



VESTA® 9-1-1 CASE STUDY

THE MID-AMERICA REGIONAL COUNCIL PROVIDING PARITY OF 9-1-1 SERVICE FOR 119 CITIES IN 9 KANSAS AND MISSOURI COUNTIES

The Mid-America Regional Council (MARC) is the metropolitan planning organization and nonprofit association of city and county governments for the bistate Kansas City region. It promotes regional cooperation and develops innovative solutions to use available resources effectively, while still achieving the highest levels of citizen satisfaction. Nine counties and 119 cities make up its membership, which represent almost 2.1 million people across 4,400-plus square miles in Kansas and Missouri. MARC is governed by a board of directors made up of 33 elected officials who stand for the nine-member counties and six largest cities. It provides a forum for the region to work together on key issues, including transportation, economic development and Public Safety.

A critical element of MARC's involvement in Public Safety includes the coordination of the region's 9-1-1 service, which the association has taken lead on since 1983. This state-of-the-art system ensures that no matter where its citizens are within the region, they have access to the same responsive and high-quality 9-1-1 service when they need it. This requires ongoing cooperation with multiple stakeholders, plus ensuring the necessary equipment is up to the task.

MARC fulfilled its vision for the regional 9-1-1 system with the implementation of the VESTA® 9-1-1 Call Handling solution from Motorola Solutions and the innovative wireless network from Motorola Solutions' Channel Partner, Commenco. Together, the three organizations provide the parity of 9-1-1 service that all MARC's communities and citizens not only expect, but deserve.

"MARC is able to provide nine counties in 119 cities with access to the same 9-1-1 system, which isn't easy to do. We provide simple access for citizens to get emergency help and ensure the process is redundant – always available."

Eric Winebrenner,
MARC's Public Safety Program Director



"As we transition to Next Generation 9-1-1, it will be a learning curve for everyone, from citizens to vendors to dispatchers. But, as we make that transition all using the same technology, we can build on our knowledge base. This ensures service to citizens is reliable, which means we can all better serve our communities."

Hassan Al-Rubaie,
MARC's Public Safety Communications Technician III

BECOMING THE SOLUTION

In the early days of its involvement, MARC was only responsible for paying phone bills for the PSAPs in its membership. Yet, local governments were struggling to coordinate all facets of 9-1-1 on their own. They asked MARC to coordinate and manage the regional system, including negotiations with LECs and solution providers.

The association brought together all the key players – fire, law enforcement and emergency medical services – from each of the affiliate communities. The participants, no matter how big or small their community may be, sit at the same table, and their viewpoints receive the same consideration in support of the decision at hand. This was true when the regional 9-1-1 system was established and has remained the case as it has now grown to 43 PSAPs.

To formalize the regional system, a 9-1-1 Interlocal Cooperation Agreement was signed by the member counties. This signified their commitment to modernize the 9-1-1 equipment in use in the PSAPs for substantial benefit – the biggest being the enhanced interoperability it would create within the region. For example, should a PSAP be rendered inoperable, its personnel can travel to a nearby PSAP and effortlessly resume operations as if they were in their own PSAP. The cost is shared by the nine counties on a per capita basis. Jackson County, the largest county with nearly one-third of the region's population, assumed nearly one-third of the cost, helping its smaller neighbors to receive the same benefits.

The next step was to align the efforts of MARC's solution and service providers. After all, everything must be consistent to not only deliver parity of service, but to begin the journey to Next Generation 9-1-1.

BUILDING THE NETWORK

Like MARC's approach to Public Safety in the Kansas City region, the network to support its regional 9-1-1 service is considered ahead of its time. It was engineered by Commenco, which is based in Kansas City and whose personnel gave careful consideration to the future of Public Safety within and around their home. Ultimately, this network would not only serve the regional 9-1-1 system, but would also enable P25 radio communications across 13,000 square miles for 24,000 users and growing.

All this made the most crucial element of network design its survivability. Commenco sought to ensure that if a single site lost connection, the regional 9-1-1 system would not be at risk. Instead, its team made sure there were many other routes for the network traffic of the 43 PSAPs. The result was a hybrid network design made up of microwaves, fiber, T1 lines, multiprotocol label switching (MPLS) and a metropolitan-area Ethernet – also known as a MESH network. Such a network is known for its ability to actively distribute workloads, especially when its elements have issues. It's also known for its reduced maintenance costs compared to monthly T1 fees, leaving funding to direct to other areas.

Still, some are surprised to learn a network the size of MARC's is predominantly microwave driven, making it one of the most extensive Public Safety-serving microwave networks in the nation. The truth is the benefits of this move are tremendous, particularly with the improvements microwave technology has seen in the past decade. For instance, there is no risk of technology obsolescence or more importantly, failure. Microwave outages are generally short and concentrated, lasting a few minutes versus hours. The network then goes into a self-healing process, allowing MARC and its PSAPs to rest assured in its availability. This makes microwave a sound investment – one that realizes a return within three years for a single-hop. Plus, while T1 speed is generally 1.5 meter per second (mbps), microwave sees a whopping 100-300 mbps. Last, it's also extremely scalable. This is important for the future of Next Generation, when PSAPs begin to accept the various forms of multimedia to come.

MARC does urge other PSAPs or council of governments considering microwave to do one important thing – invest in the associated FCC license. Hassan says, "The FCC has deemed 4.9 GHz as the public safety broadband spectrum. There is loose definition to what is Public Safety, so we've tried to avoid that spectrum." He advises, "Ask your vendor what the loading is like in your area because 4.9 GHz can be congested. Invest in the license for higher bandwidth. People's lives are worth the cost, and it's a small price to pay for having your own lane in the traffic."

IMPLEMENTING THE LAST PIECE FOR TRUE PARITY

A Motorola Solutions customer since 1991, MARC chose the company's Next Generation call handling solution, the VESTA® 9-1-1 system, to round out its regional 9-1-1 service. The move from the legacy equipment to the new helped ease the transition for the regional Telecommunicators. This is because the user interface of the VESTA 9-1-1 system is highly configurable, making available multiple layouts and workflows to lessen their learning curves.

The VESTA 9-1-1 system is also flexible to meet the demands of all MARC's PSAPs. Its open architecture readily accommodates its multi-site deployment. Plus, it can scale to support agencies from two-to-250 positions, easily adapting to changes.

Having one system for all PSAPs, no matter their size, has allowed for better use of MARC's resources and time, such as with training. Most important, it provides each PSAP with a solid back-up plan in emergencies. This is possible through VESTA 9-1-1's multi-agency support, which allows displaced Telecommunicators to log into the system at other member PSAPs and handle calls like they normally would.

MARC has also found flexibility in its adoption of Text-to-9-1-1. Currently, the VESTA 9-1-1 system accepts emergency text messages by TTY. These are received by the Text Control Center (TCC), which converts them to TTY and delivers them to Motorola Solutions'

routing equipment. However, MARC plans to transition all PSAPs to the VESTA® SMS solution, also from Motorola Solutions. The VESTA SMS solution integrates with the VESTA 9-1-1 system to enable seamless handling of both voice calls and text messages, making the process easier for Telecommunicators. It will go live with the new Text-to-9-1-1 solution once every PSAP has it and is ready. This is another way it helps ensure equal service for all its citizens.

The association is proud of this ability – to make sure that all citizens, from one corner of the region to another, within a two-hour drive, can call or text 9-1-1 and get the same level of service. Its holistic system offers its PSAPs and their communities the highest levels of confidence due to the redundancy provided by three Motorola Solutions host sites for the region. This helps confirm that, if service to the VESTA 9-1-1 system is impacted for one site, the other PSAPs remain unaffected. Yet, MARC realizes that this parity may not exist for everyone all the time. Such instances surround those people who work in the Kansas City metro area but live outside it. That's why the association maintains its capacity to expand its regional service to counties that may want to join on a contract basis.

In fact, after realizing complete Next Generation, MARC is proud to report its member PSAPs within Kansas will be able to connect to other non-member PSAPs within the state. This is possible because the VESTA 9-1-1 system also sits at the core of Kansas' statewide 9-1-1 effort, expanding their PSAPs' back-up resources and creating greater interoperability.

For now, MARC and its members will continue to focus on upholding parity of service within its region, while moving further down the path to NG9-1-1. It will do so in collaboration with each other and with its solution and service providers, Motorola Solutions and Commenco. After all, their combined efforts have shown there is strength in numbers.

A REGIONAL 9-1-1 SYSTEM

44 PSAPs ACROSS

119 CITIES IN

9 COUNTIES SPANNING

2 STATES USING

1 UNIFORM SERVICE FOR

2.1 MILLION CITIZENS



"The service we get from VESTA is exactly what we expect. We have great communication, recognizing that we're stronger together."

Eric Winebrenner,
MARC's Public Safety Program Director

THE VESTA® SOLUTIONS SUITE

Our VESTA® Next Generation 9-1-1 solutions serve more than 60% of all U.S. Public Safety Answering Points, as well as Federal DoD operations globally. Our Emergency Notification solutions support the communications needs of hundreds of public and private sector organizations worldwide. As one of the most trusted solutions providers in Public Safety communications, we help people be their best in the moments that matter.

Experience the VESTA difference. Call **951.719.2100**.

MOTOROLA SOLUTIONS

Founded in 1928, Motorola has a history of innovation that has revolutionized communications. From pioneering mobile communications in the 1930s and making equipment that carried the first words from the moon in 1969, to supporting modern-day emergency response equipment for disaster relief efforts around the world, Motorola Solutions has a global footprint with products that demonstrate its thought leadership.

For more information, please visit us on the web at: www.vestapublicsafety.com



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