WISCONSIN
STATEWIDE COMMUNICATION INTEROPERABILITY PLAN

September 2022

Developed by the Interoperability Council with
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LETTER FROM THE INTEROPERABILITY COUNCIL CHAIR

Greetings,

As the Chair of the Wisconsin Interoperability Council (IC), I am pleased to present to you the 2022 Wisconsin Statewide Communication Interoperability Plan (SCIP). The SCIP represents the State's continued commitment to improving emergency communications interoperability and supporting the public safety practitioners throughout the state. In addition, this update meets the requirements of the current U.S. Department of Homeland Security grant guidelines.

Representatives from the IC and its subcommittees collaborated to update the SCIP with actionable and measurable goals and objectives that have champions identified to ensure completion. These goals and objectives focus on Governance, Technology and Cybersecurity, and Funding. They are designed to support our state in planning for new technologies and navigating the ever-changing emergency communications landscape. They also incorporate the state interoperability markers which describe Wisconsin's level of interoperability maturity by measuring progress against 25 markers.

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 the SCIP and become a nationwide model for statewide interoperability.

Sincerely,

Matt Joski

Sheriff Matt Joski
Chair
Wisconsin Interoperability Council

INTRODUCTION

The SCIP is a three-year strategic planning document that contains the following components:

- **Introduction** – Provides the context necessary to understand what the SCIP is and how it was developed. It also provides an overview of the current emergency communications landscape.
- **Vision and Mission** – Articulates the IC's vision and mission for improving emergency and public safety communications interoperability over the next three years.
- **Governance** – Describes the current governance mechanisms for communications interoperability within Wisconsin as well as successes, challenges, and priorities for improving them. The SCIP is a guiding document and does not create any authority or direction over any state or local systems or agencies.
- **Technology and Cybersecurity** – Outlines public safety technology and operations needed to maintain and enhance interoperability across the emergency communications ecosystem.
- **Funding** – Describes the funding sources and allocations that support interoperable communications capabilities within Wisconsin along with methods and strategies for funding sustainment and enhancement to meet long-term goals.
- **Implementation Plan** – Describes Wisconsin's plan to implement, maintain, and update the SCIP to enable continued evolution of and progress toward the State's interoperability goals and SAFECOM/NSWIC State Interoperability Markers.

Interoperability and Emergency Communications Overview

The Emergency Communications Ecosystem consists of many inter-related components and functions, including communications for incident response operations, notifications, alerts and warnings, requests for assistance and reporting, and public information exchange. The primary functions are depicted in the 2019 National Emergency Communications Plan.[1]

The Interoperability Continuum, developed by the Department of Homeland Security's SAFECOM program and shown in Figure 1, serves as a framework to address challenges and continue improving operable/interoperable and public safety communications.[2] It is designed to assist public safety agencies and policy makers with planning and implementing interoperability solutions for communications across technologies.

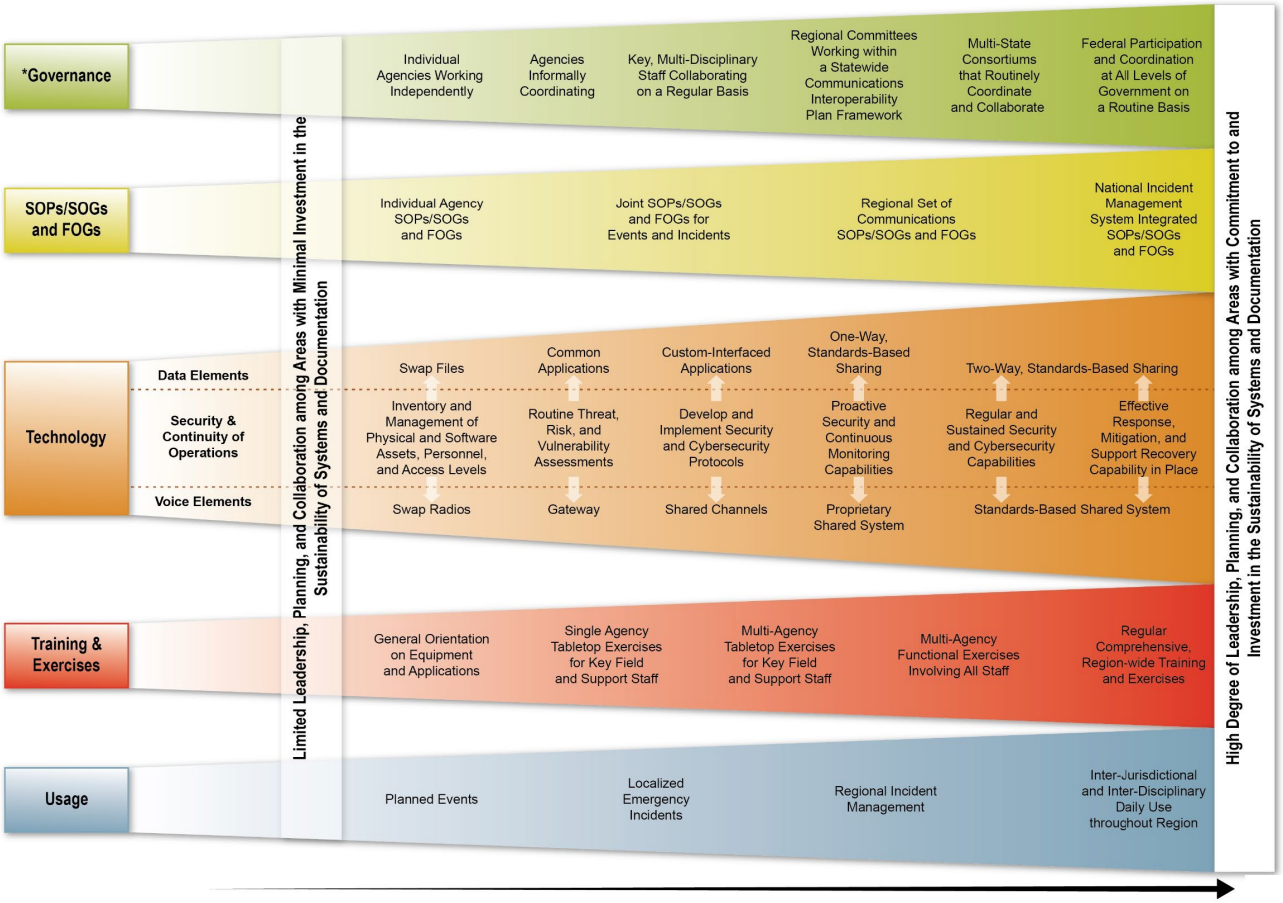

Figure 1: Interoperability Continuum

Interoperability is the ability of emergency response providers and relevant government officials to communicate across jurisdictions, disciplines, and levels of government as needed and as authorized. Reliable, timely communications among public safety responders and between public safety agencies and citizens are critical to effectively carry out public safety missions, and in many cases, saving lives.

[1] 2019 National Emergency Communications Plan
[2] Interoperability Continuum Brochure

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

VISION AND MISSION

This section describes the Interoperability Council's vision and mission for improving emergency and public safety communications interoperability:

IC Vision:

To achieve and advance seamless statewide public safety interoperable communications through the support and participation of Federal, State, tribal, local, public, and private organizations.

IC Mission:

To promote and achieve interoperable communications through the development and implementation of standards and best practices, conducting ongoing training and exercises, supporting existing technology, exploring, and adapting new technologies, and pursuing and securing adequate funding, while integrating all disciplines and jurisdictions.

GOVERNANCE

The Interoperability Council (IC) is Wisconsin's interoperable communications governing body, and contains four subcommittees: 9-1-1, Land Mobile Radio (LMR), Public Safety Broadband (PSB), and the Wisconsin Interoperable System for Communications (WISCOM). Both the IC and the 9-1-1 Subcommittee are statutorily created, and members are appointed by the Governor. Under Wis. Stats. §323.29, the IC is responsible for advising the Department of Military Affairs on various topics related to statewide public safety interoperable communications systems. The IC and its subcommittees recently completed a refresh of their charter and bylaws in 2021 to refine the responsibilities of each group.

The IC does not include alerts and warnings within the scope of its governance. However, guidance in these areas is provided by Wisconsin Emergency Management (WEM). WEM is responsible for administering the Federal Emergency Management Agency (FEMA) Integrated Public Alert Warning System (IPAWS) in Wisconsin and has established a Statewide IPAWS Work Group to advise WEM, counties, and tribes to better serve customers who use the IPAWS system. The duties of the work group are to act as a forum for collaborating on new ideas in notification and developing training

plans, to act as a resource for agencies considering becoming alert originators, to write after-action reviews of IPAWS incidents, and to be a source of consistent information for users across the state.

Wisconsin's Homeland Security Council (HSC) is a 16-member, non-statutory council responsible for advising the governor on homeland security issues, coordinating state and local threat prevention and response efforts, and producing periodic reports on the state of homeland security in Wisconsin. The governor appoints council members, and the chair of the Council is the Adjutant General, who also serves as the governor's homeland security advisor. The Council has also created work groups and subcommittees that meet in between Council meetings and focus on specific strategic goals.

Cybersecurity is an area that is important to the work being conducted by both the IC and the HSC, and there is a need for increased collaboration between the committees to better understand the roles and responsibilities of each group.

The Wisconsin Statewide Interoperability Coordinator (SWIC) and the Deputy SWIC reside within the Office of Emergency Communications (OEC). Responsibilities of the SWIC include[3]:

- Overseeing the daily operation of the state's interoperability efforts
- Coordinating interoperability and communications projects
- Maintaining governance structures
- Assembling working groups to develop and implement key initiatives
- Updating and implementing the SCIP

Wisconsin's governance structure is depicted in Figure 2.

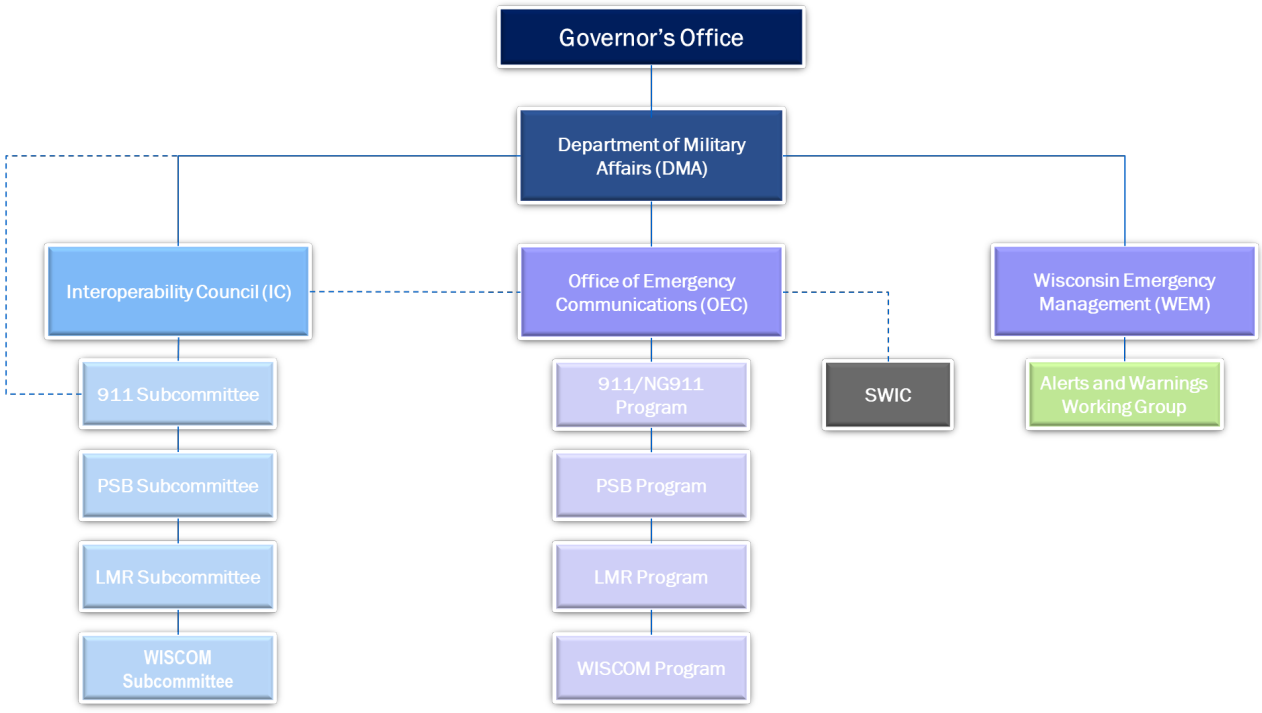

Figure 2: Wisconsin Governance Structure

[3] https://www.cisa.gov/statewide-interoperability-coordinators#

During the 2022 SCIP Workshop, participants frequently discussed the need for greater engagement by the IC and subcommittee members, and increased outreach by the IC and subcommittees to the rest of the emergency communications stakeholders in Wisconsin.

The following table outlines goals and objectives related to Governance:

Governance	
Goal	**Objectives**
1. Increase engagement, ownership, and outreach of the IC and its subcommittees	1.1 Create and disseminate a consistent messaging and appearance across all IC subcommittees on the IC vision/mission, responsibilities, and active and planned projects
	1.2 Develop and disseminate templates, talking points, and best practices for IC communications using consistent branding
	1.3 Position IC members as spokespeople of the IC to various stakeholders
	1.4 Host regional roadshow of the IC and its subcommittees • Have consistent IC presence at each association meeting/conference
2. Establish onboarding process for new IC and subcommittee members	2.1 Create onboarding package for new members of the IC and its subcommittees
	2.2 Align new IC and subcommittee members with current members for mentorship
	2.3 Align onboarding process with subcommittee member appointment
3. Increase COOP planning for PSAPs	3.1 Support development of a continuity of operations (COOP) plan template for PSAPs • Include alternate routing agreements in COOP plan template
	3.2 Host tabletop exercises for PSAPs on usage of COOP plans

TECHNOLOGY AND CYBERSECURITY

Land Mobile Radio

WISCOM

WISCOM is Wisconsin's statewide interoperable public safety trunked land mobile radio communications system. It is a Very High Frequency (VHF) Project 25 (P25) Phase I digital radio system that allows for agencies at all levels of government to communicate statewide during emergency situations. WISCOM currently supports over 44,000 subscriber radios with 140 sites across the state. While some local entities utilize WISCOM for daily use and have made individual enhancements for additional portable coverage, most entities in the state have retained their local or regional radio systems and use WISCOM as a means for interoperability. WISCOM also connects to other local and state networks to further enhance interoperability.

At the time this SCIP was being drafted, the State was engaged in a procurement process to replace the existing VHF P25 Phase I WISCOM system with a 700/800-Megahertz (MHz) P25 Phase II

WISCOM system. The primary goals of the new system are to meet the needs of both interoperable and daily users by providing increased coverage, increased capacity, interconnection with disparate systems, 4G/5G LTE integration, and infrastructure lifecycle management.

Additional Statewide Interoperability Resources

In addition to WISCOM, the State of Wisconsin maintains a comprehensive interoperability channel plan utilizing conventional channels in the VHF, 700 MHz, and 800 MHz bands to support communications for all public safety disciplines. Licenses are centrally managed for itinerant mobile and portable use throughout the state, while counties and other local agencies wishing to deploy base stations or stationary repeaters may obtain their own coordinated licenses for these channels with concurrence from the State. Other local stand-alone systems across the state utilize VHF, UHF, 700 MHz, and 800 MHz spectrum, and these systems may be linked to WISCOM or other conventional interoperability channels using analog and digital gateways. Other emerging technologies, such as push-to-talk over cellular applications, are also able to connect to these interoperability resources with concurrence from the State.

Public Safety Broadband

The State and the PSB Subcommittee of the IC are both carrier-neutral and provide information to stakeholders regarding the PSB offerings of each carrier. Agencies across the state currently use a variety of priority and preemption services from different broadband vendors. There are many different Push-to-Talk (PTT) applications which can be used on each network which has made interoperability between them difficult. Vendor information can also be dense and difficult to understand during an emergency. The PSB Subcommittee serves as the clearing house for public safety broadband solutions from various carriers, acts as a resource to users when questions arise, and makes recommendations for best practices and improving interoperability.

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

The current state of 9-1-1 in Wisconsin is very decentralized due to the home rule nature of the state. There are 122 PSAPs in the state that handle approximately 3 million 9-1-1 calls annually. The provisioning of 9-1-1 services is currently administered at the local level, with each PSAP operating under the direction of county or municipal authorities and with minimal State oversight. With the transition to NG9-1-1, the State and 911 Subcommittee will be able to provide more direction and ensure there is increased interoperability.

The 9-1-1 Subcommittee is statutorily responsible for advising the Department of Military Affairs (DMA) on various tasks related to the statewide efforts to transition to NG9-1-1, including updating the NG9-1-1 Strategic Plan which was first published in May 2017 and updated in 2020.

DMA is statutorily required to contract for the network needed to implement NG9-1-1, to distribute grants to PSAPs, and to oversee GIS in relation to NG9-1-1. In 2021, DMA contracted with AT&T to provide a statewide Emergency Services Internet Protocol Network (ESInet) and NextGen Core Services (NGCS).

Since there is no requirement for PSAPs to join the statewide ESInet provided by AT&T, counties and municipalities are free to build their own or join other ESInets. There are currently two other ESInets functional in the state. All ESInets will be required to interconnect to provide full PSAP interoperability in NG9-1-1. To ensure PSAP interoperability and a common vision of 9-1-1 services

statewide, additional updates to Wisconsin's NG9-1-1 Strategic Plan will be necessary as Wisconsin PSAPs continue to transition to NG9-1-1 services.

Alerts and Warnings

Wisconsin Emergency Management (WEM) is responsible for administering the Federal Emergency Management Agency (FEMA) Integrated Public Alert Warning System (IPAWS) and Wireless Emergency Alert (WEA) systems through its Warning and Communications Program. The program works with a variety of federal, state, and local government agencies, volunteer groups and private industry in providing emergency communications in Wisconsin regardless of the type of disaster or emergency. Approximately 30 Wisconsin counties participate in the IPAWS program.

There is a need for increased cybersecurity protections for Alerts and Warnings systems including IPAWS, WEA, and other emergency broadcast systems.

Cybersecurity for Public Safety Technology

The Wisconsin Division of Enterprise Technology's (DET) Bureau of Security is responsible for all aspects of cybersecurity in the State network. The Wisconsin Homeland Security Council (HSC) has the Wisconsin Cyber Strategy Planning Working Group (WCSPWG), and the State Chief Information Security Officer (CISO) coordinates public and private resources to promote cybersecurity and respond to cybersecurity incidents. The Bureau of Security, along with the Department of Military Affairs, manage volunteer-based Cyber Response Teams (CRTs) that strive for a safer, stronger environment for users by responding to major incidents, analyzing threats, and exchanging critical cybersecurity information with trusted partners. The State's multiple cybersecurity resources assist local governments, tribal government, public academic institutions, and critical sectors in the entire spectrum of cybersecurity, including assisting with prevention, protection, mitigation, response to, and recovery from cyber events.

To continue to improve Wisconsin's cybersecurity posture, the IC looks to assist its stakeholders in accessing and sharing information about cybersecurity as it relates to the emergency communications ecosystem.

Technology and cybersecurity goals and objectives include the following:

Technology and Cybersecurity	
Goal	**Objectives**
4. Increase awareness of cybersecurity resources and threat assessments	4.1 Complete CISA Cybersecurity Awareness Webinar TA and engage CISA on other cyber resources
	4.2 Establish and maintain relationship between the IC and the HSC WCSPWG and assist in any planning, education, and cyber threat assessment efforts within the public safety community in Wisconsin (risk identification) • Report out at 3 IC meetings a year
	4.3 Request CISA and/or other cybersecurity resources to perform cybersecurity assessments for PSAPs
5. Increase education on emergency communications technologies and	5.1 Identify subject matter experts (SMEs) to provide education on technologies in the emergency communications ecosystem

Goal	Objectives
cybersecurity for IC members and its subcommittees	5.2 Incorporate regular educational presentations on emergency communications technologies to the IC and its subcommittees during IC meetings
6. Train Communications Unit personnel	6.1 Develop a pipeline to maintain the lifecycle of the COMU personnel in Wisconsin
7. Support transition of users to the next generation of WISCOM	7.1 Create radio purchasing recommendations and develop stakeholder education for decision makers and vendors on subscriber unit replacements
	7.2 Assist DMA with identifying, configuring, and executing future grant programs for WISCOM

FUNDING

The IC does not have direct control over funding but looks to increase stakeholder awareness on funding streams and grant opportunities at all levels of government. Funding priorities include purchasing radios, and annual funding for WISCOM, NG9-1-1, IPAWS subscriptions, and training and exercises.

Funding goals and objectives include the following:

Funding	
Goal	**Objectives**
8. Increase stakeholder awareness of funding streams and grant opportunities	8.1 Complete a CISA Grants Webinar TA
	8.2 Educate stakeholders on the history and status of the police and fire protection fee
	8.3 Compile and provide white paper on emergency interoperable communications funding needs to legislators
9. Establish lifecycle funding plan for WISCOM, ESInet, and statewide IPAWS participation	9.1 Develop WISCOM, ESInet, and statewide IPAWS participation funding transition and sustainability plan

IMPLEMENTATION PLAN

Each goal and its associated objectives have a timeline with a target completion date, and one or more owners who will be responsible for overseeing and coordinating its completion. Accomplishing goals and objectives will require the support and cooperation of numerous individuals, groups, or agencies; accordingly, these goals and objectives will be added as formal agenda items for review during regular governance body meetings. It is expected that any objectives assigned to a subcommittee would also route through the IC. The State and IC will review and update the SCIP again in 2025, with the planning starting in 2024.

The Cybersecurity and Infrastructure Security Agency's (CISA) Interoperable Communications Technical Assistance Program (ICTAP) has a catalog[4] of technical assistance available to assist with the implementation of the SCIP. Technical assistance requests are to be coordinated through the SWIC. Based on the discussions during the SCIP Workshop, CISA recommends the following TAs to support Wisconsin's SCIP goals:

- Grant Funding for Emergency Communications
- 9-1-1/PSAP Cybersecurity Awareness Webinar
- 9-1-1/PSAP Cybersecurity Assessment
- Communications Unit Training Courses

Wisconsin's implementation plan is shown in the table below.

Goals	Objectives	Owners	Completion Date
1. Increase engagement, ownership, and outreach of the IC and its subcommittees	1.1 Create and disseminate a consistent messaging and appearance across all IC subcommittees on the IC vision/mission, responsibilities, and active and planned projects	IC and OEC to assist with creation. Subcommittee Chairs to disseminate	June 2023
	1.2 Develop and disseminate templates, talking points, and best practices for IC communications using consistent branding	Subcommittees to recommend product to IC	June 2023
	1.3 Position IC members as spokespeople of the IC to various stakeholders	IC	December 2022
	1.4 Host regional roadshow of the IC and its subcommittees • Have consistent IC presence at each association meeting/conference	IC, each subcommittee Chair	December 2023
2. Establish onboarding process for new IC and subcommittee members	2.1 Create onboarding package for new members of the IC and its subcommittees	IC and OEC to assist	June 2023

[4] Emergency Communications Technical Assistance Planning Guide

Goals	Objectives	Owners	Completion Date
	2.2 Align new IC and subcommittee members with current members for mentorship	IC and each subcommittee Chair	
	2.3 Align onboarding process with subcommittee member appointment	OEC and each subcommittee Chair	
3. Increase COOP planning for PSAPs	3.1 Support development of COOP plan template for PSAPs • Include alternate routing agreements in COOP plan template	9-1-1 Subcommittee, OEC	March 2023
	3.2 Host tabletop exercises for PSAPs on usage of COOP plans		December 2023
4. Increase awareness of cybersecurity resources and threat assessments	4.1 Complete CISA Cybersecurity Awareness Webinar TA and engage CISA on other cyber resources	IC, SWIC	April 2023
	4.2 Establish and maintain relationship between the IC and the HSC WCSPWG and assist in any planning, education, and cyber threat assessment efforts within the public safety community in Wisconsin (risk identification) • Report out at 3 IC meetings a year	IC	Ongoing
	4.3 Request CISA and/or other cybersecurity resources to perform cybersecurity assessments for PSAPs	IC	July 2024
5. Increase education on emergency communications technologies and cybersecurity for IC members and its subcommittees	5.1 Identify SMEs to provide education on technologies in the emergency communications ecosystem	IC, OEC	Ongoing
	5.2 Incorporate regular educational presentations on emergency communications technologies to the IC and its subcommittees during IC meetings	IC	
6. Train Communications Unit personnel	6.1 Develop a pipeline to maintain the lifecycle of the COMU personnel in Wisconsin	LMR Subcommittee, COMU Workgroup	Ongoing
7. Support transition of users to the next generation of WISCOM	7.1 Create radio purchasing recommendations and develop stakeholder education for decision makers and vendors on subscriber unit replacements	WISCOM Subcommittee	Ongoing, dependent on RFP
	7.2 Assist DMA with identifying, configuring, and executing future grant programs for WISCOM	WISCOM Subcommittee	
8. Increase stakeholder awareness of funding streams and grant opportunities	8.1 Complete a CISA Grants Webinar TA	IC, OEC	April 2023
	8.2 Educate stakeholders on the history and status of the police and fire protection fee	IC	September 2022

Goals	Objectives	Owners	Completion Date
	8.3 Compile and provide white paper on emergency interoperable communications funding needs to legislators	IC	September 2022
9. Establish lifecycle funding plan for WISCOM, ESInet, and statewide IPAWS participation	9.1 Develop WISCOM, ESInet, and statewide IPAWS participation funding transition and sustainability plan	WISCOM Subcommittee, 9-1-1 Subcommittee, WEM, OEC	Ongoing

APPENDIX A: STATE MARKERS

In 2019, CISA supported states and territories in establishing an initial picture of interoperability nationwide by measuring progress against 25 markers. These markers describe a state or territory's level of interoperability maturity. Below is Wisconsin's assessment of their progress against the markers as of July 2022.

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
1	**State-level governing body established (e.g., SIEC, SIGB).** Governance framework is in place to sustain all emergency communications	Governing body does not exist, or exists and role has not been formalized by legislative or executive actions	Governing body role established through an executive order	Governing body role established through a state law
2	**SIGB/SIEC participation.** Statewide governance body is comprised of members who represent all components of the emergency communications ecosystem.	Initial (1-2) Governance body participation includes: ☐ Communications Champion/SWIC ☐ LMR ☐ Broadband/LTE ☐ 9-1-1 ☐ Alerts, Warnings and Notifications	Defined (3-4) Governance body participation includes: ☒ Communications Champion/SWIC ☒ LMR ☒ Broadband/LTE ☒ 9-1-1 ☐ Alerts, Warnings and Notifications	Optimized (5) Governance body participation includes: ☐ Communications Champion/SWIC ☐ LMR ☐ Broadband/LTE ☐ 9-1-1 ☐ Alerts, Warnings and Notifications
3	**SWIC established.** Full-time SWIC is in place to promote broad and sustained participation in emergency communications.	SWIC does not exist	Full-time SWIC with collateral duties	Full-time SWIC established through executive order or state law
4	**SWIC Duty Percentage.** SWIC spends 100% of time on SWIC-focused job duties	SWIC spends >1, <50% of time on SWIC-focused job duties	SWIC spends >50, <90% of time on SWIC-focused job duties	SWIC spends >90% of time on SWIC-focused job duties
5	**SCIP refresh.** SCIP is a living document that continues to be executed in a timely manner. Updated SCIPs are reviewed and approved by SIGB/SIEC.	No SCIP OR SCIP older than 3 years	SCIP updated within last 2 years	SCIP updated in last 2 years and progress made on >50% of goals

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
6	**SCIP strategic goal percentage.** SCIP goals are primarily strategic to improve long term emergency communications ecosystem (LMR, LTE, 9-1-1, A&W) and future technology transitions (5G, IoT, UAS, etc.). (Strategic and non-strategic goals are completely different; strategy -- path from here to the destination; it is unlike tactics which you can "touch"; cannot "touch" strategy)	<50% are strategic goals in SCIP	>50%<90% are strategic goals in SCIP	>90% are strategic goals in SCIP
7	**Integrated emergency communication grant coordination.** Designed to ensure state/territory is tracking and optimizing grant proposals, and there is strategic visibility how grant money is being spent.	No explicit approach or only informal emergency communications grant coordination between localities, agencies, SAA and/or the SWIC within a state/territory	SWIC and/or SIGB provides guidance to agencies and localities for emergency communications grant funding but does not review proposals or make recommendations	SWIC and/or SIGB provides guidance to agencies and localities for emergency communications grant funding and reviews grant proposals for alignment with the SCIP. SWIC and/or SIGB provides recommendations to the SAA
8	**Communications Unit process.** Communications Unit process present in state/territory to facilitate emergency communications capabilities. Check the boxes of which Communications positions are currently covered within your process: ☒ COML ☒ COMT ☐ ITSL ☒ RADO ☒ INCM ☒ INTD ☒ AUXCOM ☐ TERT	No Communications Unit process at present	Communications Unit process planned or designed (but not implemented)	Communications Unit process implemented and active

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
9	**Interagency communication.** Established and applied interagency communications policies, procedures, and guidelines.	Some interoperable communications SOPs/SOGs exist within the area and steps have been taken to institute these interoperability procedures among some agencies	Interoperable communications SOPs/SOGs are formalized and in use by agencies within the area. Despite minor issues, SOPs/SOGs are successfully used during responses and/or exercises	Interoperable communications SOPs/SOGs within the area are formalized and regularly reviewed. Additionally, NIMS procedures are well established among agencies and disciplines. All needed procedures are effectively utilized during responses and/or exercises.
10	**TICP (or equivalent) developed.** Tactical Interoperable Communications Plans (TICPs) established and periodically updated to include all public safety communications systems available	Regional or statewide TICP in place	Statewide or Regional TICP(s) updated within past 2-5 years	Statewide or Regional TICP(s) updated within past 2 years
11	**Field Operations Guides (FOGs) developed.** FOGs established for a state or territory and periodically updated to include all public safety communications systems available	Regional or statewide FOG in place	Statewide or Regional FOG(s) updated within past 2-5 years	Statewide or Regional FOG(s) updated within past 2 years
12	**Alerts & Warnings.** State or Territory has Implemented an effective A&W program to include Policy, Procedures and Protocol measured through the following characteristics: (1) Effective documentation process to inform and control message origination and distribution (2) Coordination of alerting plans and procedures with neighboring jurisdictions (3) Operators and alert originators receive periodic training (4) Message origination, distribution, and correction procedures in place	<49% of originating authorities have all of the four A&W characteristics	>50%<74% of originating authorities have all of the four A&W characteristics	>75%<100% of originating authorities have all of the four A&W characteristics

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
13	**Radio programming.** Radios programmed for National/Federal, SLTT interoperability channels and channel nomenclature consistency across a state/territory.	<49% of radios are programed for interoperability and consistency	>50%<74% of radios are programed for interoperability and consistency	>75%<100% of radios are programed for interoperability and consistency
14	**Cybersecurity Assessment Awareness.** Cybersecurity assessment awareness. (Public safety communications networks are defined as covering: LMR, LTE, 9-1-1, and A&W)	Public safety communications network owners are aware of cybersecurity assessment availability and value (check yes or no for each option) ☐ LMR ☒ LTE ☐ 9-1-1/CAD ☐ A&W	Initial plus, conducted assessment, conducted risk assessment. (Check yes or no for each option) ☐ LMR ☐ LTE ☐ 9-1-1/CAD ☐ A&W	Defined plus, Availability of Cyber Incident Response Plan (check yes or no for each option) ☐ LMR ☐ LTE ☐ 9-1-1/CAD ☐ A&W
15	**NG9-1-1 implementation.** NG9-1-1 implementation underway to serve state/territory population.	Working to establish NG9-1-1 governance through state/territorial plan. • Developing GIS to be able to support NG9-1-1 call routing. • Planning or implementing ESInet and Next Generation Core Services (NGCS). • Planning to or have updated PSAP equipment to handle basic NG9-1-1 service offerings.	More than 75% of PSAPs and Population Served have: • NG9-1-1 governance established through state/territorial plan. • GIS developed and able to support NG9-1-1 call routing. • Planning or implementing ESInet and Next Generation Core Services (NGCS). • PSAP equipment updated to handle basic NG9-1-1 service offerings.	More than 90% of PSAPs and Population Served have: • NG9-1-1 governance established through state/territorial plan. • GIS developed and supporting NG9-1-1 call routing. • Operational Emergency Services IP Network (ESInet)/Next Generation Core Services (NGCS). • PSAP equipment updated and handling basic NG9-1-1 service offerings.
16	**Data operability/interoperability.** Ability of agencies within a region to exchange data on demand, and needed, and as authorized. Examples of systems would be: CAD to CAD, Chat, GIS, Critical Incident Management Tool, Web EOC	Agencies are able to share data only by email. Systems are not touching or talking.	Systems are able to touch but with limited capabilities. One-way information sharing.	Full system to system integration. Able to fully consume and manipulate data.

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
17	**Future Technology/Organizational Learning.** SIEC/SIGB is tracking, evaluating, implementing future technology (checklist)	☒ LMR to LTE Integration ☒ 5G ☐ IoT (cameras) ☒ UAV (Smart Vehicles) ☒ UAS (Drones) ☒ Body Cameras ☐ Public Alerting Software ☐ Sensors ☐ Autonomous Vehicles ☒ MCPTT Apps	☐ Wearables ☐ Machine Learning/Artificial Intelligence/Analytics ☒ Geolocation ☒ GIS ☒ Situational Awareness Apps-common operating picture applications (i.e., Force Tracking, Chat Applications, Common Operations Applications)	☐ HetNets/Mesh Networks/Software Defined Networks ☒ Acoustic Signaling (Shot Spotter) ☒ ESInet ☐ 'The Next Narrowbanding' ☐ Smart Cities
18	**Communications Exercise objectives.** Specific emergency communications objectives are incorporated into applicable exercises Federal/state / territory-wide	Regular engagement with State Training and Exercise coordinators	Promote addition of emergency communications objectives in state/county/regional level exercises (target Emergency Management community). Including providing tools, templates, etc.	Initial and Defined plus mechanism in place to incorporate and measure communications objectives into state/county/regional level exercises
19	**Trained Communications Unit responders.** Communications Unit personnel are listed in a tracking database (e.g., NQS One Responder, CASM, etc.) and available for assignment/response.	<49% of public safety agencies within a state/territory have access to Communications Unit personnel who are listed in a tracking database and available for assignment/response	>50%<74% of public safety agencies within a state/territory have access to Communications Unit personnel who are listed in a tracking database and available for assignment/response	>75%<100% of public safety agencies within a state/territory have access to Communications Unit personnel who are listed in a tracking database and available for assignment/response
20	**Communications Usage Best Practices/Lessons Learned.** Capability exists within jurisdiction to share best practices/lessons learned (positive and/or negative) across all lanes of the Interoperability Continuum related to all components of the emergency communications ecosystem	Best practices/lessons learned intake mechanism established. Create Communications AAR template to collect best practices	Initial plus review mechanism established	Defined plus distribution mechanism established

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
21	**Wireless Priority Service (WPS) subscription.** WPS penetration across state/territory compared to maximum potential	<9% subscription rate of potentially eligible participants who signed up WPS across a state/territory	>10%<49% subscription rate of potentially eligible participants who signed up for WPS a state/territory	>50%<100% subscription rate of potentially eligible participants who signed up for WPS across a state/territory
22	**Outreach.** Outreach mechanisms in place to share information across state	SWIC electronic communication (e.g., SWIC email, newsletter, social media, etc.) distributed to relevant stakeholders on regular basis	Initial plus web presence containing information about emergency communications interoperability, SCIP, trainings, etc.	Defined plus in-person/webinar conference/meeting attendance strategy and resources to execute
23	**Sustainment assessment.** Identify interoperable component system sustainment needs;(e.g., communications infrastructure, equipment, programs, management) that need sustainment funding. (Component systems are emergency communications elements that are necessary to enable communications, whether owned or leased - state systems only)	< 49% of component systems assessed to identify sustainment needs	>50%<74% of component systems assessed to identify sustainment needs	>75%<100% of component systems assessed to identify sustainment needs
24	**Risk identification.** Identify risks for emergency communications components. (Component systems are emergency communications elements that are necessary to enable communications, whether owned or leased. Risk Identification and planning is in line with having a communications COOP Plan)	< 49% of component systems have risks assessed through a standard template for all technology components	>50%<74% of component systems have risks assessed through a standard template for all technology components	>75%<100% of component systems have risks assessed through a standard template for all technology components
25	**Cross Border / Interstate (State to State) Emergency Communications.** Established capabilities to enable emergency communications across all components of the ecosystem.	Initial: Little to no established: ☒ Governance ☒ SOPs/MOUs ☒ Technology ☒ Training/Exercises ☒ Usage	Defined: Documented/established across some lanes of the Continuum: ☐ Governance ☐ SOPs/MOUs ☐ Technology ☐ Training/Exercises ☐ Usage	Optimized: Documented/established across all lanes of the Continuum: ☐ Governance ☐ SOPs/MOUs ☐ Technology ☐ Training/Exercises ☐ Usage

APPENDIX B: ACRONYMS

Acronym	Definition
AAR	After-Action Report
AUXCOMM/AUXC	Auxiliary Emergency Communications
A&W	Alerts and Warnings
CASM	Communication Assets Survey and Mapping
CISA	Cybersecurity and Infrastructure Security Agency
COML	Communications Unit Leader
COMT	Communications Unit Technician
COMU	Communications Unit Program
COOP	Continuity of Operations Plan
CRT	Cyber Response Team
DHS	Department of Homeland Security
DMA	Department of Military Affairs
ECD	Emergency Communications Division
ESInet	Emergency Services Internal Protocol Network
FEMA	Federal Emergency Management Agency
FirstNet	First Responder Network Authority
FOG	Field Operations Guide
GETS	Government Emergency Telecommunications Service
GIS	Geospatial Information System
HSC	Homeland Security Council
HSGP	Homeland Security Grant Program
IC	Interoperability Council
ICTAP	Interoperable Communications Technical Assistance Program
INCM	Incident Communications Center Manager
INTD	Incident Tactical Dispatcher
IP	Internet Protocol
IPAWS	Integrated Public Alerts and Warnings System
ISSI	Inter-RF Subsystem Interface
IT	Information Technology
ITSL	Information Technology Service Unit Leader
LMR	Land Mobile Radio
MHz	Megahertz
MOU	Memorandum of Understanding
NECP	National Emergency Communications Plan
NG9-1-1	Next Generation 9-1-1
NGCS	Next Gen Core Services

Acronym	Definition
OEC	Office of Emergency Communications
PSAP	Public Safety Answering Point
PSB	Public Safety Broadband
PTS	Priority Telecommunication Services
PTT	Push-to-Talk
P25	Project 25
RADO	Radio Operator
SCIP	Statewide Communication Interoperability Plan
SME	Subject Matter Expert
SOP	Standard Operating Procedure
SWIC	Statewide Interoperability Coordinator
TA	Technical Assistance
TERT	Telecommunications Emergency Response Team
TICP	Tactical Interoperable Communications Plan
VHF	Very High Frequency
WCSPWG	Wisconsin Cyber Strategy Planning Working Group
WEA	Wireless Emergency Alert
WEM	Wisconsin Emergency Management
WISCOM	Wisconsin Interoperable System for Communications
WPS	Wireless Priority Service