



## Case Study

# Dallas Police Department

*Dallas Police Department Protects and Serves Citizens with Innovative, Crime-Reducing Video Surveillance System Anchored by BridgeWave's High-Capacity GigE Wireless Links*



Dallas is the No. 1 visitor destination in Texas as well as a leading business and financial center. The city also boasts the largest wholesale market in the world while serving as one of the top convention locales in the United States. For the Dallas Police Department, protecting the nation's ninth largest city encompasses a never-ending focus on reducing crime while increasing overall satisfaction with public safety of its citizens.

In providing the highest levels of professional services, the Dallas Police Department continually embraces new technology tools and law enforcement best practices to assist in deterring, detecting and investigating crime. The department, which includes approximately 3,000 police officers and 500 civilian employees, was among the earliest proponents of video surveillance technology to reduce crime in dense urban areas of downtown Dallas. The success of a pilot project in early 2005 proved the viability of video surveillance cameras as an effective apprehension and crime-reduction tool.

According to Tom Lawrence, deputy police chief for the Dallas Police Department, the ability to monitor activity in real-time during peak entertainment hours in the Deep Ellum area of Dallas added a new



dimension to the department's law enforcement efforts. "We

achieved a 96 percent reduction in violent crime while lowering non-violent crime by 48 percent over a four-month period," he says. "It became very clear that this technology could provide greater geographic coverage of downtown, acting as a force multiplier." With the assistance of an \$840,000 grant from the Meadows Foundation, an in-state, private philanthropic institution, the department obtained funding to expand its pilot program and achieve its goal to reduce crime in "hot spot" areas of downtown by 30 percent within the first six months of installing a new, widespread state-of-the-art video surveillance system.

***"With BridgeWave's high-speed, secure wireless links, the Dallas Police Department has gained a 'future-proof' network backbone that can scale to meet our evolving bandwidth requirements while helping us make downtown safer for our residents, businesses and visitors."***

- Tom Lawrence,  
Deputy Police Chief,  
Dallas Police Department

### CHALLENGE

In mid-2006, the Dallas Police Department issued a city-wide Request for Proposal (RFP) for a turnkey video surveillance solution that could be installed on utility poles and building facades at major points in the city's central business district. Initially, officials thought the city's existing wired network infrastructure could serve as a backbone for carrying the video traffic to 24-hour monitoring stations at City Hall and Jack Evans police headquarters.

The officials then realized the congested city network was suffering from saturation issues and couldn't accommodate the additional video traffic load. The department also demanded expedited delivery of large video files, which would require much more bandwidth than the city network could provide. In addition, image clarity was a major concern. "We had to be able to read a license plate clearly from 300 yards away and view different camera angles without any time delays," adds Lawrence.



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An additional challenge was finding a high-throughput networking solution that could scale quickly to support more cameras and new locations. "Over time, we planned to expand the video surveillance system substantially, so we needed to be able to grow significantly without any drop in image quality or speed of delivery," explains Lawrence. "The network had to deliver the same performance if 20 or 40 officers were monitoring videos at the same time."

### SOLUTION

As part of the city's bid process, the Dallas Police Department reviewed proposals from six integrators before narrowing the field to three. In assessing the finalists, the department was most impressed with the solution and capabilities demonstrated by Bearcom, a nationwide provider of wireless communications equipment and solutions that happened to be based in Dallas. "Initially, we didn't approach this project with wireless technology in mind but the advantages of Bearcom's approach were obvious," notes Lawrence. "They proved we could deploy a self-contained public safety network without overhauling our existing infrastructure. Bearcom also recommended the best overall solution for a scalable network backbone featuring both substantial bandwidth and security for handling video streams."

Bearcom's proposed solution combined the latest wireless innovations, including IP video cameras, multi-radio mesh network nodes and high-capacity, Gigabit Ethernet and 100Mbps backbone links. In evaluating wireless camera and networking technologies, Bearcom chose Sony Electronics' multi-codec IP cameras with single- or dual-streaming codec modes, advanced motion detection and day/night functionality for the highest image quality in all conditions.

In selecting a scalable wireless networking infrastructure, Bearcom opted for Firetide's fast and flexible mesh network nodes to link the Sony cameras wirelessly, eliminating the exorbitant costs and difficulty of installing video cabling to each camera. Additionally, Bearcom designed mesh zones for aggregating video traffic and then backhauling it to the monitoring stations using BridgeWave's high-capacity 60GHz point-to-point Gigabit and 100Mbps wireless links. Each BridgeWave wireless link carries traffic for up to 10 video cameras in hub-and-spoke as well as repeater configurations.

### BENEFITS

In January 2007, Bearcom completed the first phase of the Dallas Police Department's video surveillance system, including the deployment of 40 Sony video cameras, 35 Firetide mesh network nodes and seven high-capacity BridgeWave backhaul links. The wireless video surveillance system operates on the secure 4.9GHz frequency reserved for public safety use, which ensures interference-free communications. Using BridgeWave's 60GHz links for the backhaul also conserves the low frequency spectrum for other public safety access applications.

The compact wireless cameras and radios are installed on "portable pods" that can be moved easily to increase monitoring capabilities at special events or other downtown areas experiencing high incidents of crime. "The small form factor of both the cameras and the wireless radios offer a big advantage as we wanted to have the flexibility to move the cameras to other downtown areas as needed," says Lawrence. "The BridgeWave radios also allow direct attachment of cameras through their additional "add/drop" copper Ethernet port, which enables rapid, streamlined installations."

Around-the-clock remote monitoring of the video camera is enhanced by the ability to quickly change the direction of the camera lens. With BridgeWave's ultra low-latency backhaul technology, real-time pan, tilt and zoom control of remote cameras is easy. "Our officers and public safety staff have been impressed by the image quality in all light conditions as well as the ease with which they can zoom in for a closer look at street-level activity," Lawrence adds.

Currently, the new video surveillance system covers approximately 30 percent of the downtown area and has received resounding support from the community and local businesses that have pledged additional funds for continued expansion. Plans are underway to more than triple the number of cameras as well as expand the wireless video surveillance system to other areas of the city. "With BridgeWave's high-speed, secure wireless links, the Dallas Police Department has gained a "future-proof" network backbone that can scale to meet our evolving bandwidth requirements while helping us make downtown safer for our residents, businesses and visitors," Lawrence concludes.



BridgeWave



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### CUSTOMER:

Dallas Police Department, [www.dallaspolice.net](http://www.dallaspolice.net)

### INDUSTRY:

Law Enforcement

### CHALLENGES:

- Existing wired network infrastructure was insufficient for carrying bandwidth-intensive video traffic as part of city-wide rollout of a new video surveillance system.
- Image clarity was paramount so sufficient bandwidth was necessary to run cameras at high bit rates.
- High-capacity network backbone was required to scale rapidly as additional cameras and new locations were added.

### SOLUTION:

Seven BridgeWave links combining GE60, FE60 and AR60 60GHz products

### CHANNEL PARTNER:

Bearcom, a nationwide provider of wireless communications equipment and solutions based in Dallas; [www.bearcom.com](http://www.bearcom.com)

### BENEFITS:

- Ample bandwidth to meet current and future networking needs while ensuring highest levels of image quality.
- Compact form factor allows for streamlined installation and rapid moves to provide additional support for special events or to monitor other downtown areas.
- Ultra low latency backhaul technology enables real-time pan, tilt and zoom control of remote cameras.
- Using 60GHz frequency conserves low-frequency spectrum for other public safety applications.

CASE STUDY



BridgeWave

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