

ARIZONA STATEWIDE COMMUNICATION INTEROPERABILITY PLAN (SCIP)



October 2019

Developed with Support from the
U.S. Department of Homeland Security's Cybersecurity and Infrastructure Security Agency

TABLE OF CONTENTS

Letter from the Statewide Interoperability Coordinator 1

Introduction..... 3

Interoperable and Emergency Communications Overview 4

Vision and Mission 5

Governance 6

 Statewide Interoperability Executive Council..... 6

 National Governors Association Regional Workshop 6

Technology 8

 Land Mobile Radio 8

 Mobile Broadband..... 8

 9-1-1/Next Generation 9-1-1 8

 Alerts and Warnings..... 9

Funding 10

 Current State of Funding..... 10

Implementation Plan..... 11

Appendix A: List of Acronyms 16



LETTER FROM THE STATEWIDE INTEROPERABILITY COORDINATOR

Greetings,

As the Statewide Interoperability Coordinator for the State of Arizona, I am pleased to present the 2019 Arizona Statewide Communication Interoperability Plan (SCIP). This SCIP represents Arizona's continuous commitment to improving emergency communications interoperability and supporting our public safety practitioners throughout the state. In addition, this update meets the requirement of the current U.S. Department of Homeland Security (DHS) grant guidelines.

Representatives from the following federal, state, local, and tribal agencies collaborated to update the SCIP:

- Arizona Department of Public Safety (DPS)
- Arizona Department of Homeland Security (AZDOHS)
- FirstNet
- Arizona Department of Emergency and Military Affairs (DEMA)
- University of Arizona
- Northwest Fire District AZ
- Phoenix Police Department
- Scottsdale Police Department
- Maricopa County Emergency Management
- Arizona Department of Administration
- Mesa Police Department
- Peoria Police Department
- Marana Police Department
- Yuma Regional Communications System (YRCS)
- Chandler Police Department
- Ak-Chin Indian Community
- Town of Oro Valley
- Gilbert Police Department
- Pima County Office of Emergency Management
- Gila River Police Department
- Navajo County
- Gila County
- City of Glendale
- Cochise County
- Navajo Nation
- City of Buckeye
- Pinetop Fire Department
- Tohono O'odham Nation
- City of Surprise
- City of Tucson
- City of Tempe
- Rio Rico Medical & Fire District
- Town of Winslow

The updated SCIP includes actionable and measurable goals and objectives with a focus on governance, technology, and funding. They are designed to support our state in planning for new technologies and navigating the ever-changing emergency communications ecosystem. They also incorporate recommendations identified during Arizona's participation in the National Governors Association (NGA) Northeast Regional Workshop on Enhancing Public Safety Communications Governance that was conducted in partnership with the DHS Cybersecurity and Infrastructure Security Agency (CISA).



As we continue to enhance interoperability, we must remain dedicated to improving our ability to communicate among disciplines and across jurisdictional boundaries. With help from public safety practitioners statewide, we will work to achieve the goals set forth in this SCIP and become a nationwide model for statewide interoperability.

Sincerely,

Jeremy Knoll

Jeremy Knoll
Arizona Statewide Interoperability Coordinator



INTRODUCTION



The Arizona Statewide Communications Interoperability Plan (SCIP) is a stakeholder-driven, multi-jurisdictional, and multi-disciplinary strategic plan to enhance interoperable and emergency communications over the next two to three years. This document contains the following planning components:

- **Introduction:** Provides the context necessary to understand what the SCIP is and how it was developed.
- **Interoperable and Emergency Communications Overview:** Provides an overview of Arizona's current and future emergency communications environment.
- **Vision and Mission:** Articulates Arizona's two- to three-year vision and mission for improving emergency communications operability, interoperability, and continuity of communications at all levels of government.
- **Goals and Objectives:** Outlines the goals and objectives aligned with the vision and mission of the SCIP as they pertain to Governance and Technology.
- **Implementation Plan:** Describes Arizona's plan to implement, maintain, and update the SCIP and enable continued evolution of and progress toward Arizona's interoperability goals.

The Emergency Communications Ecosystem consists of many inter-related components and functions, including communications for incident response operations, notifications and alerts and warnings, requests for assistance and reporting, and public information exchange. The

primary functions are depicted in the 2019 National Emergency Communications Plan (NECP)¹.

The Interoperability Continuum, developed by SAFECOM and shown in Figure 1, serves as a framework to address challenges and continue improving operable/interoperable and public safety communications. It is designed to assist public safety agencies and policy makers with planning and implementing interoperability solutions for communications across technologies. More information on the Interoperability Continuum is available in ECD’s Interoperability Continuum brochure.²

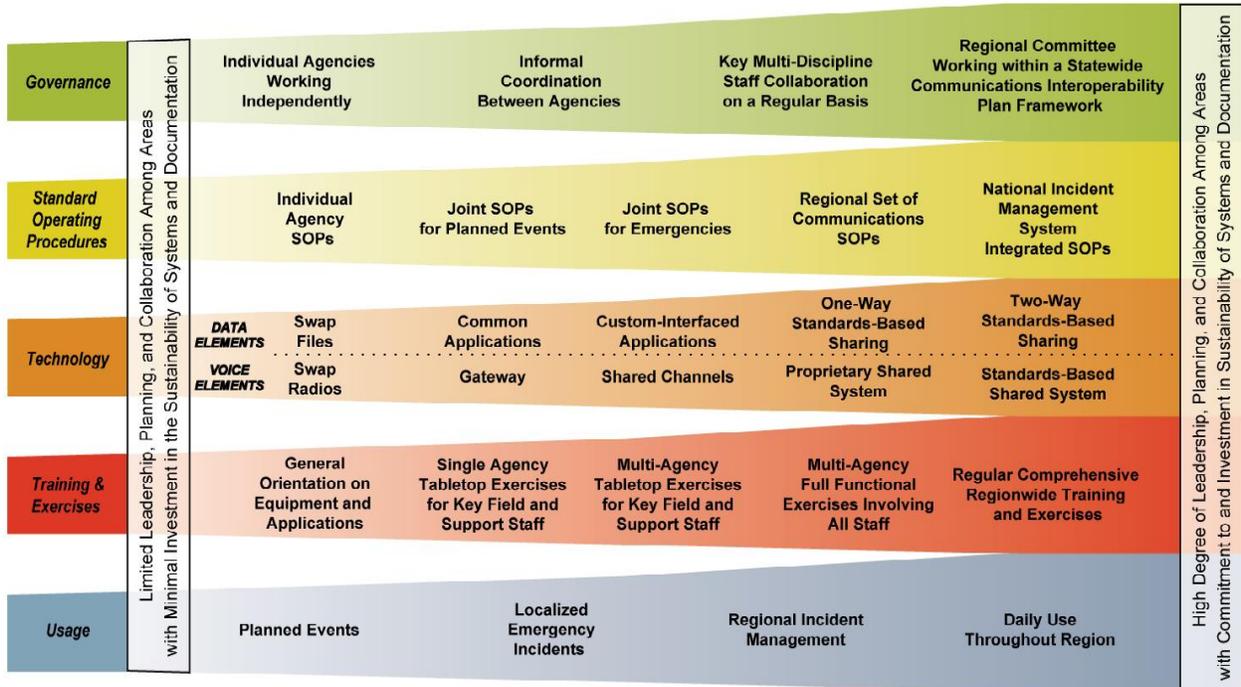


Figure 1: Interoperability Continuum

INTEROPERABLE AND EMERGENCY COMMUNICATIONS OVERVIEW

Reliable, timely communications among public safety responders, public safety agencies and citizens is critical to effectively carry out public safety missions, and in many cases, saving lives.

Traditional voice capabilities, such as land mobile radio (LMR), landline and wireless 9-1-1 services have long been and continue to be critical tools for communications. However, the advancement of internet protocol (IP) based technologies in public safety, has increased the

¹ The 2019 NECP is available here: <https://www.cisa.gov/publication/2019-national-emergency-communications-plan>

² The Interoperability Continuum Brochure is available here: https://www.dhs.gov/sites/default/files/publications/interoperability_continuum_brochure_2.pdf



type and amount of information responders receive, the tools they communicate with, and complexity of new and interdependent systems. New technologies increase the need for coordination across public safety disciplines, communications functions, and levels of government to ensure emergency communications capabilities are interoperable, reliable, and secure.

An example of this evolution is the First Responder Network Authority’s (FirstNet) implementation of the Nationwide Public Safety Broadband Network (NPSBN). All 56 states and territories, including Arizona, have opted into FirstNet. With this new system, agencies can supplement existing LMR capabilities with improved spectrum, broadband capabilities, and the means to move and transfer data as never before. Its adoption and implementation will entail close coordination with 9-1-1 administrators, dispatch supervisors, LMR systems managers and managers of alert and warning systems to ensure interoperability and cybersecurity are not sacrificed as agencies begin adopting wireless cellular devices for daily operations.

Similarly, the transition of public-safety answering points (PSAPs) to Next Generation 9-1-1 (NG9-1-1) technology will enhance sharing of critical information in real-time through the use of multimedia—such as pictures, video, and text — among citizens, PSAP operators, dispatch, and first responders. While the benefits of NG9-1-1 are tremendous, interfacing systems along with governance, standard operating procedures and training are necessary to fully realize these benefits and ensure the security of information are all key elements to successful implementation.

VISION AND MISSION

This section describes Arizona’s vision and mission for improving emergency communications operability, interoperability, and continuity of communications statewide:

Vision:

To achieve interoperable communications within all areas of the emergency communications ecosystem

Mission:

Implement and strengthen governance within Arizona to enhance and sustain all elements of the emergency communications ecosystem



GOVERNANCE

Statewide Interoperability Executive Council

Arizona currently has no governance body in place for Emergency Communications. Instead, the SWIC currently manages all public safety and emergency communications and interoperability statewide. Addressing the technical problems and challenges occurs ad hoc by interested parties. The workshop attendees established the ad-hoc SCIP Working Group to oversee the implementation of the 2019 SCIP until the establishment of a formal governance body. The SCIP Working Group identified several challenges regarding governance, technology, and funding.

Arizona seeks to formalize a governance body by re-establishing the Statewide Interoperability Executive Council (SIEC) with membership from various disciplines across state. The SIEC will enhance governance and develop statewide public safety communications (LMR, 911, Broadband, Alerts and Warnings) for all Public Safety Agencies to collaborate. This would set standards to further interoperability needs for all jurisdictions. At present, a draft executive order has been written and is being discussed with the Governor's office staff.

In creating the ideal state for the Arizona SIEC, the SCIP Working Group has proposed the following model. Figure 2 depicts the proposed organizational structure of the SIEC.

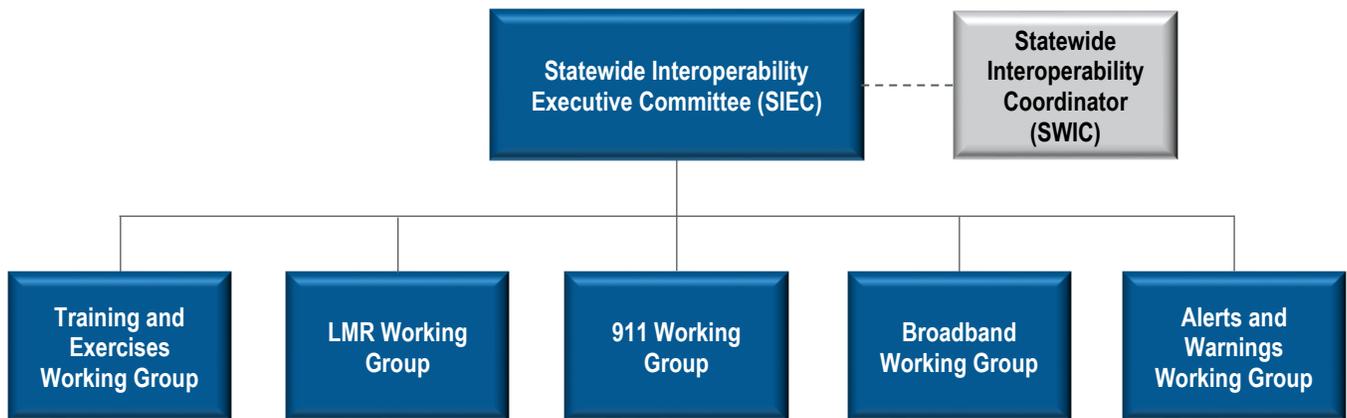


Figure 2: Proposed Statewide Interoperability Executive Council Organization Chart

National Governors Association Regional Workshop

During the March 2018 National Governors Association (NGA) Regional Workshop, the Arizona State Team identified the following activities:

- Convene stakeholders who reviewed the Business Case – Why we are asking to create the SIEC
- Collect anecdotes of stories of when communications worked well and when it did not
- Draft Business Case

- Convene stakeholders identified in the draft executive order to discuss the business case, the executive order, and updating the SCIP
- Brief directors of respective agencies on the business case
- Present business case at the Law Enforcement Summit
- Create an outline of the working groups of the SIEC
- Provide the Governor’s Public Safety Advisor the business case

Governance		
#	Goals	Objectives
1.	Formalize and fund SWIC position and office	1.1 Express support and endorsement (e.g., letter, phone call) for host agency for decision-making level SWIC position 1.2 Pursue action to secure and sustain the position
2.	Establish the SIEC to represent the public safety communications ecosystem	2.1 Identify advocates and supporters 2.2 Establish structure and champions 2.3 Identify decision makers/ elected officials to support SIEC 2.4 Socialize business case to garner buy-in and support 2.5 Pursue action to secure and sustain the SIEC 2.6 Create Bylaws for the SIEC
3.	Share operational best practices and implement regionally and nationally recognized standards for technology across the state	3.1 Use plain language on daily and multi-agency events. Include agency and call signs 3.2 Adopt minimum training standards statewide for end users and telecommunicators 3.3 Program shared interoperability channels in all radios if it is adopted as a regional standard (i.e., Priority Programming Guide) 3.4 Expand the SOPs within Arizona to develop a cohesive guide to interoperability beyond individual counties 3.5 Review and revise Arizona Minimum Equipment standards for interoperable communications technology; incorporate into grant guidance
4.	Continue to encourage use of common/ shared channels within Arizona	4.1 Track testing and evolution of ISSI/CSSI technologies and other bridging technologies 4.2 Revise and update the state channel programming guide 4.3 Engage with National Public Safety Telecommunications Council (NPSTC) and other national bodies to ensure consistency



Governance		
#	Goals	Objectives
		4.4 Determine operational needs and feasibility of deploying fixed gateway technologies

TECHNOLOGY

Land Mobile Radio

The State of Arizona will benefit from the entire state being on a single Land Mobile Radio (LMR) system. Currently during emergencies there are not enough statewide interoperable talk groups. A statewide system with interoperable talk groups, programmed to work with federal, state, local and tribal agencies would be a tremendous value to the state. It would facilitate the usage of an interoperable communications system and encourage LMR inter-system interoperability. This level of integration of emerging technologies, outreach and education on interoperability resources and channels will be critical to enhancing LMR interoperability. Integration of technologies along with updates and modernization of the current LMR system will also improve overall coverage.

Mobile Broadband

Currently, broadband integration between LMR and 9-1-1 is beginning to converge and the state is trying to leverage the technology it has while remaining conscientious to not create any roadblocks to interoperability through competing standards or applications. Arizona is interested in ensuring that an independent body is available to advise agencies on what broadband integration can do, what its weaknesses are, and how LMR and broadband can work hand-in-hand but not replace each other. Integrating FirstNet into the communications ecosystem as well as leveraging NG9-1-1 capabilities will enhance the benefits of broadband technology. The state will be able to gain statewide 4G and emerging 5G Data coverage and encourage a standardization of public safety broadband.

9-1-1/Next Generation 9-1-1

Arizona's 9-1-1 Program office interfaces with a single point of contact identified as a 9-1-1 System Administrator who represents the Public Safety Answering Points (PSAP) within their political subdivision. The state currently has several 9-1-1 initiatives competing for space with multiple cities and counties continuing to migrate to Next Generation 9-1-1. An ideal state would be for all 9-1-1 systems used in Public Safety to be leveraged for the highest benefit for public safety personnel. In this way 9-1-1 and cybersecurity vulnerabilities could be addressed and funding for 9-1-1 could reflect the current state of end users and fees.



Alerts and Warnings

Emergency Management coordinates with the National Weather Service (NWS), the Department of Public Safety (DPS), and the Arizona Broadcaster's Association (ABA) to ensure that the Emergency Alert System (EAS) is functioning and reaching all intended recipients. To achieve Arizona's goals for enhancing Alerts and Warnings, AZDEMA will need to work with Arizona Department of Administration and the Governor's Office to seek out a statewide enterprise solution to alerts and warnings. In this way, alerts and warnings could be standardized and outreach to the public would increase.

Technology		
#	Goals	Objectives
5.	Coordinated integration of broadband technology while recognizing that broadband will not replace existing LMR voice systems in the foreseeable future	5.1 Continue outreach and education of emerging technologies and encourage phases releases
		5.2 Identify long and short-term governance needs
		5.3 Identify coverage area needs
		5.4 Identify application needs (software and hardware interoperability)
		5.5 Ensure regional and state shared systems are standards based or have standard interfaces to allow flexibility for end user products
		5.6 Build system approach to interoperability interstate and nationally; enhance plans to leverage cooperation
6.	Support the Communications Unit (COMU) recognition program and continued education	6.1 Update current COMU recognition procedure
		6.2 Disseminate COMU information to Arizona stakeholders
		6.3 Identify operability and interoperability training needs
		6.4 Identify a clearinghouse for training materials in one location. Training materials to be provided in multiple medias (e.g., web, video, paper)
		6.5 Promote communications training and best practices
		6.6 Promote the COMU program for all hazards exercise program
7.	Encourage use of interoperable communications for operations	7.1 Ensure communications personnel are included in planning, exercises, and major events
		7.2 Encourage interoperable resources to be used for routine events and exercises to institutionalize use daily
		7.3 Educate command and executive personnel on the value of interoperable communications



Technology		
#	Goals	Objectives
		7.4 Train response personnel on the use of interoperable communications
8.	Develop outreach programs tailored to different audiences to promote and sustain interoperable communications ecosystem including LMR, NG 9-1-1, broadband, and Alerts and Warnings	8.1 Remind stakeholders of the Priority Program Guide
		8.2 Promote existing Arizona Interagency Radio System (AIRS) training materials (e.g., video, CD, publication)
		8.3 Identify and assemble an outreach working group comprised of subject matter experts
		8.4 Educate elected officials on the interoperable communications ecosystem including LMR, NG9-1-1, broadband, and Alerts and Warnings
9.	Enhance cybersecurity capabilities to secure communications systems within Arizona	9.1 Leverage the cyber task force in the statewide fusion center
		9.2 Coordinate with stakeholders to understand existing capabilities and additional needs
		9.3 Develop a notification protocol of cybersecurity incidents
		9.4 Share information through the SIEC

FUNDING

Current State of Funding

The State of Arizona budgetary constraints and sustainable funding is still an issue. With a lack of leveraging funding coordination, the state could benefit from exploring methods of funding for interoperability projects through coordinated efforts. The state could also identify or create new sustainable funding statewide that can be supported by all public safety entities including NGOs, local, county, tribal, state, federal, and international agencies. This would ultimately lead to funding for a full time SWIC and support staff.

Funding		
#	Goals	Objectives
10.	Identify or create new sustainable funding sources for interoperability and capitalize on coordinated efforts	10.1 Explore Federal funding opportunities to expand interoperable technologies in the state
		10.2 Identify realistic and sustainable funding plans for the full life cycle of interoperable communications equipment



		10.3 Engage national organizations or employee associations to solicit support for funding opportunities
		10.4 Support sufficient level of tax to fund NG9-1-1 across the state
		10.5 Review identified funding streams based on an analysis of available funds and gaps in funding for interoperable and emergency communications priorities

IMPLEMENTATION PLAN

The SWIC will be the central point of coordination for implementing SCIP goals and objectives which are intended to support the dissemination of best practices across the state and may be amended as necessary. The SCIP will be reviewed and updated, if needed, on an annual basis to track progress and ensure fulfillment of current and future grant funding requirements. The Cybersecurity and Infrastructure Security Agency (CISA) publishes a catalog of Technical Assistance (TA) service offerings each year to assist states and territories with SCIP implementation.³ Jeremy Knoll, SWIC for the State of Arizona, is available to coordinate requests.

#	Goals	Initiatives	Owners	Timelines
1.	Formalize and fund SWIC position and office	1.1 Express support and endorsement (e.g., letter, phone call) for host agency for decision-making level SWIC position	DPS, ADOA	September 1, 2019
		1.2 Pursue action to secure and sustain the position	DPS	Ongoing
2.	Establish the SIEC to represent the public safety communications ecosystem	2.1 Identify advocates and supporters	SCIP Working Group	Ongoing
		2.2 Establish structure and champions	SCIP Working Group	Ongoing
		2.3 Identify decision makers/ elected officials to support SIEC	SCIP Working Group	Ongoing
		2.4 Socialize business case to garner buy-in and support	SCIP Working Group	Ongoing
		2.5 Pursue action to secure and sustain the SIEC	DPS, ADOA	September 1, 2019; Ongoing
3.		3.1 Use plain language on daily and multi-agency events. Include agency and call signs	Agency Heads	Ongoing

³ FY2019 TA/SCIP Guide is available here: <https://www.dhs.gov/publication/ictapscip-resources>



#	Goals	Initiatives	Owners	Timelines
	Share operational best practices and implement regionally and nationally recognized standards for technology across the state	3.2 Encourage collaboration and participation in regional standards-based communications systems	AZDHS, SIEC when established	Ongoing
		3.3 Adopt minimum training standards statewide for end users and telecommunicators	SIEC when established	July 2020
		3.4 Revise and adopt the Priority Programming Guide and disseminate to all agencies	SWIC, SIEC when established	July 2020; Ongoing
		3.5 Develop and recommend SOPs within Arizona for a cohesive guide to interoperability beyond individual counties	SIEC when established	July 2020; Ongoing
		3.6 Review and revise Arizona Minimum Equipment standards for interoperable communications technology; incorporate into grant guidance	SWIC, SIEC when established	Ongoing
4.	Continue to encourage use of common/ shared channels within Arizona	4.1 Track testing and evolution of ISSI/CSSI technologies and other bridging technologies	SIEC when established, Technology Working Group	Ongoing
		4.2 Engage with National Public Safety Telecommunications Council (NPSTC) and other national bodies to ensure consistency	SWIC	Ongoing
		4.3 Determine operational needs and feasibility of deploying fixed gateway technologies	SIEC when established, Technology Working Group	Ongoing
5.	Coordinated integration of broadband technology while recognizing that broadband will not replace existing LMR voice systems in the foreseeable future	5.1 Continue outreach and education of emerging technologies and encourage phases releases	ADOA, DPS	Ongoing
		5.2 Identify long and short-term governance needs	SIEC when created	Ongoing
		5.3 Identify coverage area needs	SIEC when created, Broadband Working Group	Ongoing



#	Goals	Initiatives	Owners	Timelines
		5.4 Identify application needs (software and hardware interoperability)	Broadband Working Group	Ongoing
		5.5 Ensure regional and state shared systems are standards based or have standard interfaces to allow flexibility for end user products	SIEC when created	Ongoing
		5.6 Build system approach to interstate interoperability; enhance plans to leverage cooperation nationally	SWIC	Ongoing
6.	Support the Communications Unit (COMU) recognition program and continued education	6.1 Update current COMU recognition procedure	COMU Working Group	December 2019
		6.2 Disseminate Communications Unit information to Arizona stakeholders	COMU Working Group	January 2020; Ongoing
		6.3 Identify operability and interoperability training needs	COMU Working Group	June 2020, Annually
		6.4 Identify a clearinghouse for training materials in one location. Training materials to be provided in multiple medias (e.g., web, video, paper)	SIEC once created	December 2019
		6.5 Promote communications training and best practices	SIEC once created, DEMA	December 2019; Ongoing
		6.6 Continue to promote the Communications Unit program for all hazards exercise program	SWIC, DEMA, Emergency Managers	Ongoing
7.	Encourage use of interoperable communications	7.1 Ensure communications personnel are included in planning, exercises, and major events	Emergency Managers, Agency Heads, SIEC when created	Ongoing
		7.2 Ensure public safety dispatching centers are included in planning, exercises, and major events	Emergency Managers, Agency Heads, SIEC when created	Ongoing



#	Goals	Initiatives	Owners	Timelines
		7.3 Encourage interoperable resources to be used for routine events and exercises to institutionalize use daily	Emergency Managers, Agency Heads, SIEC when created	Ongoing
		7.4 Educate command and executive personnel on the value of interoperable communications	Emergency Managers, SIEC when created	Ongoing
		7.5 Train response personnel on the use of interoperable communications	SIEC Training and Exercises Working Group Once Created	Ongoing
8.	Develop outreach programs tailored to different audiences to promote and sustain interoperable communications ecosystem including LMR, NG9-1-1, broadband, and Alerts and Warnings	8.1 Remind stakeholders of the Priority Programing Guide	SWIC, SIEC when created, AZDHS	August 2020; Ongoing as needed
8.2 Promote existing Arizona Interagency Radio System (AIRS) training materials (e.g., video, CD, publication)		SWIC, SIEC when created	December 2020; Ongoing as needed	
8.3 Identify and assemble an outreach working group comprised of subject matter experts		SIEC when created	March 2020	
8.4 Educate elected officials on the interoperable communications ecosystem including LMR, NG9-1-1, broadband, and Alerts and Warnings		SCIP Working Group, SIEC when created	March 2022; Ongoing	
9.	Enhance cybersecurity capabilities to secure communications systems within Arizona	9.1 Identify notification protocols of cybersecurity incidents	SWIC, ADOA, SIEC when created	July 2020
9.2 Share best practices and information through the SIEC		SIEC when created	Ongoing	
10.	Identify or create new sustainable funding sources for interoperability and capitalize on coordinated efforts	10.1 Explore Federal funding and other available funding opportunities to expand and sustain interoperable technologies in the state	ADOA, AZDHS, DEMA, SIEC when created	Annually following the grant cycles
10.2 Engage national organizations and associations to solicit support		ADOA, AZDHS, DEMA, SIEC when created	Ongoing	



#	Goals	Initiatives	Owners	Timelines
		10.3 Support sufficient level of tax to fund NG9-1-1 across the state	ADOA, SIEC when created	January 2020; Ongoing as needed



APPENDIX A: LIST OF ACRONYMS

AAR	After-Action Report
ABA	Arizona Broadcasters Association
AWS	Alerts and Warning System
AZDOHS	Arizona Department of Homeland Security
CISA	Cybersecurity and Infrastructure Security Agency
DHS	United States Department of Homeland Security
DEMA	Department Emergency Management Agency
DPS	Department of Public Safety
EAS	Emergency Alert System
ECD	Emergency Communications Division
FirstNet	First Responder Network Authority
GETS	Government Emergency Telecommunications Service
IP	Internet Protocol
LMR	Land Mobile Radio
LTE	Long-Term Evolution
NECP	National Emergency Communications Plan
NG9-1-1	Next Generation 9-1-1
NGA	National Governors Association
NPSBN	National Public Safety Broadband Network
NWS	National Weather Service
P25	Project 25
PSAP	Public Safety Answering Point
SCIP	Statewide Communication Interoperability Plan
SIEC	State Interoperability Executive Council
SWIC	Statewide Interoperability Coordinator
TA	Technical Assistance
TICP	Tactical Interoperable Communications Plan
WPS	Wireless Priority Services

