Chief Trauernicht: "Mission-critical communication is key to everything we do."

by Nathan Trauernicht, Fire Chief, University of California, Davis

On any given day, we have about 50,000 people here on the University of California, Davis, campus – working, living, learning, and researching.

It's the largest of the 10 campuses in terms of landmass. It's also one of the top public research institutions in the country, which means the UC Davis Fire Department has a unique and diverse risk profile that we protect, along with over 30,000 students.

The population grows throughout the year, depending on what's happening on campus. Our largest event, which is Picnic Day, sees over 80,000 people coming to campus in a single day. That's when alumni come back to celebrate all things UC Davis.

Because of the nature of where we work, mission-critical communication is key to everything we do. From responding to emergencies to teaching the next generation of first responders, we must get messages out quickly and reliably so that our community feels safe. And the expectation is that we perform at a high level all the time, given our unique demographic.

That's why we rely on FirstNet®.

Early adopter

UC Davis is an early adopter of FirstNet, but for me it goes back even further. I worked with the Western Fire Chiefs Association and the International Association of Fire Chiefs to tell Congress the story of why we needed a first responder network. It's a passion project for me because interoperability and reliability are so important to everything we do on emergency scenes.

The UC Davis Fire Department has been responding to emergencies on campus for over 106 years now. In addition, we provide automatic aid to 6 cities that surround the campus, supporting their significant events. And we respond all over the state of California during major wildfires.

The mutual aid system here in California is one of the most advanced in the country. We're able to rapidly mobilize emergency resources all over the state. When an individual jurisdiction has an incident of significance, whether it's a fire or another type of disaster, they go through the California Office of Emergency Services (Cal OES), which coordinates all the resources in the state.

They reach out to the local jurisdictions through our dispatch centers. And within minutes we're able to put all sorts of equipment out in the field – anything from a Type 1 fire engine that you see fighting fires in a city to a Type 3 engine, which you often see fighting fires in the wildland or wildland urban interface.

Tools of the trade

We use a wide range of communication devices. For many of us, it starts with phones. So, no matter where we are – in the station or at home – we're able to get alerts about emergencies and information from our dispatch centers.

We equip all our fire trucks with tablets that are easily accessible to our company officers. As they respond to an emergency, they can get near real-time information from the dispatch center. We're also able to access pre-fire plans, which tell us what hazards are in a structure, important locations in the building for fire or emergency medical situations. And we use them to get driving directions — especially if we're getting onto one of the major freeways.

We're also using tablets in the field to do electronic patient care reports (e-PCRs). One of the great things about it is that while we are at the patient's side, we get computer-aided dispatch (CAD) information directly into that device. As our crews are filling out information out in the field, it's going back into our IT systems. So, when crews get back to the station, their report is nearly finished.

And we use tablets with a new program we've launched called Health 34 that is fundamentally reimagining how we care for our community outside of a 9-1-1 call. The tablets help us capture information about public health trends that can then help the campus address emerging issues in health and safety on our campus.

Caring for the community

Health 34 is helping people who maybe are having a bad day and trying to prevent a crisis wherever possible. It's that same kind of service model that public safety is known for, but in a non-emergency, high compassion, high empathy service role.

One of the things we look to do with Health 34 is break out of the silos of people who support you on a hard day, whether it's behavioral health services or things like basic needs, food insecurity, housing insecurity. We even carry essential supplies on the unit – like toothbrushes, toothpaste – in case somebody needs them as we navigate them to a service.

Other models across the U.S. focus on trying to avoid 9-1-1 calls. Ideally, we would have fewer people in crisis. But this is fundamentally different because this is how we let a community know that they are cared for every single day before they get to a point where they have to dial those three numbers.

It's amazing to see our team of Health 34 providers come together and the EMTs that work on that unit as well. And just compassionately being there for people when they're having interpersonal conflict, when their behavioral health medications have changed or their access to a provider has changed.

The UC Davis Fire Department is a Basic Life Support (BLS) response agency, so we don't transport. Our providers work at the basic life support level. But, because we're part of a university, we're deeply ingrained in the university's academic mission and helping to create the next generation of EMS provider.

We have the nation's number one hands-on EMT certification program that we run through the UC Davis Fire Department. We also have a paramedic program. We're getting college students ready to step into our shoes as a next generation of first responder.

LMR to LTE on a simple solution

We're really excited about our implementation of an LMR to LTE solution, using the mission critical push-to-talk solution called FirstNet Rapid Response on the Siyata device. It allows us to do a whole bunch of things using the Siyata platform.

For example, we can go into the website and through a simple user interface, create as many LTE talk groups as we can imagine, in addition to our radio talk groups. There's a lot of bandwidth there. And this is great because with a single device, a simple device, we're able to monitor our 800 MHz radio channels, talk on them as if we were on a radio, and use the LTE push-to-talk component to have other conversations and to build other groups.

The Siyatas are going to be popular with public safety because of the simplicity of the device. And for those in the fire service who remember older generations of pagers, there are very few buttons. The controls are similar to what you would see on your existing LMR radio.

The solution lets me go anywhere in the country and monitor radio traffic in near real time.

Throughout the region, as I'm traveling or doing work, the ability to hear our primary dispatch channel and our tactical channels is a valuable tool for me. It helps make sure I maintain situational awareness. Again, with a university campus, there's a high expectation that as things happen, we can communicate rapidly to the community. It really helps me do that from anywhere that I have cellular service.

Training consortium

One of the other unique things UC Davis does is we're home to a regional training consortium. We lead training efforts for multiple jurisdictions throughout a multi-county area. And part of that involves doing large scale exercises and drills.

We recently did an active shooter drill and had some unique players that we don't see every day in our emergency operations. For example, there are folks who we may not have interoperable communications with on a day-to-day basis – like the California Department of Fish and Wildlife. The Siyata is a great example of a low-cost device we can use in training to practice interoperability. While we may not work with some agencies every day, we always need to have the capacity to get communications out quickly to those that don't have our frequencies.

From a dream to reality

It took us a while to get mission critical push-to-talk up and going here at UC Davis Fire. But one of the benefits of going in on FirstNet is the support from the FirstNet team throughout the region and their desire to get the newest technology in the hands of first responders.

One of the most exciting things about FirstNet for me has been to see something of this size and scale and this national impact, go from a dream to reality. It isn't something you get to see very often. But the work isn't done yet – and will never be done on FirstNet.

We will always be pushing, building, and trying to put the latest technology into the hands of first responders. And that commitment to continued investment in public safety is incredibly valuable. It's exciting to see where we've been and where we can go – limited only by the imagination.

Chief Nathan Trauernicht has been with the UC Davis Fire Department for over 16 years – with the last 12 as chief. Chief Trauernicht runs a department of about 100 employees, 24 of whom work on an engine and truck company 24/7. The department serves the campus community, neighboring communities and provides mutual aid for fires throughout California. He is a member of the International Association of Fire Chiefs and serves as chair of the Safety, Health & Survival Section Board of Directors; and he is member and past president of the California Fire Chiefs Association and its board of directors.