

## An Innovative Approach to Modernization

A cutting-edge deployment in Fairfax County shows the power of replacing land mobile radio (LMR) with Enhanced Push-to-Talk.

Two years ago, Fairfax County, Va., faced a steep price tag to modernize the radio system used by thousands of its employees. The land mobile radio (LMR) infrastructure supporting non-public safety staff – everyone from public works crews to school bus drivers to water authority workers – was reaching the end of its useful life. And users struggled with aging radios, limited bandwidth and lack of mobile productivity apps.

The county estimated the cost of building a new LMR network at \$18 million – and that was simply to replace the existing capabilities. It wouldn't add capacity or wider network coverage or new applications. With the county budget already stretched thin by other needs, Fairfax officials took an innovative approach for non-public safety communications: They opted to replace the aging LMR network with Enhanced Push-to-Talk from AT&T.

This ground-breaking new service eliminates the need for the county to build and maintain a radio network infrastructure for these users — it runs on the AT&T commercial cellular network. It also provides 100 communications channels and one-to-one capabilities, putting an end to cross-talk and busy signals. And rather than requiring expensive mobile radios for end-users, which can cost thousands of dollars each, AT&T Enhanced Push-to-Talk can be deployed on existing county 4G LTE phones.

"We see this as the future of how our agencies communicate because they get push-to-talk, and they have the ability to use productivity apps, location awareness and all the other mobile broadband tools they want without any capital investment," says Michael Newburn, Fairfax County's wireless and radio solutions manager.

Although the Fairfax employees who are moving to pushto-talk are not public safety personnel, they often serve in critical roles during emergencies. AT&T enables the county to prioritize its push-to-talk traffic on the AT&Towned domestic 4G LTE network. Plus, the new service also interoperates with the county's existing LMR network that will continue to be used by police and fire.

"That was a big requirement for our public safety leadership," says Newburn. "They wanted to ensure they had communication with our general county agencies during emergencies like snowstorms or other events."

Fairfax expects to have about 1,000 employees on AT&T Enhanced Push-to-Talk by later this year. The user base will ultimately grow to more than 3,000 when the rollout is complete. Along with eliminating upfront investment in new radio infrastructure, the move to AT&T Enhanced Push-to-Talk is expected to save the county an additional \$2 million annually, thanks to lower operating costs.

## Leading the Way by Solving Common Challenges

Fairfax's challenges with LMR aren't unique. Counties often struggle to provide two-way radios to general services personnel. While police and fire communications are supported by 911 funding, radios for road crews, parks workers, school bus drivers and scores of other mobile staff are financed by general funds. And providing LMR service to these general users is expensive.

Counties must buy and maintain LMR infrastructure as well as bear the cost of necessary upgrades. Pricey end-user radios typically become obsolete in five to seven years. These factors tend to result in general employees relying on inadequate infrastructure and outdated equipment. For instance, "some of the radios carried by general services users in Fairfax County were two generations behind current technology," Newburn says.

Adoption of push-to-talk technology enables Fairfax to give general users better mobile communications and to invest more on their LMR network for police and fire. It's an approach that could make sense for countless other jurisdictions throughout the nation.

"Fairfax County is leading the way in solving challenges experienced across the country," says John Stuhrenberg, vice president of government and education at AT&T. "They found themselves needing to examine the various populations that they served and differentiating public safety from general services. It didn't make sense to continue with the one-size-fits-all radio networking."

The ability to interconnect traditional LMR with carriergrade AT&T Enhanced Push-to-Talk makes this possible. Recent technical advancements – including the adoption of IP standards by LMR manufacturers and the maturing of LTE capabilities – enable practical and cost-effective interoperability between the two systems.

"The advancements in standards and technology have provided the final piece of the puzzle," says Rick Koehler, industry solutions practice manager at AT&T. "This type of interoperability wasn't easy to do before. Now we have the solution."

## **Smooth Transition and County Success**

Newburn says transitioning users from LMR to push-to-talk has been easy. Many users already have county smartphones loaded with useful mobile apps. The new service simply adds the push-to-talk client to their existing devices. Some longtime LMR users needed additional education and outreach to make the shift. But even these LMR veterans quickly adapted to the new platform. "We see this as the future of how our agencies communicate because they get push-to-talk, and they have the ability to use productivity apps, location awareness and all the other mobile broadband tools they want without any capital investment."

Michael Newburn, Wireless and Radio Solutions Manager, Fairfax County, Virginia

The move was particularly appealing to a younger generation of workers who were raised on cellphones instead of LMR technology. "Our agencies were doing refresher training for this workforce on how to use a two-way radio," says Newburn. "But as soon as they get the app on their phone for pushto-talk service, they're up and running. It's very intuitive and they already know how to use it."

Behind the scenes, AT&T Enhanced Push-to-Talk provides greater mobile capabilities while freeing up county resources. The old LMR network struggled to cover Fairfax's 400-square-mile territory with just seven radio towers. The AT&T broadband network blankets this same area with nearly 200 cell sites, providing superior bandwidth and connectivity. And since Fairfax no longer supports radio infrastructure for general users, Newburn's staff can focus more attention on maintaining the county's remaining LMR network for police and fire personnel.

Robust cellular coverage in the Fairfax area was another key to the county's successful push-to-talk adoption. "Our public safety agencies have used the cellular network for their mobile data requirements for nine years, so the coverage is tested and vetted," says Newburn.

Stuhrenberg notes that AT&T has invested significantly in its LTE network and push-to-talk services, opening the door for more jurisdictions to replicate Fairfax County's success.

"The LTE network itself has come of age and has been a major investment strategy for the corporation," he says. "And AT&T Enhanced Push-to-Talk is going to become a more common and frequent application for governments that are struggling with budget and operational issues. I think it opens up an amazing set of opportunities that did not exist previously."

That's certainly the case in Fairfax County, says Newburn. "It's a winning solution for us."



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