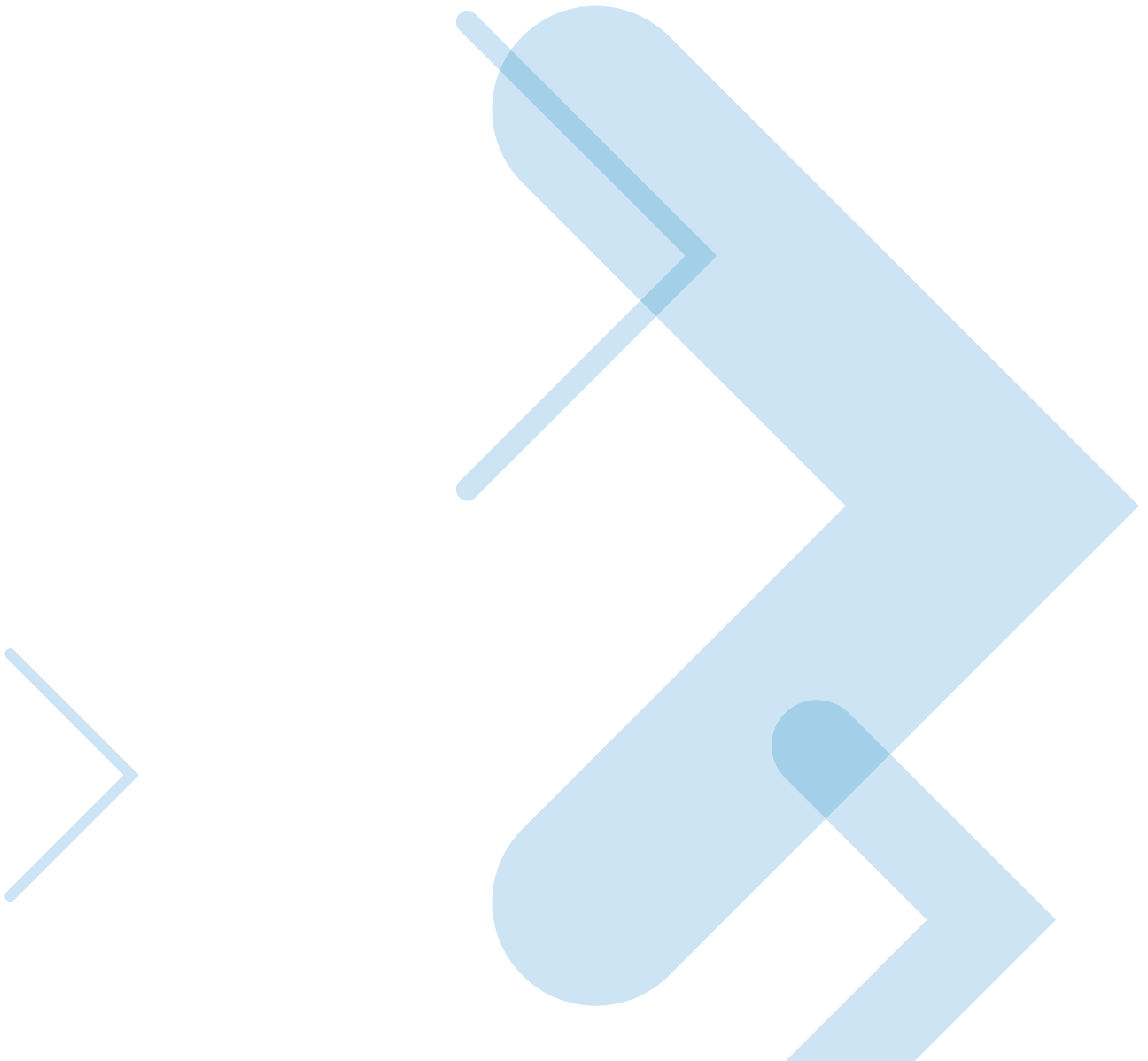




Preparing for Natural Disaster

What public safety leaders are saying today...

And how available communication technologies can address their concerns



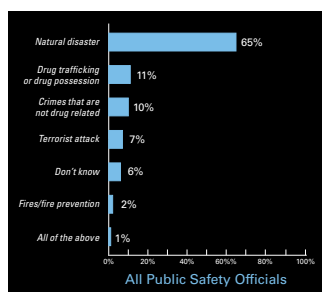
In a recent survey of public safety leaders, concern about readiness for natural disaster ranked above other worries such as crime and terrorism. The odds are simply too high that disaster will strike within your jurisdiction. And when it does, it will severely challenge the capabilities of your personnel, procedures and equipment.

There is no way to predict exactly where and when a crisis might occur, but one factor you can control is your communications readiness. In the critical hours immediately before, during, and after the event, reliable wireless voice and data service could literally be a matter of life and death for first responders and the citizens they protect. Take steps today to strengthen your communications in advance of the moment when maybe someday becomes right now.

The Association of Public Safety Communications Officials (APCO) and Motorola surveyed 200 North American public safety officials by in-depth telephone interview in 2007. Among those interviewed were fire chiefs, police officers, mayors and other public officials, emergency center officers, and EMTs. Half were first responders and the other half were public administrators.

Natural disaster is the #1 concern

Thinking of your community's level of preparedness to handle certain public safety issues, which of the following are you most concerned about?



Keeping the Lifelines Open...

Public administrators and first responders say it's the one thing they worry about most when assessing their communications. A storm, fire, flood or earthquake strikes... a rescuer reaches for a radio... and what happens next? Good communication is vital for:

- **Situational awareness** for decision makers at headquarters and in the field. In a dangerous job, and particularly in the fluid and high risk environment of a disaster response, it is essential to know what is going on and share that knowledge across the entire response team.
- **Interoperability** for personnel from multiple departments and jurisdictions. When agencies are working together to save lives, there is no time for responders to be hindered by the inability to easily communicate.
- **Rapid response** using technology such as computer-aided dispatch, geographic locators, fast database access, and related functions that help agencies direct the right resources to the right locations as quickly as possible.

...When the Stakes are Highest

Disasters put extraordinary demands on communication networks:

- Extra personnel are placed on duty, straining network capacity to handle the increased call traffic.
- Multiple departments (fire, police, sheriff, EMS) must work together while state and Federal agencies need to coordinate with local efforts.
- Networks may be affected by power outages, infrastructure damage, the need to evacuate operations and dispatch centers, and the overloading of public carrier networks.

Concerns About Preparedness

Given the importance of communications and the challenges that disasters impose, it's not surprising that public safety pros are concerned about their ability to provide good communications support in the event of natural disaster.

All respondents were significantly more concerned about preparedness for natural disasters than for other events. As Dick Dennin, Retired Deputy Chief, South San Francisco Fire Dept said: "We have a much greater risk from natural disaster. Terrorism is localized; it doesn't have the mass geographical reach." *

Communications Benefits

Speaking about communications as a whole, not only in disasters, respondents believed that interoperability with team members and situational awareness are the top ways technology has helped public safety in their communities. Faster processing of incidents, access to real time data and video to allow for better decision making, and faster response times were other important benefits.

Communications Priorities

Communications was seen as roughly on par with human resources as a top priority for funding.

Respondents' "wish lists" included:

- Better communications
- Interoperability
- More available equipment
- Data availability
- Training

Concerns About Technology

According to the survey, the top two concerns with current equipment were "poor interoperability between departments/jurisdictions" and "equipment in the field not providing quick and accurate access to database records." For the future, respondents would like to improve existing technology, make more data available and add GPS/mapping capabilities.

Enhancing Interoperability

Hundreds, perhaps thousands of first responders and supporting personnel could be working in your jurisdiction tomorrow. They will come from multiple departments (police, fire, medical, public works, utilities...) and multiple agencies (state, local, county, federal, military, civilian, private and public sectors). Will they have the communications they need to mount an effective joint response?



Backups to the Backups

*“The biggest focus here in Miami is how to recover after a hurricane. From our last hurricane, our cellular went down, our radios and repeaters went down. I’m always thinking of backups to the backups. You have to have the mindset that everything is going to fail and you must make sure you have a method of communications that doesn’t rely on existing infrastructure to be there.”**

– Jeff Garnett,
Department of
Emergency Management,
Miami, Florida

Interoperability Can’t Wait

Every public safety organization, no matter what size, must find a way to communicate beyond the boundaries of department and jurisdiction. Often it requires several tactics, phased in over a gradual timetable. The key is to have a plan of action for both immediate and long-term solutions for all participating agencies.

P25 Standard-based Interoperability

The Project 25 standard is the gold standard for interoperable public safety communications. Fifteen states are using or are currently deploying statewide P25 networks. P25 is mandated by the Federal government and Department of Defense, and many grant programs require P25 compliance for new systems. Motorola’s ASTRO®25 voice/data solutions offer:

- Interoperability with other agencies and jurisdictions that have P25 compliant systems
- Flexibility and dependability using an enhanced Internet Protocol (IP) network for both voice and data
- Scalability, from a single site to a multi-site network, allowing customers to add users, geographic coverage, and data applications as their needs evolve.
- Ability to quickly reprogram talk groups using Programming Over P25 (POP25) to reconfigure teams regardless of their location in the system for quick response.
- Control over your agency’s communications, both now and into the future.

Existing networks can link to a P25 network via console patches or mutual aid channels. This can provide benefits to small departments and towns that could not afford to replace their old networks. When multiple agencies and jurisdictions pool their resources, a modern P25 voice/data solution becomes easier to cost justify as the one solution that will take a community’s public safety communications forward into the future.

MOTOBIDGE Interoperability

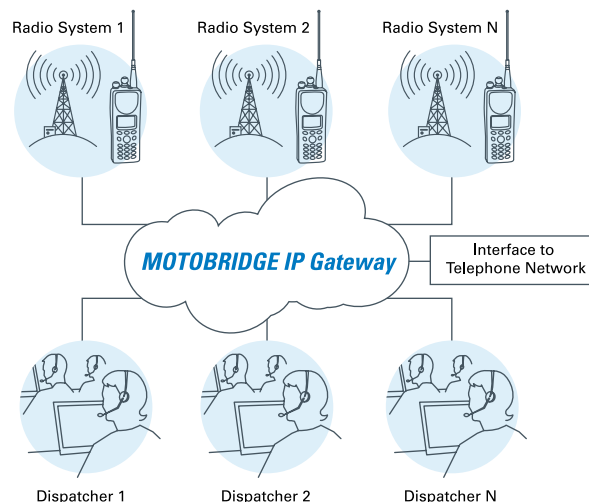
To interoperate across disparate networks, Motorola’s MOTOBIDGE™ IP Interoperable Solution is a robust and adaptable answer. It offers maximum flexibility to reconfigure voice communications in an emergency. Scalable to fit agencies of any size, it establishes a feature-rich IP gateway between formerly incompatible systems including:

- Analog to P25 interoperability
- Trunked to conventional
- IP networks to IP networks
- 700/800 MHz to UHF to VHF to Low Band
- IP networks to circuit switched networks
- Radio to Radio
- Different vendor networks to each other
- Radio to telephone (PSTN, IP, and Cellular)

The MOTOBIDGE distributed architecture has no single point of failure, making it a highly robust solution for disaster communications. Any number of systems can be linked together. Connections can be activated at any time from the dispatch center or a remote command center/vehicle. Dispatchers can activate pre-arranged plans or dynamically open connections and reallocate talkgroups as needed in response to fast-changing events.

MOTOBIDGE IP Interoperability

Bridging multiple networks together over an IP gateway.



Quick-Response Solutions

In the blink of an eye, a quiet location becomes a crowded incident scene, swarming with first responders and the radios, computers, and handheld devices they carry. The nearby network repeater tower was damaged from a direct tornado hit. A shift in the wind puts the emergency dispatch center in the path of danger and it must be evacuated.

Extraordinary events can require extraordinary communications. How quickly can you deploy the additional network coverage, capacity and interoperability to give responders adequate support?

Establish Basic Multi-Agency Support

With advanced planning and careful assessment of current resources there are several additional methods to establish basic interoperability in an emergency.

- *Keep a stockpile of radios and share with other agencies during an emergency.*
- *Operate in talkaround at an incident scene – radio to radio via conventional voice with a limited range of operation.*
- *Set up similar mutual aid channels for inter-agency operations using analog voice capabilities.*
- *Pre-configure a console patch to connect two radio systems and allow users to roam.*

Rapid Response Solutions

A comprehensive disaster plan must answer the question: What if? Your emergency resources should include standby equipment that can be swiftly applied wherever and whenever needed.

Motorola's rapid response solutions are tailored, tested, and ready to roll. Designed for rapid response in mission critical public safety applications, they can tie together disparate agency systems, provide extra support for additional users, run specialized applications, or provide back-up support to primary systems. These solutions are:

- **Pre-configured, pre-built, and pre-tested** – Each customer environment is different and Motorola designs the right solution to meet specific network architecture needs.
- **Fully integrated** – Each system includes the shelter, antenna, Motorola radio equipment, trailer, backhaul and generator with fuel for continuous, self-contained usage for days without refueling.
- **Easy to transport** – The system can be transported to the site by land or air drop.
- **Quick to deploy** – The system can be quickly set up and integrate with compatible Motorola radio networks.

Master Site on Wheels

This unit provides the complete functionality of an ASTRO 25 system in a compact, versatile design. It supports Integrated Voice and Data (IV&D) repeater sites, dispatch sites, and console operator positions. A MOTOBRIDGE gateway solution can be included for interoperability with other radio systems in the area.

RF Site on Wheels

This unit includes a shelter, antenna, generator, trailer, and Motorola radio equipment fully integrated and ready to use. Units are available in trunked, conventional, digital or analog only, in any frequency band, and in multiple configurations.

Command and Control Vehicles

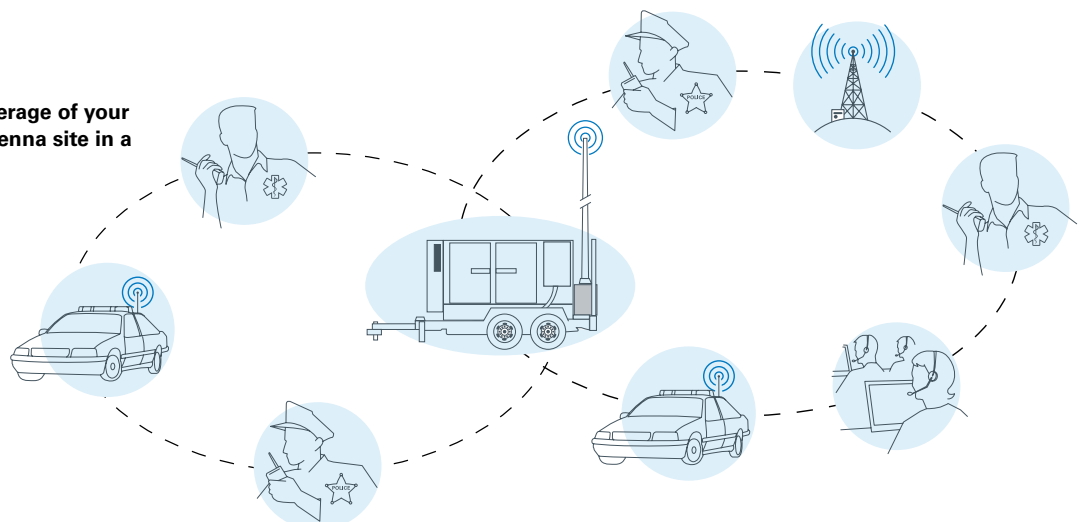
These units can be custom designed to include a wide array of capabilities including: enhanced VoIP networking, satellite connectivity, voice radio interoperability between analog and digital systems, wired and wireless networking, a radio incident site command module, and video conferencing.

Portable "Suitcase" Repeaters

Motorola offers a complete line of portable repeater products. Quickly deploy a repeater or base station in a suitcase for on scene communications. The portable equipment can support an ASTRO 25 system or a stand-alone system.

Master Site on wheels

Allows you to extend the coverage of your system or replace a fallen antenna site in a natural disaster.



Communications in Time of Disaster

Given the concerns of both policymakers and first responders, communities are reassessing their communications for disaster readiness. With advance planning and appropriate technology, you can greatly enhance the likelihood that first responders will be able to count on their radios in an emergency.

Clear and Present Dangers

Every community is vulnerable. Are you ready for another year like 2007?

According to FEMA, in 2007:

1,085 tornadoes were reported in the U.S.

An eight-lane highway bridge collapsed in Minneapolis.

Wildfires drove more than 500,000 Californians from their homes.

Two Category 5 hurricanes struck Central America, and Tropical Depression Erin dumped 9 inches of rain as far inland as Oklahoma.

FEMA processed 63 Federal Disaster Declarations, most related to severe storms and flooding.

How to Shore Up Communications

Before disaster strikes, agencies must prepare:

A plan that involves participating agencies in the region.

- Procedures that have been tested through training exercises and simulations to confirm that all parties know exactly what to do and when.
- Disaster-hardened communications technology that works during normal operations and also has the flexibility, capacity, and survivability to continue doing the job during an emergency.
- Standby systems and spare equipment that are activated only when needed.
- Emerging technologies – asset tracking, medical records access, alert systems, and more – that help communities predict, mitigate, survive, respond to, and recover from disaster.
- Early warning systems to notify citizens of an impending disasters

Having assisted in many major disaster recovery efforts in the U.S., Motorola stands ready to help. Motorola's world-class Services Organization can help customers design, construct, optimize, program manage, and test both operational and standby solutions. Available services include:

Risk Analysis: determine the potential risks so decision-makers can set appropriate priorities and allocate resources accordingly.

Disaster Recovery Planning: identify and select recovery strategies to keep communications working or restore them as soon as possible.

Disaster Response Training: develop a program that identifies roles and responsibilities at the time of a disaster so all personnel are prepared for action.

Business Impact Analysis: identify those critical business functions that allow an agency to operate effectively, considering the maximum downtimes that could be tolerated for various systems and functions.

Motorola also offers maintenance services for operational and standby systems to keep them at peak performance so they are ready when disaster strikes.

*“The best kind of technology acts as a kind of pre-placement out in the field – ready to handle it wherever disasters hit. As a department, we prefer to buy Motorola because of their proven reliability. Within village politics and our recent homeland security grant, I will specifically fight for Motorola, simply because to us it’s important that it’s proven to work. We need reliable communications that will perform without a doubt.”**

– Survey Respondent, Fire Department, Illinois

MOTOA⁴[™]

Technology that’s second nature[™]

From a vendor who understands public safety

Preparing for the worst is easier when you partner with a vendor who understands the special challenges of public safety. For over 75 years, Motorola is a leader in helping governments apply the latest technologies for protecting their communities in a dangerous world.

Motorola’s MOTOA4[™] portfolio of mission-critical technologies enables agencies to confidently prepare for natural disasters and other emergencies that put lives at risk and make extraordinary demands on their communications resources. MOTOA4 solutions are fully integrated, allowing customers to start with any solution and gradually build upon it to introduce new capabilities and adapt to their ever-changing needs.

Motorola technologies are delivered seamlessly into the hands of first responders: simply, reliably, and without distracting them from their work. This is technology that’s second nature.

To learn more about Motorola’s full range of products and services, and how they can help you strengthen your communications readiness, please visit our website: www.motorola.com/secondnature or contact your Motorola representative.

APCO & Motorola Future Tech Survey - 2007

For more information about the FutureTech survey, please visit: www.motorola.com/FutureTech

* All of the quotes in this position paper are direct quotes taken from telephone interviews with survey respondents.



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