

Case Study: Land Mobile Radio System Replacement Support

AT A GLANCE

Location

Butler County, Pennsylvania

Challenge

Butler County, PA's existing radio system is facing end-of-life and has begun to experience reduced reliability. The County needed to find a reliable replacement system, and a network to support it, that enabled them to provide mission-critical response while maximizing cost savings.

Solution

The County worked with MCP to develop a roadmap that would replace the existing LMR system with one that would meet their future needs. The multi-year effort included a detailed assessment of possible solutions, the most attractive of which was a P25 system from Motorola.

Results

With support from MCP throughout negotiations, the County's selected solution realized an impressive 43% cost-savings off list price with an additional savings of upwards of \$350K. The new system is expected to go-live in early 2019.

Mission Critical Partners Helps Butler County, PA Maximize the Value of its New P25 Radio System While Boosting Coverage, Capacity and Regional Interoperability

Background

Located 20 miles north of Pittsburgh, PA, Butler County serves a population of nearly 200,000 people across 800 square miles. The Department of Emergency Services' current countywide conventional simulcast analog communications system was installed in 2004. The ten-site, eight channel system operates in a frequency band that has been reallocated by the FCC as mandated within the Middle-Class Tax Relief Act of 2012. Further, the existing radio system is facing the need for end-of-life support and has begun to experience reduced reliability.

Challenges

As a county that requires reliable mission-critical communications for 60 first responder agencies, it is important that Butler County's land mobile radio (LMR) system—and the network supporting it—is available whenever and wherever it needs to be. However, the system is facing several challenges that played a role in the decision to replace it:

- The radio system is reaching end-of-life, and support for several of its core components would be needed by the end of 2020. Butler County would have to rely on third-party service centers to complete repairs and would face

increased system maintenance costs or difficulty obtaining spare parts.

- The existing system operates on the T-Band—radio spectrum the County would be forced to vacate before 2023 because of an impending deadline imposed by the FCC in 2012.
- The County has to begun to experience frequent network connectivity backhaul issues because the system relies on outdated, unreliable, costly analog telephone lines.
- The radio system suffers from extended outages, coverage issues and a loss of communication capabilities that threaten the County's ability to provide uninterrupted, mission-critical response.
- The system lacks the capacity to support multiple large-scale incidents and does not enable law enforcement to use encryption to protect sensitive communications.



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Solution

Working with an experienced team of radio experts from Mission Critical Partners (MCP), Butler County began to develop a roadmap in 2015 that would allow them to replace their existing LMR system with one that would meet their needs today, and into the foreseeable future, with the lowest amount of risk.

“Our goal was to evaluate every option on the table and make an educated decision about a solution that would address our challenges and limit the need for future upgrades,” said Steve Bicehouse, director.

To begin the multi-year effort, Butler County looked to MCP to complete a detailed assessment that presented several alternatives, complete with a comparison of pros and cons for each solution. The County also requested comprehensive cost estimates to aid in their planning efforts when working with officials to allocate the appropriate funds. Of the four options presented by MCP, the report concluded that the most attractive solution was an 800 MHz P25 Phase 2 trunked simulcast radio solution that offered several advantages over the alternatives because it:

- Overcame the limitations of the existing system and addressed the requirements of the impending T-Band mandate.
- Provided substantial increased capacity and expanded the County’s radio coverage.
- Presented Butler County with the lowest possible risk based on a flexible, standards-based architecture that would limit the need to invest in future upgrades.
- Reduced the number of projected radio sites from 15 down to 13, resulting in considerable backhaul, radio system and tower site cost savings.
- Had the greatest in-building penetration in comparison to alternatives.
- Provided the opportunity to integrate with a shared regional system providing additional cost-saving opportunities.

From Vision to Implementation

After selecting a path forward, Butler County chose MCP to assist with procurement and implementation of the new P25 system. With MCP’s support developing requirements and specifications, the County kicked off a competitive procurement process with the ultimate goal of finding the most cost-effective solution available by dividing procurement between radio infrastructure, backhaul and site development vendors.

“It was our goal to not only help Butler County achieve a savings of at least 30 percent for their new solution, but also to help them realize cost savings from sharing systems with adjacent agencies,” said Steve Haberman, project manager, MCP.

Additionally, the new solution was designed to increase interoperability and leverage the resources of neighboring counties. Butler County is one of 14 counties located in Region 13, a task force that shares a regional, interoperable Emergency Services Internet Protocol (IP) network, or ESInet. A component of the requirements for the County’s new design was that it would utilize the Region 13 ESInet and leverage infrastructure and enhanced features available from the six-county Intercounty Regional Radio System (ICORRS). This design also meant the new system could be implemented for a lower upfront cost, achieve the highest level of interoperability with neighboring counties and reduce long-term maintenance costs.

Throughout the project, MCP’s support gave Butler County greater confidence that the solution they selected would meet their unique requirements. MCP also supported the County with vendor negotiations, playing a key role helping them obtain the most aggressive pricing possible.

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– Steve Bicehouse, director

Results

After selecting Motorola as the vendor for the new P25 system, as well as separate vendors for supporting network backhaul and site development, Butler County retained MCP to manage the implementation of the new system, which is expected to be fully-operational in early 2019. With MCP's negotiation support, the County's selected Motorola solution included an impressive 43 percent cost savings off of list price, with an additional savings estimated at upwards of \$350K to be achieved through sharing systems with nearby regional partners.

"MCP has played a key role helping us meet our project goals by managing multiple vendors on our behalf—holding them accountable for meeting project milestones, managing project risks and ensuring they meet schedule deadlines and requirements," said Bicehouse. "The quality of the team, and the fact that MCP knew our County and our region so well, played a significant role in us being able to see our vision through to reality," he continued.

The radio communications system in Butler County will go live prior to the project's conclusion and will accomplish the goals set forth early on.

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About Mission Critical Partners

Mission Critical Partners is a professional and co-managed services firm that helps clients enhance and evolve their public safety systems and operations through extensive experience, knowledge and resources. By providing insight and support every step of the way, our clients are able to transform their mission critical operations, maximize the value of their investments and ensure optimal performance and success.

For more information, visit MissionCriticalPartners.com

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