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## News

### Viva Las Vegas Mesh

By [Ed Sutherland](#)

Las Vegas public safety workers are piloting a six-month trial of mesh networking. Located along a two and a half square mile portion of downtown Las Vegas, the wireless network from [MeshNetworks](#) and [Cheetah Wireless](#) could expand throughout the city and become a model for the entire state.

The Las Vegas Traffic Engineering Department, along with Metro Police and Fire Services, will use the mesh network to transmit large data files, have remote access to the Emergency Vehicle Preemption system, remotely monitor video cameras at city intersections, maintain communication between field personnel, and allow "instant tactical networking."

"We are looking forward to testing this high-speed wireless data pilot program," said Jorge Cervantes, Assistant Traffic Engineer for the City of Las Vegas.

The pilot program will be a success if the network allows the traffic department to radically re-engineer the way they work, says Rick Rotondo, vice president of technical marketing at Maitland, Fla.-based MeshNetworks.

If the trial is a success, the Las Vegas Traffic Department plans to expand the network throughout the city's 58 square miles.

The mesh network employs three ruggedized access points with what Rotondo calls 2Mbps "real-world" data speeds. "This mean there is a 6Mbps uplink and downlink," says Rotondo.

The mesh network will use QDMA (Quadrature Division Multiple Access) technology, rather than only 802.11. While both 802.11 and QDMA operate in the unlicensed 2.4Ghz band, the "radio is specifically designed and optimized for wide area, mobile mesh networking systems," according to the company.

Unlike 802.11, with a 300-foot range -- or line of sight -- QDMA has a one-mile range.

Then there is the problem of interference.

Las Vegas is "Interference City," according to Rotondo. Heavy use of Wi-Fi in businesses poses a problem. 802.11 "was far from optimum" in such a situation. QDMA, on the other hand, is very resistant to interference, said the MeshNetworks exec.

In what MeshNetworks calls a "somewhat unique" relationship, system integrator Cheetah Wireless will install the mesh network as a public-private funding relationship with the city of Las Vegas.

"We work with them as if they are an investor in the network," says Mitch Gonzalez, president of Cheetah Wireless. The Las Vegas Traffic Department is paying less than \$25,000 for the network trial.

"We are hopeful that a wireless mesh network through a municipal plan could be a cost-effective way for the City of Las Vegas to provide a more efficient system to serve its citizenry," said Cervantes.

While making it easier for Cheetah to install the network, the city eventually hopes to gain revenue from commercial subscribers.

The company spent Wednesday explaining the system to city workers, and distributing 11 PCMCIA cards for PDAs and notebook computers. The network is able to handle up to 100 users, according to MeshNetworks.

Cheetah Wireless is also involved in creating several Wi-Fi hotzones throughout the city. While three hotzones are already available at the city airport and two commercial centers, the company is working on more than a dozen residential projects.

Cheetah is a two year old, privately funded company with 15 employees. Their focus is on municipalities and creating public-private opportunities.

Speaking of the benefits of a private company installing wireless networks for a city, Gonzalez points out that "cities take one or two years to procure a system." By that time, "they are installing obsolete equipment," he says. "Cities are realizing they have these assets. But the amount of traffic is a little more than they can handle."

Gonzalez tells municipalities intrigued with the idea of establishing a citywide wireless network this: "you do what you do best," and they'll do the rest.

Both companies believe the Las Vegas pilot could be the test bed for a statewide wireless project.

"If this works, it could be used across Nevada," says Rotondo. The Freeway and Arterial System of Transportation organization (FAST) of Nevada "is very, very interested in this trial," he says. Gonzalez also hinted that a similar system could be used with the area mass transportation system.