



Los Alamos County, New Mexico

An ENCOM "Then and Now" Success Story





THE CHALLENGE

Little city with large-scale issues

Alipio Mondragon accepts the jokes with good humour. When you live in Los Alamos, New Mexico, it's impossible to escape the history of the place—the Manhattan Project, Robert Oppenheimer, and, in July 1945, the successful development of the world's first atomic bomb.

"I know there are always jokes about green clouds hovering over town," chuckles Mondragon, traffic operations manager for Los Alamos County. "Experiments are done on us, right? And whatever you do, don't drink the water."

All kidding aside, however, it's pretty clear that Los Alamos, with its scientific priorities and its nuclear capabilities, required some sort of emergency traffic management plan.

Every day, more than 12,000 employees check in for work at the Los Alamos National Laboratory—one of the largest science and technology institutions in the world—nearly doubling the size of the desert city to more than 30,000.

The need for emergency traffic management

"Back in (2000), we had a huge fire up here (the Cerro Grande Fire)," recalls Mondragon. "I think it burned 170 houses and 50,000 acres. They actually had to do a full-fledged emergency evacuation, because the fire swept into town so quickly.

"That's when this all came into play—we didn't have the ability to do any type of emergency traffic management, and we saw that need because of where we're located." —Alipio Mondragon, Los Alamos Country

"With the lab here, and with the threat of terrorism, you never know what kind of emergencies could happen. We needed to have plans in place." —Alipio Mondragon, Los Alamos Country

Because Los Alamos lacks a fibre optic ring installed for city infrastructure, installing a time and budget-intensive wired system wasn't a feasible solution. Further compounding matters was the unreliable leased phone line network the city was using, which was providing haphazard communication to the traffic signals.



THE SOLUTION

Getting a clear picture on the ground

After receiving a Department of Homeland Security grant, Los Alamos County transportation officials set about finding a way to link a video monitoring system to the city's 10 traffic intersections.

Inspiration struck when Mondragon saw an ENCOM Wireless Data Systems advertisement in the International Municipal Signals Association (IMSA) journal.

"We purchased a couple of the ENCOM radios, just to test them, and they performed really well, so we decided to pursue this avenue."

—Alipio Mondragon, Los Alamos County

The right tools, the right plan

ENCOM worked together with city officials to design a wireless broadband system that would provide reliable, high-bandwidth communications of up to 54 Mbps for crisp video from PTZ (pan tilt zoom) cameras in point-to-multipoint configurations, as well as traffic signal timing patterns, malfunction management units (MMUs) and battery backup information.

Plans called for a point-to-multipoint network, on the 4.9 GHz public safety band, between a CommPAK BB 49/58 INT radio at a repeater station and several CommPAK BB 49 INT units installed in traffic cabinets.

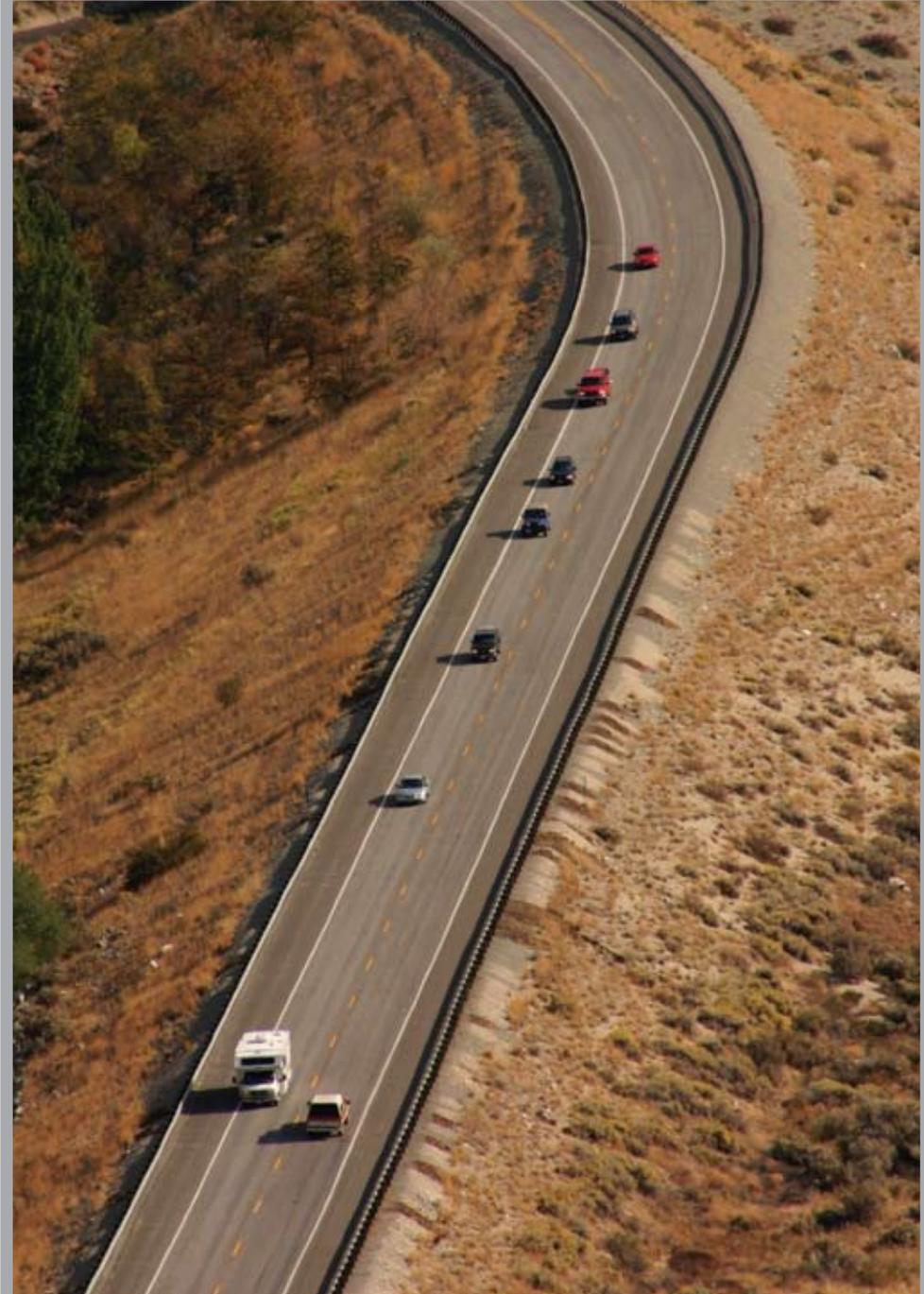
From there, the repeater unit would communicate 108 Mbps at the 5.8GHz frequency, back to a CommPAK BB 58 INT unit at the Los Alamos traffic management centre.

"Video is a wonderful thing, such a useful tool in traffic management, if there's an accident, or a traffic tie-up, you're not stuck in traffic trying to get to that intersection. You're able to correct the issue on the spot."

—Alipio Mondragon, Los Alamos County

"...they performed really well, so we decided to pursue this avenue."

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"I love them. They're bulletproof. They work." —Alipio Mondragon, Los Alamos County



THE RESULTS

Substantial cost savings

The cost comparison heavily favoured ENCOM's rugged, field-tested equipment over any wired options. The ENCOM system, to date, has cost Los Alamos County less than \$20,000, while the installation of an underground fiberoptic network would run into a seven-digit neighbourhood, estimates Mondragon.

"For fiber, we'd be looking at hundreds of thousands of dollars, if not a million or two, ENCOM provided us a great tool that allowed us to [capture high-quality video] without the cost of fiber." —Alipio Mondragon, Los Alamos County

No more leased lines

All phone lines leased from a regional telecom giant were disconnected from the intersections. And in the summer of 2008, Los Alamos County technicians began using ENCOM's terrain analysis to install the broadband network smoothly, quickly and painlessly.

"We did experiment, briefly, with a Qwest broadband unit at one of our intersections, but it didn't work well at all," says Mondragon. "The equipment wasn't rated for the cabinet, and their broadband upload speeds are very, very slow.

"We got rid of that too. We're 100 per cent ENCOM now."

—Alipio Mondragon, Los Alamos County

High performance and high security

By employing specific packet routing and packet switching, and combining the latest in MPEG transmission compression and state-of-the-art wireless technology, ENCOM CommPAK BB broadband units provide the best possible support for multicast streaming video applications.

ENCOM's broadband radios also boast the most advanced security features on the market, meeting the WPA2 standard and ensuring privacy and discretion.

For his part, Mondragon is impressed. "The equipment is working great. We've yet to have a problem with one of our radios," he says. "We have camera issues, communication issues, but so far, none of it has been attributed to the ENCOM radios.

"I love them. They're bulletproof. They work."



About ENCOM Wireless:

ENCOM, based in Calgary, Canada, provides field-proven, cost-effective wireless data solutions for municipal and industrial clients, with applications in the areas of:

- Intelligent transportation systems
- Public safety communications
- Municipal corporate security and IT networks
- Waste and water management
- Electrical utilities
- Oil and gas

FUTURE PLANS

Easy expansion ahead

Los Alamos County is taking advantage of ENCOM's future-minded broadband systems, which boost data rate, efficiency and capability while accommodating growth and modernization. Future plans call for several more ENCOM radios to be installed in Los Alamos by the end of 2009, bringing the total number of traffic video cameras to 16.

Communication is key for an effective plan

ENCOM has also helped Los Alamos take several giant strides along the road to its emergency traffic management plan.

"We're still in the process of finishing it off, but a big part of it was communication—getting all our intersections to where we could control them from the office," says Mondragon.

"And beyond the emergency scenario, we're just trying to make people's lives less inconvenienced when it comes to traffic." —Alpicio Mondragon, Los Alamos Country

HOW THE ENCOM SOLUTION BENEFITTED LOS ALAMOS

- Deployed video monitoring, an extremely powerful weapon in the ITS arsenal. ENCOM's license-free broadband radios enable video cameras to provide excellent video images with minimal Ethernet bandwidth consumption;
- Installed a reliable, field-proven dedicated wireless network at a fraction of the cost of wired alternatives, such as copper or fiber optics;
- Helped city officials mastermind the technical strategy behind their emergency plan;
- Boosted in the data rate and the efficiency of the current system;
- Ensured reliability with seamless, error-free, industry-leading radio performance;
- Provided the flexibility to expand and reposition the network at will, since ENCOM's products operate at licence-free radio frequencies, and are powerful and flexible enough to overcome daunting topographical challenges;
- Protected its client's investment with one of the best warranties in the business;
- Ensured a lasting partnership with the security of knowing that ENCOM's investment will pay for itself many times over.



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