

## INCREASING BANDWIDTH FOR ADVANCING TECHNOLOGIES

### BACKGROUND

West Metro Fire Protection District is a special multi-jurisdictional district west of Denver. 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.

### THE 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.

### THE 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, they worked with In Motion Technology, an innovator in integrated communications/asset management solutions used by hundreds of public safety, healthcare, municipal, transportation and utility organizations worldwide. In Motion Technology's onBoard™ 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.



West Metro  
Fire Rescue

### QUICK FACTS

Founded: 1995

Firefighters: 349

Stations: 15

Jurisdiction: 110 sq. miles

Serving: 250,000 people

# West Metro Fire Protection District

## CASE STUDY



The onBoard™ Mobility Manager 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 Mobility Manager continuously collects and analyzes information from Gateway-equipped vehicles to provide headquarters staff with a virtual dashboard of information from the field. The Mobility Manager 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 Gateways onboard 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 Gateway creates and manages 3G connectivity, so they can obtain CAD and incident information on the fly. This mobility allows West Metro to respond and be routed to incidents in less time than a radio-based dispatch. Because the Gateway supports all wireless networks, they are able to move seamlessly between Wi-Fi and cellular services. The Gateway 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 shaves minutes from emergency response times. Through proprietary incident reporting software, they can mobile fax, or data store patient care information while on the road using the Gateway as the primary wireless connection. They are currently looking at the Gateway's capability to provide EKG information to the hospital separate from the patient care report they track on laptops.

The Gateway can also provide a mobile hotspot for other agencies; West Metro are currently looking at giving local police, sheriff, and other emergency agencies access to their mobile hotspots. The Gateways seamlessly switches traffic to the best available network, so the agency has outfitted their Gateways with multiple cards to handle those situations where a single network may be unavailable. 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.

When a call comes in, the Gateway 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. At the scene, each Gateway 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.

### CONCLUSION

In Motion Technology's solution has enabled West Metro to meet the original objectives 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.

*"With the Gateway, our crews have information at their fingertips that we could never have imagined just a year ago. And, unlike other solutions that must be replaced as technology changes, the onBoard Mobile Gateway was designed to be easily upgraded. This investment will improve our emergency responses today and into the future. Our upgraded communications -- which includes In Motion Technology's mobile wireless communications solutions -- will improve our responses and the service we provide to the residents of the West Metro Fire Protection District, said Patrick Purdy, Director of Information Technology*

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