



Powerwave Coverage Solutions

Seattle Fire Department

Powerwave Technologies Extends Wireless Coverage System for Seattle Fire Department

Fire personnel at training facility now benefit from uninterrupted access to public safety and commercial wireless voice and data services

The mission of the Seattle Fire Department is to prevent the loss of life and property resulting from fires, medical emergencies and other disasters. The department accomplishes this mission through its highly trained firefighters, a focus on fire prevention and education, and nationally recognized emergency medical skills.

Since its founding in 1894, the Department has expanded its charter to provide other critical services such as building inspections, fire code enforcement, tactical rescues and public education.

Today, it provides fire suppressions and emergency medical services around the clock to more than 563,400 Seattle residents* who live and work within an 83.9-square-mile radius. During the day, those numbers nearly triple to 1.5 million, due to Seattle's large commuter population.

Enhancing Communications for Firefighters in Training

When the Seattle Fire Department's more than 1,000 uniformed personnel are not fighting fires or providing other community services, they are honing their skills through training. Critical to both the success of these training programs and execution in real-world emergency situations is communication and collaboration with other fire personnel and the outside world.

However, unreliable access to both public safety and commercial wireless frequencies within the Seattle Fire Department's Joint Training Facility (JTF) and Apparatus Building was severely diminishing the ability for fire personnel to train with their two-way radios or cell phones while inside the facility.

Additionally, all Seattle Fire Department units have mobile computer and GPS equipment that uses Sprint™ CDMA EVDO wireless modems to communicate to the 911 Fire Alarm Center. As such, if these units were in the training facility, and the signal was lost, the Fire Alarm Center could no longer detect the unit's location or receive incident information from the 911 Computer Aided Dispatch (CAD) system in

the event the unit needed to be called into service.

“While the JTF is primarily used for training fire units who are considered to be ‘out of service’ during training periods, there is always a chance that the unit could be put into service to respond to a 911 call, or that the facility could serve as a gathering place in the event of a natural or man-made disaster,” said Chief Jesse Youngs, Seattle Fire Department. “In any of these cases, the ability to communicate via cellular phone or two-way radio is critical to the safety of our fire personnel and that of the citizens of Seattle.”

To improve wireless communications capabilities within the JTF, the Seattle Fire Department and Department of Information Technology contracted with Powerwave Technologies to upgrade its existing wireless infrastructure system, which had originally been designed and built by Powerwave, to include the training facility.

Georg Smith, communications manager for the City of Seattle’s Department of Information Technology (DoIT) Communications Shop worked directly with Powerwave Technologies on the deployment of the wireless communications system for the JTF. “One of the primary reasons the Seattle Fire Department and the DoIT Communications Shop chose to again partner with Powerwave was its successful track record in deploying coverage systems that accommodate wireless communications for law enforcement and public safety agencies worldwide,” said Smith. “We have been happy with the company’s ability to provide flexible, scalable and cost-effective wireless infrastructure solutions that support both public safety and commercial wireless frequencies.”

Among the key objectives in establishing the Seattle Fire Department’s wireless communication system were:

- Extend existing wireless infrastructure systems to support the training facility.
- Leverage state-of-the-art technology to provide fire and rescue personnel with access to seamless public safety and commercial wireless communications on a single platform.
- Install a flexible and scalable platform that is “future-proofed” to accommodate existing public safety and private network frequencies, commercial cellular PCS and 3G networks, as well as other emerging frequencies and technologies.
- Provide a minimum of 99.9 percent system availability.
- Offer a 95 percent RF coverage guarantee.

Robust, Easy-to-Maintain System Provides Uninterrupted Wireless Communications

Leveraging its broad-based experience in architecting systems to accommodate wireless communications for law enforcement and public safety agencies around the globe, Powerwave designed the wireless coverage system using predominantly passive components. This offered the Department more reliable wireless coverage, and ensured greater system availability and uninterrupted access to wireless voice and data services throughout the training facility.

The system consists of 3 fiber-fed repeaters, 1 off-air repeater, and 30 antennas connected via coaxial cable systems. The system also includes an off-air donor antenna that supports 850MHz/1900MHz commercial wireless frequencies.

Because Powerwave's use of coaxial cabling systems precludes the requirement for separate antennas for each communication frequency, fewer parts must be maintained once the system has been installed.

The result is a turnkey solution that provides guaranteed 95 percent coverage for 800MHz public safety, and 850MHz/1900 MHz commercial wireless communications frequencies throughout a 45,000-square-foot area comprised of the Seattle Fire Department Joint Training Facility and Apparatus Building.

"Our wireless coverage and capacity solutions are specifically designed to be the most reliable and cost-effective method for providing access to wireless voice and data services indoor environments," said David Quinn, vice president, Global Networks, Powerwave Technologies. "We are pleased to support fire safety and rescue personnel in providing uninterrupted access to public safety and commercial wireless frequencies inside the Seattle Fire Department's training facility."

Achieving Success

The integration of Powerwave's wireless coverage system for the Seattle Fire Department's training facility, with its existing wireless infrastructure, was completed in 2007. As part of the deployment, Powerwave installed support for the 800MHz public safety frequency, as well as 850MHz/1900 MHz equipment to support commercial wireless services.

"We are very pleased with the work and the outcome of this project," said Patty Kunitsugu, Seattle Fire Department Technical Manager. "Our ability to now provide fire and rescue personnel with uninterrupted access to public safety and commercial wireless voice and data services within our training facility, will undoubtedly enhance our efforts to provide the best possible fire and rescue services to the citizens of Seattle."

About Powerwave Technologies

A global leader in end-to-end wireless coverage and capacity solutions, Powerwave Technologies, Inc. offers cutting edge wireless infrastructure to address the demands of enterprise and commercial customers. Powerwave offers a comprehensive suite of solutions, including Antennas, Base Station Solutions and Coverage Solutions. Powerwave's product line supports all wireless network protocols and frequencies including Next Generation Networks in 4G technology such as WiMAX™ and LTE®. Powerwave solutions, products and services also help wireless operators and OEMs reduce capital and operating expenses, speed rollout of services, improve coverage and capacity, and reduce environmental impact. For more information, visit us at www.powerwave.com.



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