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# The Myths Of Wireline E9-1-1

*By Anthony Maier, President and CEO, RedSky Technologies*

PSAPs should understand the misconceptions and equip themselves with the facts so they can help businesses get on the E9-1-1 bandwagon.

**A** NOBLE E9-1-1 TREND IS AFOOT AMONG BUSINESS LEADERS that should be acknowledged—and actively supported—by public safety officials. As institutions scrub their emergency communications response checklists, the topic of wireline E9-1-1 is more regularly appearing as a crucial line item. Whereas E9-1-1 used to be relegated as a corporate telecom issue for the communications or information technology (IT) department—if it was addressed at all—E9-1-1 is becoming a corporate boardroom topic with increasing frequency.

The tragic events surrounding September 11, 2001 certainly put emergency communications on everyone's to-do list. In the past eighteen months, wireline E9-1-1 call management software solutions providers supporting corporate and government agencies have seen a steady increase in calls from institutions across the country. More than ever, they're seeking to add E9-1-1 call management throughout their operations so when someone calls for help, the phone number, floor and office location will be automatically sent to the PSAP.

Many aren't moving fast enough for policymakers. The lack of widespread adoption of E9-1-1 by businesses, schools and public facilities has prompted regulators and legislators to get involved. Emergence of several new state E9-1-1 laws for business communications systems has sparked interest by businesses. With the FCC now actively considering a NENA-led proposal to require the capability in our nation's institutions and members of Congress considering national legislation on the matter, there's legitimate reason for attention.

# Bridge Collapses on Nebraska Highway, Emergency Personnel Respond

On May 23, 2003, four tractor-trailer trucks slammed into a bridge during an accident—resulting in the bridge’s collapse and a three-day closure for Nebraska’s busiest highway, Interstate 80. Once the first tractor-trailer struck the bridge—killing the driver and causing the overpass to collapse—three other tractor-trailers slammed into the bridge, noted a communications officer with the Nebraska State Patrol.

Pete Peterson, director of the 9-1-1 center in Keith County (Ogallala, NE)—which provides Phase I Wireless, E9-1-1 services to Keith and neighboring counties, including Deuel County, where the accident occurred—took the initial 9-1-1 call. “That area does not predominately have very good cellular phone coverage; it is a very fringe area,” Peterson states. “I immediately dispatched fire, EMS and law enforcement. From a 9-1-1 center standpoint, it was not very busy at that time. We received very few calls that the event even occurred because of the poor cell coverage.”

Tom Venable, a communications specialist for the Nebraska State Patrol, reports that the first officers were on the scene within twenty minutes. “They determined that the highway was blocked, some of responding officers immediately set up a temporary detour, and others were responding to the fire and checking other vehicles,” he says.

According to Sgt. Ed Petersen of the Nebraska State Patrol, the main concern was diverting traffic to avoid backups while the firefighters battled the blaze. “With a bridge sitting on top of your interstate there’s not much you can do until it’s cleared out,” he says. “We mobilized a lot of people in a short amount of time and we were fortunate to have the backing of the governor and the Department of Roads.

“If it wasn’t Memorial Day weekend, we could have found a contractor crew a little more quickly and probably would have had the highway repaired in half the time,” Petersen continues. He offers the following advice for any rescue personnel caught in a similar situation: “Have your contacts in place—not just fire and rescue personnel—but contractors and additional resources for just about every scenario you can imagine. Fortunately we found one. Just be prepared for anything. Keep in touch with the news media and make sure that everything stays organized and all personnel are in the right place.”

### Liability, Workplace Protections Are Driving Interest

Institutions certainly have a long way to go with E9-1-1. Although wireless E9-1-1 has captured most of the attention the past few years, an estimated one in ten calls to PSAPs originate from multiline phone systems. Although most multiline telephone systems aren’t yet E9-1-1 compatible, more businesses have the capability than ever before.

Perhaps what speaks loudest to many businesses is the financial vulnerability of the issue. Keeping shareowners free from corporate liability is a powerful motivator. Nothing gets a business’ attention more quickly than the threat of a multimillion-dollar lawsuit accompanied by reputation-smearing headlines. For an increasing number of businesses, protecting employees and first responders, in part by providing a world-class emergency communications system, is the primary driver.

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Said one Chicago-area Fortune 500 executive that recently installed an automated E9-1-1 solution covering seven thousand stations and eight separate phone systems, “You enter the situation thinking about compliance and liability, but then you come out of the situation with a good feeling knowing that you will have helped save a life or head off a tragedy.”

Thankfully, technologies do exist to allow enterprises to maintain automatic location information (ALI) and automatic number identification (ANI) efficiently. Businesses don’t have to add or redirect staff to add the capability. New software-based solutions enable even the largest institutions to have a reliable, enterprise-wide system, thus mitigating liability concerns about mishandled emergency calls.

Public safety officials can be tremendous ambassadors for E9-1-1 within business circles. Below are responses to three common myths often raised by business leaders about E9-1-1:

#### **Myth 1: “It’s going to be a massive, time-consuming IT project.”**

Not true. If a business decides to build its own E9-1-1 system, they may be asking for trouble. Just maintaining station location information can be complex, with 25 percent or more station changes annually. A business with five thousand employees at three sites will need half of a full-time position just to keep the station information current.

Software vendors are available to oversee all aspects of your E9-1-1 project and simplify the task. They can coordinate with

## Some states have financial penalties if businesses aren't E9-1-1 compliant.

In Illinois, a business can be fined up to \$5,000 for not having an adequate E9-1-1 system.

all internal departments and external agencies, including your local phone company, your equipment manufacturer and local public safety authorities.

One of the nation's premier telecommunications companies employing five thousand Chicago workers served by six different phone systems recently installed an automated E9-1-1 solution. The complete process—from budget approval to implementation—took only forty-five days. To simplify the project, the provider cared for all auditing, system administration, training, testing, and coordination with service providers and the company's equipment vendor. System maintenance and ongoing ALI management, with minimal support from the organization's internal staff, can be included with a software solution.

### Myth 2: "E9-1-1 is a large cost causer with no return on investment."

Hardly. While installation of a software-based system will cost money—anywhere from \$50,000 to \$100,000 for a company with many thousands of employees in multiple locations—the litigation costs from a wrongful death suit because

Public safety officials can help businesses seeking a wireline E9-1-1 solution by encouraging them to answer these five questions:

1. **Is it foolproof?** The system must not fail, which means it must be able to quickly and accurately transfer the correct information.
2. **Is it cost-effective?** Evaluate potential solutions by taking a long-term view. Process and reporting automation maximizes use of company personnel.
3. **Can it be easily integrated?** Ensure the solution works with your existing systems, including multiple PBXs, Centrex service and external files.
4. **Is it maintenance-free?** Remember, the system is only as good as the accuracy of the information. Change is constant. So must be the business' attention to maintaining the system.
5. **Is it scalable?** The best solutions manage multiple sites and can easily accommodate growth and organizational change.

## 9-1-1 Callout

### NYC Police and Fire Departments Promise to Unite in Disaster Responses

Reversing positions they took in the aftermath of the September 11th terrorist attack, New York City's police and fire commissioners said last July that they would adopt formal rules for how emergency agencies should work together in responding to major disasters, the New York Times reports. Police Commissioner Raymond W. Kelly and the fire commissioner, Nicholas Scoppetta, expected to finalize and sign the agreement by summer's end.

According to the Times, many officials said they hoped it would reduce the mistrust and miscommunication that has surfaced at emergency scenes for generations and con-

tributed to the flawed response at the World Trade Center in 2001. In addition to clashing at emergency scenes over jurisdiction and ability to perform rescue operations, there was some recent confusion at a terror-attack drill. A motivating factor in adopting these procedures is the fact that the Department of Homeland Security reported that it would not grant money to cities' and states' "formal command structure for major emergencies," city officials reported.

The system that will be used is one of "unified command" for the handling of disasters, as well as practices and procedures for dealing with even minor rescues. Kelly elaborated, noting that top police and fire commanders would oversee their own forces at emergency scenes, but that there would be specific plans in place for senior officers from both departments to communicate and to coordinate actions through the city's Office of Emergency Management.

### Fire Raises Questions Regarding Communications Between Emergency Personnel

On July 4, 2002, a devastating fire swept through a house in Gloucester City, NJ—killing three firefighters and three children—and bringing to light poor communications between fire, police and rescuer workers.

The New Jersey Department of Labor just issued a report on the tragedy, which finds significant fault with the performance of the Gloucester City fire department. The report lists at least a dozen violations against the department—including personnel not being effectively deployed and communication radio problems caused by the use of more than one frequency. According to Gloucester City fire chief William Glassman, police, fire and rescue operate on different frequencies. “Seven years ago the police went to 500 megahertz frequency and the fire/ambulance communications still operate on the 150 megahertz frequency,” he explains. “We can’t program their frequencies on our radios. So we have to have two portables or two mobiles. Since the fire, we’ve been doing that so we can communicate when we have to, but it’s been difficult.

“Because we are under a county system, the problem is that even if we want to do something we are still obligated to work under the county system because they still have to dispatch us and communicate with us,” Glassman continues. “Any changes would have to be made to the county’s system. Some of the surrounding towns operate on different frequencies, so every time we have a major fire, we do keep this in mind and try to address it, but sometimes it creates issues. Some messages are missed, some are delayed because of the time lag between one frequency and the next. Sometimes one dispatcher in the communications center needs to pass along a message to another dispatcher, and the problem is how to accomplish that. Basically they yell across the room and then the question is, how fast does that get passed along, etc., let alone if you have a surrounding community that responds on a different radio. Then, some of those messages have to be passed to a dispatcher on the phone that must process the information and call another communications center, to then pass it to the other apparatus. Over time we’ve basically put two radios into all of the vehicles so we have all bands, but we don’t have two portables consistently on every call. All of this is just jumbling up the communications link instead of having a direct link from one person to another.”

This was the scenario during the fire: “There was a period of about a minute and a half during a very critical point in the fire where we had three or four critical things occurring on different frequencies, and some of that information was lost in the shuffle,” Glassman notes. “How many things can you listen to, how much can you see, absorb and figure out at once? At one point, the firefighters that rescued a woman who was still in the building twenty minutes after we arrived were actually on the ambulance frequency. That message didn’t come across my particular radio, but it came across the paramedic’s radio. He was standing behind me and I happened to hear that message on his radio—he didn’t hear it. It was actually thirty seconds by the time that message got passed from one dispatcher to the other one. The dispatcher who was operating our band called me on the radio and said, ‘Chief, be advised they are rescuing somebody in the back of the building,’ and I relayed that I had received the message, but it was on somebody else’s radio. Now, hearing that radio could I have missed something on my own radio? Communications are an integral part of emergency services, and I don’t think emergency services have come together very well. When things go wrong, communications is vital and almost all we have.

“We have been battling for five years about the fact that there aren’t sufficient frequencies out there for emergency services and I’m not even sure if there are even enough available,” he adds. “This is our struggle: Does the government spend a lot of money to upgrade and redo systems that may still fail?”

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of a lack of E9-1-1 information could be catastrophic. Court decisions have held institutions and managers personally liable for safety negligence associated with E9-1-1.

A jury awarded \$50 million to the family of a victim who died, in part, because the city did not get an ambulance to the scene on time. In Phoenix, a woman had a heart attack and collapsed at an American Express office. The company’s phone system had been set up to block outgoing 9-1-1 calls because the company wanted employees to call an in-house emergency number, which resulted in a delayed emergency response. A costly and damaging lawsuit followed.

Businesses need to fully consider the financial risks when evaluating their E9-1-1 capabilities. Loss of both life and property could be a very expensive proposition for the company that chooses to go unprepared. A study by a liability consulting firm found the average jury verdict for a rape on business property to be \$1.2 million and for a workplace death to be \$2.2 million. Some states have financial penalties if businesses aren’t E9-1-1 compliant. In Illinois, a business can be fined up to \$5,000 for not having an adequate E9-1-1 system.



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# Case Study: E9-1-1 Enhancing Cook County Crisis Preparedness

In the wake of heightened interest in homeland and workplace security, government leaders across America are wondering what can be done to protect their own employees if and when disasters strike. An area of growing concern is how to get rescuers to the exact location—not just to the correct building—when someone calls 9-1-1 from a government facility. Clearly, the quicker the response, the greater likelihood that lives and property will be saved.

To tackle the issue in Illinois, Cook County relies on a leading edge, software-driven system that taps into its existing phone system. It enhances the likelihood that local firefighters, paramedics and police can find those in distress when responding to a 9-1-1 call from a county facility.

“E9-1-1 technology automatically provides public safety dispatchers with information to pinpoint the origin of a 9-1-1 call,” explains Catherine Maras O’Leary, CIO at Cook County. “The system models government leadership in leveraging technology to add workplace protections.”

Today, some twenty-six thousand county employees at multiple locations are protected with this system, which regularly transmits station-specific location information to the E9-1-1 information center any time a change is made in its phone system. No additional database entries are required.

If the county creates a new agency and assigns a new set of telephone extensions, for example, that information is passed on to the E9-1-1 information center as soon as the county updates its telephone system. If the new agency will be working in a different building or a different city, the telephone extension and location information can still be easily updated at the county’s central offices.

## Automation Is Essential

When it began its search for a vendor, Cook County surveyed the market and contracted with Chicago-based RedSky Technologies (Chicago, IL)—a telemanagement solutions provider that specializes in helping institutions develop efficient E9-1-1 call handling systems.

One of the county’s primary considerations was the need for a completely automated call management system that did not require time-intensive, manual intervention. Frequent moves and changes among its workers would be a logistical nightmare in regard to maintaining and updating its system, so officials wanted to set it and forget it, without worry.

Cook County employees and citizens are now benefiting from one of the safest and most automated crisis response systems in the nation, capable of systematically accommodating its five thousand to seven thousand telephone system changes annually, representing about 25 percent of its telephone stations. The county viewed its E9-1-1 project as a prime opportunity to automate its entire telecommunications system, building on its existing investments.

“Automation and standardization today are essential for business and government,” says Maras O’Leary. “Think of it as a piece of the overall telecommunications system. E9-1-1 data is pure, so you can store it in a central database for reuse with your call accounting, work order and directory management systems.”

Beyond the efficiency, county officials have greater peace of mind knowing that finding a 9-1-1 caller in its facilities won’t be an issue should emergency strike.

## Myth 3: “I must wait until I upgrade my phone system to add E9-1-1.”

Incorrect. The vast majority of medium and large-sized businesses today have phone systems that can easily accommodate E9-1-1. That’s because E9-1-1 software providers have done joint development with major equipment manufacturers, such as Avaya, Nortel and Siemens. Smaller businesses generally can get a much simpler version of E9-1-1 from their local telephone service provider.

Businesses waiting for tomorrow’s phone system before they add E9-1-1 are taking a high-risk gamble that could backfire, causing them and their employees irreparable harm. PSAPs are in a pivotal role to be valuable E9-1-1 stewards. Business leaders interested in getting more information about wireline E9-1-1 can visit [www.enhanced911.com](http://www.enhanced911.com).

*Anthony Maier, president and CEO of RedSky Technologies (Chicago, IL) can be reached at (312) 432-4300 or via e-mail at [amaier@redskytech.com](mailto:amaier@redskytech.com).*