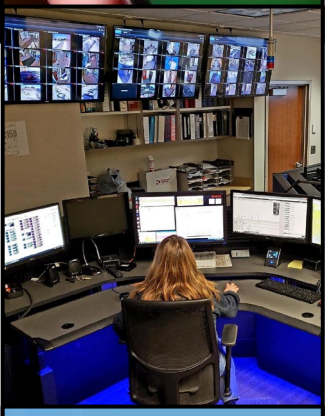

Minnesota Statewide Communication Interoperability Plan

2022-2024

Developed by the Minnesota Statewide Emergency Communication Board (SECB)
with support from the
Minnesota Department of Public Safety division of Emergency Communication Networks (DPS-ECN)

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Letter from the SECB Chair

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Greetings,

As chair of the Statewide Emergency Communication Board (SECB), I am pleased to present the Minnesota 2022-2024 Statewide Communication Interoperability Plan (SCIP). The SCIP provides a 'roadmap' that helps guide the SECB's efforts toward achieving its mission of "Enabling emergency responders and citizens to communicate easily and respond immediately in critical emergency situations by providing reliable and robust systems for interoperable communications across counties, state, federal, and tribal regions".

In an increasingly complex and interconnected emergency communications ecosystem, a single entity acting alone cannot resolve operability, interoperability, and continuity challenges. Establishing and sustaining interoperable emergency communication capabilities requires a partnership that extends across all public safety disciplines and levels of government. A strong governance framework brings together all relevant stakeholders to plan, collaborate, and make decisions regarding the effective implementation and usage of interoperable emergency communications technology.

The State of Minnesota has established itself as a nationally recognized leader in interoperable emergency communication capabilities and emergency communications governance. The reputation and effectiveness of the 'Minnesota Model' of governance is a direct reflection of the commitment that stakeholders at the local, regional, tribal, and state levels have made to supporting and participating in our statewide and regional governance systems.

On behalf of the Department of Public Safety, Commissioner John Harrington and I would like to thank the diverse group of stakeholders who were involved in the creation of this plan. Their insight, guidance, and expertise in defining the goals and objectives that the SECB and its committees will work toward achieving during the next three years will help ensure that our local, county, regional, state, tribal, and federal public safety partners are available to deliver timely and effective emergency services to Minnesota's residents and visitors.

TBD

TBD

Assistant Commissioner, Minnesota Department of Public Safety
Chair, Statewide Emergency Communication Board

Letter from the DPS-ECN Director

November 18, 2021

Greetings,

As director of the Minnesota Department of Public Safety division of Emergency Communication Networks (DPS-ECN), I am pleased to present the Minnesota 2022-2024 Statewide Communication Interoperability Plan (SCIP). This plan represents the collaborative efforts of representatives from the statewide and regional governance systems, state agencies, public safety professional associations, and DPS-ECN to produce a 'roadmap' for improving interoperable emergency communication capabilities across each of Minnesota's four core emergency communication systems (911, LMR, Wireless Broadband, and IPAWS).

On behalf of the DPS-ECN team, I would like to thank the SECB for the opportunity to participate in the creation of the SCIP. We are proud of the role that our team plays in supporting the statewide and regional governance systems. We look forward to collaborating with the SECB and its committees as they work toward achieving the goals and objectives outlined in the Minnesota 2022-2024 SCIP.

Sincerely,

Dana Wahlberg
Director, Minnesota Department of Public Safety division of Emergency Communication Networks

Letter from the SWIC

November 18, 2021

Greetings,

As Minnesota's Statewide Interoperability Coordinator (SWIC), I am pleased to present the Minnesota 2022-2024 Statewide Communication Interoperability Plan (SCIP). This SCIP represents Minnesota's ongoing commitment to improving emergency communications interoperability and supporting public safety practitioners throughout the state. This plan includes actionable and measurable goals and objectives that are designed to support the SECB's efforts to plan for new technologies and navigate the ever-changing emergency communications ecosystem. In addition, this document meets the requirements of the U.S. Department of Homeland Security (DHS) grant guidelines.

Stakeholder engagement in the strategic planning process is necessary to achieve both initial and long-term success. I would like to thank the representatives from the SECB and its committees/workgroups, the seven Emergency Communications Board/Emergency Services Board regions, state agencies, professional associations, and DPS-ECN that contributed to the development of this SCIP. Their input provided valuable insight into the initiatives that Minnesota should undertake over the course of the next three years to build and/or sustain interoperable emergency communication capabilities across the state. With their ongoing participation and support, we will work to achieve the goals set forth in this SCIP and continue to highlight the State of Minnesota as a nationwide model for interoperability.

Sincerely,

Cathy Clark

Deputy Director, Minnesota Department of Public Safety division of Emergency Communication Networks
Minnesota Statewide Interoperability Coordinator

Section 1: Executive Summary

The Minnesota 2022-2024 Statewide Communication Interoperability Plan (SCIP) is a stakeholder-driven, multi-jurisdictional, and multi-disciplinary strategic plan that provides an effective mechanism to support decision making, funding prioritization, and measurement of overall progress toward building and sustaining interoperable emergency communication capabilities across the state. The SCIP will be implemented and maintained by the Statewide Emergency Communication Board (SECB) with support from the Minnesota Department of Public Safety division of Emergency Communication Networks (DPS-ECN).

In preparation for the development of the Minnesota 2022-2024 SCIP, each of Minnesota's seven Emergency Communications/Emergency Services Board regions participated in a series of facilitated engagement session to identify and document their regional emergency communication needs and priorities. Several regions have incorporated this information into their own Integrated Preparedness Plans (IPPs). The IPPs will complement the initiatives identified in the SCIP by documenting the region's unique interoperable emergency communication needs and the specific actions that they will undertake to address those needs.

Additionally, the DPS-ECN leadership team and staff have collaborated to develop an internal plan to further advance the division's four core program areas (911, Land Mobile Radio, Wireless Broadband, and Integrated Public Alert and Warning). The DPS-ECN plan aligns with and augments the goals and objectives identified in the SCIP, while concurrently meeting the priorities established by the Commissioner of Public Safety and the Governor's Office, given DPS-ECN resides under the Executive Branch of Minnesota state government.

The dedicated and collective efforts of stakeholders across all levels of government and public safety disciplines have resulted in a comprehensive 'roadmap' to help Minnesota's efforts to build and sustain interoperable emergency communication capabilities throughout Minnesota and beyond our state borders over the course of the next three years.

Purpose and Scope

The purpose of the SCIP is to provide the SECB and its committees with the vision and strategic direction for achieving the 'desired state' of interoperable emergency communications within the state. This plan includes the following sections:

- Interoperability: This section describes the ongoing need for interoperable emergency communication capabilities and identifies the goals and objectives necessary to maintain and enhance interoperability across the entire emergency communications ecosystem.
- Governance: This section describes Minnesota's statewide and regional governance structure as well as the goals and objectives necessary to enhance the role that governance plays in developing interoperable emergency communication capabilities.
- Technology and Operations: This section describes Minnesota's four core emergency communication systems: 911, Land Mobile Radio [LMR], Wireless Broadband, and Integrated Public Alert and Warning System [IPAWS], as well as the goals and objectives necessary to build and sustain the state's emergency communications ecosystem.
- Funding and Sustainment: This section describes the funding sources and allocations that support interoperable emergency communication capabilities within the state as well as the goals and objectives necessary to build and sustain these capabilities into the future.
- Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis: This section provides insight into the strengths, weaknesses, opportunities, and threats that relate to Minnesota's emergency communications ecosystem.
- SECB Committee Goals and Objectives: This section describes the goals and objectives that each SECB committee has established to support this plan.
- Plan Implementation and Measurement: This section describes how Minnesota intends to implement, maintain, and update the SCIP to facilitate ongoing efforts toward achieving its emergency communication interoperability goals and objectives.

The Planning Process

To create this plan, the SECB Steering Committee established a planning team consisting of board members, committee chairs, other committee members, and representatives from DPS-ECN. The planning team participated in a series of facilitated discussions that included the following activities:

- Gathering input from key stakeholders at the local, regional, and statewide levels regarding their interoperable emergency communication needs and priorities.
- Assessing the Strengths, Weaknesses, Opportunities, and Threats (SWOT) that impact interoperable emergency communication capabilities across the state.
- Incorporating recommendations from other relevant plans and documents, such as the National Emergency Communications Plan, Interoperability Marker Assessment, regional Integrated Preparedness Plans, into this plan.
- Establishing goals and objectives for each SECB Committee that build and/or sustain interoperable emergency communication capabilities across the state. Each committee-level goal and objective was assigned an owner, timeline for completion, and a mechanism for measuring success.
- Identifying the Planning, Organizational, Equipment, Training, and Exercise (POETE) related actions that are necessary to achieve the goals and objectives identified in this plan.

The 'Desired State' of Interoperable Emergency Communications

Based on the information gathered during the planning process, the planning team identified overarching 'capability targets' to help focus the SECB's efforts toward achieving the 'desired state' of interoperable emergency communications within the state. These capability targets were classified into one of four categories:

- The Desired State of Interoperability
- The Desired State of Governance
- The Desired State of Technology and Operations
- The Desired State of Funding and Sustainment

Desired State of Interoperability
The SECB has identified the following capability targets as essential benchmarks for achieving the desired state of emergency communications interoperability within Minnesota: • The SECB will develop a statewide plan for encryption that promotes secure and interoperable land mobile radio communication for Minnesota's emergency responders. • The SECB will define a desired baseline of service for each of Minnesota's four core emergency communication systems (911, LMR, Wireless Broadband, and IPAWS) and recommend measures to ensure that all geographic areas of the state have the capability to provide uniform access and a minimum quality of service to Minnesota's residents, visitors, and emergency responders. • The SECB will promote initiatives to improve interoperability across each of Minnesota's four core emergency communication programs (911, LMR, Wireless Broadband, and IPAWS) through robust, shared public safety applications as well as highly available and accessible shared data and mapping functionality.

Desired State of Governance
The SECB has identified the following capability targets as essential benchmarks for achieving the desired state of interoperable emergency communications governance within Minnesota: • The SECB will continue to promote and enhance a robust governance structure with active involvement from stakeholders at the local, regional, state, tribal, and federal levels. • The SECB will promote strong partnerships to support the current and ongoing needs of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).

Desired State of Technology and Operations
The SECB has identified the following capability targets as essential benchmarks for achieving the desired state of interoperable emergency communications technology and operations within Minnesota: • 911: The SECB will provide recommendations regarding the development and deployment of a secure, shared public safety network that supports information and application sharing. • 911: The SECB will advocate for certification and standardized training requirements for PSAP staff as well as compensation and benefits that promote long-term career retention. • 911: The SECB will work to ensure that core services, networks, data, and applications are available, well known, and supported through effective training and use of analytics. • 911: The SECB will promote a resilient 911 network that readily adapts to rapidly changing technology. • 911 / LMR: The SECB will make recommendations regarding the physical and cyber security measures necessary to protect the 911 and Land Mobile Radio (LMR) systems. • Wireless Broadband: The SECB will advocate for cellular service that provides the coverage, reliability, quality of service, and redundancy necessary to support public safety needs.

- Wireless Broadband: The SECB will advocate for robust interoperable mobile broadband communication capabilities that are available to public safety partners across Minnesota when and where they are needed.
- IPAWS: The SECB will provide warning and alerting originators with updated guidance and training/exercise opportunities to remain proficient in IPAWS capabilities.

Desired State of Funding and Sustainment
The SECB has identified the following capability targets as essential benchmarks for achieving the desired state of interoperable emergency communications funding and sustainment within Minnesota: • The SECB will establish and implement a comprehensive funding plan that provides recommendations for the ongoing, stable, and adequate support and maintenance of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS). • The SECB will promote efforts to help decision makers at the local, regional, state, tribal, and federal levels understand the importance of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS), and support investments in staffing, training, exercises, and technology that ensure the safety of Minnesota's residents, visitors, and emergency responders. • The SECB will collaborate with key stakeholders to develop a capital improvement plan for each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS) and make recommendations to the Commissioner of Public Safety regarding actions that can be taken to improve and/or sustain these essential programs, systems, and applications. • The SECB will advocate for state and federal grant funding to build and sustain interoperable emergency communication capabilities across each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).

Annual SCIP Review

On an annual basis, the SECB Steering Committee will evaluate the progress made toward achieving the goals and objectives identified in this plan. This review will include three key components:

- An assessment of current interoperable emergency communication capabilities across each of Minnesota's four core emergency communication systems: 911, LMR, Wireless Broadband, and IPAWS.
    - How have those capabilities changed over the past year?
    - How do the current capability levels align with the 'desired state' outlined in the plan?
    - What, if any, changes to the plan are necessary to address newly identified capability targets?
- Recommendations to address interoperable emergency communication capability gaps.
    - What, if any, gaps exist between the interoperable emergency communication capabilities that we want to achieve and the capabilities that we currently have?
    - Do the goals and objectives outlined in the plan align with closing these gaps?
    - What, if any, changes to the plan are necessary to address them?
- An assessment of funding and sustainment capabilities.
    - Over the past year, what impact did various funding sources, including grants, have on the ability to achieve the goals and objectives outlined in the plan?
    - What, if any, changes to the plan are necessary to address funding concerns?

Once the annual review is completed, the SECB Steering Committee will report their findings, as well as their recommendations for amending/updating the plan, to the SECB.

Section 2: Interoperability

Every day, events occur in communities across Minnesota that require a public safety response. Without a reliable network of interoperable emergency communication systems that include voice and data, the response to these events can suffer. The ability of emergency responders to communicate between and across disciplines, agencies, and jurisdictions is critical to establishing command and control at an incident scene, maintaining situational awareness, and ensuring public safety. As numerous after-action reports and other assessments have revealed, however, there are still communications deficiencies that affect the ability of emergency responders to manage routine incidents and support the response to special events, disasters, emergencies, and acts of terrorism.

Reliable, timely, and interoperable voice and data communications among and between Public Safety Answering Points (PSAPs), emergency responders, and community members is a vital component to the effective delivery of public safety services and, in many cases, saving lives.

Interoperability is the key to effective communication, coordination, and collaboration during an emergency response.

Support and Coordination

DPS-ECN and the federal government play an integral role in providing support and coordination of Minnesota's intra- and interstate interoperable emergency communication initiatives. On a state level, these efforts are led by the SWIC and two Regional Interoperability Coordinators (RICs) who are committed to improving interoperable emergency communication capabilities across each of Minnesota's four core emergency communication systems, which are 911, LMR, Wireless Broadband, and IPAWS.

On the federal level, the U.S. Department of Homeland Security (DHS) Cybersecurity and Infrastructure Security Agency (CISA) offers a number of resources to promote interoperable emergency communications capabilities between and among federal, tribal, territorial, state, and local jurisdictions.

The Emergency Communications Ecosystem

The Emergency Communications Ecosystem (Figure 1) is dynamic; not everyone is needed every day depending on the incident, events, access to information, and technologies used. It is also multi-directional, as anyone can initiate emergency communications. The ecosystem is comprised of networks of people, technology, and processes. Together, these components create a 'system of systems' that plays an important part in ensuring the operability, interoperability, and continuity of emergency communications.

Reporting and Requests for Assistance	Requests or information sharing made to public safety resources using defined emergency and non-emergency paths.
Incident Coordination and Response	Direct voice and data communications among public safety responders, PSAPs, and emergency support systems to establish command and control, situational awareness, and a common operating picture.
Public Interaction	Sharing of information through various public or commercial networks.
Alerts, Warning, and Notifications	Instructional messages to the public directing protective actions to save lives and property, and convey time-sensitive information to support preparedness, response, and/or recovery operations.

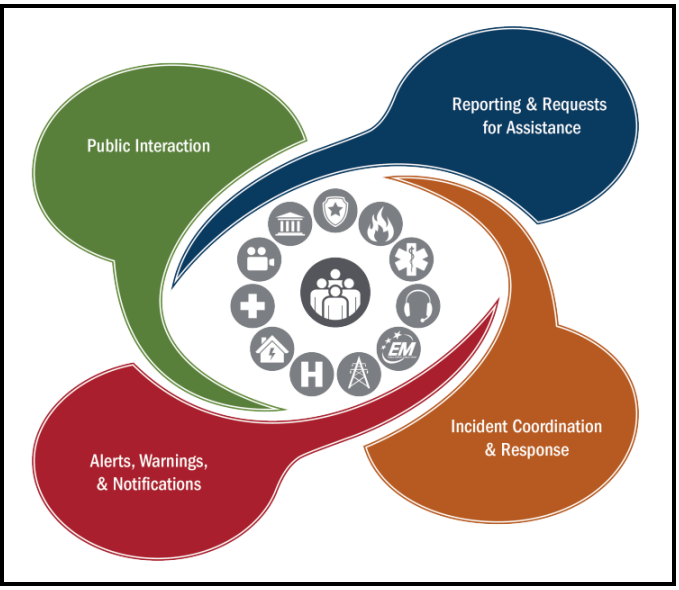


Figure 1: The Emergency Communications Ecosystem

The National Emergency Communications Plan

The National Emergency Communications Plan (NECP) is our nation's strategic plan to strengthen and enhance interoperable emergency communication capabilities. Developed with stakeholder input from over 3,500 federal, state, local, tribal, and territorial public safety agencies and organizations, the updated NECP addresses the current gaps within emergency communications and promotes the innovation and integration of new technologies while considering their associated risks. In addition, it provides guidance to drive the enhancements of the emergency communication capabilities across all levels of government.

NECP Vision
To enable the Nation's emergency response community to communicate and share information securely across communications technologies in real time, including all levels of government, jurisdictions, disciplines, organizations, and citizens impacted by any threats or hazards event.

The NECP establishes six strategic goals to drive progress toward the vision:

- Goal 1 (Governance and Leadership): Develop and maintain effective emergency communications governance and leadership across the Emergency Communications Ecosystem (Figure 1).
- Goal 2 (Planning and Procedures): Develop and update comprehensive emergency communications plans and procedures that address the evolution of risks, capabilities, and technologies across the Emergency Communications Ecosystem.
- Goal 3 (Training, Exercises, and Evaluation): Develop and deliver training, exercise, and evaluation programs that enhance knowledge and target gaps in all available emergency communications technologies.
- Goal 4 (Communications Coordination): Improve effective coordination of available operable and interoperable public safety communication capabilities for incidents and planned events.

- Goal 5 (Technology and Infrastructure): Improve lifecycle management of the systems and equipment that enable emergency responders and public safety officials to share information efficiently and securely.
- Goal 6 (Cybersecurity): Strengthen the cybersecurity posture of the Emergency Communications Ecosystem.

Interoperability Marker Self-Assessment

DHS-CISA and the National Council of Statewide Interoperability Coordinators (NCSWIC) have collaborated to develop the 'Interoperability Marker Self-Assessment' tool. This tool allows states and territories to evaluate their level of interoperability 'maturity' against 25 criteria related to governance, standard operating procedures, technology, training and exercises, and usage. The results of the assessment can be used to drive strategic planning, justify funding requests, improve coordination, and help decision-makers understand the impact of collaborative initiatives focused on improving interoperable emergency communications capabilities. Minnesota's current 'Interoperability Marker Assessment' is included in this document as Attachment A.

Interoperability Continuum

To help promote a holistic approach to improving interoperable emergency communication capabilities, the DHS SAFECOM program developed the Interoperability Continuum (Figure 2). The Interoperability Continuum is designed to assist public safety agencies and policy makers with their efforts to build and sustain their interoperable emergency communication capabilities. The continuum identifies the five critical success elements of Governance, Standard Operating Procedures (SOPs), Voice and Data Technology, Training and Exercises, and Usage that must be addressed to achieve a robust interoperability solution.

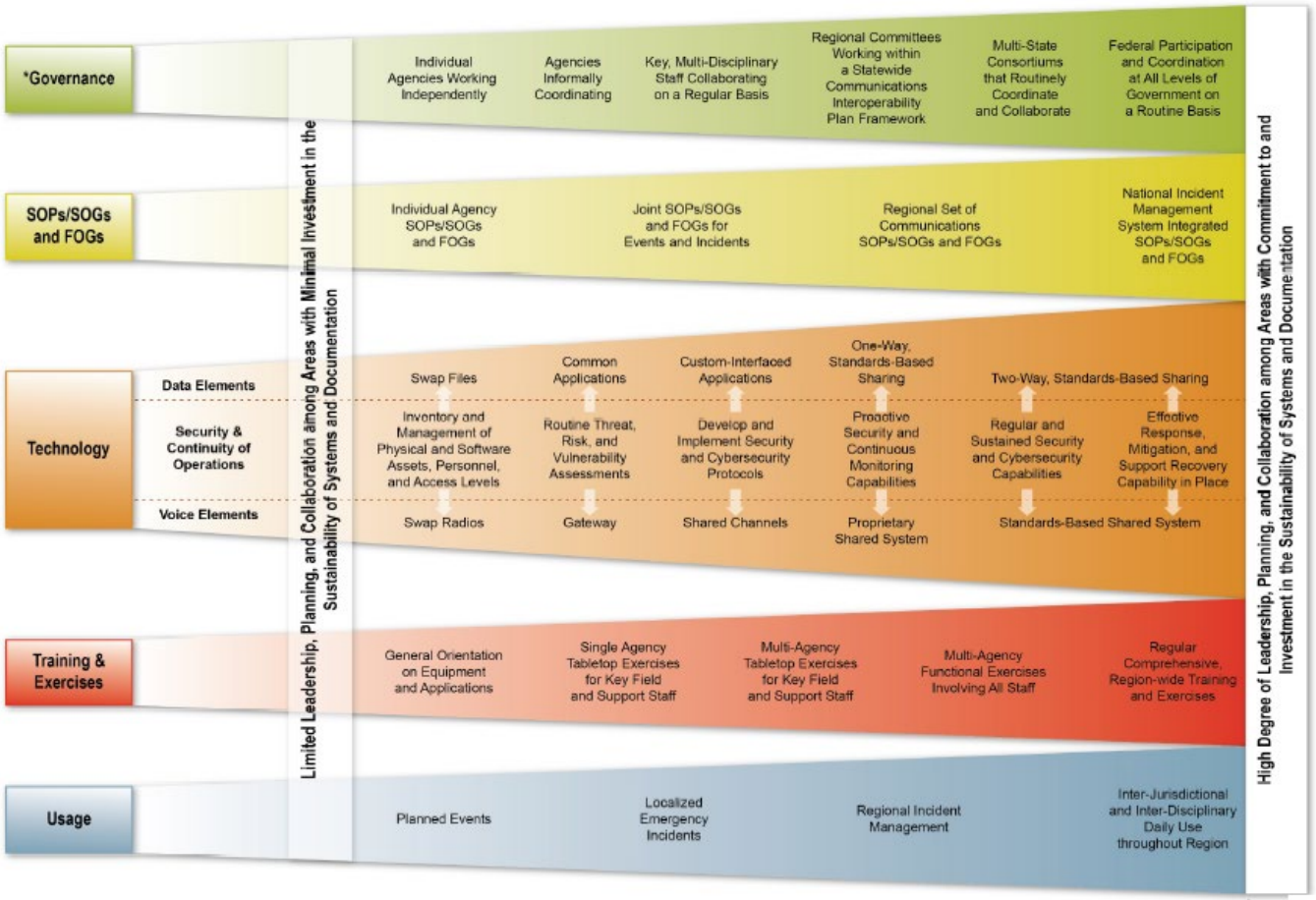


Figure 2: The SAFECOM Interoperability Continuum

The SECB's Desired State of Interoperability

The SECB has identified the following capability targets as essential benchmarks for achieving the desired state of emergency communications interoperability within Minnesota:

- The SECB will develop a statewide plan for encryption that promotes secure and interoperable land mobile radio communication for Minnesota's emergency responders.
- The SECB will define a desired baseline of service for each of Minnesota's four core emergency communication systems (911, LMR, Wireless Broadband, and IPAWS) and recommend actions and plans for all geographic areas of the state to provide uniform access and a minimum quality of service to Minnesota's residents, visitors, and emergency responders.
- The SECB will promote initiatives to improve interoperability across each of Minnesota's four core emergency communication programs (911, LMR, Wireless Broadband, and IPAWS) through robust, shared public safety applications as well as highly available and accessible shared data and mapping functionality.

Section 3: Governance

Governance refers to establishing a shared vision and an effective organizational structure to provide guidance and support to interoperable emergency communications projects and initiatives. Minnesota is widely known across the country as a leader in emergency communications governance. The 'Minnesota Model' of governance ensures that a diverse group of stakeholders (Figure 3) is included in the decision-making process. The strength of the 'Minnesota Model' is the fact that the governance process is driven from the ground up. That approach keeps the process focused on the overarching goal of ensuring that Public Safety Answering Points (PSAPs) and emergency responders have the communication tools necessary to serve their communities.

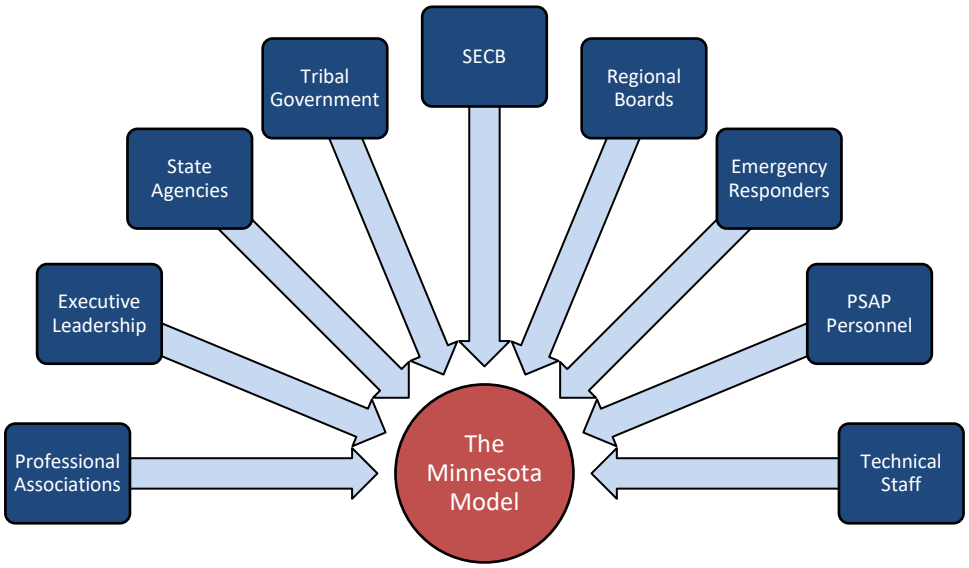


Figure 3: The 'Minnesota Model' of Governance

Statewide Governance

Originally established by the Minnesota legislature as the Statewide Radio Board (SRB), the role of the board has expanded beyond its original focus on implementation of the statewide Allied Radio Matrix for Emergency Response (ARMER) Land Mobile Radio (LMR) system to include other emergency communication technologies, which are 911, Wireless Broadband, and the Integrated Public Alert and Warning System.

Now known as the Statewide Emergency Communication Board (SECB), the board provides recommendations to the Commissioner of Public Safety regarding the vision, priorities, and technical roadmap for establishing and sustaining interoperable emergency communication capabilities across the state. The board also serves as Minnesota's State Interoperability Executive Committee (SIEC). In this role, the board is responsible for promoting coordination and cooperation among local, state, federal, and tribal public safety agencies in addressing statewide public safety communications interoperability within Minnesota.

The SECB's Vision
The safety of Minnesota's emergency responders, citizens, and visitors is accomplished through the state-of-the-art interoperable public safety communications systems.

The SECB's Mission
Enable emergency responders and citizens to communicate easily and respond immediately in critical emergency situations by providing reliable and robust systems for interoperable communications across counties, state, federal, and tribal regions.

Board membership consists of 20 representatives from state agencies, public safety professional associations, the metro area, and greater Minnesota. This composition (1/3 state agencies, 1/3 metropolitan area, 1/3 greater Minnesota area) ensures that the board's actions are based on an equal opportunity for participation, an equal voice in the decision-making process, and the inclusion of diverse perspectives in the discussion.

Supporting the board are a number of committees that have been established to provide subject matter expertise on a wide range of topics related to governance, interoperability, and emergency communications technology. Each committee is comprised of representatives from state agencies, professional associations, and the state's seven Emergency Communications Board (ECB) and Emergency Services Boards (ESB) regions.

- SECB Steering Committee: The role of the SECB Steering Committee is to advise the SECB on all matters related to policy decisions.
- SECB Legislative Committee: The role of the SECB Legislative Committee is to advise the SECB on all matters related to legislation and government affairs that have the potential to impact the board and its members.
- SECB Finance Committee: The role of the SECB Finance Committee is to advise the SECB on all matters that have a financial impact upon the board and its members and users.
- SECB Interoperability Committee: The role of the SECB Interoperability Committee is to advise the SECB on all matters related to public safety communications interoperability.
- SECB Next Generation (NG) 911 Committee: The role of the SECB NG 911 Committee is to advise the SECB on all matters relating to NG911. The committee will recommend to the board uniform 911 network design characteristics, policies, and procedures based on best practices and industry standards to ensure Public Safety Answering Point (PSAP) interoperability across the state using open architecture and the implementation of a coordinated statewide NG 911 plan. The NG 911 Committee will plan the migration to, utilization of, and the continued operation and maintenance for the statewide, interoperable Next Generation 911 system.
- SECB Land Mobile Radio Committee: The role of the SECB Land Mobile Radio (LMR) Committee is to advise the SECB on all matters operational and technical as they pertain to use of the ARMER System and LMR technologies.
- SECB Wireless Broadband and Applications Committee: The role of the SECB Wireless Broadband and Applications Committee is to advise the SECB on all matters relating to wireless broadband for public safety and to represent Minnesota on a national level.
- SECB Integrated Public Alert and Warning Committee: The role of the SECB Integrated Public Alert and Warning System (IPAWS) Committee is to advise the SECB on all matters related to IPAWS and to coordinate and establish policy, procedure, and protocols for the expansion of IPAWS through private/public partnership.

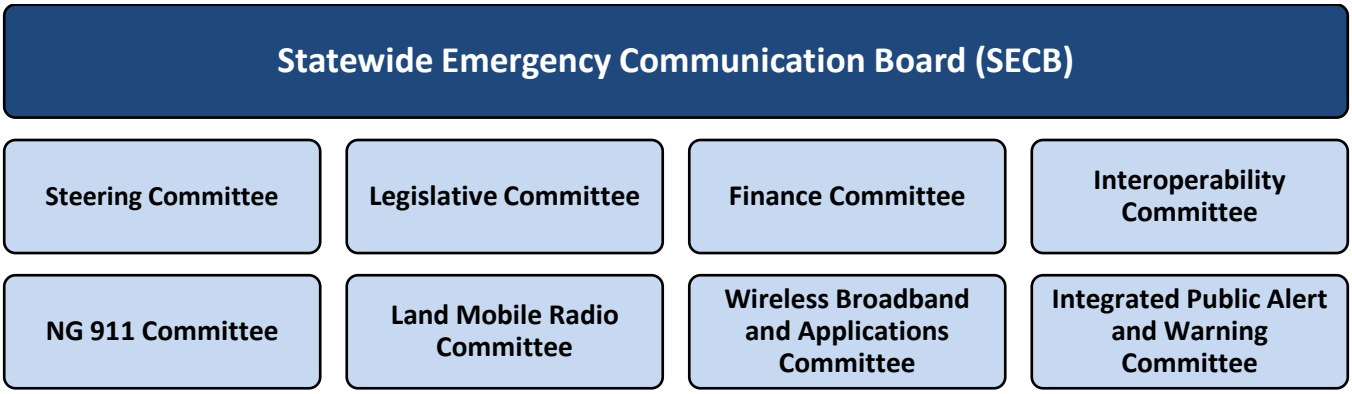


Figure 4: Minnesota's Statewide Governance Structure

Regional Governance

The regional governance system facilitates communication, collaboration, and cooperation among stakeholders as they work toward improving their interoperable emergency communication capabilities. Established under legislative authority, the seven regional Emergency Communications Boards (ECBs) and Emergency Services Boards (ESBs) depicted in Figure 5 provide the 'grass roots' platform for local entities to participate in the governance process.

Minnesota's Seven Regional Governance Entities

- Northwest Minnesota Emergency Communications Board
- Northeast Minnesota Emergency Communications Board
- Central Minnesota Emergency Services Board
- Metropolitan Emergency Services Board
- Southwest Minnesota Emergency Communications Board
- South Central Minnesota Emergency Communications Board
- Southeast Minnesota Emergency Communications Board

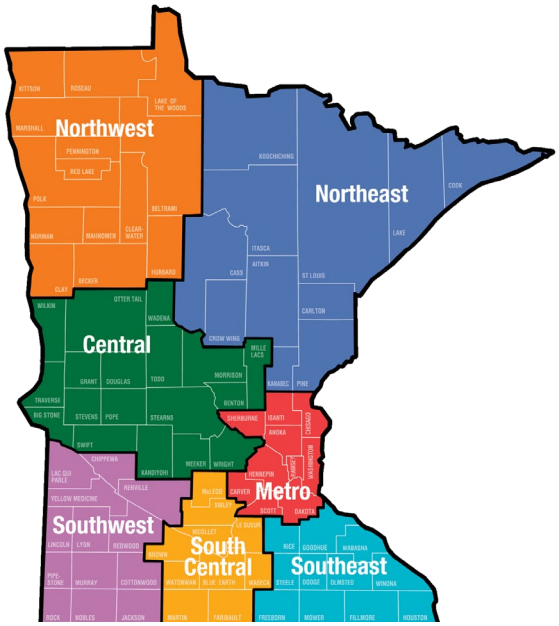


Figure 5: Minnesota's Seven Emergency Communications/Emergency Services Board Regions

Operating under a Joint Powers Agreement (JPA), each regional ECB/ESB has adopted its own by-laws, membership criteria, organizational structure, budget, and meeting schedule. Each ECB/ESB has established an organizational structure similar to the example depicted in Figure 6.

- Emergency Communications/Emergency Services Board: Board membership typically consists of elected officials, such as sheriffs, county commissioners, city council members, and executive leadership.
- Regional Advisory Committee: Membership of the Regional Advisory Committee (RAC) typically consists of a diverse mix of elected/appointed officials, end users, PSAP staff, and technical staff. The RAC provides the board with recommendations on a wide range of topics related to governance, interoperability, and emergency communications technology.
- Regional Subcommittees: Membership on the various regional subcommittees typically consists of subject matter experts representing emergency responders, PSAP staff, and technical staff. These subcommittees provide the RAC with recommendations regarding emergency communications technology and operations.

Emergency Communications Board / Emergency Services Board

Regional Advisory Committee

Regional Subcommittees
(Owners and Operators, Users, NG 911, Voice Logging, etc.)

Figure 6: Minnesota's Regional Governance Structure

Support and Coordination

DPS-ECN plays an integral role in supporting the statewide and regional governance systems. This support includes:

- Providing support to the SECB and its committees/workgroups. Examples include:
  - Maintaining agendas, meeting materials, and minutes for over 100 SECB related meetings each year.
  - Providing subject matter expertise to the board and its committees on matters related to each of Minnesota's four core emergency communication systems: 911, LMR, Wireless Broadband, and IPAWS.
  - Maintaining and updating over 90 SECB standards that govern the usage of Minnesota's four core emergency communication systems: 911, LMR, Wireless Broadband, and IPAWS.
  - Hosting website content that includes SECB board and committee meeting notices, SECB standards, and other SECB-related materials.
- Providing support to each of the state's seven ECB and ESB regions. Examples include:
  - Maintaining the Regional Interoperability Coordinator (RIC) program. The RICs serve as a resource to assist each region with activities related to governance, planning, coordination, grant management, and implementation of emergency communications technology. The RICs participate in over 100 regional governance meetings annually.
  - Hosting website content for a number of ECB regions that includes board and committee meeting notices, standards, and other related materials.
- Providing education and outreach opportunities to participants in the statewide and regional governance system. Examples include:
  - Publishing newsletters that include information on matters related to interoperable emergency communications.
  - Facilitating quarterly stakeholder engagement meetings to provide a mechanism for information sharing and discussion regarding matters related to interoperable emergency communications.
  - Hosting periodic webinars and an annual Public Safety Communications Conference where participants have an opportunity to learn more about governance and emergency communications technology.

The SECB's Desired State of Governance

The SECB has identified the following capability targets as essential benchmarks for achieving the desired state of interoperable emergency communications governance within Minnesota:

- The SECB will continue to promote and enhance a robust governance structure with active involvement from stakeholders at the local, regional, state, tribal, and federal levels.
- The SECB will promote strong partnerships to support the current and ongoing needs of Minnesota's four core emergency communications systems.

Section 4: Technology and Operations

Technology refers to the equipment, infrastructure, network, and applications that Public Safety Answering Points (PSAPs) and emergency responders use to exchange critical information when responding to an emergency, disaster, or act of terrorism. Operations refers to how this technology is applied in terms of training, exercises, and daily usage.

Traditional voice capabilities, such as land mobile radio (LMR) and landline 911 services have long been and continue to be essential tools for emergency communications. The advancement of internet protocol (IP)-based technologies in public safety, however, 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 all levels of government to help ensure that emergency communication 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 Minnesota, have opted into FirstNet. With this new platform, agencies can supplement existing communication capabilities with improved spectrum, broadband capabilities, and the means to transfer and share data as never before. Its adoption and implementation will entail close coordination with stakeholders across the emergency communications ecosystem to ensure interoperability and cybersecurity are not sacrificed as agencies begin incorporating wireless technology into their daily operations.

Similarly, the transition of Public-Safety Answering Points (PSAPs) to Next Generation 911 (NG 911) technology will enhance sharing of critical information in real-time through the use of multimedia - such as pictures, video, and text - among community members, PSAP operators, dispatch, and first responders. While the benefits of NG 911 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.

Another example of evolving emergency communication technology is the Integrated Public Alert and Warning System (IPAWS). IPAWS software allows alerting authorities to issue timely and location-specific messages to the public using a number of communication platforms. Wireless Emergency Alert (WEA) messages are delivered to cellular devices within an impacted area and Emergency Alert System (EAS) messages are delivered via commercial broadcast partners, such as radio, television, and cable service providers.

Support and Coordination

Minnesota has four core emergency communication systems (911, LMR, Wireless Broadband, and IPAWS) that provide PSAPs and emergency responders with interoperable emergency communication capabilities (Figure 7). DPS-ECN plays an integral role in supporting the operation of these systems.

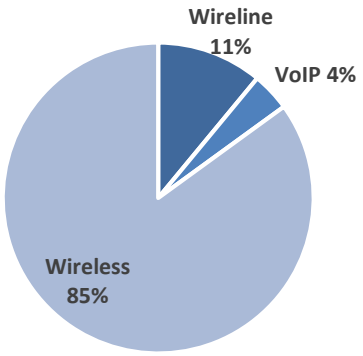
911 **Land Mobile Radio** **Wireless Broadband** **IPAWS**

Figure 7: Minnesota's Core Emergency Communication Systems

911

The first 911 systems in Minnesota were implemented in the cities of Windom and St. James in 1968. Expanding 911 coverage statewide involved the passage of legislation, the establishment of a 911 funding mechanism, and State assistance to the cities and counties in order to provide this essential public safety service to Minnesota's residents and visitors.

The Minnesota state legislature passed Chapter 403 of the Minnesota State Statutes in 1977. The law required each county to develop a plan to implement 911 in the seven-county metropolitan area by December 15, 1982 and in the remaining counties by December 15, 1986. Currently, 911 calls in Minnesota are routed to 104 Public Safety Answering Points (PSAPs) through a state-supported legacy network maintained by a number of private sector partners. Each year, these PSAPs receive approximately 3million 911 calls, of which approximately 85% are made from wireless devices.

911 Call Volumes	Source of 911 Calls (2020)
Total number of 911 emergency calls received by Minnesota's 104 Public Safety Answering Points: • **2019:** approximately 3 million • **2020:** approximately 2.95 million • **2021 (January-September):** approximately 2.03 million	

Since its inception over 50 years ago, the 911 network has struggled to keep pace with today's rapidly changing technology. Network infrastructure that was originally intended to carry and receive voice calls from fixed locations and transfer only a minimal amount of data is now expected to provide an accurate location for callers using mobile devices and accommodate the transmission of photos, text messaging, and video provided by callers requesting emergency services.

To meet these expectations, significant planning and infrastructure investments are necessary to achieve the National Emergency Number Association's (NENA) stated desire of accessing the 911 network from "any device, anytime, anywhere". In 2017, DPS-ECN and the SECB NG 911 Committee recognized the need to begin the transition to 'Next Generation' 911 (NG 911) technology and drafted a NG 911 strategic plan. This plan laid the foundation for the actions necessary to ensure that the current and future requirements for those requesting, as well as those providing, emergency services are met.

Text-to-911

The deaf and hard-of-hearing community is depending more on text messaging to communicate and is a driving force to implement an IP-enabled, Next Generation 911 (NG 911) system. In December 2020, Minnesota celebrated three years of providing 'Text-to-911' capabilities to the public. During that time, Text-to-911 capabilities have been deployed on a regional/local level across the state. In 2019, and again in 2020, Text-to-911 capable PSAPs fielded approximately 7,000 Text-to-911 transactions each year.

In March 2019, DPS-ECN was the recipient of the Access Award by the Minnesota Commission of the Deaf, Deafblind, & Hard of Hearing. The honor acknowledges ECN for the notable work of contributing to communication equity; that is, the concept that everyone, regardless of ability, should be able to gain access to

the information and services they need. ECN is committed to the continuing education of the deaf, deafblind, and hard-of-hearing community in the use of this service.

NG 911 GIS Data Collection Project

The Minnesota Next Generation 911 (NG 911) GIS Data Project is an effort to collect and aggregate the Geographic Information System (GIS) data necessary to locate a 911 caller, route the 911 call to the appropriate PSAP, and dispatch appropriate emergency response resources to the location of the incident. For 911 callers, this project will result in improved address verification as well as faster and more accurate emergency response to their location.

Network Infrastructure

Much of the 911 network infrastructure has reached the end of its technological life cycle and is unable to accommodate the current expectations from the public, PSAP staff, and emergency responders regarding caller location and the ability to receive data, including text, pictures, and video, from callers.

As managers of the state's 911 network, DPS-ECN is currently in the process of selecting vendors to provide network infrastructure capable of meeting the future technological needs of Minnesota's residents, visitors, PSAPs, and emergency responders. DPS-ECN anticipates implementation of the necessary network infrastructure changes to begin in 2022.

Land Mobile Radio (LMR)

The Allied Radio Matrix for Emergency Response (ARMER) system is the statewide 700/800 MHz digital trunked public safety radio communication system. The ARMER system, built by Motorola and owned and operated by the Minnesota Department of Transportation (MnDOT), serves as the primary Land Mobile Radio (LMR) communication tool for the majority of Minnesota public safety entities.

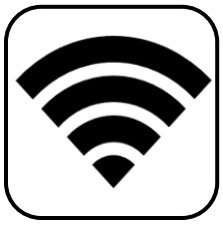
The ARMER system build-out began in the Twin Cities metropolitan area during the late 1990s and was expanded to include greater Minnesota in the mid-2000s. In late 2020, the system buildout was completed. There are now 335 state-maintained and 100 locally-maintained tower sites 'on-the-air' across Minnesota that provide mobile radio coverage to 95% of the state's geographic area.

As the owner and operator of the ARMER system, MnDOT provides 24/7/365 monitoring and maintenance of the ARMER infrastructure to help ensure mission-critical readiness and reliability. In 2020, MnDOT and Motorola executed a five-year System Upgrade Agreement (SUA) to ensure that ongoing support is provided to keep the software operating the ARMER system 'current'.

With over 70,000 active radios on the system, almost every emergency response agency, including law enforcement, fire, and emergency medical services in Minnesota is operating on the ARMER system. Other users such as federal public safety agencies, schools, hospitals, public works, disaster relief organizations, and emergency managers, are also on the system. DPS-ECN is actively engaged in establishing cross-border LMR interoperability between the ARMER system and the statewide LMR systems operated by North Dakota, South Dakota, Iowa, Wisconsin, Ontario, and Manitoba.

While the initial buildout of the ARMER system has been completed, MnDOT, DPS-ECN, and the SECB Land Mobile Radio Committee will continue their efforts to explore new technology and capabilities to enhance the ARMER system, particularly in the areas of encryption and potential integrations with other emerging communications technology.

Wireless Broadband



The First Responder Network Authority (FirstNet Authority) is an independent authority within the U.S. Department of Commerce. Authorized by Congress through the Middle Class Tax Relief and Job Creation Act of 2012, the Authority's mission is to oversee the development, implementation, and operation of a nationwide public safety broadband network (NPSBN). The purpose of this network is to equip emergency responders with dedicated cellular voice and data communications capabilities to save lives and protect property.

AT&T is the cellular service provider that was awarded the 25-year contract to deploy the NPSBN across all 50 states and six territories. The NPSBN, branded as "FirstNet" by AT&T, is the only nationwide wireless broadband communications platform dedicated to America's public safety community and, as such, it is different from service offered by other cellular carriers. Operating on the Band 14 spectrum, FirstNet has a dedicated public safety core that provides emergency responders with enhanced quality of service, priority, and preemption on an "always on" 24/7 basis. It also encrypts network traffic within the core, creating the highly secure environment that public safety requires.

The wireless broadband program was initially established to support Minnesota's opt-in process for FirstNet. As part of the 'opt-in' process, DPS-ECN and the SECB Wireless Broadband and Applications Committee collaborated with over 100 public safety stakeholders across the state to identify the actions necessary to ensure that FirstNet provided the reliability, coverage, and capacity to meet the needs of Minnesota's emergency responders.

In October 2017, Governor Mark Dayton provided notice that Minnesota was officially 'opting-in' to participate in the FirstNet implementation. Since that time, DPS-ECN and the SECB Wireless Broadband and Applications Committee have continued to work closely with AT&T and the FirstNet Authority to monitor the status of the network infrastructure build-out, which is scheduled to be completed in 2023.

In 2020-2021, DPS-ECN and the SECB Wireless Broadband and Applications Committee developed a series of 'best practice guides' and other reference documents to help educate and inform stakeholders regarding wireless broadband technology.

As new and innovative technology, devices, applications, and services are developed and introduced, DPS-ECN and the SECB Wireless Broadband and Applications Committee will continue their efforts to meet the cellular voice and data needs of Minnesota's public safety community.

Integrated Public Alert and Warning System (IPAWS)

In 2006, Presidential Executive Order 13407 established the Integrated Public Alert and Warning System (IPAWS). IPAWS provides the ability to send immediate warnings to the American people. The system ensures that the President of the United States can alert and warn the public in times of crisis. It also provides state, tribal, and local authorities with the capability to send emergency warnings to members of the public within their respective jurisdictions. These alerts can appear on cell phones, television, radio stations and cable television as well as other devices.

Emergency Alert System (EAS) Messages

The Emergency Alert System (EAS) is a national public warning system that requires television and radio broadcasters, cable television service providers, satellite service providers, and wireline operators to provide the President of the United States with the capability to address the American people within ten minutes during a national emergency. This public-private partnership includes the following features:

- EAS messages can interrupt radio and television programming to broadcast emergency alert information.
- EAS messages cover a large geographic footprint.

- EAS messages can support full message text for screen crawl/display, audio attachments in mp3 format, and additional languages.

Wireless Emergency Alert (WEA) Messages

Through a partnership between the Federal Emergency Management Agency (FEMA), the Federal Communications Commission (FCC), and wireless cellular service providers, authorized federal, state, local, tribal, and territorial public alerting authorities to broadcast Wireless Emergency Alerts (WEAs). WEA messages are short emergency messages broadcast from cellular telephone towers to any WEA-enabled mobile device within a specifically targeted geographic area. Depending upon the situation, a variety of different WEA messages can be issued:

- Imminent Threat Alerts include natural or human-made disasters, extreme weather, active shooters, and other threatening emergencies that are current or emerging.
- Public Safety Alerts contain information about a threat that may not be imminent or after an imminent threat has occurred. Public safety alerts are less severe than imminent threat alerts.
- America's Missing: Broadcast Emergency Response (AMBER) Alerts are urgent bulletins issued in child-abduction cases. Rapid and effective public alerts often play a crucial role in returning a missing child safely. An AMBER Alert instantly enables the entire state of Minnesota to assist in the search for and safe recovery of the child.
- Opt-in Test Messages assess the capability of state and local officials to send their WEAs. The message will state that this is a TEST.

WEA Message features include:

- WEA messages have a unique tone and vibration, both repeated twice.
- WEA messages are free and are exempt from texting limits on wireless device service plans.
- WEA messages will not interrupt an existing telephone call, but will display when the call is completed.
- WEA messages do not track a user's location. They are broadcast from area cell towers to mobile devices within a defined geographic location. Every WEA-capable device within that area will receive the message.
- WEA messages are not affected by cellular network congestion.

In 2020, DPS-ECN and the SECB IPAWS Committee collaborated with local alerting authorities to revise and develop new material for the second published version of Minnesota's 'Statewide Alert, Warning, and Notification Best Practices Guide'. This guide provides recommendations to local alerting authorities regarding the most appropriate processes and procedures for maintaining their IPAWS capabilities and issuing WEA and EAS messages to the public.

In 2020, DPS-ECN and the SECB IPAWS Committee also worked to expand the alerting area of each IPAWS-capable jurisdiction to include adjacent bordering counties within the State of Minnesota. This change accommodated the need for appropriate alerts and warnings to be issued when an emergency occurs along a jurisdictional border or when it extends across jurisdictional lines. In 2021, this capability was expanded to include the ability of Minnesota jurisdictions to issue alerts and warning across state lines into adjacent counties in the State of Iowa.

DPS-ECN and the SECB IPAWS Committee are looking forward to improving IPAWS capabilities through ongoing efforts related to the development of additional best practices guides, updating plans, providing training and outreach opportunities, increasing awareness and utilization, and implementing new features and technology.

IPAWS Altering Authorities in Minnesota

The following Minnesota jurisdictions are approved IPAWS alerting authorities:

- 83 counties: four counties are not currently IPAWS-capable
- DPS-BCA (Bureau of Criminal Apprehension)
- DPS-HSEM (Homeland Security and Emergency Management)
- City of Minneapolis
- Metropolitan Airports Commission (MSP Airport Communications Center)

In the period between January 2019 and April 2021, Minnesota's alerting authorities issued 93 IPAWS alerts. As noted in Figure 8, alerts were issued for a number of situations including:

- Winter storm road closures.
- Flash flood evacuation notices.
- Emergency curfew notifications.
- Cold weather shelter locations.
- 911 service outages.

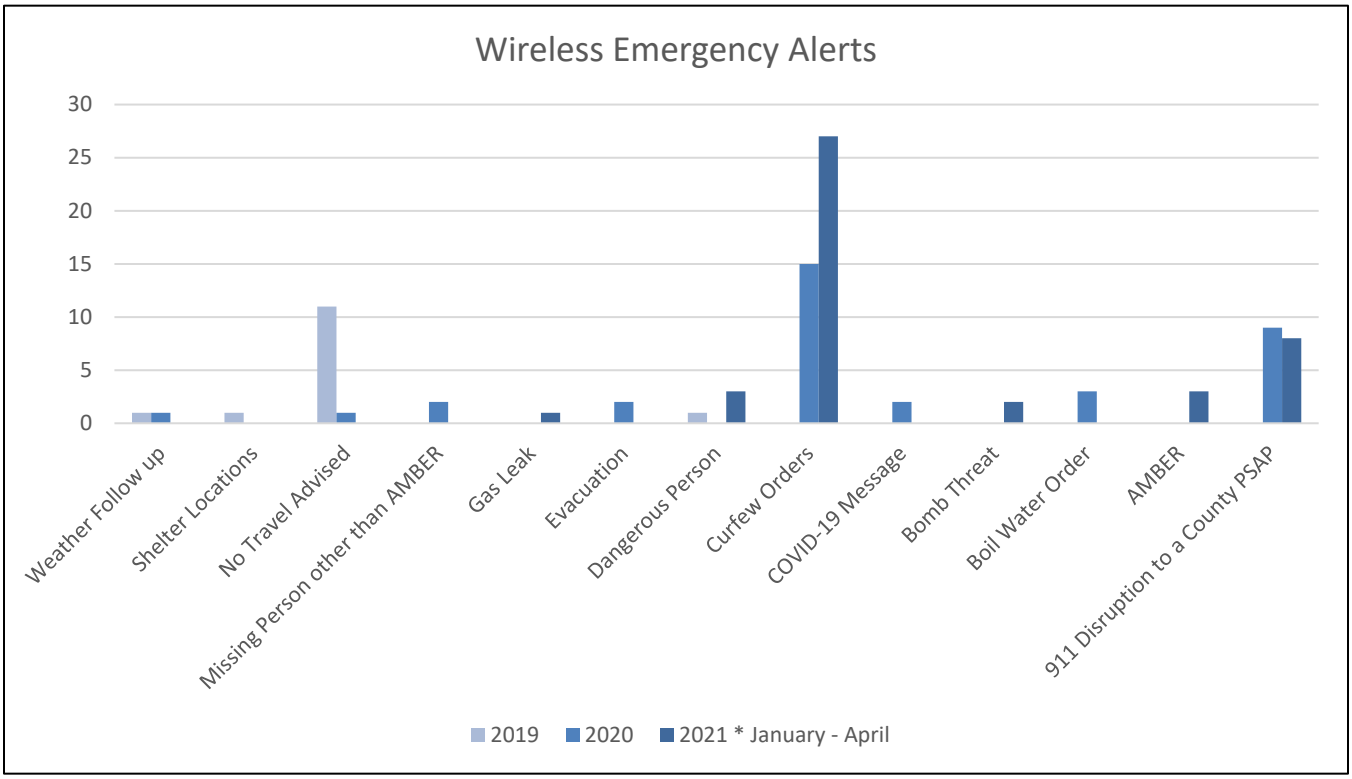


Figure 8: WEA Messages (January 2019-April 2021)

Training and Exercises

The goal of training and exercises is to be sure the public safety community can do their jobs effectively. Implementing effective training and exercise programs is essential for ensuring that interoperable emergency communications equipment and technology works as intended so responders are able to communicate effectively with one another during disasters, emergencies, and acts of terrorism.

In partnership with DPS-ECN, the SECB and its committees and workgroups are committed to providing Minnesota's public safety community with ongoing training and exercise opportunities to improve their knowledge, skills, and abilities related to the use of interoperable emergency communications equipment and technology. Examples include:

- On-line training modules developed by DPS-ECN and hosted through Alexandria Technical College.
- Virtual and in-person training courses and exercises hosted through the DHS CISA Interoperable Communications Technical Assistance Program (ICTAP).
- Virtual and in-person training courses and exercises hosted by DPS-ECN.
- Grant funding to support virtual and in-person training courses delivered on a local/regional level.

The SECB's Desired State of Technology and Operations

The SECB has identified the following capability targets as essential benchmarks for achieving the desired state of interoperable emergency communications technology and operations within Minnesota:

- 911: The SECB will provide recommendations regarding the development and deployment of a secure, shared public safety network that supports information and application sharing.
- 911: The SECB will advocate for certification and standardized training for PSAP staff, and for positions classified and compensated to assure long-term career retention.
- 911: The SECB will work to ensure that core services, networks, data, and apps are available, well known, and supported through effective training and use of analytics.
- 911: The SECB will promote a resilient 911 network that readily adapts to rapidly changing technology.
- 911 / LMR: The SECB will make recommendations regarding the physical and cyber security measures necessary to protect the 911 and Land Mobile Radio (LMR) systems.
- Wireless Broadband: The SECB will advocate for cellular service that provides the coverage, reliability, quality of service, and redundancy necessary to support public safety needs.
- Wireless Broadband: The SECB will advocate for robust interoperable mobile broadband communication capabilities are available to public safety partners across Minnesota when and where they are needed.
- IPAWS: The SECB will provide warning and alerting originators with updated guidance and training/exercise opportunities to remain current with IPAWS operations.

Section 5: Funding and Sustainment

All public safety agencies, including law enforcement, fire, emergency medical services, public works and utilities, Public Safety Answering Points (PSAPs), and dispatch centers, regardless of size or discipline, must have the equipment and technology necessary to support their ability to serve and protect the residents and visitors in their communities. Acquiring and maintaining interoperable emergency communications technology and equipment is an ongoing process, not a one-time investment. Adequate funding must be secured to ensure that Minnesota's core emergency communication systems, which are 911, LMR, Wireless Broadband, and IPAWS, are well maintained with a long-term commitment to upgrades and eventual replacement of aging infrastructure.

When considering emergency communication funding and sustainment needs, all six public safety communications system components categories - Infrastructure, Fixed Station Equipment, Devices, Accessories, Features, and Software/Data Storage - depicted in Figure 9 must be considered. Figure 9 also includes a general description of the cost ranges and expected lifespans of each component. Cost ratings are relative to each other with 'Infrastructure' being the most expensive and 'Accessories' being one of the least expensive components. Additional features and accessories drive up costs, but are essential for many responders to complete their mission effectively. Costs also vary depending on system configuration, owned or leased operation, geographic region, manufacturer, applicable technical standards testing, operational and maintenance costs, and other factors.

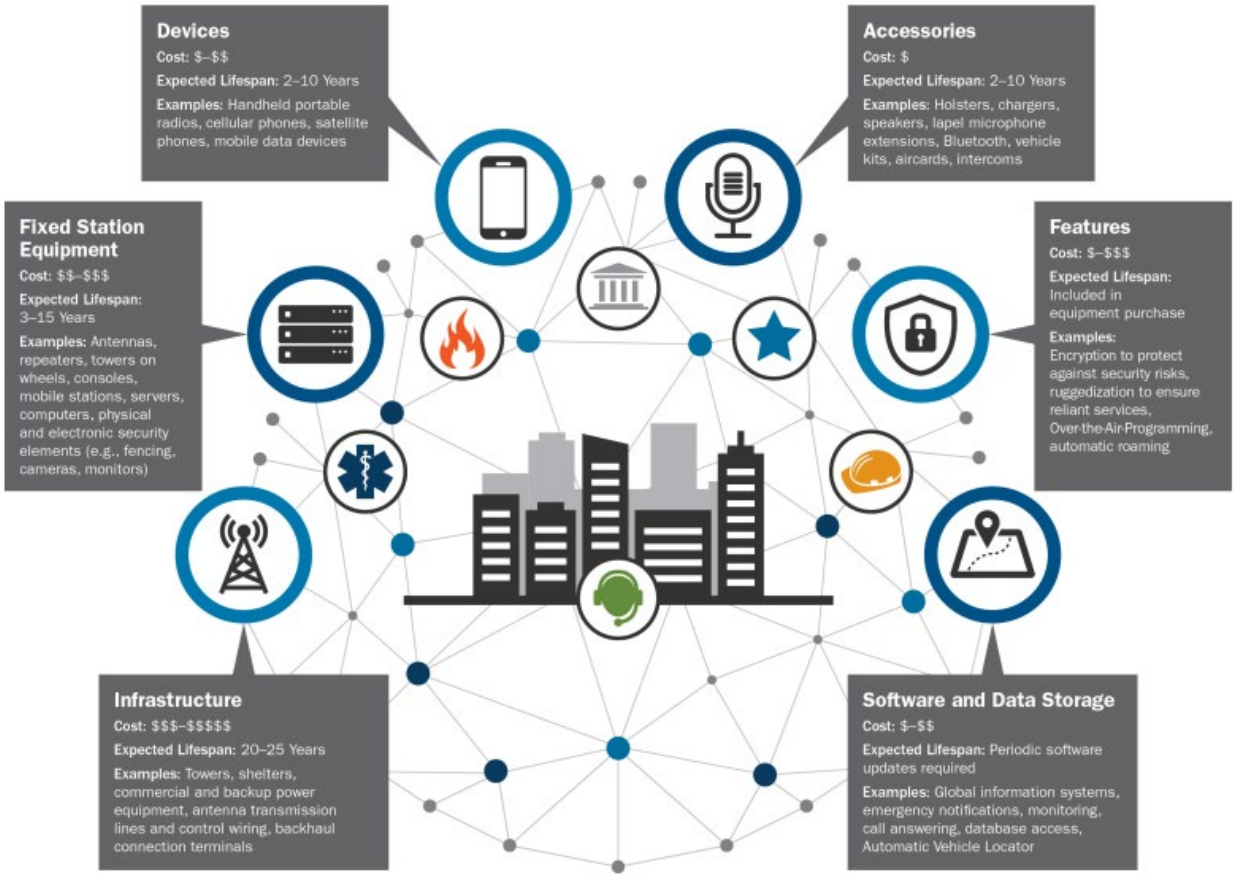


Figure 9: Public Safety Communications System Components

Minnesota's public safety agencies utilize a variety of funding mechanisms to help build, improve, expand, and sustain their interoperable emergency communications systems. In collaboration with DPS-ECN, the statewide and regional governance systems play a key role in identifying sources of funding for interoperable emergency communications projects and initiatives and ensuring that these funds are prioritized and allocated in a cost-effective manner.

911 Special Revenue Account:

The Minnesota legislature has established the 911 Special Revenue Account to support the infrastructure, technology, and equipment necessary to deliver 911 calls to eligible Minnesota Public Safety Answering Points (PSAPs), identify the caller's location, communicate with the caller, and dispatch appropriate emergency response resources.

The 911 Special Revenue Account is funded through fees collected from each landline, VoIP, and cellular telephone service provider that operates in Minnesota. These carriers assess a monthly fee of $0.80 per line to each Minnesota customer. DPS-ECN is the state agency tasked with collecting these fees and allocating funding to support the operation of the state's 911 system.

Each year, DPS-ECN provides eligible PSAPs with approximately $27.3 million in funding from the 911 Special Revenue Account. By statute, these funds must be deposited in an interest-bearing fund or account separate from the entity's general fund and may only be used to support specific aspects of PSAP operations.

State statute also requires eligible entities receiving funding distributed from the 911 Special Revenue Account to conduct an annual audit on the use of those funds and report the findings to DPS-ECN. DPS-ECN, in turn, must submit an annual report to the Federal government regarding the state's use of 911 funds.

Grant Funding:

Jurisdictions that demonstrate a financial need can access funding available through a number of state and federal grant programs to provide the "seed money" for short-term projects and initiatives that improve their interoperable emergency communication capabilities. Because grants are a relatively unstable source of funding, their use for long-term sustainment of POETE activities is discouraged.

DPS-ECN manages the distribution of state and federal grant funds to eligible entities for the purposes of improving interoperable emergency communication capabilities:

- SECB Grant: In partnership with the SECB, DPS-ECN provides the seven ECB/ESB regions with grant funding to support projects and initiatives that improve local/regional interoperable emergency communications capabilities. This grant is funded through the 911 Special Revenue Account and all projects must be deemed eligible under the provisions of Minnesota State Statute 403.113.
- SHSP Grant: The State Homeland Security Program (SHSP) is a federally funded grant program intended to support state, local, tribal, and territorial efforts to build, sustain, and deliver the capabilities necessary to prevent, prepare for, protect against, and respond to acts of terrorism. DPS-ECN receives a limited amount of SHSP grant funding each year to improve the state's interoperable emergency communication capabilities.
- Other Grant Programs: On occasion, other state and/or federal grant funding opportunities become available to support specific statewide, regional, and/or local projects and initiatives related to improving interoperable emergency communication capabilities.

The SECB's Desired State of Funding and Sustainment

The SECB has identified the following capability targets as essential benchmarks for achieving the desired state of interoperable emergency communications funding and sustainment within Minnesota:

- The SECB will establish and implement a comprehensive funding plan that provides recommendations for the ongoing, stable, and adequate support and maintenance of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
- The SECB will promote efforts to help decision makers at the local, regional, state, tribal, and federal levels understand the importance of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS), and support investments in staffing, training, exercises, and technological resources that ensure the safety of Minnesota's residents, visitors, and emergency responders.
- The SECB will collaborate with key stakeholders to develop a capital improvement plan for each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS) and make recommendations to the Commissioner of Public Safety regarding the maintenance and upgrades necessary to support existing statewide interoperable emergency communication programs, systems, and applications.
- The SECB will advocate for state and federal grant funding to build and sustain interoperable emergency communication capabilities across each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).

Section 6: SWOT Analysis

A SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis provides insight into an organization's strengths and weaknesses (S-W), as well as broader opportunities and threats (O-T). The results of a SWOT analysis can help drive both the strategic planning and decision-making processes. In developing this plan, a SWOT analysis was conducted to assess the status of interoperable emergency communications in Minnesota.

Strengths:

- Interoperability:
  - The foundational elements of the SAFECOM Interoperability Continuum are well established in Minnesota's emergency communication ecosystem.
  - The statewide ARMER system provides a nationally recognized LMR interoperability solution.
  - Interoperability initiatives are supported through the statewide governance process.
  - Interoperable LMR capabilities have been established with surrounding states and provinces.
- Governance:
  - The SECB has an established governance structure that includes diverse representation from key stakeholder groups.
  - The SECB's governance structure facilitates planning efforts through open communication and active participation.
  - The SECB has adapted to the challenges of COVID-19 and demonstrated that effective governance can be achieved through virtual meetings.
  - The SECB has recognized the need to rely upon the subject matter expertise of its stakeholders to help guide the decision-making process.
  - Members of the various SECB committees are actively engaged in identifying solutions to meet the emergency communication needs of Minnesota's residents, visitors, and emergency responders.
- Funding and Sustainment:
  - The 911 Special Revenue Fund provides a legislatively mandated funding mechanism to support the 911 system on a state and local level.
  - The SECB has developed strong partnerships with key stakeholders to address emergency communication funding and sustainment needs.
  - The SECB has demonstrated a willingness to explore innovative strategies to address emergency communication funding and sustainment needs.
- Technology and Operations:
  - A robust statewide infrastructure is in place to support the ARMER and 911 systems.
  - As new technology becomes available, the 911 system continues to expand capabilities and improve the quality of service.
  - The initial buildout of the ARMER system infrastructure has been completed.
  - ARMER system capabilities are available to local, regional, tribal, state, and federal public safety entities across the state.
  - The wireless broadband system incorporates the latest technology with vast interest in expanding its capabilities worldwide.
  - The IPAWS provides an opportunity for public, private, and non-profit agencies/organizations to collaborate in the delivery of alert and warning messages to the public.
  - The IPAWS has the capability to deliver alert and waring messages in several languages.
  - The WEA capabilities of the Integrated Public Alert and Warning System (IPAWS) provide an excellent tool for notifying the public by utilizing cellular infrastructure to deliver alert and warning messages to a broad audience within a specific geographic area.

Weaknesses:

- Interoperability:
  - 'Interoperability' is somewhat ambiguous. Additional discussion is necessary to define the scope of the definition (interoperability between programs, across jurisdictional borders, across technologies, etc.).
  - Additional training and exercise opportunities are necessary to develop interoperable emergency communication capabilities across each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
  - Additional Communications Unit (COMU) personnel are needed to support the interoperable emergency communications needs of Minnesota's emergency responders.
- Governance:
  - In certain situations, SECB committees lack the necessary expertise/representation to address technical issues.
  - In certain situations, there is difficulty in filling vacancies within the SECB governance structure.
  - The governance structure surrounding the 911, Wireless Broadband, and IPAWS systems are not as fully developed as the structure supporting the LMR system.
- Funding and Sustainment:
  - Additional work needs to be identify the funding and sustainment needs for each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
  - A dedicated, stable funding mechanism is not in place to meet the funding and sustainment needs of the LMR, Wireless Broadband, and IPAWS systems.
  - The funding and sustainment planning process does not always incorporate the needs and priorities of all stakeholders across the state.
  - There is a certain level of uncertainty surrounding the ongoing discussion regarding 911 funding and fee diversion.
- Technology and Operations:
  - There is an ongoing need to fund and sustain key elements of Minnesota's four core emergency communication systems (911, LMR, Wireless Broadband, and IPAWS).
  - Discussions regarding funding and sustainment tend to focus on technology and do not always include considerations for operating costs, human capital, and other 'soft costs'.
  - At times, there is a lack of responsiveness/accountability with the telecommunications service providers involved in delivery of 911 calls to the PSAPs.
  - Training opportunities are inconsistent/limited due the lack of certification and standardized curriculum.
  - Due to rapidly evolving technology and standards, the implementation of NG 911 is not clearly defined.
  - There is a lag in implementing/leveraging technology to improve 911 caller location accuracy.
  - The statewide ARMER system is dependent on a single vendor to support the infrastructure.
  - Many portable and mobile radios operating on the statewide ARMER system are aging and obsolete.
  - The coverage provided by cellular service providers is not adequate to meet the needs of all emergency responders in Minnesota.
  - Due to the success of the ARMER system, the adoption and utilization of LMR-LTE integration technology is lagging.
  - The IPAWS is a somewhat underutilized resource. Additional work is needed to solicit participation by public/private partners.
  - The IPAWS does not have the capability to deliver alert and warning messages in all of the common languages used by Minnesota's residents and visitors.

Opportunities:

- Interoperability:
  - Raise awareness/interest in the Communications Unit (COMU) program.
  - Explore solutions to improve interoperable emergency communication capabilities across each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
  - Identify solutions to improve data interoperability (common platform, shared services, etc.).
- Governance:
  - Provide additional clarity regarding the roles and responsibilities of the SECB, DPS-ECN, and the Commissioner of Public Safety in supporting each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
  - Identify, engage, and recruit key stakeholders to fill SECB committee vacancies.
  - Ensure that the representation on various SECB committees includes the 'right mix' of stakeholders with diverse backgrounds (decision makers, operational, technological) and levels of expertise.
  - Develop and implement a cross-functional approach to SECB committee work.
  - Increase involvement in planning and coordination efforts related to each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
- Funding and Sustainment:
  - Advocate for state and federal grant funding to improve interoperable emergency communication capabilities across each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
  - Foster collaboration and partnerships with key stakeholders to advocate for adequate funding to support each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
- Technology and Operations:
  - Raise awareness with key stakeholders regarding the regarding the capabilities and constraints related to each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
  - Identify the training and exercise needs of stakeholders at the local, regional, tribal, and statewide levels.
  - Raise awareness and understanding of cybersecurity threats to each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
  - Leverage existing LMR and 911 infrastructure to support other emergency communication needs.
  - Identify opportunities to implement shared services (personnel, hardware, software, infrastructure, etc.) at a regional/statewide level to reduce costs, improve reliability, and enhance interoperability.
  - Identify measures to promote the recruitment and retention of PSAP employees.
  - Explore CAD-to-CAD interoperability solutions.
  - Develop an ARMER system encryption plan to improve the security of sensitive LMR communications.
  - Foster collaboration and partnerships with key stakeholders to address local ARMER system coverage gaps.
  - Advocate to the FirstNet Authority and ATT to invest in coverage and capacity to meet the needs of Minnesota's emergency responders.
  - Leverage emerging technology to expand the IPAWS capabilities.
  - Increase the IPAWS capabilities to include the ability to deliver alert and warning messages in additional languages.

Threats:

- Interoperability:
  - Lack of compatibility/interoperability across software/application platforms.
  - There is a lack of trained and credentialed personnel to adequately support the Communications Unit (COMU) program.
  - There is a lack of dedicated/stable funding to support the interoperable emergency communication needs of stakeholders at the local, regional, tribal, and state levels.
  - There are not enough training and exercise opportunities available at the local, regional, tribal, and statewide levels to develop and demonstrate proficiency with interoperable emergency communication systems.
- Governance:
  - The 'institutional knowledge' of long-standing SECB members will be lost due to natural turnover and attrition.
- Funding and Sustainment:
  - Lack of awareness and understanding among decision makers regarding the importance of funding and sustainment of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
  - Uncertainty regarding the availability of state and federal grants to improve interoperable emergency communication capabilities across each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
  - Inadequate funding to support each of Minnesota's four core emergency communications systems (911, LMR, Wireless Broadband, and IPAWS).
  - Significant funding will be needed to replace aging/obsolete ARMER system equipment and infrastructure.
- Technology and Operations:
  - Unrealistic expectations regarding the 'desired state' of technology.
  - System vulnerability to cyber-attacks.
  - Recruiting and retaining PSAP employees.
  - 911 service disruptions and outages.
  - Lack of diversity, reliability, and redundancy with telecommunication service providers.
  - Inability to influence cellular service providers to meet the needs of Minnesota's emergency responders.
  - Lack of transparency from cellular service providers regarding coverage, quality of service, features, etc.
  - Lack of end-user familiarity/proficiency with the various IPAWS software platforms results in incomplete alert and warning messages and /or other errors.

Section 7: SECB Committee Goals and Objectives

This section outlines the specific goals and objectives that each SECB Committee has established to support the execution of this plan.

Steering Committee					
The role of the SECB Steering Committee is to advise the SECB on all matters related to policy decisions.					
Goals	**Objectives**	**Actions**	**Metrics for Success**	**Timeline**	**Ownership**
Promote and enhance a robust SECB governance structure based on strong partnerships and active involvement from stakeholders.	• Increase stakeholder awareness of, and participation in, the SECB governance structure. • Clearly define the role of the SECB in MSS Chapter 403 language related to governance. • Ensure that the SECB by-laws and other documents related to the governance process reflect the important role that the SECB members play in supporting Minnesota's four core emergency communications systems.	• Conduct outreach to solicit broader participation in the SECB governance process. • Engage the SECB Legislative Committee to periodically review and update the governance related language included in the MSS Chapter 403 statute. • Periodically review and, as necessary, update the SECB by-laws and other documents related to the governance process.	• Committee members participate in outreach activities (at least once per year) to solicit participation in SECB governance. • SECB vacancies are filled. • The governance related language in the MSS Chapter 403 statute remains current and relevant. • The SECB by-laws and other documents related to the governance process remain current and relevant.	Ongoing effort throughout 3-year SCIP cycle.	• Steering Committee • Legislative Committee • Other SECB Committees • Other key stakeholders

Goals	Objectives	Actions	Metrics for Success	Timeline	Ownership
Educate and inform decision makers and key stakeholders at the local, regional, state, tribal, and federal levels regarding Minnesota's four core emergency communications systems as well as the important role that SECB governance plays in ensuring the safety of Minnesota's residents, visitors, and emergency responders.	• Increase stakeholder awareness and understanding of Minnesota's four core emergency communications systems. • Increase stakeholder awareness and understanding regarding SECB governance activities.	• Develop 'Fact Sheets' regarding Minnesota's four core emergency communications systems as well as the role that the SECB plays in supporting these systems. • Conduct outreach to educate and inform decision makers and key stakeholders regarding Minnesota's four core emergency communications systems as well as SECB governance activities.	• 'Fact Sheets' are developed regarding Minnesota's four core emergency communications systems as well as SECB governance activities. • Committee members participate in outreach activities (at least once per year) to educate and inform decision makers regarding Minnesota's four core emergency communications systems as well as SECB governance.	Ongoing effort throughout 3-year SCIP cycle.	• Steering Committee • Other SECB Committees • Other key stakeholders
Promote and support cross-committee communication, coordination, and collaboration on SCIP related initiatives.	• Socialize SCIP related goals and objectives with SECB committees and key stakeholders. • Work with SECB committees and key stakeholders to ensure that initiatives align with the SCIP. • Promote successful outcomes of SCIP related initiatives by providing support and guidance to SECB committees and key stakeholders.	• Identify and support opportunities for cross-committee communication, coordination, and collaboration on SCIP related initiatives. • Encourage SECB committee members and key stakeholders to provide input and share diverse perspectives regarding SCIP related initiatives.	• Improved communication, coordination, and collaboration between SECB committees and workgroups. • Increased situational awareness regarding SCIP related initiatives. • Increased stakeholder engagement and input on SCIP related initiatives.	Ongoing effort throughout 3-year SCIP cycle.	• Steering Committee • Other SECB Committees • Other key stakeholders

Legislative Committee					
The role of the SECB Legislative Committee is to advise the SECB on all matters related to legislation and government affairs that have the potential to impact the board and its members.					
Goals	**Objectives**	**Actions**	**Metrics for Success**	**Timeline**	**Ownership**
Recommend revisions to MSS Chapter 403 statutes to ensure that it remains relevant with regard to governance, emerging technologies, and other factors.	Engage other SECB committees and key stakeholders to periodically review MSS Chapter 403 statute language.	• Maintain the 403 statute workgroup. • Identify the need for 403 statute revisions. • As necessary, propose updates to the MSS Chapter 403 statutes language.	The MSS Chapter 403 statutes remain relevant as Minnesota's emergency communications 'ecosystem' evolves.	Ongoing effort throughout 3-year SCIP cycle.	• Legislative Committee • Other SECB Committees • Other key stakeholders
Advocate for legislation to ensure that Minnesota's four core emergency communication systems have adequate, stable funding.	Engage other SECB committees and key stakeholders to identify funding needs and priorities.	• Develop capital improvement plans for each of Minnesota's four core emergency communication systems. • Identify funding gaps and potential solutions to address those gaps. • Propose legislation to address funding needs and priorities.	Legislation is enacted to ensure that Minnesota's four core emergency communication systems have adequate, stable funding.	Ongoing effort throughout 3-year SCIP cycle.	• Legislative Committee • Finance Committee • Other SECB Committees • Other key stakeholders
Advocate for legislation to support the operational needs of stakeholders at the local, regional, tribal, and state levels as they related to emergency communications.	Engage other SECB committees and key stakeholders to identify the need for new emergency communication related legislation.	• Maintain the 403 workgroup. • Identify the need for MSS Chapter 403 statutes revisions. • As necessary, propose legislation to address operational needs.	Legislation is enacted to ensure that Minnesota's PSAPs and emergency responders have access to the emergency communication resources necessary to deliver high quality services to Minnesota residents and visitors.	Ongoing effort throughout 3-year SCIP cycle.	• Legislative Committee • Other SECB Committees • Other key stakeholders

Finance Committee					
The role of the SECB Finance Committee is to advise the SECB on all matters that have a financial impact upon the board and its members and users.					
Goals	**Objectives**	**Actions**	**Metrics for Success**	**Timeline**	**Ownership**
Identify the emergency communication funding needs of local, regional, tribal, and statewide public safety agencies.	Engage SECB committees, the seven ECB/ESB regions, and other key stakeholders to identify emergency communication funding needs.	Develop and implement a mechanism for collecting and documenting the emergency communication funding needs of local, regional, tribal, and statewide public safety agencies.	An annual 'Needs Assessment' is completed to document the emergency communication funding needs of local, regional, tribal, and statewide public safety agencies.	Ongoing effort throughout 3-year SCIP cycle.	• Finance Committee • Other SECB Committees • Other key stakeholders
Identify the emergency communication funding necessary to implement, improve, and sustain Minnesota's four core emergency communications systems.	Engage all SECB committees to develop 'Capital Improvement and Sustainment Plans' for each of Minnesota's four core emergency communications systems.	• All SECB committees contribute to the development of 'Capital Improvement and Sustainment Plans'. • Plans are submitted to the SECB Finance Committee for review. • Plans are submitted to the SECB for approval.	A 'Capital Improvement and Sustainment Plan' is developed and maintained for each of Minnesota's four core emergency communications systems.	Q4 2023.	• Finance Committee • Other SECB Committees • Other key stakeholders

Goals	Objectives	Actions	Metrics for Success	Timeline	Ownership
Provide recommendations to the Commissioner of Public Safety regarding funding necessary to support interoperable emergency communications capabilities across Minnesota.	Engage SECB committees and key stakeholders to identify and document funding and sustainment strategies for Minnesota's four core emergency communications systems.	• Gather information regarding emergency communication system funding and sustainment needs. • Develop a report that outlines strategies for funding and sustaining Minnesota's four core emergency communications systems.	An annual report is provided to the Commissioner of Public Safety that includes funding and sustainment recommendations for each of Minnesota's four core emergency communications systems.	Ongoing effort throughout 3-year SCIP cycle.	• Finance Committee • Legislative Committee • Steering Committee • Other SECB Committees • Other key stakeholders
Educate and inform decision makers at the local, regional, state, tribal, and federal levels regarding the need for ongoing, stable, and adequate funding mechanisms to support Minnesota's four core emergency communications systems.	Engage committee members, the seven ECB/ESB regions, and key stakeholders to perform education and outreach activities to increase awareness regarding the funding necessary to support Minnesota's four core emergency communications systems.	• Identify education and outreach opportunities regarding emergency communication funding needs. • Develop 'Fact Sheets' regarding Minnesota's four core emergency communications systems and the funding necessary to support them.	At least two outreach activities are conducted annually to educate and inform decision makers regarding the need for funding to support Minnesota's four core emergency communications systems.	Ongoing effort throughout 3-year SCIP cycle.	• Finance Committee • Legislative Committee • Steering Committee • Other SECB Committees • Other key stakeholders
Advocate for state and federal grant funding to enhance interoperable emergency communications capabilities across Minnesota.	Engage other SECB committees, the seven ECB/ESB regions, and key stakeholders to identify potential grant funded projects.	• Identify potential local, regional, tribal, and statewide grant funded projects. • Engage decision makers and key stakeholders to secure grant funding for emergency communications related projects.	State and/or federal grant funding is secured to support projects that enhance interoperable emergency communications capabilities across Minnesota.	Ongoing effort throughout 3-year SCIP cycle.	• Finance Committee • Legislative Committee • Steering Committee • Other SECB Committees • Other key stakeholders

Interoperability Committee					
The role of the SECB Interoperability Committee is to advise the SECB on all matters related to public safety communications interoperability.					
Goals	**Objectives**	**Actions**	**Metrics for Success**	**Timeline**	**Ownership**
Support the development and implementation of a statewide Land Mobile Radio (LMR) encryption plan.	Work with the Land Mobile Radio Committee, other SECB committees, and key stakeholders to: • Identify current LMR encryption capabilities and future needs. • Develop a multi-year plan for the statewide adoption of LMR encryption capabilities.	• Define the current state of encryption capabilities within the state. • Identify the desires state of LMR encryption capabilities. • Identify encryption standards (technical and operational) for statewide ARMER talkgroup resources. • Identify technological, funding, and operational needs associated with achieving the desired state of LMR encryption.	The SECB approves and adopts standards (technical and operational) and a multi-year plan for the statewide adoption of LMR encryption capabilities.	Ongoing effort throughout 3-year SCIP cycle.	• Interoperability Committee • Land Mobile Radio Committee • Other SECB Committees • Other key stakeholders
Support efforts to promote CAD-to-CAD system interoperability and information sharing solutions.	Work with the NG 911 Committee, other SECB committees, and key stakeholders to identify CAD system interoperability and information sharing needs.	• Identify potential solutions that will improve interoperability and information sharing between PSAPs. • Identify the feasibility and potential costs associated with implementing CAD-to-CAD interoperability and information sharing solutions on a local, regional, and/or statewide level.	CAD-to-CAD system interoperability and information sharing solutions are identified and. Based on feasibility and cost, are implemented on a local, regional, and/or statewide level.	Ongoing effort throughout 3-year SCIP cycle.	• Interoperability Committee • NG 911 Committee • Other SECB Committees • Other key stakeholders

Goals	Objectives	Actions	Metrics for Success	Timeline	Ownership
Recommend revisions to the Minnesota Field Operations Guide (MNFOG) to ensure that it remains current with regard to emerging technologies and other factors.	Engage the COMU and workgroup, STR workgroup, other SECB committees, and key stakeholders to identify necessary updates to the MNFOG.	• Conduct an annual review of the MNFOG content. • As necessary, propose updates to the MNFOG content.	The information contained within the MNFOG document remains current and relevant to COMU personnel.	Ongoing effort throughout 3-year SCIP cycle.	• Interoperability Committee • Communications Unit (COMU) Workgroup • Strategic Technology Reserve (STR) Workgroup • Other SECB Committees • Other key stakeholders
Recommend revisions to the Minnesota Communications Unit (COMU) Standard Operating Guidelines (SOGs) to ensure that they remain current with regard to governance processes, federal guidance, and other factors.	Engage the COMU and workgroup, other SECB committees, and key stakeholders to identify necessary updates to the COMU SOG.	• Conduct an annual review of the COMU SOG content. • As necessary, propose updates to the COMU SOG content.	The information contained within the COMU SOG document remains current and relevant to COMU personnel.	Ongoing effort throughout 3-year SCIP cycle.	• Interoperability Committee • Communications Unit (COMU) Workgroup • Strategic Technology Reserve (STR) Workgroup • Other SECB Committees • Other key stakeholders

Goals	Objectives	Actions	Metrics for Success	Timeline	Ownership
Increase capabilities, awareness, and utilization of Communications Unit (COMU) and Strategic Technology Reserve (STR) resources.	Engage the COMU and workgroup, the STR Workgroup, other SECB committees, and key stakeholders to: • Identify COMU/STR training and exercise needs. • Identify COMU/STR equipment and technology needs. • Identify strategies for increasing COMU/ STR utilization. • Identify strategies for increasing the number of recognized COMU personnel.	• Advocate for increased participation in the COMU program at the local, regional, tribal, and state levels. • Advocate for additional COMU/STR training and exercise opportunities. • Increase awareness among local, regional, tribal, and state public safety entities regarding COMU/STR capabilities. • Incorporate additional technology and equipment into the STR cache.	• An informational handout regarding COMU/STR capabilities is developed. • An adequate number of recognized COMU personnel are available to meet operational needs. • Regular COMU/STR training and exercise opportunities are provided across the state. • The STR capabilities are expanded to incorporate all four of Minnesota's core emergency communication systems.	Ongoing effort throughout 3-year SCIP cycle.	• Interoperability Committee • Communications Unit (COMU) Workgroup • Strategic Technology Reserve (STR) Workgroup • Other SECB Committees • Other key stakeholders

NG 911 Committee

The role of the SECB NG 911 Committee is to advise the SECB on all matters relating to NG 911. The committee will recommend to the board uniform 911 network design characteristics, policies, and procedures based on best practices and industry standards to ensure Public Safety Answering Point (PSAP) interoperability across the state through the use of open architecture and the implementation of a coordinated statewide NG911 plan. The NG911 Committee will plan the migration to, utilization of, and the continued operation and maintenance for the statewide, interoperable next generation 911 system.

Goals	Objectives	Actions	Metrics for Success	Timeline	Ownership
Support the development and implementation of a Capital Improvement Plan (CIP) for the 911 system.	Work with the Finance Committee, other SECB committees, and key stakeholders to: • Identify future 911 technology, equipment, and operational needs. • Develop criteria for prioritizing these needs. • Identify costs associated with addressing these needs.	• Develop a list of projects (technology and equipment) that will sustain and/or enhance 911 system capabilities. • Identify the feasibility and potential costs associated with achieving the desired capabilities.	The SECB approves and adopts a multi-year Capital Improvement Plan to help guide future investments in the statewide 911 system.	Ongoing effort throughout 3-year SCIP cycle.	• NG 911 Committee • Finance Committee • Other SECB Committees • Other key stakeholders
Support the implementation and sustainment of NG 911 capabilities in Minnesota's PSAPs.	• Identify the actions necessary to ensure reliability, interoperability, and use of commonly accepted standards as Minnesota's PSAPs fully implement NG 911 capabilities.	• Identify necessary actions to complete the statewide implementation of NG 911 capabilities. • Develop standards and best practices to support the implementation and sustainment of NG 911 capabilities. • Develop a multi-year plan for the implementation and sustainment of NG 911 capabilities across the state.	• The SECB approves and adopts standards (technical and operational), best practices, and a multi-year plan for the implementation and sustainment of NG 911 capabilities across the state.	Ongoing effort throughout 3-year SCIP cycle.	• NG 911 Committee • Other SECB Committees • Other key stakeholders

Goals	Objectives	Actions	Metrics for Success	Timeline	Ownership
Increased awareness regarding the current state of PSAP technology, staffing, and operations.	• Support data gathering efforts to gain insight into the current PSAP operational environment. • Promote stakeholder awareness regarding the need to review and update 911 plans on a regular basis.	• Survey PSAPs to gather data regarding technology, staffing, and operations. • Develop recommendations regarding the ongoing review and maintenance of 911 plans.	The SECB has current and relevant information available to help guide decision making related to 911 system technology, staffing, and operations.	Ongoing effort throughout 3-year SCIP cycle.	• NG 911 Committee • Other SECB Committees • Other key stakeholders
Advocate for programs and appropriate funding to meet the technology and equipment needs of Minnesota's PSAPs.	• Increase stakeholder awareness and understanding regarding the critical role that a stable (and sufficient) PSAP funding mechanism plays in ensuring the safety of Minnesota's residents, visitors, and emergency responders.	• Identify PSAP funding needs and priorities. • Develop a 'Fact Sheet' regarding the funding needs of Minnesota's PSAPs. • Conduct outreach to educate and inform decision makers and key stakeholders regarding the need for a stable funding mechanism to support the current and future operational needs of Minnesota's PSAPs.	• A 'Fact Sheet' is developed regarding the ongoing funding needs of Minnesota's PSAPs. • Committee members participate in outreach activities (at least once per year) to educate and inform decision makers regarding the ongoing funding needs of Minnesota's PSAPs. • Legislation is enacted that provides Minnesota's PSAPs with adequate, stable funding to meet their operational needs.	Ongoing effort throughout 3-year SCIP cycle.	• NG 911 Committee • Finance Committee • Legislative Committee • Other SECB Committees • Other key stakeholders

Goals	Objectives	Actions	Metrics for Success	Timeline	Ownership
Advocate for programs and appropriate funding to meet the classification, compensation, training, wellness, and related needs of Minnesota's 911 telecommunicators.	• Increase stakeholder awareness and understanding regarding the critical role that 911 telecommunicators play in ensuring the safety of Minnesota's residents, visitors, and emergency responders. • Increase stakeholder awareness and understanding regarding the need for programs and appropriate funding to support 911 telecommunicators.	• Develop 'Fact Sheets' regarding the need for programs and appropriate funding to support 911 telecommunicators. • Conduct outreach to educate and inform decision makers and key stakeholders regarding the need for programs and appropriate funding to support 911 telecommunicators. • Advocate for legislative action to address 911 telecommunicator classification, compensation, training, and wellness related issues.	• 'Fact Sheets' are developed regarding the need for programs and funding to support 911 telecommunicators. • Committee members participate in outreach activities (at least once per year) to educate and inform decision makers regarding the need for programs and funding to support 911 telecommunicators. • Legislation is enacted that addresses 911 telecommunicator classification, compensation, training, and wellness related issues.	Ongoing effort throughout 3-year SCIP cycle.	• NG 911 Committee • Other SECB Committees • Other key stakeholders
Support efforts to promote CAD-to-CAD system interoperability and information sharing solutions.	Work with the Interoperability Committee, other SECB committees, and key stakeholders to identify CAD system interoperability and information sharing needs.	• Identify potential solutions that will improve interoperability and information sharing between PSAPs. • Identify the feasibility and potential costs associated with implementing CAD-to-CAD interoperability and information sharing solutions on a local, regional, and/or statewide level.	CAD-to-CAD system interoperability and information sharing solutions are identified and. Based on feasibility and cost, are implemented on a local, regional, and/or statewide level.	Ongoing effort throughout 3-year SCIP cycle.	• NG 911 Committee • Interoperability Committee • Other SECB Committees • Other key stakeholders

Goals	Objectives	Actions	Metrics for Success	Timeline	Ownership
Enhance the SECB's capacity and capability to support decisions related to the implementation and sustainment of NG 911 capabilities.	Work with the Steering Committee, the Legislative Committee, other SECB committees, and key stakeholders to define the SECB's role in supporting the decision-making process for NG 911 related issues.	• Identify the roles and responsibilities of key stakeholder involved in decisions related to the implementation and sustainment of NG 911 capabilities. • Identify opportunities for the SECB to build additional capacity and capability to support decisions related to the implementation and sustainment of NG 911 capabilities.	The SECB approves and adopts an engagement and involvement strategy that clearly defines its desired role in supporting decisions related to the implementation and sustainment of NG 911 capabilities across the state.	Ongoing effort throughout 3-year SCIP cycle.	• NG 911 Committee • Steering Committee • Other SECB Committees • Other key stakeholders

Land Mobile Radio Committee					
The role of the SECB Land Mobile Radio (LMR) Committee is to advise the SECB on all matters operational and technical as they pertain to use of the ARMER System and LMR technologies.					
Goals	**Objectives**	**Actions**	**Metrics for Success**	**Timeline**	**Ownership**
Support the development and implementation of a Capital Improvement Plan (CIP) for the ARMER system.	Work with the Finance Committee, other SECB committees, and key stakeholders to: • Identify future LMR technology, equipment, and operational needs. • Develop criteria for prioritizing these needs. • Identify costs associated with addressing these needs.	• Identify potential projects (technology and equipment) that will sustain and/or enhance ARMER system capabilities. • Identify the feasibility and potential costs associated with achieving the desired capabilities.	The SECB approves and adopts a multi-year Capital Improvement Plan to help guide future investments in the statewide ARMER system.	Ongoing effort throughout 3-year SCIP cycle.	• LMR Committee • Finance Committee • Other SECB Committees • Other key stakeholders
Support the development and implementation of a statewide Land Mobile Radio (LMR) encryption plan.	Work with the Interoperability Committee, other SECB committees, and key stakeholders to: • Identify current LMR encryption capabilities and future needs. • Develop a multi-year plan for the statewide adoption of LMR encryption capabilities.	• Define the current and desired state of encryption capabilities within the state. • Develop encryption standards (technical and operational) for ARMER system statewide interoperability talkgroup resources. • Identify technological, funding, and operational needs associated with achieving the desired state of LMR encryption.	The SECB approves and adopts standards (technical and operational) and a multi-year plan for the statewide adoption of LMR encryption capabilities.	Ongoing effort throughout 3-year SCIP cycle.	• Land Mobile Radio Committee • Interoperability Committee • Other SECB Committees • Other key stakeholders

Goals	Objectives	Actions	Metrics for Success	Timeline	Ownership
Increased awareness regarding the current state of ARMER system participation and usage.	• Support data gathering efforts to gain insight into ARMER system usage by Minnesota's public safety community. • Promote stakeholder awareness regarding the need to review and update ARMER system participation plans on a regular basis.	• Survey ARMER system users to gather data regarding subscriber equipment utilized by emergency responders. • Develop recommendations regarding the ongoing review and maintenance of ARMER system participation plans.	The SECB has current and relevant information available to help guide decision making related to ARMER system participation and usage.	Ongoing effort throughout 3-year SCIP cycle.	• LMR Committee • Other SECB Committees • Other key stakeholders
A robust and adequate suite of ARMER system statewide Interoperability talkgroup resources are available to support interoperable LMR communications needs during multi-agency and/or multi-discipline response efforts.	Review ARMER system statewide Interoperability talkgroup capacity and capabilities to ensure that the current and future operational needs of system users are being met.	• Review the ARMER system statewide Interoperability talkgroup resources currently available and determine if additional capacity and/or capabilities are necessary. • Identify any technological, financial, and/or operational impacts that additional capacity and/or capabilities may create. • Develop recommendations for implementing additional capacity and/or capabilities.	The SECB provided recommendations to MnDOT regarding the need for additional ARMER system statewide Interoperability talkgroup capacity and/or capabilities.	Ongoing effort throughout 3-year SCIP cycle.	• LMR Committee • Other SECB Committees • Other key stakeholders

Wireless Broadband and Applications Committee					
The role of the SECB Wireless Broadband and Applications Committee is to advise the SECB on all matters relating to wireless broadband for public safety and to represent Minnesota on a national level.					
Goals	**Objectives**	**Actions**	**Metrics for Success**	**Timeline**	**Ownership**
Advocate for the wireless broadband needs of Minnesota public safety stakeholders.	• Engage stakeholders to identify and prioritize their needs. • Identify best practices and innovative technology related to wireless broadband capabilities and applications. • Engage cellular service providers to address stakeholder needs.	• Develop and implement a process for identifying and documenting local/regional wireless broadband needs and priorities. • Participate in national conferences, like PSCR, APCO. • Identify and participate in opportunities to engage/collaborate with cellular service providers to address stakeholder needs.	• Participate in at least three meetings per year to share information and solicit feedback from key stakeholders at the local/regional levels. • Attend at least two national conferences per year related to emergency communications. • Participate in at least three engagement opportunities with cellular service providers per year.	Ongoing effort throughout 3-year SCIP cycle.	• Wireless Broadband and Applications Committee • Other key stakeholders
Incorporate a “wireless broadband resources” section into the Minnesota Field Operations Guide (MNFOG).	• Engage the Communications Unit (COMU) Workgroup and other key stakeholders to develop a “wireless broadband resources” section in the MNFOG.	• Develop content for the “wireless broadband resources” section in the MNFOG. • Conduct an annual review of the “wireless broadband resources” section within the MNFOG. • As necessary, propose updates to the “wireless broadband resources” section in the MNFOG.	The information contained within the MNFOG document regarding wireless broadband resources remains current and relevant to COMU personnel.	Ongoing effort throughout 3-year SCIP cycle.	• Wireless Broadband and Applications Committee • COMU Workgroup. • Other key stakeholders

Goals	Objectives	Actions	Metrics for Success	Timeline	Ownership
Advocate for 100% geographic coverage from all cellular service providers to support the needs of Minnesota's emergency responders, with an additional focus on band class 14.	• Identify gaps in cellular coverage that adversely impact public safety operations. • Engage cellular service providers to influence coverage development for public safety stakeholders in unserved and underserved areas within the state.	• Meet with public safety stakeholders across the state to identify cellular coverage needs. • Conduct outreach efforts with cellular service providers to address coverage needs/priorities.	• Cellular coverage needs are identified and prioritized. • Information regarding coverage needs/priorities is presented to cellular service providers.	Ongoing effort throughout 3-year SCIP cycle.	• Wireless Broadband and Applications Committee • Other key stakeholders
Assess geographic coverage from all cellular service providers.	• Provide stakeholders with a cellular coverage evaluation tool.	• Identify the desired features and functionality. • Define criteria for deployment, usage, and data collection. • Acquire a cellular coverage evaluation tool for stakeholders to assess cellular coverage within their jurisdiction.	• A cellular coverage evaluation tool is available to Minnesota public safety stakeholders.	Ongoing effort throughout 3-year SCIP cycle.	• Wireless Broadband and Applications Committee • Other key stakeholders
Increase awareness among decision makers, emergency responders, and other key stakeholders regarding the need for improved data interoperability.	Engage committee members and other key stakeholders to: • Promote data interoperability. • Identify data sharing needs. • Identify potential data sharing solutions. • Identify potential data sharing standards.	• Raise awareness regarding the need/value of sharing data/data interoperability. • Conduct outreach to identify data sharing needs. • Evaluate potential data sharing solutions. • Develop data sharing standards and/or 'best practices'.	• Participate in three meetings per year to share information and solicit feedback from key stakeholders at the local/regional levels. • Potential data sharing solutions are vetted and endorsed. • Data sharing standards and/or 'best practices' are developed.	Ongoing effort throughout 3-year SCIP cycle.	• Wireless Broadband and Applications Committee • Other SECB Committees • Other key stakeholders

Goals	Objectives	Actions	Metrics for Success	Timeline	Ownership
Increase awareness among decision makers, emergency responders, and other key stakeholders regarding wireless broadband capabilities and applications.	Engage committee members and other key stakeholders to: • Promote the incorporation of wireless broadband capabilities into COMU activities, special event planning, training and exercise opportunities, and after-action reports. • Raise awareness regarding planning and operational support resources that are available. • Raise awareness regarding applications that are currently in use or available.	• Engage COMU personnel to raise awareness regarding wireless broadband capabilities, applications, and planning/operational support resources. • Conduct outreach on a local/regional level to share information and experiences regarding wireless broadband capabilities and applications. • Identify applications currently in use by stakeholders as well as potential solutions to address any unmet needs.	• Regular participation in COMU Workgroup meeting discussions. • Participate in three meetings per year to share information and solicit feedback from key stakeholders at the local/regional levels. • Expand on the Applications Toolbox (expand on existing doc) by compiling a list of applications currently in use or available.	Ongoing effort throughout 3-year SCIP cycle.	• Wireless Broadband and Applications Committee • Communications Unit (COMU) Workgroup • Other key stakeholders

Integrated Public Alert and Warning System Committee					
The role of the SECB Integrated Public Alert and Warning System (IPAWS) Committee is to advise the SECB on all matters related to IPAWS and to coordinate and establish policy, procedure, and protocols for the expansion of IPAWS through private/public partnership.					
Goals	**Objectives**	**Actions**	**Metrics for Success**	**Timeline**	**Ownership**
Increase awareness among Alert Originators regarding public alerting strategies in jurisdictions with English as a Second Language (ESL) populations of 5%+.	Engage committee members, Alert Originators, and key stakeholders to increase awareness of: • Jurisdictions with ESL populations of 5%+. • ESL alerting capabilities. • ESL alerting 'best practices'.	• Identify jurisdictions with ESL populations of 5%+. • Ensure that Alert Originators and key stakeholders are aware of DOJ's guide for providing ESL alerting in 5%+ jurisdictions. • Develop a 'one pager' and 'best practices guide' regarding ESL alerting strategies. • Incorporate ESL alerting strategies & resources for ESL alerting into EAS plans.	• Jurisdictions with ESL populations of more than 5% are identified. • Alert Originators and key stakeholders are aware and/or using ESL alert distribution of choice. • A 'one pager' and 'best practices guide' regarding ESL alerting strategies are published. • ESL alerting strategies and resources are incorporated into EAS plans. • ESL alerts are routinely distributed in 5%+ jurisdictions.	Ongoing effort throughout 3-year SCIP cycle.	• IPAWS Committee • Other key stakeholders
Promote adoption of 'back-up' agreements with other alerting authorities to support continuity of operations capabilities.	Raise awareness among alerting authorities and key stakeholders regarding the need/value of 'back-up agreements' with other alerting authorities.	• Develop a template for a 'back up agreement'. • Conduct outreach efforts with alerting authorities and key stakeholders to promote adoption of 'back up agreements'.	• A template for a 'back up agreement' has been developed. • At least 10% of Minnesota's alerting authorities have established a 'backup agreement' with another alerting authority.	Ongoing effort throughout 3-year SCIP cycle.	• IPAWS Committee • Other key stakeholders

Goals	Objectives	Actions	Metrics for Success	Timeline	Ownership
Increase awareness among decision makers, emergency responders, Public Information Officers (PIOs), and other key stakeholders regarding IPAWS capabilities and public alerting 'best practices'.	Engage committee members, Alert Originators, and key stakeholders to: • Increase awareness regarding IPAWS capabilities. • Increase utilization of IPAWS capabilities. • Improve cross-jurisdictional/cross-discipline coordination for alert dissemination.	• Advocate for the adoption of IPAWS capabilities among local, regional, tribal, and state jurisdictions. • Identify opportunities for education and outreach regarding IPAWS capabilities. • Develop 'fact sheets', 'standards', and/or 'best practice guides' to provide clarity on alerting goals, roles, and functions (e.g., when to send and when not to send alerts, etc.).	• At least five outreach opportunities are conducted to educate key stakeholders regarding IPAWS capabilities and public alerting 'best practices' • 'Fact sheets', 'standards', and/or 'best practice guides' are developed to provide clarity on alerting goals, roles, and functions (when to send and when not to send alerts, etc.). • 95% of Minnesota jurisdictions are IPAWS trained/aware and have access to IPAWS capabilities.	Ongoing effort throughout 3-year SCIP cycle.	• IPAWS Committee • Other key stakeholders
Incorporate IPAWS capabilities into local, regional, tribal, and state level training exercises.	Raise awareness among alerting authorities, emergency managers, and other key stakeholders regarding the need/value of including an IPAWS component in training exercises.	• Advocate for the inclusion of IPAWS capabilities into training exercises. • Increase awareness among exercise planners regarding IPAWS capabilities. • Develop exercise related documents and templates that include an IPAWS component.	• Alert Originators are included in developing training exercises that include an IPAWS component. • 25% of Minnesota alerting jurisdictions conduct and/or participate in training exercise opportunities that include an IPAWS component.	Ongoing effort throughout 3-year SCIP cycle.	• IPAWS Committee • Other key stakeholders

Section 8: Plan Implementation and Measurement

The SCIP is a dynamic document that the board and its committees should review on a regular basis to assess progress towards achieving the SECB strategic goals and objectives. By continuously monitoring progress towards achieving these goals, the board and its committees can ensure that they are on the right path to build and sustain interoperable emergency communication capabilities across the state.

Plan Implementation

The SECB will be responsible for providing the broad oversight of each committee's efforts toward achieving the 'desired state' of interoperability, governance, technology and operations and finance and sustainment.

Each SECB committee will be responsible for developing a work plan or charter to achieve their respective goals and objectives as identified in Section 7 (SECB Committee Goals and Objectives). The work plan/charter should reference the specific action items, timeline, and key stakeholders that will be necessary to accomplish each goal/objective.

It is important to note that some of the initiatives identified in Section 7 (SECB Committee Goals and Objectives) will require a certain degree of communication, collaboration, and coordination among and between various committees, workgroups, and/or external stakeholders. Each SECB committee chair will be responsible for ensuring that appropriate action is taken to foster these interdependent relationships.

Monitoring Progress

The SECB and its committees will monitor their ongoing efforts toward achieving the goals and objectives outlined in this plan. Because the SCIP is a 'living document', each SECB committee is encouraged to incorporate a SCIP progress report into their regular meeting agenda to help ensure that their actions are aligned with those necessary to achieve each of their assigned goals. Examples of topics for board and committee discussion include:

- What changes to our planning efforts might be necessary to help achieve our assigned goals and objectives?
- What changes to organizational structures might be necessary to help achieve this goal/objective?
- Are additional equipment and/or technology resources necessary to help achieve this goal/objective?
- Should we schedule additional training opportunities to help achieve this goal/objective?
- What types of exercise activities can we conduct to help measure progress toward achieving this goal/objective?

Annual Plan Review

The SECB Steering Committee will facilitate an annual review of the progress toward achieving the goals and objectives outlined in this plan. Each SECB committee chair will be responsible for providing the SECB Steering Committee with a status update regarding their respective goals and objectives as identified in Section 7 (SECB Committee Goals and Objectives).

Once the annual review is completed, the SECB Steering Committee will provide the SECB with a summary of the SCIP implementation status that includes the following components:

Assess Interoperable Emergency Communication Capabilities:

- What are the current capability levels across each of Minnesota's four core emergency communication systems: 911, LMR, Wireless Broadband, and IPAWS?
- How have those capabilities changed over the past year?
- How do the current capability levels align with the 'desired state' outlined in the plan?

Identify Interoperable Emergency Communication Capability Gaps and Intended Approaches to Address Them:

- What gaps exist between the interoperable emergency communication capabilities that we want to achieve and the capabilities that we currently have?
- Do the goals and objectives outlined in the plan align with closing the capability gaps?
- What, if any, changes to the plan are necessary to address the capability gaps?

Describe the Impacts of Funding Sources:

- Over the past year, what impact did various funding sources, including grants, have on the ability to achieve the goals and objectives outlined in the plan?
- What, if any, changes to the plan are necessary to address any funding concerns?

Plan Updates

Based on the recommendations identified through the improvement planning and annual plan review processes, the appropriate sections of this plan will be updated as necessary. Changes to the contents of this plan will be documented in Attachment D (Record of Changes).

Attachment A: Minnesota Interoperability Markers

In 2019, DHS CISA began supporting states and territories in measuring progress against 25 interoperability markers. This tool was developed by looking at best practices along the SAFECOM continuum to highlight emergency communication related strengths and gaps, support measurement of 2019 NECP implementation, and provide a framework for developing SCIP goals. Below is the Minnesota assessment of progress made toward achieving an 'optimized' level of performance for each of the interoperability markers.

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized
Governance	**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. The SIGB/SIEC will review and approve all updated SCIPs.	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

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized
Governance	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
	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

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized
SOP/SOGs	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

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized
Technology	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, 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	**NG 911 implementation.** NG 911 implementation underway to serve state / territory population.	Working to establish NG 911 governance through state/territorial plan. • Developing GIS to be able to support NG 911 call routing. • Planning or implementing ESInet and Next Generation Core Services (NGCS). • Planning to or have updated PSAP equipment to handle basic NG 911 service offerings.	More than 75% of PSAPs and Population Served have: • NG 911 governance established through state/territorial plan. • GIS developed and able to support NG 911 call routing. • Planning or implementing ESInet and Next Generation Core Services (NGCS). • PSAP equipment updated to handle basic NG 911 service offerings.	More than 90% of PSAPs and Population Served have: • NG 911 governance established through state/territorial plan. • GIS developed and supporting NG 911 call routing. • Operational Emergency Services IP Network (ESInet)/Next Generation Core Services (NGCS). • PSAP equipment updated and handling basic NG 911 service offerings.

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized
Technology	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)	☒ 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		

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized
Training & Exercises	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
Usage	20	**Communications Usage Best Practices/Lessons Learned.** Capability exists within jurisdiction to share best practices/lessons learned, whether positive 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 After Action Report (AAR) template to collect best practices	Initial plus review mechanism established	Defined plus distribution mechanism established
Outreach	21	**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 across 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, 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

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized
Lifecycle	23	**Sustainment assessment.** Identify interoperable component system sustainment needs such as communications infrastructure, equipment, programs, and 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
All Lanes	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

Attachment B: Reference Documents

The following documents were referenced in the creation of this plan:

Minnesota Department of Public Safety, Division of Emergency Communication Networks. (n.d.). 2019-2021 Statewide Emergency Communication Board Strategic Plan. Retrieved April 16, 2021, from https://dps.mn.gov/divisions/ecn/about/Documents/ecn-biennial-report-strategic-plan.pdf

U.S. Department of Homeland Security, Cybersecurity, and Infrastructure Security Agency. (2019, April). Emergency Communications Governance Guide for State, Local, Tribal, and Territorial Officials. Retrieved April 16, 2021, from https://www.cisa.gov/sites/default/files/publications/2018%20Emergency%20Communications%20Governance%20Guide%20for%20State%2C%20Local%2C%20Tribal%20and%20Territorial%20Officials.pdf

U.S. Department of Homeland Security, Cybersecurity, and Infrastructure Security Agency. (2020, April). Emergency Communications Systems Value Analysis Guide. Retrieved April 16, 2021, from https://www.cisa.gov/sites/default/files/publications/Value_Analysis_Guide_FINAL_05-26-2020_508.pdf

U.S. Department of Homeland Security, Cybersecurity, and Infrastructure Security Agency. (2021, June). Interoperability Continuum: A Tool for Improving Emergency Response Communications and Interoperability. Retrieved October 28, 2021, from https://www.cisa.gov/sites/default/files/publications/21_0615_cisa_safecom_interoperability_continuum_brochure_final.pdf

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U.S. Department of Homeland Security, Cybersecurity, and Infrastructure Security Agency. (2020, April). Understanding the Value of Public Safety Communications Systems: A Brochure for Elected Officials and Decision-Makers. Retrieved April 16, 2021, from https://www.cisa.gov/sites/default/files/publications/Value_Analysis_Brochure_FINAL_05-26-2020_508.pdf

Attachment C: List of Acronyms

A & W	Alerts and Warnings
AAR	After Action Report
AEL	Authorized Equipment List
AES	Advanced Encryption Standard
AIS	Automatic Identification System
ALI	Automatic Location Identification
AMBER	America's Missing: Broadcast Emergency Response
AMC	Association of Minnesota Counties
ANI	Automatic Number Identification (for a 911 call)
APCO	Association of Public Safety Communications Officials
API	Application Programming Interface
ARES	Amateur Radio Emergency Service
ARMER	Allied Radio Matrix for Emergency Response (MN statewide radio system)
AVL	Automatic Vehicle Location
BCA	Minnesota Department of Public Safety - Bureau of Criminal Apprehension
BDA	Bi-Directional Amplifier
CAD	Computer-Aided Dispatch
CAE	Child Abduction Event
CAP	Common Alerting Protocol
CASM	Communication Assets Survey and Mapping
CCGW	Conventional Channel Gateway
CDW	Civil Danger Warning
CEP	Community Emergency Preparedness
CISA	U.S. Department of Homeland Security - Cybersecurity and Infrastructure Security Agency
CKEK	Common Key Encryption Key
CKR	Common Key Reference
CLEC	Competitive Local Exchange Carrier
COG	Collaborative Operating Group
COID	Company Identifier
COLT	Cell on Light Truck
COML	Communications Unit Leader
COMT	Communications Unit Technician
COMU	Communications Unit
COOP	Continuity of Operations
CoS	Class of Service
COW	Cell on Wheels
CPE	Customer Premise Equipment
CPEaaS	CPE as a Service
CRAE	Conventional Resource ARMER Enhancement
CRTF	Communications Response Task Force
CSSI	Console Subsystem Interface
DBH	Device-based Hybrid
DES	Data Encryption Standard

DHS	U.S. Department of Homeland Security
DHS	Minnesota Department of Human Services
DNR	Minnesota Department of Natural Resources
DOC	Minnesota Department of Corrections
EAS	Emergency Alert System
ECB	Emergency Communications Board
ECC	Emergency Communications Center
ECN	Minnesota Department of Public Safety - division of Emergency Communication Networks
ECRF	Emergency Call Routing Function
EMAC	Emergency Management Advisory Committee
EMD	Emergency Medical Dispatch
EMS	Emergency Medical Services
EOC	Emergency Operations Center
ERDB	Emergency Routing Database
ESB	Emergency Services Board
ESInet	Emergency Services IP Network
ESN	Emergency Service Number
ESQK	Emergency Services Query Key
ESRK	Emergency Services Routing Key
ESRP	Emergency Service Routing Proxy
ESZ	Emergency Service Zone
FCC	Federal Communications Commission
FEMA	U.S. Department of Homeland Security - Federal Emergency Management Agency
FFW	Flash Flood Warning
FirstNet	First Responder Network Authority
FOG	Field Operations Guide
FPIC	Federal Partnership for Interoperable Communications
GAC	Geospatial Advisory Council
GETS	Government Emergency Telecommunications Service
GIS	Geographic Information System
GPS	Global Positioning System
HAT	Height Above Terrain
HPUE	High-Powered User Equipment
HSEEP	Homeland Security Exercise and Evaluation Program
HSEM	Minnesota Department of Public Safety - division of Homeland Security and Emergency Management
HSIN	Homeland Security Information Network
i3 FE	i3 Functional Elements
IAP	Incident Action Plan
ICAM	Identity Credentialing and Access Management
ICS	Incident Command System
ICTAP	Interoperable Communications Technical Assistance Program
INCM	Incident Communications Center Manager
INTD	Incident Tactical Dispatcher
INTM	Incident Tactical Manager

IoT	Internet of Things
IP	Improvement Plan
IP	Internet Protocol
IPAWS	Integrated Public Alert and Warning System
IPC	Integrated Preparedness Cycle
IPP	Integrated Preparedness Plan
ISICS	Iowa Statewide Interoperable Communications System
ISSI	Integrated Sub-System Interface
ITSL	IT Service Leader
JIC	Joint Information Center
JPA	Joint Powers Agreement
LAN	Local Area Network
LDB	Location Database
LEC	Law Enforcement Center
LEP	Limited English Proficiency
LETG	Law Enforcement Technology Group (CAD and RMS vendor)
LIS	Location Information System
LMC	League of Minnesota Cities
LMR	Land Mobile Radio
LNG	Legacy Network Gateway
LNP	Local Number Portability
LSR	Legacy Selective Router
LSRG	Legacy Selective Router Gateway
LTE	Long-Term Evolution
LVF	Location Validation Function
MAA	Minnesota Ambulance Association
MAC	Metropolitan Airports Commission
MACC	Multi-Agency Coordination Center
MBA	Minnesota Broadcasters Association
MCPTT	Mission Critical Push-to-Talk
MDC	Mobile Data Computer
MECC	Minneapolis Emergency Communications Center
MESB	Metropolitan Emergency Services Board
MHz	Megahertz
MLTS	Multi-Line Telephone System
MMB	Minnesota Office of Management and Budget
MnDOT	Minnesota Department of Transportation
MnFOG	Minnesota Field Operations Guide
MnGEO	Minnesota Geospatial Information Office
MnIT	Minnesota Information Technology Services
MOA	Memorandum of Agreement
MOG	Metro Owners Group
MOU	Memorandum of Understanding
MPC	Mobile Position Center
MSA	Minnesota Sheriff's Association

MSAG	Master Street Address Guide
MSC	Mobile Switching Center
MSP	Minnesota Department of Public Safety - Minnesota State Patrol
MTA	Minnesota Telephone Alliance
MTUG	Motorola Trunked Users Group
MUX	Multiplexer
NASNA	National Association of State 911 Administrators
NCSWIC	National Council of Statewide Interoperability Coordinators
N-DEx	National Data Exchange (FBI tool for exchanging data)
NECA	National Exchange Carrier Association
NECP	National Emergency Communications Plan
NENA	National Emergency Number Association
NFPA	National Fire Protection Association
NG911	Next Generation 911
NGCS	Next Generation Core Services
NGO	Non-Governmental Organization
NHTSA	National Highway Traffic Safety Administration
NIFOG	National Interoperability Field Operations Guide
NIMS	National Incident Management System
NIST	National Institute of Standards and Technology
NPR	National PSAP Registry
NPRM	Notice of Proposed Rule-Making
NPSBN	National Public Safety Broadband Network
NPSTC	National Public Safety Telecommunications Council
NPT	National Periodic Test
NQS	National Qualification System
NTIA	National Telecommunications and Information Administration
NWS	National Weather Service
O&O	Owners and Operators
OC	Optical Carrier
OSP	Originating Service Provider
P25	Project 25
PANI	Pseudo Automatic Number Identification
PBX	Private Branch Exchange
PIO	Public Information Officer
PM	Provisioning Manager
POETE	Planning, Organizational, Equipment, Training, Exercise
PS/ALI	Private Switch/Automatic Location Identifier
PSAP	Public Safety Answering Point
PSBTA	Public Safety Broadband Technology Association
PSCC	Public Safety Communications Conference
PTB	Position Task Book
PUC	Public Utilities Commission
QA/QC	Quality Assurance and Quality Control
QPP	Quality of Service, Priority, and Preemption

RAC	Regional Advisory Committee
RADO	Radio Operator
RAN	Radio Access Network
RECCWG	Regional Emergency Communication Coordination Working Group
RFID	Radio Frequency Identification
RFP	Request-for-Proposal
RIC	Regional Interoperability Coordinator
RLM	Regional Leadership Meeting
RMS	Records Management System
ROC	Radio Operations Center
RSEM	Regional Stakeholder Engagement Meeting
RWT	Required Weekly Test
SAA	State Administrative Agency
SaaS	Software as a Service
SAFECOM	Not an acronym; Department of Homeland Security project
SCIP	Statewide Communications Interoperability Plan
SECB	Statewide Emergency Communications Board
SECC	State Emergency Communications Committees
SHSP	State Homeland Security Program
SI	Spatial Interface
SIEC	Statewide Interoperability Executive Committee
SIGB	Statewide Interoperability Governing Body
SIP	Session Initiated Protocol
SIRN	Statewide Interoperable Radio Network (North Dakota)
SLA	Service Level Agreement
SLIGP	State and Local Implementation Grant Program
SLTT	State, Local, Tribal, and Territorial
SMA	Software Maintenance Agreement
SME	Subject Matter Expert
SMG	System Managers Group
SMS	Short Message Service
SOA	Scene of Action (ARMER resource)
SOP	Standard Operating Procedure
SPOC	Single Point of Contact
SPW	Shelter In Place Warning
SR	Selective Router
SRB	Statewide Radio Board
SSA	Software Subscription Agreement
STR	Strategic Technology Reserve
SUA	System Upgrade Agreement
SWIC	Statewide Interoperability Coordinator
SWOT	Strengths, Weaknesses, Opportunities and Threats (a type of analysis)
T-CPR	Telephone Cardio Pulmonary Resuscitation
TDM	Time Division Multiplex
TDMA	Time Division Multiple Access

TDoS	Telephone Denial of Service
TERT	Telecommunicator Emergency Response Taskforce
THIRA	Threat and Hazard Identification and Risk Assessment
TICP	Tactical Interoperable Communications Plan
TOC	Technical Operations Committee
TSP	Telecommunications Service Provider
TTS	Text-to-Speech
TTX	Tabletop Exercise
UASI	Urban Area Security Initiative
UHF	Ultra High Frequency
VDB	Validation Database
VHF	Very High Frequency
VOAD	Voluntary Organizations Active in Disaster
VoIP	Voice over Internet Protocol
VPN	Virtual Private Network
WAN	Wide Area Network
WAP	Wireless Access Point
WBB	Wireless Broadband
WBBA	Wireless Broadband and Applications (committee)
WEA	Wireless Emergency Alerts
WG	Work Group
WISCOM	Wisconsin Interoperable System for Communications
WISPERN	Wisconsin Police Emergency Radio Network
WPS	Wireless Priority Service

Attachment D: Record of Changes

Date	Author	Section	Description