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 fi re and emergencymedical 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
- Jurisdiction: 110 sq. miles
- Serving: 250,000 people

BUSINESS CHALLENGE

For years, West Metro relied on a legacy 800 MHz radio system for mobilecommunications. Although this technology provided reliable analog voicecommunications, it did not offer the bandwidth to support deployment ofthe

latest dispatch, medical device and data technologies. West Metrocrews, like most fi re crews, relied on tear-sheets for call details, paper mapsfor 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 fora communications solution that could keep pace with rapidly advancingcommunications technologies. Commercial cellular carriers were movingto 3G networks and testing WiMax. Local communities were consideringmunicipal Wi-Fi mesh-networks, and the Federal government was planning anationwide 700 MHz public safety communications network.

A survey of other fi re departments revealed that most were using modemsand integrated wireless cards. This approach provided improved datacapabilities, but when network technologies change, agencies will beforced to discard and replace expensive communications gear. WestMetro – committed to using state-of-the-art technology in the most fi scallyresponsible manner possible – rejected this approach and began the searchfor a “future proof” solution.

West Metro had two primary objectives: to improve connectivity andenhance the management of operations and assets, and to identifya “future-proof” solution that could adapt to the latest networks andtechnologies.

SIERRA WIRELESS INMOTION SOLUTION

West Metro has deployed a state-of-the-art IP infrastructure that transformshow it handles emergency calls, putting digital dispatch, building access,hydrant locations and other information at the fi ngertips of agencyfi refi ghters and medics. Stations are equipped with video monitors to displaycall details, and Wi-Fi.

For mobile communications, West Metro chose an InMotion Solution,used by hundreds of public safety, healthcare, municipal, transportationand utility organizations worldwide. The InMotion oMG mobile gatewayturns emergency vehicles into secure, high performance mobile hotspots,enabling any data devices – including laptops, PDA’s, video surveillanceequipment, ECGs and other medical devices – to connect while the vehicleis in the station, in transit, or at incident scenes.

The oMM provides organizations the information needed to manageoperations to peak effi ciency, extending asset lives, improving responsetimes and reducing costs. Simple to deploy and easy to use, the oMMcontinuously collects and analyzes information from oMG-equipped vehiclesto provide headquarters staff with a virtual dashboard of information fromthe fi eld. The oMM works with standard web-browsers and displays detailedinformation about vehicles, networks and devices on

a three-dimensionalmap, and sends email alerts based on pre-set thresholds.

LIFESAVING RESULTS

Working with Wi-Fi hotspot technology in their fi re stations and the oMGonboard their vehicles, West Metro is able to upload aerial and digital mapinformation for their mobile computer aided dispatch (CAD) application. Onthe road, the oMG creates and manages 3G connectivity, so fi re crews canobtain CAD and incident information on the fl y. This mobility allows WestMetro fi re crews to respond and be routed to incidents in less time than aradio-based dispatch.

Because the oMG supports all wireless networks, the gateways are ableto move seamlessly between Wi-Fi and cellular services. The oMG alsoseamlessly switches traffi c to the best available network, so the agency hasoutfi tted their oMG with multiple network cards to handle situations where asingle network may be unavailable.

The oMG is equipped with GPS, so West Metro can track emergencyvehicles. The GPS signal reports back to the CAD system, and usingautomatic vehicle location (AVL), the system can make the bestrecommendations for the closest responding vehicle. This technologyshaves minutes from emergency response times.

When a call comes in, the oMG enables digital dispatch information – includingmaps and turn-by-turn directions to the scene – to be instantly and wirelesslydownloaded to in-vehicle computers. Detailed incident scene information –including aerial photographs with points of access and the location of hydrants– enables fi refi ghters to plan their response before arrival. Through proprietaryincident reporting software, fi rst responders can mobile fax, or data storepatient care information while on the road using the oMG as the primary wirelessconnection. West Metro are currently looking at the oMG’s capability to provideEKG information to the hospital separately from the patient care report they track onlaptops.

At the scene, each oMG functions as a mobile, high-performance, wireless hotspot,providing all fi rst responders with reliable, secure connectivity. Crews at the scenecan communicate using voice, email, fax, video and other devices. Firefi ghters canbegin patient care immediately, and electronically send information to medics whenthey arrive. Medics can send ECG and other patient information to the hospitalfrom the fi eld, improving patient care, and saving time when seconds can mean thedifference between life and death.

The oMG can also provide a mobile hotspot for other agencies; West Metro arecurrently 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 networkingtechnologies, West Metro has seen dramatic communications and operationsimprovements. Today, by the time West Metro crews are in their vehicles, theyhave access to all the information they need to get to scene faster,respond moreeffectively, and save lives and protect property as never before.

CONCLUSION

The InMotion Solution has enabled West Metro to meet the original objectivesof its communications platform search. According to Purdy, “It has been a greatinvestment for emergency services mobility in our agency.” Today, operationscommand is able to manage assets – vehicles, communications, and mobile datagear – remotely and in real time. In the future, these solutions will also enable WestMetro to upgrade to the latest wireless technologies, saving money and ensuringthat 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 fl y, enabling crews to respond and be routed to incidents quickly.
- Detailed incident scene information enables fi refi ghters to plan their response before arrival.
- Each oMG functions as a mobile, highperformance, wireless hotspot, providing all fi rst 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.