events, he said. The most action it has seen so far was in 2017, during Hurricane Harvey.

The idea for the virtual reality training came when Noble was approached by the city's Computer and Technology Management department which was looking for an idea to use virtual reality to submit for a grant. Noble said he had always been looking for ways to do different trainings with the AMBUS because it's significantly different than a regular ambulance.

Austin-Travis County received the grant money for the idea and created basic, 3D mapping of the AMBUS similar to a Google map where a user can click around and see the inside of the bus.

After completing the 3D mapping, Austin-Travis County EMS collaborated with Smith and Augmented Training Systems to develop virtual and augmented reality "atmospheres" to help train EMTs.

The county entered another contest for a smart cities initiative and received a \$35,000 grant to create a prototype using this new technology.

"It allows people to be immersed in situations they could not normally train in and be under stress and different circumstances that are hard to replicate and are real-life situations," Smith said.

Smith spent time with Austin-Travis



A participant trains for emergencies using virtual reality equipment. Photo Courtesy of Augmented Training Systems

County EMS and Noble, who is a consultant for Augmented Training Systems, to better understand their training needs and find gaps in the process so they could focus on building an appropriate training modality.

"We wanted to make something that was more effective and allow them to have a system to move forward that we could adapt and evolve as their training needs evolved," he said.

The company first designed a 360-degree interactive map that allows users to walk through the AMBUS. The map can be accessed at any time and from any location.

After designing the interactive map, they created a fully 3D-rendered AMBUS environment that can be used for different scenarios and allows the user to track their data for improvement. A user can put on a headset, move around the AMBUS, open drawers, find supplies and immerse themselves within the virtual environment as if the AMBUS was physically in front of them.

The company also created an augmented reality environment which allows EMTs to use any space to project a holographic AMBUS that's to the scale of the real AMBUS. Users can use an empty hallway or

during a cadet class.

"We tested how well things worked between VR [virtual reality] and AR [augmented reality] and just the regular training they get," Noble said. "They greatly improved their knowledge of the bus and error rates and finding stuff."

The virtual reality and augmented reality trainings improved cadets' memory recall for locating objects by 45 percent and improved their speed by nearly 30 percent.

"Significant when you're talking about trying to save lives," Smith said.

During the training, cadets located certain items in the AMBUS while they were being timed. The VR system tracked their number of errors so they could review their progress.

"If they're not learning where they need to perform, then they're not going to perform well when they get there," Smith said.

The virtual reality training is more cost effective compared to in-person training, which can get expensive bringing in employees on overtime, Noble said.


He explained that EMS medics will now have annual, virtual training on the AMBUS to become more familiar with its inner workings. EMTs can access the program whenever they want a refresher or for "just-in-time training" to review material if they know a certain disaster may impact the area.

"For burning a building, you can only burn a building once," Smith said. "With virtual reality, I can burn 27 different buildings with 27 different chemicals. I can create stress that normally can't be created in a normal space."

Noble said he believes virtual reality training is specifically beneficial for low-frequency events that require unique training such as disasters, active shooter training or hazardous materials.

"Those situations are really difficult to train for in real life," Noble said. "First of all, it's very expensive and it's also hard to replicate."

He said the county wants to work on creating virtual reality training for infectious diseases in the future.

"For those types of events that happen very infrequently, once or twice a year, but it's high risk, it's life or death type situations, the virtual and augmented reality training has just become very useful," Noble said. 



Medical equipment is featured in AMBUS training. Photo courtesy of Augmented Training Systems

large room as their training space.

These methods provide EMTs with more ways to familiarize themselves with the vehicle and feel more confident in their emergency response skills when serving as AMBUS crew.

Before the virtual rendering, crew members only received one initial AMBUS training, Noble said.

"They don't really get training after that on the AMBUS until they're thrown into the middle of chaos in the middle of a disaster like Hurricane Harvey," Noble said.

What makes working on the AMBUS even more challenging is a different setup and layout compared to a regular ambulance, making it hard to find certain supplies and know where items are located.

The virtual reality prototype was tested

To see the full virtual and augmented reality renderings of the AMBUS, visit <http://augmentedtrainingsystems.com>.





# Exhaustive report chronicles county employee shooting

by **Charlie Ban**  
senior writer

When word broke of a mass shooting in San Bernardino County, Calif., most of the county's Board of Supervisors was 500 miles away at a conference. As details trickled out through the news Dec. 2, 2015, the supervisors and Public Information Officer David Wert planned out how the county would assist the victims and the city of San Bernardino, which had jurisdiction over the private conference center where the shooting took place.

"It wasn't for quite some time we realized our county employees were the victims," Wert said.

The county's environmental health department was conducting an off-site training when one of their colleagues opened fire with the help of his wife. In the end, 14 people were dead — 13 of them county employees — 22 were wounded and dozens more were traumatized.

Once they flew home that day, the supervisors could not return to the administration building because of fears of a bomb. They shut the county down for the rest of the week to give employees time to grieve. About repercussions, the supervisors knew only that they would be long-lasting, but aside from that, the administration was entering unknown territory.

"There was a solid 12 months where this incident dominated every work day," Wert said three-and-a-half years later. "We still deal with this, we have employees who are still recovering from their injuries, who have open workers' compensation cases that we are working with. And any time there's a mass shooting, we make sure we have counselors on hand."

By the end of 2018, the county's con-

sultant completed a comprehensive report on the incident designed to help counties learn from the Dec. 2 shooting. Although the measures in the report are not prescriptive, they are starting points for other counties to examine their own preparations for similar disasters.

## Why this report

The consultant interviewed hundreds of county employees — anyone who was involved in doing anything that day while their memories were fresh.

"We wanted it to be exhaustive," said Wert, who serves on the Countywide Oversight Board. "We knew from the start it would be something of this magnitude, but we wanted a complete document not just for ourselves but for other agencies in case they go through something like this."

The county administration feels that the report leaves no questions unanswered.

"By the time we completed the report, we had gotten past the point where we were encountering anything new," Wert said. In the days and weeks after the shooting, San Bernardino looked for similar stories from other shootings. None captured the essence of what San Bernardino dealt with.

"The world looked at all mass shootings as the same, and ours was unique in the sense that these were all our employees," Wert said. "In Colorado, what you had were people in a movie theater who all decided to go to the same show. They didn't know each other or work for the same people. Caring for them became the responsibility of many different agencies whereas here, they were our employees and the responsibility for caring for them fell on our agency. We didn't see that anywhere else."

That's not to say San Bernardino County

didn't learn from other incidents, and the county is quick to reach out when it happens somewhere else, but the report focuses on organizations that have the dual nature of counties as both the organizations that will both respond to emergencies and the collection of people who make up the county staff.

## Aftershocks

As Wert noted, because the victims were almost all county employees, they stuck together far longer than a random group would, which offered a long-term look at post-incident life. That gave the county a long-term look at how that group would react over time. Some left the county, some retired, others moved to different parts of the country. Some changed departments but stayed with the county.

"When this first happened, in the few days after, we didn't foresee all the things that would have to be done," Wert said. "We didn't take into account how traumatized people would be for so long and how that trauma would manifest itself. We had people who remain afraid to work in an enclosed space and we plan for that. Our memorial to the victims can't be enclosed because a lot of people won't put themselves in that position again."

The theme has been the long-term care of injured employees. "Once people move out of emergency mode and into maintenance mode, and they get as healed as they are going to be, they start getting frustrated and depressed," Wert said. "They're not returning to exactly where they were

before, emotionally or physically.

"We didn't foresee the type of stress and difficulty that would pose for them."

The workers' comp issues were the last string of unknowns for the county as it tied up the report, and one of the few things that surprised the administration. Ultimately, the county hired nurse managers for injured employees to help them access and manage their care and act as advocates.

"There are some people who get angry and think we haven't done enough," Wert said.

## Terrorism

Within two days, the FBI determined that the attack was a premeditated act of terror. The shooting also affected the continuity of government.

The environmental health services division saw more than a dozen staff members die in the shooting, more wounded and even more unable to return to work immediately. That left the county without the manpower to conduct restaurant and pool inspections.

"It wiped out an essential operation of a government agency," Wert said. "You can't take a break from inspecting restaurants, public health depends on it. How do we keep that function going when everyone who worked there had been 'in the room?'"

The report hammers on the importance of succession planning, not just at the top of a department, but throughout the rank and file. If a significant number of a county's expert workforce disappears overnight, who will replace them?

In San Bernardino County's case, a combination of retired public health workers and staffers on loan a few days a week from other counties helped bridge the gap until the staffing levels could be restored.

In the meantime, the county was sensitive to the returning staff. Most voiced a desire to return to their old offices, but the county renovated and rearranged the department so it wouldn't remind them of the time before the shooting on a daily basis, or their colleagues who didn't come back from the training retreat.

Read the report at [naco.org/news](http://naco.org/news). 

## THE REPORT DIVIDES RECOMMENDATIONS INTO SIX CATEGORIES:

- Emergency protocols
- Operational response
- Communications
- Employee support
- Continuity of operations
- Organizational and financial recovery





Photos courtesy of Riverside County Flood Control and Water Conservation District

by **Rachel Looker**  
staff writer

The post-wildfire scene in Riverside County, Calif., saw an increase in both new and old technologies changing the way officials respond to life-threatening situations.

In 2018, the Holy Fire in Cleveland National Forest and the Cranston Fire near San Bernardino National Forest burned more than 36,000 acres. In Riverside County, just east of Los Angeles, the wildfires caused risks for high floods, road closures, loss of utilities and mud and debris flows.

A wet winter following the wildfires increased these risks with some burned areas receiving rainfall totals that only happen once every 200 years.

In response to the wildfires, Riverside County began utilizing a drone to map burned areas, create maps of debris flow risk areas and prepare evacuation maps.

The four-foot long, four-foot wide Micro-drone MD4-1000 has a high-end camera mounted on the bottom that faces straight down and takes photos as it flies, according to Joshua Tremba, a supervising land surveyor and drone pilot at Riverside County Flood Control and Water Conservation District.

Tremba explained that the drone takes overlapping photos, which are then pro-

cessed through a software that creates three-dimensional maps.

The drone includes a survey-grade GPS receiver that is mounted directly on the camera. GPS receivers provide geo-referencing capabilities, eliminating the need for land surveyors to physically place ground control points throughout affected areas that would be used to measure distances by the drone, Tremba said.



"The fire zones are not very safe to hike in, not really somewhere you want to drive a truck through," Tremba said.

By being able to remotely fly on demand without laying ground points, the drone expedited the process of making maps, which could be completed the next day and used to make decisions concerning life and property, he said.

"We were able to do these basins sometimes in a half hour, maybe 45 minutes after we showed up," Tremba said. "It was light years beyond what we've done before. It's really a game changer especially for surveyors to map something that fast."

When basins would fill up with debris and sediment, the drone, which Tremba said is accurate down to centimeters, captured the number of resources needed to clear the material.

The drone's maps were also used to

See DRONES pg H11



# MIAMI-DADE COUNTY RESCUE DOG HITS THE BIG SCREEN



by **Charlie Ban**  
senior writer

**C**onstant barking signals that someone is alive under the rubble. Whether it's the earthquake devastation in 2010 in Haiti, the Florida panhandle after hurricanes in 2018 or a parking garage collapse in Miami, Florida Task Force 1 has been there, searching for survivors, with rescue dogs leading the way.

Now, one of those dogs is getting her star turn in an IMAX movie *Superpower Dogs*, playing primarily in museums nationwide. Halo, a 4-year-old Dutch Shepherd is one of four dogs featured in the 45-minute film. She works with Florida Task Force 1 (which is one of 28 FEMA-certified urban search and rescue units), sponsored by the Miami-Dade County Fire Department.

The film chronicles the nearly three years that Capt. "Cat" Labrada spent preparing Halo to be certified as a search and rescue dog. Labrada is the training coordinator for the task force. And though Halo has not yet been deployed to a disaster, the film aims to chronicle the hard work and training that go into preparing dogs for this task.

"It's bittersweet, we don't want these things to happen, we don't want the di-

sasters, but if they do happen, we have to be ready," Labrada said. "We train like crazy, because they are living tools who we have to maintain."

"Sometimes you'll have a dog go a whole lifetime without deploying and that's just the name of the game."

Labrada has spent nearly 20 years with the task force, after working as a trainer at Orlando's Sea World. She moved back home to Miami, took a job at a veterinary clinic and adopted a Yellow Lab that she intended to train for dog shows until she met a woman at the clinic with a search and rescue shirt. A few questions later and Labrada was on her way to an open enrollment for the fire department and that Yellow Lab had a career change to public safety.

Florida Task Force 1 handlers choose, buy and train their own dogs, and Halo is Labrada's fourth, but her first Dutch Shepherd.

"They are all about work," she said of Dutch Shepherds like Halo. "They are motivated by work, they have to be do-

ing something. They don't have an off switch."

That's a contrast to the work-hard, play-hard personality of a Yellow Lab. Labrada made that transition after the early loss of her third Yellow Lab.

After a few months, she felt the itch to train another dog, around the time filmmaker Daniel Ferguson was looking to chronicle the training process for Superhero Dogs.

Set up with Labrada, he brought his filming crew to Michigan where Labrada met puppy Halo, who makes an appearance in the film's trailer, and it was a match made on the silver screen.

"I was nervous and it was stressful," Labrada said, underselling the difficulties of training a new breed of dog on camera.

"You have this deadline, but you also have the support. I think they got lucky, finding me, because of the team that I represent. It's a very big organized team, but the dogs have good days and bad days the way we do."

## Hard training

Training a search and rescue dog boils down to regimented play and building loyalty to "victims."

"Positive reinforcement and consistency — over and over," Labrada said.

Handlers take turns hiding and letting dogs find them, while ratcheting up the difficulty, adding noise and movement to force the dog to focus on scent.

"They need to understand fully to use their nose to do what all of their senses were doing to begin with," she said. "They have to trust their nose. You need to teach your dog that getting to someone in a hole, under a pile is the best thing ever."

Each time the trainer uses the search command, it's the same work every time, the dog searching until it finds the person hiding. The dog then barks until the "victim" offers a toy — the dog's reward for a job well done.

"In real life, obviously the victims can't reward," Labrada said, pointing out that as a result, the dog will bark until someone shows up to offer a reward.

A veteran of aquatic mammal training at Sea World, Labrada said the transition to canines was a little difficult because "you can't just walk away from them, they can follow you," but having the dog as a part of her family is an added benefit. Not that Halo hasn't been a challenge.

"It was easy when it came time for Halo to work, but the obstacles I ran into were outside of the job," she said. "Particularly socialization; she's always on high alert and I needed to train her to learn it's not always about the chase. She's part of my family, she has to be able to be home when my son has his friends over." Her progress has impressed Labrada.

"A few years ago I didn't think it would be possible that she would be able to maintain her composure with a bunch of little dogs and children around." The process takes roughly one year, if a dog is mature. FEMA doesn't certify dogs younger than 18 months. A search and rescue dog typically works for 10 years.

## Showtime

Halo and her breed can be workaholics, so part of being a good handler is being able to manage a dog's workload.

"You have to be your dog's advocate, you can't let your dog overheat," Labrada said. "Hurricanes don't happen in

See RESCUE DOG pg H11



Capt. "Cat" Labrada pauses for a photo with Halo, her search and rescue dog.



## From RESCUE DOG pg H10

the winter, so we're all dealing with heat and stress levels. We all watch over each other's dogs."

Florida Task Force 1 has a complement of nine live-search dogs and three cadaver dogs. They do not search for evidence in police investigations. The dogs work on half-hour shifts, punctuated by water breaks and rest.

"We train them for endurance, but they are athletes and you just have to watch them," Labrada said.


The stress can build up, and dogs telegraph emotion. Florida Task Force 1 found 11 people over six days, which meant a lot of days, the dogs were going home without a "save." The team would take them back to base and do training, allowing them to find people and

feel some success. "It's a mental thing for them too," Labrada said. "They get depressed and you can see it and they don't work as well."

### And...cut

Labrada likes the finished film, and marvels how Ferguson condensed three years into 45 minutes. She said the film accurately depicts the work she and the task force members do, though the film's brevity can be misleading.

"It doesn't show how much time it really takes to train a dog really well, it might give a false idea that it's not as grueling as it is," Labrada said.

"It's years of blood and sweat and hiding in dark places, all for the dogs. That's the biggest part of this, it's not standing up there with a leash watching your dog do the dirty work." 

## The drone 'really proved itself'

### From DRONES pg H9

design infrastructure like debris "cages" and new basin designs, which were all useful during the wildfires.

Other uses for the drone in the county include volume calculations, construction monitoring and mapping facilities.

"In reality, when the fire came, it was a whole other ballgame," Tremba said. "It [the drone] really proved itself."

On the ground, Riverside County utilized various types of cameras to obtain information and track the status of debris flows.

Thermal, infrared and live web cameras created time lapses of high-risk areas and helped communicate risks to the public by allowing county personnel to post images on social media.

"We were able to have 24-hour vision where we installed those cameras and the cameras were articulated so that we could rotate them around real time on our phones," said Jason Uhley, the chief engineer of Riverside County Flood Control and Water Conservation District.

To collect data on rainfall totals, the county built upon an existing network of rainfall and depth-monitoring gauges by adding 16 more instruments to the network.

"This kind of class of technology was really about giving us early warning because all of this stuff you see near real time," Uhley said. "It gave us situational awareness. We knew what was happening at that moment."

After obtaining this data, the county needed to create a communication sys-

tem to easily share the information.

Radio systems and cellular systems helped transmit data and distribute it to the emergency operations centers that needed it, Uhley explained.

The county also used a web-based dashboard that provided real-time updates, notified crews when rainfall exceeded debris-producing thresholds and displayed live images from the cameras and drones.


"That kind of tactical awareness was huge," he said.

Crews used Google hangouts and Google photos to quickly share information and files captured on patrols while an application called ESRI Survey123 GIS served as a mobile data collection tool and gathered geolocated information in the field.

The cost for the tools used in the county totaled \$650,000, which was paid for by district property tax revenue, Uhley said.

"What these tools gave us was a way to deconflict information and a way to process it more quickly and accurately and then respond better to the questions and the issues that were being raised," he said.

Uhley added that in addition to the technological tools, having partnerships between different departments helped in protecting the community.

Essential to their success, he said, "was everybody working together and all on the same page and then adding these tools to that effective communication." 

## DISASTER MITIGATION RESOURCES FOR COUNTIES

### Federal Emergency Management Agency (FEMA)

- <https://www.fema.gov/pre-disaster-mitigation-grant-program>
- The Pre-Disaster Mitigation Grant Program assists states and communities in funding pre-disaster programs.

### FEMA Emergency Management Institute

- <https://training.fema.gov>
- The institute develops and delivers emergency management training.

### National Emergency Management Association (NEMA)

- <https://nemaweb.org>
  - NEMA is dedicated to enhancing public safety as well as preparing, responding and recovering from emergency situations.
- ### International Association of Emergency Managers (IAEM)
- <https://iaem.org>
  - Provides representation for professionals during emergencies and disasters.

### Association of Healthcare Emergency Preparedness Professionals (AHEPP)

- <https://ahepp.org>

- Provides healthcare preparedness professionals with education and planning resources.

### CDC's Center for Preparedness and Response

- <https://www.cdc.gov/cpr/index.htm>
- The Division of Emergency Operations coordinates preparedness, assessment, response and recovery during public health emergencies.

### National Fire Protection Association

- <https://www.nfpa.org>
- An organization that works to eliminate death, injury and property due to fire, electrical and other related hazards.

### Ready Campaign

- <https://www.ready.gov>
- A public service campaign designed to educate Americans to prepare for, respond to and mitigate emergencies.

### Rural Domestic Preparedness Consortium

- <https://www.ruraltraining.org>
- Provides all-hazards training in support of rural homeland security requirements.

## DISASTER MITIGATION PROGRAMS

**Recovery and Resiliency Framework** — Sonoma County, Calif. — The new Office of Recovery and Resiliency coordinates recovery efforts after wildfires. **Contact:** [mccall.miller@sonoma-county.org](mailto:mccall.miller@sonoma-county.org). **This program was named best in category for risk and emergency management in the 2019 NACo Achievement Awards.**

**Emergency Shelter Operations Plan** — Leon County, Fla. — Following the state's largest evacuation following Hurricane Irma, Leon County developed new shelter operations for future disasters. **Contact:** [johnsonan@leoncountyfl.gov](mailto:johnsonan@leoncountyfl.gov)

**911 Dispatch Consolidation: Saving Money, Minutes and Lives** — Erie County, Pa. — Erie County created a more efficient 911 dispatching system by consolidating independent municipality centers, leading to faster response times. **Contact:** [kbowers@eriecountypa.gov](mailto:kbowers@eriecountypa.gov)

**Emergency Management Interactive Mapping Program** — Orange County, Calif. — The Sheriff's Depart-

ment launched a mapping program to provide real-time, accurate information to residents during emergency situations. **Contact:** [jblashaw@ocsd.org](mailto:jblashaw@ocsd.org)

**Emergency Response Program Assists Animals Affected by Disasters** — Placer County, Calif. — Following the California wildfires, Animal Services created a response program to provide rescue and medical treatment to displaced animals. **Contact:** [breagan@placer.ca.gov](mailto:breagan@placer.ca.gov)

**Services Mobile Wildfire Damage Assessment App** — San Diego County, Calif. — The county developed a mobile app that can be used during and after wildfires to collect damage assessment information. **Contact:** [jessica.northrup@sdcounty.ca.gov](mailto:jessica.northrup@sdcounty.ca.gov)

**Damage Assessment Program** — Charlotte County, Fla. — After experiencing major landfalling storm events, the county developed a damage assessment program to collect onsite data. **Contact:** [Kelly.Shoemaker@charlottefl.com](mailto:Kelly.Shoemaker@charlottefl.com)



# UNTIL HELP ARRIVES: PA COUNTIES HELP TO SOLVE EMS VOLUNTEER CRISIS

by Rachel Looker  
staff writer

How long will you have to wait for an ambulance if you call 911 in Pennsylvania?

An issue identified by some Pennsylvania counties, and even labeled a “crisis,” is the lack of Emergency Medical Service (EMS) volunteers that cause 911 centers to struggle to find available responders when dispatching a call. The lack of volunteers may cause delayed response time for an ambulance to arrive at the location of an emergency.

Local municipalities are responsible for EMS in the state of Pennsylvania and counties operate all 911 call centers that dispatch ambulances throughout the state. County commissioners and 911 directors representing Tioga, Butler, Lycoming and Pike counties said they believe the 911 system is working well, but delayed response times are a result of a volunteer shortage at the municipal level.

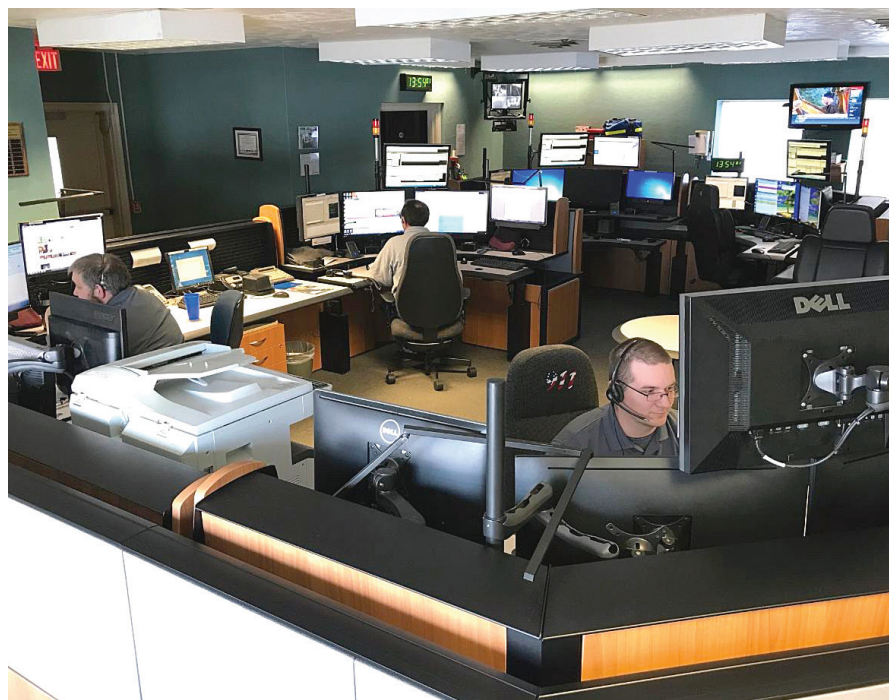
“I think Pennsylvania is doing a very good job as far as the 911 business,” said Pike County 911 Director Bernard Swartwood. “Dispatching of EMS calls isn’t a problem. It’s getting an ambulance to respond that’s the problem.”

Tioga County Commissioner Mark Hamilton said 90 percent of EMS workers in his county are volunteers, while the rest are paid.

With the lack of volunteers, according to Tioga County 911 Director David Cohick, 911 centers have to dispatch to different departments to find EMS crews for ambulances.

A recent study in Tioga County indicated that 90 percent of the time, it took 30 minutes from the time of dispatch to the time of the first EMS unit arriving on scene, according to Benton Best, Tioga County’s emergency management coordinator. The average response time was 14.3 minutes.

A nationwide study published by Medical News Bulletin says the average EMS response time is seven minutes or 14 min-



Telecommunicators Jacob Winter, James Pflieger (who is now retired) and Logan Laidacker work at the Lycoming Sullivan 911 Center. Photo courtesy of Lycoming County Department of Public Safety

utes in rural areas.

“The pre-hospital EMS situation in the U.S. right now is coming to a point where it pretty much can be declared a crisis,” Best said.

He explained how when a 911 center dispatches an ambulance and needs an EMS crew that may be volunteer-based, volunteers have to get themselves to a station before boarding an ambulance and heading to a call.

“I think the bottom line is that when we dispatch somebody to go to an EMS call, that agency needs to be available,” Best said. He added that this issue occurs more often in rural areas because of the lack of residents in the county who may consider signing up to be a volunteer emergency medical technician (EMT).

John Yingling, Lycoming County director of the Department of Public Safety, said many certified EMTs are allowing their certifications to expire, leading to a lack of volunteers. He attributes this to a “generational change.”

“There’s something in the generational mode where people don’t have the connection to community that they used to have,” he said.

Pennsylvania county officials and 911 directors said there are possible solutions to the shortage. In Tioga County, Best said he believes the lack of EMS volunteers is a system management issue that requires consolidation.

“Instead of having a well-coordinated system, we have hundreds or thousands of individual departments doing their own thing and not necessarily working together as best as they could be,” Best said.

He said Tioga County has 13 EMS agencies that are completely separate and individually do not have enough staff to be on

call for 24 hours a day, which is the legal requirement.

“We have ambulance calls that go an hour to an hour and a half sometimes without anybody responding simply because they usually aren’t working together and coordinating who is available and who’s not,” Best said.

He added that telemedicine and community paramedicine could provide alternatives by allowing 911 dispatchers to transfer a caller to a nurse or send an available non-emergency paramedic at another time if the situation is not deemed urgent.

According to Best, programs for college students and low-income earners would allow individuals to get free housing by living at the station and running calls, and encourage more people to sign up as volunteers to be available during emergencies.

In Lycoming County, Yingling said county officials are huge advocates for public awareness of basic first aid like CPR and “stop the bleed” programs in addition to more pre-arrival instructions over the phone.

Steve Bicehouse, Butler County director of the Department of Emergency Services, said in his county, there is a staffed, paid crew for every EMS agency. There are only three agencies in the county that rely on volunteers to augment the paid staff when needed.

“What it means for us is that we don’t end up with the shortages that some of the more rural departments have because we’re not relying on or waiting for volunteers to come and staff ambulances,” Bicehouse said. Yingling said Lycoming County has formed a County Emergency Medical Services Council which address-

es volunteer recruitment and retention. The county also ran an outreach campaign by using billboards.

The next step, according to Yingling, is to get the message incorporated into school district curriculums, so children as young as 10 years old will be able to learn that there’s a career or volunteer option in fire and EMS.

County officials are working to bring awareness of the EMS shortage to the state level and find ways to create solutions to the problem.

The County Commissioners Association of Pennsylvania (CCAP) started an EMS Task Force to come up with ideas to help with ambulance responses throughout counties in Pennsylvania.

The Pennsylvania legislature adopted Senate Resolution 6, which created a committee that provided 27 recommendations to the state about EMS services and possible improvements. Tioga County Commissioner Hamilton represented CCAP on the SR6 Commission committee.

Additionally, Emergency Triage, Treat and Transport (ET3), a model from the Centers for Medicare and Medicaid Services, looks at alternatives that would help rural ambulance call volume. Currently in the state, ambulances are only reimbursed for taking patients to emergency rooms. This model would allow EMTs to treat on scene and transport patients to other alternative medical facilities like walk-in clinics, doctor’s offices and addiction centers and still get reimbursed.


Butler County Commissioner Kevin Boozel said he sees his role as a commissioner as the broker between resources to ensure the state legislature is making rules to help municipalities.

“I think what it really comes down to is between the borough, the township and commissioners’ association. They need to formulate a plan and go to the legislature and say this what we need to advocate for,” Boozel said.

In Butler County’s future, Bicehouse said he doesn’t see any changes to the 911 center dispatching services.

“I think the change is going to be on that local level,” he said.

Best emphasized that just because rural areas like Tioga County may struggle to recruit EMS volunteers, it doesn’t mean residents are less entitled to quality care.

“What I would say is people in the rural areas deserve the same quality of service as someone in an urban area... It’s our responsibility as much as possible to make that an equal and level playing field,” Best said. “We can improve our system and really improve the quality of care for the citizens of the county.” 



# IS YOUR COUNTY PREPARED FOR A DISASTER?

From PREPARE pg H2

states, it may be a legal requirement to have a plan.

## DOES THE COUNTY'S EMERGENCY OPERATIONS PLAN CONTAIN:

- Disaster communications (both with the public and other government agencies.)
- Access and Functional Needs
- Animal Rescue (Animal Control)
- Damage Assessment (Building and Safety; Roads and Bridges; Parks and Recreation; Finance)
- Debris Management, Debris Monitoring (Public Works/Environmental)
- Disaster Cost Recovery (Finance and others)
- Continuity of Operations (All departments)
- Continuity of Government (Legal) (Where is the List of Succession?)

**4. Is the Emergency Operations Plan compliant with NFPA Standard 1600?** NFPA Standard 1600 or EMAP (the Emergency Management Accreditation Program) are objective national standards for measuring emergency management plans and preparedness.

**5. Does the county have a plan for disaster cost recovery? If so, when was it last revised?** Don't be surprised at a "No" answer to this question, as very few counties have such a plan. However, disaster cost recovery is like every other important function of a county and should have a working plan. It will pay huge benefits when a disaster strikes

**6. Is the county part of a mutual aid agreement with neighboring jurisdictions? When was the mutual aid agreement last used? When was the agreement last revised?** Mutual Aid is important to all jurisdictions, and the smaller the jurisdiction, the more important it is. There can be problems with getting repaid for mutual aid if the plan hasn't been recently used and has not been regularly updated.

**7. When was the last emergency preparedness drill held that included activation of the Emergency Operations Center (EOC)?** Compared to the day-to-day problems that counties have to deal with, holding an EOC exercise is easy to push off. The purpose of such exercises is to find weaknesses and shortfalls in plans BEFORE a disaster oc-

curs. Regular EOC exercises, at least annually, should be required.

**8. When was the last time employees, other than police officers or firefighters, had emergency preparedness training?** As with question number 7, this kind of training is easily delayed or not done at all. One of the purposes of such training is to find the weaknesses of the plan and to build the confidence of staff to cope with an actual disaster. Agencies that frequently train and exercise usually do much better in real disasters than those that don't train and exercise.

**9. Other than for police and fire, what were the last three emergency preparedness classes held for employees, when were they held and how many employees attended each class?** Law and fire get relatively frequent training as compared with all other government employees. However, once the disaster crisis has passed, these other, often untrained, employees will be responsible for getting the recovery going. They need training too.

**10. Exclusive of the police and/or fire department budgets, how much do we have budgeted specifically for disaster preparedness activities?** This can be compared to paying for



Michael Martinet

insurance. You don't want to have it, but you also can't afford to be without it when a disaster strikes.

**11. Is this county accredited by EMAP (Emergency Management Accreditation Process)?** (See the last bullet

of question #4.) The county should use either EMAP or NFPA Standard 1600 to ensure its EM program is comprehensive and healthy.

**12. Does the county have a Disaster Mitigation Plan in compliance with the Disaster Mitigation Act of 2000 (DMA2K)? When is the DMA2K Plan next due for revision?** While this sounds like an emergency management issue, it has a lot to do with county planning and land use policy, as well as Public Works and Roads and Bridges. Following a disaster, counties with a current and approved DMA2K plan may be able to get additional funding for mitigation projects from FEMA.

**13. Does the county have a volunteer CERT (Community Emergency Response Team), ham radio and/or animal rescue groups? If so, what are the numbers of people trained and the number of people currently active in those programs? When was the last CERT (and other) train-**

**ing program held and how many citizens participated?** Many of the better EM programs across the country incorporate volunteer programs. There is an added financial benefit when a disaster does occur, in so far as properly documented volunteer disaster response efforts can be claimed against the county's response and recovery costs.

**14. Are all county employees aware that they are Disaster Service Workers under State law, and specifically, where in our hiring process is this addressed?** In many states, all government employees are designated as Disaster Service Workers. All county employees should be aware of this responsibility and be prepared to respond as per the county's plan.

**15. Does the county have a Disaster Purchasing Policy and other necessary policies to maximize our ability to receive Federal disaster assistance?** When the county receives FEMA grants to pay for response and recovery costs, all work and expenses MUST comply with Title 2 of the Code of Federal Regulations, Part 200, and the county's own purchasing policies. Failure to do so is the single greatest risk to having FEMA or the Department of Homeland Security's auditors take back ALL of the federal grant monies.

**16. Where are the names and phone numbers of the emergency preparedness officials with our local school district(s), local hospital(s), and other significant local partner agencies and companies, including local utilities? When was the list last updated?** The emergency contact lists for both county employees and outside agencies' employees get out of date rapidly and a consistent effort must be made to keep these lists up to date.

**17. What should we be doing to be better prepared for disaster response and recovery?** The county's own employees may have some very good ideas about how to make the county better prepared for a disaster, but administrative channels may block the free flow of information. The employees need to be a part of disaster preparedness and surveyed for suggestions.



See PREPARE pg H15



# MISSOULA COUNTY, MONTANA BUILDS RESILIENCE WITH PARTNERSHIPS



■ The Missoula county/city/non-profit partnership is a potential model for small to medium-sized counties tackling the challenges of building climate resilience.

■ The Climate Ready Communities program's step-by-step Practical Guide to Developing Climate Resilience and Annual Support service have been key resources for the Missoula team.

**by Geoff Weaver**

**M**issoula County, Mont. covers approximately 2,600 square miles in the western part of the state. Five large valleys and two major rivers wind through this mountainous region. Missoula County has a population of approximately 110,900 people and the county

seat is the City of Missoula.

While changing climate conditions are a global challenge, the impacts are experienced at the local level, and it falls to local communities to address them. Missoula is already experiencing these impacts, and they are projected to intensify over the coming decades and to touch every sector of the county.

Changes are likely to include reduced

low elevation snowpack, earlier spring snowmelt, more frequent and intense droughts and wildfires, and impacts to agriculture and recreation. The earlier the county understands and prepares for these changes, the greater their chances of reducing the impacts on human health and safety, the natural environment and

See PARTNERS pg H15



## From PARTNERS pg H14

the local economy.

Missoula County is partnering with the City of Missoula and Climate Smart Missoula to lead Climate Ready Communities: Building Resiliency in Missoula County, a county-wide effort to better understand the county's greatest vulnerabilities in the face of climate change and to develop a coordinated plan to prepare the county for the changes it is facing.

This climate resilience planning process began in fall 2018 and will take 12-16 months to complete. It generally follows the guidelines of the Climate Ready Communities program developed by the Geos Institute. The process relies on community engagement and involves a broad range of local stakeholders from diverse sectors including public health, emergency services, agriculture, forestry, recreation, business, underrepresented communities, and local water, energy, and transportation systems.

The Climate Resilience team created an informative Climate and Community Primer that outlines the county attributes, climate projections for the area and expected impacts of the climate on the county. (You can see it here: <https://bit.ly/2OmctwZ>.)

This document provided key background information for the vulnerability workshop that convened in December 2018. The workshop had broad stakeholder involvement and was a major milestone in Missoula County's planning process.

The team is using the results of the workshop to develop a vulnerability as-

essment that will provide the starting point for a strategies development workshop, which convened in May to identify strategies that make sense for Missoula County. The team will move forward with finalizing the plan and implementation process to help the community build climate resilience.

### The Climate Ready Communities Program

Missoula County, the City of Missoula and Climate Smart Missoula jointly participated in the beta testing for the Geos Institute's Climate Ready Communities program and subsequently enrolled in the program's Annual Support service in September 2018. The Missoula team is utilizing the program's Practical Guide to Building Climate Resilience as well as the templates and tutorials from the Annual Support service as a central element in their climate resilience planning process.

"We find these tools to be effective and designed with a community user's perspective in mind," said Diana Maneta, the county's Energy Conservation and Sustainability coordinator. "We appreciate the step-by-step approach as well as the fact that the program is flexible, allowing us to make modifications as needed to fit our specific circumstances. We also appreciate the opportunity to consult with the experts at the Geos Institute as we go through the process." 

*Geoff Weaver is a business strategist for the Climate Ready Communities program at the Geos Institute, based in Ashland, Ore. Diana Maneta contributed to this article.*



Stakeholders gathered in December for a workshop that was a major milestone in Missoula County's resilience-building planning process. Photo courtesy of Missoula County

## IS YOUR COUNTY READY?

From PREPARE pg H13

**18. Overall on a scale of 1 to 10, how well prepared for disasters is the county?** This open-ended question may spur a greater awareness if asked of all employees, not just senior managers.


**19. Has the county ever had an audit by an independent outside expert to evaluate the state of preparedness and recovery capabilities? Or does the Council exclusively rely on the self-assessments of staff regarding preparedness?**

Employees, especially senior managers may have personal agendas that will color their responses and prevent a realistic assessment of the county's actual level of disaster preparedness for both response and recovery. Recovery capabilities are often more difficult to assess if the county has not had a disaster for a long time.

**20. Have any of the elected or senior officials ever attended an off-site disaster-related training program at the Federal Emergency Management Institute (often free), the University of Texas Extension or other nationally recognized emergency management training insti-**

**tute?** The federal government has many low cost or no cost training programs available for elected and appointed officials as well as rank and file employees. Also, request that your state counties' association feature emergency preparedness sessions at their meetings and conferences.

Once received, the answers to these questions may lead to an entirely new set of questions to be asked. Some answers may not paint a comfortable picture of the county's ability to respond to and recover from a disaster. But all of the answers should enable the elected and senior appointed leadership to make better long-term decisions about the county's ability to deal with day-to-day emergencies and those much rarer, but more deadly and costly disasters.

The most important thing is to ensure that there is an ongoing discussion of emergency management and disaster recovery issues within the county, and consistently funded efforts to make program improvements. 

*For over 30 years, Michael Martinet has worked as an emergency manager and disaster planner. He has over 20 years as a subject matter expert with FEMA's Public Assistance program.*

## FEMA encourages mitigation strategies

From LEGISLATION pg H3


ing to FEMA, effective mitigation requires familiarity and understanding of all local risks to address hard choices and invest in long-term community well-being.

While the number of disasters is increasing, FEMA reported in 2018 that only 50 percent of events activated federal disaster assistance. In 2018, state and local governments managed 23,331 events without federal assistance. According to the National Institute of Building Sciences, on average, natural hazard mitigation saves \$6 for every \$1 spent.

The goal of BRIC is to encourage community-wide mitigation activities that strengthen the resilience of critical infrastructure lifelines such as transportation, energy, water supply, communications and health facilities.

As of June 6, the notice of funding opportunity for BRIC grants will be released during the summer or fall of 2020. Counties will be eligible to apply for funding to assist with small and large mitigation

projects. There will be a strong emphasis on infrastructure projects, but funding for regular mitigation projects such as building elevation, property acquisitions and wind retrofits will still be eligible. BRIC grants will involve a federal/state cost share, with FEMA covering 75 percent and states providing a non-federal match at 25 percent. For low-income applicants, a 90 percent federal share and 10 percent state share option will be available.

FEMA's stakeholder engagement process is currently underway and many of the details of the program have yet to be released. NACo has participated in FEMA-hosted workshops and webinars to advocate for the county perspective during the research phase of stakeholder engagement. NACo will continue to work with FEMA during all implementation phases to ensure BRIC works for counties across the nation. 

*Lindsey Holman is an associate legislative director in NACo's Government Affairs department.*



# LESSONS LEARNED FROM HURRICANE HARVEY

In 2017, Hurricane Harvey killed 68 people and inflicted \$125 billion in damage in Texas. Particularly hard hit was Harris County. Dr. Umair Shah and Mac McClendon, of Harris County Public Health and the National Association of County & City Health Officials, recently looked back at some of the lessons they learned from the catastrophic storm. They jointly answered a few questions from *County News*.

**Q: What were the top priorities for the county leading up to the hurricane?**

A: Ensuring the community was getting the correct public health messaging; individuals, families and their pets were adequately prepared for the duration of the storm and its intensity, and the overall health and safety of the community.

**Q: What was your biggest challenge?**

A: The biggest challenge for Harris County Public Health (HCPH) was the duration of the response and on-going recovery. After a hurricane, once citizens are out of immediate danger and in shelters and waters are receding, the bulk of Public Health response begins. Public health often is an invisible partner in the emergency response.

HCPH was overseeing the health and medical services in shelters, providing shelter assessments and assisting in the general response, Public Health continues to monitor for epidemics and reportable diseases, ensuring they are not proliferating as a cause of the storm. In addition, we are creating and sharing information on the possible negative health effects of storms (i.e. - mold and the health issues caused by mold, the health effects of being exposed to flood waters and the possible health effects of handling debris and cleaning up properties). This surveillance and communication work continue long after everyone else has demobilized and is back to work as normal.

**Q: What other challenges did you encounter?**

A: We set up an emergency animal shelter for displaced and lost pets that took in about 300 animals. We also worked with partners on the reunification process. Our environmental health team inspects about 9,000 restaurants, all those businesses needed inspections to ensure they were properly discarding food that



A Harris County Public Health employee helps residents after Hurricane Harvey.

was not safe for human consumption and their establishments were safe for the public. Our team also went throughout the community with our fleet of mobile units offering health services, water/food and cleaning supplies, pet vaccines and food, and mental health resources, in addition to many other things needed to support the community.

The enormity of this responsibility is very noticeable when you consider that many Public Health employees are themselves flooding victims, and are trying to oversee and coordinate the safe and healthy recovery of their homes and lives while they continue to work.

**Q: What were you most thankful for, in preparing for the hurricane?**

A: I am most thankful for the amount of preparedness planning and exercising that had been done prior to the storm both internally to HCPH and county/regional/statewide. At Harris County Public Health, we had exercised our shelter response just one month prior to Harvey, so when we deployed nurses and other medical staff (people who are less familiar with disaster response) to the medical shelter they already knew what to do and what systems needed to be put in to place. In addition, our planning and preparing at a regional level had also strengthened relationships and avenues of communication so that we were all collaborating and working together effectively for the benefit not just of our own citizens but of the region as a whole.

**Q: What were your biggest challenges after the hurricane?**

A: The biggest challenge after the hurricane was data acquisition. While you are in the throes of experiencing a disaster and responding to those needing immediate help, collecting data is not the first priority for many. Later, when we were trying to make decisions in planning for the recovery phase of the response, trying to do so based on available data was difficult. Harris County Public Health had been able to execute two Community Assessments for Public Health Emergency Response (CASPER), which were able to provide significant data on two distinct areas of the county. However, other data such as non-reportable health effects of the disaster (mental health, respiratory issues, skin rashes, etc.), information on how and when mold remediation was done in homes, etc. was not readily available.

**Q: Can you name some 'wishes' you'd like to see happen?**

A: I wish more of the community would understand that being prepared requires an effort of their part and our goal is to have their safety, health in mind.

I wish people would understand the incredible role public health has in preparedness. Public health is continually under resourced and stretched thin on trying to address a multitude of health concerns: measles, Ebola, Zika, flu, diabetes, etc. Then you add the layers of being responsible for protecting the health of all residents-everyone, businesses,

displaced individuals, individuals undergoing distress from a disaster, and you realized that there is a strain and an undervaluation of the work that public health does. So best resources and more investment in the public health system would be high on our wish list.

**Q: What are the biggest lessons the county learned?**

A: There are certain sectors of the community, specifically those that are culturally and linguistically isolated, that were difficult to connect with at the time of the event, possibly impeding their receipt of important and timely information. Relationships and trust need to be built with these communities before a disaster, so that clear lines of communication are available when needed.

Staff need to be fully aware of their role as a first responder and remain flexible. They need to be cross-trained and prepared for any event. This includes having a personal preparedness plan and having that communicated with their families and friends. Also, to know the expectation ahead of time that they will be needed and therefore may be unavailable to assist at home.

Disaster mental health is still very present in recovery (almost two years later). Both in the citizens of the county and staff. The storm affected the population both physically and mentally and each time a new storm is brewing, the effects are evident in all of us.

**Q: What advice would you give?**

A: Staff preparedness and resilience needs to go beyond having a plan and a go-kit. Any county responding to a hurricane will need adequate staff, therefore employees that may not traditionally see themselves as responders will likely be needed. It is important that ALL employees then have created plans with their families and communicated those plans with them.

It is important that the employee and their families understand that the employee will likely be unavailable at the time of the disaster and through some of the recovery, therefore they will be unable to work on any family obligations, dealings with insurance, home repair, car replacement, etc. If employees and families are aware and talk through the practical implications of a response before a disaster, their stress levels will be better and the overall agency response will benefit. 