



# Small Department, Big-Time Technology

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How the Lewiston, Idaho Police Department Assembled a Next-Generation Mobile Computing System On a Next-to-Nothing Budget



Lewiston, Idaho is a small town that, in many ways, has forgotten it's small. Nestled between the Clearwater and Snake Rivers along the Idaho/Washington border, the region around Lewiston boasts an almost Elysian quality of life—fish and big game, for example, continue to draw hunters and fishers as they did in the days of Lewis and Clark, who arrived in the Clearwater Valley 200 years ago.

Perhaps it's this wild beauty that enabled Lewiston to grow to its current population of 30,000, more than a mere outpost of the Great Northwest. Today the city concerns itself with traffic control, economic development, and public safety—priorities of most modern cities. And as with other municipalities, Lewiston's police department works hard to keep up with trends in technology as a way to stretch manpower and dollars.

Dollars, however, are hard to come by for the LPD. So when the department decided a few years back it was time to extend its Computer-Aided Dispatch (CAD) system to its 14 patrol vehicles, it knew it would have an uphill climb,

not only for budgetary reasons, but also because of its unique environmental and technology needs.

“Weather is a real challenge in our area,” says Teresa Cash, a 19-year veteran of the force who currently serves as the department’s Computer Systems Specialist. “It’s not unusual for temperatures to exceed 100 degrees Fahrenheit in the summer and minus twenty in the winter. We had observed MDC (Mobile Data Computer) systems at other agencies, mostly laptops. We found that the screens in many of the laptop units would go opaque in direct sunlight. Officers would actually have to turn their A/C vents toward the units in the summer to get them to cool down so the screens would work. We knew we needed a more durable solution.”



Lewiston also wanted to reduce its radio traffic. Although the department’s internal dispatch software, Spillman’s Summit CAD, had made controllers more efficient, assignments were still issued by radio. Patrol personnel also had to call in to run routine license, registration, and warrant checks, generating voice requests that competed with critical tactical broadcasts. Extending the CAD system via wireless data connection would cut down on the number of transmissions and make the radio band more efficient.



To do so, the LPD wanted to avoid the software problems its sister agency, the Nez Perce County Sheriff’s Department, had experienced with its own MDC system. Notes Cash, “Our new data network was expected to share bandwidth with the Nez Perce system, and we knew their patrol officers complained about data transmissions breaking up. Part of the reason was a simple lack of repeater towers. But their middleware didn’t perform very well either.”

Facing the twin challenges of a long functional requirements list and a tight budget, Cash went to Chief of Police Jack Baldwin with a risky solution—design the MDC system totally in-house. “I really felt a consultant would cost us money we couldn’t afford. By researching and assembling a system ourselves, we’d have more money to put into hardware and software,” she states.



Cash asked that patrol officers be involved with every step of the project, from writing design specifications to evaluating vendors. “The people on patrol were the ones that would ultimately use this equipment eight to twelve hours a day,” Cash says. “Who better to fix something if it breaks?”

## Hands-On Effort

Despite the unconventional plan, Baldwin saw the advantages and gave his blessing. In late 2002 work began in earnest. Cash and two Lewiston officers, Corporal Phil Campbell and Corporal Eric Kjorness, visited a number of law enforcement agencies in Idaho, Oregon, and Washington states to see what worked. Campbell, the department's graveyard shift supervisor and a patrol officer himself, talked extensively with Lewiston colleagues to get feedback on what features they wanted.

The trio felt it was important to do the job right. Research continued into well into 2003 before it was felt there was enough information to properly write system specs. Once the process was complete, Cash worked with the city's computer department to create the actual RFP.

One of the ideas Cash and her colleagues came up with during their analysis with was to have Correctional Industries, which employs inmates of the Idaho State Correctional Institution, fabricate the floor consoles into which the MDC and radio head would be mounted. "Part of the reason was to save money, part was to get the console we wanted," notes Campbell. By economizing on aspects of the project like consoles, the Lewiston team was able to channel funds in ways that would have long-term value. A key moment came during bid review, when the department's eight-person ad hoc MDC committee evaluated quotes for the mobile computer.

"Our top choice for the computer was not the lowest bid," recalls Campbell. "As we read through the proposals, we became convinced the best unit for our needs was the Roper Mobile 1205-PS touch screen PC from Roper Mobile Technology. The 1205-PS has a 1,000-NIT super-bright display, it operates at ambient temperatures far beyond 130 degrees, and the case is milled from a single piece of aluminum for toughness. It doesn't need a fan for cooling, plus it has a blackout switch so the screen can be blacked out at night or when you don't want others to read the screen."

"We knew we couldn't afford to replace our PCs every three years, so this choice would have to last us a while," adds Cash. "The Roper Mobile could do the job."

To handle wireless communications, the committee chose an ESTeem 192C wireless data modem, and a Radio IP Mobile TCP/IP



Gateway served as the middleware bridge. With a grant from the Department of Homeland Security and a loan obtained by the city, contracts were awarded in early 2004 and implementation began.

## Custom Job

According to Campbell, Dan Freeman of DS Freeman Co., the authorized sales agent and manufacturers' representative who submitted the Roper Mobile bid, was a great help in fabricating the system mount. "Dan recommended Stewart Products, a California company specializing in mobile computer mounts, for our project," he states. "Stewart fabricated a solution that not only includes a keyboard quick release, but also a piston-driven swivel bracket for the computer so officers can reach the heater and radio controls."

Installation of the system in the LPD's Crown Vics, Chevy Tahoe (a supervisory vehicle), and animal control unit took place over a four day period. Campbell, Kjorness and Cash, along with the Fleet Maintenance crew already had the consoles, radios, and modems installed prior to Freeman coming on site for the computer and mount installation. "We felt it was vital that we understand this system completely. When there's a problem at 4AM during a shift, we can't be calling a vendor for help," Campbell says. "Our department needs to know how to install and repair the equipment itself."

## Officers Benefit

On May 11, the new MDC system went online in all vehicles. Spillman Technologies provided four hours of basic training on the Summit CAD software, and Campbell and Kjorness helped officers with questions regarding the touch screen PC and modem.

Campbell says the reaction from the field has been strongly positive. "Because we went with a touch screen, an officer can accept a call, show he's en route, signify his arrival, and complete the call, just by pushing buttons on the screen—no radio transmission required. We still use the keyboard touchpad for some actions, but when the car is in motion, the Roper Mobile touch screen works very well. And we've had nothing but positive experiences with Roper Mobile's Customer Support. If we have a question or issue, it has been resolved quickly and painlessly."

Another advantage to the fixed-mount MDC system is how officers use IMPACT 2K, an accident investigation software package already deployed in-house by the LPD. IMPACT (Idaho Mobile Program for Accident Collection) 2K, developed by State of Idaho to facilitate traffic crash reporting, was loaded into the Roper Mobile computers by the department. Now officers can complete their collision report on scene, and then export the data using a memory stick plugged into the PC's USB port. The report is then uploaded into the main IMPACT 2K database in-house.

Campbell tells a story of how the system's ability to access mug shots has already improved efficiency—not to mention getting the bad guys. "I made a traffic stop and asked the driver for his license. He said he forgot his license but gave me his name and date of birth," recalls Campbell. "Nothing came up in the system, so I ran the guy's last name only. Our system is designed so that people with warrants show up on top, in red. The first person in red has a different first name but the same middle name. The date of birth is off by two years, but the same month and day. So I pull up that name and the physical description matches, even the tattoos. I open up the mug shot and gee, there's my driver. He was charged not only for the warrant but also for giving false information."

Says Campbell, "Before the MDC system, an officer would have had to contact the sheriff's department, get a photo of the possible suspect, then have it brought to his location at the traffic stop. What used to take up to 30 minutes now takes seconds."



The ability to view photos and pertinent suspect information in real time has directly assisted officers in making approximately six warrant arrests since the MDCs were installed.

Since the Lewiston PD's MDC system went online, Cash says, radio transmissions have dropped 38%. The department now has Instant Messaging capabilities which will further cut down radio transmissions. Patrol dispatches can be issued confidentially, away from what Campbell calls "the scanner types" out there. Photos for missing child and Amber alerts can be deployed instantly to in-unit computers through the county hookup. "We've only touched the tip of the iceberg as to what this system can do," notes Campbell.

When the time comes for Lewiston to upgrade its system to add new features, the capability will be there, according to Freeman. The Roper Mobile 1205-PS can be equipped with a 800MHz VIA, 700MHz Pentium III, or 1.4 GHz Pentium M, he said, with RAM upgradeable from 256MB to 1GB; enough to meet the needs of any technology-savvy department.

"What's unique about Lewiston is how they were able to marry up technologies on their own to create a cutting-edge system," Freeman states. "They weren't in a rush, but took the time to investigate what other departments were doing, and then they chose the best of the best. This is very good technology that is lightning fast. Best of all, they didn't spend a half-million to get it."

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