

Boston Fire Department blazes new trails with connected FirstNet solutions



Agency/Organization Needs

Boston Fire Department joined FirstNet to provide its first responders with reliable modern communications tools.

Networking Solution

Connected smartphones, tablets, and mobile data terminals in fire trucks and other vehicles

Agency value

Priority and preemption across the LTE - Band 14 spectrum, plus all of AT&T's commercial LTE spectrum bands

Industry Focus

Public safety

Size

More than 1,500 uniformed firefighters protecting 685,000 Boston residents

The Boston Fire Department has a centuries-long history of service to its community. Established in 1678, it was the first paid fire department in the United States. Today it's the largest municipal fire department in New England, serving approximately 685,000 people living in the 50 square mile area of the city proper.

James Greene, Boston Fire Department Deputy Chief, is a third-generation firefighter. "I have a lot of personal pride serving in this department because my father and my grandfather both served in it," he said. As a Fire Alarm Construction employee in the 1950s, his grandfather ran wire in manholes and up telephone poles to connect fire alarm call boxes. "And after my father got out of Vietnam, he was appointed to Ladder 4, and so I grew up as a young boy watching my dad go to work and I was excited to get the opportunity to join myself."

Technology was not a big part of fire department operations when Greene's father and grandfather served and was still limited when Greene joined the Department in 2002. "When I first came on, we were assigned only two radios per apparatus. We had no mobile computer terminals," he said.

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James Greene, Deputy Chief
Boston Fire Department

Ready for all things

The Boston Fire Department has always been proactive in protecting its personnel and the people they serve. After the terrorist bombings at the Boston Marathon in 2013 that killed three people and injured hundreds more the department had to reevaluate its response plan to these large events with one of the Department's mottos in mind, In Omnia Paratus, which means 'ready for all things.' "The marathon really shifted our focus and training to prepare for the severe injuries that we saw from the bombing, so we added things like tourniquets to our medical bags," Greene said.

The Department also chose FirstNet to leverage state-of-the-art solutions like mobile broadband connectivity to power drones, and location tracking software to protect citizens and firefighters and help the crews to be more effective. FirstNet technologies have improved the Department's ability to respond to large events like the Boston Marathon, delivering improved situational awareness and resource coordination.

Greene views FirstNet's leadership in innovative public safety technologies as a key benefit and believes FirstNet's priority and preemption capabilities are critical for ensuring reliable communications, especially during large-scale incidents. "We utilize FirstNet in a lot of different areas, but primarily as a connection to the world. The software that we used at the marathon is something specific that FirstNet brought to our attention to help us with the marathon, championship parades, and other events," he said.

Speedy dispatch

The Boston Fire Department has been a FirstNet customer since 2018, relying on 600 FirstNet devices including smartphones, tablets, and mobile data terminals in their vehicles to protect personnel and better serve the people that rely on them.

During the annual Boston Marathon, at which half a million people line the race route to watch 30,000 runners compete, the fire department uses the Response for FirstNet tracking solution from Intrepid on FirstNet devices to monitor the location of firefighters and response teams stationed along the 26-mile route;



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this allows the command center to quickly dispatch the closest responder to any incident.

"As time went on, we started adding the FirstNet Sonim devices into the firefighters' backpacks so we'd be able to track exactly where they were. If a call came into our command post, we could easily enter the address to identify the closest asset to dispatch," Greene said

Better decisions

Budget constraints have taught fire department officials to make careful technology decisions. "Because of the structure of municipal budgets and procurement, we struggle with identifying technologies that can be supportive to us and cutting through the technologies that maybe are not ready for prime time. We have to focus our energy on what is going to be beneficial," he said. "Our FirstNet team has been a proactive partner in that, so when they brought us this software that would go along with the Sonim devices, they helped us deploy it and it has been very useful to our operation."



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During large events, like the marathon, response for FirstNet enables the Fire Department to define zones and create visual representations of deployments. “It’s easy to see where our firefighters are and who is closest to any incident. It’s really very helpful,” Greene said.

The City of Boston installed vehicular modems that improve the connectivity in department assets. “Having internet connectivity through FirstNet gives us a network that we can connect to immediately. Now we can make use of emerging technologies out in the field.”

“We use FirstNet for most of our operations. We have MG 90 modems in our response vehicles and there's a FirstNet SIM card in all of them,” he continued. “Recently we have started deploying drones, which have been very helpful in identifying the exact location of a fire, and those are solely on the FirstNet network.”

The drones can quickly show firefighters the scope of a fire in a large building. “Say there’s a fire on the top floor; I can't see what's on the roof of that building, but the drone allows me to take a look from up above and make a risk-benefit analysis. It provides another piece of information that can help us make better decisions.”

Enhancing firefighter safety

Accountability in firefighting is the practice of tracking the location and assignments of firefighters at an incident. FirstNet is helping the Fire Department solve the current challenges that exist when trying to determine Z-axis location. The ability to view the Z-axis gives first responders a three-dimensional visualization, removing a large unknown from emergency scenes and providing a fuller picture of the situation.

“The most important thing that FirstNet is doing is helping to solve the Z-axis, the vertical axis of firefighter accountability. And I know FirstNet is actively involved in trying to support companies that are working on that,” Greene said.

“Our drones use the FirstNet network, which helps me protect my personnel and helps me make decisions about protecting civilians as well. I can read dispatch comments and information that people give when they call 9-1-1, which the call taker types into the CAD (Computer Assisted Dispatch) in real time. I'm able to see that when I'm responding to incidents, so it's definitely had a positive impact in our response,” he added

Priority and preemption

Greene said he is grateful for the expertise of his FirstNet team. “It’s been excellent, right from day one. They were involved in helping us identify where we could utilize FirstNet and being able to demonstrate the priority and preemption benefits of the solution.”

“The idea of priority and preemption is very important, particularly to public safety and the fire service. And it's just something that's hard to see and talk about because if you dial your phone and it works, you don't think about it,” he said. “When you dial your phone and it doesn't work, then you think about it.”

Having a feature that supports priority and efficient communications is beneficial for first responders. “I think the priority and preemption is the biggest benefit we get from FirstNet, and a close second is having an agency that is invested in supporting emerging technologies and projects,” Greene said.

FirstNet has enhanced connectivity for the department after major events with Flying Cells on Wings (Flying COWs), which are deployable assets that provide cellular coverage in areas with weak or intermittent signals. These and other state-of-the-art solutions have revolutionized firefighting.

“If you had told me 20 years ago that there would be an unmanned drone that we could deploy, let alone even having a computer in an apparatus, I would've never believed you. But all of that exists today, so in 10 years or 15 years, what other technologies are going to be out there? FirstNet has taken an active role in supporting those technologies.”



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