
West Metro Fire Protection

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West Metro Fire Protection District is a special multi-jurisdictional district west of Denver, Colorado. The state's second-largest fire and emergency medical services provider, West Metro protects property with a market value in excess of \$24 billion in a service area that includes the cities of Lakewood, Morrison, Littleton; and Golden, Jefferson and Douglas Counties.

QUICK FACTS

- Founded: 1995
- Firefighters: 349
- Stations: 15

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- Jurisdiction: 110 sq. miles
 - Serving: 250,000 people

BUSINESS CHALLENGE

For years, West Metro relied on a legacy 800 MHz radio system for mobile communications. Although this technology provided reliable analog voice communications, it did not offer the bandwidth to support deployment of the latest dispatch, medical device and data technologies. West Metro crews, like most fire crews, relied on tear-sheets for call details, paper maps for directions to incident scenes and resource manuals for information on structures and hazards.

In 2006, West Metro's IT/GIS Director, Patrick Purdy, began a search for a communications solution that could keep pace with rapidly advancing communications technologies. Commercial cellular carriers were moving to 3G networks and testing WiMax. Local communities were considering municipal Wi-Fi mesh-networks, and the Federal government was planning a nationwide 700 MHz public safety communications network.

A survey of other fire departments revealed that most were using modems and integrated wireless cards. This approach provided improved data capabilities, but when network technologies change, agencies will be forced to discard and replace expensive communications gear. West Metro committed to using state-of-the-art technology in the most fiscally responsible manner possible; rejected this approach and began the search for a "future proof" solution.

West Metro had two primary objectives: to improve connectivity and enhance the management of operations and assets, and to identify a "future-proof" solution that could adapt to the latest networks and technologies.

SIERRA WIRELESS INMOTION SOLUTION

West Metro has deployed a state-of-the-art IP infrastructure that transforms how it handles emergency calls, putting digital dispatch, building access, hydrant locations and other information at the fingertips of agency firefighters and medics. Stations are equipped with video monitors to display call details, and Wi-Fi.

For mobile communications, West Metro chose an InMotion Solution, used by hundreds of public safety, healthcare, municipal, transportation and utility organizations worldwide. The InMotion oMG mobile gateway turns emergency vehicles into secure, high performance mobile hotspots, enabling any data devices; including laptops, PDA's, video surveillance equipment, ECGs and

other medical devices – to connect while the vehicle is in the station, in transit, or at incident scenes.

The oMM provides organizations the information needed to manage operations to peak efficiency, extending asset lives, improving response times and reducing costs. Simple to deploy and easy to use, the oMM continuously collects and analyzes information from oMG-equipped vehicles to provide headquarters staff with a virtual dashboard of information from the field. The oMM works with standard web-browsers and displays detailed information about vehicles, networks and devices on a three-dimensional map, and sends email alerts based on pre-set thresholds.

LIFESAVING RESULTS

Working with Wi-Fi hotspot technology in their fire stations and the oMG on board their vehicles, West Metro is able to upload aerial and digital map information for their mobile computer aided dispatch (CAD) application. On the road, the oMG creates and manages 3G connectivity, so fire crews can obtain CAD and incident information on the fly. This mobility allows West Metro fire crews to respond and be routed to incidents in less time than a radio-based dispatch.

Because the oMG supports all wireless networks, the gateways are able to move seamlessly between Wi-Fi and cellular services. The oMG also seamlessly switches traffic to the best available network, so the agency has outfitted their oMG with multiple network cards to handle situations where a single network may be unavailable.

The oMG is equipped with GPS, so West Metro can track emergency vehicles. The GPS signal reports back to the CAD system, and using automatic vehicle location (AVL), the system can make the best recommendations for the closest responding vehicle. This technology saves minutes from emergency response times.

When a call comes in, the oMG enables digital dispatch information – including maps and turn-by-turn directions to the scene – to be instantly and wirelessly downloaded to in-vehicle computers. Detailed incident scene information – including aerial photographs with points of access and the location of hydrants – enables firefighters to plan their response before arrival. Through proprietary incident reporting software, first responders can mobile fax, or data store patient care information while on the road using the oMG as the primary wireless connection. West Metro are currently looking at the oMG's capability to provide EKG information to the hospital separately from the patient care report they track on laptops.

At the scene, each oMG functions as a mobile, high-performance, wireless

hotspot, providing all first responders with reliable, secure connectivity. Crews at the scene can communicate using voice, email, fax, video and other devices. Firefighters can begin patient care immediately, and electronically send information to medics when they arrive. Medics can send ECG and other patient information to the hospital from the field, improving patient care, and saving time when seconds can mean the difference between life and death.

The oMG can also provide a mobile hotspot for other agencies; West Metro are currently looking at giving access to their mobile hotspots to local police, sheriff, and other emergency agencies.

By deploying an end-to-end IP infrastructure and future-proof data networking technologies, West Metro has seen dramatic communications and operations improvements. Today, by the time West Metro crews are in their vehicles, they have access to all the information they need to get to scene faster, respond more effectively, and save lives and protect property as never before.

CONCLUSION

The InMotion Solution has enabled West Metro to meet the original objectives of its communications platform search. According to Purdy, “It has been a great investment for emergency services mobility in our agency.” Today, operations command is able to manage assets; vehicles, communications, and mobile data gear; remotely and in real time. In the future, these solutions will also enable West Metro to upgrade to the latest wireless technologies, saving money and ensuring that it serves the people of Colorado with state-of-the-art, life-saving technologies.

CUSTOMER CRITICAL CHALLENGE

- Legacy 800 MHz radio system for mobile communications did not offer the bandwidth to support deployment of the latest dispatch, medical device and data technologies.
- Fire crews relied on tear-sheets for call details, paper maps for directions to incident scenes, and resource manuals for information on structures and

hazards.

SOLUTION

- oMG

BENEFITS

- The oMG's GPS signals reports back to the CAD system. Using automatic vehicle location (AVL) the system recommends the closest responding vehicle, shaving minutes from emergency response times.
- The oMG enables maps and turn-by-turn directions to the scene to be instantly and wirelessly downloaded to in-vehicle computers.
- Fire crews can obtain CAD and incident information on the fly, enabling crews to respond and be routed to incidents quickly.
- Detailed incident scene information enables firefighters to plan their response before arrival.
- Each oMG functions as a mobile, highperformance, wireless hotspot, providing all first responders with reliable, secure connectivity.
- Medics can send ECG and other patient information to the hospital from the field, improving patient care, and saving time when seconds can mean the difference between life and death.