Iowa Communications Interoperability Strategy

Report to the Governor

Submitted by

Iowa Communications Task Force

October 1, 2004

Iowa
Fields of Opportunities

STATE OF IOWA

THOMAS J. VILSACK
GOVERNOR
SALLY J. PEDERSON
LT. GOVERNOR

DEPARTMENT OF PUBLIC DEFENSE
IOWA HOMELAND SECURITY AND
EMERGENCY MANAGEMENT DIVISION
DAVID L. MILLER, INTERIM ADMINISTRATOR

October 1, 2004

The Honorable Thomas J. Vilsack
State Capitol
Des Moines, Iowa 50319

Dear Governor Vilsack:

The Iowa Communications Task Force has been diligently focusing on the issue of improving communications interoperability in the state of Iowa. Its report and recommendations are transmitted to you in response to your request of Homeland Security and Emergency Management Division to provide you with the best thinking and recommendations for a direction for Iowa.

In the four months available for this effort, it was not possible to develop a detailed plan for implementation. Yet, the expertise around the table deliberated the complexities of the issue and emerged with a vision that will, if effectively implemented, move us significantly forward in our communications capacity.

Clear messages emerged from the members of the Task Force, and they urge me to emphasize those points in my message to you. Because of the inter-dependence of the recommendations and the rippling impacts on Iowa's responder and preventer disciplines, it will be important to move forward on the initiative as a whole. Second, the Task Force certainly recognizes the significant cost involved in this effort. It also understands the other costs, and increased risks, of not moving forward.

On behalf of the Iowa Communications Task Force and Homeland Security and Emergency Management Division, thank you for your attention and support of public safety for all Iowans.

Sincerely,

David L. Miller
Administrator

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Acknowledgments

The Iowa Communications Task Force convened at the request of the Homeland Security and Emergency Management Division (HLSEM) in response to Governor Thomas J. Vilsack's charge to HLSEM to develop a strategy for Iowa's future in communications.

The Task Force wishes to express its great appreciation to Governor Vilsack for his recognition of the critical nature of this issue in Iowa. Further, gratitude is extended to David Miller, Administrator of Iowa Homeland Security and Emergency Management, for his insistence on and trust in the active participation of the broad range of stakeholders in development of the strategic solutions to communications interoperability issues.

A number of individuals contributed their expertise in informing and supporting the work of the Task Force. The Iowa Communications Task Force wishes to recognize the following:

- Eric J. Coolbaugh, SSC-San Diego, for Office of Domestic Preparedness, US Department of Homeland Security. Thanks go to Mr. Coolbaugh for his participation in the Task Force meeting and provision of key background information.
- Steve Gast, Iowa Department of Transportation. Mr. Gast is largely responsible for the involvement and support of the Department of Transportation, and his direct participation and that of DOT staff is greatly appreciated.
- Steven Kutsch, Motorola. The Task Force appreciates the contributions of Mr. Kutsch, while not a Task Force member, for his attendance at meetings and contribution of technical information useful to the work group.
- John S. Powell, Lafayette Group, for Office of Domestic Preparedness, US Department of Homeland Security. Appreciation is expressed to Mr. Powell for the information and guidance given in understanding the federal efforts around interoperability, governance, and Project 25.
- Terry Sullivan, Central Iowa Power Cooperative. Gratitude is extended to Mr. Sullivan for his regular substitute role on behalf of his organization on the technology work group and contributions made to the Task Force discussions.

Appreciation is also extended to:

- Iowa Department of Public Defense for use of the Joint Forces Headquarters facilities and equipment for Task Force meetings.
- Iowa Department of Transportation for hosting a Task Force meeting at its campus in Ames.

The Task Force had the benefit of the support of knowledgeable and well-prepared staff of Homeland Security and Emergency Management Division. Special thanks are extended to:

- Mike Beaman
- Tony Crandell
- Tom Fergus
- Kathy Karn

With gratitude,
The Members of the Iowa Communications Task Force

State Public Policy Group provided facilitation, staffing, and report development services to the Task Force. The SPPG team included Arlinda McKeen, Daryl Lewis, Sarah Dixon, Jim Addy, and Lee Konfrst. www.sppg.com

Executive Summary

We know where we are going. Now we must get there.

There must be focused and steady progress, beginning immediately, for Iowa to create a system by which those involved in emergency and response can talk directly to one another in situations where seconds can save lives. The direction is set for the communications systems used every day in all types of emergencies and disasters to protect the public safety of Iowans. Recommendations for short and long term efforts to achieve these goals are spelled out in this report from the Iowa Communications Task Force.

The problem of interoperability in emergency and disaster communications is easy to understand. The firefighters are not able to radio the police for assistance because their radios are not able to work together. The only option available to some agencies today is to call back to a public safety answering point, and the dispatcher will relay the message, even when the intended recipient is parked 50 feet away.

However, even if the problem is obvious, the solutions are not as clear or simple. The Iowa Communications Task Force believes the problems can and will be solved when Iowa establishes an interoperable communications system for voice, data, and video that can be sustained, maintained, and improved as needs change and technology allows. This long term solution brings statewide interoperability, but in the short term, other solutions can and must assist in achieving interoperability in regions of the state now unable to talk across agencies or jurisdictions.

Critical to the solutions for statewide communications interoperability in Iowa are three essential elements: governance, standards/technology, and funding. Without a dedicated, coordinated and sustained focus on each of these critical pieces, any initiative is unlikely to fully succeed.

A governance structure for the state's interoperability initiative is a centerpiece. For Iowa to successfully implement the full range of recommendations and take the bold steps required, there must be an authorized entity to focus on this responsibility. For the short term, the Task Force recommends the Law Enforcement Administrator's Telecommunications Advisory Committee (LEATAC) to fill this role. Further, as soon as possible, this leadership must transition to a permanent authority, whose sole functions are to monitory and study the emergency and disaster communications needs of the state, be knowledgeable regarding the available technology, set the policy, and coordinate control.

The technology side of the problem is, perhaps, more easily solved than the governance side. Yet technology is undergoing change at an exponential pace. There is no clear standard, as standards, too, evolve and will continue to do so. However, the technology currently exists to create a statewide interoperable system. It is a matter of designing that system to best leverage Iowa's existing assets and best meet the needs of the diverse system users.

Of course, a statewide interoperable system is costly. For this reason, implementing a short-term and long-term funding and sustainability plan is the third required element of the broader statewide interoperability initiative. Funds are needed not only to plan and implement the initiative, but also for operations, maintenance, upgrades and improvements, governing and monitoring activities of the authority, and most certainly for training on a ongoing basis.

In consideration of the potential costs and the existing systems in use today, the Task Force recommends Iowa adopt a migration approach, in which agencies and jurisdictions gradually move to the new system as they upgrade or replace equipment. The guidelines and standards will be clear to all, so equipment that agencies purchase in the future will interoperate with the rest of the new system. Over time, particularly if multiple jurisdictions partner for economies of scale, the state coverage would be complete. A likely scenario might be for the state to construct the backbone and the local level will select their system and connect with the backbone. A "forklift" changeover, the alternative to the migration approach, where the entire system statewide is replaced at once, was rejected by the Task Force as too costly and unlikely to be able to be implemented.

Ultimately, these decisions will be made by the governing authority, with significant input and representation from the statewide stakeholders.

Communications interoperability is not a new topic for those whose work requires use of voice, data, or video transmission. Gaps in coverage, outdated equipment, and a lack of resources to maintain communications systems are typical in many parts of Iowa. While the first responder/preventer agencies are well aware of the challenges in emergency and response communications, the scope and depth of the issues are likely not well-known beyond those involved on a regular basis. There is increasing attention given to emergency and response communications interoperability at the federal and state levels. That federal priority and attention helps Iowa's recommendations move toward reality.

Governor Thomas J. Vilsack announced on May 19, 2004, his requirement that the Iowa Homeland Security and Emergency Management Division (HLSEM) establish a task force to be chaired by Administrator David L. Miller. The resulting Iowa Communications Task Force brought together 28 individuals with differing expertise and experience to reflect perspectives from across the state, and from various first responder/preventer agency and communications positions. The blend of law enforcement and public safety leaders, health and EMS interests, technology and communications managers and technicians, and vendors of communications systems lent its collective expertise in identifying and addressing the complexities of communications interoperability.

The Governor provided the following charge to HLSEM and the Task Force to guide its four-month process.

> ***The mission*** *of the Iowa Communications Task Force will be development of a statewide communications strategy, including short and long term goals, to ensure dependable, cost effective, sustainable and interoperable communications.*
>
> *Systems supporting voice, data and video must be developed or enhanced so as to be fully utilized anywhere in the State of Iowa upon demand.*
>
> *This task force will review existing communications infrastructure and, when possible, build upon existing resources but always looking forward toward emerging technologies to achieve a strategic investment in our future communications capability.*

Interoperability *is the ability for public safety and public services to talk and/or share data in real time on demand, when needed, and when authorized.* This definition was developed by the Task Force to be

appropriate for Iowa while maintaining consistency with the definition adopted by SAFECOM, the US Department of Homeland Security umbrella office for federal interoperability issues.

The Task Force reached consensus on its report as a whole and the additional premise that the implementation must be approached holistically. The Task Force recognizes the importance of this work to determine the direction for interoperable communications systems in Iowa. Given the multitude of issues and their integrated nature, the Task Force submits its recommendations as a whole. Without accepting and implementing the entirety of the recommendations, the Task Force feels the current fragmented system will be perpetuated. The 12 short-term recommendations and 10 long-term recommendations, taken together, focus Iowa's interoperability initiatives.

Short Term Recommendations

Short Term Recommendation 1:

The Governor should designate a group as a temporary communications interoperability authority with adequate staff support and resources to complete its initial mandate. The Task Force recommends the Law Enforcement Administrator's Telecommunications Advisory Committee (LEATAC) as the organizing authority during the early stages of the initiative.

Short Term Recommendation 2:

The temporary authority will immediately consider the structure and organization of the permanent authority and seek appropriate legislative or executive action to establish the permanent authority that includes an adequate level of staff support.

Short Term Recommendation 3:

A permanent communications interoperability authority will be designated. Establish a permanent overview authority representing multiple disciplines, such as or similar to the model for a State Interoperability Executive Committee (SIEC) recommended by SAFECOM. The authority should be provided with adequate staff support and resources to continue the work begun by the temporary authority.

Short Term Recommendation 4:

The authority should undertake initial efforts over the first 6 – 18 months, performing the following functions:

- Develop and implement organizational and operational elements of the authority, including advising on the composition and role of the permanent authority and on staffing.
- Promote additional opportunities or capabilities for all agencies to interact and develop working relationships and work solutions. Work solutions will move the initiative toward performance and service levels.
- Develop and begin implementing a comprehensive strategy to engage support of stakeholders and policy makers that will have an early impact on communications interoperability.
- Determine the activity level of other entities within the state and what resources they are using.
- Initiate discussion and planning meetings throughout the state and include all key players that may potentially be involved in the system. Allow them the opportunity to determine the appropriate policies and protocols so that the interoperable system can function properly.
- Obtain, leverage, and manage funding to launch the authority and establish the project(s).

Short Term Recommendation 5:
The authority should seek and obtain initial funding for its operations and should develop and begin implementation of a long-term plan for sustainability of communications interoperability initiatives including one-time, continuing, and grant funding.

Short Term Recommendation 6:
The authority should conduct a policy scan to identify funding and organizational barriers to and assets for improved communications interoperability.

Short Term Recommendation 7:
The authority should examine legislative solutions to address the funding and resource challenges of providing the recommended short term solutions and communications interoperability initiatives.

Short Term Recommendation 8:
The authority should establish and fund consistent, periodic training programs for current communications systems, and integrate training as part of any plan for new communications systems and equipment.

Short Term Recommendation 9:
The authority should establish and fund an ongoing program for stakeholder education, public education, and public official education to create and maintain support for the issue and for initial activities and investments in communications interoperability solutions.

Short Term Recommendation 10:
The authority should ensure that, relating to on-the-scene communications, radios that can communicate on mutual aid channels (UHF, VHF, and 800MHz) are linked by a mobile or fixed site system. The state should have the ability to pre-deploy a certain number of linking systems, strategically placed geographically throughout the state, that can be dispatched when needed. This short term solution should include the necessary staffing and training elements to support this system.

Short Term Recommendation 11:
The authority should ensure that, relating to command-to-control communications, a voice over IP (VOIP) device should be hooked to all Public Safety Answering Points (PSAPs) that is reliable, secure, and connects all stations across the state.

Short Term Recommendation 12:
The authority should immediately provide incentives for regionalization for communications interoperability whenever possible.

Long Term Recommendations

Long Term Recommendation 1:
The authority should develop, implement, and oversee policy, operations, and fiscal components of the communications interoperability efforts at state and local levels as well as coordinate with the federal level. Its functions will include:

- Implement and maintain organizational and operational elements of the authority, including staffing and program activity.
- Review and maintain the performance and service levels on behalf of the operating agencies.

- Implement a dynamic program to ensure long term viability for sustained interoperability solutions influencing operations and control.
- Create or identify available and/or future assets that will leverage resources and/or provide incentives for communications interoperability.
- Monitor and maintain the established appropriate policies and protocols to ensure the interoperable system functions properly.
- Allocate and oversee state appropriations or other funding received for communications.

Long Term Recommendation 2:
The authority should continue to identify sources of ongoing, sustainable, longer-term funding for communications interoperability projects and obtain adequate funding in accordance with the sustainability plan.

Long Term Recommendation 3:
The authority should examine legislative solutions to address the funding and resource challenges of implementing the long term solutions for statewide communications interoperability initiatives.

Long Term Recommendation 4:
The authority should develop an integrated, statewide system that allows for shared systems and costs; takes into account infrastructure, improving reliability, and addressing liability concerns of the shared network; is developed considering the importance of public/private partnerships; and identifies and recognizes potential barriers.

Long Term Recommendation 5:
The authority should look beyond voice systems to data and video systems. The development of such systems takes into consideration the following qualities:

- Packet-based,
- Trunk-based,
- Data interchange standard, and
- Need for flexibility.

Long Term Recommendation 6:
The authority should expand, maintain, and fund consistent, periodic training programs for current communications systems and for the statewide integrated system as it is put in place. Training should be included as part of any plan for new communications systems and equipment.

Long Term Recommendation 7:
The authority should expand, maintain, and fund stakeholder education, public education, and public official education programs to demonstrate the value of the short term solutions, to continue to maintain the priority level for the long term solutions, and to understand the funding levels required to implement the statewide integrated public safety communications system.

Long Term Recommendation 8:
The authority should identify and encourage long-term partnerships and cooperation among appropriate government entities at all levels.

Long Term Recommendation 9:
The authority should identify, promote, and provide incentives for appropriate collaborations and partnerships among agencies, businesses, organizations, and associations, both public and private.

Long Term Recommendation 10:
The authority should provide incentives to support maintenance and expansion of regionalization efforts, underway or anticipated, that advance implementation of the long term communications interoperability initiative.

Finally, the Iowa Communications Task Force, and its individual members, remain committed to this effort and offer further service to the State of Iowa in moving the strategy forward.

Iowa Communications Task Force Membership

- **Dennis L. Bachman**, Paramedic Specialist/Communications Coordinator, Marshalltown Medical & Surgical Center, Marshalltown, IA. – Funding work group member.
- **Tom Boeckmann**, Health Alert Network Chief, Iowa Department of Public Health, Vinton, IA. – Funding work group member.
- **Diana Borash**, Communications Director, WestCom, West Des Moines, Clive and Urbandale, IA. – Funding work group member.
- **Nancy Brady**, Telecommunicator Training Coordinator, Iowa Law Enforcement Academy, Johnston, IA. – Governance work group member.
- **Gary E. Brown**, Directory, Woodbury County Disaster and Emergency Services, Sioux City, IA. – Funding work group member.
- **Nick Critelli**, Civil Air Patrol, Des Moines, IA. – Governance work group member.
- **Ed Farley**, Coordinator, Henry County Emergency Management, Mt. Pleasant, IA. – Funding work group member.
- **Leslie E. Fish**, Telecommunications Design Specialist, Iowa Department of Transportation, Ames, IA. – Technology work group member.
- **Scot Fynaardt**, GEOCOMM, Pella, IA. – Governance work group member.
- **John Gillispie**, Executive Director, Iowa Communications Network, Johnston, IA. – Technology work group member.
- **Larry Grund**, Chief, Technology Services Bureau, Iowa Department of Public Safety, Des Moines, IA. – Technology work group member.
- **William Hayes**, Director of Engineering and Technology, Iowa Public Television, Johnston, IA. – Technology work group member.
- **Leon Hofer**, Vice President Network Operations, Iowa Network Services, West Des Moines, IA. – Technology work group member.
- **Ted G. Kamatchus**, Sheriff, Marshall County Sheriff's Office, Marshalltown, IA. – Governance work group member.
- **James Kersten**, Associate Vice President for Government Affairs and Development, Iowa Central Community College, Fort Dodge, IA. – Funding work group member.
- **Kirk M. Litynski**, Government Account Manager, Motorola, Eden Prairie, MN. – Technology work group member.
- **Mark D. MacDonald**, Manager Business Development, Advanced Programs, Rockwell Collins, Cedar Rapids, IA. – Technology work group member.
- **Terry A. Martinson**, Assistant Fire Chief, Cedar Rapids Fire Department, Cedar Rapids, IA. – Governance work group member.
- **David L. Miller**, Administrator, Iowa Homeland Security and Emergency Management Division, Des Moines, IA. – Chairman, Iowa Communications Task Force.

- **Gregg D. Miller**, President, RACOM Corporation, Marshalltown, IA. – Technology work group member.
- **Justyn Miller**, CEO/General Manager, Kalona Cooperative Telephone Co., Kalona, IA. – Technology work group member.
- **Todd A. Misel**, Iowa State Patrol, Des Moines, IA. – Governance work group member.
- **Dennis Murdock**, Executive Vice President and CEO, Central Iowa Power Cooperative, and Executive Vice President, Central Iowa Energy Cooperative, Cedar Rapids, IA. – Funding work group member.
- **Eric Nevins**, Communications Supervisor, Des Moines Police Department, Radio Services, Des Moines, IA. – Technology work group member.
- **Judy Pletcher**, Executive Director, Rural Iowa Independent Telephone Association, Des Moines, IA. – Funding work group member.
- **Larry Plotzke**, Senior Telecommunications Engineer, Alliant Energy, Mason City, IA. – Governance work group member.
- **Larry Smith**, President, Iowa Firemen's Association, Sigourney, IA. – Governance work group member.
- **Bill Vaughn**, Chief Deputy, Polk County Sheriff's Office, Des Moines, IA. – Funding work group member.

Introduction

A 911 call comes into a public safety answering point. An explosion in rural Iowa has shaken a grain elevator where anhydrous ammonia tanks are parked awaiting the chemical's application to local farmers' fields. With a fire burning in the stockpile of corn, there is additional risk of the chemical tanks leaking and releasing a poisonous cloud of ammonia. Two elevator employees are hurt by falling debris. Their injuries are not life-threatening, but the ambulance is called and will transport the injured to the closest hospital 23 miles away.

The county sheriff's office has responded to assist since the town does not have its own police department. They are helping with traffic control, planning for a potential evacuation, and undertaking an investigation of the incident. While it is not expected that this is an intentional explosion, that possibility must be considered.

The local volunteer fire department puts out a call to all its members for response. The full-time fire department has been called from a neighboring town because the manpower and bigger equipment is needed to get this fire under control. The regional hazardous materials (Hazmat) response team is standing by. Residents are being notified that they may need to evacuate their homes and businesses.

A similar scene is entirely possible in Iowa, and has occurred more than once. It is not unusual to need to involve many kinds of first responders at one incident, no matter the type or location. To the public, it appears that the system works as one. But to many first responders involved in multi-jurisdictional or multi-discipline response to emergencies, the picture may be very different.

In Iowa, chances are that each of these first responder organizations – fire, EMS, sheriff's office, police department, hazmat – has its own radio and communication system. Most often, those systems cannot directly communicate with each other. In this case, the communications center relays updates and instructions to the various first responders. But the responders' radio systems operate differently, so they cannot connect in the fastest and most effective way – directly with one another. It is not uncommon for those leading their first responder teams to be standing on the streets, holding the radios they use to talk with their own responders, but to be hollering to a leader of another responder agency across the way. Many of Iowa's volunteer firefighters do not have radios at all – they receive calls via pager and are otherwise unable to communicate directly with the incident commander. To add to the problems, when different agencies are dispatched by different communications centers, those PSAPs sometimes are not able to talk to one another. Inability to communicate by radio is a common breakdown in Iowa's public safety communications capacity, sometimes causing delays and increasing the chance for errors as critical information is relayed.

Now consider the need for data and video transmission. Would it be in the interest of public safety if air quality or temperature measurements could be taken and transmitted to a command center? How much could the safety of responders be improved if from-the-scene video could be transmitted to the command center to allow a full perspective for assessment, response, and technical consultation?

In this brief description, the challenges of communications interoperability are illustrated in a likely Iowa situation. The good news is that technology exists that could make it possible for all of these systems – voice, data, and video – to interoperate. The not-as-good news is that it is very costly to undertake a

wholesale replacement and maintenance of everybody's systems and to be sure that the entire state has equitable coverage.

The Iowa Communications Task Force offers a direction and strategy for the consideration of policy makers, public agencies, first responder agencies, private sector partners, and vendors. The Task Force spent a focused four months in examining issues, reviewing potential solutions, looking at Iowa's first responder capacity and needs. This report and the recommendations contained within its pages address the Iowa situation in an approach that holds promise of success in the state. It recognizes the current need and priority is for interoperable voice communications, but moves the state toward interoperable video and data communications in future years.

Early discussions within the Task Force indicated a consensus understanding that to make a "forklift" change in the systems statewide, that is, to completely replace the old, fragmented systems with a statewide interoperable system in one large initiative, would be much more costly than the state could bear at one time and in the near future. It was also accepted that making the change over time will ultimately cost at least as much, if not more, than the "forklift" approach.

Consequently, the Task Force recognizes and addresses the importance of allowing interoperability to be achieved while retaining legacy systems. It emphasizes the importance of establishing a common guideline that provides incentives for agencies to implement systems that meet interoperable goals, standards or guidelines.

In the deliberations of this broad-based group of experts, it soon became clear that technology is not the primary issue. The technology to create a fully-interoperable, statewide system currently exists. Rather, the lack of policy or program leadership and authority, fragmentation in current systems and planning, and an absence of dedicated funding for establishment and maintenance of interoperable communications contribute significantly to the shortcomings of interoperability in Iowa. In areas of governance and funding, the issues interact and overlap with those of technology.

Viewed another way, to achieve these goals, there must be a deliberative interconnection created between the technology opportunities and requirements, the funding, and the time for implementation. Certainly, as the technology opportunities and requirements increase, funding needs and timelines are impacted as well. Managing this delicate balance must be part of the ongoing initiative.

The Iowa Communications Task Force, in this report, sets goals for our state in ensuring the public safety in day-to-day emergencies, in natural disasters, and in homeland security events. The political will and the capacity of first responder and policy bodies at all levels to achieve the goals will largely determine the successful implementation of interoperable communications systems in the state.

Mission of the Iowa Communications Task Force

Governor Thomas J. Vilsack requested that Iowa Homeland Security and Emergency Management Division (HLSEM) deliver a strategy with recommendations in accordance with the following mission.

> ***The mission*** *of the Iowa Communications Task Force will be development of a statewide communications strategy, including short and long term goals, to ensure dependable, cost effective, sustainable and interoperable communications.*
>
> *Systems supporting voice, data and video must be developed or enhanced so as to be fully utilized anywhere in the State of Iowa upon demand.*
>
> *This task force will review existing communications infrastructure and, when possible, build upon existing resources but always looking forward toward emerging technologies to achieve a strategic investment in our future communications capability.*

Definition of Interoperability

To address the complex issue of communications interoperability, the Iowa Communications Task Force looked at Iowa's situation in the context of national efforts and existing definitions of interoperability. The Task Force developed a definition tailored to Iowa's needs that is consistent with other practices and parallels the SAFECOM definition.

Interoperability is the ability for public safety and public services to talk and/or share data in real time on demand, when needed, and when authorized.

Assumptions

To launch productive review and discussion of communications and interoperability in the state, the Task Force identified key assumptions to frame the big picture from which they would work. These assumptions were subsequently tested and validated through a survey completed during the Task Force process.

The Iowa Communications Task Force assumed that:

- Gaps in Iowa's first responder/preventer communications systems exist.
- First responder/preventer communications systems throughout the state are inadequate, incompatible and dated.
- There is a lack of coordination and cooperation as various departments, jurisdictions, and disciplines work to improve first responder/preventer communications systems.
- There is a lack of funding available for upgrading first responder/preventer communications systems.
- Planning efforts for improving first responder/preventer communications systems are fragmented.

Problem Statements

The big picture issues around communications interoperability emerged from the Task Force's early discussions. An integrated view of these issues is important to maintain when developing potential solutions. No single element can be addressed alone and provide successful outcomes. Three primary

categories of issues were addressed by the Iowa Communications Task Force: governance, technology, and funding. Problem statements were developed that framed the work to develop solutions and strategies for Iowa's future direction.

- There is a lack of communication at all levels with no Iowa broad-based group(s) to guide, direct, or advocate with authority for voice, data, and video interoperability.
- There are insufficient guidelines to ensure that new wireless voice, data, or video systems will interoperate at the appropriate physical, transmission, database, or application level. There are interoperability challenges to overcome immediately, but long-term solutions also need to be developed.
- There is no overall sustainable funding source to build, equip, maintain or operate an interoperable communications system, either locally or statewide.

The work of the Task Force was channeled toward creating pragmatic approaches to solving these problems and establishing statewide communications interoperability for voice, data, and video, within the scope of the mission.

Situational Analysis

Introduction

Prior to the state undertaking planning and implementation efforts relating to communications and interoperability, it is critical that the environment in which Iowa is immersed be understood. The September 11, 2001 attacks heightened a number of issues at the national level, including communications and interoperability issues. The difficulties illustrated by New York City's fragmented communications systems caused a ripple affect of awareness down to the state and local levels. It has been recognized that first responders across the country cannot always talk to each other during times of emergency, both within their own organizations and with other organizations when response operations must grow to handle a situation. Iowa's telecommunications and information focus during the mid-1990s allowed for progress by the Iowa Department of Public Safety in data and information sharing with federal agencies, and Iowa can learn from past efforts as a strategic direction is developed for the future.

While issues relating to communications and interoperability are not new, they have become more complex. Individuals or groups working to address communications and interoperability issues find themselves amidst governance, funding and technology challenges. For example, all levels of government face communications and interoperability issues, meaning that in order to make effective changes, representatives from all levels of government must come to the table. Similarly, the line between public and private communications has increasingly become blurred making it critical to engage both the public and private sector. The public sector is also challenged to keep up with the private communications/technology industry, which is a dynamic and rapidly developing industry.

The environment across the nation and in Iowa demonstrates that both communications and interoperability issues exist. Some first responders do not have communications systems or technology (i.e. some volunteer fire departments do not have radios and rely on pagers for their primary communications), while other first responders have communications systems and technology, but are not able to interoperate with other first responders in their jurisdiction, neighboring jurisdictions, county, or state level or regional systems.

The number of first responder disciplines that need to be able to interoperate, the variety of applications, and varying needs makes decision-making difficult as well. In some cases communications only need to occur within one discipline in one jurisdiction. In other cases a multitude of disciplines and jurisdictions need to be able to communicate. These disciplines and jurisdictions may have different applications and technologies given their varying daily needs. The design of an interoperable communications system for Iowa must consider the many different levels of communications that need to take place in the state, from on-the-scene to on-the-scene, from on-the-scene to command, and from command-to-command.

An interoperable communications system must take into account day-to-day work as well as larger and longer-lasting emergency situations. It also must consider that to achieve a statewide system the view of the problem must be seen as going beyond the local agency, and beyond the region. Building a system that can be used for day-to-day work and emergency systems encourages investment from the users community and policy makers. Balancing all of the issues relating to governance, funding, and technology, as well as all of the different needs and uses is demanding. However, Iowa has willing and interested individuals who will dedicate their time to begin solving these highlighted issues.

Overarching Issues

There are a number of overarching issues that have created a sense of urgency when considered in the context of homeland security issues, natural disasters, and day-to-day public safety issues.

The Task Force, as part of its work, agreed early on five assumptions they identified to be generally true throughout the state. The assumptions were statistically validated as part of the Task Force work through a survey that was disseminated to first responders across the state. The five assumptions are:

- Gaps in Iowa's first responder/preventer communications systems exist.
- First responder/preventer communications systems throughout the state are inadequate, incompatible and dated.
- There is a lack of coordination and cooperation as various departments, jurisdictions, and disciplines work to improve first responder/preventer communications systems.
- There is a lack of funding available for upgrading first responder/preventer communications systems.
- Planning efforts for improving first responder/preventer communications systems are fragmented.

Survey of First Responder Communications Systems

Respondents were asked how strongly they agreed with the five premises for voice, data, and video communications and in almost every instance, the majority of respondents either strongly agreed or agreed to the premises. The table below includes the percentages of respondents who either strongly agreed or agreed to the premises. One can see there is a perceived need for Iowa to move forward in addressing interoperability and communications issues in the state.

	Strongly Agree or Agree		
	Voice	**Data**	**Video**
Gaps in Iowa's first responder/preventer communications systems exist	81.2%	63.2%	59.8%
First responder/preventer communications systems throughout the state are inadequate, incompatible and dated	65.2%	51.2%	53.6%
There is a lack of coordination and cooperation as various departments, jurisdictions, and disciplines work to improve first responder/preventer communications systems	62.4%	49.1%	46%
There is a lack of funding available for upgrading first responder/preventer communications systems	84.9%	66.8%	63.9%
Planning efforts for improving first responder/preventer communications systems are fragmented	76.5%	58%	53.5%

This survey was sent to approximately 2,000 Iowans from across the state serving in the following positions:

- Communications Center Manager
- County Sheriff
- EMS Administrator
- Fire Chief
- Police Chief

These key findings of the survey provide additional insights into the status of communications interoperability in Iowa. Additional detail of the survey findings are included in the Appendices to this report.

- Respondents were asked how strongly they agreed with the five premises for voice, data, and video communications and in almost every instance, the majority of respondents either strongly agreed or agreed to the premises.
- Respondents had a greater ability to communicate using voice communication systems compared to data and video, with respondents having the least ability to communicate via video communication systems. Respondents also felt it was most important that they have the ability to communicate using voice communication systems and viewed data and video systems as longer term needs.
- Respondents were more likely to have the ability to communicate with first responder/preventers directly under their command or management and as the distance increased to first responder/preventers outside of the respondents command or management (within regions, throughout the state, etc.), respondents were less likely to have the ability to communicate using voice, data, and video communication systems.
- Sheriffs and communications center managers are at an advantage compared to the other respondents in their ability to communicate via voice systems.
- While the smallest jurisdictions were least able to interoperate with others, the largest jurisdictions often did not have the greatest ability to interoperate with others. Rather, it was the respondents from the mid-size jurisdictions that were best able to interoperate with others.
- The largest jurisdictions (25,000 – 50,000 and over 50,000), were the most likely to have an appropriation in their annual budget to fund their communications systems.

Iowa Overview

Iowa's public safety voice, data, and video communications systems have been used in communities and regions across the state for decades. As a whole, they have performed, and continue to perform acceptably as an agency responds to an incident. Their adequacy in some communities begins to fade when there is a need to directly communicate with other agencies or across jurisdictions. As this report continues to provide a review of Iowa's past and current achievements and constraints, the scope of past and current interest and activity around communications interoperability must be highlighted.

- Public safety interoperability issues have existed for some time, but have been exacerbated as the spectrum needs of the community have grown. Spectrum is defined as the number of radio channels available for all over-the-air communications, and it has been recognized that this is a finite resource.
- Another interoperability challenge relates to the public safety community upgrading to new technologies. To ensure new technology interoperates with legacy systems, linking or patching devices must also be purchased.
- Shortcomings in the current voice and data systems include outdated systems that need upgrades and gaps in coverage that create dead spots.
- Voice Over Internet Protocol (VOIP) is a good choice for an integrating technology.
- Shifting to a new system is costly, as has been seen in neighboring states. Nebraska estimates a new publicly owned system providing radio user through transmitter system to dispatch for a

public safety answering point – an end-to-end system – will cost $220 million. In addition, a state should plan for an additional annual costs equaling 15 – 18% of the original cost.

- South Dakota has received a $7 million COPS grant from the U.S. Department of Justice, a $4 million appropriation from the state legislature, another $3.9 million grant from COPS, a $1.15 million Highway Safety grant, and a $1.4 million state agency fund to get the process moving. The funds were used to purchase a radio system infrastructure, mobile and portable radios for the state government agencies. Overall, $28 million was raised to buy nearly 7,890 radios, RF equipment, 35 towers and a network switch. The initial system went live in October of 2002 and expanded in October of 2003.
- The Iowa State Patrol moved from low band to high band in the 1970s. This shift required three years to plan and six years to implement. Now, however, with the exponential growth and turnover in technology and newly defined and growing user needs, the state can no longer enjoy this wide window of action. The state must make decisions and implement those decisions faster.
- Iowa has undertaken pilot and demonstration projects in interoperable voice and mobile data transmission, but has not yet piloted a from-the-scene video project. The Iowa Department of Transportation has implemented a project within the agency that is capable of interoperability with other agencies, though none are currently involved.
- Positions vary on whether Iowa needs the best in technology for data and video or whether those systems should take into consideration Iowa's demand and potential for actual use.
- From a federal perspective, Iowa is a rural state made up of a large number of small communities with few critical assets to protect and does not have a significant history of catastrophic disasters. Because of the criteria used to determine priority for funding, these perceptions of Iowa will weigh heavily in lowering the ranking of the state in qualifying for federal assistance for interoperable communications systems for first responders and support agencies.
- According to the survey conducted for this effort, there are rough estimates that 25% of Iowa 900+ systems are at least thirty years old, 50% are 10-15 years old, and the remaining 25% may be current technology, but short lived due to the forth coming narrow banding requirements.
- Most of these existing legacy land mobile radio (LMR) systems require either towers in excess of 100 feet or area repeaters to provide a minimum of county coverage. Currently, most eastern and western state border river counties all have dead spots due to terrain issues, and there are additional dead spots statewide.
- It is also estimated that Iowa has over 900 governmental land mobile radio (LMR) systems, which may consist of up to 30,000 radio units (handheld, mobile, base, and point-to-point). These systems are comprised of a few low band systems, the majority being high-band or VHF systems, many UHF conventional systems in both the 460Mhz and 800Mhz bands, a few UHF digital systems, about 10,000 of those units are operating on a private sector provided 800 Mhz trunked system.
- Mutual aid has been part of the state telecommunications plan for more than 30 years. Most users in Iowa operate on VHF that does not require a patch to connect to access the mutual aid channel. Users operating on bands other than VHF already have patch capability within their operational areas.
- Emergency and threat situations today require the response of many non-traditional public safety agencies, which do not share any of the common frequencies provided for first responder

agencies. (Examples: utilities, private industry security forces, railroads, public works, non-public safety state agencies, Red Cross, National Guard, Civil Air Patrol, Weather Bureau, and many more).

- Public safety agencies are now finding it necessary to dispatch a number of different types of responders to assist in a citizen's call for assistance. In many instances, there are multiple disparate radio systems involved in a single response.
- "At-the-scene" responders need and want the ability to immediately access other responders without "dispatcher" involvement or complex or confusing access schemes (for example: mixed channels, Continuous Tone Coded Squelch (CTCS) tones, or 2nd radios).
- The last time the State of Iowa commissioned a telecommunications study and plan was in 1972. This plan addressed Law Enforcement LMR systems only. While a great percentage of the state still adheres to that plan's original design, it is woefully inadequate to meet the current needs of the total statewide law enforcement community today, and it does not begin to address the needs of the new collective community of first responders and support agencies responding to today's emergencies, incidents, or threats.
- The shortage of channels within the traditional high-band or VHF band severely limits the ability to build out existing legacy systems.
- The move from VHF to another frequency band will require complete system change-outs ("forklift upgrades") for agencies. UHF coverage patterns are greatly different than VHF coverage patterns, and many additional towers and repeaters will be necessary to provide statewide coverage.
- The federal government's mandating new technical standards for land mobile radio (LMR) systems will greatly impact the state's ability to continue to use existing legacy first responder systems (for example: narrow banding, federal agencies using only P25 radios, and spectrum restructuring have and will continue to impact communications systems development).
- Most local governmental agencies owning legacy LMR systems may not be aware of or prepared for the paradigm shift necessary to own and support the LMR systems needed to participate in the interoperability systems of the future. Initial purchase and sustainability costs will be a major budget impact item heretofore only experienced by a few.
- Any un-funded communications plan mandate will result in a very lengthy migration path. The complexity and expense of "work around" systems to patch legacy systems together during that period will not only be very expensive but also largely unfunded.
- Even a funded statewide strategy to mandate a move to a digital trunked, P-25 compatible system will still have issues with respect to "in building coverage," terrain masked areas, "picket fencing" movement between tower coverage areas and intermodulation desensitizing issues. While a great improvement, it would not be a "silver bullet" to solve all communications issues statewide for all agencies.
- Any statewide interoperability solution must mandate "open standards" to accommodate multiple vendor's products.
- Iowa must build off the initiatives such as that in Sioux City (www.starcomm.org), which is a working example of partnerships in local solutions that could potentially be expanded and applied

statewide. In these types of projects, the participating agencies are developing interoperability across disciplines within their county or region and sometimes across state lines. The success of these solutions may become a model for a strategy for expansion of interoperable systems from agency to multiple agencies to jurisdictions to multiple jurisdictions. This could be undertaken in a number of communities at once to ultimately provide interoperable regions covering the state.

- A number of public safety communications initiatives have been implemented in communities across the state, creating opportunities for communications across city and county lines. Among those community projects are Iowa City, West Des Moines-Clive-Urbandale, Des Moines-Polk County, Cedar Rapids, and Black Hawk County.

Related Initiatives

While considering statewide public safety communications interoperability issues for Iowa, there are certainly lessons to be learned from efforts undertaken elsewhere. Developments in technology and their application are as important as other projects. Many of the activities at the federal level are necessary to track as well because of their impact on future direction and potential funding priorities. Changes happen very quickly and regularly at the federal level, and this section should in no way be considered exhaustive. It provides only a brief touch on information that is available on these issues.

It is notable that public safety communications interoperability is receiving attention at the federal level as never before. Because of this, the Federal Communications Commission and many of the offices of US Department of Homeland Security are devoting resources to interoperability. A challenge for Iowa is to establish a way to monitor and track these rapid and important developments that may have significant implications for our state and any proposed system.

Local Initiatives

1. Tri-State Grant for Woodbury County, Iowa; Union County, South Dakota; and Dakota County, Nebraska - Woodbury County received nearly $6 million dollars through a FY 2003 Interoperability Communication Grant from the federal government. The intent of this grant was to develop a demonstration project that explores the use of equipment and technologies to increase interoperability among the fire services, law enforcement, and emergency services, and to do this involving multiple jurisdictions. When completed, this project would serve as a model of interoperable solutions. This model would be shared with other communities throughout the nation. The multi-regional communications plan, when completed, will include three states, ten counties and two tribal authorities, encompassing 5,765 square miles and benefiting some 231,000 people.
2. Dubuque County - Dubuque County recently implemented a $3.1 million, 800 megahertz communications system. This system serves approximately 400 users operating within the county's public safety agencies. To pay for the systems implementation, the county's voters approved a referendum to increase the county's 911 surcharge for 2 years.
3. In March of 1998, RACOM installed a new 800 MHz digital trunked radio system to cover both the Iowa and Illinois sides of the Quad Cities. The new radios include Police, Fire Emergency Medical and Public Works Departments. For situations that require cross jurisdictions, agencies now have clear channels to communicate with each other. Moline passed a $10 million bond which secured $2 million for the trunked system. The state of Illinois is offering a new STARCOMM21 800MHz radio to every police, fire, emergency management and public health

agency free for five years. The radios have the ability to notify changes in the Homeland Security Threat Level, notify about incidents from the State Emergency Operations Center, and alert responders about training. At a total cost of just over $3 million, the City and County of Dubuque implemented an 800 MHz emergency radio system. The new system allows various departments to communicate with each other directly, avoiding a dispatcher. The system is maintained with a county-wide surcharge of $1.

4. Echolink and Internet Radio Linking Project (IRLP) - A demonstration to the Task Force showed that amateur radios worldwide are mature enough to allow for interoperability. The demonstration used a convenient and low-cost technology called Voice Over Internet Protocol (VOIP), which is only one of many platform/technology options. For first responders, this type of technology provides flexibility and only requires a radio with a speaker, microphone, push-to-talk button, and a low-cost integrating device (in this case, an IP gateway). It was noted that, while the Internet was used for the demonstration, a private, managed network would provide more stability. This system allows for radio-to-radio, radio-to-computer, and computer-to-computer communications. It is, however, not intended to recommend either VOIP or amateur radio as a replacement for public safety radio systems. However, the demonstration showed the available of technology in a simple and affordable method.

5. RACOM – The demonstration of this VOIP project showed a private statewide system that allowed for agencies on different bandwidths (800 MHz, VHF, and UHF) to be connected through a central system. This establishes a connection between Radio Communications (RACOM) and the Iowa Communications Network (ICN)/State Emergency Operations Center (SEOC) for the purposes of the demonstration project. The hardware that is purchased is leave-behind hardware and will become part of a final design, e.g. ACU1000 devices and the respective network interfaces as well as the wireless Ethernet connectivity. This capability connects first responder disciplines from across the state.

State Initiatives

1. Iowa Interoperability Demonstration Project - The Iowa Partnership applied to SAFECOM, a division of US Homeland Security, for funds to conduct a telecommunications interoperability demonstration project in Iowa. The project is a “leave behind” project whereas when the demonstration period is over, the technologies that are designed and implemented will remain in place for on going use by the demonstration sites.

2. Asymmetrical Data Demonstration - This demonstration will be conducted in three phases. The first demonstration (1.0) will validate the ability to provide over 2 megabits information/data in a mobile environment to a first responder/first preventer. The second demonstration (1.5) will validate the ability for a first responder to request information from various databases and receive that information very quickly. The third demonstration (2.0) will validate the ability to transport complex data files to multiple end points in a mobile environment and validate the ability for several first responders/first preventers to request and receive information in a static and mobile environment.

3. DOT Planning Effort – The Iowa Department of Transportation is currently developing a ten-year plan based on the post-September 11th heightened attention to security, responsibilities of motor vehicle enforcement to address the increase in drug trafficking on Iowa’s highways, and the DOT’s need for increased capability. The DOT has adopted P25 as its standard and recognizes the need for unit-to-unit statewide coverage. The DOT planning efforts have been conducted in

close collaboration with DPS and recognize the many interoperability issues and factors influencing their plan. The DOT includes as part of their plan considerations for voice, data, and video communications systems and recognizes the importance of shared infrastructure and systems. DOT planning efforts have yielded several viable options, however, the department has recognized that the recommendations of this task force affect their long-term planning efforts.

Federal Initiatives

1. State Interoperability Executive Council (SIEC) – several states have established a SIEC as the permanent governing body for interoperability and communications. (http://www.safecomprogram.gov/admin/librarydocs/pswn_siec_fnal_nosignatures.pdf)

2. SAFECOM – SAFECOM recently was established within the US Department of Homeland Security (DHS). The agency essentially serves as the umbrella organization for interoperability efforts at the nation level. FEMA and the Department of Justice's Office of Community Oriented Policing Services (COPS) have collaborated with DHS on grant opportunities. See more at www.safecomprogram.gov

3. Office of Interoperability and Compatibility – On September 27, 2004, Secretary of Homeland Security Tom Ridge announced the launch of the Office of Interoperability and Compatibility. This new office will help state and local public safety practitioners improve communications interoperability beginning October 1, 2004. The Office of Interoperability and Compatibility (OIC) will oversee the wide range of public safety interoperability programs and efforts currently spread across Homeland Security. These programs address critical interoperability issues relating to public safety and emergency response, including communications, equipment, training, and other areas as needs are identified.

4. Public Safety Wireless Network (PSWN) – considered a leading authority on public safety interoperability. The network is co-sponsored by the Department of Justice and the Department of Treasury and works to connect local, state, and federal agencies. This was recently transferred under the umbrella of SAFECOM.

5. PSWN's Wireless Interoperability National Strategy (WINS) – The PSWN Program has developed Public Safety WINS: Wireless Interoperability National Strategy to serve as a roadmap for improving interoperability among public safety wireless networks around the Nation. Public Safety WINS provides solutions to the technical and policy issues that are critical to improving interoperability. The program envisions that Public Safety WINS will be used by the entire public safety community, as well as senior leaders at all levels of government, to improve and implement interoperable wireless communication networks. The website offers information about the state of interoperability in the United States and includes an interoperability scorecard for each state (www.publicsafetywins.com). Again, PSWN will no longer exist independently, but can be found as a part of SAFECOM.

6. National Institute of Justice's Advanced Generation of Interoperability for Law Enforcement (AGILE) program (now called CommTech) – conducts policy development, standards, and technology research. CommTech will focus on the needs of law enforcement with a view to all of public safety; focus on research, development, testing and evaluation; and, reflect law enforcement's need for improved information sharing and intelligence - www.agileprogram.org

7. Project 25 – The Association of Public Safety Communications Officials (APCO) is the lead group for Project 25 (P25). P25 is a voluntary standard for the manufacturing of interoperable digital

two-way wireless communications products. The P25 initiative relies on public safety requirements to drive the development of the standards. Radio equipment that demonstrates compliance with P25 is able to meet a set of minimum requirements based on the needs of public safety users. This includes the ability to interoperate with other P25 equipment, so that users on different systems can talk via direct radio contact. P25 systems are available currently; however, the standard continues to be developed.

8. Emergency Interoperability Consortium (EIC) – was established to address the lack of consistent technical interoperability and standards for emergency and incident management.
9. Websites for states that have established shared radio systems include:
    a. Colorado – www.state.co.us/dtr
    b. Delaware – www.state.de.us/pscomm
    c. Florida – www.myflorida.com/myflorida/sto/slers
    d. Kentucky – www.state.ky.us/kirm/800mhz.htm
    e. Michigan – www.mpscs.com or mpscs.com/success.html
    f. Minnesota – dot.state.mn.us/oec/statewide/indez.html and Allied Radio Matrix for Emergency Response (ARMER) - www.armer.state.mn.us
    g. Nebraska – www.doc.state.ne.us/NEVCOM/index.htm
    h. Ohio – www.state.oh.us/das/dcs/marcs/AboutMARCS.htm

Status of Technology in Iowa

The Task Force reviewed the current systems and the assets and opportunities leveraged in today's systems as well as those that may hold potential for the future. The following information was developed within the technology and standards work group and is provided here as part of the analysis of Iowa's current capacity.

Iowa's Wired Assets

- Cable
- Iowa Communications Network - ICN
- Iowa Network Services - INS
- Local Exchange Carriers (LECs)

Iowa's Wireless Assets

- Iowa Department of Transportation - DOT
- Iowa Department of Public Safety - DPS
- Iowa Public Television - IPTV
- RACOM
- Cellular providers using CDMA
- Cellular providers using GSM
- Nextel
- Satellite
- Amateur Radio Service

- Aviation (AM/VHF)
- 4.9 GHz (one of the new designated FCC bands for public safety)
- Utilities (electric, power, water, gas, telecommunications, cable, etc.)
- UHF/VHF Interoperability Frequencies
- 700 MHz Planning Committee
- Law Enforcement Administrator's Telecommunications Advisory Committee - LEATAC

Status of Governance in Iowa

With a strongly-indicated need for a governing authority, the governance work group took a look at existing bodies that play some type of governance role at a local or state level. On the one hand, it was important for the Task Force to be aware of just how many disparate governing bodies are working in the areas of public safety communications. On the other hand, the group was weighing the potential for one of the existing entities to take on the temporary governance role.

Existing Governance Structures or Models Within Local and State Government

1. Local E911 Boards
2. Local Emergency Management Commissions
3. Local Emergency Planning Commission
4. County Fire Association
5. County EMS Association
6. County Law Enforcement Association
7. County Public Health Association
8. County Hospitals and Clinics
9. Local Public Utility Commissions
10. City Councils
11. Boards of Supervisors
12. State Associations of Stakeholders
    a. Iowa Association of Emergency Medical Services (EMS)
    b. Iowa Emergency Management Association (IEMA)
    c. Iowa Chapter of the Association of Public Safety Communications Officials, Intl. (APCO)
    d. Iowa Emergency Numbering Association (IENA)
    e. Fire Service associations (multiple organizations)
    f. Law Enforcement (6+ organizations)
    g. Iowa Hospital Association (IHA)
    h. Iowa Association of Local Public Health Administrators (IALPHA)
    i. Iowa League of Cities
    j. Iowa State Association of Counties (ISAC)
13. Iowa Utilities Board (IUB)
14. Law Enforcement Administrator's Telecommunications Advisory Committee (LEATAC)
15. State E911 Council
16. Homeland Security First Responder Advisory Council
17. Information Technologies and Telecommunications Commission (ITTC)
18. Iowa Homeland Security and Emergency Management Division (HLSEM)

Status of Funding in Iowa

Iowa has no state-level long-term means of sustaining the minimum communications and interoperability requirements to respond to an event of natural disaster or act of terrorism. Funding options are limited in Iowa and are often not consistently available sources. Local, state, and federal governments face budget shortfalls, and competition is stiff among agencies for scarce resources. Nonetheless, local agencies do set aside parts of their budgets, seek grant assistance, and succeed in keeping their systems operational. Upgrading and improving systems is not as easy, and agencies and communities vary on their investment in ongoing improvements.

Current Sources of Public Safety Communications Funding

- Wireless E911 surcharge
- Wireline E911 surcharge
- Agency departments and budgets
- Bonding
- Grants
- Local fundraisers

Status of Awareness and Appetite in Iowa

Few involved in public safety communications would argue that these issues have been at the top of the priority list beyond those agencies directly affected. The issues are difficult to understand; the language of technology and communications is specialized and intimidating to some. An initial challenge is to get stakeholders who may be on the periphery of day-to-day communications systems up to speed. A number of elements play into these challenges.

Level of Cooperation

Public safety agencies traditionally have developed voice communication systems based upon agency needs and spending considerations based upon strategies that do not necessarily consider the need for interoperability beyond the local, immediate, agency need. In general, there is a lack of coordination and cooperation between levels of government and agencies. In past years, there was a focus on developing interoperability between systems. For a variety of reasons and impact of other pressure points for agencies and communities, the focus on interoperability has decreased and been overshadowed by those other priorities. An additional factor in lack of coordination is that many public safety agencies are reluctant to cede management and control of their communication systems due to disparate agency missions and jurisdictional responsibilities. The appetite for collaboration has recently increased in certain areas across the state, so Iowa must build on these successes. In recent years, funding opportunities at the state and federal level have encouraged coordination and partnerships through requirements of the guidance.

Buy-In

Iowa is challenged by strong local control traditions and entrenched cultures and habits of public agencies at all levels. There may be some shortage of automatic endorsement of a statewide interoperability initiative if local stakeholders do not have an ongoing role and input into the design and management of a statewide system. Without a credible, respected, and responsive governing authority that focuses on interoperability and communications issues, buy-in will be difficult to achieve.

Perceived Need

The perceived need for addressing interoperability and communications depends on several factors. The perceived need for updating voice communications systems is much higher than for data or video communications systems. Similarly, the perceived need for updating communications systems is much higher within jurisdictions compared to outside a user's jurisdiction. The local perspective, however, does demonstrate a need for a statewide system. If a jurisdiction needs to be interoperable with bordering counties, a "domino effect" soon impacts every county, bringing it into interoperable regions near it, resulting in a statewide interoperable system.

Policy Environment

Governor's Interest

At the request of the Governor, this Iowa Communications Task Force was formed and asked to provide recommendations regarding how best the state should move forward. That the Governor's has this level of interest in interoperability and communications may indicate a consideration of this as a higher Executive priority than has been demonstrated in the past. The Governor recognizes that the need for effective and interoperable communications has become a local, state and national priority since the events of September 11.

Agency Willingness & Priority

Iowa's state agencies already involved in issues of communications interoperability are, at this time, looking positively on the developments from the Task Force. There is a growing effort for collaborative efforts between state agencies. Notably, the Department of Public Safety and the Department of Transportation are engaging in joint efforts and planning. Homeland Security and Emergency Management Division, as a coordinating agency, is leading this interoperability strategy development. It is expected that HLSEM will continue to be cognizant of the need for these efforts as it allocates federal funds to support local levels to achieve their performance plan priorities.

Legislative Priority

The Iowa Legislature has not had interoperability and communications as one of its primary issues, as might be expected, having focused on economic development and Iowa's business climate during the last several legislative sessions. Iowa policy makers have, however, been considerably more aware of homeland security and emergency risks since the events of September 11, 2001. Because the make-up of the Legislature is at the hands of voters every two years, there may be some opportunities emerging for impacting policy and legislative priority given to communications interoperability.

Federal Policy

As noted earlier, federal policy and funding are changing as the necessary responses to terrorist threats are maturing in Washington, DC. While funding is still being channeled to Iowa, the amount of those funds is likely to diminish for two reasons. First, resources for domestic homeland security efforts are beginning to level out and taper off. Second, funding has been re-allocated to urban areas seen by those in Washington as having higher risks.

Regardless of the amounts Iowa may expect to receive in federal funds from various sources, the expectation around providing moneys to the state and local levels has changed. Federal agencies have adopted fairly strict guidelines about how funds can be used. While this is not uncommon, the implications

for communications interoperability are significant. The requirement that future funding be contingent on use of P25 compliant equipment is one example.

Level of Federal Involvement/Influence

At the federal level, there are policies that have long-term implications for the first responder community across the country. This area has become very dynamic and changes rapidly. The Department of Homeland Security and its various Offices and the Federal Communications Commission are focusing a good deal of attention on the systems and the airwaves.

One effort that has been underway is that the 700 MHz radio spectrum allocated for public safety agencies is blocked by ongoing television broadcast operations. The ability of public safety agencies to utilize the 700 MHz spectrum will depend on how quickly the public replaces its analog televisions with digital televisions. Until recently, the law permitted television stations to remain on the air until December 31, 2006, or until 85 percent of households in the relevant market have access to digital television signals, whichever occurred later. This 2006 goal has since been moved back and the outcome is not yet determined. It should be emphasized that the issue of access to spectrum is of interest to Congress.

The Department of Homeland Security (DHS) has played a significant role financially. According to "Can We Talk? Not Yet, Says an Angry Jane Harman, Targeting Emergency Radio Systems," DHS has distributed "more than $8 billion in fiscal 2003 and 2004 to prepare first responders for terrorism," a large part for communications equipment (Congressional Quarterly, 2003). It is no secret that the level of funding being directed to preparedness and emergency management has increased. Initially, the funding offered at the national level was relatively proportionate across the nation. Recently, as noted above, there has been a shift in focus to urban areas, which has decreased the level of federal funding that Iowa and other rural states can expect in the future.

Iowa has been a recipient of significant federal moneys through various funding streams, designated for various uses. Many local agencies have used these funds to purchase or upgrade communications functions and equipment. Until now, however, they have been left to make these decisions without benefit of a statewide plan for interoperability. Some additional consideration should be given to whether or how some of these funds may be applied to either short term or longer term communications interoperability solutions.

The friction that occurs between state and local government also occurs between the state and the federal government. The requirements developed at the federal level are driving state strategies. States are expected to mesh their plans for interoperability and communications with plans at the federal level. Also challenging to states is the length of time the federal government has taken establishing standards. For example, the P25 initiative, which is discussed in more detail later, has been in development for the past nine years. This does not include the amount of time it will take for implementation.

Manufacturer Influence on the Market

Size of the First Responder Market – The first responder market makes up only a small percentage of the total communications/technology users market. First responder agencies cannot expect to drive the technology/communications industry forward with a small market share. Instead, first responder agencies are influenced by the private market and seem to adapt their technology decisions based on where private industry is headed.

Technologies – In general, the private sector is technologically advanced compared to the public sector. Technologies are thus developed for the private sector leaving the public sector to adjust their requirements in order to procure the most economical technology. There has been ongoing debate in this area regarding whether the shift has occurred from considering the technology a hard asset to its position as a commodity. Regardless of the degree of shift, it is difficult to see a future where the lifespan of certain technologies could reach 30 years.

Importance of the Situational Analysis

Interoperability is a complex issue - it is not the capability to talk to anyone, all the time. It is the capability to talk to whom you need to, when you need to. It is a dynamic environment that changes with each incident, emergency, or threat. This situational analysis lays the foundation for identifying issues and challenges Iowa will face. The issues cannot be isolated from one another because they are interdependent. This situational information has implications as the state looks to develop an integrated and comprehensive approach to addressing interoperability and communications issues.

Challenges to Communications and Interoperability in Iowa

A review of the situational analysis sets the stage for a more detailed consideration of the challenges facing Iowa leaders in moving forward in a productive way. It is tempting to rationalize taking no action because the way is not clear, the technology changes quickly, and the cost is high. The Iowa Communications Task Force quickly looked beyond those excuses to how this group could make the best recommendations for Iowa based on the best information available to them. It selected a multi-discipline approach, involving stakeholders at all levels, including the private sector in appropriate roles, and building upon the existing capabilities and efforts. The Task Force worked to identify the comprehensive set of challenges to prepare the way to development of comprehensive short and long term solutions.

The Task Force decided very early in its discussions that it would not be possible for the State of Iowa to "forklift" the entire system; there is simply no obvious or readily available source of funding for such a complex and costly initiative. A migration strategy was chosen instead that will allow the state to implement some short term solutions while the long term system is being developed over time. Costs will be borne by the state and local stakeholders, and partners, regardless of the strategy. It is not expected to cost less with a migration strategy, but until a detailed implementation plan is developed, it will be difficult to identify the potential costs or savings from any given strategy.

The Task Force initially conducted general discussions including perspectives of first preventer/responder leadership, communications systems managers and operators, technology experts, and systems vendors. From those discussions, consensus on five assumptions was reached. It is those assumptions, later validated through research, which continued to frame the work of the Task Force.

- Gaps in Iowa's first responder/preventer communications systems exist.
- First responder/preventer communications systems throughout the state are inadequate, incompatible and dated.
- There is a lack of coordination and cooperation as various departments, jurisdictions, and disciplines work to improve first responder/preventer communications systems.
- There is a lack of funding available for upgrading first responder/preventer communications systems.
- Planning efforts for improving first responder/preventer communications systems are fragmented.

Further discussion led the Task Force to group the identified issues into three broad categories: governance, technology and standards, and funding. Problem statements were developed to assist in directing the work of the Task Force and the three work groups.

- There is a lack of communication at all levels with no Iowa broad-based group(s) to guide, direct, or advocate with authority for voice, data, and video interoperability.
- There are insufficient guidelines to ensure that new wireless voice, data, or video systems will interoperate at the appropriate physical, transmission, database, or application level. There are interoperability challenges to overcome immediately, but long-term solutions also need to be developed.
- There is no overall sustainable funding source to build, equip, maintain or operate an interoperable communications system, either locally or statewide.

Essentially, the Task Force initially discussed the existing communications systems and described their characteristics through the five assumptions. They followed that up with the problem statements that led deliberations toward detailing solutions and recommendations. In this section of the report, each of the three problem statements are further divided into subsets of challenges to communications and interoperability in Iowa.

It must be noted that while the Task Force focused on each of these major issue elements, each encompasses portions of the others, and there must remain some blurring and overlap. The complexity of the issues prohibit complete isolation of one element from the others. As work groups discussed each of these, their comments quickly included cautions to not proceed too quickly or too deeply until they knew what the other groups were planning.

Governance

Problem statement: There is a lack of communication at all levels with no Iowa broad-based group(s) to guide, direct, or advocate with authority for voice, data, and video interoperability.

The governance issues separated themselves into six fairly distinct pieces that were discussed at length by the governance work group and presented for additional comment to the entire Task Force. These "sub-problems" each require a governing body or some authority to play some sort of role.

- Authority – Iowa lacks a governing authority over communications interoperability.
- Environment – There is inadequate coordination, cooperation, and communication between levels of government and agencies.
- Buy-in – Iowa has a need to develop a strategy for buy-in for communications interoperability.
- Resources – Current data on available assets is incomplete.
- Operations – There is a lack of consistency in operational protocol.
- Funding - Iowa needs capital outlay and operational funding.

Authority – Iowa lacks an overriding governing authority over communications interoperability. The bottom line is that nobody has been able to consistently and cohesively move forward on interoperable communications systems because nobody is "in charge." To be effective, there needs to be a guiding entity that is recognized and perceived to be credible and trustworthy by stakeholders at all levels. In addition, this entity must actually be authorized to act in a governing and authoritative role in matters of policy and operations, technology and standards, and funding. Challenges for Iowa include the strong local control traditions and entrenched cultures and habits of public agencies at all levels.

Environment – There is inadequate coordination, cooperation, and communication between levels of government and agencies. Fragmentation in planning and in systems development is a result of this inadequacy. However, some joint efforts exist, and it is that attitude that must be expanded upon. The role of a governing entity would be to work with users and other stakeholders to encourage and grow a statewide culture of multi-agency or multi-jurisdictional efforts, ultimately leading to better interoperability. Addressing turf issues and competition is a part of this culture change that a governing body would support.

Buy-in – Iowa has a need to develop a strategy for buy-in for communications interoperability. Clearly, if interoperable communications systems are in the future, stakeholders must support the effort. The role of

the governing authority would encompass developing a comprehensive and ongoing strategy, to be implemented by the authority, to engage and involve stakeholders and secure their commitment to this long term initiative. Policy makers must be engaged as well, and assisted by the governing body to advance policies fostering interoperable communications. Training, education, and advocacy should be elements of the strategy for the various stakeholders and policy makers.

Resources – Current data on available assets is incomplete. A structure designated to organize and launch efforts toward increased interoperability would first undertake an assessment to gather current and comprehensive data on available assets and current uses. Given the disparate agencies currently operating many types of systems, an assessment would not be a small undertaking. The governance body would design and lead the assessment effort, providing the findings to all stakeholders as planning and decision making continued.

Operations – There is a lack of consistency in operational protocol. On a very practical level, different users and different agencies use communications systems for varying purposes and in inconsistent ways. While one agency may use 10-codes, others would not understand what they were saying. The governing body would play a role in establishing criteria for use of the interoperable system and the protocols to be observed while using it. Some of these decisions include whether the interoperable system would be available for use in routine matters, or whether it would be activated only for emergency situations. Because these practices and protocols vary so widely across the state, the governing entity will be central to reaching these decisions.

Funding - Iowa needs capital outlay and operational funding. Funding, or lack thereof, is the persistent issue for many initiatives; this is no exception. As a detailed plan for a statewide system of interoperable communications moves forward, the governance body would play a significant role in allocating, distributing, and monitoring funds that come from various sources to the state and are not otherwise directly tied to a system of accountability and alignment with Iowa's plan for interoperability. The governing authority would also take responsibility for overall development and implementation of any long term interoperability initiatives.

Technology and Standards

Problem statement: There are insufficient guidelines to ensure that new wireless voice, data, or video systems will interoperate at the appropriate physical, transmission, database, or application level. There are interoperability challenges to overcome immediately, but long-term solutions also need to be developed.

The issues of technology and standards also divided into diverse and difficult subsets. The technology problems are more easily solved because the technology exists. The most difficult and sensitive issue revolves around standards or guidelines. Deliberations around the sub-problems tied to the technology and standards problem statement also pointed clearly to responsibilities within governance as well.

- Exponential change in technology – As quickly as technology develops and will develop in the future, it is difficult to consider implementation of an interoperable system taking longer that the "lifespan" of the technology.
- Legacy systems – Legacy systems are a reality of our current communications systems.
- Ongoing funding – There is inadequate ongoing funding to support upgrades to technology and communication systems.

- Standards development – Primarily occurring and led at a national level, once standards are developed or under development, interpretation and implementation is left to those at the local and state levels.
- Manufacturer influence – Product development is driven by demand, and the largest demand is not from the public sector, with the single exception of land mobile radio.
- Standards environment is confusing – There is a belief throughout the industry that there are multiple sets of standards and that many are under development.
- No defined system needs for Iowa – In Iowa the operational, functional, user defined needs for interoperable communications have not been fully assessed or determined.
- Acceptable risk – Decisions must be made whether the cost of providing a fully interoperable system in all areas of the state is acceptable if it is entirely possible this type of system may never actually be used.
- Incomplete data on current systems – There is no clear picture of what is currently in place, its level of interoperability, or the level of need.

Exponential change in technology – As quickly as technology develops, and will develop in the future, it is difficult to consider implementation of an interoperable system taking longer than the "lifespan" of the technology.

Legacy systems – Existing communication systems, disparate and inadequate as they may be, will continue to be operated into the near and mid-term future. Transitioning of these systems to new solutions over a period of time is a reality of our current public safety voice communications topography. Communication systems of the past may or may not have been designed with the intent to communicate with another type of system. Over time, the expectation for new systems to be interoperable with those in other agencies and jurisdictions fell away. Iowa, like the other states, is now in a situation where we want to have an interoperable system, but are left with jurisdiction after jurisdiction with inherently nonoperable, and aging, communications systems. Radio systems operating on different equipment and frequencies cannot talk to each other. Likewise, newer digital systems operate on unique proprietary software that prevents the exchange of voice or data communications on the same radio frequency. There still is little direction from the national level to help states know the best ways to move toward interoperability. The need for interoperability and the high cost of a wholesale switch to a new system, regardless of the wisdom of doing so, challenges Iowa to support existing systems in short term solutions and ultimately migrate to an interoperable system.

Ongoing funding – There is limited funding to support upgrades to technology and communication systems. One reason that Iowa's public safety voice communication systems are so fragmented and old – yet still working – is that there is no clear way to get funding for improvements. Funds are needed for planning, upgrades, operations, and maintenance. Without incentives and financial assistance, many local entities have not undertaken the financial burdens to shift to current or interoperable systems. In today's homeland security and public safety world, funding availability drives the spending priorities.
When respondents in the Task Force's statewide survey were asked to respond whether or not they currently have a budget for updating their communications system, a break down by the population size of the respondents' jurisdiction is important to note. The following are the percentage of respondents who answered, "yes" to having a budget for updating their systems by population size of the jurisdiction.

- Under 1,000 – 12.5%

- 1,000 – 4,999 – 22.4%
- 5,000 – 9,999 – 27.1%
- 10,000 – 24,999 – 47.9%
- 25,000 – 50,000 – 40.6%
- Over 50,000 – 51.9%

Standards development – Development of standards is primarily occurring and is led at a national level. However, once standards are developed or under development, interpretation and implementation is left to those at the local and state levels. National standards have been under development for years, with interested stakeholders waiting to see what will happen. Project 25 is a good example. The process is thorough and has been undertaken with attention to detail, taking nearly a decade so far. Like any new standard, adoption is an ongoing process. For instances some prominent locales, such as New York City and Los Angeles are developing interoperability plans but have not specified Project 25 as the standard. Individual agencies within those cities are given the opportunity to make that decisions independently. So, within New York and Los Angeles, there are agencies using P25 compliant radios and agencies that are not. The governing authority for Iowa's interoperability initiatives will need to address this critical decision early in its work.

Manufacturer influence – Standards development is being driven by users. Once the users have defined their requirements the manufacturers are brought in to verify if the technology exists to meet the requirements. Their mission is different than that of public safety. Common sense says that manufacturers need to sell product and create a profit. The public safety communications systems market, as a portion of the overall communications market, is small. However Land Mobile Radio is a significant, specialized market within the communications industry with many corporations dedicated to serving only that market segment. Research, development, and production is public safety-specific. Within these constraints and those of the entire issue of standards and legacy systems, Iowa must find a direction for interoperability that fits the state's needs.

Standards environment is confusing – Multiple sets of standards exist or are under development at the national level by various groups and agencies. Most notable for the Task Force discussion is Association of Public Safety Communications Officers Project 25 (APCO Project 25) that is being deployed predominantly in North America and the South Pacific. There is much confusion around the completion of these or any standards. In reality, standards are never really completed as they are constantly in a state of development, and they become activated for a stated period of time.

Acceptable risk – Decisions must be made about whether the cost of providing a fully interoperable system in all areas of the state is acceptable if it is entirely possible this type of system may never actually be used. The Task Force defined interoperability as …*the ability for public safety and public services to talk and/or share data in real time on demand, when needed, and when authorized.* This is not talking to everyone in the state all the time. The Task Force survey showed that stakeholders do not demand nor need the system to be available for their use at all times. Again, these types of determinations must fall to a governing body that would take into consideration the views of stakeholders across the state, in different situations.

No defined system needs for Iowa – In Iowa it is not clear what is needed for a statewide interoperable system. The mission of this Task Force sets forward a goal, but that goal is not specific enough on which

to base a decision to adopt standards. This situation is a bit like the chicken and the egg, or eggs. Iowa cannot afford a wholesale change to a new system, so the state must address legacy systems at the same time it considers plans for a future fully integrated system. In addition, there is little guidance and much confusion about standards that are available. But, since Iowa has not been able to apply any guidance to decide what is needed, little has been accomplished. Until there is a governing authority dedicated to communications interoperability for state and local agencies, there is little likelihood of adopting an appropriate set of standards soon, if it can be determined what is appropriate for Iowa. Iowa does not yet know where it needs to be in the end.

Incomplete data on current systems – There is no clear picture of what is currently in place, its level of interoperability, or the level of need. Faced with decisions on equipment replacement, many communities have proceeded independently to purchase interoperable linking solutions that will provide a temporary fix. As Iowa moves to a single system, a transition strategy should be developed based on what equipment, technologies, and systems are currently in use. You need to know your starting point to be able to get efficiently to your goal.

Funding

Problem statement: There is no overall sustainable funding source to build, equip, maintain or operate an interoperable communications system, either locally or statewide.

Some people believe, "It's all about money." In the case of interoperable communications systems, only part of it is about money. Throughout the deliberations of the Task Force and all three work groups, the issue of funding lurked in the minds of the members. The interconnections of funding with governance and technology/standards was even more clear when direct discussions of funding were conducted. Unless one has a notion of what the system(s) will be and do, and until one is certain of how to manage the system long term (not to mention getting it off the ground), it will be difficult to obtain funding.

Nonetheless, the discussion moved forward to identify several funding sub-issues:

- Scope of funding should be determined
- Funding mechanisms need to be determined
- Management of current funds – There often are ways that current practices can be altered to improve services and systems that may not require additional funds.
- Other impacts – Where funding decisions are concerned, there are peripheral and indirect issues to consider.
- Funds required for the initiative

Scope of Funding – Funding needs range from one-time to continuing needs and from start-up to maintenance requirements. They include such items as policy oversight of the system to training users. Other considerations include systems-wide funding, such as officer through command, intra-command, and inter-command communications through regional and statewide capability.

In an effort to illustrate the diversity of types of needs to implement the initiative over the short and long term, the following needs were identified:

- Governance
    - Governing authority operations

  - Governing authority space
  - Governing authority personnel

- Program and project administration and implementation for interoperability projects at all levels of the systems
  - Staff
  - Planning
  - Assessments
  - Equipment inventory
  - Site survey
  - Evaluations of people and skill levels
  - Engineering
  - Consultant
  - Equipment
  - Software
  - Technology
  - Maintenance
  - Operations
  - Upgrades

- Training and training incentives

- Education and awareness for public officials at all levels

Funding mechanisms need to be determined. All options should be on the table for funding, and new options created. At present, it appears most available funding is flowing through the US Department of Homeland Security with required uses for terrorism preparedness. While this may continue for some years, the shift in priorities to urban areas does not help Iowa's position. The group agreed funds from any federal funding stream cannot be planned on for future investment in interoperability. State funds, too, are difficult to establish in a continuing stream. Many local agencies fund their public safety communications systems through their budgets or through an E911 surcharge. Local funding, too, has been reduced in recent years, and an approach taken by funders toward local governments is shifting toward encouraging municipalities into greater regionalization of services.

Management of current funds – There often are ways that current practices can be altered to improve services and systems that may not require additional funds. The executive branch and legislative initiatives which have included incentives encouraging the elimination of redundant services, consolidation, and regionalization have been successful and can be applied to resolving communications interoperability issues. Making better use of existing funds will be encouraged through reduction of redundancy, consolidation of services (for example, PSAPs), partnerships and collaborations, private sector involvement, and reallocation of existing funds.

Other impacts – Where funding decisions are concerned, there are peripheral and indirect issues to consider. There currently is no funding component to incent change by any stakeholders. When discussing and making key decisions about a large taxpayer investment in a communications system,

issues of state vs. local and public vs. private interests will quickly emerge. Political considerations may likely play a greater force in the ultimate decisions than the Task Force would hope.

Funds required for the initiative. This question cannot be answered at this time. Until standards are selected, a plan is completed, assessments and inventories are analyzed, and specifications for short and long term solutions are defined, a price tag cannot be put on the long term, and ongoing, set of projects that will comprise Iowa's interoperability initiative. Recall that Woodbury County received $6 million for a multi-disciplinary, multi-level interoperability demonstration project in a small region of Iowa, and across the state borders. Remember, too, that estimates are $200 million for a 800MHz trunked radio system for voice communications. Suffice it to say at this point, the cost is high for Iowa to achieve the mission set before the Task Force. That the cost cannot be more closely defined is now, in itself, an issue.

As the Task Force worked through the three problem statements and discussed in detail the sub-issues that emerged, the best solutions began to emerge. In the next section, 22 recommendations are listed: 12 for the short term, and 10 for the long term. In developing these recommendations, the Task Force looked at governance, technology and standards, and funding as a whole, thinking of how Iowa can best move forward. As part of this process it set aside some options for solutions as not as appropriate for the state. These are included in the final section of this report, immediately following the agreed-upon recommendations.

Strategic Recommendations

The Iowa Communications Task Force reached consensus on a set of recommendations that addresses both short term and long term interoperability needs. The Task Force cannot overemphasize its position that these recommendations be considered as a whole, and that a fragmented approach to implementing these recommendations would contribute to maintaining Iowa's status quo fragmented communications systems.

In its analysis of the state, regional, and national situation, and in consideration of the challenges facing Iowa in solving interoperability problems statewide, the Task Force identified three distinct but highly interrelated areas for focused discussion. Much of the information processed and deliberations occurred around the areas of governance, technology and standards, and funding.

Though the three areas received individual focused attention, and specific recommendations were developed to address these categories, it was consistently noted in Task Force deliberations that these elements cannot wholly be separated from one another. Much like the oft-used three-legged stool analogy, the whole of the recommendations cannot stand alone without the support from all of these elements.

The Task Force wove the impacts of governance, technology and standards, and funding throughout the recommendations. It will be clear to the reader that the Task Force embraced a practical approach to interoperability, while accepting no excuses that the daunting initiative could be accomplished. That said, the group acknowledges that it is not possible to make a wholesale change, so that efforts must immediately be undertaken to address interoperability for legacy systems (existing systems in use).

As indicated earlier in this report, this type of "forklift" approach to changing our system is unworkable for the state, primarily because of the price tag. The Task Force determined very early that Iowa would need to take a migration approach, which would allow the cost to be spread over multiple years. The difference in cost – paying all at one, or spreading it out – is likely to be relatively insignificant. Also, by taking a migration approach, the stakeholder involvement and buy-in may be greater.

With an immediate start to the initiatives recommended here, the Task Force estimates it will require sustained, ongoing planning efforts to meet the ever changing environment for interoperable communications and to implement the statewide interoperable communications system for voice, data, and video. This report provides a backdrop and specifies direction and strategies to move Iowa forward right away and in a manner that will allow system implementation in the coming months and years.

Recommendations are not listed in a priority order since the Task Force believes they should be addressed as a package. The organization of the list reflects type of activity and, to a lesser degree, the time frame in which it must be undertaken. Immediately following this list of short term and long term recommendation statements is a second section. Included in this more detailed section is information explaining each recommendation and its links to the overarching mission.

Following are the recommendations of the Iowa Communications Task Force. The first ten recommendations address short-term efforts required in the first three, or fewer, years to provide more immediate solutions that will bridge systems until the longer term solutions can be implemented. The remaining twelve recommendations build and transition from the early efforts to establish a fully

interoperable communications system. These long term recommendations must also be undertaken early as they will require many years to implement. There is no correlation between the temporary authority and full implementation of the short term recommendations. It is fully expected the temporary authority will turn over to the permanent authority its initial work on both all recommendations.

Short Term Recommendations

Short term recommendations will be implemented and completed within the first three years of the initiative. The temporary authority and the permanent authority are responsible for implementation of the recommendations in this progressive effort to transition the temporary authority within the first few months to a permanent body.

Short Term Recommendation 1:
The Governor should designate a group as a temporary communications interoperability authority with adequate staff support and resources to complete its initial mandate. The Task Force recommends the Law Enforcement Administrator's Telecommunications Advisory Committee (LEATAC) as the organizing authority during the early stages of the initiative.

Short Term Recommendation 2:
The temporary authority will immediately consider the structure and organization of the permanent authority and seek appropriate legislative or executive action to establish the permanent authority that includes an adequate level of staff support.

Short Term Recommendation 3:
A permanent communications interoperability authority will be designated. Establish a permanent overview authority representing multiple disciplines, such as or similar to the model for a State Interoperability Executive Committee (SIEC) recommended by SAFECOM. The authority should be provided with adequate staff support and resources to continue the work begun by the temporary authority.

Short Term Recommendation 4:
The authority should undertake initial efforts over the first 6 – 18 months, performing the following functions:

- Develop and implement organizational and operational elements of the authority, including advising on the composition and role of the permanent authority and on staffing.
- Promote additional opportunities or capabilities for all agencies to interact and develop working relationships and work solutions. Work solutions will move the initiative toward performance and service levels.
- Develop and begin implementing a comprehensive strategy to engage support of stakeholders and policy makers that will have an early impact on communications interoperability.
- Determine the activity level of other entities within the state and what resources they are using.
- Initiate discussion and planning meetings throughout the state and include all key players that may potentially be involved in the system. Allow them the opportunity to determine the appropriate policies and protocols so that the interoperable system can function properly.
- Obtain, leverage, and manage funding to launch the authority and establish the project(s).

Short Term Recommendation 5:
The authority should seek and obtain initial funding for its operations and should develop and begin implementation of a long-term plan for sustainability of communications interoperability initiatives including one-time, continuing, and grant funding.

Short Term Recommendation 6:
The authority should conduct a policy scan to identify funding and organizational barriers to and assets for improved communications interoperability.

Short Term Recommendation 7:
The authority should examine legislative solutions to address the funding and resource challenges of providing the recommended short term solutions and communications interoperability initiatives.

Short Term Recommendation 8:
The authority should establish and fund consistent, periodic training programs for current communications systems, and integrate training as part of any plan for new communications systems and equipment.

Short Term Recommendation 9:
The authority should establish and fund an ongoing program for stakeholder education, public education, and public official education to create and maintain support for the issue and for initial activities and investments in communications interoperability solutions.

Short Term Recommendation 10:
The authority should ensure that, relating to on-the-scene communications, radios that can communicate on mutual aid channels (UHF, VHF, and 800MHz) are linked by a mobile or fixed site system. The state should have the ability to pre-deploy a certain number of linking systems, strategically placed geographically throughout the state, which can be dispatched when needed. This short term solution should include the necessary staffing and training elements to support this system.

Short Term Recommendation 11:
The authority should ensure that, relating to command-to-control communications, a voice over IP (VOIP) device should be hooked to all Public Safety Answering Points (PSAPS) that is reliable, secure, and connects all stations across the state.

Short Term Recommendation 12:
The authority should immediately provide incentives for regionalization for communications interoperability whenever possible.

Long Term Recommendations

Long term recommendations will be implemented as soon as appropriate in the first year and will be completed in succeeding years of the initiative. Some recommendations will require ongoing efforts. The permanent authority is ultimately responsible for implementation of all recommendations in this statewide communications interoperability initiative.

Long Term Recommendation 1:
The authority should develop, implement, and oversee policy, operations, and fiscal components of the communications interoperability efforts at state and local levels as well as coordinate with the federal level. Its functions will include:

- Implement and maintain organizational and operational elements of the authority, including staffing and program activity.
- Review and maintain the performance and service levels on behalf of the operating agencies.
- Implement a dynamic program to ensure long term viability for sustained interoperability solutions influencing operations and control.
- Create or identify available and/or future assets that will leverage resources and/or provide incentives for communications interoperability.
- Monitor and maintain the established appropriate policies and protocols to ensure the interoperable system functions properly.
- Allocate and oversee state appropriations or other funding received for communications.

Long Term Recommendation 2:
The authority should continue to identify sources of ongoing, sustainable, longer-term funding for communications interoperability projects and obtain adequate funding in accordance with the sustainability plan.

Long Term Recommendation 3:
The authority should examine legislative solutions to address the funding and resource challenges of implementing the long term solutions for statewide communications interoperability initiatives.

Long Term Recommendation 4:
The authority should develop an integrated, statewide system that allows for shared systems and costs; takes into account infrastructure, improving reliability, and addressing liability concerns of the shared network; is developed considering the importance of public/private partnerships; and identifies and recognizes potential barriers.

Long Term Recommendation 5:
The authority should look beyond voice systems to data and video systems. The development of such systems takes into consideration the following qualities:

- Packet-based,
- Trunk-based,
- Data interchange standard, and
- Need for flexibility.

Long Term Recommendation 6:
The authority should expand, maintain, and fund consistent, periodic training programs for current communications systems and for the statewide integrated system as it is put in place. Training should be included as part of any plan for new communications systems and equipment.

Long Term Recommendation 7:
The authority should expand, maintain, and fund stakeholder education, public education, and public official education programs to demonstrate the value of the short term solutions, to continue to maintain the priority level for the long term solutions, and to understand the funding levels required to implement the statewide integrated public safety communications system.

Long Term Recommendation 8:
The authority should identify and encourage long-term partnerships and cooperation among appropriate government entities at all levels.

Long Term Recommendation 9:
The authority should identify, promote, and provide incentives for appropriate collaborations and partnerships among agencies, businesses, organizations, and associations, both public and private.

Long Term Recommendation 10:
The authority should provide incentives to support maintenance and expansion of regionalization efforts, underway or anticipated, that advance implementation of the long term communications interoperability initiative.

Recommendations and Detailed Justification

For each of the twenty-two recommendations, the Task Force considered the situation and issues, and developed the best-case practical response. Included in the following section is information on the relationship to the Task Force mission, a rationale for the recommendation, expected short term or long term outcomes, steps required to implement, agencies and entities involved, and general types of resources required. For information about other ideas discussed by the Task Force but not recommended, see the section *Options Considered*, immediately following this portion of the report.

Short Term Recommendations

Short Term Recommendation 1:
The Governor should designate a group as a temporary communications interoperability authority with adequate staff support and resources to complete its initial mandate. The Task Force recommends the Law Enforcement Administrator's Telecommunications Advisory Committee (LEATAC) as the organizing authority during the early stages of the initiative.

Relationship to mission:
For a statewide strategy to be implemented, there must be designated leadership and credibility, as well as the authority to move forward. A temporary authority allows an early start-up, rather than experiencing delays while the details of governance are worked through.

Rationale:
Communications interoperability requires focused and deliberate efforts to be successful. It cannot be achieved in the current fragmented approach. While some progress has been made, creating a statewide capacity of interoperable systems requires the organizational structure and authority that is sustained over time and governed with representation of those stakeholders who use the system. LEATAC is an appropriate organization to serve in this temporary capacity as it already involves many stakeholders who work in positions involving voice interoperability. As a volunteer committee, there will also be a need for

designated staff to provide support to the temporary authority. LEATAC, as it operates in today's environment, has matured and broadened its membership well beyond law enforcement over the years. The membership currently represents the key stakeholders necessary in an authority. While LEATAC currently is not charged with any authority, it would be feasible for this group to accept the temporary authority for organizing the communications interoperability permanent authority. LEATAC is currently undergoing an administrative law review which may be timely in launching this effort.

Expected short term outcomes (1 – 3 years):

- The temporary authority should be designated within three months of a decision to launch the effort.
- The temporary authority should complete its work and turn over authority to the permanent authority as soon as possible and certainly within six – eighteen months from its formation.

Steps needed to implement recommendation:

- Decision by the Governor to move forward as soon as possible and practical.
- Appointment of LEATAC as the temporary authority for Iowa Communications Interoperability within three months of decision to move forward.
- Review of the stakeholder groups represented on LEATAC to ensure participation by every discipline or function necessary for comprehensive planning and implementation.

Agencies, organizations, and other entities involved:

- Governor's Office; HLSEM, DPS, DOT, ICN, IPTV, and other state agencies; and representatives of stakeholder disciplines and functions, such as communication centers, local and county law enforcement, fire service, EMS, public works.

Types of resources needed to implement recommendation:

- Funding for start-up effort, organizing the authority, and human resources.
- Human resources to serve on the authority and as staff.
- Space and operational requirements.

Short Term Recommendation 2:

The temporary authority will immediately consider the structure and organization of the permanent authority and seek appropriate legislative or executive action to establish the permanent authority that includes an adequate level of staff support.

Relationship to mission:

This recommendation addresses the long term sustainability of the authority and the statewide interoperability initiatives.

Rationale:

The statement justifying establishing the temporary authority remain valid for the long term. Without a governing structure and a designated focus on improving communications interoperability in Iowa, it will not happen. A permanent authority is necessary because this is not a one-time project that is finished and then is never revisited. Like good planning and dynamic technology, this statewide system will require

ongoing management, improvement in operations, and modifications in keeping with the state's needs and cost-effective ways to achieve and retain statewide interoperability for voice, and for data and video. Because the permanent authority will need to address complex issues on an ongoing basis, LEATAC is not the best selection for this authority. Rather, this should, from the outset, be seen as an entity requiring dedicated staffing and financial resources to accomplish its charge.

Expected term outcomes:

- The permanent authority should be designated within six to eighteen months of a decision to launch the effort.
- The temporary authority should transition authority to the permanent authority as soon as possible.
- The permanent authority will then carry on the work of the temporary authority and undertake the full functions designated to it.

Steps needed to implement recommendation:

- Establish the permanent authority for communications interoperability within the Code of Iowa and implement rules.
- Appoint the Board as a policy making body and retain staff for support and program management.

Agencies, organizations, and other entities involved:

- Governor's Office; Legislature, HLSEM and other state agencies; and representatives of stakeholder disciplines and functions, such as communication centers, local and county law enforcement, fire service, EMS, public works.

Types of resources needed to implement recommendation:

- Funding for continuation of start-up, program management and implementation, assessment and planning, and human resources.
- Human resources to serve on the authority and as staff.
- Space and operational requirements.

Short Term Recommendation 3:

A permanent communications interoperability authority will be designated. Establish a permanent overview authority representing multiple disciplines, such as or similar to the model for a State Interoperability Executive Committee (SIEC) recommended by SAFECOM. The authority should be provided with adequate staff support and resources to continue the work begun by the temporary authority.

Relationship to mission:

For implementation of the statewide strategy to be sustained, there must be designated formal leadership with the authority over Iowa's communications systems. Transitioning from a temporary authority, a permanent authority would undertake institutionalizing its functions within the preventer/responder disciplines, state government, and local officials.

Rationale:
Achieving statewide short and long term interoperable communications when needed and on demand requires high priority focus and integrated governance, funding, and technology initiatives to support an sustainable system(s). The need for ongoing relationships with stakeholder entities, monitoring progress, priority setting, standards development, performance expectations, funding allocation are a partial list of functions that will be required to encourage decision-makers at the state and local level to move toward a statewide interoperable system. The authority is also necessary to work with policy makers at all levels to ensure current and future policy is in alignment with the direction of interoperability in Iowa. With its eye on Iowa's needs and emerging technologies, the authority will have the responsibility to ensure that Iowa's communication systems take advantage of technology to move the state toward data and video interoperability.

On a day-to-day basis, the authority will provide a single policy body, staffing appropriately to manage projects and handle other functions. There is strong agreement within the Task Force that the authority is a critical element that must be carefully constructed, funded adequately, and allowed to implement the recommendations included in this report.

Expected long term outcomes (more than 3 years):

- Clear priorities, guidance, standards, and incentives for Iowa to move to interoperable communications systems.
- Reliable, secure, and affordable solutions implemented to link legacy systems.
- Expansion of data and video interoperability, including from-the-scene video.

Steps needed to implement recommendation:

- Design of the authority, including the "board" level, staff, and functions.
- Creation of the authority by the Legislature.
- Initial and long term funding obtained, including sustainability plans.
- Appointments and hiring.
- Transition from the temporary authority.

Agencies, organizations, and other entities involved:

- Authority, Governor's Office, Legislature, stakeholders.

Types of resources needed to implement recommendation:

- Expertise on designing the scope, function, and span of control of the authority.
- Funding for start up and operations ongoing.
- Appointed board.
- Paid staff.

Short Term Recommendation 4:
The authority should undertake initial efforts over the first 6 – 18 months, performing the following functions:

- **Develop and implement organizational and operational elements of the authority, including advising on the composition and role of the permanent authority and on staffing.**
- **Promote additional opportunities or capabilities for all agencies to interact and develop working relationships and work solutions. Work solutions will move the initiative toward performance and service levels.**
- **Develop and begin implementing a comprehensive strategy to engage support of stakeholders and policy makers that will have an early impact on communications interoperability.**
- **Determine the activity level of other entities within the state and what resources they are using.**
- **Initiate discussion and planning meetings throughout the state and include all key players that may potentially be involved in the system. Allow them the opportunity to determine the appropriate policies and protocols so that the interoperable system can function properly.**
- **Obtain, leverage, and manage funding to launch the authority and establish the project(s).**

Relationship to mission:
This recommendation designates the authority's responsibilities to take action to establish a plan, begin implementation of some efforts on statewide assessment and buy-in, and secure start-up funding. It is wholly focused on priorities of the mission.

Rationale:
This recommendation serves as the job description of the temporary authority. Through performance of these functions, a statewide effort will be launched. Without a focused and balanced approach, the effort will not be successful in the long term in addressing key issues effectively and efficiently in Iowa.

Expected short term outcomes (1 – 3 years):
- Begin to address issues and conduct activities to:
    - Establish an Iowa Communications Interoperability Authority with representation of stakeholders.
    - Encourage state and local entities to undertake cooperative efforts toward common systems.
    - Secure stakeholder and policy maker buy-in to the effort.
    - Launch an assessment of current systems and interoperability capacity.
    - Identify operational policies and protocols serving as best practices.
    - Receive funding to proceed with this initiative.

Steps needed to implement recommendation:
- Establish legal organization
- Designate leadership
- Define accountability

- Begin a strategic implementation plan for the broad effort.
- Determine role and scope of responsibility.
- Allocate responsibility, monitor progress, and review results.

Agencies, organizations, and other entities involved:

- LEATAC, Governor's Office; HLSEM, DPS, DOT, ICN, IPTV, and other state agencies; stakeholders around the state, such as communication centers, local and county law enforcement, fire service, EMS, public works.

Types of resources needed to implement recommendation:

- Funding for start-up activity and organization.
- Involvement of the stakeholder community statewide.

Short Term Recommendation 5:
The authority should seek and obtain initial funding for its operations and should develop and begin implementation of a long-term plan for sustainability of communications interoperability initiatives including one-time, continuing, and grant funding.

Relationship to mission:
An interoperable communications system does not exist in Iowa. It will be costly to achieve the mission; funding strategies are critical from the outset.

Rationale:
Communications projects are costly. Without a long-term plan for funding this initiative, there will be little hope of sustaining and maintaining a statewide system(s) for very long, assuming Iowa is willing to fund its development at all. Success of a funding strategy is increased by diversifying the types and sources of revenue. This speaks to the need for approaching funding sources outside of the more common tax or surcharge avenues.

Funding is needed for a number of components for improving communications interoperability:

- Establishing the authority.
- Sustaining governance efforts.
- Staff.
- Office and organizational infrastructure.
- Assessing current assets and resources.
- Planning.
- Implementation.
- Training.
- Operations.
- Maintenance.
- Upgrades and improvements.
- Expansion of the system statewide.

Sources of funding to be investigated might include the following:

- 911 surcharge structure, its uses, and distribution formula
    - wired
    - wireless
- Community Oriented Policing Services (COPS) Grants
- Fire Department Grants
- Law Enforcement Protection Grants
- Office of Domestic Preparedness (ODP)
- Other services that could be surcharged, for example, VOIP
- Other communications services that may be able to provide funding, for example, the Iowa Communications Network (ICN)
- Science and Technology Grants from Department of Homeland Security (DHS)

Expected short term outcomes (1 – 3 years):

- Sustainable funding plan for communications interoperability.
- Funds received to allow start-up.

Steps needed to implement recommendation:

- Temporary authority establishes planning guidelines and process, including leadership.
- Conduct planning process, including designating parties for implementation of specific elements.
- Begin implementation of the long-term funding plan.

Agencies, organizations, and other entities involved:

- Authority, other as designated by the authority.

Types of resources needed to implement recommendation:

- Resources to complete the planning process.
- Human resources to conduct the process.

Short Term Recommendation 6:
The authority should conduct a policy scan to identify funding and organizational barriers to and assets for improved communications interoperability.

Relationship to mission:
Policy can either help or hinder progress toward communications interoperability. To launch a long-term initiative it is imperative to understand the current policy opportunities and constraints.

Rationale:
Federal, state, and local policy needs to encourage opportunities for establishing and maintaining interoperable communications systems. To make the kinds of changes suggested in this set of recommendations will require flexible policies regarding the governing authority, technology and standards, and the focusing of adequate resources to achieve measurable progress.

Expected short term outcomes (1 – 3 years):

- Document outlining policy opportunities and issues.
- Plan to address constraints and establish flexible policy for voice, data, and video interoperability.

Steps needed to implement recommendation:

- Evaluate current laws to identify any legislation or regulation that may create barriers to establishing collaborations or sharing of resources; modify those laws as needed.
- Identify the reasons current laws that prevent sharing were enacted and examine whether those issues are still valid in the current environment.
    - Access issues
    - Capacity issues
    - Security issues
- Place priorities on certain policy constraints that must be addressed first.

Agencies, organizations, and other entities involved:

- Authority, others as designated by the authority.

Types of resources needed to implement recommendation:

- Human resources to complete the scan and provide findings in written form to the authority.

Short Term Recommendation 7:
The authority should examine legislative solutions to address the funding and resource challenges of providing the recommended short term solutions and communications interoperability initiatives.

Relationship to mission:
A statewide interoperable communications system(s) is costly. Because these systems are provided largely to ensure the public safety, the public sector holds significant responsibility for funding.

Rationale:
Legislative solutions may be one of the most flexible and easy sources of funds to obtain in the effort to launch this effort in Iowa. With other homeland security and emergency management issues requiring policymaker attention at the this time, the heightened profile and priority of communications interoperability may help to move state appropriations in the necessary direction.

- Enact legislation to provide an initial direct appropriation to establish the permanent governing authority.
- Authorize the permanent governing authority to undertake program efforts, staffing, organization of the authority, and raise interoperability issues to the top of the state's priorities list.
- Eliminate legislative or regulatory constraints to encourage and allow for blending of federal or state funding streams and/or sharing of resources among agencies at all levels.
    - HLSEM – Iowa Homeland Security and Emergency Management Division
    - ICN – Iowa Communications Network
    - IDOT – Iowa Department of Transportation

- IDPH – Iowa Department of Public Health
- IDPS – Iowa Department of Public Safety
- IPTV – Iowa Public Television
- ODP – Office of Domestic Preparedness, US Department of Homeland Security (DHS)

Expected short term outcomes (1 – 3 years):

- A current policy agenda at each level of government: federal, state, and local.
- Policy advocacy by stakeholders.

Steps needed to implement recommendation:

- Using the long-term sustainability plan and the policy scan, develop a policy agenda.
- Establish relationships with key elected officials as appropriate.
- Undertake effective grassroots advocacy efforts, using need and data to support the position for additional funding for interoperability.
- Develop proposals for specific projects statewide or on a regional basis.

Agencies, organizations, and other entities involved:

- Authority, Governor's Office, legislative leadership, stakeholder groups and organizations.

Types of resources needed to implement recommendation:

- Human resources.
- Knowledge regarding policy development.

Short Term Recommendation 8:
The authority should establish and fund consistent, periodic training programs for current communications systems, and integrate training as part of any plan for new communications systems and equipment.

Relationship to mission:
Training is a critical element of maximizing communications capability.

Rationale:
With a diverse set of users of communications systems comes a broader span of understanding and ability to use those systems. Training will become even more important as systems migrate toward a statewide standard for interoperability. Training programs for all users must be designed as part of ongoing requirements that include practice in using the systems as well as refresher trainings. Funding is needed; a portion of funding for equipment purchase might be allowed to be used for these initial training needs or vendors might provide training as part of their contracts.

Expected short term outcomes (1 – 3 years):

- More efficient and consistent procedures in use of existing equipment.
- Better use of capabilities of current equipment that may enhance interoperability.

Steps needed to implement recommendation:

- Integrate training element with the long-term funding plan and implementation.
- Establish training needs for all disciplines and levels. Consider including topics such as promoting use of and training on how to use mutual aid, Iowa Ops, and fire aid channels.
- Develop curricula and expected performance levels.
- Identify and train trainers.
- Promote and deliver training.

Agencies, organizations, and other entities involved:

- Authority, state agencies, training experts, stakeholder disciplines.

Types of resources needed to implement recommendation:

- Funding for training assessment, curriculum development, promotion, and training delivery.
- Human resources: curriculum developers and trainers.

Short Term Recommendation 9:
The authority should establish and fund an ongoing program for stakeholder education, public education, and public official education to create and maintain support for the issue and for initial activities and investments in communications interoperability solutions.

Relationship to mission:
Investment in communications interoperability and new systems, training, operations, and maintenance can only come with recognition of its importance and the political will to make change.

Rationale:
To create lasting improvements to the state's communications systems, ongoing investments are required. Early in this statewide effort, it will be very important to generate buy-in among stakeholder groups, public officials at all levels, and the public. Each may be reluctant to support these activities for different reasons. Buy-in and support may be easy to gain in theory, but when the time comes to actually change or to make the financial investment, that support may not be as strong.

Stakeholder buy-in includes such elements as willingness to participate in multi-jurisdictional or multi-discipline projects, reducing the importance of "turf," and adopting common procedures and performance expectations. Public official buy-in involves learning enough about communications interoperability, the risks of the status quo, and how to progress in making change. The public, ultimately the strongest constituency in setting policy, needs to understand the impact on their lives and the opportunities to improve community and statewide public safety.

Members of the Task Force expressed an interest in and a willingness to continue in some role in delivering appropriate messages and participating in policy maker and public education efforts.

Expected short term outcomes (1 – 3 years):

- A strategic plan for stakeholder education, public education, and public official education.
- Heightened awareness of and interest in interoperable communications.

Steps needed to implement recommendation:

- Develop a strategic plan for stakeholder education, public education, and public official education.
    - Include messages and materials targeting these critical audiences.
    - Create an awareness of both the critical importance and the need for Iowa to invest in interoperable communication systems.

Agencies, organizations, and other entities involved:

- Authority and stakeholder organizations at local and state levels.

Types of resources needed to implement recommendation:

- Funding for planning.
- Planners.
- Stakeholders to assist in plan development.

Short Term Recommendation 10:
The authority should ensure that, relating to on-the-scene communications, radios that can communicate on mutual aid channels (UHF, VHF, and 800MHz) are linked by a mobile or fixed site system. The state should have the ability to pre-deploy a certain number of linking systems, strategically placed geographically throughout the state, that can be dispatched when needed. This short term solution should include the necessary staffing and training elements to support this system.

Relationship to mission:
Creating interoperable systems such as this is the purpose of this effort and the heart of the mission. This recommendation addresses short term solutions for voice communications.

Rationale:
A first step in improving communications interoperability, this option is cost-effective (estimated to be $500,000) and could be implemented in one year. It is made even more simple and cost-effective as the current system includes many VHF users who would not require patches. In addition, many of those operating on bands other than VHF have patch capability within their operational areas.

Solutions are effective and available off-the-shelf. This type of effort, particularly in determining strategic placement of linking systems across the state, encourages the types of regional approaches that can create efficiencies as proposed in Short Term Recommendation 10. As a short term solution to some interoperability problems for voice communications, this option plays into planning and pilot projects underway in the state.

In addition, this recommendation encourages the state to make use of the new radio channels designated by the Federal Communications Commission (FCC) for mutual aid in the VHF, UHF, and 800MHz frequency bands. The channels can provide interoperable communications statewide through permanent fixed crossband stations in populated areas and with the deployable mobile crossband repeaters where needed.

This solution is not seen as viable for the long term as it does not solve the problems of a lack of coordination in planning, the need for increased coverage, the need to eliminate dead spots, or allow for

upgrades of systems to solve the problem. It also does not move Iowa toward the goal of implementing a single, statewide, interoperable, on-demand system for voice, data, and video.

Expected short term outcomes (1 – 3 years):

- Interoperable radios for on-the-scene voice communications using mutual aid channels.

Steps needed to implement recommendation:

- Assess level of need for mobile linking systems.
- Address interoperability technical issues with potential local users.
- Determine placement of mobile linking systems.
- Procure and place system.
- Determine dispatch criteria and procedures.
- Train stakeholder disciplines to use the linking systems.

Agencies, organizations, and other entities involved:

- Authority, stakeholder groups, state agencies, funding source.

Types of resources needed to implement recommendation:

- Funding for assessing, planning, purchasing, and training.

Short Term Recommendation 11:
The authority should ensure that, relating to command-to-control communications, a voice over IP (VOIP) device should be hooked to all Public Safety Answering Points (PSAPS) that is reliable, secure, and connects all stations across the state.

Relationship to mission:
Creating interoperable systems such as this is the purpose of this effort and the heart of the mission. This addresses short and medium term solutions for voice communications.

Rationale:
Using available technology, Iowa would be able to use legacy systems to continue progress in improving the ability for command-to-command communications regardless of the equipment used at the command level. The VOIP platform uses existing technology to link communication centers across the state. This can be achieved at a reasonable cost and provide an effective short term voice communications solution. Because the state E-911 Council is currently involved in discussions about VOIP and the future of 911 technology, this solution may be similar and timely; a link with that system could be considered.

This solution is not seen as viable for the long term as it does not solve the problems of a lack of coordination in planning, the need for increased coverage, the need to eliminate dead spots, or allow for upgrades of systems to solve the problem. It also does not move Iowa toward the goal of implementing a single, statewide, interoperable, on-demand system for voice, data, and video.

Expected short term outcomes (1 – 3 years):

- Implementation of VOIP connections with all PSAPS within two years.

Steps needed to implement recommendation:

- Assess level of need for VOIP devices at all PSAPS.
- Address interoperability technical issues with potential local users.
- Procure and place devices.
- Train stakeholder disciplines to use the interoperable systems.

Agencies, organizations, and other entities involved:

- Authority, state agencies with communications systems, communications centers, stakeholder agencies with command responsibilities, E-911 Council, private entities as partners.

Types of resources needed to implement recommendation:

- Funding for assessment, systems engineering, equipment, hardware and software, installation, and training.
- Funding for recurring costs of maintenance and reconfiguration when changes occur.
- Human resources to coordinate the project, implement, and maintain the system.

Short Term Recommendation 12:
The authority should immediately provide incentives for regionalization for communications interoperability whenever possible.

Relationship to mission:
Communications interoperability would be naturally enhanced by regional cooperation in systems, projects, and purchases.

Rationale:
Approaching communications interoperability requires bridging disciplines and jurisdictions, making incentives for regional planning and cost sharing viable strategies. Municipalities, counties, and bordering states may benefit from a multi-jurisdictional effort. While cost savings may not always be possible in a regional project, the benefits to public safety of regional interoperable systems are notable. When the Task Force noted there are at least 127 PSAPs and that Iowa has more than 900 governmental land mobile radio (LMR) systems, members were quick to suggest ways to work differently that may help in efficiently using limited funds to provide equal, if not better, service.

Expected short term outcomes (1 – 3 years):

- Increased multi-jurisdictional planning.
- Increased economies of scale.
- Increased interoperability within regions.

Steps needed to implement recommendation:

- Assess opportunities and constraints inherent in multi-jurisdictional initiatives, including cross-state border efforts.
- Develop incentives for multi-jurisdictional communications projects.
- Solicit proposals and grant funds to regional projects.

- Assist in developing 28E agreements as needed.

Agencies, organizations, and other entities involved:

- Temporary authority, permanent authority, stakeholder leaders, jurisdictional policy makers, state agencies, federal agencies, and the private sector, including businesses, associations, and other organizations.

Types of resources needed to implement recommendation:

- Funding for planning, governance, implementation, equipment, hardware, software, training, and maintenance of system.
- Human resources to manage and staff the project as needed.

Long Term Recommendations

Long Term Recommendation 1:
The authority should develop, implement, and oversee policy, operations, and fiscal components of the communications interoperability efforts at state and local levels as well as coordinate with the federal level. Its functions should include:

- **Implement and maintain organizational and operational elements of the authority, including staffing and program activity.**
- **Review and maintain the performance and service levels on behalf of the operating agencies.**
- **Implement a dynamic program to ensure long term viability for sustained interoperability solutions influencing operations and control.**
- **Create or identify available and/or future assets that will leverage resources and/or provide incentives for communications interoperability.**
- **Monitor and maintain the established appropriate policies and protocols to ensure the interoperable system functions properly.**
- **Allocate and oversee state appropriations or other funding received for communications.**

Relationship to mission:
The authority will direct and coordinate the work to bring about statewide interoperability over the near and long terms.

Rationale:
Without a permanent authority providing full-time attention to the continuum of issues related to communications and interoperability, Iowa's fragmented and out-dated system will not change. A real need exists to move interoperability high on the priority list for investment in this state.

The permanent authority must include representation by key stakeholders. There must be lasting avenues for discourse with federal, state, and local users, policy makers, vendors, and funders of communications systems. The authority needs to have a policy component as well as operational and management components.

Whether housed within an existing state agency or created as a stand-alone authority, those undertaking local or state agency communications projects will be accountable to this body. The Task Force discussed where the authority should be housed; many thought Homeland Security and Emergency management may be the most likely entity at this point in time. However, with inevitable changes in focus and priority, this may not remain true. The existing efforts and cooperation between Department of Public Safety and Department of Transportation should be noted and recognized as bringing value to the issues tied to governance. Because of an inability to predict the future and where federal priorities may shift, the Task Force chose not to recommend a specific agency to host the authority.

Expected long term outcomes (more than 3 years):

- Established permanent authority functioning within state government, with strong ties to local governments.
- Legacy systems linked, with a focus on new systems meeting interoperability standards set by the authority.
- Deliberate and managed progress toward statewide interoperability, supporting voice, data, and video and appropriately deployed for Iowa's needs.

Steps needed to implement recommendation:

- Build upon steps undertaken in designating the authority.
- Complete the transition from the temporary authority, if needed.
- Fulfill the functions of the authority.

Agencies, organizations, and other entities involved:

- Authority, agency housing the authority (if appropriate), other state agencies, local and federal stakeholders.

Types of resources needed to implement recommendation:

- Significant and ongoing funding to carry out projects by local and state stakeholders.
- Funding for operations and management.
- Human resources to plan, engineer, implement, staff, maintain, and expand the work toward interoperability.
- Training and trainers.

Long Term Recommendation 2:
The authority should continue to identify sources of ongoing, sustainable, longer-term funding for communications interoperability projects and obtain adequate funding in accordance with the sustainability plan.

Relationship to mission:
The costs of interoperable systems are ongoing and significant if the state is to achieve, maintain, and improve an interoperable communications system.

Rationale:
Iowa will require many years to phase in replacements for the existing systems. Initial investments in making legacy systems interoperable allows a phase-in of new systems and spreads the cost over a longer period of time. Of course, the costs include not only the initial design, procurement, and installation, but also costs of operations, maintenance, and improvement.

The authority will focus significant efforts on the funding component. This Task Force suggests a diverse approach to funding communications interoperability initiatives, both for the authority itself and for the stakeholders implementing projects. While the Task Force did not recommend one funding source over another, the collective list of suggested sources includes:

- Bonding through the Iowa Finance Authority or other state venues
- Federal funds
- Grants
- Local funding sources
    - Appropriation of tax dollars
    - Special appropriations
- Private donations
- Revolving loan fund using federal, state, and local dollars
- Sale of communications services and systems, for example ICN services
- State funds
- Surcharges
- User fees

Expected long term outcomes (more than 3 years):

- Funding levels adequate to implement, operate, and maintain Iowa's growing interoperable communications systems.
- Diversity of funding sources.

Steps needed to implement recommendation:

- Long-term funding plan completed. (Short term recommendation #3.)
- Implement plan.
- Maintain constant focus on funding options and justification of need.
- Continued efforts to gain and maintain buy-in from potential funders and policy makers at all levels.

Agencies, organizations, and other entities involved:

- Authority, stakeholders, state agencies, Legislature, Governor's Office, Congressional delegation.

Types of resources needed to implement recommendation:

- Funding for planning and plan implementation.
- Human resources.

Long Term Recommendation 3:
The authority should examine legislative solutions to address the funding and resource challenges of implementing the long term solutions for statewide communications interoperability initiatives.

Relationship to mission:
A statewide interoperable communications system(s) is costly. Because these systems are provided largely to ensure the public safety, the public sector holds significant responsibility for funding.

Rationale:
Funding for interoperable communications benefits Iowans and is a core strategy for protecting their health and safety. These services are justifiably expected to be addressed at the state and local levels. While funding for communications since September 2001 has been flowing with relative generosity from the federal level, that cannot be expected to continue, and certainly not at the levels of the past several years. Consequently, a strategy for funding should not discount or ignore federal solutions, but should include significant state and local investment as well.

Work to secure and maintain funding is never done. The Task Force suggests continuing efforts already underway and continuing to develop additional strategies for funding.

- Authorize the permanent governing authority to undertake program efforts, staffing, organization of the authority, and raising interoperability issues to the top of the state's priorities list.
- Pass legislation to provide ongoing appropriations showing that interoperability is a state priority and to help fund:
    - Governing authority
    - Assessment
    - Project engineering and implementation
    - Technology
    - Training
    - Training incentives
    - Public and public official education
- Eliminate legislative or regulatory constraints to encourage and allow for blending of federal or state funding streams and/or sharing of resources among agencies at all levels.
    - HLSEM – Iowa Homeland Security and Emergency Management Division
    - ICN – Iowa Communications Network
    - IDOT – Iowa Department of Transportation
    - IDPH – Iowa Department of Public Health
    - IDPS – Iowa Department of Public Safety
    - IPTV – Iowa Public Television
    - ODP – Office of Domestic Preparedness, US Department of Homeland Security (DHS)

Expected long term outcomes (more than 3 years):

- State, local, and federal investment in Iowa's communications interoperability initiatives and projects.

- Funding levels adequate to implement, operate, and maintain Iowa's growing interoperable communications systems.

Steps needed to implement recommendation:

- Assess progress made in this area under short term recommendation #5, and transition efforts from the temporary authority.
- Maintain a policy agenda for federal and state funding.
- Establish relationships with key elected officials as appropriate.
- Undertake effective grassroots advocacy efforts, using need and data to support the position for additional funding for interoperability.
- Develop proposals for specific projects statewide or on a regional basis.

Agencies, organizations, and other entities involved:

- Authority, Governor's Office, legislative leadership, stakeholder groups and organizations.

Types of resources needed to implement recommendation:

- Human resources.
- Knowledge regarding policy development.

Long Term Recommendation 4:
The authority should develop an integrated, statewide communication system that allows for shared systems and costs; takes into account infrastructure, improving reliability, and addressing liability concerns of the shared network; is developed considering the importance of public/private partnerships; and identifies and recognizes potential barriers.

Relationship to mission:
This recommendation summarizes achievement of the mission.

Rationale:
Implementing a single, statewide, integrated system is clearly a long term proposition. Given the experience of other projects in Iowa and other states, as well as the pace of standards development at the national level, it would be unrealistic to expect this system to be in place in fewer than ten years.

The process to plan for and implement this new system must include active involvement of the stakeholders at all points to get them and keep them supportive of this effort for the long term. Practical decisions must prevail in a context of vision and technical knowledge. The approach must be how we *can* achieve these results *despite* traditional constraints, rather than allowing those constraints to change the course of action. Private/public partnerships will be expected and sought in new thinking about ways of providing mutual benefit to the partners.

A high priority must be given to refining a public/private sector model that includes the assets and resources each sector can offer. This process can leverage private sector expertise as well as research and development.

Policy opportunities and barriers exist and must be addressed appropriately. Policy must be in place that supports sustaining, maintaining, upgrading, and operating the system at all levels over the long term. The system must be seen as a statewide system, with responsibility by government at all levels to support it with resources. Debate over "Who's responsible to pay for that?" should be anticipated and addressed in planning.

The public sector may well not be able to incur all the initial or ongoing costs for this single system. These constraints will afford Iowa leaders in the public and private sectors the opportunity to establish meaningful and mutually-beneficial partnerships for infrastructure (towers, structures, etc,) or other initial or ongoing costs.

Expected long term outcomes (more than 3 years):

- Assessment findings – first year.
- Detailed implementation plan – three years.
- Implementation – 10 years.

Steps needed to implement recommendation:

- Identify and obtain funding for planning.
- Identify and obtain funding for implementation.
- Conduct assessment within first year.
- Develop detailed implementation plan within three years.
    - Obtaining participation and buy-in from other public and private entities.
    - Build upon existing relationships, for example the DOT/DPS cooperation.
    - Select one set of standards for technology that allows agencies and organizations to invest in equipment and technology that can become part of an interoperable system.
- Implement the plan within 10 years.
- Address all issues related to operations, maintenance, improvements, governance, and funding of the system over the long term.

Agencies, organizations, and other entities involved:

- Authority, Governor's Office, legislature, state agencies, federal agencies, all stakeholder groups, private sector, vendors, and the public.

Types of resources needed to implement recommendation:

- Obvious resources include funding, expertise, infrastructure, equipment, software, construction and installation experts, training, and staff to manage and implement the project. Time frames, amounts, and specifics clearly cannot be stated at this time.

Long Term Recommendation 5:
The authority should look beyond voice systems to data and video systems. The development of such systems takes into consideration the following qualities:

- **Packet-based,**
- **Trunk-based,**

- **Data interchange standard, and**
- **Need for flexibility.**

Relationship to mission:
Data and video transmission is a specified element of a future interoperable communications system.

Rationale:
Technology currently exists to achieve data and video transmission from fixed and mobile locations. For Iowa, the issues that rise to the top are cost and the degree to which users need the highest levels of these capacities. These and other issues must be addressed as the state seeks solutions that improve the health and safety of Iowans using the most appropriate technology for the situation.

To move forward in data and video communications, it will be important to apply the lessons learned in Iowa's pilot mobile data project, and to seek out best practices from systems in other states and the private sector. Decisions that are best for Iowa need to be included in an assessment and analysis that answers the questions:

- Who needs the ability for data communications from fixed points? From mobile points?
- Who needs the ability for video communications from fixed points? From mobile points?
- How often are these capabilities needed? Daily basis? Emergency basis?
- Does the cost of these capabilities exceed the value of their benefit?
- Will Iowa need statewide data and video communications interoperability to maintain a place in multi-state or national communications?

The Task Force discussions recognize the middle term and long term need for data and video interoperability, to be addressed after the immediate issues are solved for voice communications interoperability and the longer term effort is underway for statewide, single system voice interoperability. Data and video communications will become increasingly important and needs will expand so that this recommendation should not be set aside as less important than others, but should take its place in the overall system as recommended here.

Expected long term outcomes (more than 3 years):

- Assessment and analysis in concert with voice assessment
- Decisions and plans for data and voice interoperability
- Implementation

Steps needed to implement recommendation:

- Identify and obtain funding for planning.
- Identify and obtain funding for implementation.
- Conduct assessment and analysis.
- Develop detailed implementation plan within three years.
    - Obtaining participation and buy-in from other public and private entities.
    - Build upon existing relationships, for example the DOT/DPS cooperation.

  - Select one set of standards for data and video technology, considering the characteristics specified in this recommendation, that allows agencies and organizations to invest in equipment and technology that can become part of an interoperable system.
- Implement the plan.
- Address all issues related to operations, maintenance, improvements, governance, and funding of the system over the long term.

Agencies, organizations, and other entities involved:

- Authority, Governor's Office, legislature, state agencies, federal agencies, all stakeholder groups, private sector, vendors, and the public.

Types of resources needed to implement recommendation:

- Obvious resources needed include funding, expertise, infrastructure, equipment, software, construction and installation experts, training, and staff to manage and implement the project. Time frames, amounts, and specifics clearly cannot be stated at this time.

Long Term Recommendation 6:
The authority should expand, maintain, and fund consistent, periodic training programs for current communications systems and for the statewide integrated system as it is put in place. Training should be included as part of any plan for new communications systems and equipment.

Relationship to mission:
Training is a critical element of ensuring uniform and consistent use of procedures and protocols, as well as ability to use and operate the systems.

Rationale:
A diverse set of stakeholders filling various roles will be using the single, statewide communications system. Training programs as well as refresher trainings for all users must be designed as part of ongoing requirements that include instruction and practice in using the system. Training should also include the criteria and protocols for using the system so that not only does the technology of interoperable communications work, but the messages are understood by all parties without interpretation changing the message.

Funding is needed for ongoing training programs and refresher courses. A portion of funding for equipment purchase might be allowed to be used for some initial training needs, but will likely not be adequate for longer term, ongoing training requirements.

Expected long term outcomes (more than 3 years):

- Stakeholders in all roles trained in use of the system.
- Stakeholders trained in protocols and procedures.
- Uniform and consistent communications via the interoperable system.

Steps needed to implement recommendation:

- Integrate training element with the long-term funding plan and implementation.
- Establish training needs for all disciplines and levels.

- Develop curricula and expected performance levels.
- Identify and train trainers.
- Promote and deliver training.

Agencies, organizations, and other entities involved:

- Authority, state agencies, training experts, and stakeholder disciplines.

Types of resources needed to implement recommendation:

- Funding for training assessment, curriculum development, promotion, and training delivery.
- Human resources: curriculum developers and trainers.

Long Term Recommendation 7:
The authority should expand, maintain, and fund stakeholder education, public education, and public official education programs to demonstrate the value of the short term solutions, to continue to maintain the priority level for the long term solutions, and to understand the funding levels required to implement the statewide integrated public safety communications system.

Relationship to mission:
Federal, state, and local policy should encourage opportunities for establishing and maintaining interoperable communications systems. This can only come with recognition of its importance and the political will to make change.

Rationale:
To create and sustain improvements to the state's communications systems, ongoing investments are required. Early buy-in among stakeholder groups, public officials at all levels, and the public must be maintained and nurtured so they continue to value interoperability. There may be a temptation to believe that once short term solutions are in place this issue can "go away" for some years. Of course, that is not the case. Buy-in and support is not easy to sustain over time as interests, issues, and policy makers come and go, but continued involvement and advocacy for a single, statewide, interoperable communications system is critical to the safety and well-being of Iowans.

Stakeholder buy-in includes such elements as willingness to participate in multi-jurisdictional or multi-discipline projects, reducing the importance of "turf," and adopting common procedures and performance expectations. Public official buy-in involves learning enough about communications interoperability, the risks of the status quo, and how to progress in making change. The public, ultimately the strongest constituency in setting policy, needs to understand the impact on their lives and the opportunities to maintain community and statewide public safety.

Expected long term outcomes (more than 3 years):

- Policy maker commitment to supporting single interoperable system with flexible policies and adequate funding.
- Public support and advocacy of communications interoperability for improvement and protection of the public safety and health.

Steps needed to implement recommendation:

- Continue to implement and update the strategic plan developed in the short term phase.
- Maintain communications and relationships with key policy makers.
- Identify and develop relationships and support from key associations, such as Iowa League of Cities and Iowa State Association of Counties.
- Identify and develop relationships among the public or communications interest groups to assist in advocacy.

Agencies, organizations, and other entities involved:

- Authority and stakeholder organizations at local and state levels.

Types of resources needed to implement recommendation:

- Human resources for public education activities.
- Human resources with expertise to develop and deliver policy maker education program.

Long Term Recommendation 8:
The authority should identify and encourage long-term partnerships and cooperation among appropriate government entities at all levels.

Relationship to mission:
Interoperability cannot be achieved statewide without government at all levels working together toward the common goals.

Rationale:
A lack of partnerships and cooperation has contributed significantly to the current problems with interoperability and other efforts as well. Iowa's local government structure encourages local control and the resulting isolation from neighboring counties and the state. Some may also perceive competitive relationships between counties.

The state situation has parallels to the local level, with the state agency missions driving the focus with less effort given to bigger picture goals that may involve other agencies. Progress has been made in this area in recent years with enterprise-wide planning and projects.

A tension has traditionally existed, and is expected by some, between state and local governments. The typical view is that the state "wants to run everything here in our community," or that "those folks out there around the state don't really understand all the issues." While this expresses a stereotype and those tensions are not universal, these tendencies certainly cannot be ignored.

Similar relationships exist in consideration of federal agency participation. Federal agencies are sometimes perceived as monolithic in levying stringent requirements in order to receive funds.

Initial education about communications interoperability and the benefits to all parties will be required to achieve buy-in to the concepts and plans. The partnerships among government entities should be more easily developed because the state and local entities participated in the preliminary steps in an inclusive

process. It should be considered a "requirement" that this effort include partnerships between the local, state, and federal agencies.

Expected long term outcomes (more than 3 years):

- Working partnerships in place, beginning with current or pilot projects and short term solutions.
- Multi-jurisdictional, multi-level partnerships of government agencies in implementing the single, statewide interoperable system plan and the interoperable data and video communications plan.

Steps needed to implement recommendation:

- Issue education for government agencies.
- Review and assess current partnerships.
- Facilitated efforts to develop partnerships for specific projects or portions of projects.
- Provision of templates and guides for 28E agreements or other types of partnerships.
- Attention provided to policies around partnerships between public entities to make them more flexible or simpler to enter.

Agencies, organizations, and other entities involved:

- Federal, state, and local public agencies with a role in communications or a capacity to support interoperability projects.

Types of resources needed to implement recommendation:

- Willing representatives of public agencies at all levels.
- Models and tools for successful partnerships.
- Facilitators.
- Funding for focus on partnership development and relationship development.

Long Term Recommendation 9:
The authority should identify, promote, and provide incentives for appropriate collaborations and partnerships among agencies, businesses, organizations, and associations, both public and private.

Relationship to mission:
Interoperability cannot be achieved statewide without government at all levels working with businesses, organizations, and associations toward the common goals.

Rationale:
Collaboration is a nice word and a wonderful idea. However, it is very difficult to achieve true collaboration because it requires the participating entities to give something up in order to get something of greater importance in return. Progress toward established and ongoing communications interoperability most likely cannot and will not occur without involvement of private and nonprofit interests working in concert with the public sector.

While there are traditions of this type of cooperation, investing in this complex and long-term interoperability initiative will create new and exciting opportunities for collaboration while, at the same

time, testing the will and relationships among potential collaborators. As between levels of government and agencies, there are elements of suspicion, mistrust, and negative experiences that add to the challenge.

Consideration of public/private partnerships should include both service level and infrastructure level partnerships. At the service level, a partnership can be formed in one of two ways: 1) A public (commercial) wireless service provider could make its service capabilities available in some way to support first responders/preventers, or 2) A private (state-owned) wireless network could make its capabilities available to public (commercial) service providers or their customers. It should be noted that sharing a wireless service with any first responder can only be a viable option if the wireless service availability can be guaranteed at the most critical times when it is needed. Therefore, only wireless network technology that supports the capability of enabling priority and precedence for first responders can be considered. Security for the service, which could require some level of encryption, is also essential.

At the infrastructure level there are a number of ways that partnering between public and private networks could be accomplished. While far from an exhaustive list, some of the ways infrastructure sharing might occur are:

- Sharing of towers.
- Sharing of land.
- Sharing of buildings/equipment spaces.
- Sharing of facilities/bandwidth.

Transparency and buy-in will be important elements of encouraging partnerships and collaborations as common and effective means to achieve interoperability. Collaborative efforts could also be brought to bear on decreasing the policy and attitudinal barriers to collaboration, coordinating planning for systems upgrades, and assessing the level of duplication of efforts.

Expected long term outcomes (more than 3 years):

- Working collaborations and partnerships in place, beginning with current or pilot projects and short-term solutions.
- Functional partnerships and/or collaborations among government agencies businesses, organizations, and associations in implementing the single, statewide interoperable system plan and the interoperable data and video communications plan.
- Reduction or elimination of duplication of services, while supporting implementation of the single, statewide, interoperable communications system.

Steps needed to implement recommendation:

- Educate all sectors on issues to generate interest and willingness to participate.
- Identify the obstacles for partnerships and collaboration and find ways to remove or alleviate them.
- Support each collaborating or partnering organization in remaining focused on its primary mission while working on the collaborative effort.
- Review and assess current collaborative and partnership efforts.

- Facilitate efforts to develop collaborations for specific projects or portions of projects
- Provide templates and guidance for contracts or other types of collaboration and partnership agreements.
- Give attention to policies around collaboration and partnerships among government, private, and nonprofit organizations to make them more flexible or simpler to enter, while retaining necessary accountability.
    - Consider incentives to the private sector to encourage partnerships and collaboration.
    - Incentives might include tax breaks or tax credits.

Agencies, organizations, and other entities involved:

- Authority, public entities at all levels, and private entities of all types.

Types of resources needed to implement recommendation:

- Willing representatives of involved organizations/agencies at all levels.
- Models and tools for successful collaborations and partnerships.
- Facilitators.
- Funding for focus on partnership and collaboration development as well as relationship development.

Long Term Recommendation 10:
The authority should provide incentives to support maintenance and expansion of regionalization efforts, underway or anticipated, that advance implementation of the long term communications interoperability initiative.

Relationship to mission:
Communications interoperability would be naturally enhanced by regional cooperation in systems, projects, and purchases.

Rationale:
A single, statewide interoperable system providing voice, data, and video communications almost by definition will require regional approaches. Some might argue an effective way of achieving a statewide system is to first develop a number of regional systems using common platforms and technology which could then be linked to achieve the statewide system.

Approaching communications interoperability requires bridging disciplines and jurisdictions, making incentives for regional planning and cost-sharing viable strategies. Municipalities, counties, and bordering states may benefit from a multi-jurisdictional effort. While cost savings may not always be possible in a regional project, the benefits to public safety of regional interoperable systems are notable.

At various points in its discussion, the Task Force suggested that a regionalization of systems and services might be not only more cost-effective, but would also provide better service. For example, analyze the need for 127 Public Safety Answering Points (PSAPS), with an initial suggestion that the state may not need more than 25 – 30.

At this time, guidance from funding sources are requiring reduction of duplication of services and a regional approach to service delivery. This movement is likely to continue, and many Iowa jurisdictions have begun to move in this direction. It may be expected that for some projects and initiatives in the not-too-distant future, regional applications could be required to qualify for consideration of funding.

Expected long term outcomes (more than 3 years):

- Most communications system development implemented on a regional basis.
- Increased willingness and success in working effectively at a regional level.
- New policies and regulations supporting regional efforts.

Steps needed to implement recommendation:

- Assess opportunities and constraints inherent in multi-jurisdictional initiatives, including cross-state border efforts.
- Develop incentives for multi-jurisdictional communications projects.
- Solicit proposals and grant funds for regional projects.
- Assist in developing 28E agreements as needed.
- Consider formal creation or establishment of longer term regional communications services.

Agencies, organizations, and other entities involved:

- Authority, stakeholder leaders, jurisdictional policy makers, state agencies, federal agencies, and the private sector, including businesses, associations, and other organizations.

Types of resources needed to implement recommendation:

- Funding for planning, governance, implementation, equipment, hardware, software, training, and maintenance of system.
- Human resources to manage and staff the project as needed.

Options Considered

The roomful of communications experts who came together for seven-hour meetings every two to three weeks had a lot of ideas about how to make Iowa's voice, data, and video communications system(s) better and interoperable. Scores of suggestions and options were bandied about, seriously considered, rejected, finely tuned, or accepted. Members of the group voiced thoughts reflecting their expertise and helped to complete ideas suggested by others. Many hours of healthy discussions resulted in the 21 recommendations listed in the previous section.

Some might be interested in what was not accepted from the suggestions. This section seeks to incorporate some of the additional suggestions along with the reasoning for not including the idea as a recommendation.

This process included a number of cumulative steps that led the group to recommendations such as a current situational analysis, issue identification and stating the problem, and identifying a number of solutions to the problem. From this process that examined multiple options, the Task Force worked through additional considerations to make its best recommendations for Iowa's interoperable systems.

Because much of the options development occurred within the three groups assigned to governance, technology and standards, or funding, the options are presented accordingly.

Governance

The issues surrounding governance are complex, and this group relied on the suggestions of the other groups to aid in determining the role and function of a governing body. Questions primarily arose about span of control, organizational structure, accountability, and establishment of an authority.

In establishing a short-term governing body, there was little question that the Governor should appoint this group/board/structure. The bigger questions were what the temporary authority should represent and what would be the span of the short term role. Considerable discussion revolved around whether to use an existing group, with the notion that there were advantages and disadvantages to both.

By using an existing group as the temporary authority, there would be a shorter start-up phase, assuming that body already was familiar with the issues and represented the key stakeholders impacted by communications interoperability. On the other hand, it was felt that any existing entity may also bring with it certain biases or a pre-disposed attitude among stakeholders that might place the designated temporary authority at a disadvantage in this new role.

The group rejected the notion of establishing a brand new temporary authority. It also rejected the use of an existing state agency as that authority. After reviewing all the existing groups, including the Homeland Security First Responder Advisory Council and the State E-911 Council, which have no legal authority in their current roles, the group recommended the Law Enforcement Administrator's Telecommunications Advisory Committee (LEATAC) be appointed as temporary authority.

LEATAC, as it operates in today's environment, has matured and broadened its membership well beyond law enforcement over the years. The membership currently represents the key stakeholders necessary in

an authority. While LEATAC currently is not charged with any authority, it would be feasible for this group to accept the temporary authority for organizing the communications interoperability permanent authority.

There was also agreement that LEATAC should not remain as the permanent governing authority, and that a permanent authority should be in place as soon as practical, within six to eighteen months. While there was little disagreement on the functions of the permanent authority, there was much discussion on its structure. It was agreed early that two levels were needed. Considered were the following options:

- Independent authority/agency that might function similar to the Iowa Utilities Board.
- Paid staff are needed.
- All volunteer authority at the policy making level.
- Paid authority at the policy making level.
- Authority serving as a volunteer board or commission housed within an existing agency and staffed by state agency staff.
- A non-government entity.

Governance by an organization established outside government was not strongly considered. Since the majority of stakeholders are public entities, the Task Force considered the appropriate responsibilities to be placed within government, specifying representation from stakeholders from all levels and sectors. Initially there was consensus that there be paid staff for administration and project management, but some discussion on whether the policy level would be paid or volunteer. It was suggested a paid policy board might be less acceptable to the public and to stakeholders than a volunteer board.

Technology and Standards

The technology work group also faced complex issues, and in the end decided not to decide on a specific standard or technology as Iowa's direction for the long term. The group felt able to provide realistic and affordable short term options for dealing with voice interoperability, as seen in the set of short term recommendations dealing with mobile linking systems and the VOIP technology.

In issues of standards and technology, this group looked strongly to the governing authority for those decisions. Because of the credibility, knowledge, and focus the authority would bring, this group felt it critical that the decision to select the single standard for Iowa must fall to the permanent authority. The technology discussions did include a consensus that whatever is selected must be an open standard.

The P25 standard was topic of considerable discussion as well. A number of agencies are turning to the P25 standard, including DOT. Other standards exist or are being developed as well. Since P25, under development at the national level, continues to change, the group was uncertain whether a better standard for Iowa might come along by the time the state is ready to move forward.

The group did agree that the technology currently available is being driven by users, as manufacturers respond to their specific needs, and this situation is not likely to change. A state will not be able to define the standard and technology; rather it will need to continue working to shape the public safety products while considering what the market provides.

Hand-in-hand with questions of manufacturer roles is the potential for public/private partnerships. Discussion centered on what kinds of roles these partnerships might play in a statewide interoperable communications system. In addition to having research, data, and knowledge about the direction of

technology, private sector partners can be involved in providing services and infrastructure. The issues of willingness and perceived risk would need to be worked out between partners and the authority, ensuring protection of the public health and safety, as well as the security and priority access to communications in the event of an incident.

Additional responsibilities should also fall to the authority, according to the technology group, including ensuring steady progress and management of implementation of projects. The group emphasized the importance of an accountable project manager and a monitoring authority.

The technology and standards group was also unable to resolve the important question of how long the authority should support legacy systems. While legacy systems could, in theory, continue to be part of the interoperable statewide system through patches and linked systems, there was no agreement on whether supporting these systems is a good investment in light of Iowa's expectation to establish a single, statewide interoperable system for voice, data, and video. The group expects the governing authority to include these decisions in the state's long term implementation plan.

Funding

In consideration of funding options, needs for funding, and how to bring to bear adequate funding to implement Iowa's aggressive mission, the funding work group sought to identify and evaluate many options, including making better use of existing funds across the state.

The members of this subcommittee intentionally examined creative funding sources knowing that state and federal resources would be scarce and could not necessarily be counted on as sustainable funding annually. While some of these options remain in the recommendations for consideration, the following are pros and cons from some of the ideas.

For user-based fees, the group had in mind adding a tax or surcharge to fees already charged; ambulance fees, as an example. This drew immediate reaction from some in the group who were unwilling to tack additional taxes onto user fees in one area without equal imposition on all other fee areas. The pros of user fees include that only those using the services actually pay for it. The cons included discussion that it was hard to collect these fees; the fees may actually generate only minimal funds; and doubts that this funding source would be sustainable. The decision was to include it in the recommendations for consideration.

Other funding recommendations included allowing cities or counties to issue bonds that would be backed by the Iowa Finance Authority. Since no one on the committee understood exactly how that might work or if it was a viable resource, that specific idea was not included in the recommendations. However, if found to be viable, it may still be a resource to consider.

The group had a lengthy discussion about the difficulties in, what is essentially, increasing taxes by adding surcharges to existing taxes. It is difficult to get legislative buy-in for this idea, and even more difficult to get public support – even if the public understands that the fee or tax may increase their personal safety. The same type of discussion was held when considering legislative appropriations. Representatives in the group from Polk County related how difficult their current fight has been to propose a increase of the 911 surcharge even by a few cents. As only one of two counties in the state without this surcharge, Polk County's voters will decide the issue on the November 2004 ballot. Still, a surcharge was

a funding the source the group ultimately conceded should be recommended. This led into the discussion about the need for funding a public education campaign about what these funds would be used for and how critical communications interoperability is for Iowans and their safety.

While early and strong consensus was reached regarding the need to assess current funding and how it's being used, the group also recognized how contentious an issue that would be. This led to the recommendation that barriers to consolidation and sharing of resources be identified and addressed prior to an assessment of how funding might be reprioritized. Many agreed that these kinds of changes would need to be initiated at the local level (i.e., with leadership from the local sheriff, police chief, fire chief and emergency management director, etc.).

The funding group also held a discussion about leasing versus purchasing new equipment, but ultimately agreed that decision was best left to the local purchasers. However, providing a mechanism or information about leasing options might be worth considering so the issue is seen as an option locally if appropriate (some jurisdictions have rules preventing leasing).

Reallocations of existing resources were discussed, but the group concurred that these options may need to be looked at after other revenue sources are explored and decided not to include these specifics in their funding recommendations. Reallocations of gambling, road use, economic development funds were part of this discussion.

Lastly, the funding subgroup expressed concern that, if a new governing body were to successfully find creative sources of revenues, city, county and state budgets may then be cut, supplanting these funds and, in essence, leaving the purchasing organization with either no increase of funds for communications purchases, or less than the organization previously had. A great deal of discussion was centered around ways to prevent this from happening.

Appendices

Appendix 1 **Member Bios – Iowa Communications Task Force**

Appendix 2 **Task Force Process**

Appendix 3 **Glossary**

Appendix 4 **Survey and Findings**

Appendix 1
Member Bios – Iowa Communications Task Force

Dennis L. Bachman, Paramedic Specialist/Communications Coordinator, Marshalltown Medical & Surgical Center, Marshalltown, IA. Bachman has eight years of experience in law enforcement and thirty years of experience with EMS. He is currently an EMS and HazMat instructor, State 911 Board Member, and former President of the Iowa Telecommunications Users Group.

Tom Boeckmann, Health Alert Network Chief, Iowa Department of Public Health, Vinton, IA. Boeckmann runs the Health Alert Network (HAN) to improve communication between health and other officials. A relatively new initiative, HAN continues development and includes users from state agencies, hospitals, clinics, laboratories and local health departments. The network is not for public use and will mostly be used by clinicians. HAN will be used for information sharing, will have a document library, and will provide an opportunity for collaboration.

Diana Borash, Communications Director, WestCom, West Des Moines, Clive and Urbandale, IA. Borash has over 26 years of experience in public safety communications. She is a former paramedic and firefighter and currently serves as a Communications Officer on the Minnesota DMAT-1 Team. Borash is President-Elect of APCO International, the world's oldest and largest public safety organization serving over 17,000 public-safety communications professionals. She is a charter member of the Department of Homeland Security.

Nancy Brady, Telecommunicator Training Coordinator, Iowa Law Enforcement Academy, Johnston, IA. Brady is certified as a 9-1-1 Communications Center Director, 9-1-1 Communications Training Officer, Emergency Medical Dispatcher, Fire Service Instructor I, and Hazardous Material Instructor. She is a member of LEATAC, the Association of Public Safety Communications Officials International, Inc., the Iowa Emergency Numbering Association, and APCO International Institute Advisory Committee. Brady was APCO International Telecommunicator of the Year in 1991 and previously served as the Buena Vista County 9-1-1 Communications Center Manager and County 9-1-1 Coordinator.

Gary E. Brown, Director, Woodbury County Disaster and Emergency Services, Sioux City, IA. Brown managed the emergencies at the site of Flight 232 in July 1989 and at the Terra Explosion in December 1994. He is a nationally and internationally acclaimed speaker on emergency response and disaster readiness and preparedness. He provided homeland security support for the 2004 Democratic National Convention, the 2004 Republican National Convention, and the 2004 State of the Union Address.

Nick Critelli, Communications Officer, USAF Aux. Civil Air Patrol, Iowa Wing, Des Moines, IA.
Critelli has 46 years of communication experience in the Amateur Radio Community involving both RF (wireless) and voice over IP Internet technology. He is President of the Iowa State Bar Association and a life member of the iRadio Amateur Satellite Corporation.

Ed Farley, Coordinator, Henry County Emergency Management, Mt. Pleasant, IA. Farley is a certified Iowa Emergency Management Coordinator, serving as Henry County Emergency Management Coordinator for over 25 years. He is a graduate of the Iowa Military Academy, holds an AA Degree from Southeastern Community College, and retired from the USAR at the rank of Major having served as a Combat Engineer and Chemical Officer from 1972 to 1992. Farley received the Army Achievement

Medal for training 6 battalions in nuclear biological and chemical operations prior to Operation Desert Shield.

Leslie E. Fish, Telecommunications Design Specialist, Iowa Department of Transportation, Ames, IA. Fish is the DOT Administrator of the Wide Area Data Network and AASHTO Frequency Coordinator. Fish is leading the development of the new 10-year DOT radio communications plan and is the author of the frequency plan currently in use.

Scot A. Fynaardt, Communications Consultant, GeoComm, Inc., Pella, IA. Fynaardt has 21 years of experience in the wireless communications industry with has vast experience with conventional radio systems, paging systems, public safety consoles, licensed microwave systems, spread spectrum links, voice and data multiplexers, and system integration. Fynaardt has participated in communications interoperability projects in Kansas City, St. Louis and the State of Wisconsin. He is a member of International Who's Who in Information Technology and APCO.

John Gillispie, Executive Director, Iowa Communications Network, Johnston, IA. Gillispie was appointed by the Iowa Telecommunications and Technology Commission as the ICN Executive Director on December 11, 2002. He has a background and experience in information technology and satellite, microwave, and fiber optic networking.

Larry Grund, Chief, Technology Services Bureau, Iowa Department of Public Safety, Des Moines, IA. Grund has served as the State of Iowa representative to the National Law Enforcement Telecommunications System (NLETS) since 1981 and was elected to the office of NLETS President for a two-year term in 2002. He is a member of the Governor's Taskforce on Interoperability and Communications, the DPS appointee to the Chief Information Officer Council, Chairman of the Chief Information Officer Council Security Committee, and the Governor's appointee to the Criminal Justice Integration System (CJIS) Advisory Committee.

William Hayes, Director of Engineering and Technology, Iowa Public Television, Johnston, IA. Hayes is responsible for the planning and development of all technology projects at Iowa Public Television including RF transmission facilities, studio origination facilities and the 750 interactive classroom facilities of the Iowa Communications Network throughout the state of Iowa. In addition to his position at IPTV, he is also an author for *TV Technology,* a prominent technical magazine. Mr. Hayes also chairs the IEEE BTS standards committee. Hayes has extensive experience in planning, design, and construction of all facets of television station facilities.

Leon Hofer, Vice President Network Operations, Iowa Network Services, West Des Moines, IA.
Hofer has more than 30 years of experience in the telecommunications industry, including 10 years in development of ANSI standards for voice and digital performance and wireless interfaces. He is an ANSI Technical Editor, IEEE Senior Member, and recipient of the Standards Committee T1 Outstanding Achievement Award.

Ted G. Kamatchus, Sheriff, Marshall County Sheriff's Office, Marshalltown, IA. Kamatchus has been in law enforcement since 1976, becoming Marshall County Sheriff in 1988. Sheriff Kamatchus has served in policy advisor and leadership positions for various organizations at the local, state and federal levels and currently is Vice President of the National Sheriff's Association and will assume the presidency in 2006. He also serves on the Senior Advisory Board Member for the Science and Technology Directorate

of the United States Department of Homeland Security, and has held positions in the Iowa State Sheriffs and Deputies Association and the Board of the National Sheriffs Association.

James Kersten, Associate Vice President for Government Affairs and Development, Iowa Central Community College, Fort Dodge, IA. Kersten is a former State Senator, Assistant to Iowa Governor Branstad, and Senior Vice President and COO of Heartland Communications Group, Inc.

Kirk M. Litynski, Government Account Manager, Motorola, Eden Prairie, MN. Litynski's education includes USAF and a BA in Communications from Augsburg College. He was a participant in Iowa LEATAC and Motorola Top Gun School for communications.

Mark D. MacDonald, Manager Business Development, Advanced Programs, Rockwell Collins, Cedar Rapids, IA. MacDonald has four years of experience working with advanced technology applications at Rockwell Collins. He is a combat veteran, serving 13 years in USN (SEAL).

Terry A. Martinson, Assistant Fire Chief, Cedar Rapids Fire Department, Cedar Rapids, IA. Martinson is a Certified Fire Instructor and 29-year member of the Cedar Rapids Fire Department. He is serves on the Linn County E-911 Board, the Cedar Rapids Geographic Information System (GIS) Steering Committee, and the Iowa Telecommunicator Training Board. Terry has worked as a project manager for both the Cedar Rapids Joint Communication Center and the feasibility evaluation for the consolidation of emergency communications with Linn County, City of Marion, and City of Cedar Rapids.

David L. Miller, Administrator, Iowa Homeland Security and Emergency Management Division, Des Moines, IA. Prior to being named Administrator in September 2004, Miller has served the Division over the past 16 years in a number of capacities, beginning as the State E911 Program Coordinator and, most recently, as Chief of Staff. Miller's experience includes six years as a communications specialist and four years as a Criminal Justice Specialist with the Iowa Department of Public Safety. He also has five years experience in local government serving as the E911 communications mangers in Jackson County, Oregon and Missoula County, Montana.

Gregg D. Miller, President, RACOM Corporation, Marshalltown, IA.

Justyn Miller, CEO/General Manager, Kalona Cooperative Telephone Co., Kalona, IA. Miller has served on the Iowa Telecommunications Association Board of Directors, Kalona Area Chamber of Commerce, and USTA CPAC Committee.

Todd A. Misel, Captain, Communications Officer, Iowa State Patrol, Des Moines, IA.
Misel is a 21-year veteran of the Iowa Dept of Public Safety. Most recently, he was promoted to Captain and is overseeing the Communications Operations. Misel is a 1983 graduate of the 11th DPS Basic Academy and attended the Des Moines Area Community College. In 2002, the Captain attended the 209th session of the FBI National Academy. Currently he is enrolled in the Drake University (CPM) program.

Dennis Murdock, Executive Vice President and CEO, Central Iowa Power Cooperative, and Executive Vice President, Central Iowa Energy Cooperative, Cedar Rapids, IA. Murdock has 36 years of experience in the electric utility industry and a broad range of experience in working with community leaders across the CIPCO service territory. He is a member of the Board of Directors and Chairman of the Iowa Capital Investment Corporation, the Iowa Capital Corporation, the Iowa Area Development

Group, Capital Management Associates, and the Iowa Community Development, LC. Murdock is also a member of the Board of Directors of the Hawkeye Insurance Association and the Iowa Association of Business and Industry.

Eric Nevins, Communications Supervisor, Des Moines Police Department, Radio Services, Des Moines, IA. Nevins is the Secretary/Treasurer for 700 MHz Committee Region 15 Planning and has served as a Public Safety Radio Technician with Des Moines Radio Services for 31 years. He is a member of LEATAC representing APCO, NPSPAC 800 MHz Region 15 Planning Committee, and a life member of the Iowa Chapter of APCO.

Judy Pletcher, Executive Director, Rural Iowa Independent Telephone Association, Des Moines, IA. Pletcher has 14 years experience working for and representing the independent telephone industry in Iowa. She works on legislative and regulatory issues on both the state and national level.

Larry Plotzke, Senior Telecommunications Engineer, Alliant Energy, Mason City, IA. Plotzke is an engineering lead responsible for large radio project planning, design, specification, scheduling and management. He has participated in projects such as regional digital microwave, multi-site voice radio systems, centralized voice dispatch systems and a State-wide wireless data work order dispatch system. Larry is a former Executive Board Member of Mobile Data User Group (Motorola DataTac Users forum) and a member of the Utilities Telecommunications Council.

Larry Smith, President, Iowa Firemen's Association, Sigourney, IA. Smith has served as the Keokuk County Homeland Security Emergency Management Coordinator since 1984 and is a current member of the Keokuk County E911 Service Board. He has served on the IFA Board of Directors since 1998 and the State of Iowa E911 council for 3 years. Smith has been a member of the Sigourney Volunteer Fire Department for 27 years.

William M. Vaughn, Chief Deputy, Polk County Sheriff's Office, Des Moines, IA. Vaughn is second in command to Sheriff Anderson and serves as Sheriff in his absence. Among many other leadership responsibilities, Vaughn directs all technology functions and oversees the integration and operations of data and communication technologies for the Sheriff's Office. He is a member of the Technology Sub-Committee and the Narcotics Task Force Sub-Committee for the Polk County Chiefs of Police and sheriff's Association, a member of the FBI Anti-Terrorism Task Force, and is the Special Operations Commander for the Sheriff's Office Hostage and Rescue Team. Included in his education and training accomplishments is 2001 graduation from the FBI National Academy in Quantico, VA.

Appendix 2
The Process – Iowa Communications Task Force

The Iowa Communications Task Force, which pulled together representatives from many constituencies that face interoperability issues on a daily basis, spent a focused four months in examining issues, reviewing potential solutions, looking at Iowa's first responder capacity and needs.

The Task Force was comprised of 28 members who represented both urban and rural interests. It was made up of sheriffs, police, firefighters, paramedics, public health officials, utility organizations, telecommunications, communication center leaders, emergency management, civil air patrol, public safety, network providers, Iowa Public Television and Iowa Communication Network administrators, as well as several systems vendors.

The process was developed and facilitated by an impartial organization, State Public Policy Group, a Des Moines-based issue management and policy development firm. The Task Force was led through a process designed to move progressively through a logical sequence of deliberations. Steps included:

- Situational analysis and current views on interoperability
- Preliminary issue identification
- Development of assumptions
- Development of problem statements for governance, technology and standards, and funding
- Identification of existing activity, issues, multiple options for solution
- Review of the survey findings from the Task Force Survey of Iowa stakeholders regarding their capacity and perception of need and validating the Task Force assumptions
- Development of recommended solutions based on findings and information shared throughout the process.

Transparency and open communications were encouraged. In an environment of free discussion and discourse on complex issues, keeping open the lines of communication among all Task Force members was a high priority.

The Task Force met formally six times over the four-month period for day-long sessions:

- June 18, 2004 Joint Forces Headquarters (JFHQ), Johnston
- July 22, 2004 Department of Transportation Campus, Ames
- August 12, 2004 JFHQ, Johnston
- August 19, 2004 JFHQ, Johnston
- September 8, 2004 JFHQ, Johnston
- September 28, 2004 JFHQ, Johnston

During portions of three of the Task Force meetings, the larger group was divided into three subgroups to allow for a more in-depth examination of the three key issues identified in early discussions: governance, technology and standards, and funding. These subgroups spent a significant amount of time examining specific issues in these areas at the Aug. 12, Aug. 19, and Sept. 8 meetings. After subgroups met, their progress was reported back to the full group for questions, discussion and to examine where the overlaps in issues and concerns arose. Areas of Task Force consensus were identified.

A written survey was mailed to nearly 2,000 communication center managers, county sheriffs, EMS administrators, fire chiefs, and police chiefs. The survey was not designed as a comprehensive inventory of communications systems on which to develop a specific implementation plan. Instead, the intent of the survey was to gain an understanding of the first preventer/responders' level of agreement with five assumptions of the Communications Task Force. Additionally, the survey sought to determine systems users' perceptions of the importance of interoperability problems in their work. The findings were presented to and discussed by the Task Force.

In the information review and deliberations of this broad-based Task Force of experts, it soon became clear that lack of technology is not the primary issue facing interoperable communications for Iowa. The technology to create a fully-interoperable, statewide system currently exists. Rather, the lack of policy or program leadership and authority, elements of fragmentation in current systems and planning, a lack of interchangeable equipment or standardization in communications systems, and an absence of dedicated funding for establishment and maintenance of interoperable communications contribute significantly to the shortcomings of interoperability in Iowa. In areas of governance and funding, the issues interact and overlap with those of technology and standards.

Indeed, this was a group of wide and varying expertise in a number of critical safety and communication areas for Iowa. And, representatives were able to both articulate specific needs of their constituents, as well as see the larger picture of what might work best for Iowa in their discussions. Much credit must be given to the Task Force members for being willing and able to set aside their specific agendas to work toward the overall betterment of Iowa's communication capacities and abilities.

To facilitate ongoing communication among Task Force members between the formal meetings, a ListServ was established. The ListServ was used by members to share timely articles and information, as well as opinions and ideas.

Also, as recommendations were honed to become more clearly focused, several subgroups held conference calls to ensure all issues were being aired, opinions heard, and perspectives considered in an effort to reach consensus on each recommendation.

All participants recognized the short time frame required steady progress in their work. The Task Force members were highly interactive, willing to share perspectives, and listened to those of other members. Some issues and concerns were universal; others were more controversial. Each got an airing and vigorous discussion. Because of this open, interactive, communicative process, Task Force members were able to identify, develop and agree on the recommendations contained in this report.

Appendix 3
Glossary

700 MHZ voice system	On December 31, 1997, the Federal Communications Commission (FCC) issued a Report & Order allocating 24 MHz of radio spectrum in the 700 MHz band to public safety uses, in compliance with a legislative mandate.
800 MHZ voice system	Federal Communications Commission first designated the 800 MHz band for public safety use in 1980. 800 MHz systems in Iowa consist of both conventional and trunked systems.
ACU1000	A product made by Raytheon/JPS Company for Homeland Security interoperability applications. It is an electronic, programmable crossconnect system used to connect disparate radio systems together.
Asymmetrical Data	A demonstrated concept that provides a statewide, digital, secure, addressable, forward error corrected, broadband (>2MBs) mobile data stream. The concept utilizes the statewide IPTV High Density TV signal as the transport medium. It is called asymmetrical because the upstream data request is made via a legacy LMR data terminal limited to a throughput of <19.2 Kbs of data. Most requests for mobile data files are only a few characters in length, where as the requested file may be many Mbs in size.
Bandwidth	A relative range of frequencies that can carry a signal without distortion on a transmission medium.
Cellular Digit Package Data (CDPD)	Technology that allows data files to be broken into a number of "packets" and sent along idle channels of existing cellular voice networks.
Channel	A bandwidth path along which a communications signal is transmitted.
Code Division Multiple Access (CDMA)	A spread-spectrum approach to digital transmission. With CDMA, each conversation is digitized and then tagged with a code. The mobile phone is then instructed to decipher only a particular code to pluck the right conversation off the air.
Command-to-command communications	A communications network which connects chief to chief or staff to staff for the purpose of command and control. It is not the normal day-to-day operations channel.
Commercial Mobile Radio System (CMRS)	The regulatory classification that the FCC uses to govern all commercial wireless service providers including Personal Communications Services, cellular and Enhanced Specialized Mobile Radio.

CTCS Tones	Continuous Tone Coded Squelch tones are in the range of about 88 to 200 Hz, and are transmitted sub-audible. If the receiving radio is set for the same tone, it won't turn on the speaker unless it hears the proper tone.
Digital Technology	Data (including voice messages) are converted into digits that represent sound intensities at specific points in time. Because natural pauses in the conversation are eliminated, (1) the background noise that is generally heard in the analog system becomes inaudible, and (2) more capacity becomes available from the same amount of spectrum, thus reducing the need for new sites. There are two forms of digital technology: 1) Code Division Multiple Access (CDMA) and 2) Time Division Multiple Access (TDMA). Both of these forms of digital technology render multiple access over one frequency, or channel.
Enhanced Specialized Mobile Radio (ESMR)	A personal communication system that offers two-way voice and data communications through hand-held and car mounted phones and through wireless modems incorporated into devices such as portable computers and electronic notebooks.
Frequency Division Multiple Access (FDMA)	Method of radio transmission that allows multiple users to access a group of radio frequency bands without interference.
Global System for Mobile Communications (GSM)	This set of standards is widely used in Europe for cellular communications. The audio encoding subset of the GSM standard is best known to computer users because its data compression and decompression techniques are also being used for Web-phone communication.
Land Mobile Radio System (LMR)	A regularly interacting group of base, mobile and associated control and fixed relay stations intended to provide land mobile radio communications service over a single area of operation.
Legacy system	For the purpose of this report, it is the existing first responder radio systems used in Iowa. The preponderance of these systems are analog and are either low band, high band, 460 MHz conventional, and 800 MHz trunked or conventional.
Linking systems	A means of allowing two or more pieces of disparate telecommunications equipment or systems to interact.
Low band	For the purpose of this report, it is the 30-50 MHz frequency spectrum.
Masked areas	Areas that cannot receive clear radio communications signals due to either natural or man-made obstructions.

Mobile crossband repeaters	Voice interoperability by receiving a radio transmission on one agency's frequency, and rebroadcasting the audio to one or more agencies on their respective frequency.
Mutual aid channels	Mutual aid channels are frequencies designated by the FCC for common calling between first responder agencies. The predominant Mutual Aid frequency in Iowa is 155.475 MHz which is located in the High Band or Very High Frequency spectrum. In Iowa, this frequency is available to Law Enforcement, Fire, and Emergency Medical Services personnel. Agencies using 460MHz or 800 MHz systems must have some form of linking or crossband patching to access this frequency.
Narrow banding	The forthcoming FCC mandate to reduce the width of a radio channel that is currently assigned to a first responder radio system. The reduction of that channel width severely limits the amount of digital information that can be passed over that system.
Packet-based	The process of routing and transferring data by means of addressed packets so that a channel is occupied during the transmission of the packet only, and upon completion of the transmission the channel is made available for the transfer of other traffic.
Permanent fixed crossband stations	It is a feature with some VHF-UHF dual band systems that simply repeats what it receives on one band and automatically retransmits it on the other band. This increases the range and capabilities by adding range and coverage through bi-directional or uni-directional operations.
Picket fencing	Multipath (often called picket fencing or flutter) happens when FM signals bounce around between the buildings in a city, or other large obstructions, this bounce causes a reflection and the FM radio tries to lock onto the original signal as well as the reflection.
Public Safety Answer Points (PSAPs)	For the purpose of this report, PSAPs are Iowa law enforcement communication centers answering incoming 9-1-1 calls.
Repeater	A device that amplifies and retransmits an input signal regardless of its nature.
Shadowing Effect (Shadow)	Area in which a radio signal transmitted from a particular location is received poorly or not at all due to natural or manmade obstructions.
Spectrum	The range of frequencies of electromagnetic radiation from zero to infinity. The International Telecommunications Union formally recognizes 12 bands, from 30 Hz to 3000 GHz. New bands, from 3 THz to 3000 THz, are under active consideration for recognition.

Time Division Multiple Access (TDMA)	A method of digital communications transmission allowing a large number of users to access a single radio frequency channel without interference by allocating unique time slots to each user within each channel.
Trunk	A line of communication between switching systems.
Trunked radio system	A computer managed radio system with multiple radio channels. For each transmission, the computer assigns a channel to the participants for the duration of that transaction.
UHF	A radio system or channel that operates in the Ultra High Frequency spectrum in the 450-460 MHz or 800 MHz.
VHF	A radio system or channel that operates in the Very High Frequency spectrum in the 150-170 MHz band.
Voice Over Internet Protocol (VOIP)	For the purpose of this report, a technology of transmitting telephone or radio calls over a managed network using packet-linked routes. Also called Radio Over Internet Protocol (ROIP).
XML solution	For the purpose of this report, it is the process of accessing web-based information using the Extensible Markup Language (XML) that is a subset of Standard Generalized Markup Language (SGML). Its goal is to enable generic SGML to be served, received, and processed on the Web in the way that is now possible with Hyper Text Markup Language (HTML). XML has been designed for ease of implementation and for interoperability with both SGML and HTML.

Iowa Communications Interoperability Strategy

Survey Report

Submitted by

Iowa Communications Task Force

October 1, 2004

Table of Contents

Introduction & Rationale for Survey Development

In May of 2004, Governor Vilsack requested that a statewide strategy be developed to address the short and long term communications needs of Iowa's first responder and preventer community. The Iowa Communications Task Force was convened by the Iowa Homeland Security and Emergency Management Division (HLSEM) on June 18, 2004, with the goal of providing a report to the Governor that identifies the direction the state should take in beginning to address interoperability and communications issues in the first responder/preventer community.

The task force received federal technical assistance from the Office of Domestic Preparedness (ODP) regarding approaches being taken by other states and the federal government. This information certainly proved to be helpful, but the task force needed Iowa-specific information to better understand the unique interoperability and communications issues the state faces. To provide this information, a survey was developed to provide the members with information and guidance as they worked to develop recommendations for how Iowa should best move forward.

The survey was developed focusing on five premises and asked about voice, data, and video communications systems. While the survey did not ask about all communications and interoperability issues, it was meant to provide the task force with information about several of the key communications issues first responders/preventers face. Task force members understood the survey was not a census – responses were not received from every first responder/preventer organization in the state – however, it provided a general picture of the strengths and weaknesses in Iowa's communications systems. Further research and data collection may need to be conducted in the future, but this survey offers a starting point from which the first responder/preventer community and policy makers can move forward.

Methods Section

Respondents were asked to respond to the survey from a first responder/preventer perspective and were encouraged to reach out to any communications specialists within their organization that could assist in the completion of the survey.

Sample

The survey was sent to approximately 2000 Iowans from across the state serving in the following positions:

- Communications Center Manager
- County Sheriff
- EMS Administrator
- Fire Chief
- Police Chief

Data Collection

For practical considerations, such as money, the survey was administrated via mail. A postage paid, self-addressed envelope was included with the survey, which increases the response rate in mail surveys. The response rate was approximately 20%, which is above average for mail surveys. It should also be noted that 50 surveys were returned after the analysis had been conducted and were therefore not included in the results of the survey. Verbatim responses from these surveys are included in Appendix C.

Appendix B provides a map of the respondents' location. There is good spatial response, as only three counties are not represented in the survey respondents.

Data Analysis

Data entry and analysis were completed by State Public Policy Group using the Statistical Package for the Social Sciences (SPSS). The analysis for this report was completed in August - September 2004.

The response burden for this survey was particularly high given its length and complexity. In all, there were 376 independent questions asked in the survey. Another challenge affecting the response rate were the nature of the organizations in which the respondents served; many fire departments, for instance, are completely volunteer run.

Another issue was also discovered that affected the results of the survey. In some instances where both a sheriff and a communications center manager both received a survey, instead of sending two back, they worked together and completed one jointly. Similarly, several individual respondents serve in more than one first responder/preventer role. For example, nearly 50% of the sheriff respondents also described themselves as communication center managers. Forty-six individual respondents were double counted, which is a relatively minimal overlap. Allowing this overlap to occur increases the statistical power and reliability of the findings. This technique has been used before and is accepted.

The way in which respondents described their position is highlighted in Exhibit 1. As one can see, only 12 respondents did not respond to the question. Exhibit 1 is a combination of questions 26 and 27 from the survey in order to categorize as many respondents as possible.

Exhibit 1. Who Are the Respondents?

Self Described Position

		Frequenc	Percen	Valid Percen	Cumulativ Percen
Valid	County	21	5.5	5.7	5.7
	Communications Center	45	11.7	12.1	17.8
	EMS	72	18.8	19.4	37.2
	Fire	115	30.0	31.0	68.2
	Police	52	13.6	14.0	82.2
	County Sheriff-Communications Center	12	3.1	3.2	85.4
	EMS Manager-Fire	26	6.8	7.0	92.5
	County Sheriff-Fire	1	.3	.3	92.7
	Communication Center Manager-	2	.5	.5	93.3
	EMS Manager-Police	1	.3	.3	93.5
	Fire Chief-Police	2	.5	.5	94.1
	County Sheriff-Communications Center Manager-EMS	2	.5	.5	94.6
	Communications Center Manager-EMS Manager-	1	.3	.3	94.9
	County Sheriff-Communications Center Manager-	1	.3	.3	95.1
	County Sheriff-Communications Center Manager-	1	.3	.3	95.4
	Sheriff-Communications-EMS-Fire-	6	1.6	1.6	97.0
	Private	4	1.0	1.1	98.1
	Generic Law	7	1.8	1.9	100.0
	Total	371	96.9	100.0	
Missin	No response to either	12	3.1		
	Total	12	3.1		
Total		383	100.0		

Five Premises Confirmed

During the development of the survey, task force members discussed several assumptions they had about communications and interoperability issues throughout the state. Task force members agreed to build the survey around five premises that addressed their initial assumptions. In this capacity, the survey served as a tool for testing those initial assumptions. The five premises were:

- Gaps in Iowa's first responder/preventer communications systems exist.
- First responder/preventer communications systems throughout the state are inadequate, incompatible, and dated.
- There is a lack of coordination and cooperation as various departments, jurisdictions, and disciplines work to improve first responder/preventer communications systems.
- There is a lack of funding available for upgrading first responder/preventer communications systems.
- Planning efforts for improving first responder/preventer communications systems are fragmented.

Respondents were asked how strongly they agreed with the five premises for voice, data, and video communications and in almost every instance, the majority of respondents either strongly agreed or agreed to the premises. Exhibit 2 includes the percentages of respondents who either strongly agreed or agreed to the premises.

Exhibit 2. How Strongly Do You Agree to the Following Statements?

	Strongly Agree or Agree		
	Voice	**Data**	**Video**
Gaps in Iowa's first responder/preventer communications systems exist.	81.2%	63.2%	59.8%
First responder/preventer communications systems throughout the state are inadequate, incompatible and dated.	65.2%	51.2%	53.6%
There is a lack of coordination and cooperation as various departments, jurisdictions, and disciplines work to improve first responder/preventer communications systems.	62.4%	49.1%	46%
There is a lack of funding available for upgrading first responder/preventer communications systems.	84.9%	66.8%	63.9%
Planning efforts for improving first responder/preventer communications systems are fragmented.	76.5%	58%	53.5%

In the two instances when the percentage of respondents who either strongly agreed or agreed was less than 50% (data and video response for the third assumption), there was a high item non-response bias, meaning a significant number of respondents did not answer the question.

Those respondents who described themselves as sheriffs or communications center managers were less likely to strongly agree or agree with the premises, whereas police and fire chiefs were more like to strongly agree or agree. Later in the report, additional differences between these demographic groups will be discussed.

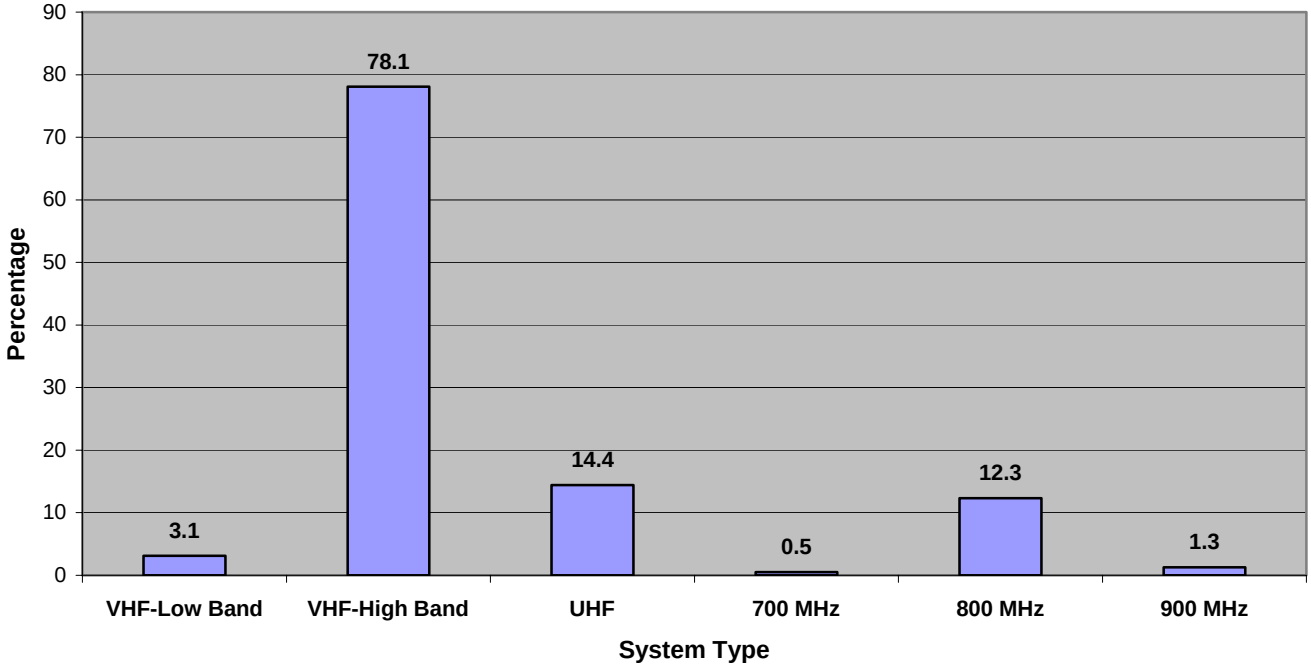
The confirmation of the five assumptions was critical to the work of the task force because the strategic direction the task force recommended to the Governor was based on the assumptions being true. The

ideas brought forth in the assumptions provide messages for consensus-building and concrete reasons for addressing issues of interoperability across the state.

Ability to Communicate by Position

Many of the questions in the survey asked about voice, data, and video communication systems. The task force was interested in seeing whether or not respondents were using voice, data, and video systems, as well as how important respondents felt each type of communication system was for their organization. Exhibit 3 shows the percentage of respondents using each type of voice communication system asked about in the survey.

Exhibit 3. Voice Communication System Used



It is important to note that according to the survey, approximately 78% of the state is covered by VHF High-Band systems, while about 12% of the state is covered by 800 MHz systems. However, the majority of the state's population is being covered by 800 MHz systems rather than VHF systems. That 12% covers the large, urban areas. Some Sheriff's departments and communications centers have access to both 800 MHz and VHF systems, providing some overlap in system coverage.

Two themes emerged in the data relating to the type of communications system respondents used or felt they needed to be able to have access to. These findings are not surprising, however, they are important to note. Respondents had a greater ability to communicate using voice communication systems compared to data and video, with respondents having the least ability to communicate via video communication systems. Not surprisingly, respondents also felt it was most important that they have the ability to communicate using voice communication systems. For this reason, the analysis in this report will focus on voice communication systems.

The second theme that emerged was that respondents were more likely to have the ability to communicate with first responder/preventers directly under their command or management. As the

distance increased to first responder/preventers outside of the respondents command or management (within regions, throughout the state, etc.), respondents were less likely to have the ability to communicate using voice, data, and video communication systems.

Paralleling this theme is the idea that respondents felt they needed the ability to communicate with first responder/preventers from their own jurisdiction at greater rates than first responder/preventers outside of their jurisdiction.

All respondents who identified themselves as sheriffs or communications center managers had the ability to communicate using voice systems with law enforcement within their home jurisdiction (compared to 93.5% and 93.1%, respectively, in the other responses). This is promising considering communications centers often serve as the entity linking first responder/preventer communications within their coverage area. Sheriffs and communications center managers are also at an advantage in their ability to communicate via voice systems with neighboring law enforcement agencies and state law enforcement.

Police chiefs are relatively well off when it comes to communicating with law enforcement under their command and throughout the state as well. Fire chiefs and EMS managers have the least ability to communicate with law enforcement agencies. Fire chiefs have a greater ability to communicate within their profession using voice, but the only statistically significant figure relating to fire chiefs and their ability to talk to other first responder/preventers was that 90.8% can communicate with neighboring fire departments, compared to 80.6% in the other responses. Fire chiefs' ability to communicate within their home jurisdiction was not statistically significant compared to the other responses.

When looking at respondents' ability to communicate with EMS agencies, 100% of sheriffs (compared to 94.4% of the other responses) are able to communicate via voice with EMS agencies within their home jurisdiction. The ability for EMS managers to communicate with EMS agencies in their home jurisdiction is not statistically significant, however, it is significant when looking at EMS managers' ability to communicate with neighboring EMS agencies (88.9% compared to 63.4%). Sheriffs and communications center managers can communicate with the state emergency management agency at higher rates than the other responses, 63.6% compared to 33% for sheriffs, and 50% compared to 33.8% for communications center managers; the differences are statistically significant.

Sheriffs and communications center managers are also more likely to have the ability to communicate with local and state public health officials. Communications center managers and EMS managers are more likely to have the ability to communicate with local hospitals compared to the other responses.

Ability to Communicate by Population Size

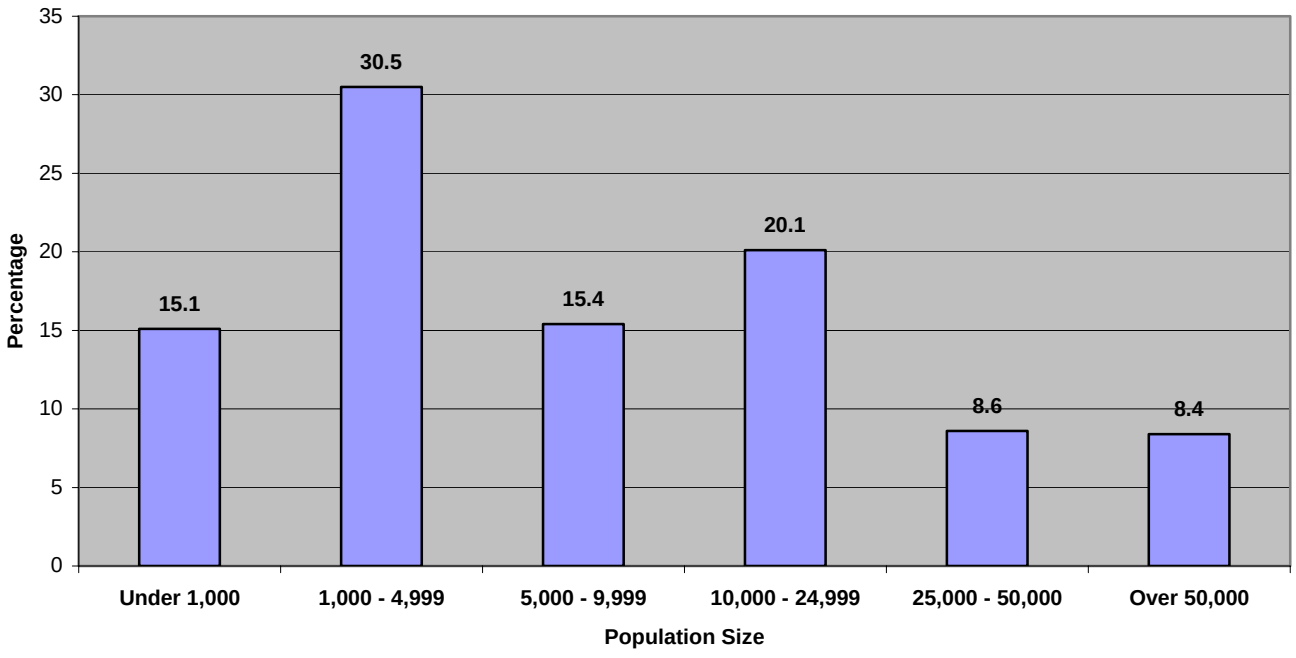
As some background about population size in Iowa counties, the Iowa Emergency Management Association (IEMA) reported the following census figures based on counties reporting back about population. It should be mentioned that not all counties responded to this inquiry.

Under 10,000 – 16 counties
10,000 – 50,000 – 68 counties
Over 50,000 – 10 counties

Based on 2000 Census data, the average size of an Iowa county is approximately 29,560. The smallest county has a population of 4,482 and the largest county has a population of 374,601. Census data from 2000 offers the following figures for Iowa cities. The average size of an Iowa city is approximately 2,380. The smallest city has a population of 11 while the largest city has a population of 198,682.

The survey asked respondents to select categories for their population size. The average population size of the respondents' jurisdiction was between 5,000 and 9,999, with jurisdictions with populations of 1,000 – 4,999 having the greatest percentage of respondents, 30.5%. Exhibit 4 illustrates the percentage of respondents' jurisdictions by population size.

Exhibit 4. Approximate Population Size of Respondents' Jurisdiction



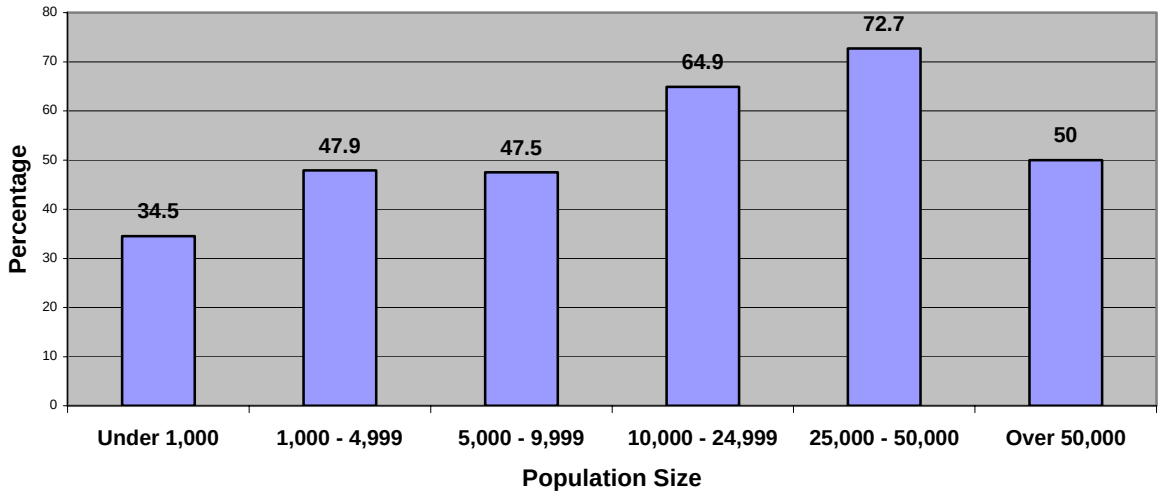
An interesting finding relating to the size of the respondents' jurisdiction relates to the commonly held belief that bigger is better. While the smallest jurisdictions were least able to interoperate with others, in this case, the largest jurisdictions often did not have the greatest ability to interoperate with others. Rather, it was the respondents from the mid-size jurisdictions that were best able to interoperate with others. This trend is most likely explained by sheriffs and communications center managers being from the mid-sized jurisdictions, which in regard to these respondents were the counties.

Other Factors Considered by Population Size

Funding is always an important factor to address. Considering the responses to questions about how communications systems are currently funded by population size of the jurisdiction, the largest jurisdictions (25,000 – 50,000 and over 50,000), were the most likely to have an appropriation in their annual budget to fund their communications systems, 66.7% and 65.6%, respectively.

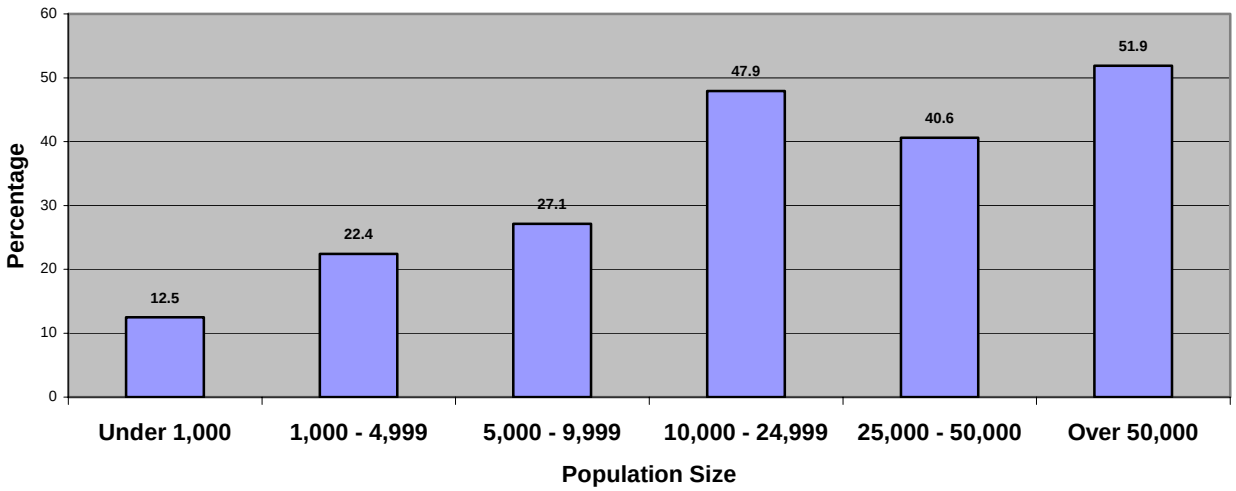
Another funding stream to note is the use of the E-911 surcharge revenue. Exhibit 5 illustrates the percentage of respondents who use an E-911 surcharge to fund their communications systems. It should be noted that respondents were asked to "check all that apply" from a list of funding options.

Exhibit 5. Use of Local E-911 Surcharge Revenue by Population Size



Respondents were also asked to respond to the question, "Do you currently have a budget for updating your communications systems?" In this case, respondents from the largest jurisdictions were most likely to respond "yes" to this question. Exhibit 6 provides the affirmative response percentages to this question.

Exhibit 6. Currently Have a Budget for Updating Communications Systems by Population Size



Conclusions

It is clear that the priority issue for respondents is ensuring first responder/preventers have the ability to communicate via voice communication systems in their home jurisdiction. Sheriffs and communications center managers have a greater ability to communicate with most first responder/preventers throughout the state via voice systems. This is most likely a direct result of having more consistent and stable budgets for updating their communications systems as well as the nature of the positions in which they serve. As the state moves forward, it must keep in mind the role that county-wide jurisdictions play in connecting smaller jurisdictions within that same region.

The five premises the task force agreed to, guided the development of this survey and provided qualitative data about attitudes relating to communications systems in the state. This data can be used to make a case that there is a need to address issues of interoperability and communications from local to state levels and from command-to-command to command-to-individual.

Recognizing that this analysis is not comprehensive, one can see that it provides baseline data for moving forward in addressing interoperability and communications issues throughout Iowa. Further study would need to be conducted in order to provide a census of communications systems being used in Iowa. Additionally, there were a number of specific questions that were not asked in this survey and this would be a starting place for additional analysis. The value of conducting this survey was to provide a base for moving forward. The information provided will increase the level of users' buy-in and demonstrate the need for collaboration on all levels.

Appendices

Appendix A **Frequency Report**

Appendix B **Map of Respondents' Location**

Appendix C **Comments from Late Surveys**

Iowa Communications Task Force
200 10th Street, 5th Floor | Des Moines, Iowa 50309
Phone: 515.243.2000 | Fax: 515.243.5941

Appendix A - Frequency Report

The Iowa Communications Task Force has been convened by Iowa Homeland Security and Emergency Management in response to the Governor's request for a statewide communications interoperability strategy. To better plan for future investment in interoperability, the Task Force is seeking information from local users of communication systems.

This survey is being sent to sheriffs, police chiefs, fire chiefs, communications centers, and EMS agencies throughout Iowa. Please respond to this survey from a first responder/preventer perspective. All of your responses to the questions will be confidential, and under no circumstances will individual responses be released. Please feel free to completely express yourself. Also, in order to obtain a comparable database, it is important that you answer all the questions. If you wish to comment on any question or qualify your answer, please feel free to use the space in the margins or on the back cover. Your comments will be read and used, when applicable, in our final report.

If you have any questions about the survey, please contact Sarah Dixon at 515-243-2000 or sdixon@sppg.com.

Please return this survey in the enclosed return postage paid, self-addressed envelope by **Friday, August 13, 2004.**

Thank you.

Please note: use of responder/preventer throughout this survey includes only law enforcement, fire, and emergency medical services (EMS). Also, for purposes of the survey, many of the questions have been structured to ask about voice, data, and video communications systems. The following are examples of each type of communications systems.

- **Voice communications systems (Vo) - telecommunications or radio systems**
- **Data communications systems (D) - public safety data communications systems**
- **Video communications systems (Vi) - "from the scene" video systems**

1. How strongly do you agree with the following statements?

	Strongly Agree			Agree			Neutral			Disagree			Strongly Disagree			DK/NA		
	Vo	D	Vi	Vo	D	Vi	Vo	D	Vi	Vo	D	Vi	Vo	D	Vi	Vo	D	Vi
Gaps in Iowa's first responder/preventer communications systems exist	37.3	35.8	43.9	43.9	27.4	15.9	9.4	10.2	11.2	5.5	3.9	1.8	1.3	.8	1	2.6	21.9	26.1
First responder/preventer communications systems throughout the state are inadequate, incompatible and dated	24.5	26.1	28.5	40.7	25.1	20.1	21.4	18.5	18	8.9	5.7	3.9	1.3	1	1.3	3.1	23.5	28.2
There is a lack of coordination and cooperation as various departments, jurisdictions, and disciplines work to improve first responder/preventer communications systems	31.1	25.1	27.7	31.3	24	18.3	18.5	17.2	18.3	13.8	8.4	7.3	2.9	2.1	1.6	2.3	23.2	26.9
There is a lack of funding available for upgrading first responder/preventer communications systems	56.4	45.7	42.8	28.5	21.1	20.1	8.6	8.6	9.7	3.9	2.1	1.3	1.6	1.6	1.6	1	20.9	24.5
Planning efforts for improving first responder/preventer communications systems are fragmented	36	28.5	28.7	40.5	29.5	24.8	16.4	15.7	17.5	5	3.4	2.9	.8	.5	.5	1.3	22.5	25.6

2. Do you have the ability for voice, data, and video communications with the following individuals or organizations?

	Yes			No			Unsure/NA		
	Vo	D	Vi	Vo	D	Vi	Vo	D	Vi
All of the responders/preventers under your command/management	83.3	17.2	4.7	13.6	62.7	71.3	3.1	20.1	24
All of the responders/preventers in your jurisdiction	72.6	13.1	2.9	22.2	65	71.5	5.2	21.9	25.6
All of the responders/preventers in your region	38.1	9.9	1	49.9	64.8	70.8	12	25.3	28.2
All of the responders/preventers throughout the state	17.8	7.6	1	63.2	64.5	69.7	27.9	27.9	29.2
Responders/preventers across state lines (if needed)	16.2	6.5	1	60.3	63.4	67.4	23.5	30	31.6

3. What voice communications system do you currently use? Please check all that apply.

	Yes	No/NA
VHF-Low Band (30 MHz to 50 MHz)	3.1	96.9
VHF-High Band (150 MHz to 170 MHz)	78.1	21.9
UHF (450 MHz to 470 MHz)	14.4	85.6
700 MHz	.5	99.5
800 MHz	12.3	87.7
900 MHz	1.3	98.7
No Current Radio System	0	100
Other: See responses to the right	n/a	n/a

Other responses for question 3:

- All of our EMT's have pagers but not all of them have radios
- Amateur radio
- Cell phones (4)
- Cell phones and Nextel
- Clarinda and Shenandoah have communication that this office uses
- Not Sure

4. In what year were the following types of communications systems purchased?

Year Voice System Purchased	Percent
1960	0.3
1965	0.5
1967	0.3
1970	2.1
1972	0.3
1973	0.3
1974	0.5
1975	2.1
1976	1.6
1977	1.3
1978	0.5
1979	0.5
1980	3.1
1981	0.3
1982	0.8
1984	1.8
1985	2.9
1986	1.0
1987	0.3
1988	0.8
1989	0.8
1990	6.3
1992	1.3
1993	1.6
1994	3.9
1995	4.7
1996	2.1
1997	1.6
1998	4.7
1999	6.0
2000	6.5
2001	3.4
2002	5.0
2003	5.7
2004	5.2
DK/NA	20.1

Year Data System Purchased	Percent
1979	0.3
1980	0.3
1984	0.3
1985	0.3
1986	0.8
1987	0.5
1990	0.3
1991	0.3
1992	0.5
1993	0.5
1994	0.3
1996	0.5
1997	1.3
1998	1.8
1999	3.1
2000	3.1
2001	2.3
2002	1.6
2003	2.6
2004	3.1
2005	0.3
Do not have one	4.4
DK/NA	71.5

Year Video System Purchased	Percent
1989	0.3
1990	0.3
1994	0.8
1995	0.5
1996	0.8
1998	0.8
1999	0.5
2000	1.0
2001	1.0
2002	0.8
2003	1.0
2004	0.5
Do not have one	7.6
DK/NA	84.1

5. Which of the following categories most closely describes the extent to which you have made upgrades to following types of communications systems?

	Voice System		Data System		Video System	
	Yes	No/NA	Yes	No/NA	Yes	No/NA
Minor upgrades over the life of the system	61.4	38.6	15.1	84.9	5.7	94.3
Regular yearly maintenance	33.2	66.8	11.5	88.5	2.3	97.7
Ongoing maintenance with major upgrades	31.9	68.1	11.2	88.8	3.1	96.9
Other: See responses below	n/a	n/a	n/a	n/a	n/a	n/a

Other responses for question 5:

- Are presently working on a county wide upgrade plan
- Data- as we think & can afford new computer systems
- Future upgrade
- In process
- Installed squad cameras
- Maintenance as necessary
- New CAD in 2005
- New system under implementation
- No updates
- No upgrades
- Not enough money
- Repaired until obsolete, then replaced with what could be afforded
- Voice - Repair when needed

6. Do you have plans for replacing or improving the following types of communications systems?

	Voice System	Data System	Video System
Yes	24.8	21.9	6.5
No	59	46	51.4
Unsure/NA	16.2	32.1	42

6a. If you responded yes to the above question, in what year do you plan to make improvements or replacements to the following types of communications systems?

Year of Planned Voice System Update	Percent
2004	9.4
2005	7.6
2006	4.4
2007	0.8
2008	1.6
2010	0.3
DK/NA	75.9

Year of Planned Data System Update	Percent
2004	6.5
2005	6.0
2006	2.9
2007	0.5
2008	0.5
2010	0.8
2014	0.3
DK/NA	82.5

Year of Planned Video System Update	Percent
2004	0.8
2005	3.1
2006	0.3
2007	0.3
2010	0.3
DK/NA	95.3

7. My current voice, data, and video communications system is adequate. Please indicate how strongly you feel about each type of communications system based on the above statement.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	DK/NA
Voice	15.7	37.3	17.5	20.4	5.5	3.7
Data	10.2	16.7	18.8	21.1	16.4	16.7
Video	10.2	6.8	19.8	17.8	22.7	22.7

7a. Why or why not?

- 800 MHz system would be ideal so all emergency responders could communicate, however costly and small depts. don't have the money.
- Age and cost of upgrade.
- All offices have adequate radios and have access to telephones upgrade as funds become available.
- All services need more then one way to communicate, as backup or a secondary way to communicate.
- Antiquated/void areas of voice communications.
- As funding is available.
- Can communicate within city. Cannot easily communicate with other agencies.
- Can contact all neighboring and mutual aid departments, data is continuing update, video updates as budget allows.
- Cannot communicate between towns in some county. Pages will go off better 40 miles away vs. near location of accident - hand held and pagers signal and ability awful. Liability issues have made it difficult to keep first responder.
- Cannot communicate everywhere within county - old equipment.
- Cannot communicate with police department in our own city and also many mutual aid companies.
- Critical dead spots on voice - such as by the hospital ER, No Data, No video except old and unreliable in car video cameras.
- Current radio system outdated and does not provide interoperability data - 3 redundant PSAPS - could be consolidated into 2- No video planned.
- Current voice systems are near end of life, (10 years) they need to be replaced we are replacing 2 a year.
- Currently operating with outdated equipment. With the changes in FCC regulations and the need for narrow bandwidth radios and upgrades to the voice system will be costly. There are several areas throughout our county and in the city where communication is not possible and therefore dangerous to officers/deputies on patrol without communication to dispatch. Video equipment is not installed in squad cars and it has proven effective for the safety of officers/deputies on patrol as well as citizens. Working with outdated data equipment slows the system and causes extra workload for departments that already operate with minimum manpower.
- Data and Video are not available in my area.
- Data and video not available.
- Data communication is only by relay over voice from dispatch. Video is non-existent.
- Data outdated in process of replacement.
- Data system unreliable, No video system available. Voice system not always a clear connection due to numerous hills and valleys in our area,
- Data: Countywide CAD, Jail and records mgt recently installed plus mapping.
- Dead Spots – Skip.
- Dead spots in voice communications.
- Dead spots in voice, no data at this time.
- Dead spots with radio systems lack of data and video in the field.
- Do not have video ideas.
- Don't have video.
- Don't understand question.
- Equipment works but is out dated and not as efficient as could be.
- Everything is outdated.
- Frequent dropped pages, no "good" way of sending info to state. No video.

- Funding.
- Handheld radio for all members would be good presently pagers only receive.
- Have had some improvements. With the changes in FCC regulations and the need for narrow bandwidth radios and upgrades to the voice system will be costly. There are several areas throughout our county and in the city where communication is not possible and therefore dangerous to officers/deputies on patrol without communication to dispatch. Video equipment is not installed in squad cars and it has proven effective for the safety of officers/deputies on patrol as well as citizens. Working with outdated data equipment slows the system and causes extra workload for departments that already operate with minimum manpower.
- Have no data or video system. We use different agency for voice/Dispatching and have no control over system used.
- Have no need for video.
- Hospital Base radio in poor condition. We are attempting to upgrade with grant money and HRSA money.
- I feel our communication is adequate at this time because it has been serving its purpose.
- I question the need and intended use for video from scenes. There are some advantages, many disadvantages, some potential use by unfriendly /terrorist cells to deploy actions against responders. The media generally covers major events and video should be the last "state" priority in considering communication interoperability. Voice and mobile should be # 1 to include GIS mapping systems.
- Inability to easily communicate with nearby jurisdictions.
- In light of the events that occurred on 09/11, the way we have been doing things and just barley getting by is no longer adequate or acceptable.
- Inability to communicate outside our closed system is problematic in emergencies.
- Inability to communicate with other agencies in region. No data ability. Dead spots in coverage.
- Interagency communication difficult with frequent dead spots.
- It could be improved - the faxed Internet data sharing s being improved as we use it.
- Just updated radios in 2000 very little data or video equipment.
- Lack of interoperability.
- Many agencies on same system can at times have difficulty in getting through.
- My county is still using UFH high band and does not see the need to upgrade. Most fire departments have old 1970- 1980 vintage retired police radios.
- Need better communication for trucks when they are at different ends of the districts i.e. tanker operations, Storm Watch; State Firehouse programs are hard to use; Communications with county dispatch is below par Fire and EMS considered below county law enforcement.
- Need better communications with all under my command.
- Need better pagers.
- Need more radios and pagers to replace old ones.
- Needs to be update with better coverage.
- No data capability exists for Polk County Volunteer fire agencies, which include GIS mapping which is extremely important to get resources to the incident. Voice needs to be getter coordinated between Fire/EMS and law enforcement agencies. Video capability is questionable to me, depending on its intended use and it’s lesser of the three in importance.
- No data or video communications not everyone has handheld radios.
- No data or video in place at this time.
- No data or video system affordable for a small rural department.
- No data, no video, voice still has areas with no communication in our area.
- No funding to upgrade, not enough frequencies, no video or data available and no funding - poor interoperability with outside agencies.
- No funds. (2)
- No Video or Data.
- Not a very modern and user-friendly system. Some things are good but as a whole system could use some work.
- Not enough bandwidth.
- Old outdated equipment for voice. NA video system at all.
- Old systems, lack of funding.

- On sight video except how car cameras are unneeded; we do not intend to get. Data is not a bad item but right now cost/benefit says no; Voice - our system is fine. We can radio who we need on various frequencies but some of our equipment is old and some needs tech updating.
- Our area is a hilly terrain and we have a lot of dead spots in our comm. From our paging system and our emergency vehicles.
- Our computer system, phone and fax are adequate.
- Our county communications needs major improving. We have dead spots, we are not able to reach our law center from many locations with our hand held radios and some spots with our mobile radios.
- Our current communication system works well for ourselves. It would not be adequate for homeland security with limited range. Not talking to different agencies.
- Our current radio system has not been able to cover our fire district since we went to E-911 in1992 -1993. The county fire chiefs association has asked the 911 board to help to resolve the issue, the reply was that 911 was not responsible for communication in the county. This leaves asking who has the responsibility for the comprehensive plan and the direction in which to move.
- Our current system and equipment is outdated, but still provides adequate service.
- Our data and video communication is basically non-existent, with the exception of fax machine and e-mail transmissions. Our voice communication system is presently lacking but will be soon upgraded.
- Our data system consists of a computer at the station our radio systems are not always compatible some of our neighboring departments in another county are not compatible with the 800 system.
- Our radio system is outdated.
- Our radio system needs some help because due to the part of the county we are in we have a lot of dead spots and our portables do not work well either. As rules change for EMS reporting & more records are required for fire we are trying to buy 2 new computers, one with grant money and one out of our own money.
- Our system is old and we are unable to add any new frequencies to be more compatible with other agencies systems.
- Our system within our fire dept is adequate - it becomes inadequate during large events when police, transportation and other fire depts. join in and we can’t communicate or we're talking over each other.
- Our systems are obsolete and outdated that if our system goes down we will be without any system.
- Our telecommunications system is outdated and inadequate. We do not have mobile data or video systems in place.
- Our telephone exchange is somewhat dated. But still reliable, our radio system is obsolete and some of the radios still have tubes, we have no video system.
- Our voice communications are good. We do not have data or video in our dept.
- Outdated, lack of standards.
- Phone system is adequate until Phase II is put into effect. We do not have data or video from the field.
- Phone system out of date having problems, computer system working well.
- Phones adequate. Contract communications to city.
- Poor coverage area, limited data availability at this time, No Video accessible (other than in car recorder).
- Poor interoperability.
- Radio Communication ritual for FF safety. 911 computers and radio and towers of communications center need updating badly.
- Radio coverage is not adequate.
- Radio system is 20 years old in service, need mobile data terminals.
- Radio system is adequate. Phone system - especially all phone system is not. Hoping to replace it soon. Data system is adequate. Do not have mobile data systems in squad cars, fire trucks or ambulances.
- Radio System is dated and has no hand held radio communication on regular basis.
- Radio system is OLD - 20 years - need mobile data terminals.
- See no real need for D - V we get by with radio but could use upgrade.
- Some mobile radios are over 10 years old - some pagers are in very unreliable condition. Not enough hand held portable radios available.
- Some trouble regional & state wide - very adequate in our service area.

- Sometimes we have trouble reaching officers in our county depending on where they are.
- System overload, not enough radios for all personnel, No data system provided to fire and EMS services.
- Systems change everyday; it is impossible for small departments on a restricted budget to keep up. If someone updates and you can't your system is inadequate and communications become a problem.
- Technological improvements are not being implemented as they become available. This reluctance is mostly due to lack of financial resources.
- Technology is very expensive and difficult for small counties to acquire funding for major improvements or overhaul.
- The county is in the process of upgrading all the FP radios.
- The systems we use are moderate.
- The voice system is good but we have to call the county to connect with Boone or Polk County. I don't know enough about Data or Video.
- The voice system is still several different systems with interoperability between agencies. With regards to data, only law enforcement uses it and only on a completely different communications systems. We have no video capability.
- There are some locations that radios will not work. We also use a line channel that metro agencies (police) listen to that is as far as fire/EMS radio system it also needs a lot of updating to interlink multiple agencies and jurisdictions. Radio channel is also becoming overwhelmed due to number of departments and call load.
- There have never been any regional meetings to address communications between agencies. Plus there was no funding available to address this.
- There is always room for improvement.
- They are and will be outdated as a new frequency to HISH band is being mandated.
- To far from repeater tower.
- To some extent, more is always better, with emergency communication long range planning technology standards and careful coordination is probably the best approach for us at the local level. We hope to "catch up" with mobile data technology to enhance our effectiveness.
- Too many "Dead Spots" terrain too difficult to overcome extensive cost to cover the existing dead spots.
- Too many organizations on one frequency.
- Upgrade as funding is available.
- Upgrade funding available.
- Video communication is basically non-existent statewide. Data can be transferred via e-mail or state system. Voice communications is available - no secure channels or at state wide level.
- Vo: we have the ability to communicate with all LE, FD, and ambulances in the county. D: We use email to communicate with most of the responders. VI: we have some in-care video cameras.
- Voice - lack of portable coverage throughout the county. Mobile is okay - Data/Video - Don't even have.
- Voice - more interoperability between Fed, State, County, and City systems. Data - Would like to see more use of e-mail, pictures etc. Via windows systems. OS
- Voice - not V-25 compliant, Data - Does not exist, Video - Does not exist.
- Voice - our area has "dead areas" so cellular phones/Radios don't reach.
- Voice - Public safety can't talk to each other on a regular basis - without relaying. Police and Sheriff can't talk or monitor activity. The Sioux City police and Fire lease from RACOM - when the T-1 line to Marshalltown fails - the towers aren't link together so there are big gaps in communicating. DATA - Sioux City PD is the only dept that has data - it is slow and is unable to handle large packets of data such as phones - roll call info - finger prints - and the GPS tracking is not live (DATA leased from RACOM).
- Voice - Radio system would work better with repeater for countywide communications data - MDT's and Avl would benefit users in the system Video - No video system in place.
- Voice - Radio systems are fragmented (800, UHF, VHF); Data Current CAD outdated - implementing new CAD and RMS 2005. Integrated with Des Moines Police and Fire. Video - Limited to in-care recording - no means to transmit.
- Voice - Recently have done major upgrades and added repeaters thru out the county.
- Voice - Unable to communicate with all responders on major incidents Data - No availability regional EMS and law enforcement data. Video - not currently in use.

- Voice - we have a sufficient supply of radios, pagers, and a cell phone. Data - We have Internet capability at the office with a laptop other than that, we have no data communications. Video - Non available.
- Voice - We have done well in keeping our Pager and Radios up to date, Data - Poor Data no ability to have data outside of our offices - no personnel to keep data updated. Video - Doesn't exist.
- Voice - We have to go to the rescue van to use the phone - it's not hand held. Data and Video we don't have either one of these.
- Voice communication to be adequate for us to function. Data is fax and Sean and Email. Don't have video.
- Voice communications is limited to our county dispatchers because of an antiquated system and they as joint comm respond to the PD LSD on private frequencies with us muted out. We sometimes need to call by phone to get them to answer us.
- Voice data is adequate because it is designated frequencies. No data or video available - no funds for purchasing.
- Voice is adequate for routine, can become congested during multiple events. MAT and video not present.
- Voice is adequate; Data is unavailable because of cost. Video is unavailable because of cost but may not be useful for my jurisdiction.
- Voice sometimes unable to talk more than 5 miles on car mobile due to traffic from other counties and skip. Video does not exist for our agency.
- Voice system gets upgrades and regular schedule. Data system is improving with E-911 upgrades. Video system is not in place.
- Voice system in place, no other.
- Voice system is new; Video and data systems do not exist.
- We are a private service that provides 911 service and back up service to Des Moines we have no ability to communicate with Des Moines Medic Unites in a disaster setting.
- We are a small agency in a small community with good systems.
- We are able to reach out to our respective agencies by radio 95-100 % of time. We have no data or video system in place currently.
- We are progressive and planning for future.
- We are small department - all our equipment is adequate and functional
- We could use more handheld radios.
- We currently have MUT's in public works, it is a very important tool for NCIC and secure, Communications video would enhance that capability
- We do not have data or video systems. Voice/Radio has good coverage with very few exceptions.
- We do not have data or video, Voice system is new and digital capable.
- We do not have the funds to upgrade and sometimes to repair.
- We have communications that serve us for our needs at this time there is no need to change. 800 systems have issues as well as VHF/UHF. Until 800 systems are cleaned up, we will stay with what we have.
- We have just updated our fire/ground communications to include all firefighters on our department with W/T/ we also purchased headsets for pump operators and speaker mics for officers. We have done nothing with the data and video systems.
- We have mobile-to-mobile dead spots.
- We have neither data nor video from scene too many "black" coverage areas with voice.
- We have no data or video equipment.
- We have no data or video. Voice works well.
- We have no data or voice sharing systems or software.
- We have no funding, no one who is responsible and will take responsibility for training, quality improvement and infrastructure. The fire service is a bastard stepchild with regards to communications concerns. Police get all the attention and dispatchers could pretty much care less if we communicate.
- We have no funds for Data or video. Our voice capability is adequate for our jurisdiction.
- We have no money to fund MDC's.
- We have no video system or mobile data communications. We have dead spots in our mobile and portable radio system. They can all be improved upon.
- We have no video system right now, nor does anyone else we know. Our data system consists of a fax machine and free state software, which only reports data they want.
- We have no video system. Phone system replaced last year, Radio system needs an upgrade but is adequate.
- We have no video; we were given a used computer 7-27-04.

- We need more portable radios because we need a separate radio system to talk to neighboring counties.
- We now have all county EMS transport units using county fire and there is no Alt channel other than police /MA channels.
- We update as funds are available through grants in our voices systems. We do not have data or video systems.
- We use voice pagers and they are not reliable when people are inside of building with metal roofs. Florescent lights and other electrical devices that may be on the building (hospitals and school).
- With the terrain that we have in our area, communications can be almost impossible at times.
- Within my department, we have adequate voice communications. Outside of the department, it is not.

8. Approximately what percentage of your voice communications coverage area contains dead spots?

No dead spots exist	6.3
Less than 5%	25.8
5 – 10%	22.5
11 – 20%	16.2
21 – 30%	31.1
31 – 40%	7
41 – 50%	2.9
51 – 60%	1.3
61 – 70%	.5
71 – 80%	0
81 – 90%	.5
91 – 100%	.5
DK/NA	3.4

9. Does your organization have a back up plan given a failure of the following types of communications systems?

	Yes	**No**	**Unsure/NA**
Voice	67.6	26.9	5.5
Data	18.5	52.2	29.2
Video	2.1	60.3	37.6

10. Which of the following agencies can you currently communicate with? Please check all that apply in voice, data, and video communications.

	Voice		Data		Video	
	Yes	No/NA	Yes	No/NA	Yes	No/NA
Law enforcement within home jurisdiction	94.3	5.7	24.3	75.7	2.9	97.1
Neighboring law enforcement agencies	75.7	24.3	22.2	77.8	1.8	98.2
State law enforcement	72.6	27.4	20.4	79.6	.8	99.2
Federal law enforcement agencies	25.3	71.7	14.1	85.9	.5	99.5
Fire department(s) within home jurisdiction	95.6	4.4	11.7	88.3	1	99
Neighboring fire departments	84.3	15.7	10.2	89.8	.8	99.2
EMS agency within home jurisdiction	95	5	11.5	88.5	1	99
Neighboring EMS agencies	70	30	9.1	90.9	.5	99.5
State emergency management agency	36.6	63.4	13.3	86.7	.5	99.5
Federal emergency management agency	16.7	83.3	11.2	88.8	.5	99.5
National databases (i.e. NCIC/NLETS)	16.7	83.3	26.6	73.4	.5	99.5
Local public health officials	35.8	64.2	7.3	92.7	.5	99.5
State public health officials	21.4	78.6	8.1	91.9	.5	99.5
Local hospitals	71.3	28.7	6.8	93.2	.5	99.5
Hospitals in neighboring municipalities	46	54	5	95	.5	99.5
Public utilities/public works department within home jurisdiction	52	48	6.3	93.7	.8	99.2
Public utilities/public works department in neighboring municipalities	18	82	3.9	96.1	.5	99.5
Schools and school buses within home jurisdiction	25.8	74.2	4.7	95.3	.5	99.5
Schools and school buses in neighboring municipalities	13.8	86.2	2.6	97.4	.3	99.7
Other: See responses below	n/a	n/a	n/a	n/a	n/a	n/a

Other responses for question 10:

- Air Care
- Airport
- Amateur radio
- Can contact all by phone
- County Emergency Management
- County Road
- Ham Radio
- National Weather Service (2)
- Railway and public transportation
- This depends on day and dead spots
- Transit buses, Coast Guard Auxiliary
- We can only talk with ourselves

11. Which of the following agencies do you need to be able to communicate with? Please check all that apply in voice, data, and video communications.

	Voice		Data		Video	
	Yes	No/NA	Yes	No/NA	Yes	No/NA
Law enforcement within home jurisdiction	92.7	7.3	41	59	12.8	87.2
Neighboring law enforcement agencies	84.1	15.9	36.6	63.4	7.8	92.2
State law enforcement	80.2	19.8	35.8	64.2	7	93
Federal law enforcement agencies	40.7	59.3	27.7	72.3	4.4	95.6
Fire department(s) within home jurisdiction	89.8	10.2	31.6	68.4	10.7	89.3
Neighboring fire departments	88.3	11.7	28.5	71.5	7.8	92.2
EMS agency within home jurisdiction	91.9	8.1	29.2	70.8	8.6	91.4
Neighboring EMS agencies	85.1	14.9	26.6	73.4	4.7	95.3
State emergency management agency	66.8	33.2	34.5	65.5	9.9	90.1
Federal emergency management agency	42.3	57.7	27.2	72.8	7.3	92.7
National databases (i.e. NCIC/NLETS)	26.1	73.9	32.9	67.1	3.1	96.9
Local public health officials	60.8	39.2	25.3	74.7	5.7	94.3
State public health officials	46.2	53.8	23.8	76.2	4.2	95.8
Local hospitals	81.2	18.8	25.8	74.2	6.8	93.2
Hospitals in neighboring municipalities	59.8	40.2	19.3	80.7	3.9	96.1
Public utilities/public works department within home jurisdiction	77	23	17.2	82.8	4.4	95.6
Public utilities/public works department in neighboring municipalities	44.1	55.9	11.2	88.8	2.6	97.4
Schools and school buses within home jurisdiction	61.4	38.6	12.5	87.5	3.4	96.6
Schools and school buses in neighboring municipalities	36.3	63.7	8.1	91.9	.8	99.2
Other: See responses below	n/a	n/a	n/a	n/a	n/a	n/a

Other responses for question 11:

- Air Care
- Airport
- Bomb data center, NRC, National Guard
- County Emergency Management (3)
- County Road Dept
- DOT - State Road Workers
- Military Units
- National Weather Service
- Off Duty responders
- Public Transportation
- State Park Officers, DNR
- Transit Buses

12. How important is it that you have the ability to communicate with the following agencies?

	Very Important	Important	Somewhat Important	**Not Important**	**DK/NA**
Law enforcement within home jurisdiction	89.3	7.3	1	0	2.3
Neighboring law enforcement agencies	62.9	21.9	9.4	2.1	3.7
State law enforcement	55.1	21.7	15.7	1.6	6
Federal law enforcement agencies	19.8	20.6	31.6	14.6	13.3
Fire department(s) within home jurisdiction	93	3.4	.3	.3	3.1
Neighboring fire departments	76	17.2	3.4	.3	3.1
EMS agency within home jurisdiction	90.9	5.5	.3	0	3.4
Neighboring EMS agencies	65.8	19.8	10.2	.5	3.7
State emergency management agency	27.9	36.6	23	3.9	8.6
Federal emergency management agency	13.3	25.1	35.2	13.3	13.1
National databases (i.e. NCIC/NLETS)	38.1	10.2	21.9	17	12.8
Local public health officials	36	29.2	19.3	5.7	9.7
State public health officials	16.4	36	27.4	8.4	11.7
Local hospitals	68.1	13.6	8.6	2.6	7
Hospitals in neighboring municipalities	40.7	25.3	15.4	8.6	9.9
Public utilities/public works department within home jurisdiction	51.4	22.7	12.3	4.7	8.9
Public utilities/public works department in neighboring municipalities	16.4	27.9	28.2	13.8	13.6
Schools and school buses within home jurisdiction	31.3	23.2	20.9	13.1	11.5
Schools and school buses in neighboring municipalities	12.5	21.4	28.2	24	13.8
Other: See responses below	n/a	n/a	n/a	n/a	n/a

Other responses for question 12:

- Air Care
- Airport
- Amateur Radio
- Bomb data center, NRC, National Guard
- County Emergency Management (3)
- County Road Department
- DOT - State Road Workers
- Exelon Nuclear Plant
- Military Units
- National Weather Service
- Railroads
- State Park Officers – DNR
- Transit Buses

13. How great is the need for mobile data communications in your jurisdiction?

Very great	31.3
Fairly great	18.3
Somewhat great	20.4
Not at all	12.8
Unsure/NA	9.1

14. Is there a need for "from the scene" video from your jurisdiction to the following locations?

	Yes	No	Unsure/NA
Your headquarters	29.5	43.1	27.4
Communications centers	34.7	33.7	31.6
Iowa Emergency Operations Center	20.6	39.2	40.2
Iowa Dept. of Public Safety	17.2	38.9	43.9
Iowa Homeland Security & Emergency Management Division	19.8	35.5	44.6
Other: See responses below	n/a	n/a	n/a

Other responses for question 14:

- Command vehicle on scene
- County Emergency Management
- Emergency Management EOC (2)
- Hospitals (3)
- Incident Command
- Local EOCs (3)
- Mobile Command (3)

15. What agencies do you dispatch for? Please check all that apply. (FOR COMMUNICATIONS CENTERS ONLY)

	Yes	**No/NA**
Police	31.3	68.7
Fire	34.7	65.3
EMS	32.4	67.6
Other: See responses below	n/a	n/a

Other responses for question 15:

- Airlife
- All public safety
- Animal Control
- City/county roads
- City issues after hours (2)
- City utilities
- City utilities and public health
- Coast Guard Aux. Underwater recovery, Urban Search and rescue, Regional Hazmat Team
- County Sheriff
- County Sheriff/County Fire Depts.
- Decorah Police provides dispatch services
- EMA (2)
- Gas Company, weather information in schools, etc.
- Hospital Air Ambulance
- Local utilities
- Medical Examiner, Health Department, Public Works

- Municipal Light Plant
- Neighboring EMS
- None
- Page public health nurse, home utilities, and communicate with local school buses
- Public Utilities
- Public Works (3)
- REC
- Rescue
- Rural Electric Co/weekends and off hours
- Sheriffs department (2)
- Sometimes public works
- Storm spotters, county conservation
- Utilities and road engineers dept
- We are dispatched by Harrison County Sheriff
- We are dispatched from neighbor county
- We are part of consolidated communications center that services law, fire, and EMS for our county
- We do not dispatch (2)
- Wreakers, power co, hospital

16. What system do you operate on with these agencies? Please check all that apply. (FOR COMMUNICATIONS CENTERS ONLY)

	Yes	No/NA
VHF-Low Band (30 MHz to 50 MHz)	2.1	97.9
VHF-High Band (150 MHz to 170 MHz)	32.9	67.1
UHF (450 MHz to 470 MHz)	8.6	91.4
700 MHz	.3	99.7
800 MHz	7.6	92.4
900 MHz	0	100
No Current Radio System	.3	99.7
Other: See responses below	n/a	n/a

Other responses for question 16:

- Cell phones
- Nextel, radio cell phone as well
- Not sure

17. Please rate how important the following system features and functionality are to your department.

	Very Important	Important	Somewhat Important	Not Important	DK/NA
Mobile radio based system	93.5	2.9	.8	0	2.9
Portable radio based system	90.6	5.5	.8	0	3.1
Combination mobile and portable based system	84.3	6.8	5	.5	3.4
Seamless (reliable, uninterrupted service) jurisdiction wide voice coverage	70.8	13.8	6	3.9	5.5
Seamless (reliable, uninterrupted service) voice coverage outside of jurisdiction	42	33.4	12.5	6	6
Interoperable communications with agencies in jurisdiction	68.9	18.3	5.7	1.6	5.5
Interoperability communications with neighboring organizations/agencies	52.5	30.5	10.2	1.3	5.5
Interoperability communications with state agencies	33.4	34.2	23.5	2.9	6
Interoperability communication with federal agencies	17.8	25.6	38.1	11.2	7.3
User safety	72.8	8.4	3.9	1	13.8

18. Do you coordinate within any of the following areas in efforts to improve communications and interoperability for your organization? Please check all that apply.

	Yes	No/NA
City	72.1	27.9
County	90.1	9.9
Region	24.8	75.2
State	19.1	80.9
Beyond state lines	5.5	94.5
Other: See responses below	n/a	n/a

Other responses for question 18:

- Airport, National Weather Service
- Fire, EMS, Public Works, Local Government
- Internal VHF band
- Iowa State University, local schools
- Mutual-aid association
- Neighboring Counties
- School District
- We border Nobles Co, MN
- We have tried it, but there is little interest in cooperation

19. Do you respond to calls outside your normal service or response area?

Yes	88.8
No	8.6
Unsure/NA	2.6

20. When making decisions about purchasing equipment, do you coordinate with other first responder/preventer organizations around you?

Yes	61.9
No	32.6
Unsure/NA	5.5

21. When purchasing equipment, which category best describes why you coordinate with first responder/preventer organizations? Please check all that apply.

	Yes	No/NA
Pooling resources	42.3	57.7
Required of fund source	22.5	77.5
Due to cooperative service agreements	25.3	74.7
There is not a need to coordinate with other organizations	17	83
Other: See responses below	n/a	n/a

Other responses for question 21:

- Better enhancement of service
- Better pricing
- Check models
- Check reliability of products
- Compare equipment already in use
- Compatibility and user familiar with equipment across jurisdictions
- Compatible equipment (3)
- Coordinating system capabilities
- Discussion, but no pooling of funds
- Don't coordinate
- Equipment Services
- Everyone has his own way
- Federal Grant
- Find equipment that works well in all areas and have same type of equipment
- Frequencies
- Group discounts
- Haven't coordinated in the past
- In order to communicate
- Information (3)
- Interoperability (6)
- Interoperability of equipment
- Make sure equipment is compatible (2)
- Make sure we have the right frequencies
- Needs to be done
- Not much coordination - need more
- Polk Co Sheriff 28E Agreement for Communications
- Reliability
- See what is working for them
- So we can talk to each other
- Standards
- Try to use same type of equipment/gear
- Type of equipment
- Very little coordination
- When funding is available, things are the same

- When needed volunteer funds
- Zero funding

22. How do you currently fund your communications systems? Please check all that apply.

	Yes	No/NA
I set money aside each year	27.4	72.6
There is an appropriation in the annual budget	49.1	50.9
I receive grants for special projects	35.2	64.8
Use of local E-911 surcharge revenue	50.9	49.1
Other: See responses below	n/a	n/a

Other responses for question 22:

- As needed and when money available
- Budget to maintain status quo
- Budgeted HRSA funds not shared by volunteers
- Capital Budget requests (2)
- City Council budget item
- Comes out of repairs/maintenance fund that is used for all types of repairs/maintenance not just specifically communications systems
- Comm. Center is under 28E, not the Sheriff
- County Association
- Dept budget
- Donations (5)
- Donations and tax dollars
- EM Grants
- Federal Grant
- Find the funds when needed
- Flip pancakes
- Fund raisers (7)
- Fund raising or we have received grant money
- Grants
- If it is a large dollar amount of purchase, the city council must approve to spend the money
- Major purchases are paid via bond issue
- Our budget
- Our city pays for it.
- Revenue
- Sheriff budget
- Special appropriation
- System thru Sheriff office
- Tax dollars that support FD and fund raisers
- Taxes and fundraising
- Taxes and donations (2)
- Unsure
- We try to find money for it, when we need it, which is usually too late

23. Do you currently have a budget for updating your communications systems?

Yes	29
No	64.5
Unsure/NA	6.5

24. Besides meeting your operational requirements, what factors do you consider when updating your communications systems? Please check all that apply.

	Yes	No/NA
I base them on developed standards	43.1	56.9
I use past practices	35.5	64.5
I seek out the latest information and resources	59	41
I speak to technology/communications specialists	74.7	25.3
Other: See responses below	n/a	n/a

Other responses for question 24:

- 3rd party
- Bottom line is always what can we afford to purchase
- Cost
- Cost effective system that best fits our needs
- Decided higher up
- Done through a board of directors
- Interoperability
- Metro discussions
- Money
- None
- Our county emergency management (E911 Board)
- Our Sheriff decides for us
- Past usage
- Price /affordability
- Safety
- See what's working for others in same situation
- Sheriff decides
- Speak to other agencies
- The needs of the users (2)
- When they won't work any more we replace them (2)

25. Besides meeting your operational requirements, what influences your decision about buying new technology? Please check all that apply.

	Yes	No/NA
I base my decisions on developed standards	36.6	63.4
I use past practices	30.3	69.7
I seek out the latest information and resources	56.1	43.9
I speak to technology/communications specialists	75.5	24.5
Other: See responses below	n/a	n/a

Other responses for question 25:

- 3rd party
- Availability of maintenance
- Based on cost and funding
- Because of scanning system we are able to communicate with other dept.
- Board of directors
- Bottom line is always what can we afford to purchase
- Close communication gaps, improve interoperability
- Cost (7)
- Cost effective system that best fits our needs
- Cost, when money is available
- Decided higher up
- Discuss with our unit.
- Durability
- Finances
- Funding (2)
- Funding available
- Governing body decides
- I use what has worked well in the past also
- Interoperability compatibility - all county depts. Have similar radios so mutual aid responders can use them
- Metro discussions
- Money
- Money available
- Operator input
- Other agencies' experiences
- Our county emergency management (E911 Board)
- Past usage
- Price (2)
- Resources
- Speak to other agencies
- Talk to their departments
- Technology publications
- The Sheriff decides for us

26. Please select the type of organization you work for from the following list:

Combined Public Fire/EMS Agency	32.6
Communications Center	10.7
Fire Service Agency	18.5
Law Enforcement Agency	23.5
Private Emergency Medical Service (EMS)	5.7
Other: See responses below	4.7
DK/NA	4.2

Other responses for question 26:

- All of the above
- City EMS (3)
- City EOC
- Combined law/Fire/EMS/Public Works
- Combined Public fire/EMS agency
- County EMS (2)
- County hospital, EMS
- County hospital, hospital-based EMS
- County Sheriff, so all of the above
- EMA (2)
- EMA - E911
- Emergency management
- EMS - City Owned
- EMS Agency
- Fire Services Agency
- Hospital Base Ambulance
- Hospital Based EMS (5)
- Iowa Department of Transportation
- Law Enforcement
- Law Enforcement, City Public Safety Agency
- Mechanicsville fire & ambulance volunteers
- Private
- Private Emergency Medical Services (EMS)
- Public EMS (3)
- Public hospital-based EMS
- Regional Emergency Medical Service
- Separate EMS, publicly funded
- State Hospital

27. In which of the following position(s) do you serve? Please check all that apply.

	City	**County**	**Incorporated Area**	**Regional**	Statewide	**Unincorporated Area**	**Other:** See responses below
County Sheriff	2.3	11	2.6	.3	.3	1.3	n/a
Communications Center Manager	8.6	13.6	4.4	1	.3	2.6	n/a
EMS Manager	19.1	9.7	4.4	1.6	0	4.2	n/a
Fire Chief	33.7	8.4	8.9	.8	0	8.4	n/a
Police Chief	15.9	2.1	1.8	.3	0	.3	n/a
Other: See responses below	n/a	n/a	n/a	n/a	n/a	n/a	n/a

28. How long have you served in your current position?

Less than a year	6
Up to five years	27.4
Five to 10 years	28.5
More than 10 years	36.6
DK/NA	1.6

29. What is the approximate population of the jurisdiction you serve in?

Under 1,000	15.1
1,000 – 4,999	30.5
5,000 – 9,999	15.4
10,000 – 24,999	20.1
25,000 – 50,000	8.6
Over 50,000	8.4
DK/NA	1.8

30. For your primary position, please indicate the city where your headquarters are located.

- Adel (2)
- Afton
- Albia
- Algona (2)
- Allison
- Alta
- Altoona
- Alvord
- Ames (2)
- Anamosa
- Ankeny (2)
- Aplington
- Arlington
- Armstrong
- Asbury
- Atlantic
- Badger
- Baldwin
- Barnum
- Battle Creek
- Baxter
- Bedford
- Belle Plaine
- Bellevue
- Belmond
- Bennet
- Bettendorf
- Blairstown
- Blockton
- Bloomfield
- Boone (2)
- Braddyville
- Bridgewater
- Burlington
- Calmar
- Camanche
- Carroll
- Carson
- Carter Lake
- Cedar Falls
- Cedar Rapids
- Center Junction
- Centerville
- Chariton
- Charles City (3)
- Chester
- City of Prairie City
- Clarinda (3)
- Clarion (2)
- Clear Lake
- Clinton (3)
- Clive (2)
- Cultier
- College Springs
- Columbus Junction
- Coralville
- Corning
- Corydon (2)
- Council Bluffs (2)
- Cresco (2)
- Creston (3)
- Danbury
- Danville
- Davenport (5)
- Dayton
- Decorah (3)
- Denison
- Denver
- Des Moines (9)
- Des Moines (Saylor Township)
- Dewitt (2)
- Dike
- Doon
- Dubuque (3)
- Eagle Grove
- Earling
- Earlville
- Edgewood
- Elberon
- Eldon
- Eldora
- Eldridge
- Elgin
- Elkader (2)
- Emmetsburg
- Epworth
- Essex
- Estherville (3)
- Fairfield
- Farley
- Farmington (2)
- Fire Station
- Forest City
- Fort Dodge (2)
- Fort Madison
- Fredricksburg
- Fruitland
- Garner
- Gilmore City
- Gladbrook
- Glenwood (2)
- Graettinger
- Grafton
- Gravity
- Great lakes of Iowa Area
- Greenfield
- Grimes
- Grinnell (2)
- Griswold
- Guthrie Center
- Guttenberg
- Hampton (2)
- Harlan (4)
- Harpers Ferry (2)
- Hayesville
- Hiawatha
- Hancock
- Holland (2)
- Hudson
- Hull
- Humboldt (2)
- Humestone
- Ida Grove (3)
- Independence (2)
- Indianola
- Ionia
- Iowa City (4)
- Irwin
- Janesville
- Jefferson
- Jesup (2)
- Kelley
- Kellogg
- Knoxville (2)
- Lake Mills
- Lamont
- Lee County Iowa - Jackson Township
- Lemars
- Leon
- Lohrville
- Lone Rock
- Low Moor
- Mallard Fire Department
- Manchester (5)
- Manilla
- Manning
- Maquoketa (3)
- Marcus
- Marengo (2)
- Marion
- Marquette
- Marshalltown (3)
- Martelle
- Mason City (4)
- Maynard
- McClelland
- Mechanicsville
- Mediapolis (2)
- Melrose
- Melvin
- Menlo
- Milton
- Missouri Valley
- Montour
- Mount Pleasant (3)
- Mount Vernon
- Moville
- Mt Auburn
- Muscatine (3)
- Nashua
- Nevada (2)
- New Hampton (4)
- Newell
- Newhall

- Newton (3)
- Nodaway
- Nora Springs
- North Liberty
- Norwalk
- Ogden
- Onawa
- Orange City (4)
- Osage
- Osceola
- Oskaloosa (2)
- Ossian
- Packwood
- Palmer
- Pella (3)
- Pleasant Hill
- Pocahontas (2)
- Police Department
- Postville
- Prairie City
- Preston
- Primghar (2)
- Randolph
- Red Oak
- Remsen
- Riceville (2)
- Ricketts
- Riverdale
- Rock Rapids
- Rockwell City
- Rolfe
- Rural
- Rural Marshall County
- Salem
- Sergeant Bluff
- Sheffield (2)
- Sheldon (2)
- Shenandoah
- Sibley (2)
- Sidney
- Sioux City
- Solon
- South English
- Spencer (3)
- Spirit Lake
- Springbrook
- St. Ansgar
- Stanton
- State Center (2)
- Storm Lake (2)
- Story City (2)
- Strafford
- Stuart (2)
- Swea City
- Templeton
- Thurman
- Tipton (2)
- Toledo
- Tracy (2)
- Traer
- Tripoli
- Truro
- Underwood
- University Heights
- Urbandale
- Ute
- Villisca
- Vinton (2)
- Volga Fire Dept
- Wadena
- Walker
- Walnut
- Wapello
- Washington (2)
- Waterloo (4)
- Waukee
- Waverly (2)
- Wayland
- Webb
- West Bend
- West Burlington
- West Des Moines
- West Point
- West Union (4)
- Wheatland
- Whiting
- Williams
- Winfield
- Winterset
- Winthrop
- Woodbine (2)

31. Is there anything else you would like the Iowa Communications Task Force to know?

- A lot of the time private EMS systems are left out of funding. But we are doing this to help our communities.
- A proprietary radio system is not in the best interest for a statewide communications system. (i.e. Motorola - edacs - etc.)
- A standard system which would function in all areas would be beneficial in the demands we need to meet in mutual aid situations.
- All services need to improve communications ability.
- Any assistance would be appreciated. Don't let this just be a study. We need funding & action.
- Any help you can give the smaller agencies would be a help. The large metro areas have more available resource options than a community our size. That trying to provide the same service. Thank you Orville Randolph, Bennet Ambulance President.
- As chief I oversee a communications center for City/County operations. Interoperability is a necessary component of ensuring timely and seamless response to a vast number of calls - not just emergency- related ones.
- As far as Law Enforcement needs go there is probably more of a demand for funding and technical assistance in data communication (i.e. computers) than anything. Not sure of the need for video feeds in the small and rural areas.
- As time goes on with the changes in this world today, a complete radio system is crucial for all emergency responders to be able to communicate. Be sure to include all areas within the state when you consider money to be allocated. It seems there is no money left to reach the departments that need improvements and upgrades to their system but who do not qualify for formula based grants. And that there may be grants available but if your department is not aware of them, you don't receive any money. That even if your agency does not have an immediate threat of terrorism or bioterrorism, communications are crucial to the safety of its citizens should those threats arise. And for the daily safety of it's citizens, responders and law enforcement.
- Be sure to include all areas within the state when you consider money to be allocated. It seems there is no money left to reach the departments that need improvements and upgrades to their system but who do not qualify for formula based grants. And that there may be grants available but if your department is

not aware of them, you don't receive any money. Even if your agency does not have an immediate threat of terrorism or bioterrorism, communications are crucial to the safety of its citizens should those threats arise. And for the daily safety of it's citizens, responders, and law enforcement.

- Clayton County is currently upgrading the county communications system including microwave/Dispatch Center/
- Coming from MO to IA was a huge change; it may be worth it to look into a governing body for communications centers. IE Mark in KC MO. This helps with funding and equipment for the area covered as well as training for communications operator. I believe St. Louis also has a regional district.
- Common equipment region to region, common frequencies, ability to utilize towers without huge fee's - by private companies, H seems lie Gov't leases tower space to cable/cellular for pennies, but they charge you if you want to place on their towers.
- Communications need to be easy to use and standardized statewide so all counties and agencies can communicate with each other.
- Communication language is another important interoperability issue. "10-Codes" are dates, confusing to some, and different across state lines. We should develop a plain English approach.
- Communication upgrades were to be implemented after last year’s grants, not in place yet.
- Communications in the rural areas is lacking. Updates are needed and better coverage is a must for Fire/EMS and Law.
- Consider using the existing ICN to link local EOCs to county and state ones. Tie those EOC with the E-911 centers. This would be a very good start.
- Currently we are dependent on E-911 funding primarily from phone surcharges for communications equipment. The amount collected has dropped drastically due to cell phone use and is jeopardizing funding for upgrades and replacement.
- Developing a system in Iowa has outstanding potential with the infrastructure in place. Current systems for lease have proved to be too expensive for cash strapped cities. The state needs to take the initiative to provide statewide communications, not a private vendor.
- Equipment should be coordinated through agencies involved not homeland security emergency management.
- Federal and state government are great on making mandates but forget about the hardship of following these mandates because of lack of funding
- For private not for profit organization such as ours, it would be nice to tie into state funding for communication replacement, pages, radios, etc. Cell phones have become a main stay in Ambulance Communication need better plans for emergency services!
- From my perspective: whatever is done in communications, there needs to be relief for the dispatchers they do more and more while budgets are cut. Officer safety is surely number one. I would like to see second priority, a new idea or technology to ease the dispatchers’ workload in some manner.
- Funding is our biggest problem living in a small town.
- Funding sources and cooperation between entities that have not worked well together in the past will be your biggest challenges.
- Funding, We need $
- Good Luck!
- Good to see some organization taking place hopefully some funding will be included.
- Having a statewide system for all responders is essential.
- Help funding better paging for our department would help a lot. We would also like help updating our comm. Towers in our county to help in our need for better comm. between agencies and members of our dept.
- I agree all entities should work together, however one big system or fads such as a troubled 800mhz system must be avoided. We work well now by following vertical and or horizontal voice communication groupings. If all try to work through a common system a jumble will result. A fireman on the street should not talk to law, his supervisor should talk to incident command and they pass it to law in the street (incident command)
- I am not in favor of "regionalization" of fire/EMS services for training or equipment. Counties are regions - ours has 10 fire departments. We regionalize our grant money per department. It works regions of multiple counties will be prioritized to corporate services & I don't want that.
- I am State Center EMS Training Officer and Captain. Marshall county Emergency Medical Services Association President and member of the Marshall County Area EMS advisory Board.
- I answered some of these questions but not all; our agency has closed the dispatch portion of our department.
- I believe mobile data should be a high priority especially in rural areas where information is difficulty to attain.
- I do not believe there is a communication crisis in Iowa. We have some jurisdictions that are looking to replace communications equipment and want someone else to pay for it so they are using inoperability as a reason. I believe we can solve whatever inoperability problems with available equipment and not have to replace radio systems. I do not believe that video from the scene is needed for daily work.
- I do not have a Communications Center within my city. We are dispatched through the Boone Co. Communication Center.

- I do not think that a 800 MHz (steering) system will work any better than what we have now (state lea system) the digital mode is "OK" in the clear/but I feel officer/fire safety is going to be a "issue: with dropped signals and wind noises application - Digital is great wile working but give you no gray area to operate out of/ cost will weigh-in heavy on this also.
- I don't know how data or video communications would be used.
- I feel that all dispatchers should receive E-911 training.
- I feel that the bucks are going to larger jurisdictions when we are the front line people to move in and assist in a disaster or emergency in those areas. The dollars are not being funneled down to us as smaller departments they handicapping the main reserves to first responders. Too much politics in distribution and not enough common sense planning.
- I feel there is a great need for updating communications around the state. I feel that there should never be a dead spot in an area that a department should have to deal with.
- I have not heard much about the data and video communications systems. So I am very limited in any knowledge of these. They sound high priced.
- I think there should be a strong emphasis put toward state wide "Mobil Data". The same as the ISP and DOT use. The cost for a small agency who have the TRACs systems and all computerized to connect to a Mobile Data system is too high.
- I work in a rural setting and feel that our service provides excellent patient care. However, there is always room for improvement and communication in the rural setting, where response times are long, can be a great benefit. My greatest default is lack of education in the technological field. I rely on specialists to handle purchasing for our agency.
- I would describe our communication needs is a "manifold" Many time there is too much info being fed too fast. Everyone sets their own priorities.
- If you can find a way to deal with entrenched parochialism and law enforcement dominance of public safety communications you will do us a great service.
- In our area there is too much outside interference in our radio traffic. We are getting skip from more than 150 miles away that is stronger than our dispatch's signal. Our sheriff has made no attempt to correct this problem for over 10 years now.
- Interoperability is critical for LE, FD, and EMS. New and updates systems are necessary, but money to purchase updates and enhancements are needed due to budget constraints. E 911 surcharge minifies our system, but could be inadequate to revamp and replace our current system with new technologies and frequencies.
- Interoperability, Seamless system and budget constraints are my main concerns.
- It is our desire/intention to pursue a regional system in north-central Iowa to solve problems with dead spots and interoperability issues. With current resources a statewide solution (or even a plan) is years into the future. We think a 10 or so county region is much more workable, and we want to see progress now.
- It's getting harder to fund and staff the small community ambulances.
- Keep it fair, so private EMS and city /county owned get same breaks.
- Keep it simple - allowing unlimited access to any frequency will only serve to increase congestion, rather than allowing everyone to talk to anyone anytime, it would be prudent to use training and discipline to control communications by limiting access and channeling through an ore refined ICS/Communications Protocol.
- Lack of funds is a major problem
- Lack of interoperability among the fire, EMS & law enforcement agencies in Polk County and the surrounding community is a very significant problem!
- Let the county we have territory in and tax payers that pay 911 money too; to purchase us radios the same as they did the other departments.
- Major concern is cross platform 150 - 450 - 800 compliances 25r is an 800 system we can't use. 25ris a 450 is similar in a mutual aid setting communications could be difficult - impossible.
- Major updates for equipment is impossible with tax money only
- Make sure communication to all is provided - I mean discussion of the issues by people who actually work with the equipment.
- Many agencies are going to 800 MHz systems that are expensive for Fire/EMS volunteer agencies like ours to afford this type of switch. It is a great system but expensive.
- Members of the task force, I am on the Communications board, 911 board and emergency management board, I am trying to get better communications in my area but run into road blocks by the director of the communications center. He refuses to admit that there is a problem the deputies do not want to come to Newell because the voice radio is so poor. The Fire Chief (Bruce Erie) has been fighting for years but has gotten the same response. Mark Van Hooser is the Buena Vista Communications director. This department has no video equipment as of yet due to high costs.

- Mobile data is the best way to go to ease communication load in our area. This would also cut back on need for additional dispatchers. The cost is large and if we could get multiple counties together to share the costs this would work.
- Money helps
- Money is needed.
- More money going to put up repeaters in the counties, The money not going to the county seats only so they can spend more for their local fire, EMS and police department only.
- More understanding and respect for the job communications operators do everyday!
- Need to find a common voice communications system instead of everyone choosing their own. This would eliminate the use of two radios in our department.
- Need to get everyone on same frequency.
- No (3)
- Not at this time.
- Nothing else.
- On scene video is a waste of time and money - the local TV station do it for Free! It's their job. Do not waste money on pie in the sky technology when you have comm. centers without mutual - LEA channel - we only have 1 MA channel - use our reserves, Do not try and reinvent the wheel. It is not needed, why are the comm. centers Iowa. NCRC service on a T1 phone line instead of the state ICN fiber optic network.
- Our dispatchers at the Algona PD go too fluster on some calls and do not do their job in the right manner, when they do this they do not speak plain. They forget to send us a print out most of the time.
- Our primary communications issues revolve around the fact that some of our neighboring fire and EMS agencies, along with the city police department are going to 800 MHz systems. We still operate on VHF.
- Please do not make a standard that we cannot afford.
- Please move forward on interoperability of communications - perhaps moving public safety to a new 700mhz bandwidth. Need for state and federal grants for communication equipment.
- Please require dispatchers EMS Training.
- Prepared by Mary Ann Perkins, Polk County Comm. Ctr. Mgr. Jason Davis Commutations specialist.
- Problems exist where some jurisdictions adopt 800 MHz systems and neighboring agencies cannot afford similar systems. Interoperability becomes virtually non-existent.
- Proper funding is the key. Small municipalities like ours are unable to maintain as the state cut backs are killing us. We are paid out of the general fund and this has resulted in the closing of our dispatch center due to the sate cuts to this fund.
- Put a program together that is affordable and will work. Consider the small unites have to use the systems that is put into place. Listen to them as well as the larger departments.
- Q-13 - At times would be good to have, but not enough to justify the expense.
- Recordable pagers and handheld radios for EMS personnel. We cover 150 sq miles; portable radios would give us greater communications between EMS and Base Operations. Recordable pagers give EMS personnel the ability to replay the page to insure as to where the EMS person is being paged.
- See sheets.
- Share results of survey, Share goals and objectives, share preliminary plans.
- Small departments needs $'s
- State wide MDC teaming it in all squad cars could greatly increase communications and lessen the burden on communications operators during times of disaster
- The city of Fruitland is currently under contract with the Muscatine city Police Department for police service. We do not nor have we had a dispatch operation. When we had our own officers, the Muscatine County Sheriffs department dispatched them. A township department not directly connected with the city furnishes our Fire service. The City and County of Muscatine are now in the process of forming a joint communications center that will cover our area. I anticipate several bugs in the system with new equipment and the two departments getting used to each other.
- The communications Center just upgraded the 911 and telephone system last year. We currently have access to Iowa and NCIC and NLETS computer system, but need another terminal. We anticipate a radio system upgrade soon. But are having problems securing funds to do so. The communications center is funded through a 28E agreement between Webster County and the Cities that are in Webster County. All contributing based on population.

- The current high band UHF system was designed 30 years ago. We run a lot more traffic than it was designated to handle. Mobile data would relive this problem. Some neighboring counties have moved to 800 MHz and now we cannot communicate with them as needed.
- The Story county fire departments have no voice on communications or on how the E-911 money is spent.
- The story of requiring a state wide 800 MHz would be ill advised cost a lot of money for responders that have good to new systems. The 800 MHz would work well as second backup system but not as a primary system.
- The strongest systems at the local level are likely to be ones we use every day. Exotic solutions often don't serve us well. I'd encourage you to set standards, establish priorities and help us worked toward a strong communities infrastructure that we can use everyday.
- The volunteer Fire Service generally operates in the VHF (HIGH) range that best suite the current operational needs. Efforts to move volunteers to 800 MHZ should be resisted, due to building Penetration capabilities and the vastness or rural coverage. However, the existing VHF infrastructure (tower sites) appear to be inadequate to support service operation areas, at least in Polk county (terrain -issues)
- The Wireless Phase II 911 Service needs to be fully funded by the State, as does mapping of 911 calls. This needs to be a priority, and not done piecemeal as it is now. A statewide APCO-25 compliant voice system needs to be built to truly make interoperability happen. All agencies need the capability of compatible data systems as well, using same software & hardware.
- There are a lot of things out here for us to use but I feel that the lack of knowledge and the fact that we are small & rural puts us at a disadvantage for even the smallest of the latest technology that could help us improve.
- There is a great need for statewide communications upgrade! (Voice and Data)
- There is currently a significant amount of discussion in the state about replacing radio system. We simply need some direction from the federal level to the state level to the local level on how to proceed. Without this type of direction, first responders will continue to struggle with interoperability issues negatively importing homeland security and the safely of our personnel.
- There need to be more communications towers in rural areas of the state.
- This county has strict budget restrictions with communication needs. Our experience is that a lot of money is being wasted and we can't fill our needs.
- To feel free to contact me anytime. I have both personal and professional interest in communications.
- Statewide trunking.
- Voice and data transfer should be the primary goal, video is limited in its true need for coordination of activity and the media provides a lot of crisis video coverage. In this era I'm concerned about "real-time" video that could be used by a terrorist cell half way around the world to time a series of actions remotely.
- We are 10 miles from the state line - 16 miles from Omaha, NE. We cannot communicate with Nebraska agencies. Blair, NE is 10 miles away and we work with these agencies often.
- We are a small community that contracts for law enforcement with the sheriffs department in nearby community and we have no communication or coordination with our provider or the outside sources. I'm sure there are other small communities like ours with this problem.
- We are currently exploring the costs and recommendations of replacing our current radio system.
- We are dispatched out of the County Dispatch center. Funding would be most beneficial for the County Dispatch center. It could be a better system if funds allowed much needed upgrades. Part of the upgrades should include new portable and mobile radios for all agencies.
- We are in the 1970's for communication and interoperability.
- We are located in Woodbury County, which is currently installing new communications system with a grant from FEMA.
- We are not into Video Communications locally.
- We as a county (Guthrie) have been approved to upgrade all radios in our fire and EMS system for almost 1 year we are waiting on the state to order the radios. This is through homeland security E.M.D.
- We could sure use the help with putting a radio in 2 trucks and the purchase of updated handhelds for members.
- We do not have a communications system at this time but use the county dispatch center.
- We drastically need to communicate with neighboring dept. and EMS/State/
- We have a perfect opportunity to utilize our State ICN network into all our Co State Courthouses, EOC etc. This would greatly enhance our Data and Video systems. Run a fiber in and tie to the ICN.
- We have a portable Interoperability Unit that allows for joining several radio systems together at an incident. The problem is getting the frequencies and private line codes from other agencies also the FCC requires litters of permission to use their frequencies with is cumbersome that needs to change.

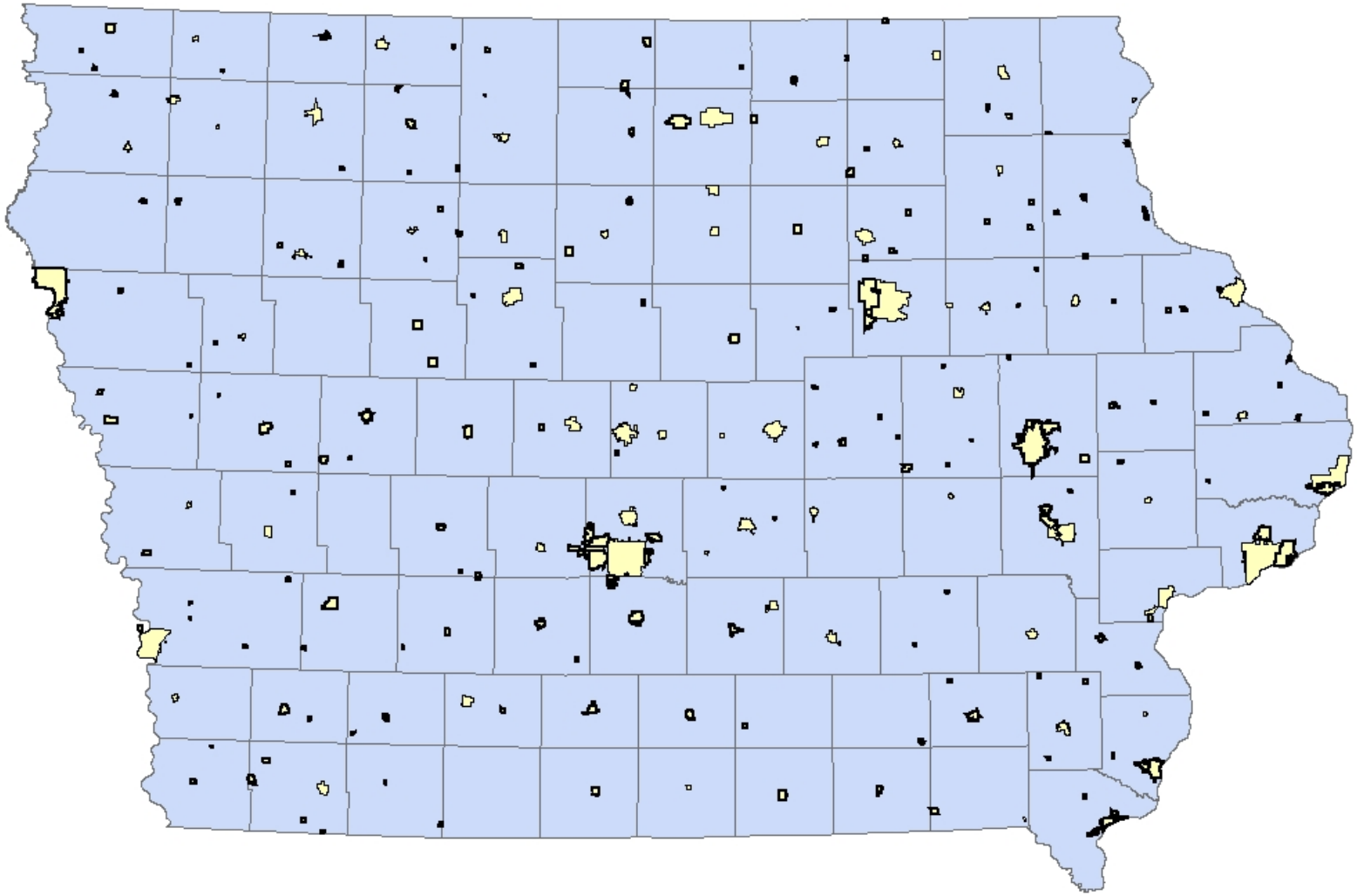
- We have worked with our PSAP, the Polk County Sheriff's office, since 1996 to coordinate service and equipment need. Current efforts are underway to improve and extend radio inoperability
- We need a better more consistent pager system in Winneshiek County. All other counties can test page everyday. We are lucky to have a test once a week or two. We need to be paged for accident calls. We have met with dispatch but got no satisfaction. Winneshiek Dispatch wants to run the whole show instead of being part of the solution; sometimes they are part of the problem. We have asked all affected agencies to be dispatched at the same time instead an ambulance maybe dispatched then minutes later first responders.
- We need money.
- We need more communication towers in all of these rural areas due to so many dead spots, with the hills in our location.
- We need to be able to buy pager/radios for each of our 25 members. When the cost it is not feasible to buy them out right so we buy them as affordable. We now have 2.
- We need to do a better job of returning 911 surcharge money to the county that is generated by cell phone use. Cell usage has cut into our 911 revenue.
- We need to make the different voice systems more compatible.
- We are a volunteer service of about 20 crewmembers. We are in need of another computer/laptop to enter data to the state/out billing company. They only money we normally spend on communication is E-911 revenue, which for us is usually almost $2000. Year.
- When federal funding comes available it should be offered to private services that provide 911 service to Fire-EMS agencies. Our service provides tiers for our county Polk and surrounding counties. We are excluded from state - federal money because we are private.
- While a statewide trunked system would be nice and work well, smaller agencies cannot afford the equipment and may volunteers purchase their own communications equipment. A system similar to the DPS would be ideal.
- With all of the SHSGP/DOJ/WMD grand funds available there needs to be direction. My county recently ordered over 50 radios all VHF high band, not UHF or 800 or 900 MHz
- Would like communications with state law. Have good county communications with the entire county fire department. Also Dub. County sheriffs department thanks to 800 MHz
- Yes provide funding before requiring these things to make to out in service.

Understanding what you want and need regarding your communications system is crucial for the Iowa Communications Task Force so they can recommend an appropriate direction for the state to move in.

Thank you *for taking the time to complete this survey and helping us work to improve communications across Iowa. Please return the survey by August 13 in the enclosed postage-paid envelope to:*

ICTF Survey
200 10th St., 5th Floor
Des Moines, IA 50309

Appendix B - Map of Respondents' Location



*There were 266 distinct locations that could be mapped (there were some non-responses and unusable answers). Only three counties were not represented in the survey responses - Audubon, Ringgold, and Sac.

Appendix C – Verbatim Responses from Late Surveys

Question 7a:

- Adequate means getting the job done without major problems or complaints.
- Almost non-existent.
- Current equipment is over 10 years old and in need of many updates in order to keep current with today's technology.
- Do not have any video system. Only data is NCIC/Iowa system.
- Do not have the majority of equipment.
- Need better coverage for county with radio, have mobile data computers in vehicles but no access, need video in vehicles.
- Need for new or updated 2-way radios. However, these requests have been put forth to grant requests.
- No budget for major upgrades.
- No funding.
- Poor reception, different departments walking over each other's transmission.
- Some is non-existent; we have not had funds available for improvements.
- System needs to be updated; most departments don't have video or data.
- Think the state needs to "step up" and depending on size of department. Needs to fund in car MDT's. Would save time and money in long run. Some smaller departments can't afford it.
- Unreliable and too expensive to replace, computers are slow but very slow in upgrading.
- Voice system coverage has many dead spots. Some are equipment related. Some are because of our terrain. We currently do not have data system but is being researched. We have no video system.
- We are isolated within our county. We cannot communicate with services in neighboring counties except for Mutual Aid frequency, which is so cluttered with traffic its difficult to access in an emergency.
- We are not able to communicate with surrounding L/E agencies.
- We have no data system.
- Radios in trucks still functional, but are becoming dated. Pagers have been recently upgraded because of age of originally purchased pagers. Portable radios – only two owned by department. A few of the members have purchased their own radios but have programmed in additional frequencies that are not programmed into the department owned radios. Many F.D. members have their own cellular telephones.
- Need handheld radios for crew to communicate with each other at disasters. Currently no video. Data kept updated usually with county EMS association.

Question 27:

- City and County Communications Center Manager
- City and County Fire Chief
- City and Unincorporated Area EMS Manager; City and Unincorporated Area Fire Chief
- City Communications Center Manager
- City EMS Manager (7)
- City Fire and EMS
- City Fire Chief (4)

- City Police Chief (2)
- City, County, Incorporated Area, Regional, Statewide, and Unincorporated Area Sheriff; City, County, Incorporated Area, Regional, Statewide, and Unincorporated Area Communications Center Manager
- City, Incorporated and Unincorporated Area Fire Chief
- Communications Center Manager - City, County, Incorporated Area, Unincorporated Area, Consolidate 911 Center
- Communications Center Manager – County (2)
- County 911 Coordinator
- County Sheriff (5)
- County Sheriff - County, Incorporated Area, and Unincorporated Area; Communications Center Manager - County, Incorporated Area, and Unincorporated Area
- County Sheriff - Incorporated Area and Regional, County Fire Chief
- County Sheriff and County Communications Center Manager (2)
- Director of Ambulance
- EMS Manager - Incorporated Area (2)
- EMS Manager - Incorporated Area and Unincorporated Area
- Fire Chief - Unincorporated Area
- Incorporated Area Fire Chief
- Regional EMS Manager
- City, County, Incorporated Area, Unincorporated Area Fire Officer
- County EMS Manager
- County, Incorporated, and Unincorporated area County Sheriff, and City, County, Incorporated, and Unincorporated Area Fire Chief

Question 29:

- Under 1,000 (7)
- 1,000-4,999 (12)
- 5,000-9,999 (7)
- 10,000-24,999 (10)
- 25,000-50,000 (2)
- Over 50,000 (4)

Question 30:

- Afton
- Albion
- Altoona
- Anamosa
- Aplington
- Audubon
- Callender
- Carroll
- Cedar Rapids
- Centerville
- Cherokee
- Churdan
- Clarinda
- Columbus Jet
- Corydon
- Council Bluffs
- Dow City
- Dunkerton
- Eldora
- Hamburg
- Inwood
- Keosauqua

- Letts
- Lime Springs
- Mason City
- Melvin
- Mid-Eastern part of the state
- Montezuma (2)
- Monticello
- Raymond
- Rockwell City
- Shenandoah
- Spencer
- Swisher
- Templeton
- Tipton
- Waterloo (2)
- Yale
- Yarmouth

Question 31:

- Blackhawk County has contract with Racom Radio. Purchases have to be approved by them; poor reception radios have been updated 3 times in the last 7 years.
- If you go to VHF we need some big $$$ in grants and cost sharing.
- Provide or secure grants for hospital based EMS services.
- Statewide radio system.
- Still waiting on walkie-talkies requested through Homeland Security money. Have been waiting several months.
- Technology is great but keeping trained people in the communications center is a big issue. No one wants to recognize how important this is. All the technology won't work without trained people.
- We would encourage the task force to rely on the input from the public safety officials rather than vendors.
- We would like to get cell phones for our Rescue and Fire trucks, but until we get a tower in our area, it is not beneficial to spend the money for phones and service. We are not able to call out or receive calls big share at the time.
- Small towns/counties do not have funding for extra equipment for disasters.