
Agency Name: City of Everett Police Department
Technology Program Name: City of Everett Interoperability Wireless Network
Competitive Category: Excellence in Communications and Interoperability
Agency Size: Medium
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Executive Summary:

To protect the City of Everett’s 100,000 residents, the City of Everett Police Department (“the agency”) uses a wide range of technologies to support the City’s 181 sworn officers. The agency was an early adopter of intranets, to give officers the ability to readily access and share information. However, access to information by officers on patrol continues to be extremely limited compared to access from police stations. The goal of the City of Everett Interoperability Wireless Network is to make officers more productive and effective in the field, increase community involvement and awareness, and create the foundation for a city-wide network connecting police, courts, fire department, transit system, and more. The cost of the pilot project, which was funded by a Local Law Enforcement Block Grant, was under \$90,000.

City of Everett patrol officers work a 12-hour, 3 days on, 3 days off schedule. The agency surveyed 20 patrol officers and found that officers spend an average of 4.3 hours out of their patrol cars in a police building accessing network-attached resources, including email, files, and printers (excluding travel time, which could be in excess of one hour per day per officer). The agency estimated that 34 percent of the workforce was out touch with the community for 34 percent of their work day. In addition, producing documentation is a labor-intensive, redundant, error-prone process. Dispatchers record information and pass it by voice to officers in patrol cars, who typically write and then retype the information, which is then submitted to a supervisor to approve and pass to a records specialist to retype. An additional report may be recreated through a separate booking system at the county jail.

The agency’s goal was to make all of the database information, photographs, and communications, scheduling and management tools available anywhere, anytime. In addition, the incidence of Repetitive Stress Injuries increases dramatically with computer usage, and typing on laptops while sitting behind the steering wheel of a parked car is not ergonomically sound. The agency wanted a mobile computing solution that took ergonomics and safety into account.

Program Narrative:

In the fall of 2003, the police department, led by project manager Sgt. Boyd Bryant, and the City of Everett IT department, headed by IT Manager, Joe Boland, asked for authorization from the Mayor and Everett City Council to undertake a pilot project for a wireless network for police vehicles. The network infrastructure is based on Cisco mobile access routers with integrated 802.11b 2.4 GHz wireless radios transmitting to Cisco wireless bridges to the City network. Northrop Grumman Public Safety was the systems integrator. The pilot program began in March 2004, and 4 “hot zones” and 10 police vehicles were online by July 2004.

The wireless network allows the agency to transmit voice, data, and video at up to 11 megabits per second. The agency worked rigorously with vendors to optimize the radius of each hot zone by carefully selecting and testing the sites around the city. Officers have reported that the overall quality of the signal and service at up to one mile from a hot zone transmitter is as good or better than in-house network connected workstations.

The wireless network enables patrol officers to access over 7,000 pages of departmental reference material, the agency's digital photo archive, and databases of registered sex offenders, prostitutes, outstanding warrants, and more. Officers can also access the agency's email server from patrol cars.

As part of the pilot, the agency tested voice recognition based on Scansoft's Dragon Naturally Speaking. Six users were given voice recognition in their wireless network-connected vehicles, and two users could also walk away from the vehicle with their laptop computers. Not only has the voice recognition system improved each officer's productivity, but also their safety because they don't have to look away from the road when dictating reports or running license plates. Officers have been extremely enthusiastic about voice recognition, and the agency has anecdotal data that officers who could only type at 35 words per minute are now dictating hands-free at 135+ words per minute while driving.

The police department also added two special vehicles: the Everett Police Department Crime Prevention in Motion vehicle, and a Police Car of the Future.

The Crime Prevention in Motion Vehicle is equipped with a wireless laptop, dual wireless radio transmitters, voice recognition, a 32" television monitor, network-attached camera, DVD, duplex printer, and backup power. The vehicle allows Officer Steve Paxton, the police crime prevention officer, to pull into schools and other public spaces and deliver safety demonstrations. Officer Paxton can use the vehicle-mounted printer to create customized crime prevention brochures for citizens. Previously, it would have taken hours or even days to respond to a request from the community — now it takes about sixty seconds, minus drive time. The vehicle can also broadcast video to the City Emergency Operations Center and connect directly to the department's intranet for police team review of maps, documents, or video during incidents.

The Police Car of the Future, manned by Sgt. Bryant, is configured with the same equipment as the Crime Prevention in Motion Vehicle, plus video editing. The vehicle is also equipped with the AVID video analysis system. Sgt. Bryant can respond to emergency situations and broadcast still images, video, and sound files to local television stations or even directly to the public through community cable channels. The agency can process images without wasting time and money on outside production companies. In addition, the agency can archive footage in case there is any discrepancy between media accounts and what officers recorded at the scene. Recently, there was a bank robbery and the Police Car of the Future was on the scene within 20 minutes, uploading surveillance pictures from the bank's security cameras to the City network. The department had a press release out within the hour. Previously, this information might have taken days to coordinate and disseminate.

In the future, the department expects to be able to use these vehicles as mobile communications and command centers during emergencies, serving personnel on the scene, transmitting observations back to a command center, and even controlling mobile video cameras in areas where officers can't go.

The success of the pilot project enabled the agency to apply for and receive a National Institute of Justice C.O.P.S. Interoperability grant for \$998,000. The grant will allow the agency to deploy a city-wide wireless network to support more patrol cars and also connect other agencies,

including Public Works, Transit and the City of Everett Fire Department. Under the budget, the city plans to deploy 15 new fixed hot zones, 4 portable hot zones, and install 76 additional mobile access routers in police vehicles and 24 mobile access routers in fire department vehicles.

The agency has learned several valuable lessons from this project. First, as your agency becomes more technology dependent, only work with vendors that you know will be around for many years. Second, deploy redundant network connections to help ensure that you're not only covered, you're resilient. Third, if you are considering escalating the pace of technology adoption, incorporate rapid prototyping into your design and deployment process.