Kentucky

Statewide Communication Interoperability Plan (SCIP)

July 2014

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EXECUTIVE SUMMARY

The Kentucky Statewide Communication Interoperability Plan (SCIP) is a stakeholder-driven, multi-jurisdictional, and multi-disciplinary statewide strategic plan to enhance interoperable and emergency communications. The SCIP is a critical mid-range (three to five years) strategic planning tool to help Kentucky prioritize resources, strengthen governance, identify future investments, and address interoperability gaps.

The purpose of the Kentucky SCIP is to:

- Serve as the operational blueprint for the conceptualization, procurement, implementation, and usage of interoperable communications by Kentucky's public safety agencies and nongovernmental/private organizations;
- Explain to leadership and elected officials the vision for interoperable and emergency communications and demonstrate the need for recurring and sustainable funding;
- Inform emergency communications stakeholders throughout the Commonwealth on the standards required to remain eligible for State or Federal communication grants and funds.

The following are Kentucky's Vision and Mission for improving emergency communications operability, interoperability, and continuity of communications statewide.

Vision: Kentucky will continue to leverage new and existing resources and technologies; review and coordinate projects; and through outreach, provide education and guidance to ensure communications interoperability and response readiness.

Mission: To significantly improve public safety communications and interoperability across the Commonwealth.

The following strategic goals represent the priorities for delivering Kentucky's vision for interoperable and emergency communications.

- Governance –
    - Maintain and strengthen the role of the Statewide Interoperability Coordinator (SWIC) as an inter-and intra-State leader for interoperable and emergency communications funded projects
    - Leverage Kentucky Wireless Interoperability Executive Committee (KWIEC) to ensure compliance with the State and Local Implementation Grant Program (SLIGP)
    - Review and update the Public Safety Working Group (PSWG) membership to validate that members are fully representative and actively participating
    - Partner with existing intra-State regional coordination entities to discuss statewide interoperability efforts

  - Identify coordination points between the KWIEC, Commercial Mobile Radio Service (CMRS), and the Kentucky Commonwealth Office of Technology (COT)

- Standard Operating Procedures (SOPs) –
  - Create SOPs and Memoranda of Understanding (MOUs) for request and use of deployable communications assets
  - Develop SOPs for gateways and interoperability tactical repeaters
- Technology –
  - Move toward standards-based communications systems
  - Continue to promote / program national interoperability channels into all existing emergency responder radios
- Training and Exercises –
  - Conduct annual full-scale emergency communications exercise
  - Include interoperability communications objectives in public safety exercises
  - Increase capacity and utilization of Communications Unit Leaders (COMLs) / Communications Unit Technicians (COMTs) / Auxiliary Communicators (AUXCOMMs)
- Usage –
  - Promote use of gateways and interoperability tactical repeaters
- Outreach and Information Sharing –
  - Design and execute an outreach and information sharing plan to inform public safety, leadership, and elected officials of the interoperable and emergency communications environment in Kentucky
- Life Cycle Funding –
  - Develop a life cycle funding plan that takes into account all State owned interoperable and emergency communications systems and equipment

TABLE OF CONTENTS

1. INTRODUCTION

The Kentucky Statewide Communication Interoperability Plan (SCIP) is a stakeholder-driven, multi-jurisdictional, and multi-disciplinary statewide strategic plan to enhance interoperable and emergency communications. The SCIP is a critical mid-range (three to five years) strategic planning tool to help Kentucky prioritize resources, strengthen governance, identify future investments, and address interoperability gaps. This document contains the following planning components:

- Introduction – Provides the context necessary to understand what the SCIP is and how it was developed.
- Purpose – Explains the purpose/function(s) of the SCIP in Kentucky.
- State's Interoperable and Emergency Communications Overview – Provides an overview of the State's current and future emergency communications environment and defines ownership of the SCIP.
- Vision and Mission – Articulates the State's three- to five-year vision and mission for improving emergency communications operability, interoperability, and continuity of communications at all levels of government.
- Strategic Goals and Initiatives – Outlines the strategic goals and initiatives aligned with the three- to five-year vision and mission of the SCIP and pertains to the following critical components: Governance, Standard Operating Procedures (SOPs), Technology, Training and Exercises, Usage, Outreach and Information Sharing, and Life Cycle Funding.
- Implementation – Describes the process to evaluate the success of the SCIP and to conduct SCIP reviews to ensure it is up-to-date and aligned with the changing internal and external environment.
- Reference Materials – Includes resources that provide additional background information on the SCIP or interoperable and emergency communications in Kentucky or directly support the SCIP.

Figure 1 provides additional information about how these components of the SCIP interrelate to develop a comprehensive plan for improving interoperable and emergency communications.

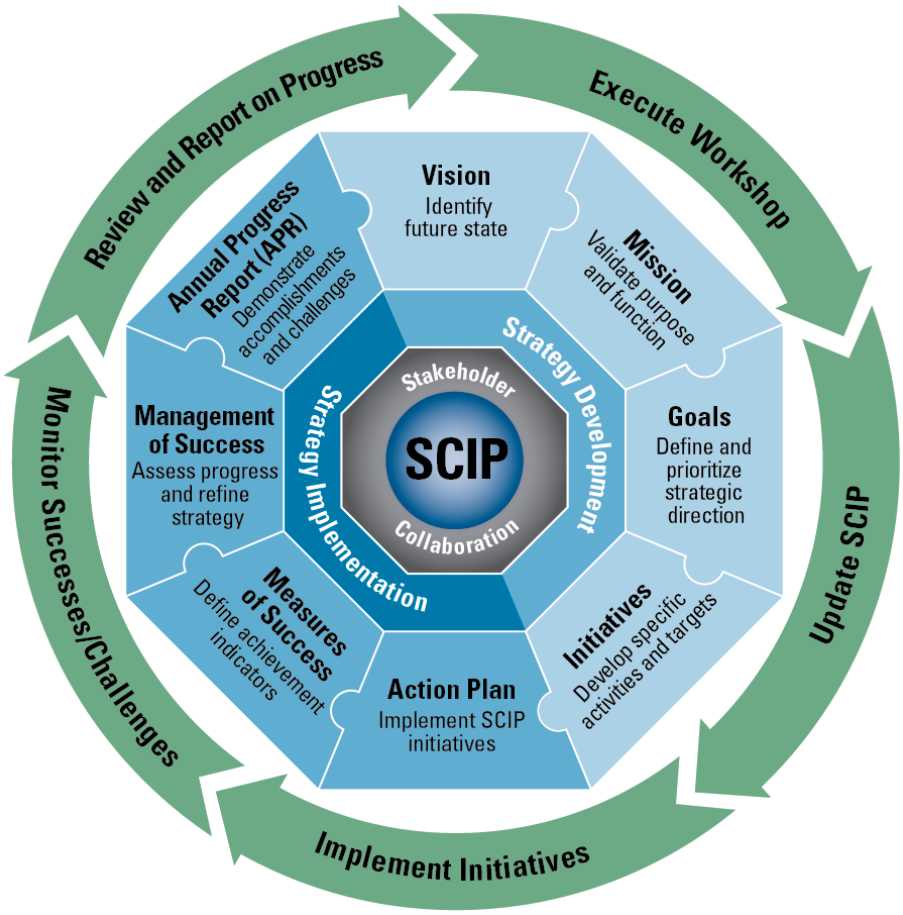

Figure 1: SCIP Strategic Plan and Implementation Components

The Kentucky SCIP is based on an understanding of the current and mid-range interoperable and emergency communications environment. Kentucky has taken significant steps towards enhancing interoperable and emergency communications, including:

- Developing the Kentucky Field Operations Guide (FOG);
- Establishing mutual aid agreements with interoperable radio systems in the Ultra-High Frequency (UHF), Very-High Frequency (VHF), and 800 megahertz (MHz);
- Conducting statewide interoperable and emergency communications exercises;
- Establishing digital microwave infrastructure dedicated to public safety communications.

However, more remains to be done to achieve Kentucky's vision. It is also important to note that this work is part of a continuous cycle as Kentucky will always need to adapt to evolving technologies, operational tactics, and changes to key individuals (e.g., Governor, project champions). In the next three to five years, Kentucky will encounter challenges relating to operability, interoperability, geography, aging equipment/systems, emerging technologies, changing project champions, and sustainable funding.

Wireless voice and data technology is evolving rapidly and efforts are underway to determine how to leverage these new technologies to meet the needs of public safety. For example, the enactment of the Middle Class Tax Relief and Job Creation Act of 2012 (the Act), specifically Title VI, related to Public Safety Communications, authorizes the deployment of the Nationwide Public Safety Broadband Network (NPSBN). The NPSBN is intended to be a wireless, interoperable nationwide communications network that will allow members of the public safety community to securely and reliably gain and share information with their counterparts in other locations and agencies. New policies and initiatives such as the NPSBN present additional changes and considerations for future planning efforts and require an informed strategic vision to properly account for these changes. Figure 2 illustrates a public safety communications evolution by describing the long-term transition toward a desired converged future.

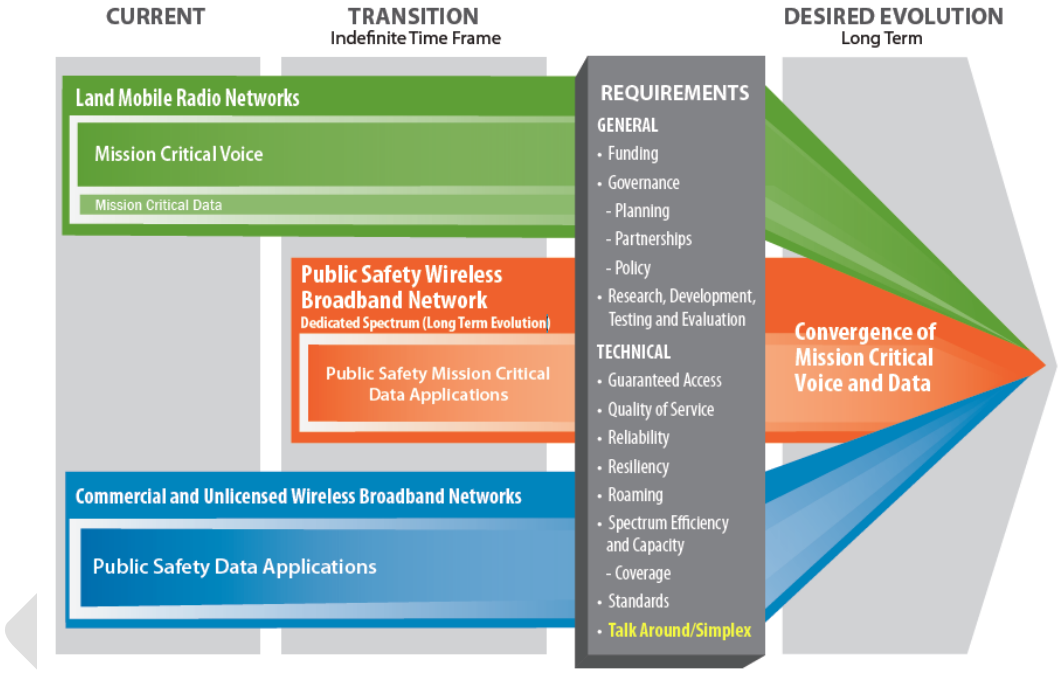

Figure 2: Public Safety Communications Evolution

Integrating capabilities such as broadband provide an unparalleled opportunity for the future of interoperable communications in Kentucky. It may result in a secure path for information-sharing initiatives, Public Safety Answering Points (PSAP), and Next Generation 911 (NG911) integration. Broadband will not replace existing Land Mobile Radio (LMR) voice systems in the foreseeable future due to implementation factors associated with planning, deployment, technology, and cost. A cautious approach to this investment is needed. Therefore, robust requirements and innovative business practices must be developed for broadband initiatives prior to any implementation.

There is no defined timeline for the deployment of the NPSBN; however, Kentucky will keep up-to-date with the planning and build-out of the NPSBN in the near and long term in coordination with the First Responder Network Authority (FirstNet). FirstNet is the independent authority within the National Telecommunications and Information Administration (NTIA) and is responsible for developing the NPSBN, which will be a

single, nationwide, interoperable public safety broadband network. The network build-out will require continuing education and commitment at all levels of government and across public safety disciplines to document network requirements and identify existing resources and assets that could potentially be used in the build-out of the network. It will also be necessary to develop and maintain strategic partnerships with a variety of stakeholder agencies and organizations at the national, State, regional, local, and tribal levels and design effective policy and governance structures that address new and emerging interoperable and emergency communications technologies. During this process, investments in LMR will continue to be necessary and in the near term, wireless data systems or commercial broadband will complement LMR. More information on the role of these two technologies in interoperable and emergency communications is available in the Department of Homeland Security (DHS) Office of Emergency Communications (OEC) Public Safety Communications Evolution brochure.[1]

In Kentucky, the Public Safety Broadband Working Group (PSBWG) was established by the Kentucky Wireless Interoperability Executive Committee (KWIEC) to research the benefits of opting-in or out of the NPSBN. The PSBWG is currently in the process of developing a broadband plan for Kentucky as well as gathering bandwidth needs and coverage requirements from agencies across the Commonwealth. In addition, the PSBWG submitted a State and Local Implementation Grant Program (SLIGP) grant application and was awarded over $1 million to begin preparations for the NPSBN. Kentucky will use its existing KWIEC to implement the SLIGP, and the Kentucky PSBWG will provide technical support. The Commonwealth intends to formalize current ad-hoc regional governance structures to ensure they serve as the primary vehicles for broadband education and outreach to local jurisdictions. Kentucky aims to strengthen the Commonwealth's knowledge of broadband to be better prepared for the NPSBN and to meet the requirements of FirstNet.

Achieving sustainable funding in the current fiscal climate is a priority for Kentucky. As State and Federal grant funding diminishes, States need to identify alternative funding sources to continue improving interoperable and emergency communications for voice and data systems. Key priorities for sustainable funding in Kentucky include:

- Securing immediate funding for the life cycle of statewide communications networks;
- Identifying alternate sources of funding for planning, training, and exercising interoperable communications;
- Explaining to leadership and elected officials the vision for interoperable and emergency communications and demonstrate the need for funding;
- Continuing to support and encourage future efforts of the Funding Initiatives Working Group (FIWG).

[1] OEC's Public Safety Communications Evolution brochure is available here: http://publicsafetytools.info/oec_guidance/docs/Public_Safety_Communications_Evolution_Brochure.pdf

More information on a typical emergency communications system life cycle, cost planning, and budgeting is available in OEC's System Life Cycle Planning Guide.[2]

The Interoperability Continuum, developed by SAFECOM and shown in Figure 3, serves as a framework to address all of these challenges and continue improving operable/interoperable and emergency communications. It is designed to assist emergency response agencies and policy makers with planning and implementing interoperability solutions for voice and data communications.

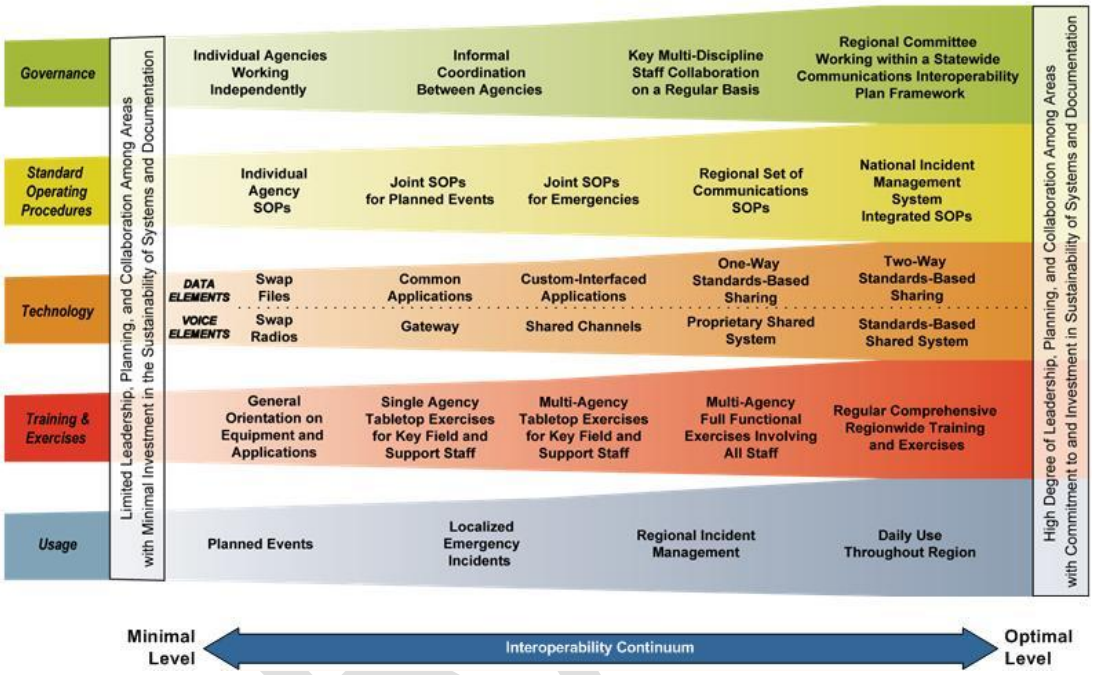

Figure 3: The Interoperability Continuum

The Continuum identifies five critical success elements that must be addressed to achieve a successful interoperable communications solution:

- Governance – Collaborative decision-making process that supports interoperability efforts to improve communication, coordination, and cooperation across disciplines and jurisdictions. Governance is the critical foundation of all of Kentucky efforts to address communications interoperability.
- SOPs – Policies, repetitive practices, and procedures that guide emergency responder interactions and the use of interoperable communications solutions.
- Technology – Systems and equipment that enable emergency responders to share voice and data information efficiently, reliably, and securely.
- Training and Exercises – Scenario-based practices used to enhance communications interoperability and familiarize the public safety community with equipment and procedures.

[2] OEC's System Life Cycle Planning Guide is available here: http://publicsafetytools.info/oec_guidance/docs/OEC_System_Life_Cycle_Planning_Guide_Final.pdf

- Usage – Familiarity with interoperable communications technologies, systems, and operating procedures used by first responders to enhance interoperability.

More information on the Interoperability Continuum is available in OEC's Interoperability Continuum brochure.[3] The following sections will further describe how the SCIP will be used in Kentucky and Kentucky*'s* plans to enhance interoperable and emergency communications.

2. PURPOSE

The purpose of the Kentucky SCIP is to:

- Serve as the operational blueprint for the conceptualization, procurement, implementation, and usage of interoperable communications by Kentucky's public safety agencies and nongovernmental/private organizations;
- Explain to leadership and elected officials the vision for interoperable and emergency communications and demonstrate the need for recurring and sustainable funding;
- Inform emergency communications stakeholders throughout the Commonwealth on the standards required to remain eligible for State or Federal communication grants and funds.

The development and execution of the SCIP assists Kentucky with addressing the results of the National Emergency Communications Plan (NECP) Goals and the Federal government with fulfilling the Presidential Policy Directive 8 (PPD-8)[4] National Preparedness Goal for Operational Communications.[5]

In addition to this SCIP, Kentucky will develop an Annual Progress Report (APR) that will be shared with OEC and other stakeholders to highlight recent accomplishments and demonstrate progress toward achieving the goals and initiatives identified in the SCIP. More information on the SCIP APR is available in Section 6.4.

This SCIP is owned and managed by the KWIEC. The KWIEC has the authority to and is responsible for making decisions regarding this plan. The KWIEC is also responsible for ensuring this plan is implemented and maintained statewide. The Kentucky Statewide Interoperability Coordinator (SWIC) is responsible for working with the KWIEC subcommittee and the Public Safety Working Group (PSWG) to draft the content of the SCIP which is then forwarded to the KWIEC for review and approval. In

[3] OEC's Interoperability Continuum is available here: http://www.safecomprogram.gov/oecguidancedocuments/continuum/Default.aspx

[4] PPD-8 was signed in 2011 and is comprised of six elements: a National Preparedness Goal, the National Preparedness System, National Planning Frameworks and Federal Interagency Operational Plan, an annual National Preparedness Report, and ongoing national efforts to build and sustain preparedness. PPD-8 defines a series of national preparedness elements and emphasizes the need for the whole community to work together to achieve the National Preparedness Goal. http://www.dhs.gov/presidential-policy-directive-8-national-preparedness.

[5] National Preparedness Goal – Mitigation and Response Mission Area Capabilities and Preliminary Targets – Operational Communications: Ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected communities in the impact area and all response forces.

1. Ensure the capacity to communicate with the emergency response community and the affected populations and establish interoperable voice and data communications between Federal, State, and local first responders.
2. Re-establish sufficient communications infrastructure within the affected areas to support ongoing life-sustaining activities, provide basic human needs, and transition to recovery.

November of 2013, Kentucky held a two day SCIP Workshop in which participants drafted the goals and initiatives for the Kentucky SCIP based on feedback from stakeholders throughout the Commonwealth. The SCIP was then reviewed by the SWIC and the PSWG and then submitted to the KWIEC for approval. The Kentucky SCIP was approved by the KWIEC on July 2014..

3. STATE'S INTEROPERABLE AND EMERGENCY COMMUNICATIONS OVERVIEW

The governance body that oversees the interoperable communications strategy in Kentucky is the Kentucky Wireless Interoperability Executive Committee. The KWIEC was created by KRS 42.738 and its membership consists of a mixture of state and local representatives. It primarily function is to act as the advisory body for all wireless communications strategies in the commonwealth and to ensure that all new communications architectures employed steer the commonwealth toward full interoperable of public safety voice and data communications systems. The Public Safety Working Group was also created as part of this same legislation and exists to aid the KWIEC by assisting in the planning and development of the public safety frequency spectrum. The PSWG primary charge it to bring about a seamless, coordinated, and integrated public safety communications network for the safe, effective, and efficient protection of life and property.

Currently, there is no statewide communications system in Kentucky; public safety agencies primarily operate in the VHF, UHF, and 800 MHz frequency bands. Since most radios do not have the capability to operate on different frequency bands, the KWIEC implemented mutual aid standards that formalize wireless voice communication protocols necessary to achieve interoperability. Several mutual aid channels are set aside to operate in the VHF, UHF, and 800 MHz bands during emergency response events, and public safety voice communications equipment is automatically programmed with the corresponding frequencies to establish on-scene voice communications interoperability. In addition, Kentucky uses a console-to-console patch technology which allows radios operating within separate frequency bands to be "patched" together for voice communications interoperability.

Furthermore, voice communications systems in Kentucky are supported by the Kentucky Emergency Warning System (KEWS), a microwave backbone system that provides control links and channels for State agencies to operate and control their voice radio systems. A large KEWS upgrade was completed in 2013 to provide first responders with a highly robust IP based digital backbone. The system fully supports existing voice, data, and video technologies and is poised to take advantage of the new technologies as they emerge. The legacy Kentucky owned primary wireless data infrastructure for first responders is the Kentucky Wireless Information Network Service (KyWINS); it was built with IPMobileNet 800 MHz as the standard and leverages the existing 165 public access towers across the Commonwealth. The wireless speed of KyWINS is a shared 19.2 kilobytes (Kbps) per channel and any program using

transmission control protocol/internet protocol (TCP/IP) within the speed limitations will work on KyWINS.

Currently, public safety agencies are capable of communicating with agencies during daily, routine incidents. However, interoperability continues to be a challenge during emergency situations that require multi-disciplinary, multi-jurisdictional response activities. To ensure emergency communications interoperability, Kentucky developed goals and initiatives to complete within the next three to five years that will continue to advance interoperability efforts while incorporating emerging technology. These goals and initiatives may be found in Section 5 of the SCIP.

4. VISION AND MISSION

The Vision and Mission section describes Kentucky's vision and mission for improving emergency communications operability, interoperability, and continuity of communications statewide.

Kentucky's Interoperable and Emergency Communications Vision:

Kentucky will continue to leverage new and existing resources and technologies; review and coordinate projects; and through outreach, provide education and guidance to ensure communications interoperability and response readiness.

Kentucky's Interoperable and Emergency Communications Mission:

To significantly improve public safety communications and interoperability across the Commonwealth.

5. STRATEGIC GOALS AND INITIATIVES

The Strategic Goals and Initiatives section describes the statewide goals and initiatives for delivering the vision for interoperable and emergency communications. The goals and initiatives are grouped into seven sections, including Governance, SOPs, Technology, Training and Exercises, Usage, Outreach and Information Sharing, and Life Cycle Funding.

5.1 Governance

The Governance section of the SCIP outlines the future direction of Kentucky's governance structure for interoperable and emergency communications. To ensure interoperability among local and State agencies, the KWIEC serves as the Statewide Interoperability Governing Body (SIGB) and oversees all wireless communications strategies and purchases in the Commonwealth. State and local agencies present

project plans or desired purchases for primary wireless public safety voice or data communications systems for review and recommendation by the KWIEC. If the KWIEC approves of the State or concurs with a local agency strategy or purchase, the KWIEC chairperson notifies the appropriate agency. This process helps to coordinate the purchases of communications assets by State and local agencies to ensure interoperability statewide. Any state level communications projects disapproved by the KWIEC are ineligible and will be cancelled. Local agencies which have communications projects disapproved by the KWIEC may choose to ignore the KWIEC's decision however, these agencies will not be able to receive or use State or Federal funds for initial purchase or the sustainment of the equipment in the future.

In addition to overseeing the communications structure in Kentucky, the KWIEC also develops the annual public safety report to brief the Kentucky legislature on interoperable and emergency communications efforts throughout the Commonwealth. The KWIEC is also responsible for updating the CIO regularly to allow the CIO to brief elected officials and the legislature at any requested time. The SWIC is responsible for ensuring the SCIP is up to date and that work progresses on the SCIP goals and initiatives.

The KWIEC consists of several working groups (e.g., PSWG, FIWG) that focus on routine interoperability efforts such as broadband, engineering, outreach, and education. Regional planning committees were established to provide a top-down chain of information sharing; however, the regional committees are not able to meet with the KWIEC frequently and therefore, are unable to transfer pertinent information from the KWIEC to local public safety entities and vice versa.

In addition to the KWIEC, the PSWG is a state planning committee and focuses on the engineering and technological aspects of interoperable and emergency communications within the Commonwealth. The PSWG is responsible for evaluating and making recommendations to the KWIEC; frequency planning and coordination of the 700 and 800 MHz frequency bands; collaborating with the Federal Communications Commission (FCC) and neighboring States; and evaluating the usage of broadband, IP-based, and other communications networks within the 700 MHz frequency band. The PSWG is an active working group but the KWIEC wants to ensure local, regional, State, and Federal agency representatives are included in its membership. Many of Kentucky's governance goals focus on enhancing the PSWG and ensuring coordination between the PSWG and other public safety entities.

Table 1 outlines Kentucky's goals and initiatives related to governance.

Table 1: Governance Goals and Initiatives

Governance Goals and Initiatives				
Goal #	Goals	Initiatives	Owner	Completion Date
1.	Maintain and strengthen the role of the SWIC as an inter-and intra-State	A. Identify all potential funding streams for emergency communications	FIWG	March 2014 Quarterly thereafter

Governance Goals and Initiatives				
Goal #	Goals	Initiatives	Owner	Completion Date
	leader for interoperable and emergency communications funded projects	B. Meet with agencies who fund projects to ensure funding opportunity aligns with the SCIP prior to the award and during the entire grant life cycle	SWIC	June 2014
		C. Work with the State Administering Authority (SAA) to establish a process for the SAA and SWIC to collaborate on funding decisions	SWIC	July 2014
2.	Leverage KWIEC to ensure compliance with SLIGP	2.1 Incorporate broadband plans into SCIP	SWIC	July 2016
		2.2 Ensure coordination with PSBWG and PSWG	SWIC	July 2014
		2.3 Identify additional members to participate in PSBWG	FirstNet State Point of Contact of Kentucky (SPOCK)	July 2014
3.	Review and update the PSWG membership to validate that members are fully representative and actively participating	3.1 Review and update PSWG membership list with members' contact information	PSWG Chair	Quarterly Meeting
		3.2 Ensure that PSWG members are actively engaged and participating in various working groups	PSWG Chair	Quarterly Meeting
		3.3 Meet with PSWG members who are not active and provide suggestions of where their participation would be beneficial and most needed	PSWG Chair	Quarterly Meeting
4.	Partner with existing intra-State regional coordination entities to discuss statewide interoperability efforts	4.1 Identify target list of existing groups	PSWG	March 2014
		4.2 Determine the PSWG members to conduct formal outreach	PSWG	June 2014
		4.3 Develop clear and consistent messaging regarding interoperable and emergency communications	SWIC	June 2014

Governance Goals and Initiatives				
Goal #	Goals	Initiatives	Owner	Completion Date
		4.4		
		4.5 Begin conducting formal outreach	PSWG Chair	January 2015
		4.6 Evaluate alternative outreach methods (e.g. social media)	PSWG	November 2017
5.	Identify coordination points between the KWIEC, Commercial Mobile Radio Service (CMRS), and the Commonwealth Office of Technology (COT)	5.1 Identify a legislative liaison to champion amendment to reinstate the 911 coordinator as a voting member of the KWIEC	KWIEC Chair	July 2014
		5.2 Schedule quarterly meetings with representatives from KWIEC, CMRS, and COT to discuss needs and challenges	KWIEC Chair	July 2014
		5.3 Resolve any interoperability and communications issues between the agencies that are uncovered during the quarterly meeting	KWIEC Chair, CMRS representative and COT representative	December 2014

5.2 Standard Operating Procedures (SOPs)

The SOPs section of the SCIP identifies the framework and processes for developing and managing SOPs statewide. While several local single-agency and single-jurisdiction SOPs exist, Kentucky seeks to make improvements to sharing templates and examples of this type of information so localities may formalize agreements for both planned events and emergency response situations. In addition, the Commonwealth, through the work of the PSWG, intends to formalize the process by which localities can request deployable communications assets (e.g., Strategic Technology Reserve [STR] equipment) during an incident or response.

Some advancement in developing SOPs has occurred in the past few years including intra-State SOPs developed between counties along the Tennessee border (e.g., Calloway), and MOUs available to all 120 counties for the use of national interoperability channels. However, there is still a need to create a standardized SOP template that can be distributed to stakeholders throughout the Commonwealth for use in developing local uniform and consistent SOPs. Kentucky plans to tackle this challenge by posting additional information to their KWIEC website and by developing templates and SOPs for the use of such technology as gateways and interoperability tactical repeaters.

Table 2 outlines Kentucky's goals and initiatives for SOPs.

Table 2: Standard Operating Procedures Goals and Initiatives

Standard Operating Procedures Goals and Initiatives				
Goal #	Goals	Initiatives	Owner	Completion Date
6.	Create SOPs and MOUs for request and use of deployable communications assets	6.1 Update existing list of State owned deployable communications assets	PSWG	December 2014
		6.2 Develop list of locally owned deployable communications assets	PSWG	December 2015
		6.3 Develop list of military owned deployable communications assets	PSWG	December 2015
		6.4 Review and update the communications assets lists/ update the STR assets list	PSWG	March 2016
		6.5 Expand use of Communication Assets Survey and Mapping (CASM) through training	PSWG	July 2014
		6.6 Develop appropriate SOPs/MOUs/MAAs outlining statewide use of communications infrastructure	Emergency Support Function (ESF)-2	July 2015
7.	Develop SOPs for gateways and interoperability tactical repeaters	7.1 Leverage other States' existing SOPs for use of gateways and interoperability tactical repeaters	PSWG	June 2014
		7.2 Develop Kentucky SOP for use of gateways and interoperability tactical repeaters	PSWG	July 2014
		7.3 Include SOPs into outreach efforts	PSWG	January 2015

5.3 Technology

The Technology section of the SCIP outlines Kentucky's plan to maintain and upgrade existing technology; the roadmap to identify, develop, and implement new and emerging technology solutions; and the approach to survey and disseminate information on

current and future technology solutions to ensure user needs are met. Kentucky has a wide range of LMR resources that may be used to achieve interoperable communications to support public safety operations. By taking advantage of all available resources, the Commonwealth has also achieved a significant level of redundant communications capabilities. Examples include the use of both wired and wireless systems, national resources that have been licensed for statewide services, and the development and operation of multiple primary and secondary systems to ensure that public safety agencies are connected and able to assist one another. Daily operable and on-scene interoperable communications are handled through legacy VHF, UHF, and 800 MHz radios and networks, and Kentucky's auxiliary communications (AUXCOMM) support is very well established for emergency responses.

Kentucky relies on the KyWINS system to ensure data connectivity. However, since there is no standards-based communication system within the Commonwealth, many agencies operate on a variety of different mobile software interfaces and are limited in their ability to communicate with each other via the KyWINS system. To overcome these communication limitations, Kentucky developed an open-source messenger service, which can be used by first response agencies regardless of the type of mobile software the agencies use. The KyWINS Messenger is free to all agencies and does not have any recurring costs. The messenger software package allows an individual to send instant messages to any other person who has both the messenger software on their laptop and wireless access to the State's secure network. It also provides users with the capability to join conferences to share real-time information.

KyWINS is an effective instant messaging service for Kentucky's public safety responders; however, it does not represent a standards-based communication system that is interoperable with public safety agencies statewide. Kentucky's technology goals and initiatives focus on creating a standardization process for public safety agencies to follow to ensure interoperable emergency communications throughout the Commonwealth.

Table 3 outlines Kentucky's goals and initiatives for technology.

Table 3: Technology Goals and Initiatives

Technology Goals and Initiatives				
Goal #	Goals	Initiatives	Owner	Completion Date
8.	Move toward standards-based communications systems	8.1 Participate and provide feedback to SAFECOM regarding grant guidance development through stakeholder engagement process	SWIC	December 2013
		8.2 Reaffirm adoption of SAFECOM Grant Guidance	KWIEC	January 2014
		8.3 Prioritize standards-based	KWIEC	January 2014

Technology Goals and Initiatives				
Goal #	Goals	Initiatives	Owner	Completion Date
		communications projects		
		8.4 Include standards-based benefits into outreach efforts	PSWG	January 2015
9.	Continue to promote / program national interoperability channels into all existing emergency response radios	9.1 Include SOP on use of national interoperability channels into outreach efforts	PSWG	January 2015
		9.2 Post updated national interoperability channels SOP onto KWIEC website (tools page)	PSWG	June 2014
		9.3 Begin conducting targeted outreach to vendors requesting that the national interoperability channels be programmed into responders' radios prior to purchase	PSWG	June 2014

5.4 Training and Exercises

The Training and Exercises section of the SCIP explains Kentucky's approach to ensuring emergency responders are familiar with interoperable and emergency communications equipment and procedures and are better prepared for responding to real-world events. The Kentucky Homeland Security Exercise and Evaluation Program (KY-HSEEP) designs, develops, conducts, and evaluates exercises that test multi-jurisdictional relationships to include federal, state, local, and private sectors. The decrease in federal grants funding, as well as personnel turnover has impacted the KY-HSEEP annual full-scale exercise; however, plans to revitalize the annual exercise are in progress for the upcoming year. Local and regional jurisdictions plan to showcase their technology as part of the exercise in an effort to increase collaboration between counties and regions across the State. Additionally, following the full-scale exercise, the KWIEC will revitalize the After Action Report to better identify interoperability challenges and develop a plan to mitigate such challenges.

The KWIEC, through the PSWG, seeks to make progress in expanding the training opportunities for first responders by promoting basic training opportunities (e.g., Incident Command System training) on the KWIEC website, and by increasing the capacity of Communications Unit Leaders (COMLs) / Communications Unit Technicians (COMTs) / AUXCOMMs by offering additional courses and formalizing the credentialing process for COMLs / COMTs / AUXCOMMs.

Table 4 outlines Kentucky's goals and initiatives for training and exercises.

Table 4: Training and Exercises Goals and Initiatives

Training and Exercises Goals and Initiatives				
Goal #	Goals	Initiatives	Owner	Completion Date
10.	Conduct annual full-scale emergency communications exercise	10.1 Identify stakeholders to participate in COMMEX	ESF-2	February 2014
		10.2 Expand existing process to include regional showcases (show & tell)	ESF-2	December 2014
		10.3 Address gaps identified in after action reports	PSWG	February 2015
11.	Include interoperability communications objectives in public safety exercises	11.1 Develop example exercise objectives	PSWG	February 2014
		11.2 Determine method to test and evaluate objectives	PSWG	March 2014
		11.3 Distribute objectives to exercise planning teams	PSWG	April 2014
12.	Increase capacity and utilization of COMLs / COMTs / AUXCOMMs	12.1 Offer additional COML / COMT / AUXCOMM training	Kentucky Emergency Management Agency	January 2015
		12.2 Incorporate COMLs / COMTs / AUXCOMMs into exercises	PSWG	December 2014
		12.3 Develop list of trained COMLs / COMTs / AUXCOMMs	PSWG	September 2014
		12.4 Develop list of certified COMLs / COMTs / AUXCOMMs with completed task books	PSWG	December 2016
		12.5 Work with agencies to certify COMLs / COMTs / AUXCOMMs	PSWG	December 2015
		12.6 Develop list of COMLs / COMTs / AUXCOMMs to send to local public safety agencies	PSWG	December 2017

5.5 Usage

The Usage section of the SCIP outlines efforts to ensure responders adopt and familiarize themselves with interoperable and emergency communications technologies, systems, and operating procedures in Kentucky. Regular usage ensures the successful establishment of interoperable emergency communications during emergency response situations. As Kentucky deals with many weather incidents throughout the year, including tornados and ice storms, it plans to promote the appropriate and effective usage of interoperability equipment (e.g., gateways, tactical repeaters) to address interoperability gaps. The Commonwealth has taken the first step by allowing all 120 counties sign an MOU to program national interoperability channels into their radios; however, more work remains to ensure the effective training and use of these channels are in place for public safety first responders.

Table 5 outlines Kentucky's goals and initiatives for usage.

Table 5: Usage Goals and Initiatives

Usage Goals and Initiatives				
Goal #	Goals	Initiatives	Owner	Completion Date
13.	Promote use of gateways and interoperability tactical repeaters	13.1 Utilize equipment in accordance with SOPs for use of gateways and interoperability tactical repeaters	PSWG	June 2015 Following COMMEX
		13.2 As equipment is used and lessons are learned, update Kentucky SOPs for use of gateways and interoperability tactical repeaters to reflect current environment	PSWG	June 2016
		13.3 Include SOPs into outreach efforts	PSWG	January 2015

5.6 Outreach and Information Sharing

The Outreach and Information Sharing section of the SCIP outlines Kentucky's approach for building a coalition of individuals and emergency response organizations statewide to support the SCIP vision and for promoting common emergency communications initiatives. Outreach and information sharing has traditionally been a challenge to the Commonwealth; however, the KWIEC has leveraged existing members who represent local first responder agencies such as , Fire Chiefs Association, Police Chiefs Association and The KY Board of EMS to assist with interoperability efforts throughout Kentucky and to transfer pertinent information between the KWIEC and local

public safety entities. Attaining active participation in local government remains a challenge, but recent developments and awareness of broadband efforts and SLIGP funding have increased interest among public safety agencies throughout the Commonwealth.

The PSBWG is responsible for distributing outreach materials and educational information regarding broadband to public safety agencies, in addition to gathering FirstNet applications, bandwidth needs, and coverage requirements for agencies statewide. To capitalize on outreach efforts, the KWIEC's primary outreach and information sharing objective focuses on connecting the PSBWG with the PSWG to develop an outreach and information sharing plan that incorporates collaboration with local and regional groups such as the Area Development Districts (ADDs). Members from either the PSWG or the PSBWG will attend the ADDs' meetings to discuss interoperability efforts throughout Kentucky, including broadband, the NPSBN, narrowbanding, and the benefits of standards-based communications systems. Through regular participation in local and regional outreach meetings, the KWIEC anticipates a consistent flow of information between State and local public safety entities and continuing interest statewide in achieving sustainable communications interoperability throughout the Commonwealth.

Table 6 outlines Kentucky*'s* goals and initiatives for outreach and information sharing.

Table 6: Outreach and Information Sharing Goals and Initiatives

Outreach and Information Sharing Goals and Initiatives				
Goal #	Goals	Initiatives	Owner	Completion Date
14.	Design and execute an outreach and information sharing plan to inform public safety, leadership, and elected officials of the interoperable and emergency communications environment in Kentucky	14.1 Conduct meeting with PSWG and PSBWG members to exchange best practices and lessons learned in outreach efforts	KWIEC	February 2014
		14.2 Identify groups (e.g., ADDs, emergency management regional groups, etc.) to target	PSWG and PSBWG	March 2014
		14.3 Attend meetings to build rapport and distribute information to group members through various communications platforms	PSWG or PSBWG	January 2015
		14.4 Identify non-traditional methods (e.g., social media, alerts and warning programs, etc.) for conducting outreach to inform a greater number of stakeholders	PSWG and PSBWG	November 2017

5.7 Life Cycle Funding

The Life Cycle Funding section of the SCIP outlines Kentucky's plan to fund existing and future interoperable and emergency communications priorities. Previously, Kentucky relied on Federal grant funding to support and sustain its interoperable and emergency communications environment; however, with the current fiscal climate, funding support has been reduced and the Commonwealth has been relying on insufficient State funding support. In 2012, the KWIEC established the FIWG and tasked it with the responsibility of determining potential funding opportunities for the maintenance of Kentucky's interoperable emergency communications environment. Kentucky's life cycle funding goal focuses on the FIWG and the PSWG collaborating to develop a life cycle funding plan that accounts for the needs of all current communications assets throughout the Commonwealth as well as any potential emerging technological needs. The FIWG will then work with the SWIC to determine the best funding avenues to pursue; the SWIC will meet with funding agencies to ensure the SCIP and the funding opportunities align, as outlined in Goal 1, Initiative 1.1.

Table 7 summarizes Kentucky's goal and its corresponding initiatives for life cycle funding.

Table 7: Life Cycle Funding Goals and Initiatives

Life Cycle Funding Goals and Initiatives				
Goal #	Goals	Initiatives	Owner	Completion Date
15.	Develop a life cycle funding plan that takes into account all State owned interoperable and emergency communications systems and equipment	15.1 Develop a list of interoperable and emergency communications programs	PSWG	March 2014
		15.2 Identify mechanism for determining continued funding for operational expenditures	FIWG	June 2014
		15.3 Participate in the SAFECOM / National Council of Statewide Interoperability Coordinators (NCSWIC) Funding and Sustainment Working Group and share with PSWG	SWIC	March 2014
		15.4 Determine how funds have been used either consistently or inconsistently with the	FIWG	January 2016

Life Cycle Funding Goals and Initiatives				
Goal #	Goals	Initiatives	Owner	Completion Date
		SCIP vision and goals		

6. IMPLEMENTATION

6.1 Action Plan

The Action Plan section of the SCIP describes the process Kentucky will use to execute the initiatives in the SCIP. Kentucky plans to use its KWIEC meetings to work closely with the various working groups and committees assigned specific goals and initiatives to determine progress. As a result, monthly reporting to the SWIC by relevant stakeholders on their identified goals and initiatives is anticipated throughout the year to ensure success of these efforts. Each KWIEC working group will be assigned ownership of their respective sub-section of the SCIP to complete the identified goals and initiatives.

Each year, the KWIEC produces an Annual Report on Public Safety on the progress and activities of the Commonwealth to comply with standards to achieve public safety communications interoperability. This report will contain updates on the goals and initiatives of the SCIP and will be submitted to the Kentucky legislature and responsible committees. The report is also posted to the KWIEC website.

6.2 Measures of Success

The Measures of Success section of the SCIP defines the measures that Kentucky will use to monitor progress and indicate accomplishments in achieving the vision for interoperable and emergency communications. Measures of success are used to assess the outcomes and impacts of program functions and processes in meeting strategic goals. Table 8 outlines these measures for Kentucky. More information on how these measures are managed is included in Section 6.3.

Table 8: SCIP Measures of Success

Measures of Success					
Goal #	Strategic Goal(s) Supported	Initial State	Target Measurement	Measure Completion Date	Owner or Source

Measures of Success					
Goal #	Strategic Goal(s) Supported	Initial State	Target Measurement	Measure Completion Date	Owner or Source
1.	Maintain and strengthen the role of the SWIC as an inter-and intra-State leader for interoperable and emergency communications funded projects	Lacks defined responsibilities and has little authority over funding decisions for the Commonwealth	100% empowerment of SWIC to make strategic State level funding decisions for emergency communications projects; SWIC strategic funding decisions adhered to by executive branch agencies	October 2014	KWIEC Chair and SWIC
2.	Leverage KWIEC to ensure compliance with SLIGP	Limited coordination between the PSBWG and PSWG; active member participation on the PSBWG is lacking	Increased PSBWG member participation by 75%; PSBWG and PSWG collaborate monthly to ensure broadband is incorporated into all SCIP efforts	July 2014	SWIC, PSWG and PSBWG
3.	Review and update the PSWG membership to validate that members are fully representative and actively participating	Lack of leadership in the PSWG and active membership participation is limited	Strong executive committee that oversees PSWG and assigns 100% of responsibilities/ initiatives to subcommittees/ members	August 2014	PSWG Chair
4.	Partner with existing intra-State regional coordination structures to discuss statewide interoperability efforts	Lack of coordinated outreach plan for informing leadership, public safety, elected	PSWG and PSBWG coordinated schedule/calendar of the following year's monthly	January 2015 Annually thereafter	PSWG and PSBWG

Measures of Success					
Goal #	Strategic Goal(s) Supported	Initial State	Target Measurement	Measure Completion Date	Owner or Source
14.	Design and execute an outreach and information sharing plan to inform public safety, leadership, and elected officials of the interoperable and emergency communications environment in Kentucky	officials, and intra-State regional coordination entities in statewide interoperability efforts	meetings with leadership, public safety, elected officials, and intra-State regional coordination entities as outlined in Outreach and Information Sharing Plan		
5.	Identify coordination points between the KWIEC, CMRS, and COT	Limited collaboration between the KWIEC, CMRS, and COT	Monthly scheduled meetings between the KWIEC, CMRS, and COT; 911 Coordinator reinstated as voting member of KWIEC	July 2014	KWIEC, CMRS, and COT
6.	Create SOPs and MOUs for request and use of deployable communications assets	Outdated assets lists for State, military, and local public safety entities as well as for the STR; Zero deployable assets request-SOPs and MOUs between agencies	CASM is updated with 90% or more of State, military, local, and STR deployable assets; process has been developed for requesting assets and SOPs/ MOUs/ MAAs developed to outline statewide use of communications infrastructure	March 2016	PSWG and ESF-2
7.	Develop standardized SOPs for gateways and interoperability tactical repeaters	No SOPs outlining the proper usage of gateways and interoperability tactical repeaters	SOPs developed and updated annually outlining standardized process for using gateways and interoperability tactical repeaters;	January 2015	PSWG

Measures of Success					
Goal #	Strategic Goal(s) Supported	Initial State	Target Measurement	Measure Completion Date	Owner or Source
13.	Promote usage of gateways and interoperability tactical repeaters		SOPs are distributed during monthly outreach activities		
8.	Move toward standards-based communications systems	No prerequisite exists requiring State and local communications systems to be interoperable in order to receive grant funding	SAFECOM collaborates with KWIEC to develop grant requirement outlining that grant money may only be used for purchasing communications systems that are interoperable with current State system	January 2015	SWIC, KWIEC, and PSWG
9.	Continue to promote / program national interoperability channels into all existing emergency response radios	Little guidance on programming national interoperability channels into all existing emergency response radios	National interoperability channels SOP is developed and distributed via monthly outreach efforts	January 2015	PSWG
10.	Conduct annual full-scale emergency communications exercise	Emergency communications operations are not included in all State exercises	Annual full-scale emergency communications exercise scheduled and conducted; State requirement that all public safety exercises include an emergency communications component	February 2015	PSWG and ESF-2
11.	Include interoperability communications objectives in public safety exercises				

Measures of Success					
Goal #	Strategic Goal(s) Supported	Initial State	Target Measurement	Measure Completion Date	Owner or Source
12.	Increase capacity and utilization of COMLs / COMTs / AUXCOMMs	COMLs / COMTs / AUXCOMMs are not utilized regularly because there is no contact list documenting trained and/or certified COMLs / COMTs / AUXCOMMs	Regularly scheduled and publicized COML / COMT / AUXCOMM training and certification courses; Distributed contact list of trained and certified COMLs / COMTs / AUXCOMMs to local, regional and State public safety agencies	January 2017	PSWG and Kentucky Emergency Management Agency
15.	Develop a life cycle funding plan that takes into account all State owned interoperable emergency communications systems and equipment	No State life cycle funding plan in existence	Approved life cycle funding plan that outlines how Kentucky will fund ongoing and new interoperable and emergency communications projects	January 2016	SWIC, PSWG, and FIWG

6.3 Management of Success

The Management of Success section describes the iterative, repeatable method Kentucky will follow to add, update and refine the measures of success. The KWIEC will review the SCIP annually during its meeting in November and as part of the Action Planning process, the SWIC will monitor the progress of the goals and initiatives monthly. The SWIC will post goal and initiative updates on the KWIEC website each quarter. KWIEC members will use the November meeting to specifically compare goal and initiative accomplishments to the measures of success to determine status, share best practices, obtain further support for initiative challenges, and update relevant sections of the SCIP. Upon final review, the updated SCIP will be distributed to stakeholders throughout the State as well as published on KWIEC website.

6.4 Strategic Plan Review

The Strategic Plan Review section outlines the process Kentucky will use to conduct reviews of the SCIP. The KWIEC and its associated working groups will provide an annual review of the SCIP in November (as noted in Section 6.3), to ensure it is up to date and aligned with the changing internal and external interoperable and emergency communications environment. As part of this process, the SWIC will also track and report progress against the defined initiatives and measures of success. Once the annual review is complete, the updated SCIP is provided to the KWIEC for approval and dissemination. If elements of the SCIP are not being addressed according to planned timelines, the SWIC shall make recommendations to the KWIEC to adjust the priority of goals and initiatives and what resources should be focused upon these adjusted priorities moving forward.

7. REFERENCE MATERIALS

The Reference Materials section outlines resources that contribute additional background information on the SCIP and interoperable and emergency communications in Kentucky. Table 9 includes the links to these reference materials.

Table 9: SCIP Reference Materials

Title	Description	Source/Location
2007 Kentucky SCIP	Previous SCIP developed in July 2011 by members of the KWIEC	www.kwiec.ky.gov
2012 SCIP Implementation Report	Annual update on interoperable and emergency communications initiatives' progress in Kentucky	www.kwiec.ky.gov

APPENDIX A: MAJOR SYSTEMS

Table A-1: Major Systems, Updates, and New Systems

Major Systems Information						
System Type	System Name	System Owner(s)	System Description	# Subscribers and Agencies	Users' Level of Government	Status and Changes/Updates
Shared Statewide System	Kentucky Mutual Aid Network		VHF (High Band): 150MHz to 170MHz Non-P25 Motorola Analog Conventional Not Encrypted Other: Analog, VHF, UHF, 800Mhz Voice	*Open system available to all public safety agencies with MOA agreement*	`	Existing System
Shared Statewide System	Kentucky Mobile Data Network		800MHz Non-P25 Other Digital Conventional Encrypted Other: Digital 19.2 kbps, 800 Mhz Data		State	Existing System

Major Systems Information						
System Type	System Name	System Owner(s)	System Description	# Subscribers and Agencies	Users' Level of Government	Status and Changes/Updates
State Agency(ies) System	Kentucky State Police		UHF (Upper High Band): 450MHz to 470MHz P25 Compliant Motorola Digital Conventional Encrypted Other: Voice		State	Existing System
State Agency(ies) System	Kentucky Emergency Management Agency		VHF (High Band): 150MHz to 170MHz P25 Compliant Choose make Choose digital/analog Choose trunked/conventional Choose encryption level Other:		State	Existing System

Major Systems Information						
System Type	System Name	System Owner(s)	System Description	# Subscribers and Agencies	Users' Level of Government	Status and Changes/Updates
State Agency(ies) System	Kentucky Fish and Wildlife		VHF (High Band): 150MHz to 170MHz Choose P25 description Choose make Analog Choose trunked/conventional Choose encryption level Other:		State	Existing System
State Agency(ies) System	Kentucky Transportation Cabinet		VHF (High Band): 150MHz to 170MHz Choose P25 description Choose make Analog Choose trunked/conventional Choose encryption level Other:		State	Existing System

Major Systems Information						
System Type	System Name	System Owner(s)	System Description	# Subscribers and Agencies	Users' Level of Government	Status and Changes/Updates
Multi-County/Parish System	Louisville Metro		800MHz P25 Compliant Choose make Digital Trunked Encrypted Other:		Regional	Existing System
Multi-County/Parish System	Lexington Metro		800MHz P25 Compliant Choose make Digital Trunked Choose encryption level Other:		Regional	New System

APPENDIX B: LIST OF ACRONYMS

AAR	After Action Report
ADD	Area Development Districts
APR	Annual Progress Report
AUXCOMM	Auxiliary Communications
CASM	Communication Assets Survey and Mapping
CIO	Chief Information Officer
CMRS	Commercial Mobile Radio Service
COML	Communications Unit Leader
COMT	Communications Unit Technician
COT	Commonwealth Office of Technology
DHS	U.S. Department of Homeland Security
EMA	Emergency Management Agency
ESF	Emergency Support Function
FCC	Federal Communications Commission
FirstNet	First Responder Network Authority
FIWG	Funding Initiatives Working Group
FOG	Field Operations Guide
IP	Internet Protocol
Kbs	Kilobytes
KEWS	Kentucky Emergency Warning System
KOHS	Kentucky Office of Homeland Security
KWIEC	Kentucky Wireless Interoperability Executive Committee
Ky-HSEEP	Kentucky Homeland Security Exercise and Evaluation Program
KyWINS	Kentucky Wireless Information Network Service
MHz	Megahertz
LMR	Land Mobile Radio
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NCSWIC	National Council of Statewide Interoperability Coordinators
NECP	National Emergency Communications Plan

NG911	Next Generation 911
NIMS	National Incident Management System
NPSBN	Nationwide Public Safety Broadband Network
NRF	National Response Framework
NTIA	National Telecommunications and Information Administration
OEC	Office of Emergency Communications
PIO	Public Information Officer
PPD	Presidential Policy Directive
PSAP	Public Safety Answering Point
PSBWG	Public Safety Broadband Working Group
PSWG	Public Safety Working Group
RECCWG	Regional Emergency Communications Coordination Working Group
RIC	Regional Interoperability Council
RPC	Regional Planning Committee
SAA	State Administering Agency
SCIP	Statewide Communication Interoperability Plan
SIEC	Statewide Interoperability Executive Committee
SIGB	Statewide Interoperability Governing Body
SLIGP	State and Local Implementation Grant Program
SOP	Standard Operating Procedure
SPOCK	FirstNet State Point of Contact of Kentucky
STR	Strategic Technology Reserve
SWIC	Statewide Interoperability Coordinator
TCP/IP	Transmission Control Protocol/Internet Protocol
TDM	Time-Division Multiplexing
TICP	Tactical Interoperable Communications Plan
VHF	Very High Frequency
UHF	Ultra High Frequency