WEST VIRGINIA
STATEWIDE COMMUNICATION INTEROPERABILITY PLAN

1 April 2024

Developed by the Statewide Interoperability Executive Committee (SIEC) with support from the Cybersecurity and Infrastructure Security Agency

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Opening Remarks

Greetings,

The West Virginia Statewide Interoperable Executive Committee (SIEC) is pleased to provide this Statewide Communications Interoperability Plan, better known as the SCIP for 2024. In the past few years, our world has lived through a global pandemic which has changed and reshaped many things in our lives, including the opportunity to update this plan. While the SCIP plan document itself has not been updated due to the pandemic, West Virginia has not stopped moving forward it is interoperability initiatives supporting public safety and the citizens of the State.

The 2024 West Virginia SCIP continues to build on the previous SCIP 2018. SCIP plans are designed as a multi-jurisdictional, multi-disciplinary stakeholder-driven guide that outlines goals and provides for achievable outcomes and includes short term (one year) to long term (three – five year) goals in driving the efforts of the SIEC as it works for West Virginia.

The SIEC faces complex challenges as we work to maintain what we have and continue to grow and expand. The everchanging ecosystem of technology, as well as funding limitations and threats are just some of the issues that face the SIEC and the State public safety agencies. With the continued work and support of the many local, state, and federal users of SIRN as well as the membership of the SIEC, West Virginia will succeed in meeting the goals outlined in this SCIP.

Sincerely,

G.E. McCabe

GE McCabe
West Virginia Statewide Interoperable Executive Committee
Chairman

INTRODUCTION

The SCIP is a one-to-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 West Virginia's vision and mission for improving emergency and public safety communications interoperability over the next one-to-three-years.
- **Governance** – Describes the current governance mechanisms for communications interoperability within West Virginia as well as successes, challenges, and priorities for improving it. 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 West Virginia along with methods and strategies for funding sustainment and enhancement to meet long-term goals.
- **Implementation Plan** – Describes West Virginia's plan to implement, maintain, and update the SCIP to enable continued evolution of and progress toward the state'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.[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.

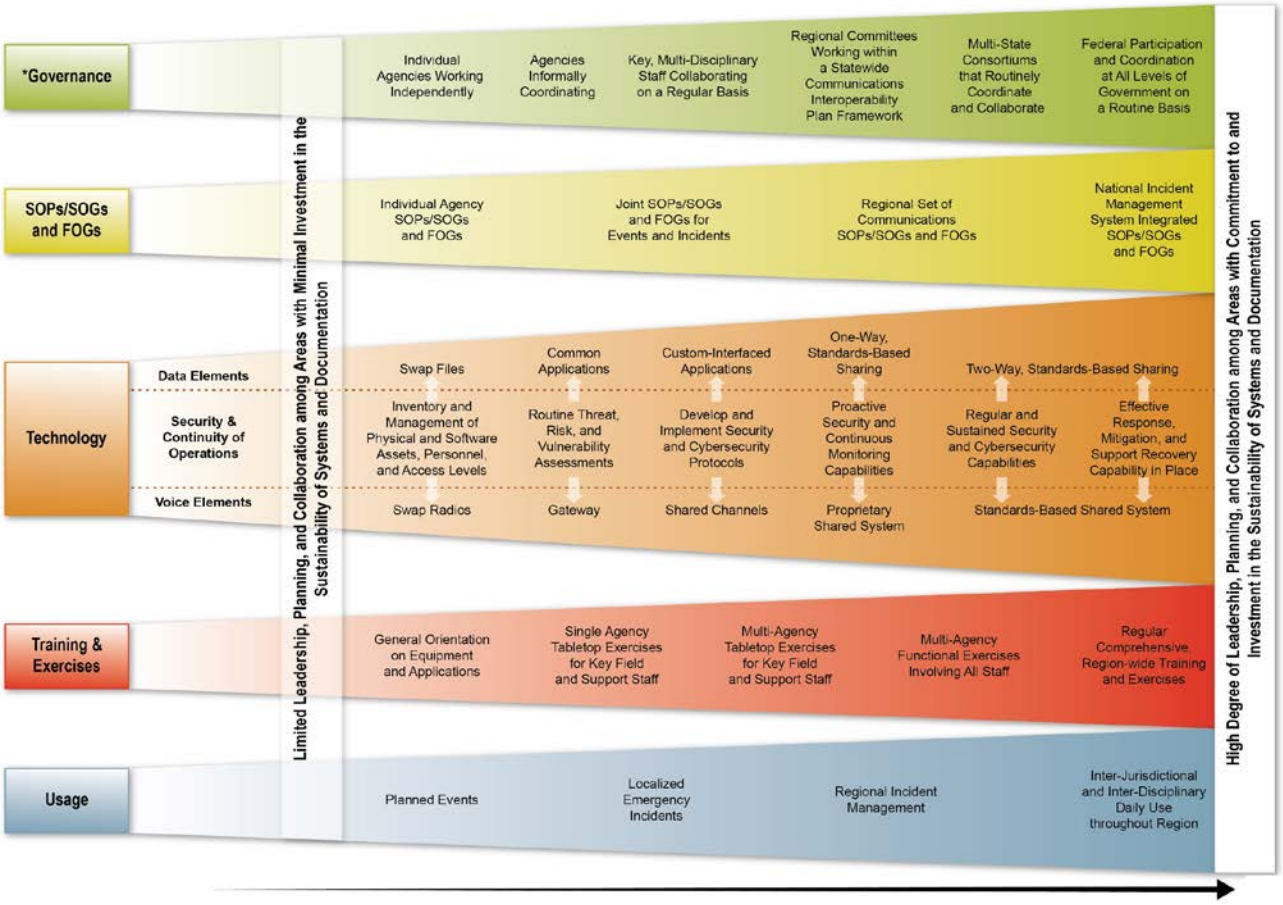

Figure 1: Interoperability Continuum

Interoperability and Emergency Communications Overview

Interoperability is the ability of emergency response providers and relevant government officials to communicate across jurisdictions, disciplines, technologies and levels of government as needed and as authorized. Reliable, timely communications among public safety responders and between 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) 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

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

responders receive, the tools they communicate with, and complexity of new and interdependent systems. Emerging 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 transition of public-safety answering points (PSAPs) to Next Generation 9-1-1 (NG9-1-1) technology that will enhance sharing of critical information in real-time using multimedia—such as pictures, video, and text — among citizens, PSAP operators, dispatch, and first responders. While potential benefits of NG9-1-1 are tremendous, implementation challenges remain. Necessary tasks to fully realize these benefits include interfacing disparate systems, developing training and standard operating procedures (SOPs) and ensuring information security.

VISION AND MISSION

West Virginia's vision and mission for improving emergency and public safety communications interoperability:

Vision:

To continue to enhance, sustain, maintain, coordinate resources, and improve statewide public safety communications interoperability. Continue to establish and develop policies and guidelines, and identify technology and resiliency standards affording the citizens of West Virginia safety and enhanced response thereby protecting life, limb, and property

Mission:

To maintain, enhance and facilitate resilient interoperable communications for Public Safety in West Virginia

GOVERNANCE

The primary governance body associated with interoperable and emergency communications in West Virginia is the Statewide Interoperable Executive Committee (SIEC) which is codified through West Virginia State Code §15-14-5. Please see appendix C to learn more about the West Virgina SIEC and its members. The SIEC identifies new and developing technologies and standards as well as enhances the coordination of all available resources for public safety communications interoperability. The SIEC's standing committees (Technical, Planning, Policy & Procedures, Training/Education/Outreach, New & Emerging Technologies and Conference, along with the Cybersecurity Subcommittee) meet monthly to stay on top of interoperable communications needs within the state and region. The SIEC is the primary advisory group for the Statewide Interoperable Coordinator (SWIC) in the West Virginia Emergency Management Division. The SWIC provides recommendations to the West Virginia Director of Emergency Management who presents the information to the Governor to determine statewide priorities related to interoperable communications. Lastly, the Regional Interoperability Committees (RICs) assist with the governance and monitoring of the West Virginia Statewide Interoperable Radio Network (SIRN) implementation

and operation and assist in establishing goals for the improvement of the SIRN. The RIC's provide all members of the public safety community, from local to Federal levels, the ability to be part of the SIRN system to stay informed and included in the public safety communications ecosystem. The RIC's operate as part of the SIEC and are codified in the legislation.

West Virginia's emergency communications governance map is depicted in Figure 2.

Figure 2: West Virginia's Emergency Communications Governance Map

Governance goals and objectives include the following:

Governance	
Goals	**Objectives**
1. Develop and conduct training and support to continuously enhance and update statewide interoperability capabilities	1.1 Develop comprehensive training and exercise program to support the technologies of the emergency communications ecosystem
	1.2 Support training initiatives for West Virginia specifically developed training courses
	1.3 Implement interoperable communications component into non-communication exercises
	1.4 As a best practice AARs to be shared and reviewed by the SWIC to assist with corrective action planning

2. Identify and encourage the appropriate use of communications and communication resources to best engage in interoperability	2.1 Encourage and assist developing Tactical Interoperable Communications Plans (TICP's)
	2.2 Update and maintain a State Interoperable Field Operating Guide (FOG)
	2.3 Update and maintain data associated with the TICP, FOG and E-FOG
	2.4 Encourage the use of established Statewide and Regional Interoperable communications
	2.5 Encourage planning and support for the full life cycle of interoperable and emergency communications systems.
	2.6 Encourage training and exercising of the technologies in the emergency communications ecosystem
3. Identify, establish, and maintain bordering state interoperability	3.1 Identify interoperable communications partners and points of contacts from bordering states
	3.2 Identify bordering states technology capabilities for interoperability
	3.3 Invite key stakeholders to attend SIEC meetings and West Virginia Interoperability Conference
	3.4 Encourage cross border participation in communication exercises and trainings
4. Support the RICs in encouraging local participation from the entire interoperability ecosystem	4.1 Promote the importance of the RIC
	4.2 Promote participation as a best practice by local agencies and entities with the RICs
	4.3 Add Regional Interoperability Committee meeting notes to the SIEC meeting minutes
	4.4 Develop a social media presence

TECHNOLOGY AND CYBERSECURITY

LAND MOBILE RADIO

The West Virginia Statewide Interoperable Radio Network (SIRN) is a 450 megahertz (MHz) ultrahigh frequency (UHF), Project 25 (P25) digital trunked system. The SIRN enables Federal, State, and Local agencies to communicate with one another and provides interoperable communications for all public safety agencies in West Virginia on a shared radio network, as well as provides interoperable connectivity to its bordering States. The SIRN currently supports over 50,000 registered subscriber units with access to 109 RF voice radio sites. There are still legacy systems that exist and the owners and operators of those are encouraged to keep them for backup communications.

9-1-1

West Virginia is at the forefront of modernizing its emergency response infrastructure by transitioning to Next Generation 9-1-1 (NG9-1-1) and developing comprehensive plans and policies to support this transition. NG9-1-1 represents a significant leap forward in emergency response operations, enabling the state to harness the full potential of advanced technologies and solutions for emergency calling. Recognizing the importance of this transition, West Virginia initiated a crucial step by commissioning a study for NG9-1-1 in February 2019. The results of this study provided invaluable insights and

recommendations for the state's journey towards a Next Generation 9-1-1 system. This initiative underscores West Virginia's commitment to staying ahead of the curve in emergency response capabilities. Currently, West Virginia operates 51 primary Public Safety Answering Points (PSAPs), which serve as vital hubs for receiving and dispatching emergency calls. These PSAPs are integral in ensuring swift and efficient responses to various emergencies across the state. Approximately two-thirds of the state now have text-to-9-1-1 capabilities. This feature empowers individuals to send text messages to 9-1-1, which can be especially crucial in situations where voice communication is not possible or safe.

Broadband

FirstNet/AT&T, along with other major wireless carriers like Verizon, and T-Mobile, plays a crucial role in providing essential Public Safety broadband services across the state of West Virginia. These services are designed to cater to the specific needs of first responders, law enforcement agencies, emergency medical services, and other public safety organizations operating in the region. West Virginia recognizes the paramount importance of seamless communication and data exchange in emergency situations. To achieve this goal, the state has not only contracted with multiple carriers but also prioritizes interoperability. A desired outcome of an interoperability plan for West Virginia is to ensure that various public safety broadband applications can seamlessly work across different networks and devices, enabling more effective and coordinated responses during emergencies and critical incidents.

Alerts and Warnings

The need to notify and warn responders, elected officials, and the public is common to all hazards. A situation that requires warning the public can occur at any time. Warning time for each hazard may vary from sufficient warning time to no warning time at all. State, county, and local governments have developed several redundant notifying and warning systems (equipment and procedures). Major communications systems include the National Warning System (NAWAS), National Oceanic and Atmospheric Administration (NOAA) Weather Radio, Emergency Alert System (EAS), Wireless Emergency Alert (WEA) and the WV Statewide Interoperable Radio Network (SIRN), as well as various state and local radio and telephone-based systems, including pagers and the use of email through the internet. West Virginia also uses the Amber and Silver alert systems.

Cybersecurity

In West Virginia, cybersecurity is overseen by the West Virginia Office of Technology Cybersecurity Office, with the notable exceptions of the West Virginia State Police and the Statewide Interoperable Radio Network (SIRN). For SIRN, cybersecurity policies recommended and implemented by Motorola Solutions ensure the radio network's security. Cybersecurity assessments are conducted at the county level to enhance local defenses and preparedness. When a cybersecurity attack occurs, the state's resources are mobilized with the involvement of the State’s Watch Center, Fusion Center, and the Office of Technology, collectively working to mitigate and respond to the threat. Additionally, West Virginia is in the process of developing a comprehensive Emergency Response Plan to further bolster its cybersecurity posture and preparedness for potential cyber incidents.

Technology and cybersecurity goals and objectives include the following:

Technology and Cybersecurity	
Goals	**Objectives**
5. Enhance and coordinate interoperability across all technologies, including SIRN, broadband, Next Generation (NG) 9-1-1, Computer-Aided Dispatch (CAD) systems, and Geographic information system (GIS) mapping	5.1 Develop a SIRN coverage, capacity, and enhancement plan to include: a. Maintain SIRN to the always current software and hardware platform b. Expand access and availability to OTAP/OTAR c. Establish full IP data backhaul d. Outline alternative paths for IP data backhaul redundancy e. Develop cybersecurity plan f. Adequate personnel for SIRN support
	5.2 Coordinate with partners to enhance access and usage of Wireless Emergency Alerts
	5.3 Enhance broadband coverage, capacity, and utilization
	5.4 Support implementation of Next Generation 9-1-1
	5.5 Coordinate with partners to plan for the convergence of technologies
6. Strengthen the cybersecurity posture of the West Virginia Emergency Communications Ecosystem	6.1 Educate all users and stakeholders on cybersecurity best practices
	6.2 Maximize the use of available resources (i.e.: CISA, Multi-State Information Sharing and Analysis Center MS-ISAC, Cyber Assessments)
	6.3 Encourage utilization of available resources for enhanced cyber hygiene and cyber resiliency
	6.4 Encourage cyber incident reporting (Cyber incidents are to be reported by City and County through their County Emergency Managers to both WVEMD and the WV Fusion Center, who will notify the WV Office of Technology. State agencies are to report Cyber incidents to both WVEMD, the WV Office of Technology and the WV Fusion Center. The WV Office of Technology and/or the WVEMD will notify CISA of cyber incidents.)
	6.5 Cyber subcommittee should get information out and published
	6.6 Publish recommended security baselines and cybersecurity best practices
	6.7 Encourage participation in cybersecurity exercises

FUNDING

Achieving sustainable funding in the current fiscal climate is a priority for West Virginia. As State and Federal grant funding diminishes, States need to identify alternative funding sources to maintain and continue improving interoperable and emergency communications for voice and data systems. An increase in EMD's line-item budget is needed to have sustainable funding to cover SIRN Expenses.

In West Virginia, securing the necessary funding to ensure a seamless transition to P25 Phase 2 for all users has become a priority. This effort not only aims to enhance coverage across the state but also seeks to provide outreach and education opportunities for legislative and elected officials, fostering a deeper understanding of the importance of this critical upgrade. To propel the state further into the future, West Virginia stakeholders are determined to secure adequate funding for the transition to NG9-1-1 and support robust cybersecurity initiatives, all while maximizing the use of available grant funding opportunities. This commitment extends to conducting comprehensive cyber resiliency testing of the Statewide Interoperable Radio Network (SIRN) system and implementing and enforcing an acceptable use policy. Additionally, West Virginia recognizes the need for funding to stay ahead of the curve in adopting future technologies, ensuring fiber resiliency, and maintaining adequate funding for the state's strategic reserves. These steps collectively demonstrate West Virginia's dedication to a safer, more advanced, and resilient communication infrastructure.

Funding goals and objectives include the following:

Funding	
Goals	**Objectives**
7. Establish sustainable life cycle funding for the construction, operation, administration, and maintenance of SIRN as a line item in the State budget	7.1 Identify current expenditures for SIRN and responsible owners
	7.2 Enhance partnerships for sharing infrastructure expenses
	7.3 Need an increase in the EMD line-item budget for the construction, operation, administration, and maintenance of SIRN to maintain and enhance the level of interoperability in the State and to adequately plan for interoperability needs in the future
	7.4 Identify alternative funding sources to continue improving interoperable and emergency communications for voice and data systems
	7.5 Continued outreach and education of elected officials

IMPLEMENTATION PLAN

Each goal and its associated objectives have a timeline with a target completion date, and one or multiple owners that will be responsible for overseeing and coordinating its completion. Accomplishing goals and objectives will require the support and cooperation from numerous individuals, groups, or agencies, and will be added as formal agenda items for review during regular governance body meetings. The Cybersecurity and Infrastructure Security Agency's (CISA) Interoperable Communications Technical Assistance Program (ICTAP) has a catalog of technical assistance (TA) available to assist with the implementation of the SCIP. TA requests are to be coordinated through the Training/Education/Outreach Committee of the SIEC.

West Virginia's implementation plan is shown in the table below.

Goals	Objectives	Owners	Completion Dates
1. **Develop and conduct training and support to continuously enhance and update statewide interoperability capabilities**	1.1 Develop comprehensive training and exercise program to support the technologies of the emergency communications ecosystem	• State Training Officer • SWIC • SIEC • RICs	• Ongoing
	1.2 Support training initiatives for West Virginia specifically developed training courses		
	1.3 Implement interoperable communications component into non-communication exercises		
	1.4 As a best practice AARs to be shared and reviewed by the SWIC to assist with corrective action planning		
2. **Identify and encourage the appropriate use of communications and communication resources to best engage in interoperability**	2.1 Encourage and assist developing Tactical Interoperable Communications Plans (TICP's)	• First Responder Community • SIEC • RIC	• Ongoing
	2.2 Update and maintain a State Interoperable Field Operating Guide (FOG)		
	2.3 Update and maintain data associated with the TICP, FOG and E-FOG		
	2.4 Encourage the use of established Statewide and Regional Interoperable communications		
	2.5 Encourage planning and support for the full life cycle of interoperable and emergency communications systems.		
	2.6 Encourage training and exercising of the technologies in the emergency communications ecosystem		

3. Identify, establish and maintain bordering state interoperability	3.1 Identify interoperable communications partners and points of contacts from bordering states 3.2 Identify bordering state's technology capabilities for interoperability 3.3 Invite key stakeholders to attend SIEC meetings and West Virginia Interoperability Conference 3.4 Encourage cross border participation in communication exercises and trainings	• SWIC • SIEC • RIC • Local first responders • RECCWG	• 3.1, 3.2 October 2024 • 3.3 December 2023 • 3.4 Ongoing
4. Support the RICs in encouraging local participation from the entire interoperability ecosystem	4.1 Promote the importance of the RIC 4.2 Promote participation as a best practice by local agencies and entities with the RICs 4.3 Add Regional Interoperability Committee meeting notes to the SIEC meeting minutes 4.4 Develop a social media presence	• RIC • Local first responders • SIEC • Emergency Management Division	• 4.1, 4.2, Ongoing • 4.3 November 2023 • 4.4 January 2024
5. Enhance and coordinate interoperability across all technologies, including SIRN, broadband, Next Generation (NG) 9-1-1, Computer-Aided Dispatch (CAD) systems, and Geographic information system (GIS) mapping	5.1 Develop a SIRN coverage, capacity, and enhancement plan to include: a. Maintain SIRN to the always current software and hardware platform b. Expand access and availability to OTAP/OTAR c. Establish full IP data backhaul d. Outline alternative paths for IP data backhaul redundancy e. Develop cybersecurity plan f. Adequate personnel for SIRN support 5.2 Coordinate with partners to enhance access and usage of Wireless Emergency Alerts 5.3 Enhance broadband coverage, capacity, and utilization 5.4 Support implementation of Next Generation 9-1-1 5.5 Coordinate with partners to plan for the convergence of technologies	• SIEC • Emergency Management Division • 9-1-1 Council • RIC	• Ongoing

6. Strengthen the cybersecurity posture of the West Virginia Emergency Communications Ecosystem	6.1 Educate all users and stakeholders on cybersecurity best practices 6.2 Maximize the use of available resources (i.e.: CISA, MS-ISAC, Cyber Assessments) 6.3 Encourage utilization of available resources for enhanced cyber hygiene and cyber resiliency 6.4 6.4 Encourage cyber incident reporting (Cyber incidents are to be reported by City and County through their County Emergency Managers to both WVEMD and the WV Fusion Center, who will notify the WV Office of Technology. State agencies are to report Cyber incidents to both WVEMD, the WV Office of Technology and the WV Fusion Center. The WV Office of Technology and/or the WVEMD will notify CISA of cyber incidents) 6.5 Cyber subcommittee should get information out and published 6.6 Publish recommended security baselines and cybersecurity best practices 6.7 Encourage participation in cybersecurity exercises	• Cybersecurity Subcommittee • SIEC • RIC • All system users • CISA • Connected Vendors	• 6.1, 6.2, 6.3, 6.4, 6.7 Immediate start, ongoing • 6.5 January 2024 • 6.6 June 2024
7. Establish sustainable life cycle funding for the construction, operation, administration, and maintenance of SIRN as a line item in the State budget	7.1 Identify current expenditures for SIRN and responsible owners 7.2 Enhance partnerships for sharing infrastructure expenses 7.3 Need an increase in the EMD line-item budget for the construction, operation, administration, and maintenance of SIRN to maintain and enhance the level of interoperability in the State and to adequately plan for interoperability needs in the future 7.4 Identify alternative funding sources to continue improving interoperable and emergency communications for voice and data systems 7.5 Continued outreach and education of elected officials	• SIEC • Emergency Management Division	• 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 West Virginia's assessment of their progress against the markers as of November 3, 2023

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 ☐ 911 ☐ Alerts, Warnings and Notifications	Defined (3-4) Governance body participation includes: ☐ Communications Champion/SWIC ☐ LMR ☐ Broadband/LTE ☐ 911 ☐ Alerts, Warnings and Notifications	Optimized (5) Governance body participation includes: ☒ Communications Champion/SWIC ☒ LMR ☒ Broadband/LTE ☒ 911 ☒ 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
6	**SCIP strategic goal percentage.** SCIP goals are primarily strategic to improve long term emergency communications ecosystem (LMR, LTE, 911, 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

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
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
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
13	**Radio programming.** Radios programmed for National/Federal, SLTT interoperability channels and	<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

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
	channel nomenclature consistency across a state / territory.			
14	**Cybersecurity Assessment Awareness.** Cybersecurity assessment awareness. (Public safety communications networks are defined as covering: LMR, LTE, 911, 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 ☒ 911/CAD ☒ A&W	Initial plus, conducted assessment, conducted risk assessment. (Check yes or no for each option) ☐ LMR ☐ LTE ☒ 911/CAD ☒ A&W	Defined plus, Availability of Cyber Incident Response Plan (check yes or no for each option) ☐ LMR ☐ LTE ☐ 911/CAD ☐ A&W
15	**NG911 implementation.** NG911 implementation underway to serve state / territory population.	Working to establish NG911 governance through state/territorial plan. • Developing GIS to be able to support NG911 call routing. • Planning or implementing ESInet and Next Generation Core Services (NGCS). • Planning to or have updated PSAP equipment to handle basic NG911 service offerings.	More than 75% of PSAPs and Population Served have: • NG911 governance established through state/territorial plan. • GIS developed and able to support NG911 call routing. • Planning or implementing ESInet and Next Generation Core Services (NGCS). • PSAP equipment updated to handle basic NG911 service offerings.	More than 90% of PSAPs and Population Served have: • NG911 governance established through state/territorial plan. • GIS developed and supporting NG911 call routing. • Operational Emergency Services IP Network (ESInet)/Next Generation Core Services (NGCS). • PSAP equipment updated and handling basic NG911 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.
17	**Future Technology/Organizational Learning.** SIEC/SIGB is tracking, evaluating, implementing future technology (checklist)	☒ 5G ☐ Acoustic Signaling ☐ Autonomous Vehicles ☒ Body Cameras ☒ ESInets ☒ GIS ☐ Geolocation	☐ HetNets/Mesh Networks ☒ LMR to LTE Integration ☒ MCPTT Apps ☐ Machine Learning/AI ☒ Public Alerting Software ☐ Sensors ☐ Situational Awareness Apps	☐ Smart Cities ☐ The Next Narrowbanding ☐ UAS (Drones) ☐ UAV (Smart Vehicle) ☐ Wearables ☐ IoT (Cameras)
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	<49% of public safety agencies within a state / territory have access to Communications Unit personnel	>50%<74% of public safety agencies within a state / territory have access to Communications Unit personnel	>75%<100% of public safety agencies within a state / territory have access to Communications Unit

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
	tracking database (e.g., NQS One Responder, CASM, etc.) and available for assignment/response.	who are listed in a tracking database and available for assignment/response	who are listed in a tracking database and available for assignment/response	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
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
BRIM	Board of Risk and Insurance Management
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
DHS	Department of Homeland Security
EAS	Emergency Alerting Systems
EMD	Emergency Management Division
ESInet	Emergency Services Internal Protocol Network
FOG	Field Operations Guide
GIS	Geospatial Information System
ICTAP	Interoperable Communications Technical Assistance Program
INCM	Incident Communications Center Manager
INTD	Incident Tactical Dispatcher
IP	Internet Protocol
ITSL	Information Technology Service Unit Leader
LMR	Land Mobile Radio
MHz	Megahertz
MOU	Memorandum of Understanding
NCSWIC	National Council of Statewide Interoperability Coordinators
MS-ISAC	Multi-State Information Sharing & Analysis Center
NECP	National Emergency Communications Plan
NG911	Next Generation 911
OEM	Office of Emergency Management
PSAP	Public Safety Answering Point
RADO	Radio Operator
REDI	Responder Emergency Deployment Information
RIC	Regional Interoperability Committees
SAFECOM	Safety Communications
SCIP	Statewide Communication Interoperability Plan
SIRN	Statewide Interoperable Radio Network

Acronym	Definition
SOP	Standard Operating Procedure
SWIC	Statewide Interoperability Coordinator
TA	Technical Assistance
TERT	Telecommunications Emergency Response Team
TICP	Tactical Interoperable Communications Plan
WPS	Wireless Priority Service

APPENDIX C: §15-14-5 THE STATEWIDE INTEROPERABLITY EXECUTIVE COMMITTEE

(a) The Statewide Interoperability Executive Committee shall consist of the following members or their designee:

(1) The Director of the WVDHSEM;

(2) The Superintendent of the West Virginia State Police;

(3) The President of the West Virginia Emergency Management Council;

(4) The Adjutant General of the West Virginia National Guard;

(5) The West Virginia Chief Technology Officer;

(6) The President of the West Virginia Enhanced 911 Council;

(7) The President of the West Virginia Sheriffs' Association;

(8) The West Virginia State Fire Marshal;

(9) The President of the West Virginia County Commissioners' Association;

(10) The President of the West Virginia Municipal League;

(11) The Secretary of the Department of Transportation;

(12) The Director of the West Virginia Department of Health and Human Resources, Office of Emergency Medical Services;

(13) One representative from each of the agencies which own one of the SIRN's zoned master site switches not otherwise represented;

(14) The chairman of each of the Regional Interoperability Committees;

(15) A representative of the West Virginia Chapter of the Association of Public Safety Communications Officials;

(16) The Director of the West Virginia Parkways Authority; and

(17) The Statewide Interoperability Coordinator who shall serve in a nonvoting Ex officio capacity.

(b) The director shall serve as the chairman of the Executive Committee.

(c) Members of the Executive Committee shall serve without compensation. However, each member of the Executive Committee may receive reimbursement from the Statewide Interoperable Radio Network Account, for actual expenses, including travel expenses, in accordance with state travel guidelines.

(d) The Executive Committee may appoint, as nonvoting members, individuals with technical expertise that may assist with its mission