Appendix C:
"When They Can't Talk" Brochure - from the National Association of Counties

When They Can't Talk

Lives are Lost

What Public Officials Need to Know about Interoperability

NACo

National Association of Counties

The Voice of America's Counties

You grew up watching cop shows on television. When the police were in trouble, they could pick up the radio anywhere, anytime, and help would instantly arrive. In reality, this is often not the case. We all watched in horror as the second tower of the World Trade Center collapsed on September 11, 2001. Did you know that police received the radio message that the building was going to collapse, but firefighters never received that message because they used different radio frequencies?

- **Did you know** that the police, EMS teams, and firefighters sometimes have to juggle as many as five different radios because each agency communicates on different systems?
- **Did you know** that first responders had to use runners to carry messages from one command center to another in the immediate aftermath of the Oklahoma City bombing because they did not have common radio systems?
- **Do you know** how often agencies cannot talk to one another or to agencies in their neighboring cities, counties, or states? Is yours one of them?

While events of the magnitude of the attacks of September 11, 2001, or Oklahoma City do not occur every day, there are many daily events that require different agencies and jurisdictions to be able to communicate with one another. Incidents such as traffic crashes, missing children, fires, high-speed chases, rescues, and chemical spills occur with frightening regularity and they know no boundaries. When they occur in your community, will your agencies be able to talk to one another?

What Public Officials Need to Know about Interoperability

Why Can't They Talk?

Public safety agencies historically have depended upon their own stand-alone radio communication systems and they are often incompatible with systems used in neighboring jurisdictions or with other disciplines like fire and EMS.

Not only are there different systems for different agencies within one community, different jurisdictions maintain their own systems, too. There are approximately 2.5 million public safety first responders in the United States. They work for 18,000 state and local law enforcement agencies, 26,000 fire departments, and more than 6,000 rescue departments, plus federal law enforcement, tribal law enforcement and other agencies, such as state and federal emergency management, transportation, and the public utilities who all need to talk to one another during critical incidents.

Who Is Public Safety?

According to definitions from the Public Safety Wireless Advisory Committee (PSWAC), public safety service providers perform emergency first response missions to protect and preserve life, property, and natural resources and to serve the public welfare through local, state, or federal governments as defined in law. Public safety support providers include those whose primary mission might not fall within the classic public safety definition, but who may provide vital support to the general public and/or the public safety official. Law enforcement, fire, and EMS fit the first category, while public health, transportation or public utility workers fit the second. Public safety service providers also include non-governmental organizations who perform public safety functions on behalf of the government. For example, a number of local governments contract with private groups for emergency medical services.

Why Is This Important To You?

The public looks to you — their elected and appointed officials — to provide basic public safety, and guidance and management during a crisis. You are responsible for making critical funding decisions using limited taxpayer dollars. You understand the political dynamics in your community and in the surrounding jurisdictions. Community residents expect the public sector to function like a business — consistent and effective customer service, everywhere and at any time.

Ultimately, the public expects their lives and property to be protected by all governments — local, state, or federal — without distinction as to who responds to their needs.

Understanding the current status of public safety communication systems in your community — its capabilities and limitations and plans for upgrading or replacing those systems — is critical. If your public safety agencies cannot communicate directly with one another by radio and data systems (such as computer systems) to coordinate life-saving activities, inevitably some lives will be lost.

Interoperability. What Is It?

Interoperability is the ability of emergency responders to communicate among jurisdictions, disciplines, and levels of government, using a variety of frequency bands, as needed and as authorized. System operability is required for system interoperability. Most people assume that public safety is already interoperable. In too many cases, public safety officials can't even talk to their own agencies.

Equally as critical as interoperability is the need for basic communications within public safety agencies. When the issue of interoperability is raised, officials respond that they are unable to even talk to their own personnel. The first priority must be to provide public safety with mission critical communication systems that provide reliable agency-specific — police, fire, EMS — communications. (Mission-critical communications are those required when life or property is at stake.) As jurisdictions build or upgrade current systems, that priority should be expanded to include the provision of reliable and interoperable local and regional communications, and ultimately reliable and interoperable local, state, and federal communications.

Why can't they just use cell phones?

Unfortunately it's not that simple. Although public safety regularly use cellular phones, personal digital assistants (PDAs), and other commercial wireless devices and services, these devices are currently not sufficiently suited for public safety mission-critical communications during critical incidents. Wireless systems often become overloaded during a crisis preventing first responders from accessing them which makes this application less desirable to use in an emergency.

Public safety officials cannot depend upon commercial systems that can be overloaded and unavailable.

Experience has shown such systems are often the most unreliable during critical incidents when public demand overwhelms the systems.

Public safety officials have unique and demanding communications requirements. Optimal public safety communication systems require:

- Dedicated channels and priority access that is available at all times to handle unexpected emergencies.

- Reliable operability for one-to-many broadcast capability, a feature not generally available in cellular systems.

- Highly reliable and redundant networks that are engineered and maintained to withstand natural disasters and other emergencies.

- The best possible coverage within a given geographic area, with a minimum of dead zones.

- And, unique equipment designed for quick response in emergency situations -- dialing, waiting for call connection, and busy signals are unacceptable during critical events when seconds can mean the difference between life and death.

Why Aren't Public Safety Communications Already Interoperable?

Five key reasons. Incompatible and aging communications equipment, limited and fragmented funding, limited and fragmented planning, a lack of cooperation and coordination, and limited and fragmented radio spectrum.

- Different jurisdictions use different equipment and different radio frequencies that cannot communicate with one another, just as different computer operating systems will not work together or an AM receiver will not accept an FM signal. While standards for technology and equipment are improving, they are incomplete. Plus, older "legacy" systems were created before newer standards were developed or implemented.

- There is limited funding to replace or update expensive communications equipment, and different communities and levels of government have their own budget cycles and funding priorities.

- Planning is limited and fragmented. Without adequate planning, time and money can be wasted and end results can be disappointing. Agencies, jurisdictions, and levels of government compete for scarce dollars, inhibiting the partnership and leadership required to develop interoperability.

- The human factor is a substantial obstacle — agencies are reluctant to give up management and control of their communications systems. Interoperability requires a certain amount of shared management, control, and policies and procedures.

- There is a limited and fragmented amount of radio spectrum available to public safety.

Today's Rapid Information-Sharing Environment

Today there are methods to share information with first responders that are rapidly changing how responders receive and transmit information. Gone are the days when radio transmissions were the only way for responders to share information. Mobile Data Terminals (MDTs) are commonplace in emergency vehicles, and are even used on such vehicles as police motorcycles.

An MDT is a laptop computer set up to work in a vehicle such as the cab of a fire truck or police cruiser. It is used to communicate with a central dispatch office as well as to connect with state and federal criminal information databases. It is more common now for responders to rely on an MDT to advise their dispatching office on their location, duty status, and to request information.

MDTs are also used by responders to access databases such as sophisticated geographic information system (GIS) maps, building floor plans, driver's license and vehicle registration information, and criminal histories. Rapid and reliable access to these data is an important life-safety issue for responders.

MDTs feature a screen on which to view information and a keypad for entering information, and may be connected to various peripheral devices, such as a two-way radio. Today, most MDTs contain full, PC-equivalent software and hardware, including secure wireless capabilities.
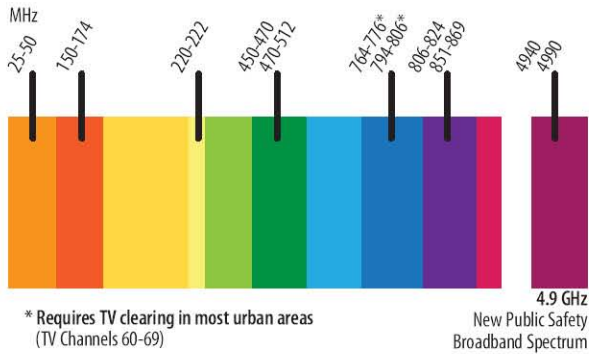
While there are standards for interoperable data systems to share information, the same challenges apply to these systems as to radio systems in accessibility, operability, reliability, coverage areas, and security.

What Is Radio Spectrum?

It is electronic real estate — the complete range of frequencies and channels that can be used for radio communications. Spectrum is the highway over which voice, data, and image communications travel. Radio spectrum, one of our nation's most valuable resources, is a finite resource — what exists today is all there ever will be.

Public Safety Radio Spectrum Bands

MHz

25-50 150-174 220-222 450-470 470-512 764-776* 794-806* 806-824 851-869 4940 4990

* Requires TV clearing in most urban areas
(TV Channels 60-69)

4.9 GHz
New Public Safety
Broadband Spectrum

The Federal Communications Commission (FCC) has allocated certain frequencies or channels to public safety, but it is inadequate and scattered widely in 11 discrete bands (each indicated with a frequency range in the illustration) across the spectrum, making it difficult for different agencies and jurisdictions to communicate.

Initially, almost all public safety communications were confined to the low end of the frequency range, but as technology advanced and improved, transmission at higher frequencies became possible, offering a temporary solution for congestion and crowding. The result — public safety currently operates in 10 separate bands, which has added capacity, but which has also caused the fragmentation that characterizes the public safety spectrum today.

How Can I Help My Constituents and Colleagues Understand the Importance of Interoperability?

Your role as a public official provides you the unique opportunity to take the initiative. Your constituents and colleagues need to be educated about the importance of an operable and interoperable public safety communications system that will make it possible for local, state, and federal public safety agencies to talk to one another, to coordinate life-saving operations, and to provide a basic level of public safety.

Public perceptions are shaped by the news shows and articles, movies, and television that tell a different story from the true state of public safety communications. The public that reads news stories about computers in patrol cars, amazing life-saving technologies in rescue vehicles, and the latest state-of-the-art dispatch center may find it difficult to believe that their public safety agencies cannot talk to one another.

This is a job that requires policymakers across jurisdictions to work together for the common good — to plan, fund, build, and govern interoperable public safety communications systems. Policymakers at all levels need to collaborate to develop communications interoperability for emergency response and incident prevention. It begins with a dialogue among the stakeholders.

What Is Your Role?

Creating interoperability requires leadership, planning, and the development of partnerships among disparate groups at the local, state, and federal level. In order to effectively respond to emergencies, all levels of government and industry must plan for interoperability among all parties from the outset. The ability to be in voice contact and to read and exchange data among all emergency responders should be designed in from the start.

State and local governments must take the lead to collaboratively formulate an interoperability architecture that provides a roadmap for all to follow.

In short, public officials at all levels of government should:

- Understand the importance of operability and interoperability
- Be able to communicate the benefits of interoperability effectively to the public
- Understand the political and institutional barriers within the public safety community that can impede interoperability
- Facilitate collaborative planning among local, state, and federal government agencies
- Find out where your local jurisdiction fits with the Statewide Communications Interoperability Plan (SCIP) and learn about the larger role of the National Emergency Communications Plan.
- Encourage the development of flexible and open architectures and standards; and
- Support funding for public safety agencies that work to achieve interoperability within an agreed-upon plan.

Where Are You Now?

What Is the Status of Your Public Safety Communications?

The basic questions to consider are:

- What types of emergencies like traffic crashes typically occur in your community, region, or state and which public safety agencies would respond to each of them?
- How about major crimes like bank robberies or large-scale fires or natural disasters like hurricanes or earthquakes?
- Who needs to talk to one another every day?
- Who should be able to communicate and share data in the first eight hours of an emergency?
- Who will need to be added to that initial group if the emergency continues for longer than eight hours?

Once you know the answers to these questions, assess your resources. For example, what existing communications infrastructure such as radio towers do you already have? What financial resources are budgeted for public

safety communications? There are assessment tools that can be used to determine the level of interoperability in your community, region, or state.

How Much Will It Cost?

There are several issues to consider, including what is already being spent on public safety communications in your area and how much it will cost if you don't develop interoperability. Planning for interoperability can be incorporated into the process of replacing and upgrading communication systems.

Individual costs will depend on the state of communications in your area and which short-and long-term direction you choose to follow. The nationwide investment in radio systems and supporting infrastructures is substantial.

As agencies replace aging equipment and adopt new technologies, the amount of money invested in communications equipment will continue to grow.

Solutions to this national issue can only be achieved through cooperation between all levels of government.

How Can You Achieve Interoperability?

Interoperability begins with leadership and partnerships. It begins with open, equitable discussions among all the stakeholders. Look beyond turf concerns and focus on partnerships. Develop a common voice to

facilitate budget and policy decisions. Strength in improving interoperability is built by working together with agencies and jurisdictions that have traditionally been viewed as competitors for scarce dollars.

Before developing the solution, define the problem by performing a complete assessment of your current state of communications. This includes understanding what your first responders need. Planning includes policies and procedures, building a governing structure, and identifying potential resources.

This is not a "one size fits all" problem and there is no single solution. There are short- and long-term strategies for improving interoperability — some involve improving coordination and cooperation among responding agencies and jurisdictions. Other strategies require longer term planning and implementation of new systems, policies, and operating procedures. Expectations need to be realistic, solutions take time.

Where Can I Learn More About Interoperability?

A guide collectively created by a task force of national associations representing public officials at local and state levels, titled, *Why Can't We Talk? Working Together to Bridge the Communications Gap to Save Lives.* This booklet begins to answer these questions and more.

Much more information is kept updated on the SAFECOM Program website at **www.safecomprogram.gov.**
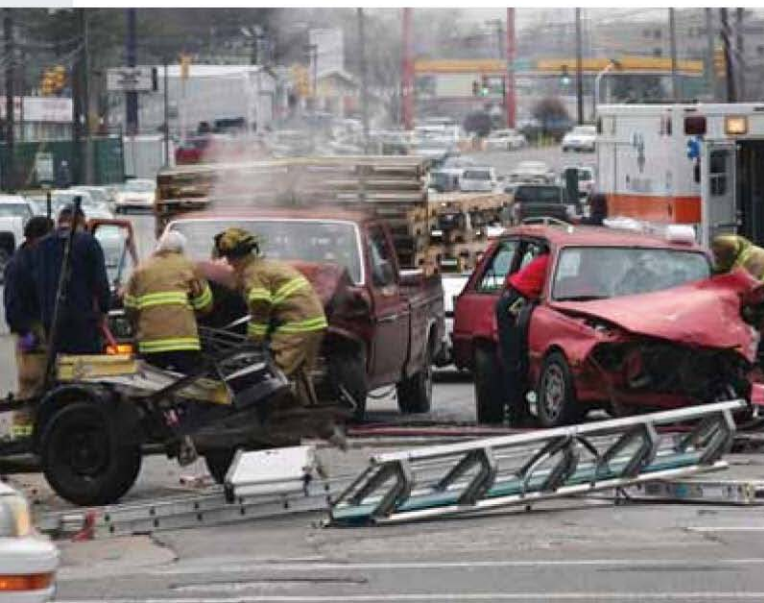
Working Together

The inability of our public safety officials to readily communicate with one another threatens the public's safety and often results in unnecessary loss of lives and property. Recognizing that solutions to this national issue can only be achieved through cooperation between all levels of government, representatives from state and local government and associations serving local and state governments, meet regularly through the SAFECOM Program.

Created in 2003, the SAFECOM Program brings together public safety practitioners and policymakers. Guided by an Executive Committee which provides strategic leadership, the SAFECOM Emergency Response Council is a vehicle to provide a broad base of input from the public safety community on its user needs to the SAFECOM program. The ERC provides a form for individuals with specialized skills and common interest to share best practices and lessons learned so that interested parties at all levels of government an gain from one another's experience. Emergency responders and policymakers from federal, state, local, and tribal governments comprise the SAFECOM EC and ERC.

Achieving interoperability is a challenging job. Without the collective voices of elected and appointed officials, without partnership, cooperation, and leadership at all levels, it is a job that will not get done. It is hoped that this guide will serve as a catalyst for public officials to begin other, continuing dialogues with public officials in their localities, regions, and states.

During 2002, 18 national associations representing elected and appointed and public safety officials worked together on the National Task Force on Interoperability (NTFI) to develop the original foundation of this brochure for the U.S. Department of Justice AGILE Program. These associations included:

- Association of Public Safety Communications Officials International, Inc.
- International Association of Chiefs of Police
- International Association of Fire Chiefs
- International City/County Management Association
- Major Cities Chiefs
- Major County Sheriffs' Association
- National Association of Counties
- National Association of State Chief Information Officers
- National Association of State Telecommunications Directors
- National Conference of State Legislatures
- National Criminal Justice Association
- National Emergency Management Association
- National Governors Association
- National League of Cities
- National Public Safety Telecommunications Council
- National Sheriffs' Association
- The Council of State Governments
- The United States Conference of Mayors

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