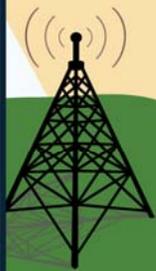


Commonwealth of Kentucky Statewide Strategic Plan for Communications and Interoperability





COMMONWEALTH OF KENTUCKY
OFFICE OF THE GOVERNOR

ERNIE FLETCHER
GOVERNOR

700 CAPITOL AVENUE
SUITE 100
FRANKFORT, KY 40601
(502) 564-2611
FAX: (502) 564-2617

Dear Public Safety Professionals:

Each day, Kentucky's courageous first responders work to ensure our communities are safe, and take action to serve the public in times of need. That is why it is essential that we provide them with the support and equipment necessary to do their jobs effectively.

Earlier this year, I, along with representatives from the U.S. Department of Homeland Security and the Kentucky Office of Homeland Security, kicked off the SAFECOM Regional Communications and Interoperability Pilot Project on the anniversary of September 11, 2001. On that day, we remembered the sacrifices of those who lay down their lives for the cause of freedom, both here at home and abroad. We are reminded of the necessity to ensure that tragedies of that type never happen again here in this country. On that fateful day, over 300 New York City firefighters lost their lives because they could not communicate effectively.

Over the past several months, the SAFECOM Program has worked to help us ensure that such a tragedy never occurs here in the Commonwealth, whether it is due to a natural or man-made disaster. Ensuring that our state's first responders have the necessary means to communicate with one another during an emergency is a top priority of my administration. That is why I am honored that the U.S. Department of Homeland Security selected Kentucky to be one of only two states to take part in this pilot project. It is also why I appreciate the work that SAFECOM has done and continues to do as we implement statewide strategy to ensure our communications and interoperability issues are thoroughly addressed.

We recognize that there is no quick fix for all of our state's communications and interoperability issues. That is why we remain diligent in our efforts to make certain that every first responder has the appropriate support, training, and communications equipment that will help ensure our commonwealth is ready and prepared.

Sincerely,

A handwritten signature in blue ink that reads "Ernie Fletcher".

Ernie Fletcher



AN EQUAL OPPORTUNITY EMPLOYER M/F/D

Working Together to Improve Public Safety Communications and Interoperability in Kentucky

This strategic plan stems from a significant commitment of the public safety community in the Commonwealth of Kentucky. During a series of regional focus group sessions and a strategic planning session, the Commonwealth's public safety providers shared their knowledge, experiences, and visions for improving public safety communications and interoperability state-wide. Representatives from the following organizations were invited to participate in this process (see Appendix B for the full list of participants):

- Local Government
- Local Fire and Rescue
- Local Law Enforcement Agencies
- Local Sheriffs' Departments
- Emergency Medical Services
- Private Ambulance Services
- Kentucky State Police
- Area Development Districts
- Vehicle Enforcement
- Department of Fish and Wildlife
- Department of Emergency Management
- Department of Health
- Department of Park Services
- Department of Public Works
- Federal Bureau of Investigation
- Hospitals
- Kentucky National Guard
- Kentucky Universities
- School Districts
- United States Coast Guard
- United States Department of Homeland Security



TABLE OF CONTENTS

EXECUTIVE SUMMARY	6
INTRODUCTION.....	9
After All These Years, We Still Can't Talk.....	9
What Is the Issue in Kentucky and Nation-Wide?	10
Why Should We Care?.....	10
How Are We Doing?.....	11
Where Do We Want to Be?	11
How Are We Going to Bridge the Gap?	12
What Does This Plan Entail?.....	12
WHAT IS OUR STRATEGY?	13
Initiative A.....	14
Initiative B.....	15
Initiative C	16
Initiative D (Long-Term).....	17
WHAT ARE THE BARRIERS TO SUCCESS?.....	18
HOW CAN WE PUT THIS STRATEGY INTO EFFECT?.....	19
Establish an Interoperability Program Office	19
Governance.....	21
The Role of an Executive Committee.....	22
The Role of Advisory Groups	23
Outreach	24
Performance Measures	25
WHAT ARE THE PRINCIPLES FOR ACHIEVING STATE-WIDE INTEROPERABILITY?	26
WHAT SHOULD WE DO FIRST?.....	27
WHAT ARE THE CRITICAL SUCCESS FACTORS?	28
HOW DID WE DEVELOP THIS STRATEGY?.....	29
HOW DID THE SAFECOM PROGRAM CHOOSE KENTUCKY?	30
THE KENTUCKY-SAFECOM PARTNERSHIP	31
APPENDIX.....	32
Appendix A: Seven Regions	33
Appendix B: Participating Stakeholders	35
Appendix C: Strategic Planning Session Data	44
Appendix D: Regional Focus Groups Data	52
Appendix E: Glossary of Terms.....	67
Appendix F: List of Acronyms.....	71



“Without interoperable communications, we are sending our first-responders into harm’s way absolutely blind – and that’s unacceptable.”

Executive Summary

The Process

The State-Wide Strategic Plan for Communications and Interoperability is the product of a series of regional focus group sessions and a strategic planning session held from September through December 2005 in the Commonwealth of Kentucky. During these gatherings, Kentucky's public safety practitioners shared experiences and visions for improving public safety communications and interoperability state-wide. The plan relies on a locally driven strategy, in which the knowledge and needs of local responders are drawn on to build the appropriate initiatives for improved emergency response.

The Problem

In Kentucky, most public safety responders cannot communicate across jurisdictions and disciplines during day-to-day operations and large-scale incidents. Incident response communications between local, regional, state, and federal public safety organizations are often limited to cell phones and runners. The issue is complicated by Kentucky's unique blend of vulnerabilities, which include diverse terrain, natural events, and high-profile targets. The inability to relay incident information directly and effectively jeopardizes the lives of Kentucky's public and its public safety officers. Consequently, some areas within Kentucky have begun to address the issue of communications interoperability, thereby laying a foundation for further progress.



The Goal

The public safety community in Kentucky envisions a working environment where first responders can operate seamlessly, across jurisdictions and disciplines, on a state-wide communications system.

The Strategy

Initially, the strategy for achieving the goal includes three near-term initiatives and one long-term initiative, all of them interrelated, and thus all of them essential to success:

- A. Achieve close to 100 percent state-wide coverage for voice and data communications networks of all first responders. Tasks include:
 - a. Determine baseline of state-wide communications.
 - b. Dramatically expand coverage by improving and constructing infrastructure state-wide.
 - c. Establish nearly 100 percent Enhanced 911 (e911) coverage state-wide.
- B. Put into effect existing state-wide interoperability efforts. Tasks include:
 - a. Program current state-wide mutual aid channels into all public safety radios. Educate public safety community on using these channels.
 - b. Fully apply the console-to-console bridge solution.
 - c. Ensure that all levels of first responders, first receivers, and chief executives adopt the National Incident Management System.
 - d. Establish a state-wide, 10-code/clear text standard that local and state public safety agencies will accept and put into effect.

- C. Streamline 911 dispatch services. Tasks include:
 - a. Remove financial disincentives currently in place.
 - b. Assist in the merger of interested 911 dispatch centers.
 - c. Create a state-wide model for delivering dispatch services.
- D. Build over the long term a state-wide public safety communications and interoperability system. Tasks include:
 - a. Design and execute a technical approach for building a state-wide communications system.
 - b. Create and execute a state-mandated communications and interoperability training program.

The Barriers to Success

Kentucky's public safety community identified the following key barriers to successful plan execution:

1. Political Motivations
2. Funding Limitations
3. Technical Constraints
4. Public Safety Culture ("turf" battles)
5. Power and Control Issues
6. Individual Over State-Wide Needs ('Big Hat' vs. 'Little Hat' Dilemma)
7. Diverse Terrain



Elements of the Strategy

A number of elements for successfully achieving the strategy must exist.

A program office for public safety communications and interoperability – The office would be responsible for putting the strategic plan into effect. It would be the primary state-wide place of accountability for all issues relating to public safety communications and interoperability.

Governance bodies – These bodies will represent public safety practitioners, of all disciplines, from across the state to ensure the interoperability program office is locally driven. It would be empowered to develop standards, influence funding decisions, and offer specialized technical assistance.

- *Executive Committee (EC)* – The EC would be the primary steering group for the interoperability program office. It would provide an access point for public safety practitioners and policy makers to guide the program. A way to quickly establish a credible EC would be to re-mission and reorganize the Kentucky Wireless Interoperability Executive Committee (KWIEC).
- *Advisory Groups (AGs)* – AGs would provide a mechanism for individuals with specialized skills to share best practices and lessons learned. AGs would be established due to specific communications and interoperability needs. They would relay guidance and feedback from the public safety community to the program office and EC, and communicate decisions to constituencies and practitioners.

Outreach -- Because the ability to communicate initiatives to the state-wide public safety community is critical to the program office's success, outreach should be a strategic part of each initiative. Outreach functions include:

- Distribute clearly understandable lessons learned and best practices to local, state, and regional public safety responders, EC and AG members, and other stakeholders.
- Create and execute a plan to educate the public, political figures, and the public safety community.
- Plan and host quarterly regional interoperability and communications focus groups.

Performance Measures – A performance management process will help ensure the successful achievement of goals and initiatives. Setting goals and performance measures will provide a “snapshot” of actual performance. The interoperability program office and the EC will compare results to performance, and evaluate plan execution.

Driving Principles

Driving principles behind the management of the interoperability program office include:

1. Locally driven program
2. Extensive leveraging of existing efforts
3. Effective outreach program
4. Standards-based approach
5. Understanding a “system of systems” approach
6. Prioritizing the issue of public safety communications and interoperability
7. Applying grant funding according to plan principles

Priorities

As the first 90 days of roll out are critical, the interoperability program office will need to focus on the following key activities:

- Define role and responsibilities of the organization that will execute the strategy, and submit a proposal to fund the organization effectively.
- Reorganize membership of the KWIEC, and conduct its first meeting to support communications and interoperability initiatives.
- Determine the baseline of communications state-wide, to provide enough information to begin execution of the other initiatives.

Factors Critical to Success

The most significant challenges to plan execution are the lack of the following: A strong leader, high-level support, sufficient funds, and sufficient other resources.

This plan is therefore based on the following assumptions. Namely, that the Governor's Office supports the strategy outlined in this report, as do key stakeholders in Kentucky. Further, it is recommended the Governor appoint a single person, accountable to the Governor, to drive the strategy to completion. In addition, the Governor should make sufficient resources available to execute the strategy, and authorize sufficient staffing for this purpose.

Introduction

After All These Years, We Still Can't Talk

- *New York City, NY – The Events of September 11 (2001)*

Hundreds of firefighters and police officers rushed to a chaotic, devastating scene to rescue victims from the attack on the World Trade Center. As police and firefighters swarmed the buildings searching for survivors, incident commanders outside heard warnings from helicopters circling the scene from above that the towers were beginning to glow and were dangerously close to collapse. Effective radio communications were a lifeline for the hundreds of police officers who received the word to evacuate the building—all but 60 police officers escaped with their lives. Tragically, hundreds of New York firefighters didn't receive that warning—because they were using a different radio communications system. Totally unaware of the impending collapse, at least 121 firefighters, most within striking distance of safety, died, as documented in *The New York Times*. A report from the University of New Hampshire-based ATLAS Project stated: "From numerous interviews gathered as part of a fire department inquiry into the events of September 11th, it would appear that non-interoperability was at least partially responsible for the loss of 343 firefighters at the World Trade Center."¹
- *Campbell County, KY – Police Shooting (2002)*

On January 18, 2002, a Campbell County, KY, police officer was shot by an armed robber. The officer was ambushed and shot in the head with a 12-gauge shotgun. First on the scene to assist the downed officer, the Assistant Chief from the Alexandria, KY, Police Department, immediately radioed for help. Due to a swamped communications center, he could not get through for help even after stating he had "Emergency Traffic". When an ambulance finally responded, its driver could not find the exact location of the incident nor the downed officer. Even though the Assistant Chief could see the ambulance driving up and down US-27, he had no way to effectively communicate directly with the ambulance to obtain medical assistance. It took an additional, vital three minutes for the Assistant Chief to get through to the communications center and relay his location to the ambulance. This delay put the wounded officer's life in critical danger, as well as the lives of all the responding officers.
- *New Orleans, LA – Hurricane Katrina (2005)*

Communications systems at the local and state levels in the Gulf area were operating at the time Hurricane Katrina made landfall. However, the Hurricane and the lack of backup power severely affected the critical infrastructure that houses communications systems. The resulting lack of state, local, and federal public safety agency communications was a major impediment to the Hurricane Katrina response effort. Many lives and property were placed in jeopardy because public safety responders could not communicate with one another. In this case, the communications problem was not one of interoperability but of operability, because emergency power back-up to infrastructure sites, for the most part radio towers, failed. For communications systems to function at all, operability is the most pressing need.

¹ See *Why Can't We Talk? Working Together To Bridge the Communication Gap To Save Lives*, February 2003., <http://www.ojp.usdoj.gov/nij/topics/commtech/ntfi/publications.htm>

What Is the Issue in Kentucky and Nation-Wide?

For decades, the lack of adequate and reliable wireless communications systems has been an issue plaguing public safety organizations. In many cases, agencies cannot perform their mission-critical duties. These agencies are unable to share vital voice or data information via radio with each other and neighboring jurisdictions in daily operations and in emergency response to incidents, including natural disasters and acts of terrorism.

What Is Interoperability?

The ability of public safety agencies to talk across disciplines and jurisdictions via radio communications systems, exchanging voice and/or data with one another on demand, in real time, when needed, and as authorized.*

**Throughout the KY Strategic Planning Process, participants used this definition of interoperability as defined by the National Task Force on Interoperability.*

In the Commonwealth of Kentucky, the majority of public safety responders cannot communicate across jurisdictions and disciplines² during day-to-day operations and large-scale incidents. In addition, incident response communications between local, regional³, state, and federal public safety organizations are often limited to cell phones and runners. The issue is complicated by Kentucky's unique blend of local and regional risks and vulnerabilities, which include diverse terrain, natural events (such as earthquakes and tornadoes), and the presence of high-profile targets such as Fort Knox, large venues (for example, race tracks and sports arenas), and international airports.

Why Should We Care?



The inability to relay incident scene information directly and effectively jeopardizes the lives of Kentucky's public safety responders. Incompatible communications systems hinder, and at times prohibit, incident coordination and daily operations for every community across Kentucky. As noted in the examples above, this lack of interoperability leads to an unnecessary loss of lives, property, and environmental stability.

The loss is not limited to the public safety community. If inadequately addressed, the lack of communications and interoperability for emergency response can affect the lives of everyday citizens, and can destroy the reputation of relevant elected and appointed officials. While the financial costs of correcting deficiencies in public safety communications are large, far greater is the value of lives and property that effective interoperable communications would save.

² In this plan, the term "discipline" refers to public safety agency-type, such as fire, law enforcement, EMS, etc.

³ In this plan, the terms "regional" and "regions" refer to seven regions of Kentucky, as identified by the participants of each focus group session.

How Are We Doing?

Kentucky's first responders' 'can do' attitude has enabled them to persevere admirably in the current environment, but they know that time is running out. The Kentucky public safety community is very aware of the challenges that face them, and its leaders are more willing than ever to overcome conflict and work together to find a solution. With that said, some areas within Kentucky have already begun to address the issue of communications and interoperability, and have built state-wide momentum towards finding solutions that meet the needs of the public safety community. Because of this, Kentucky's public safety community is well positioned to become one of the nation's leaders in interoperable communications.

Where Do We Want to Be?

When asked to describe the future of public safety communications and interoperability in Kentucky, the public safety community envisioned a world where first responders to incidents operate seamlessly, across jurisdictions and disciplines, on a state-wide communications system. In this vision, no person in Kentucky would lose his or her life or property because public safety responders could not communicate effectively with one another.

What Does Our Future in Kentucky Look Like?

- We have a single point of accountability for state-wide communications and interoperability issues.
- Our first responders can directly communicate radio-to-radio within or outside their jurisdictions and disciplines, and without the need for dispatch assistance.
- We have a systematic approach to public safety training -- first responders train together in a coordinated way and use radios, base stations, and other communications equipment to the full extent of the equipment's capability.
- Our first responders practice state-wide training exercises for incident response communications.
- Our first responders define their needs to vendors, and vendors build solutions that meet those needs.
- Our public safety community is comprehensive - schools, hospitals, utilities, transportation systems and other pertinent agencies are included in our planning and can effectively communicate with first responders as necessary.
- We partner with our bordering states and participate together in emergency response and preparedness.
- We integrate national and cross-border assets during mutual aid events.
- Our grant funding includes funds for communications equipment purchases as well as continuing maintenance, upgrades, and operations.
- Our funding is allocated based on alignment to the state-wide strategic plan for communications and interoperability.
- All of our first responder professionals put aside political and "turf" battles to serve the public safety community and the general public.
- Our legislators understand emergency preparedness and consider public safety communications and interoperability a priority.

How Are We Going to Bridge the Gap?

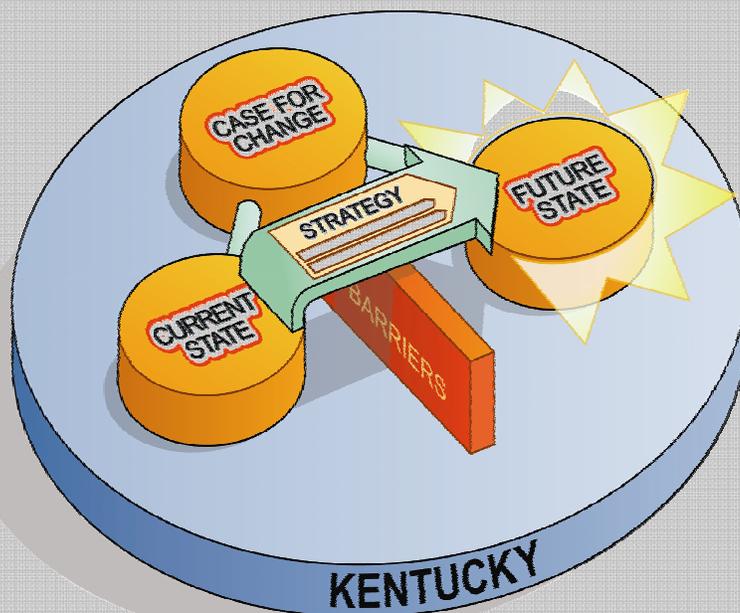
The initiatives outlined in this state-wide plan represent the foundation of the locally driven strategy. In such a strategy, the experience and needs of local responders are drawn on to formulate the appropriate initiatives for improving emergency response. Throughout the strategic planning process, local practitioners recommended a strategy that begins with a baseline of communications and interoperability in Kentucky. Once the Commonwealth determines a baseline, and pinpoints communications dead spots, it will work to put existing communications initiatives into effect, and address the highest priority dead spots across the state. This strategy will begin bridging the gap between Kentucky's current state of communications and interoperability and the desired future state. It will recognize existing barriers to success, and devise means of overcoming them. It is stressed that these key initiatives will be fulfilled over time. They will be revised as necessary so that they stay in synch with Kentucky's ongoing vision for a much improved system of communications and interoperability.

What Does This Plan Entail?

In the sections that follow, the strategic initiatives are described. Then, after outlining the barriers to achieving success for improved interoperability, organizational changes to achieving the plan's goals are discussed. These encompass an interoperability program office, a governing body, an executive committee, and advisory groups, backed by outreach efforts, performance measures, and a set of guiding principles. Finally, a set of priorities and critical factors for success are outlined.

Bridging the Gap

The graphic below depicts the SAFECOM methodology for discussing public safety communications and interoperability in Kentucky. To describe a desired future state of communications and interoperability, public safety practitioners agreed on the current state, developed a compelling case for why changes to that current state need to occur, identified barriers to change, and formulated a strategy for overcoming those barriers. (See Appendices C and D for a detailed description of this methodology.)



What Is Our Strategy?

The Commonwealth will pursue a strategy that requires understanding a baseline of public safety communications across Kentucky, leveraging existing efforts to improve communications and interoperability, and building a backbone that enhances interoperability state-wide. This strategy includes an effective, locally driven governance structure, a comprehensive outreach capability, and the successful completion of key strategic initiatives, while keeping an accurate 'scorecard' to measure progress. The goal of this strategy is to significantly improve public safety communications and interoperability state-wide.

The first key part of Kentucky's strategy is efficient and effective governance of this state-wide plan. Successful implementation of this will include the creation of an interoperability program office, whose director will be the single point of accountability for interoperability and communications in Kentucky. This person will receive guidance and recommendations from several groups of local public safety officials on the development of specific initiatives that further this strategy. These groups will also assist the greater public safety community by not only communicating the direction and progress of the strategy, but also playing a role in providing assistance on key areas of communications and interoperability. Effective outreach is essential to the strategy's success, as the entire public safety community must be kept well informed while working toward a common goal.

The goal of the strategic initiatives in this plan is to promote interoperability and improve communications for all public safety responders within Kentucky. Initially, this strategy includes three near-term initiatives and one long-term initiative.

In this strategy, projected completion for near-term initiatives is within two years, and projected completion for long-term initiatives is three to seven years.

Near-Term Initiatives:

- Achieve close to 100 percent state-wide coverage for voice and data communications networks of all first responders.
- Put into effect the existing state-wide interoperability efforts.
- Streamline 911 dispatch services.

Long-Term Initiatives:

- Build a state-wide public safety communications and interoperability infrastructure.

These initiatives are based upon recommendations made by public safety practitioners throughout the Commonwealth, and are interrelated. Therefore, they must all be completed to effectively and efficiently improve public safety communications and interoperability. The failure to complete any one initiative will inherently lead to the failure of the strategy, and thus prolong the current less-than-ideal state of affairs.

Initiative A

Achieve Close to 100 Percent State-Wide Coverage for Voice and Data Communications Networks of All First Responders.

Description

The need for basic communications within public safety agencies is equally as critical as interoperability. Public safety practitioners throughout Kentucky voiced concern that they cannot communicate directly with their own personnel, much less with neighboring agencies. The Commonwealth must address such issues with basic public safety communications to achieve state-wide coverage. In that way, all public safety responders communicate effectively.

“The Commonwealth must achieve ‘operability’ before it can become interoperable.”

Execution

- Determine the baseline of state-wide communications.
 - Inventory frequencies, towers, and radio assets.
 - Include all licensed emergency provider services.
- Drastically expand coverage by improving and constructing infrastructure state-wide.
 - Inventory, categorize, and prioritize dead spots.
 - Recommended categories of impediments.
 - Geographic impediments.
 - Deficiencies in communications infrastructure.
 - Structural impediments.
 - A lack of reception within buildings.
 - Address the highest priority dead spots within a defined amount of time.
- Establish nearly 100 Percent Enhanced 911 (e911) coverage state-wide.
 - Determine the gaps in coverage and address as needed.

Initiative B

Put into Effect the Existing, State-Wide Interoperability Efforts.

Description

Kentucky is currently undergoing several efforts to improve communications and interoperability throughout the Commonwealth. Public safety practitioners recognize that completing these efforts will result in significant improvements. Current interoperability efforts that must be completed by December 2006 are listed below.

Execution

- Program the current state-wide mutual aid channels into all public safety radios. Educate effectively the public safety community on the use of these channels.
- Fully apply the console-to-console bridge solution.
- Ensure that first responders, chief executives, and first receivers at all levels adopt the National Incident Management System (NIMS).
- Establish a state-wide, 10-code/ clear text standard that local and state public safety agencies will accept and put into effect.

“Some of us are currently doing things to improve interoperability. We all need to get on board to fix this problem.”

Initiative C

Streamline 911 Dispatch Services.

Description

Public safety practitioners throughout Kentucky identified a need to streamline 911 dispatch centers by region to provide more efficient and effective dispatching services.

Currently, monetary disincentives discourage such dispatch center mergers. Further, agencies are hesitant to reduce jobs within their communities and eliminate the familiarity that comes with community-focused dispatching. However, by streamlining dispatch services throughout Kentucky, public safety agencies will be able to offer more efficient and consistent assistance to both citizens and its own personnel.

“Our dispatch centers are not operating as effectively as we need, but our efforts to fix the problem are hindered by financial regulations.”

Execution

- Remove financial disincentives currently in place.
 - Allow dispatch centers to continue to receive their current allocation of Commercial Mobile Radio Service (CMRS) funds even after the merger of 911 dispatch services.
- Assist in the merger of interested 911 dispatch centers.
 - Conduct a survey to determine which centers want to merge.
 - Develop a document that provides guidance for merging effectively.
 - Establish appropriate incentives to merge.
- Create a state-wide model for delivering dispatch services.
 - Conduct a focus group session to gain regional insights into developing a model that meets public safety needs.

Initiative D (Long-Term)

Build a State-Wide Public Safety Communications and Interoperability Infrastructure.

Description

One solution will not solve all communications and interoperability issues in Kentucky. To achieve state-wide public safety communications and interoperability, Kentucky must design, approve, and build an open-platform infrastructure for voice and data communications. This state-wide communications network must be in regular use, and must allow public safety responders to communicate with whom they need in real-time, on demand, and as authorized.

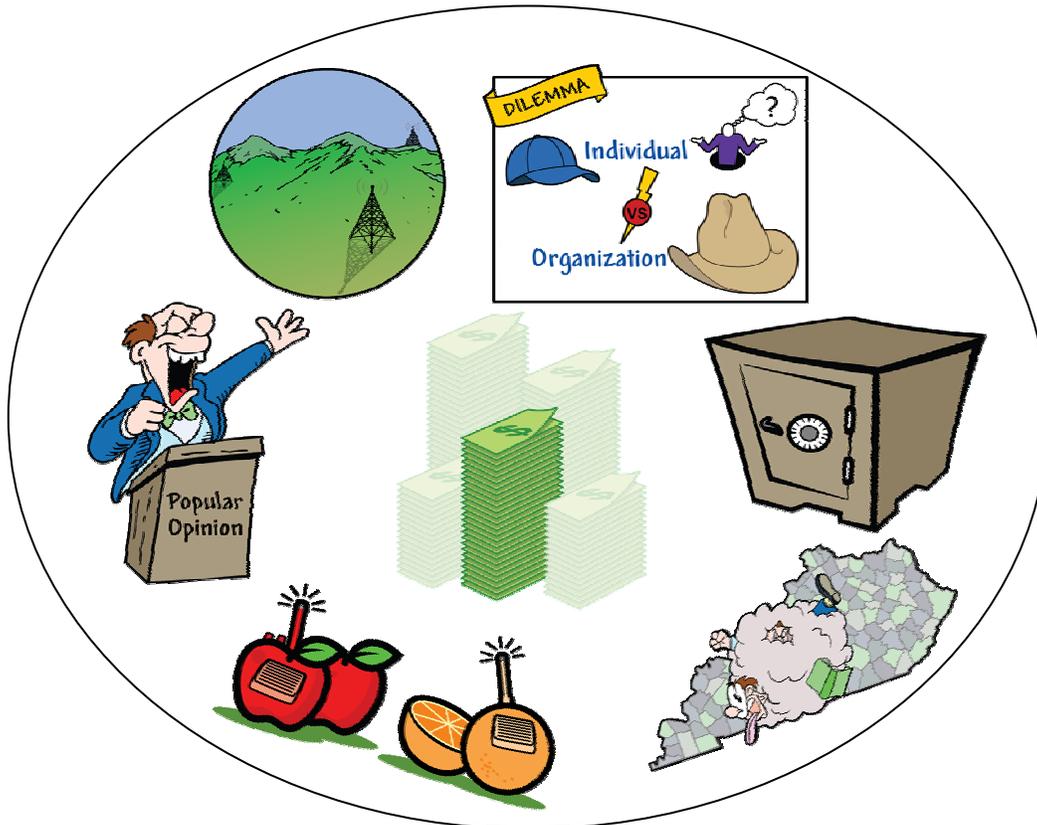
“We need to develop a system that will allow our first responders to communicate directly and effectively, and on a daily basis, with whomever they choose.”

Execution

- Design and execute a technical approach for building a state-wide communications system.
 - Determine the technical requirements of Kentucky’s public safety responders.
 - Develop technical standards that allow public safety practitioners to drive the process, and that encourage manufacturers to build radio communications equipment that address practitioner needs.
 - Design and conduct a pilot project to successfully address specific and existent interoperability problems as a basis for the state-wide system.
 - The pilot project should involve both urban and rural areas.
- Create and implement a state-mandated communications and interoperability training program.
 - Determine the required number of hours per year for training on communications and interoperability (include training on equipment, policies, protocols, and procedures).
 - Design short, defined, regular exercises that are rolled out regionally.

What Are the Barriers to Success?

In this plan, barriers are defined as the factors that hinder efforts to improve the state of communications and interoperability in Kentucky. Kentucky's public safety community identified the following barriers to their efforts for improving communications and interoperability:



1. **Political Motivations** – Interoperability is not a voter issue, and many politicians support more visible issues.
2. **Funding Limitations** – General lack of local funding, and grant funding does not allow for system maintenance, upgrades, and operations.
3. **Technical Constraints** – Vendors have the upper hand in this market, and fail to produce and sell open platform systems that meet practitioner needs; constantly advancing technologies make existing and new systems obsolete quickly.
4. **Public Safety Culture** – Egos and turf battles get in the way of building interoperable solutions.
5. **Power and Control Issues** – The resistance of agencies to share or give up control of communications systems.
6. **Individual Over State-Wide Needs ('Big Hat' vs. 'Little Hat' Dilemma)** – Many public safety officials choose to defend their individual roles versus considering statewide and regional needs and solutions.
7. **Diverse Terrain** – Mountainous regions of Kentucky have coverage issues and may need more complex solutions.

How Can We Put This Strategy Into Effect?

Establish an Interoperability Program Office

To effectively execute the strategy laid out in this plan, Kentucky should consider forming a program office for public safety communications and interoperability. This program office would be responsible for putting into effect the State-Wide Strategic Plan for Communications and Interoperability. Further, this program office would act as the primary point of accountability state-wide for all issues relating to public safety communications and interoperability.

A successful program office is managed with a primary governing body, one outreach plan, and one scorecard for all program aspects. The director of Kentucky's interoperability program office should be a full-time employee; he or she will need to manage the collection of strategic initiatives as one strategy.

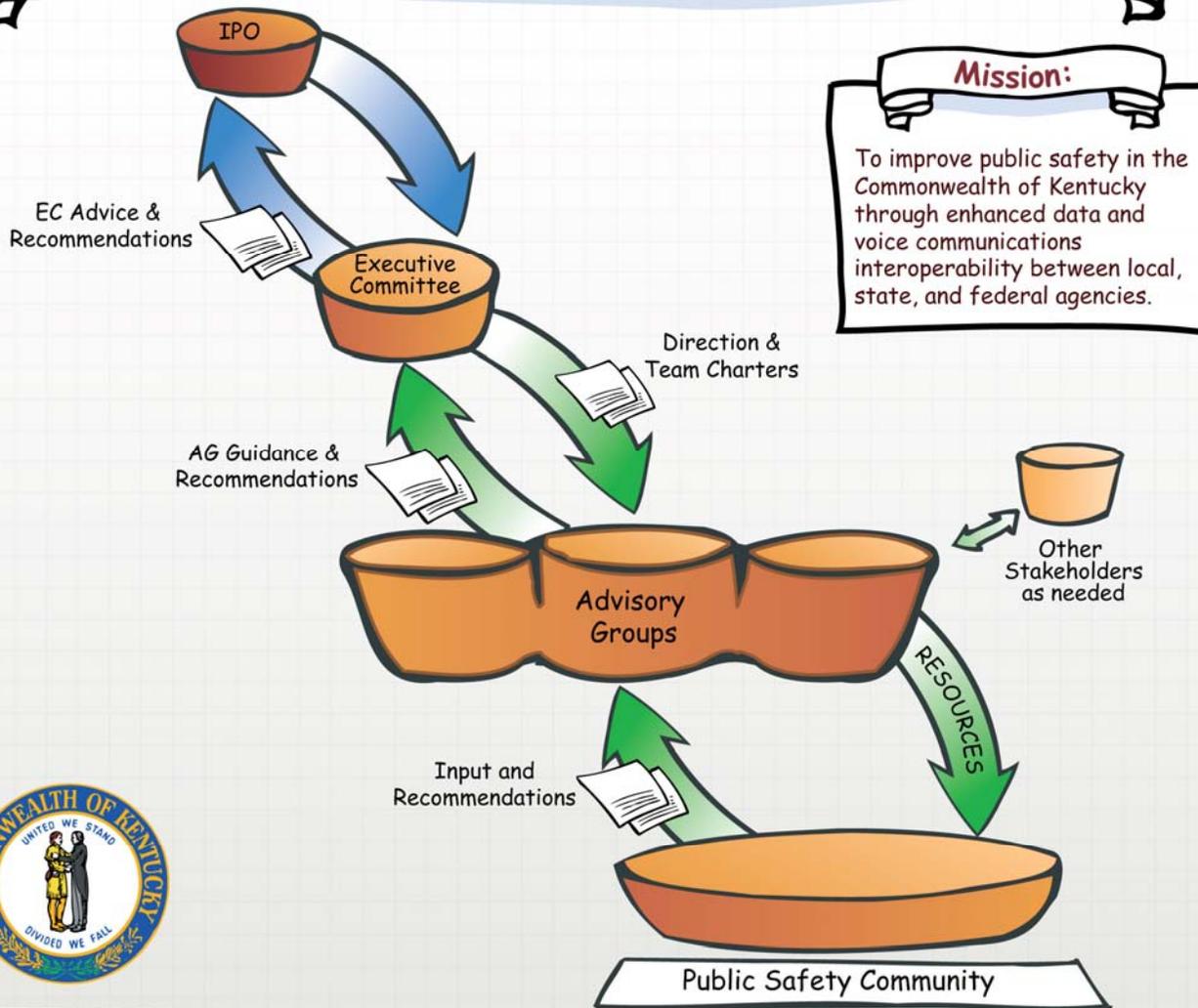
The director will be responsible for:

- Driving the execution of the State-Wide Strategic Plan for Communications and Interoperability.
- Revisiting the strategy annually to ensure that it still meets the needs of Kentucky's public safety community.
- Serving as liaison between the local and regional public safety communities, state agencies, and state officials.
- Serving as a non-voting member on the Kentucky Wireless Interoperability Executive Committee (KWIEC).
- Serving as liaison between the KWIEC and the Governor regarding communications and interoperability issues.

“Financially, costs would be high in implementation (equipment, services and on-going training), but human lives are priceless.”

Interoperability Program Office (IPO) Governance Structure

LOCALLY DRIVEN



SAFECOM developed the model above to assist the input of the public safety community on program strategy and activities. The graphic depicts the high-level flow of information and communication between the components of the governance structure, which include an Executive Committee (EC) and Advisory Groups (AGs). The text boxes below describe the roles of ECs and AGs.

Governance

The support of local, regional, and state public safety leadership across Kentucky is critical to the successful application of the State-Wide Strategic Plan for Communications and Interoperability. To ensure the interoperability program office is locally driven, Kentucky will need to launch a governance body that represents public safety practitioners, of all disciplines, from across the Commonwealth.

“An effective state-wide plan will, in the long run, save money across many agencies.”

The interoperability program office should launch a governance body empowered to develop standards, influence funding decisions, and offer specialized technical assistance on communications and interoperability to the public safety community. The governance body will provide input and recommendations on decisions that affect the state-wide public safety community.

The proposed governance approach encourages transparency, accountability, and collaboration. It will employ the following means to accomplish these goals:

- Leadership that represents a broad range of local-level public safety responders.
- Participatory decision making.
- Relationship building at the local, regional, state, and federal levels.
- Support of legislation that enforces timely and cost-efficient execution of strategic plan initiatives which support state-wide communications and interoperability.
- Outcome-based strategic planning.

To encourage input from the public safety community on the program’s strategy and activities, local and state practitioners will be included in the program’s Executive Committee (EC), or a part of an Advisory Group (AG). Both EC and AG members are expected to play a key role in program definition and execution.

The Role of an Executive Committee

The Executive Committee (EC) is the primary steering group for the interoperability program office. It provides an access point for public safety body practitioners and policy makers to guide the program, and offers leadership to the Advisory Groups (AGs).

The Executive Committee (EC) serves as the primary steering group for the interoperability program office.

Development of a new governance body is a challenge, one that can demand patience, time, and additional resources. A way to quickly establish a credible governance body to guide Kentucky's interoperability efforts would be to reorganize, reinvigorate, and re-launch the Kentucky Wireless Interoperability Executive Committee (KWIEC).

Kentucky established KWIEC to address communications and interoperability in the Commonwealth. According to House Bill-309 of Kentucky's General Assembly, KWIEC "shall advise and make recommendations regarding strategic wireless initiatives to achieve public safety voice and data communications interoperability." To date, the role of KWIEC has not been fully communicated to the public safety community across Kentucky. With the creation of an interoperability program office, however, KWIEC will be well positioned to act in its intended advisory capacity. The expanded role of KWIEC should include the following activities:

- Provide strategic leadership, guidance, and assistance, when requested, to the interoperability program office from the perspective of practitioners and policy makers at all levels of government.
- Offer advice on the application of the state-wide plan, review the progress of the plan's application, and recommend changes, as necessary.
- Identify and explain issues requiring policy, procedural, or other changes, as needed.
- Communicate decisions, plans, and results to relevant constituencies and practitioners.
- Define and articulate the needs of the public safety community to spur the development of materials for it.
- Review the guidance and recommendations offered by the AGs.

Membership

To make KWIEC more effective, it will be necessary to reorganize its membership. Members must include representatives from all public safety disciplines, and across all of Kentucky's geographic regions and urban areas. After all, the most effective governance bodies are made up of members that recognize the issues at hand -- because they represent the community most affected by their decisions, namely, the local constituencies. Therefore, local representation on KWIEC must be greater than state and federal representation. Further, KWIEC members should have some knowledge of wireless communications, and authority to make decisions for and offer advice to their constituents.

The Role of Advisory Groups

Advisory Groups (AGs) will be established based on a particular communications and interoperability need. Kentucky's public safety community, based on current needs, identified the following as examples of AGs:

Advisory Groups provide a mechanism for individuals with specialized skills and common interests to share best practices and lessons learned.

- Policies and Procedures Advisory Group
 - Reviews, amends, and/or creates state-wide or regional communications and interoperability policies and procedures.
 - Disseminates information on training opportunities across all disciplines at the local, regional, and state levels.
- Technical Advisory Group
 - Assists local public safety agencies by providing technical assistance when needed.
 - Provides guidance on equipment that counties must have to be interoperable.
 - Offers direction on training, policies, and procedures for equipment purchases and interoperability life cycle planning.
 - Assesses the capabilities and limits of existing and emerging technology and equipment.
 - Recommends standards that vendors must follow if they want to be able to sell equipment in the state.
 - Consults the Executive Committee (EC) on technology, spectrum, and standards issues at the local, state, and federal levels.

Other advisory groups could pertain to grants assistance, finance, general administration, regional coordination, and training, among others.

The role of the AGs should include:

- Provide general guidance and recommendations to the EC.
- Provide advice, feedback, and support to the interoperability program office and the EC on the program's strategic direction.
- Communicate decisions, plans, and results to relevant constituencies and practitioners.

AGs will be a vehicle for a broad base of public safety community input to the interoperability program office. They will provide a mechanism for individuals with specialized skills and common interests to share best practices and lessons learned. In an AG, interested parties at all levels of government can learn from one another's experience, perspective, and expertise. In addition to providing subject matter expertise, the AGs will act in an advisory capacity on specific communications and interoperability issues, for both the EC and the public safety community.

Membership

AG members will serve as a key resource for improving public safety communications and interoperability. Membership should be comprised of representatives from the local, state, and federal public safety and policy maker communities. The membership of the AGs will be subject to review by the EC.

Outreach

Critical to the success of an interoperability program office is the ability to communicate the content and status of current initiatives to the state-wide public safety community. Outreach is a strategic part of each initiative. Kentucky's public safety community has identified this area as a serious deficiency. Both the interoperability program office and the Executive Committee must make it a priority to regularly perform outreach regarding state-wide communications and interoperability. Outreach functions include, but are not limited to, the following:



- Distributing well-defined information on lessons learned, best practices, challenges and opportunities, and other matters to:
 - Local and state public safety responders and organizations.
 - Regional representatives.
 - State representatives.
 - Executive Committee and Advisory Group members.
 - Other key stakeholders and decision makers.
- Creating and executing a plan to educate the public, political figures, and the public safety community on the importance of communications and interoperability.
- Planning and hosting quarterly regional interoperability and communications focus groups.
 - Help promote regional communications and interoperability by building cross-discipline and jurisdictional relationships.
 - Focus groups will assist in gathering regional insights.
- Designing a survey to query public practitioners on their current perspective regarding specific interoperable communications issues.

Performance Measures

The execution of a performance management process will help ensure the successful achievement of the goals and initiatives outlined. It will contribute to the stakeholders' understanding of the state-wide strategic plan, and to their understanding of how the state-wide plan will help them. The application of this plan will assist the public safety community in fulfilling its duty to make Kentucky a safe place to visit, work, and reside.

The output and related processes that are part of the performance management approach begin with setting goals and performance measures. Once baselines and targets are established, the data will be consolidated to provide a "snapshot" of actual performance. The data will provide a mechanism to monitor execution of the state-wide plan. Goals are then achieved through the planning of project activities and alignment of resources. The interoperability program office, with input from KWIEC, will then review execution of the project activities, and compare results to the performance measures.

Unanticipated events and other factors will likely affect the program's ability to achieve some goals and initiatives. Therefore, the state-wide plan should be viewed as a living document that the interoperability program office and KWIEC review annually, and adjust as necessary.

“During an incident, our inability to quickly contact the ‘right’ people directly via the radio lets additional time slip away, and puts our first responders and the public at unneeded risk.”

What Are the Principles for Achieving State-Wide Interoperability?

For the interoperability program office to effectively address the myriad of interoperability issues state-wide, it will need to employ a common set of standards, policies, and procedures driven by local practitioner input. Such an approach must recognize the substantial investments that public safety agencies have already made in existing equipment and procedures throughout Kentucky. In addition, this program office must recognize the challenges of incorporating legacy equipment and practices in the face of constantly changing technology. Driving principles behind the management of the interoperability program office include:

“The focus is on catastrophic events, but our need is greater for day-to-day operations.”

1. *Recognizing that it must be a locally driven program* – Public safety practitioners will be integrated into the program from its beginning, and will have a meaningful role throughout its execution. This will encourage a program that creates solutions to meet their needs.
2. *Extensive leveraging of existing efforts* -- The investments that many public safety agencies, within Kentucky and across state borders, have already made must not be wasted. Cooperation and coordination with existing efforts reduces unnecessary duplication of effort, and increases efficient use of resources dedicated to common causes.
3. *An effective outreach program* -- Outreach efforts will emphasize the need for interoperability, and tools for its implementation, to practitioners and policy makers at all levels of government.
4. *A standards-based approach* -- Standards heighten competition across industry, encourage innovation, create costs savings, and increase compatibility among public safety agencies. In Kentucky, the public safety community must educate and motivate industry to build solutions that meet their needs.
5. *Understanding a “system of systems” approach* – One solution will not solve all interoperability issues in Kentucky. The interoperability program office will develop a state-wide open-platform infrastructure that allows public safety agencies to choose a solution that meets their needs while conforming to any standards that are developed.
6. *Prioritizing the issue* – Decision makers throughout Kentucky must recognize public safety communications and interoperability as a high-priority issue. Action and results are essential.
7. *Applying grant guidance* -- An effective way to ensure adherence to the state-wide strategy of achieving interoperability is to tie grant funding for public safety communications and interoperability to alignment with the principles and initiatives in this plan.

What Should We Do First?

The first 90 days of roll out, and the initial phases of implementing this state-wide plan, are critical. They will elicit the support required to successfully accomplish the initiatives to enhance communications and interoperability in Kentucky.

During the next three months, the interoperability program office, or another organizing body chosen by Kentucky, will need to focus on several key actions and activities to help ensure successful execution of the initiatives outlined, as well as future initiatives that may arise. These activities include:

- Define the role and responsibilities of the organization that will execute this state-wide strategy, and submit a proposal to the Governor to fund the organization effectively.
- Reorganize the membership of the KWIEC, and conduct its first meeting to support the communications and interoperability initiatives.
- Determine the baseline of communications state-wide to provide enough information to begin effective execution of the other initiatives.

During the strategic planning process, Kentucky's public safety practitioners at the local, state, and federal levels determined the most important initiatives for improving public safety communications and interoperability across the Commonwealth. In choosing the strategy, each participant committed to do his or her part to ensure fulfillment of these initiatives.

“Incompatible systems at incidents require our first responders to physically run between locations to communicate critical questions and information. This is unacceptable.”

What Are the Critical Success Factors?

The Commonwealth does not have a single point of accountability to manage public safety communications and interoperability issues state-wide. Therefore, the most significant actions to take would be to establish or assure the following:

- Strong leadership
- High-level support
- Funding
- Other necessary resources.

“Interoperability should not have to wait until a crisis generates political will.”

With these factors in mind, this plan is based on the following assumptions.

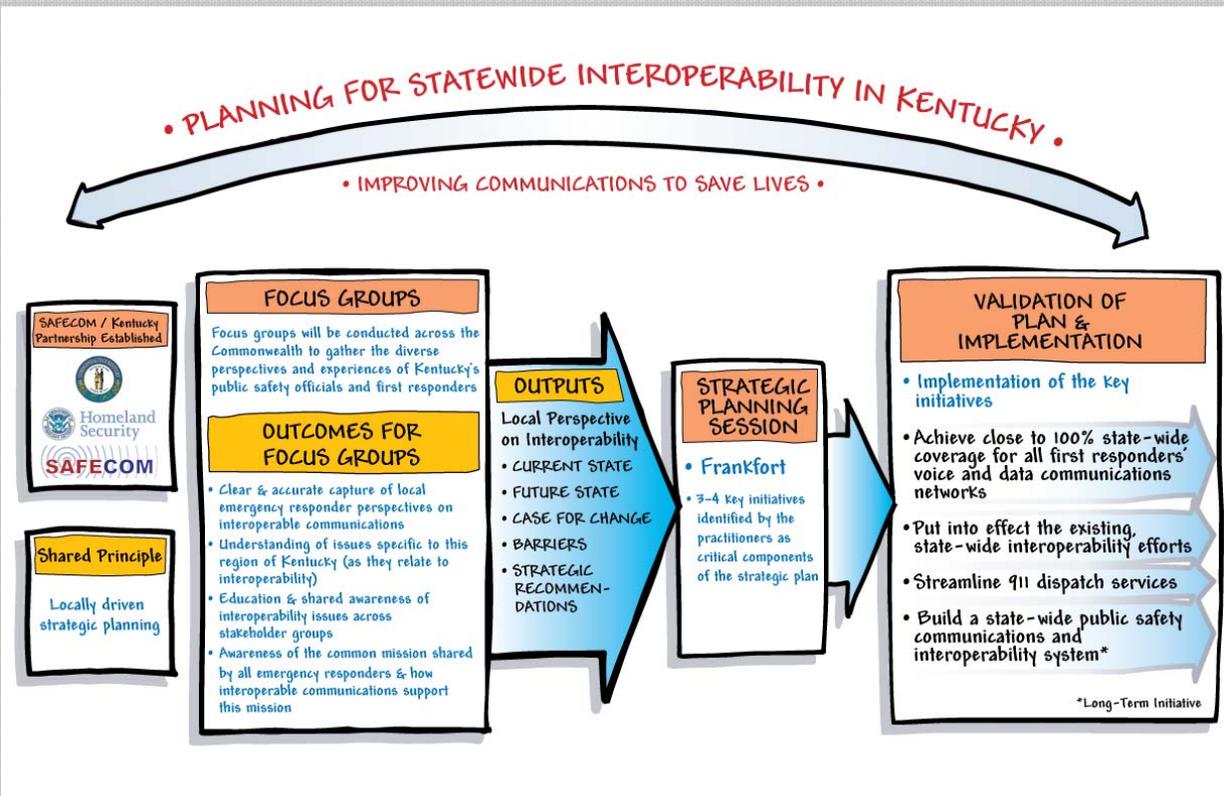
1. The Governor’s Office supports this strategy, along with key stakeholders in Kentucky. These stakeholders include, but are not limited to, the Center for Rural Development, Louisville Metro, the city of Lexington, and regions of Western and Northern Kentucky.
2. The Governor appoints a single person, accountable to the Governor, to drive the strategy to completion.
3. Sufficient resources and staffing are authorized by the Governor.

This Is One Strategy

If Any Part of the Strategy Fails, the Entire Strategy Fails.

How Did We Develop This Strategy?

Kentucky, with the SAFECOM program, designed a strategic planning process that gathered local public safety perspectives through regional focus group sessions. This process drew from ongoing best practices of other states, and leveraged existing local, regional, state, and federal interoperability initiatives and resources in Kentucky. The graphic below depicts the process roadmap for developing a locally driven State-Wide Strategic Plan for Communications and Interoperability in Kentucky. The roadmap highlights how the focus groups and strategic planning session were the driving force in identifying the key initiatives of this plan.



How Did the SAFECOM Program Choose Kentucky?

The Department of Homeland Security's (DHS) Office for Interoperability and Compatibility (OIC) is housed within the Science and Technology (S&T) Directorate's Office of Systems Engineering and Development (SED). SAFECOM is a program of the OIC. The OIC is a practitioner-driven office that believes any successful effort to improve public safety interoperability must include the voices of first responders on the front lines in large, small, urban, and rural communities across the Nation. OIC makes it possible for the public safety community to leverage resources by promoting coordination and cooperation across all levels of government.

Authorized by the Intelligence Reform and Terrorism Prevention Act of 2004 (Public Law 108-458) to address communication issues facing public safety, OIC, through SAFECOM, conducted two Regional Communications Interoperability Pilots (RCIP). The purpose of the RCIP is to improve interoperable communications nationwide. The pilots will build upon the work SAFECOM has done with other states and localities that have delivered improvements for states and regions while leading to replicable tools. The pilot projects are focused on developing tools and models for improving communications and interoperability that seek to address the unique challenges faced across the Nation. SAFECOM conducted the first of two RCIPs in the State of Nevada and Commonwealth of Kentucky.

Pilot sites were selected using criteria provided by the Intelligence Reform and Terrorism Prevention Act of 2004 and SAFECOM, such as:

- Level of risk to the area.
- Number of federal, state, and local law enforcement agencies located in the area.
- Number of potential victims from a large-scale terrorist attack in the area.
- Community risk and vulnerability.
- Level of commitment and buy-in of the region.
- Articulation of a defined interoperability need by the region.
- Ability of the pilots to serve as national models.

The SAFECOM Program promotes strategic planning efforts that:

- Demonstrate a user-driven philosophy.
- Build relationships across agencies and jurisdictions in an effort to acknowledge stakeholder similarities and differences.
- Address interoperability from a comprehensive point of view, recognizing that solutions take on a variety of forms, including governance, frequency of use, Standard Operating Procedures (SOP), training and exercises, and technology.
- Identify existing technical and operational strengths and promote solutions that leverage these strengths as improvements are made.
- Promote a "system of systems" approach and recognize that interoperable solutions are rarely "one size fits all."

The Kentucky-SAFECOM Partnership

Kentucky's Office of Homeland Security entered a partnership with the SAFECOM Program to conduct a regional pilot project, based on applying SAFECOM principles to plan and execute enhanced communications and interoperability state-wide. The SAFECOM Program, a practitioner-driven public safety program, provides guidance and assistance for local, tribal, state, and federal public safety agencies working to improve public safety response through more effective and efficient interoperable communications. Kentucky has benefited from SAFECOM's information and resources pertaining to governance, coordination, planning, measures of success, challenges, and lessons learned. SAFECOM has derived these from the insights and practices of other states and local areas that have begun to progress on their own toward interoperability. SAFECOM is guided by the input of local and regional public safety practitioners, and has benefited from the experiences of Kentucky's public safety community as it works to define and execute plans and solutions for improved interoperability.

The involvement of local and state emergency responders is critical to the success of developing a State-Wide Strategic Plan for Communications and Interoperability that meets the needs of the public safety community. Both Kentucky and SAFECOM recognize the need for a locally driven approach to enhance public safety communications and interoperability. Therefore, each stage of the strategic planning process was designed to ensure that the resulting strategy and initiatives would be a collaborative effort. This approach consisted of input and recommendations from local, regional, and state public safety responders. To accomplish this, SAFECOM conducted seven focus group sessions throughout Kentucky to gather the diverse perspectives and experiences of public safety practitioners. On December 14, 2005, a strategic planning session was conducted to validate the information gathered by the focus groups. The goal was for Kentucky's public safety community to collectively develop a strategy for improving state-wide communications and interoperability. (See the appendices for detailed information on these sessions).

Appendix

The following pages offer supplementary information and data to the State-wide Strategic Plan for Communications and Interoperability. They are designed to offer insight into the processes and information used to create the plan.

Appendix A: Seven Regions

Appendix B: Participating Stakeholders

Appendix C: Strategic Planning Session Data

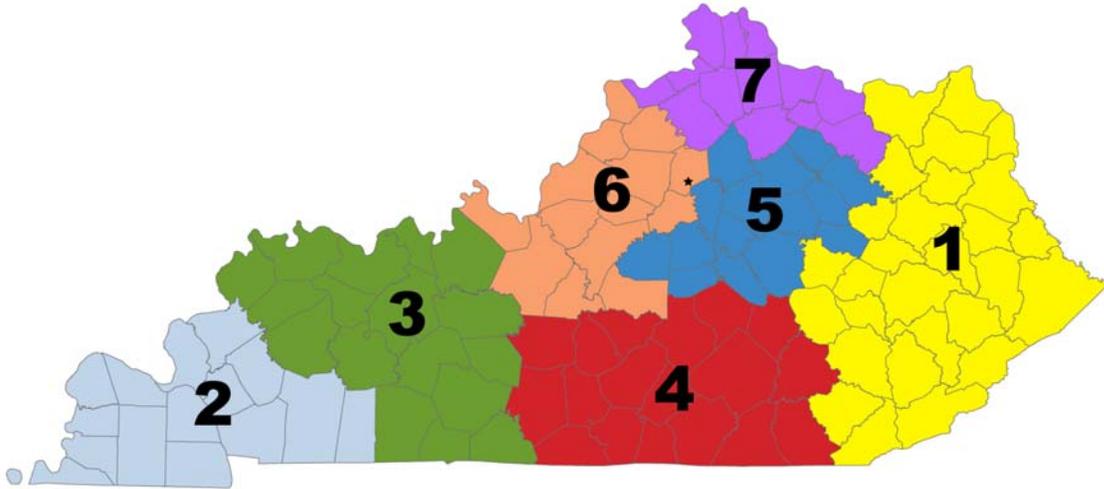
Appendix D: Focus Groups Data

Appendix E: Glossary of Terms

Appendix F: Acronyms

Appendix A: Seven Regions

Data for the State-Wide Strategic Plan was gathered from seven focus groups. The data was validated during a strategic planning session. The map below graphically depicts the focus group regions, by chronological order of the meetings. Below the map, the counties in each region are listed. The star in Region 6 marks the location of the strategic planning session, the city of Frankfort.



Region 1: Booneville

- Bell County
- Boyd County
- Breathitt County
- Carter County
- Clay County
- Elliott County
- Estill County
- Floyd County
- Greenup County
- Harlan County
- Jackson County
- Johnson County
- Knott County
- Knox County
- Lawrence County
- Lee County
- Leslie County
- Letcher County
- Lewis County
- Magoffin County
- Martin County
- Menifee County
- Morgan County
- Owsley County
- Perry County
- Pike County
- Rowan County
- Wolfe County

Region 2: Paducah

- Ballard County
- Caldwell County
- Calloway County
- Carlisle County
- Christian County
- Crittenden County
- Fulton County
- Graves County
- Hickman County
- Livingston County
- Lyon County
- Marshall County
- McCracken County
- Todd County
- Trigg County

Region 3: Owensboro

- Allen County
- Breckinridge County
- Butler County
- Daviess County
- Edmonson County
- Grayson County
- Hancock County
- Henderson County
- Hopkins County
- Logan County
- McLean County
- Muhlenberg County
- Ohio County
- Simpson County
- Union County
- Warren County
- Webster County

Region 4: Somerset

- Adair County
- Barren County
- Casey County
- Clinton County
- Cumberland County
- Green County
- Hart County
- Laurel County
- Lincoln County
- McCreary County
- Metcalfe County
- Monroe County
- Pulaski County
- Rockcastle County
- Russell County
- Taylor County
- Wayne County
- Whitley County

Region 5: Lexington

- Bath County
- Bourbon County
- Boyle County
- Clark County
- Fayette County
- Garrard County
- Jessamine County
- Madison County
- Mercer County
- Montgomery County
- Nicholas County
- Powell County
- Scott County
- Washington County
- Woodford County

Region 6: Louisville

- Anderson County
- Bullitt County
- Franklin County
- Hardin County
- Henry County
- Jefferson County
- LaRue County
- Marion County
- Meade County
- Nelson County
- Oldham County
- Shelby County
- Spencer County
- Trimble County

Region 7: Covington

- Boone County
- Bracken County
- Campbell County
- Carroll County
- Fleming County
- Gallatin County
- Grant county
- Harrison County
- Kenton County
- Mason County
- Owen County
- Pendleton County
- Robertson County

Strategic Planning Session: Frankfort

Appendix B: Participating Stakeholders

This directory lists, in alphabetical order by last name, invited focus group and strategic planning session participants.

Abney, Scott

Erlanger Police Department

Akers, David

Kentucky Emergency Management

Akers, John

Executive Director
Kentucky Center for School Safety

Alexander, Hollis

Police Chief
Cadiz

Anderson, John

Purchase Area Development District

Atherton, Walter

Deputy Director
Daviess Emergency Management

Bagly, Diane

Major
Louisville Metro Emergency Medical Service

Bailey, Mark

KAPA Board
Fort Thomas Fire Department

Ball, Danny

Center for Rural Development

Ball, Tim

Center for Rural Development

Banks, Libby

Nursing Administrator
Kentucky River District Health Department

Barber, Vernon

Emergency Manager
Bath County

Barker, David

Wireless IT Manager
Kentucky Army National Guard

Barker, Rick

911 Coordinator
Pulaski County

Barnett, Marcus

Emergency Medical Service Director
Ohio County Emergency Medical Service

Barnhart, Jim

Director
Commonwealth Office of Technology

Barrett, Eugene

Director
Lee County Emergency Management

Beatty, Anthany

Chief
Lexington Police Department

Becraft, Steve

KAPA Board
Menifee County Ambulance Service

Bee, Carl

Deputy Chief
Elizabethtown Police

Benge, Roy

Area Manager 10
Kentucky Division of Emergency Management

Berry, Jeanetta

Health Department Director
Paducah/McCracken

Bertram, Keith

Deputy
Monticello Fire Department

Beshears, Darrell

Judge/Executive
Pulaski County

Biggerstaff, David

Police Chief
Somerset

Blade, Vaughn

Kentucky State University

Blankenship, Michael

Communications Director
Hardin County Emergency Medical Service

Blasher, Michael

Deputy
Louisville Airport

Bloodworth, Donald

Chief
Radcliff Police Department

Bolton, Clyde

Cabinet for Health Services

Booth, Lee

Fort Knox

Bozarth, Dan

Executive Director
Pennyrile Area Development District

Bradshaw, Joe

Knox County Emergency Medical Service

Brady, Ed

Chief
KYAPC/Henderson Police Department

Brangers, Darrel
Communications
Elizabethtown Police
Department

Bratton, Randy
Chief
Paducah Police Department

Brinley, Lisa
Big Sandy Area Development
District

Brooker, Paul
Ranger

Brown, Chris
Sergeant
Owensboro Police Department

Brown, Kenneth
Operations
University of Louisville Police
Department

Brown, Ronel
Louisville Fire Department

Buchanan, Bob
Judge/Executive
Ballard County

Bukner, Leroy
Park Ranger
Department of Parks

Burk, Ed
Director
Kenton County Homeland
Security Emergency
Management

Butler, Jeff
Cincinnati Police Department

Cain, Keith
Sheriff
Daviess County

Caldwell, Steve
TVA - Dam
Police Department

Calhoun, Betty
Special Projects
Cumberland Valley Area
Development District

Calhoun, Jesse
Communications
US Enrichment
Corporation

Carlton, Glendon
Assistant Chief
Lexington Fire Department

Carman, Stuart
Executive Director
Lake Cumberland Area
Development District

Carpenter, John
Emergency Management
Agency
Jessamine County

Carrico, Bob
KYEM Area 1 Manager
Kentucky Division of
Emergency Management

Carroll, Danny
Assistant Chief
Paducah Police
Department

Carter, Debbie
Supervisor
Metrosafe

Caudill, Clive
Chief
Jackson Police
Department

Chaney, Carl
Emergency Manager
Lewis County

Clark, Randy
Sheriff
Trigg County

Clifton, Doug
Kentucky State Police
Post 6

Cline, Joe
Chief Police Department
Morehead State Unive

Cole, Bryan
Ranger
Kentucky Park Services

Collignon, Ed
Systems Administrator
Henderson County

Conley, John
911 dispatcher
Morgan County

Coomer, Allan
Somerset Police Department

Cooper, Lisa
Northern Kentucky Area
Development District

Cox, Frank
Sheriff
McLean County

Cox, Rick
KentuckyEM Area 3 Manager
Kentucky Division of
Emergency Management

Crider, Bill
Chief
Dawson Springs Police
Department

Crittendon, Mike
Assistant Chief
Cincinnati Airport Police
Department

Crow, Bill
Post 16 Communications
Kentucky State Police

Crutcher, Bob
Communications Director
Covington Police Department

Daniels, Cora
Police Records Supervisor
City of Owensboro

Darby-Pascall, Dot
Executive Director
Barren River Area
Development District

Day, Jerry
Kentucky State Police Post
Radio Specialist
Letcher County

Day, Ronnie
Executive Director
Kentucky Fire Commission

Delk, Wesley
Gateway Area Development
District

Devoss, David
Chief
Murray State University

Dickson, Larry
Regional Coordinator for
Emergency Management
Rowan County

Die, Troy
Deputy Chief of Patrol
Elizabethtown Police
Department

Dietz, Charles
Chief
Fort Mitchell Fire Department

Domidion, Jerry
Deputy Director
JC Emergency Medical
Service

Doss, Larry
Chief
Coast Guard

Dozer, Ron
Kentucky State Police Post 2

Driskill, Rick
Operations Supervisor
Mercy Regional

Duncan, Dwight
Sergeant
Henderson County

Edmondson, Dale
Director
Campbell County 911

Eggen, Brandon
Sergeant
Kentucky Vehicle
Enforcement

Eiter, Frank
Judge/Executive
Union County

Elam, Stefanie
Dry Ridge Fire Department

Fecher, Ken
Lieutenant
Fort Thomas Police
Department

Feger, Rebecca
Coordinator
Laurel County Health Dept

Ferrell, Jerry Steve
Fire Chief (Vol)
Monticello

Forbis, David
McCracken County

Foster, Bob
Louisville Airport

Fox, Debbie
Deputy Director
Metrosafe

Francis, Rob
Coordinator
Division of Water

Franklin, Don
Director
Emergency Management
Area 12

Franklin, Kevin
University of Kentucky
Police Department

Franklin, Richard
Emergency Medical
Service Director
Menifee County

Frazier, James
Lt. Detective
Morehead State University

Friely, Roger
Fire Chief
Jackson Fire Dept

Fuller, Adam
Fort Mitchell Fire Department

Furlong, Ed
Ranger
Park Services

Gadzala, Jamey
Lieutenant
Fort Thomas Police
Department

Gardner, Ruben
Chief
Elizabethtown Police
Department

Gerughty, Joe
Coordinator
Metcalf 911

Glenn, Mindy
Metro Safe

Griswold, John
Campbell County Emergency
Management

Hacker, James
Ambulance Inc. of Loral
County

Hall, Alice
Whitley County Emergency
Medical Service

Hall, Mike
Chief
Southgate Police Department

Hall, Steve
Henderson Fire Department

Hall, Wayne
Chief
University of Louisville Police
Department

Hall, Tammy
7 County Hazard Office

Hamilton, Rebecca
Programmer/Analyst
City of Owensboro

Hansel, Gary
Chief
Mt. Vernon Fire

Hardesty, Pat
Captain
Owensboro Fire Department

Harkins, Brian
Federal Bureau of
Investigation

Harris, Charlie
Anti-Terrorism Officer
Kentucky National Guard

Harris, Jerry
Deputy
Wolfe County Fire Department

Harrison, Mark
KAPA Board
Marshall County Ambulance
Service

Hatcher, Frank
Road Commissioner
Pike County

Hatfield, Wendell
Chief/ED
Jessamine County Emergency
Medical Service

Haubner, Dan
Deputy Director
Covington Police Department

Hawes, Dwayne
Emergency Management
Marshall County

Hawthorne, Seth
Radio Tech
Kentucky State Police Post 15

Hayden, Marvin
Police Patrol Commander
City of Owensboro

Hehman, John
Assistant Chief
Fort Mitchell Fire
Department

Helm, Betsy
Tech Administrator
Louisville Public Protection
Cabinet

Hensley, Mark
Health Department
Laurel County

Henson, Todd
Operations IT
Kentucky State Police
Post 12

Hicks, Milton
Communications
US Enrichment
Corporation

Higgins, Brian
Radio Tech
Kentucky State Police
Post 11

Hinkle, Bill
Director
Hamilton County (Ohio)
Department of
Communications

Holbrook, Howell
Rockcastle Emergency
Management

Hollon, Elijah
Chief
London Police Department

Hollon, Gene
Sheriff
Laurel County

Honeycutt, Doug
Kentucky State Police
Headquarters

Hoover, Joey
State Parks

Hopper, Dee
911 Director
Christian County

Horn, Shelby
911 Coordinator
Jessamine County

Howard, Carolyn
Kentucky River Area
Development District

Howard, Larry
Knox County Emergency
Medical Service

Howell, Carol
911 Coordinator
McLean County

Hume, Robbie
Exercise Coordinator
Public Health

Hunter, JJ
Ranger
Park Services

Inman, Jim
KAPA Board
Hancock County Emergency
Medical Service

Jackson, Greg
Security Advisor
Marathon Ashland

Jackson, Ron
Radio Technician
City of Owensboro

Jameson, Ruth
911 Supervisor
Ohio County

Jenkins, Jerry
Director of all 911 Dispatch
Magoffin County

Johnson, Joe
Deputy Chief
McMahan Fire Department

Jones, Richard
Captain
Versailles Fire Dept

Keelin, Terry
Sheriff
Marathon

Keithley, Tony
KentuckyEM Area 4 Manager
Kentucky Division of
Emergency Management

Kent, Nathan
Operations IT
Kentucky State Police Post 1

Kiely, Don
Emergency Services Manager
Covington

Kilgore, Kent
Kentucky Vehicle Enforcement

King, Kent
DES Officer
McCracken County

Klope, Pam
Home Health Supervisor
Purchase District

Knight, Michael
Fort Wright

Knipper, Ken
Director
Campbell County OEM

Kraft, Mike
Assistant Chief
Covington Police Department

Kuhl, Lawrence
Judge/Executive
Laurel County

Kurtsinger, Michael
Division Director
Kentucky Fire Commission

Langston, Rebecca
Commissioner
Public Safety

Latham, Doug
Fire Chief
Trigg County
Ambulance/LEPC

Latham, Jim
Fire/Emergency Medical
Service
Somerset

Laughlin, Ronald
FBI

Lawson, Lonnie
Center for Rural
Development

Leddy, David
Kentucky Vehicle
Enforcement

Ledford, Rick
Chief
Radcliff Fire Department

Lee, Duane
KAPA Board
Georgetown/Scott County
Emergency Medical
Service

Legaspi, Lee
Director
Hardin County Emergency
Medical Service

Leslie, Dennis
Assistant Chief
Henderson Fire
Department

Lewis, Kathy
Planner
FIVCO Area Development
District

Lewis, Mike
DES
Leslie County

Lewis, Peggy
Director, Emergency
Operations
Logan County

Lewis, Terry
Vice President
Kentucky Association of
Fire Chiefs
Chief, Henderson Fire
Department

Locke, Jamey
KAPA Board
Mercy Regional Ambulance
Service

Logsdon, Johnny
Chief of Police
Booneville Police Department

Maher, Dan
Boone County Emergency
Management

Mahone, Tim
Methodist Hospital Ambulance
Service

Mandeel, Grey
Safety Compliance Officer
Kentucky State University

Manley, Travis
Emergency Manager
University of Kentucky
Emergency Management

Mansfield, Jerome
US Enrichment Corporation
Emergency Management

Marshall, Brandon
Kentucky State Police Post 12

Martin, Bryan
Ranger
Kentucky Dam Village

Martin, Jeff
Assistant Chief
Northern Kentucky University
Police Department

Martin, Vernon
Emergency Medical Service
Director
Union County

Mason, Mike
KAPA Board
Allen's Ambulance Service

Massie, Robert
Operations Lt
Kentucky State Police Post 11

Mayberry, Jeff
Kentucky State Police

Maynard, Keith
Emergency Management
Director
Martin County

McCaslin, Jack
Judge/Executive
Hancock County

McDavid, Sherry
Executive Director
FIVCO Area Development
District

Mcintosh, Deana
Nursing Supervisor
Kentucky River District

McMichael, Bruce
Criminal Justice

Meadors, Andy
Executive Director
Cumberland Valley Area
Development District

Mercado, John
Cincinnati Homeland Security

Milburn, Rodney
Major
Louisville Police Department

Miller, Doug
Chief
Refinery Fire Department

Miller, Mike
Judge/Executive
Marshall County

Milligan, Robert
Ranger
Park Services

Mitchell, Ken
Executive Director
Commercial Mobile Radio
Service

Moore, Art
Kentucky State Police Post 1

Morgan, Janet
911 Coordinator
Leslie County

Motley, Greg, Lt
Operations Supervisor
Kentucky State Police
Post 13

Murphy, Kevin
Chief
Cincinnati Airport Police
Department

Murphy, Rodney
Center for Rural
Development

Myers, John
Judge/Executive
Clark County

Nauert, Jerry
Coast Guard

Nave, Paul
911 Director
Daviess County 911

Nesler, Fred
State Representative
Graves County

Nesselrode, Derek
Kentucky State Police
Post 12

Newuendo, Troy
State Fire Rescue
SFRT Area 1

Niemeier, Howard
Captain
Newport Police
Department

Nixon, Larry
Assistant Director, Captain
Murray State University
Police

Norman, Sheila
Whitley County
Emergency Medical
Service

Nunley, Heather
Assistant Director of
Communications
Muhlenberg Central Dispatch

O'Neal, Charlie
KAPA Board
Anderson County Emergency
Medical Service

Osborne, Tim
Communications Tech
Kentucky State Police post 13

Pannell, Ron
Supervisor
Louisville Comm

Pennington, Steve
911 coordinator
Laurel 911

Perry, Pete
Transportation Security
Administration

Perry, Clarence
Sheriff
McCreary County

Petty, Gary
Director
Allen County Emergency
Management

Pogue, Stella
911 coordinator
Monticello

Possich, Wallace
Chief
Frankfort Fire Dept

Powell, John
Kentucky State Police
Headquarters

Prunty, Pat
Emergency Medical Service
Director
Edmonson County

Rains, Jerry
Director
Area 11 Emergency
Management

Rambo, Deron
Deputy
Frankfort Emergency
Management

Rathman, Ronnie
Paducah Fire Department

Reams, Brian
Hazmat
Laurel County

Reed, N.E.
Judge/Executive
Edmonson County

Reid, Chris
Regional Hazmat

Reinhart, Kirk
Deputy Director
Kenton County Homeland
Security Emergency
Management

Reneer, Rex
Deputy Emergency Medical
Service Director
Yellow Ambulance of Daviess
County

Renfroe, Leland
Emergency Medical Service
Director
Edmonson County Emergency
Medical Service

Rice, Bill
Kentucky Emergency
Management

Richards, Clayton
Battalion Chief
Lexington Fire Department

Roark, Bonnie
Coordinator, 911 Services
Rockcastle county

Rogers, Fred
Director
Estill County Emergency
Management

Ross, Charlie
Public Health Director
Purchase District Health
Department

Roy, Erick
Barren River Area
Development District

Sandfoss, Jerry
Fort Thomas Fire
Department

Sayler, Marcia
Area Manager 09
Kentucky Division of
Emergency Management

Schneider, Ron
Campbell County
Emergency Management

Schreiner, George
Alexandria Police
Department

Schwartz, Steve
Whitley County
Emergency Management

Scott, Bob
Chief
Falmouth Police
Department

Shah, Jiten
Executive Director
Green River Area
Development District

Shouse, Stephen
Emergency Medical
Service Representative
Union County Methodist
Hospital Ambulance
Service

Shuck, Frank
President
Kentucky Fire Chiefs
Association

Sizemore, Jeff
Big Sandy Area
Development District

Smith, Mitchell
911 Coordinator
Georgetown

Smith, Vivian
Director
Health Center - Knott County

Sparks, Kristy
Director of Communications
Muhlenberg County

Spaulding, Greg
Patrolman
Southgate Police Department

Spears, Jamey
Central Dispatch e911
Paducah e911

Speed, Jeff
Captain
Owensboro Police Department

Stacy, Sam
Assistant Fire Chief
Hazard Fire

Staverman, Jim
Director
Boone County

Stem, Mike
Tech Coordinator
Boone County PSCC

Stephens, Bob
Kentucky Emergency
Management

Stephens, Robert
Chief
Richmond Police Department

Stephenson, Jackie
e911 for Pendleton County

Stovall, Randy
Emergency Management
Allen County

Street, Melissa
Street Supervisor
City of Paducah

Stringer, Brent
e911 Services

Strunk, Renn
McCreary County Sheriffs
Office

Sullivan, David
US Enrichment Corporation

Swift, Mike
KAPA Board
Barren-Metcalf County
Emergency Medical Service

Tackett, Doug
Fire Department Coordinator
Pike County

Tapp, Corey
Investigations Commander
Henderson County

Tapp, Richard
Chief
RF Fire Department

Thompson, Eddie
Road Supervisor
Henderson County

Thompson, JV
Kentucky State Police Post 4

Tobergte, Dave
Admin Sergeant
Northern Kentucky University
Police Department

Townsend, Jim
Judge/Executive
Webster County

Trent, Michael
Morehead State University

Trowbridge, Rob
Kentuckiana Regional
Planning and Development
Agency

Turley, James
Lexington Police Department

Turner, Cale
Judge/Executive
Owsley County

Vaughn, Mark
Cabinet for Health
Services

Via, Earnie
Paducah Public Works

Wade, Randy
Emergency Management
Director
Trigg County Emergency
Management

Waldon, Cynthia
Louisville Fire

Wallace, Mike
Western Kentucky
University

Wallen, Dave
Region 5 Sargeant
Park Ranger

Ward, Mike
Chief
Alexandria Police
Department

Watkins, Chris
Henderson Fire
Department

Watkins, Rick
Area Manager
Kentucky Emergency
Management

Weddle, David
Assistant Chief
Mayfield Fire Department

Welch, Justin
Menifee Ambulance
Menifee County
Ambulance Service

Wells, Jim
Dry Ridge Fire Department

Wells, Willie
Captain
Radcliff Police Department

Wheatley, Buddy
Chief
Covington Fire
Department

Whitton, Barry
Cincinnati Police Department

Whobrey, Tony
Radio Supervisor
Kentucky State Police Post 4

Wiggins, Kim
911 Coordinator
Trigg County

Wilder, Tim
Middlesboro Fire Dept &
Ambulance Service

Wilkerson, Susan
Grants Director
Kentucky Office of Homeland
Security

Willoughby, Ashley
Associate Director of
Development
Barren River Area
Development District

Wilshire, John
Telecommunications Engineer
Lexington Police Department

Wilson, Arnold
Owsley County Emergency
Director

Wilson, Bonnie
Owsley County Emergency
Management

Wisniewski, Paul
Federal Security Director
Cincinnati Airport

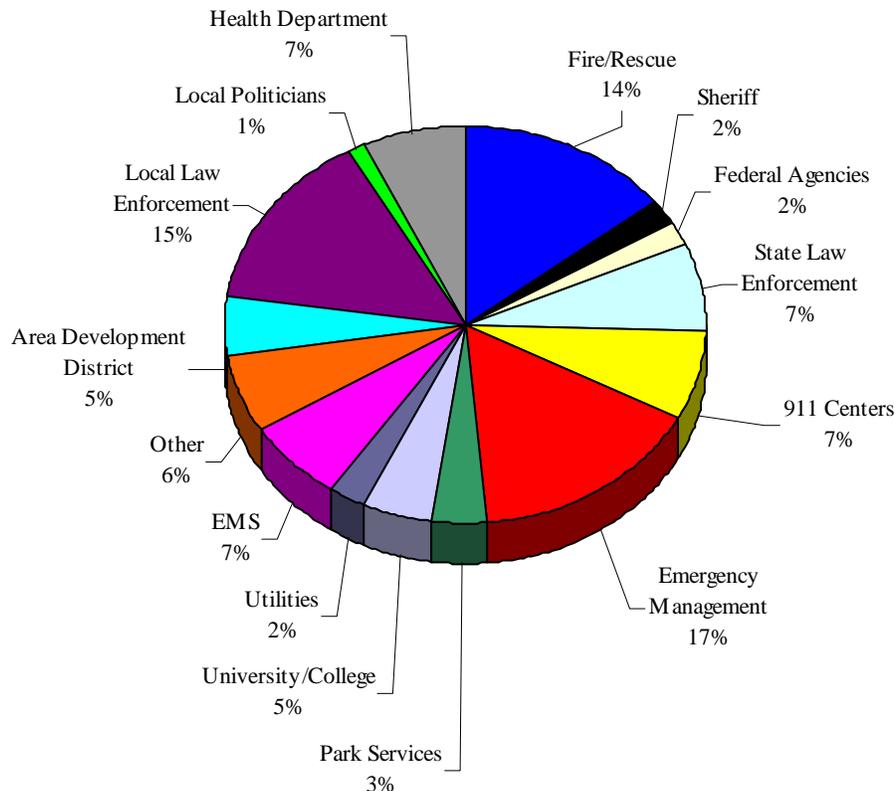
Wolfe, Roger
1000 Sticks Fire Department

Woosley, Angela
Planner
Health Department

Yates, John
Kentucky State Police

Yates, Marty
Kentucky State Police
Post 3 Communications

Participation by Discipline



Over 300 members of Kentucky’s public safety community were involved in the strategic planning process that is the basis for the development of this state-wide plan. The figure above provides a breakdown of stakeholder participation by discipline. The category “other” includes unique stakeholder groups that make up less than 1 percent of the overall participants. These stakeholder groups include school districts, non-elected city officials, and other state and private agencies that do not fit under the above categories.

Appendix C: Strategic Planning Session Data

SAFECOM is guided by the input of local and regional public safety practitioners as it works to define and implement interoperability plans and solutions. To this end, SAFECOM conducted seven focus group sessions located throughout Kentucky. These sessions were comprised of law enforcement, fire response, Emergency Medical Services (EMS) organizations, and other agencies that provide critical support for incident response. In addition to the focus group sessions, a final meeting--the strategic planning session--was conducted to validate and build on the inputs from the focus groups.

The desired outcomes of the Strategic Planning Session were:

- Public safety's recommendations to Kentucky on how to improve voice and data communications across the Commonwealth
- An enhanced sense of community among state-wide public safety practitioners in the state

Each focus group session was designed as a series of conversations centered on the following five issues:

- Interoperability, state-wide and regional, as it relates to the “current state” or status of interoperability
- The case for why change needs to happen
- The envisioned future state
- Barriers to achieving the future state
- A strategy for moving forward, consisting of:
 - Short-term recommendations
 - Long-term recommendations

The Strategic Planning Session took place in Frankfort, Kentucky, on December 14, 2005. During the Strategic Planning Session, the conversations of all seven focus group sessions were consolidated, and presented back to the public safety community for validation. The following sections provide a detailed outline of the conversations that took place at the Strategic Planning Session, organized by the five issues mentioned above.

Current State

During the focus group sessions, participants were asked to discuss the “what is” of communications and interoperability in Kentucky, concerning response efforts from day-to-day operations to catastrophic events. The objective of the current state conversation was to ascertain and confirm current interoperability capabilities and needs. The Strategic Planning Session participants were presented with a consolidated list of their conversations on the current state. They validated the current state themes below specific to communications interoperability.

Overall Themes

- First responders cannot communicate across jurisdictions and disciplines during emergencies and day-to-day operations. For example:
 - Many local agencies cannot communicate directly with other agencies.
 - First responders within the same discipline often cannot communicate with one another within the same county.
 - Many local law enforcement agencies cannot communicate directly with state and federal agencies.
 - Many law enforcement agencies cannot communicate directly with fire departments in the same county.
 - The National Guard cannot communicate directly with most local and state first responders.
- Public safety uses an assortment of old and new technologies, which has led to a lack of communications and interoperability.
- Training for public safety communications does not meet practitioner needs, especially as technology becomes more complex.
- DHS grant funding is focused on regional solutions, and public safety agencies have a greater opportunity to obtain such funding if they work together.
- Spectrum is a finite commodity:
 - The public safety community is battling with commercial entities for control of existing frequencies.
 - The public safety community is battling each other for control of existing frequencies.
- Mutual aid incidents occur in Kentucky:
 - Day-to-day as well as catastrophes:
 - Catastrophic risks include: large venues with economic implications, international airports, the possibility of an earthquake at the New Madrid fault, and other natural disasters.

Technology

- First responders in Kentucky are aware of their technological weaknesses, and are working together to find a solution.
- Many first responders cannot directly communicate radio-to-radio within or outside their jurisdictions and disciplines. They need dispatch assistance to be interoperable:
 - A lack of direct, “real-time” direct communications has led to the transmission of less accurate or incorrect information.
 - Many dispatch centers are not interoperable and are inefficiently staffed.
- Many agencies use communications systems that are outdated:
 - Agencies often purchase new radios that are used on obsolete systems.
 - Replacement parts are purchased at places such as “eBay”.
- Radio coverage is inconsistent and, in some areas, nonexistent.
- Skip, interference, and footprint overlap complicate interoperability in certain areas.
- Mutual aid frequencies exist, but have a limited capacity and are ineffective for large-scale incidents.
- Vendors only offer closed platform systems that have contributed to incompatibility.
- There is inconsistent Enhanced 911 (E911) coverage throughout the state.

Management and Coordination

- Public safety is more willing than ever to overcome conflict and to work together, especially with large-scale incidents.
- Local, state, and federal agencies are not sharing technical expertise or information on interoperability planning, funding, and goals.
- Frequencies are managed poorly and are used inefficiently state-wide:
 - Frequencies are poorly managed by oversight bodies at all levels (FCC, state agencies, and frequency coordinators).
 - There is no good way for local agencies to clear up interference issues.
- There is a disparate use of 10-codes and clear text across jurisdictions and disciplines.
- Decision makers underestimate the importance of interoperability. They overly rely on the input of vendors for purchasing decisions.
- There is no single point of accountability for state-wide interoperability.
- The majority of public safety agencies are unaware of the existence and initiatives of the Kentucky Wireless Interoperability Executive Committee (KWIEC).
- Current regulations inhibit the consolidation of Public Safety Answering Points (PSAPs).

Training and Education

- There is an increased awareness of the lack of, and need for, joint training and exercises.
- First responders are not adequately trained to use radios, base stations, and other communications equipment to the full extent of the equipment's capability.
- Existing policies and procedures to handle incident interoperability are either insufficient, or insufficiently understood.
- Public safety agencies lack the technical expertise to effectively research the purchase of interoperable systems.
- Kentucky has not adequately educated public safety personnel on the existence and use of mutual aid channels.
- Dispatchers across the state have varying levels of experience and training to have interoperable communications during specific incidents.
- A lack of training exists for incident response communications with respect to policies and procedures between agencies:
 - The procedures exist in the Emergency Operations Plan (EOP).
 - The training does not address:
 - Who needs to talk to whom?
 - What is the proper communications chain?

Political Realm

- The public safety community has a “can do” attitude -- responders make do with the equipment they have to communicate.
- Interoperability is not a voter issue; therefore, elected officials do not regard communications issues as a high priority.
- Few leaders will risk taking responsibility for driving interoperability solutions at the local level.
- Trust issues and turf battles are part of the public safety “culture”.

Resources and Funding

- There is great momentum for interoperability in several areas of Kentucky.
- A large amount of money is spent on undefined solutions.
- Grant spending is often postponed due to vendor delays, poor coordination efforts, or a lack of direction from the state.
- Grant funding is often limited to the purchase of new equipment and does not include funds for continuing maintenance, upgrades, or operations.
- Insufficient grant funding exists for adequate training and use of radios and other communications equipment.
- Grant funding has time constraints, usually 12 months or less, related to applications and spending.
- Increased cell phone and Voice over IP (VoIP) use has led to decreased tax revenue allotted for communications resources.
- Funding for private ambulance companies is either limited or nonexistent.

Case for Change

The objective of the case for change conversation is to discuss consequences and implications if changes to the current state of interoperable communications in Kentucky do not occur. Another objective is to identify the opportunities that may be missed by not changing.

The Strategic Planning Session participants were presented with a consolidated list of cases for improving communications and interoperability. They validated the information, and determined the following cases for change:

- In every community across Kentucky, incompatible communications systems limit, and at times prohibit, incident coordination and daily operations.
- Incompatible communications systems can require the reliance of runners in dangerous situations, and result in increased response times, leading to additional loss of lives and property as well as greater environmental stability.
- Multi-jurisdictional incidents overwhelm communications systems, and lead responders to miss other emergencies.
- In a catastrophic event, Kentucky's inability to communicate will put its elected officials in a negative spotlight, erode community confidence, and put the public safety community in additional, physical danger.
- The inability to efficiently deal with natural and complex disasters sends a negative message to voters, and could cause businesses and industry to relocate.
- Continuing to preserve outdated systems that are difficult to maintain wastes money and delays interoperability.
- The cost to correctly fix the problem is much smaller than the value of lives that would be saved with interoperable communications.
- Poor communications leads to inefficient use of assets, and costs agencies and taxpayers unnecessary money and time.
- The longer the delay in solving this problem, the greater risk may be for vicarious liability and lawsuits.

Future State

The objective of the future state conversation is to describe the desired future regarding communications among emergency responders in Kentucky.

Serving in their leadership roles, the Strategic Planning Session participants reviewed and validated a consolidated list of themes that described their intent for Kentucky and their region with regards to communications and interoperability. Participants see a world where the public safety community is operating seamlessly, across jurisdictions and disciplines, on a state-wide communications system. The following statements are presented as if the desired future state has been realized:

- *Technology*
 - National technical standards for communication and interoperability are adopted and used as the basis for planning, management, training and funding.
 - State-wide voice and data communications interoperability exists between public safety jurisdictions and disciplines.
 - Agencies use scalable, redundant communication systems that are digital and secure, and that can be augmented with video, satellite imagery, structural occupancy and plans, GPS, and radio-to-telephone bridging.
 - Public safety requirements define the solutions and products that vendors build.
 - Every citizen of Kentucky has functional and accurate E911 service, as well as reverse 911 (alert) capability.
 - Kentucky's first responders lead the nation in defining standards to vendors.

- *Management and Coordination*
 - A single organization exists for communications and interoperability deliberations, standards, training, data resources, technical assistance and making grants.
 - The system is inclusive: hospitals, schools, utilities, and so on are integrated, and use a centralized (or regionalized), scalable, unified incident command structure.
 - Clear and consistent state-wide standard operating procedures (SOPs) are in place for incident planning, response, and review.
 - State-wide communications equipment procurement is practitioner-driven, and based upon common technical needs and strategy.

- *Training and Education*
 - Standardized training for all agencies occurs at all levels, with regional and local implementation (for example, 10-codes, clear text, shared language).
 - Multi-disciplinary training reinforces collaboration and sharing of best practices.
 - Innovative tools and delivery methods (web-based education) are used to expand the impact of training.
 - Kentucky's public safety community is fully credentialed to national standards.

- *Political Realm*
 - Legislators and other elected officials are well-educated on, and responsive to, the complexities and urgency of communications and interoperability issues.
 - Governmental support for communications and interoperability transcends parties and administrations.

- *Resources and Funding*
 - State and federal funding is defined, consistent, and aimed at both communications equipment acquisition, maintenance, and operations.
 - Funding is tied to interoperability and adherence to existing national and state standards.

Barriers

The purpose of the barriers conversation is to identify factors that hinder efforts to improve communications and interoperability, and thus achieve the desired future state.

As such, the Strategic Planning Session participants reviewed, validated, and ranked (from greatest to least impact) the following barriers:

1. Political Motivations – Interoperability is not a voter issue. Many politicians support more visible issues than interoperability.
2. Funding Limitations – There is a general lack of local funding. Further, grant funding does not allow for system maintenance, upgrades, and operations.
3. Technical Constraints – Vendors have the upper hand in this market, and fail to produce and sell open-platform systems that meet practitioner needs. In addition, constantly advancing technologies make existing and new systems quickly obsolete.
4. Public Safety Culture – Egos and turf battles get in the way of building interoperable solutions.
5. Power and Control Issues – The resistance of agencies to share or give up control of communications systems.
6. “Big Hat” vs. “Little Hat” Dilemma – Many public safety officials choose to defend their individual roles and turf instead of giving more consideration to state-wide and regional needs and solutions.
7. Diverse Terrain – The mountainous regions of Kentucky present challenge relating to coverage, and may need more complex or different solutions.

Strategic Recommendations

The purpose of the Strategic Recommendations conversation is to identify the fewest and most compelling strategic initiatives essential to reach the desired future state. Strategic initiatives improve communications and interoperability for first responders.

The Strategic Planning Session participants were presented with a strategy based on their recommendations from the focus group sessions, and they identified and validated the following critical initiatives to improve communications and interoperability state-wide:

Near-Term Recommendations

- **Achieve nearly 100 percent state-wide coverage for all first responders' voice and data communications networks** (“We can’t have interoperability without first having operability”):
 - Determine a baseline of state-wide communications:
 - Inventory frequencies, towers, and radio assets.
 - Drastically improve coverage, including coverage in buildings, by constructing or improving existing infrastructure state-wide.
 - Establish nearly 100 percent E911 coverage state-wide.
- **Put into effect existing state-wide interoperability efforts:**
 - Program current mutual aid channels into all radios, and educate public safety personnel on how and when to use them.
 - Execute fully the console-to-console bridge solution.
 - Ensure all first responders, chief executives, and first receivers across the state adopt NIMS.
 - Establish a 10-code, clear text standard state-wide, that all local and state public safety agencies will accept and put into practice.
- **Optimize 911/dispatch services while maintaining community-oriented communications dispatch:**
 - Assist merger of those that want to merge by removing financial disincentives.
 - Encourage resource sharing by establishing appropriate incentives.
 - Create a focus group to develop a model for delivery of services by dispatch centers.
- **Establish a governance body to lead Kentucky’s interoperability efforts:**
 - Establish and operate a credible communications and interoperability body:
 - Empower that body to develop and enforce standards for equipment, policies, procedures, and training related to communications and interoperability within Kentucky’s public safety community.

Long-Term Recommendations

- **Build a state-wide public safety communications and interoperability system:**
 - Design, approve, and build a shared, state-wide public safety infrastructure for voice and data communications.
 - Design and conduct a pilot project to address a specific interoperability problem successfully as a basis for the state-wide system.
 - Create and execute a state-mandated radio and communications training program, and regularly practice state-wide and regional interoperability exercises.

Appendix D: Regional Focus Groups Data

SAFECOM conducted seven focus groups throughout Kentucky to gather the diverse perspectives and experiences of public safety practitioners.

The desired outcomes of each focus group session were:

- Clear and accurate capture of local emergency responder perspectives on interoperable communications
- Understanding of interoperability-related issues specific to this region of Kentucky
- Education and shared awareness of interoperability issues across stakeholder groups
- Awareness of the common mission shared by all emergency responders--saving lives--and how interoperable communications support this mission

Each focus group session was designed as a series of conversations centered on the following issues:

- Interoperability, state-wide and regional, as it relates to the current state
- The envisioned future state
- The case for why change needs to happen
- Barriers to achieving the future state
- Recommended strategies to pursue

Each issue is outlined in turn below, organized by geographical area, and by issue areas such as technical systems, management and coordination, and training.

Current State

Booneville

Technical Systems

- Not everyone in Kentucky has 911, or enhanced 911, service.
- There are communication “dead spots” where first responders cannot talk to each other.
- A significant proportion of the population does not have access to land lines or cell phones.
- State police are establishing three mutual aid frequencies, whose capacity doesn’t necessarily help localities that need to communicate.
- First responders are currently operating non-compatible equipment (UHF, VHF, analog/digital). Further, first responders are not coordinating based upon their common knowledge of other jurisdictions’ resources and goals.
- There is no state standard for GIS, nor coordination of existing GIS resources and activities.
- Vendors are driving their own agendas using closed systems, which perpetuate incompatibility.

Management and Coordination

- Large amounts of money are spent on problems that have not yet been sufficiently defined.
- A regional or state-wide plan for communications and interoperability does not exist.
- Major entities are creating stand-alone plans without coordinating with other interdependent agencies such as schools, public health agencies, and emergency management organizations.
- Training related to voice communication is not coordinated across entities.
- In a catastrophic event, local authorities and first responders cannot speak to Federal agencies (NTSB, FAA, Civil Air Patrol) without going through the state Emergency Operations Center (EOC).
- Jurisdictions use different 10-codes across a region and the state, and have transitioned to clear-text at different paces.

Paducah

Technical Systems

- Mutual aid channels are not being used, or are being used for purposes other than originally intended.
- Skip, interference, and footprint overlap, thereby complicating interoperability.
- Once a first responder is out of his or her service area, communications are generally cut off.
- The Kentucky Law Enforcement Emergency Network (KLEEN) is not well known among practitioners.

Management and Coordination

- Jurisdictions haven't spent existing funds due to vendor delays, lack of coordination, or absence of state-wide strategic direction.

Training and Education

- First responders are unaware of colleagues' capabilities, systems, and future plans.
- Importance of interoperability is underestimated across incident spectrum (from day-to-day events to catastrophes).
- First responders aren't trained effectively on their radios, base stations, and other equipment to take advantage of existing capacity.

Funding

- Patchwork budgeting and systems integration results in redundant equipment that cannot communicate.
- Limited funding leads to turf battles.

Owensboro

Technical Systems

- Patchwork of systems leads to incompatibility and non-reinforcing redundancy.
- Existing systems of information sharing are not "real-time", and often result in message degradation.
- Widespread radio coverage is of limited use due to incompatible systems.

Management and Coordination

- Purchasing compatible equipment is accorded varying levels of priority across Kentucky.
- Jurisdictions are not sharing information on existing systems, capacities, and future funding and goals.
- Kentucky authorities often leave local expertise out of the conversation.
- Technical information and procedures are not shared across jurisdictions.

Training and Education

- Not enough training and exercises is provided on existing equipment.
- Each geographic area has multiple coordinating agencies, making joint training difficult.

Political Will

- Communications and interoperability problems are avoided because no one wants to take responsibility for solving them.
- Turf issues keep practitioners from talking to others outside their own agency.
- “Good Ol’ Boys” network must open up to allow change to benefit the entire state.

Somerset

Technical Systems

- Dispatch centers are not interoperable in the region, are understaffed, and are hard-pressed to keep up with technology.
- State police cannot always talk to local authorities in their county of work.
- Vendors are providing interoperable equipment for agencies.

Management and Coordination

- 10-codes are different throughout the region, and formal, common policies and procedures are absent.
- Local jurisdictions are buying equipment without guidance from regional or state authorities.
- Hospitals, utilities, and schools are not under the existing governance structure.
- Policies between police and 911 dispatch centers have caused conflict in implementation and communication.

Training and Education

- Training is primarily done “in-house”, and does not include instruction on how and when to escalate to mutual aid.

Funding

- Little coordination exists at the Federal level among agencies providing communications and interoperability funding and assistance.

Lexington

Technical Systems

- Coverage across the region is inconsistent and in some areas entirely non-existent.
- Some systems are completely incompatible with agencies outside the county, creating a communications “island”.

- New money is being used to buy incompatible equipment.
- The market is vendor-driven, and local jurisdictions don't have the time or capacity for sufficient research on equipment.

Management and Coordination

- There is a lack of clarity about who is in charge of a state-wide interoperability plan.
- There are not sufficient (or sufficiently understood) policies and procedures for handling incident interoperability.

Training and Education

- The only state-wide training that exists is for law enforcement communications officers.
- Most end users don't know the full capacities of the equipment they have already, much less equipment that would like to have.

Funding

- In an emergency, funds don't move fast enough, and reimbursement takes too long.
- Maintenance funds do not exist to maintain equipment after initial purchase.

Louisville

Technical Systems

- Some systems are completely incompatible with agencies outside county borders, creating a communications "island".
- Louisville is buying P25 equipment.
- 70 percent of the state is VHF; that is unlikely to change in the near- or medium-term.
- The price of P25 equipment is prohibitive.
- In the region, E911 is almost 100 percent completed.

Management and Coordination

- There is no single point of accountability for coordinating interoperability.
- Multiple versions, that is, languages, of 10-codes are used across jurisdictions.
- Agencies are purchasing equipment without considering interoperability with neighboring agencies.
- The Kentucky State Police and National Guard cannot communicate, and the National Guard cannot communicate with Louisville Metro.
- Jefferson County is moving ahead with interoperability independently from the rest of the state.
- There is no common backbone nor technical hardware infrastructure.
- There are approximately 300 dispatchers in the region, and they have a high rate of turnover and disparate levels of training and ability.

Training and Education

- The only state-wide training is for law enforcement communications officers.
- Most end users don't know the full capacities of the equipment they use.

Political Will

- "There is a lot of talk, but very little action."

Funding

- Funds often exist for equipment procurement, but not for system maintenance.

Covington

Technical Systems

- In this region, different police, fire, and EMS departments cannot talk to each other car to car or portable to portable without a patch.
- The firefighting community is fairly interoperable, but the police community is more fragmented.
- Some agencies are using brand new radios that are operating off of 30-year-old equipment.
- Vendors are selling us expensive, incompatible systems.
- There are issues concerning interference with frequencies in this area.

Management and Coordination

- There is no single point of accountability for interoperability within the state.
- Frequencies are used inefficiently.
- Where traditionally there has been conflict, personnel within the public safety community have an increasing willingness to work with each other.

Training and Education

- There is no continuing training for dispatchers on how to handle particular incidents.
- No official communications training exists for public safety officials.
- Many people in the region are not knowledgeable about P25.
- Many people in the region are not familiar with the Kentucky Wireless Interoperability Executive Committee (KWIEC).

Political Will

- Communications funding is taking the back seat to other projects.
- There are too many dispatch centers, which affects the level of service.

Funding

- Funding is not targeted.
- Grants do not provide funds for upgrading and ongoing maintenance of current infrastructure; therefore the money is coming out of the organization's general fund.
- Revenue streams are decreasing due to the difference in taxes between hard-line phones, cell phones and VoIP.
- Funding streams are contributing to communications barriers between jurisdictions and disciplines (stovepipe systems).

Case for Change

The focus group participants used real-life examples to make their case for improving communications and interoperability in Kentucky. Such examples cited in the following sections underscore the urgency for improving Kentucky's current state.

Booneville

- During the high-speed chase of a drunken driver approaching the local Sorghum Festival, property and lives could have been lost, because local police officers could not communicate by radio with the Kentucky State Police officer.
- A day-to-day incident in a large jurisdiction can seem catastrophic to smaller, more rural jurisdictions. For instance, a multiple car pileup in Owsley County is catastrophic enough to deplete emergency response capabilities for many hours. Without interoperable communications systems, Owsley County cannot communicate with responding jurisdictions.

Paducah

Technical Systems

- Lack of a robust communications system means limited coordination between responders, and reliance in dangerous environments upon runners.
- Large-scale incidents can overwhelm local 911 capacity, leading to a situation where responders might miss other, unrelated emergency calls.

Management and Coordination

- Lack of capacity in a large-scale crisis prevents first responders from warning other counties, regions, and states.

Political Will

- Interoperability should not have to wait until a crisis generates political will (and generates blame as well).

Funding

- Consolidation of regional resources can increase both cooperation and interoperability, and save funds.

Owensboro

Technical Systems

- Voice is critical on scene, but data, and sometimes video, are also important.

Management and Coordination

- Redundant communications are required when some systems are knocked out or overwhelmed by a large-scale incident.
- "Soft" aspects of equipment, such as training and standard operating procedures, are as important as technical specifications.

Political Will

- Recent and historical incidents (September 11, Hurricane Katrina, earthquake, chemical plant fire) must motivate legislators to move forward on communications and interoperability.
- Investing in state infrastructure will lower insurance rates, thus pleasing constituents.

- Local systems cannot support necessary scale and cost of large-scale interoperability; such systems must be at the state-wide level.

Somerset

Technical Systems

- Disparate systems delayed response and exposed people to unnecessary risk during a factory fire in Corbin, Kentucky.

Management and Coordination

- Lack of effective communications increases response time and reduces efficiency in resolving a crisis.
- Interoperable communications leads to cross-agency information sharing, which is critical to first responders.

Political Will

- Significant political liability exists for not having these plans in place.
- Failure to resolve the problem sends a clear and negative message to voters.
- First responders know personally the people they serve, which increases accountability.

Funding

- An effective, state-wide solution will in the long run save money across multiple agencies.
- The cost of lawsuits is greater than the cost of improving interoperability.

Lexington

Technical Systems

- Kentucky has 120 counties with 63,000 first-responders and over 120 different radio systems.
- Incompatible systems at actual incidents required first responders to physically run between locations to communicate critical questions and information.

Management and Coordination

- Focus is on catastrophic events, but greater need is for day-to-day incidents.

Political Will

- Incompatible equipment puts citizens' lives at risk.
- An actual catastrophic event (earthquake, series of tornados, chemical fire), would put Kentucky's inability to communicate in the national spotlight.
- Inability to deal with natural or complex disasters could drive out big business (for example, UPS was displeased with emergency response during a severe ice storm).

Funding

- The cost to fix the problem correctly is much smaller than the cost of responding to the impact afterwards in the event of a catastrophe or attack.

Louisville

Technical Systems

- Incompatible communications systems create disorganization and lead to unnecessary loss of life and property damage.

- Outdated systems are difficult to maintain and, in some cases, parts are unavailable for them.

Management and Coordination

- Multiple agencies are represented and responsible for the Kentucky Derby, but the agencies' equipment is not interoperable. This puts many lives in danger.
- Non-interoperable systems cause inefficient use of resources. Interoperability would allow the use of assistance from close jurisdictions.

Political Will

- Incompatible equipment puts at risk the lives of citizens and their families.

Funding

- Duplicative systems waste taxpayer dollars.

Covington

Technical Systems

- Problems in quickly contacting the "right" people through the radio let additional time slip away, and put first responders and the public at unneeded risk.
- Even though an officer could see the ambulance needed, he could not direct it to the proper location to help a victim. Incompatible communications prevented him from communicating with nearby first responders via radio, thus putting another officer's life at risk.

Management and Coordination

- The lack of communications means an inefficient and ineffective use of assets.

Political Will

- If we fail, due to a lack of communications, political authorities and public safety community are placed in a negative spotlight.
- A negative economic impact occurs in our region if we cannot resolve incidents in a timely manner.

Funding

- Better communications leads to more efficient use of assets and monetary savings.
- Communications issues can lead to expensive liability lawsuits.

Future State

Serving in their leadership roles, the focus group participants described their vision for Kentucky and the region, and highlighted the following elements of the future state of communications interoperability in Kentucky.

Their statements are presented as if the desired future state had been realized.

Booneville

Technical Systems

- We have data, voice, and video interoperability.
- Response vehicles are equipped with an interoperable system that has look-down, keyhole imagery containing access to a database with building schematics, occupancy limits, GPS, and key contacts.

- On demand satellite communications for first responders.
- Backup communications systems for first responders.
- Critical information is pushed to first responders.
- A command system and training process is in place for all first responders.
- Access to transportation (planes, helicopters, specialized vehicles), as needed.
- A nation-wide standard exists for communications and interoperability.
- Every citizen in Kentucky can call and get help from an enhanced 911 system.

Management and Coordination

- All first responder professionals put aside political and “turf” battles to serve the public safety community and the general public.
- First responders are able to scale the level of interoperability to meet their needs, complementing local capacity, familiarity, and resources.
- Authority is granted to competent leaders in incident management.
- Every first responder is trained and disciplined to use the mutual aid channels.

Paducah

Technical Systems

- Communications equipment evolves to a combination unit that features radio, telephone, and a PDA.
- Voice over IP replaces repeater towers to become the de facto standard.
- Technology allows monitoring of, and reaction to, events from home, the car, and the office, and will create massive scalability.
- State-wide equipment standards are established.

Management and Coordination

- Multiple disciplines use a unified, scalable command.
- There is state-wide testing and relationships with vendors.
- Kentucky State Police (KSP) posts are used as hubs for incident managers.

Training and Education

- There is state-wide training on equipment, and the training has a regional, cross-discipline approach.

Political Will

- Legislators understand and prioritize emergency preparedness, communications, and interoperability.

Funding

- Funding remains steady, even without a major state-wide incident.

Owensboro

Technical Systems

- The Kentucky Early Warning System (KEWS) network, if fully digital and providing scalable, state-wide bandwidth, as required.
- Association of Public Safety Communications Officials (APCO)/IEEE has a data transmission standard that Kentucky has adopted.

Management and Coordination

- All agencies have access to a central command incident management center.
- A common data repository is accessible to all agencies.

- One central, state-wide dispatch center coordinates response, when necessary.
- Common codes and terminology are in place across jurisdictions.
- To gather and act on feedback, Kentucky has standardized templates to be filled out after each exercise.

Training and Education

- Training takes place regionally, and to a state-wide standard, across disciplines and jurisdictions.

Political Will

- A “Disaster Marshall” is in charge of state-wide coordination.

Funding

- Funding is steady for equipment maintenance and upgrades.

Somerset

Technical Systems

- There is a secure, state-wide, voice-and-data radio network which is scalable, and which can selectively communicate with anyone that first responders choose.
- One hundred percent coverage exists across the state.
- Satellite communications are available, as necessary.

Management and Coordination

- There is a participatory governance structure where everyone can contribute to problem solving.
- Jurisdiction can be requested and approved on demand, as necessary.
- Regional dispatch centers with 911 coordination, including network administration and mapping, exist at a state level.
- Equipment is governed by national or international standards that are driven by a consortium of government and business.

Training and Education

- A common, plain-text language system is used.
- Public safety officials undergo centralized and standardized training.

Lexington

Technical Systems

- Full interoperability exists across a range of equipment.
- There are no geographic limitations on communications.
- All transmissions are secure.
- Agencies have redundant communications.
- There is a state-wide radio system with a backbone that can connect to telephone.
- All agencies have access to a state-wide information system accessible at the local and regional level.
- First responders use image-based communication.
- All communications are digital and VOIP.

- Consistent, reliable interoperability exists between incident commanders, and the communications are tiered to provide effective communications, as requested or necessary.

Management and Coordination

- A common, plain-text system is in use state-wide.
- Local control is maintained over equipment and technology.
- There are between 1-49 fusion PSAPs for the state.
- Equipment purchases are driven by customers, not by vendors.
- Personnel resources can easily be “swapped” to ease scalability”.
- Policies provide clear guidance for equipment purchases and maintenance.
- There is a ‘resource list’ of technical personnel to turn to for technical expertise.

Training and Education

- Regional and state-wide training exists.
- Training is coordinated, standardized, and computer-based.

Funding

- State and federal funding augments local resources.
- A clear and consistent funding stream exists.

Louisville

Technical Systems

- Communications systems are based on VoIP with GPS and multi-band capacity.
- Artificial intelligence governs identification of agencies in an incident region, and automatically connects agencies, as necessary.
- Communications systems are cost-effective and redundant.

Management and Coordination

- All first responders at the local, state, and national level can seamlessly communicate with each other.
- Industry partners with first responders.
- The communications system is well-regulated and simplified.
- One central coordinator makes standards and procedures consistent for everyone.
- Regional, multi-agency dispatch centers coordinate response.
- A “One Call Does It All” program provides emergency response.
- Schools, hospitals, and transportation systems communicate with first responders as necessary.

Training and Education

- Collective training increases efficiency and builds interagency relationships.

Political Will

- Kentucky first responders define their needs to vendors, and vendors build solutions that meet those needs.
- Politicians have operational experience and familiarity with the issues.

Funding

- Funding is tied to interoperability and adherence to standards.

Covington

Technical Systems

- A nation-wide voice and data system is completely interoperable on all frequency bands.
- One piece of equipment, based on an open platform, does anything required, including: streaming video for incident response, and a voice-activated “cheat sheet” that instantly patches into an agency. This equipment actively “squawks” its ID for location-based reception and action.

Management and Coordination

- Public safety officials have automatic priority for whatever communications system they are using.
- Regional dispatch centers are strategically based throughout the state.
- Public safety officials have day-to-day interaction with state and federal organizations.

Training and Education

- Training is brought to the people, as opposed to the people going to the training.
- Internet-based training is increased, and focused on the technology.
- Training is generated and standardized at the state and federal level.
- Vendors play an active role in training.

Political Will

- All local and state agencies work well together.
- The public safety and vendor communities work together as partners.

Barriers

Focus group participants identified the barriers to progress outlined below.

Booneville

Management and Coordination

- There have been significant discussions on problems, and possible solutions. However, the organizational or political willingness to put solutions into effect, and measure their effectiveness, has not happened.

Training and Education

- Some technical and operational capacity in communications and interoperability exists, but collaboration in training and implementation is not sufficient across jurisdictions.

Political Will

Leaders do not communicate with fellow officials, because they are defending their “turf”.

Owensboro

Management and Coordination

- A lack of understanding exists regarding the role of agencies in an emergency.
- There is insufficient planning and capacity to design a new system and put it into effect.

Political Will

- Pet projects hinder what is best for Kentucky.

- An all-too-common mentality of “If it ain’t broke, don’t fix it” hinders solutions.
- Local governments are not cooperating in a way that would yield a regional and state-wide gain.
- Administration of difficult-to-maintain interoperability systems is not seen as a priority, given other competing needs.

Funding

- Continual funding is necessary for upgrades, integrations, and maintenance of communications systems.

Somerset

Technical Systems

- Infrastructure is not in place to support P25, and local jurisdictions want to be “operable” first, before moving to “high tech”.

Management and Coordination

- Lack of coordination exists for multiple state-wide initiatives that use, or are building, the same infrastructure.

Political Will

- No one wants to give up control of his or her part of the system; turf battles prevent coordination.
- Interoperability doesn’t win votes.

Funding

- Counties have tight budgets, which complicates moving money into a large and potentially long-term project.
- State and Federal funding usually does not include the money necessary to maintain the system.

Lexington

Technical Systems

- Vendors continue to produce and sell “closed systems”.
- Constantly advancing technology makes existing or “new” systems obsolete.

Management and Coordination

- No agreement exists on common goals and timelines.

Political Will

- Egos and turf battles keep groups from coordinating.

Funding

- Funding is limited, and competition keen, for resources.

Louisville

- Mentality of “If it ain’t broke, don’t fix it” prevents progress.
- Communications and interoperability isn’t a voter issue.
- A superior vision of interoperability is lacking.
- Leaders do not want to assume the risk and liability of trying something new.

Covington

Management and Coordination

- There is a lack of agreement for consistent 10-codes, and how to give and get access to specific systems.

Political Will

- Turf battles continue.
- There is a lack of relationships across different agencies.
- Decision makers don't want to give up their power.
- Jurisdictional restrictions exist.
- The FCC is making decisions for the betterment of industry instead of the public safety community.

Strategic Recommendations

The focus group participants identified the critical initiatives outlined below to improve communications and interoperability state-wide.

Booneville

- “Flip the game”—Develop standards so that local practitioners drive the process, and manufacturers build radio communications equipment that address practitioner needs.
- “Level the playing field”—Build a state-wide a data and voice backbone that can be used locally and regionally, and that is scalable, upgradeable, and accessible.
- “Even the score”—Ensure that every agency in Kentucky has access to enhanced 911.

Paducah

Technical Systems

- Program mutual aid channels into existing radio units, and train personnel on their use.
- Fully apply, and train on, a BIM card solution.

Management and Coordination

- Establish and operate a credible oversight and coordination body which is representative of all the state's disciplines and regions.

Owensboro

Technical Systems

- Establish an integrated and standardized voice, data, and video communications system.

Management and Coordination

- Identify needs, issues, and response plans of local jurisdictions. Roll up capacity to the state level through a representative committee.

Training and Education

- Educate the public, legislators, and first responders on communications and interoperability.

Political Will

- Establish state-wide legislation and policies that guide the communication and interoperability process.

Somerset

- Connect all users with current systems: complete the design, acquisition, and execution of a system to interconnect agencies by third quarter 2006.
- Execute the BIM and mutual aid initiatives by March 2006.
- Design and agree upon on a shared state-wide public safety voice communications system.
- Take control of the 911 dispatch infrastructure – provide future funding and leave existing local funding in place.
- Require vendors to comply with state-mandated standards for public safety communications equipment.

Lexington

- Have nearly 100 percent coverage of the first responders' voice and data networks.
- Enact, and get complete compliance with, legislation that edicts a compatible digital system.

Louisville

- Establish a Kentucky Department of Homeland Security Central Communications Directorate.
- Develop a pilot project to gain hard evidence of a specific interoperability problem being addressed successfully by a specific, scalable technology.

Covington

- Establish state-wide and tri-state (Kentucky, Ohio, and Indiana) seamless interoperability within 6–10 years.
- Develop a futuristic, state-wide infrastructure for voice and data communications.
- Ensure all first responders, chief executives, and first receivers in this region adopt NIMS.
- As much as possible, consolidate services to achieve national training standards.
- Provide incentives to agencies that conform to state and federal interoperability standards.
- Get the Commercial Mobile Radio Service (CMRS) board to increase funding, so that money from cell phone services will be equal to that received in the past from land lines.

Appendix E: Glossary of Terms⁴

Analog: A signal that may vary continuously over a specific range of values.

Band*: The spectrum between two defined, limited frequencies. For example, the Ultra High Frequency (UHF) is located from 300 MHz to 3,000 MHz in the radio frequency spectrum.

Bandwidth: The range within a band of frequencies; a measure of the amount of information that can flow through a given point at any given time.

Block grant: Federal grant funding that is allocated to state and localities based on a pre-determined statutory formula.

Channel*: A single unidirectional or bidirectional path for transmitting, receiving, or both transmitting and receiving, electrical or electromagnetic signals.

Communications interoperability: The ability of public safety agencies to talk across disciplines and jurisdictions via radio communications systems, exchanging voice and/or data with one another on demand, in real time, when needed, and as authorized.

Communications system*: A collection of individual communication networks, transmission systems, relay stations, tributary stations, and data terminal equipment usually capable of interconnection and interoperation to form an integrated whole. The components of a communications system serve a common purpose, are technically compatible, use common procedures, respond to controls, and operate in unison.

Coverage*: The geographic area included within the range of a wireless radio system.

Cycle: One complete performance of a vibration, electrical oscillation, current alternation, or other periodic process.

Digital: Voice communication normally occurs as an analog signal; that is, a signal with a voltage level that continuously varies. Digital signals occur as the presence or absence of electronic pulses, often representing only one of two values: a zero (0) or a one (1). Voice transmissions may be sent over digital radio systems by sampling voice characteristics and then converting the sampled information to ones and zeros.

Discretionary grant: Federal grant funding distributed at the discretion of the agency administering the program funding, usually through a competitive process.

e911: Enhanced 911 (e911) systems automatically report the telephone number and location of 911 calls made from wireline phones.

⁴ Terms marked with an asterisk (*) are as defined in the National Task Force on Interoperability (NTFI) report "Why Can't We Talk? Working Together To Bridge the Communications Gap To Save Lives," February 2003.

First responders: Individuals who in the early stages of an incident are responsible for the protection and preservation of life, property, evidence, and the environment, including emergency response providers, as well as emergency management, public health, clinical care, public works, and other skilled support (such as equipment operators). Such personnel provide immediate support services during prevention, response, and recovery operations.⁵

Formula grant: Federal grant that is allocated based on a predetermined statutory formula.

Frequency*: The number of cycles or events of a periodic process in a unit of time.

Frequency bands*: Where land mobile radio systems operate in the United States, frequency bands include:

High HF	25-29.99 MHz
Low VHF	30-50 MHz
High VHF	150-174 MHz
Low UHF	450-470 MHz
UHF TV Sharing	470- 512 MHz
700 MHz	764-776/794-806 MHz
800 MHz	806-869 MHz

Grant: Funding made available to local agencies from State and Federal government agencies, as well as from private sources, such as foundations. Grants usually require the submission of a formal application to justify a funding request.

Hertz: A measurement of frequency for cycles per second.

Infrastructure*: The hardware and software needed to complete and maintain the radio communications system.

Interference*: Extraneous energy, from natural or man-made sources, that impedes the reception of desired signals.

Jurisdiction: The territory within which legal or political power or authority can be exercised.

Locality: A particular neighborhood, place, or district.

Local revenue fund: Funding obtained by local governments through local taxes (e.g. sales tax, property tax), user fees, and other user charges, as well as through the issuing of debt instruments, such as bonds.

⁵ First Responder as defined the December 17, 2003 Homeland Security Presidential Directive/Hspd-8, Subject: National Preparedness

Modem: An acronym for modulator/demodulator, a device that translates digital signals coming from a computer into analog signals that can be transmitted over standard telephone lines. The modem also translates the analog signal back into a digital signal that a computer can understand.

Mutual aid: A mode that involves major events with large numbers of agencies involved, including agencies from remote locations. Mutual aid communications are not usually well planned or rehearsed. The communications must allow the individual agencies to carry out their missions at the event, but follow the command and control structure appropriate to coordinate the many agencies involved with the event.

Mutual aid channel: A radio channel specifically allocated for use during emergency mutual aid scenarios.

Narrow-banding: In general, narrowband describes telecommunication that carries voice information in a narrow band of frequencies. For state and local public safety, narrow-banding typically refers to the process of reducing the useable bandwidth of a public safety channel from 25 kHz to 12.5 kHz. The FCC issued rules on the migration of private land mobile radio systems using frequencies in the 150-174 MHz and 421-512 MHz bands to narrowband technology. These rules set deadlines on applications for new wideband systems, modifications of existing wideband systems, manufacture and importation of 25 kHz equipment, and the requirement for public safety to migrate to 12.5 kHz systems by January 2018.

Receiver: The portion of a radio device that converts the radio waves into audible signals.

Refarming: An administrative process that the FCC conducts to reallocate channel bandwidths and which, as a result, promotes spectrum efficiency.

Repeater: In digital transmission, equipment that receives a pulse train, amplifies it, retimes it, and then reconstructs the signal for retransmission; in fiber optics, a device that decodes a low-power light signal, converts it to electrical energy, and then retransmits it via an LED or laser source. Also called a “regenerative repeater”.

Spectrum: The region of the electromagnetic spectrum in which radio transmission and detection techniques may be used.

Spectrum efficiency: The ability to optimize the amount of information sent through a given amount of bandwidth.

Steering committee: A group of usually high-level officials charged with setting policy for a project.

Supplemental responders: Responders who provide support to first responders during incidents requiring special assistance. Supplemental responders include:

- Emergency Management such as those involved in public protection and central command and control of public safety agencies during emergencies
- Environmental Health/Hazardous Materials specialists such as environmental health personnel
- Homeland Security and Defense units
- Search and Rescue teams
- Transportation personnel

Transmitter: The portion of a radio device that sends out the radio signal.

Trunked radio system*: A system that integrates multiple channel pairs into a single system. When a user wants to transmit a message, the trunked system automatically selects a currently unused channel pair and assigns it to the user, decreasing the probability of having to wait for a free channel for a given channel loading.

Appendix F: List of Acronyms

AG: Advisory Group

APCO: Association of Public-Safety Communications Officials, International

BIM: Base Interface Module

CMRS: Commercial Mobile Radio Service

DHS: Department of Homeland Security

EC: Executive Committee

EMS: Emergency Medical Services

EOC: Emergency Operations Center

EOP: Emergency Operations Plan

FAA: Federal Aviation Administration

FCC: Federal Communications Commission

IEEE: Institute of Electrical and Electronics Engineers

KEWS: Kentucky Early Warning System

KLEEN: Kentucky Law Enforcement Emergency Network

KOHS: Kentucky Office of Homeland Security

KSP: Kentucky State Police

KWIEC: Kentucky Wireless Interoperability Executive Committee

NIMS: National Incident Management System

NTSB: National Transportation Safety Board

OIC: Office for Interoperability and Compatibility (Department of Homeland Security)

PSAP: Public Safety Answering Points

SED: Office of Systems Engineering and Development (DHS S&T)

SOP: Standard Operating Procedures

S&T: DHS Science and Technology Directorate

UHF: Ultra High Frequency

VHF: Very High Frequency

VoIP: Voice Over Internet Protocol