

Reducing 911 Response Time in Milpitas, California

Customer Highlights Challenges

- Provide mobile public safety personnel access to critical data and systems, improving community safety and helping save lives

Solution

- Secure, cost-effective, high-speed network provides police and fire personnel with in-field access to essential public safety applications and information
- GPS allows in-field personnel and central dispatch to “see” vehicle location and assess traffic, enabling the fastest response time
- In-vehicle mobile Wi-Fi routers effectively extend the reach of the network broadening the coverage area

Results

- Reduced response time by mobile emergency personnel up to 30%, improving community safety and saving lives
- Mobile officer started administering CPR less than 90 seconds after dispatch received call, saving a life
- Fast access to hazardous materials locations, building floor plans, and other data helps increase effectiveness of firefighters and reduce safety risks
- Mobile access to DMV, gang, and other databases raises effectiveness of police officers

Systems and Services

- Tropos Networks MetroMesh 5210 and 4210 routers

response times have been reduced by as much as 30 percent. Emergency response times dropped from 3-4 minutes to 2-3 minutes. Urgent response times dropped from 6-7 minutes to 4-5 minutes.

The new dispatch system integrates GPS and traffic information directing mobile units that can arrive to an emergency scene the fastest to respond. Recommendations on which unit should respond are made according to which can arrive first, not which is closest. Fire units roll out of the station with traffic-adjusted driving instructions already downloaded into the on-board PC.

Located at the “Crossroads of Silicon Valley,” Milpitas has grown from its agricultural roots into a high-technology hub, with a regional shopping center and diverse neighborhoods. This San Francisco Bay Area suburb is home to 65,000 residents and each business day the population doubles to nearly 130,000 people as commuters come to work in Milpitas. The city is home to several well-known technology manufacturers, and thousands of other companies. City officials strive to serve the community as effectively as possible, and desired to modernize their dated 911 emergency response system and enable new applications that would improve public safety worker efficiencies.

THE CHALLENGE

Ensuring the public’s safety in a thriving and dynamic city covering 13.5 square miles is a daunting task. Commercial, industrial, and office buildings occupy nearly 20 percent of the city. Two interstate highways and a railroad pass through town, transporting freight and a wide variety of other materials.

It was difficult to ensure mobile emergency workers had access to the latest street maps, policy and operations manuals, hazardous materials guides, and other information. Fire and police vehicles were using an older Cellular Digital Packet Data (CDPD) based network, but it was too slow for anything other than simple text data. It was nearly impossible to download graphics, such as DMV photographs for police officers or building floor plans for responding firefighters. When incidents were reported, dispatchers had no way to identify the nearest public safety vehicle to dispatch, making it difficult to ensure emergency situations were responded to as fast as possible.

RESULTS

Milpitas chose to purchase and install a Wi-Fi network as its primary public safety network, based on products from Tropos Networks, providing reliable, secure broadband connectivity to the city’s 30 police patrol vehicles and 20 fire trucks. Police and fire vehicles are also equipped with a 1XRTT cellular modem for redundancy and failover of the Wi-Fi network.

Now that public safety vehicles are equipped with broadband connectivity, the results are impressive. Emergency and urgent



“The Tropos MetroMesh network helped us reduce emergency response times by up to 30 percent.”

Bill Marion
Milpitas Information Services Director

Before arriving on scene, battalion chiefs can review site maps, building floor plans, hazardous materials locations, water hydrant and utility main connections, and then instruct incoming response vehicles on how and where to set up.

The new network also enables the city’s 95 sworn police officers to spend more time in the field. With direct access to DMV databases such as CalPhoto, California Gang Database, and other police applications, officers can get efficient

access to the police records and other information they need to be more effective in the field. Similar to the fire department, the police can also respond more quickly to emergency calls, which can save lives. In one incident, a police officer was able to start administering CPR less than 90 seconds after dispatch received the call, because he could see from the GPS map in his car that he was the closest to the scene.

In addition, police and fire units have access to a network of video cameras that monitor high-traffic areas throughout the city. They can assess road status, traffic incidents, and other situations from any public safety vehicle.

“The Tropos MetroMesh network helped us reduce response times by up to 30 percent. The network offers us the performance, coverage, and reliability we need to enable our police and fire departments to respond faster and more efficiently,” said Bill Marion, Information Services Director for the city of Milpitas.

TROPOS SOLUTION

After evaluating carrier-based wireless, private-radio wireless, and 802.11-based options, the city of Milpitas selected a Tropos MetroMesh Wi-Fi network to enable higher bandwidth applications that increase the efficiency and effectiveness of mobile public safety workers, and to increase coverage. The broadband network was first deployed in 2004, and operated by the city’s IT department.

The first phase of the network used Tropos’ 5110 MetroMesh routers to cover about 5 square miles of the city. The 1XRTT network provides connectivity when vehicles are out of range of the Wi-Fi network.

In 2006, the city entered into an agreement with Earthlink Networks and the network was expanded and updated with Tropos’ MetroMesh 5210 routers, providing police and fire units with broadband Wi-Fi connectivity across the entire city. Seven of the city’s fire vehicles use Tropos’ 4210 Mobile MetroMesh routers, which provide mobile Wi-Fi connectivity and extend the mesh network coverage area.

FUTURE APPLICATIONS

The city of Milpitas is evaluating use of the network for other municipal applications that will improve mobile worker efficiencies and reduce costs.

- Mobile Municipal Workers - Enabling other municipal workers, such as building inspectors, traffic engineers, and code inspectors to use tablet PCs in the field to file reports and access information from centralized and Internet-based databases, improving worker efficiencies and level of service provided to community.
- Automated Utility Meter Reading - A pilot project is underway evaluating automated water, electric and gas meter readers to reduce costs and improve meter reading accuracy and overall customer service.
- Expanded Telephone Capabilities - Extending the city’s PBX system to each Wi-Fi-equipped vehicle, enabling complete telephone functionality such as access to voice mail and 4-digit dialing.

