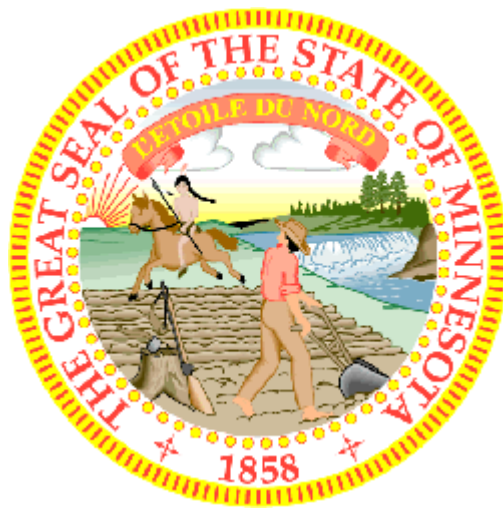


# STATE COMMUNICATIONS INTEROPERABILITY PLAN



## STATE OF MINNESOTA

JANUARY 2010

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This document is classified as "public data" under Minnesota Statute Chapter 13.03



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## **OVERVIEW**

This document provides a comprehensive outline of the strategic direction of Minnesota's public safety interoperable communication efforts. It establishes the State Communications Interoperability Plan (SCIP) required by the Department of Homeland Security (DHS) as part of Minnesota's comprehensive Homeland Security planning efforts. The SCIP is intended to describe, document and establish the communications, interoperability and planning initiatives, timelines, responsibilities, accountabilities and funding available or required by the State of Minnesota to maximize interoperability between public safety/service agencies over the course of the next 3-5 years.

The SCIP provides an overview of the current status of communications interoperability in the State of Minnesota, including a description of existing governance structures, available technology, the existence of standard operating procedures (SOPs) and of communications interoperability training and exercises. It is necessary to acknowledge that in some cases, additional information is necessary to fully develop an assessment of the current status of interoperable communication and alternatives. In those cases, the SCIP plan provides an outline (timelines, assignment of responsibilities and benchmarks) for doing so.

Minnesota is located in the north central portion of the United States, sharing a northern border with the Canadian provinces of Manitoba and Ontario. Lake Superior runs along the north eastern region of Minnesota with the ports of Duluth and Two Harbors serving international trade. The State has a population of 5,220,393 people (2008 estimates) with 53% of the population residing in the seven-county Twin Cities (Minneapolis/St. Paul) metropolitan area in southeast Minnesota. The State's Division of Homeland Security and Emergency Management lists floods, tornadoes, hail, coastal erosion and severe winter storms as the most common natural hazards and dam failures and fire as the most common technical hazards. As a commercial center, the Twin Cities metropolitan area is a major commercial and transportation center for the upper Midwest region of the United States. There are also two nuclear power generating facilities within 50 miles of the Twin Cities metropolitan area.

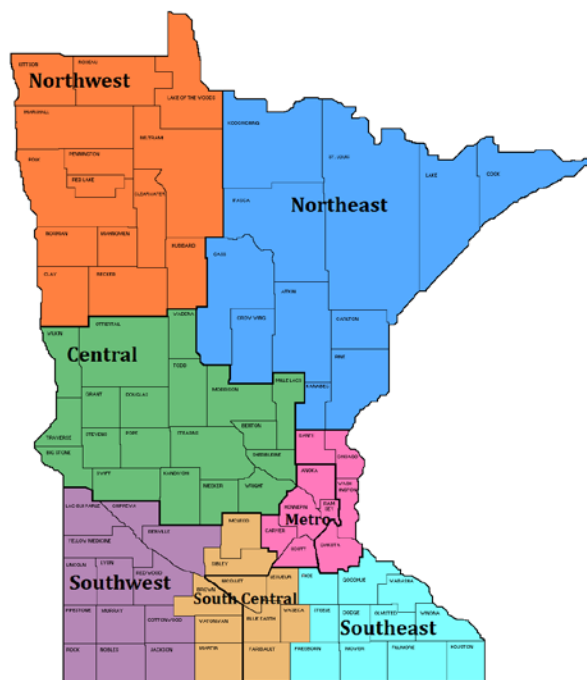
The fundamental building block of Minnesota's strategy for public safety communication interoperability is the statewide implementation of an open standards digitally trunked communication system, known as the Allied Radio Matrix for Emergency Response (ARMER). The ARMER system was first implemented in the Twin City metropolitan area in 2001. The subsequent plan for a statewide system was adopted by the Minnesota legislature in 2002. An essential element in Minnesota's strategy is that the ARMER plan provides the opportunity for all public safety/service entities operating in the state to achieve the highest level of interoperability by operating on a shared platform. That platform is a scalable 800 and 700 MHz digital trunked radio system with specific details of the system and its implementation maintained on the Statewide Radio Board (SRB) website at <https://dps.mn.gov/entity/srb>.

*Minnesota Statewide Communications Interoperability Plan*

In addition to providing the opportunity for all public safety agencies to operate on a common communication backbone, the ARMER system provides a statewide infrastructure that can be used to link existing public safety resources together. Utilizing this “system of systems” approach, Minnesota’s plan provides for cross-spectrum interoperability with existing legacy communication systems and non-ARMER systems at a number of levels through shared radios, gateways through console based patches and a Very High Frequency (VHF) frequency overlay. These cross-spectrum interoperability strategies are also being applied to address public safety communication interoperability needs with neighboring states and along the international border with Canada. More specific technical details of this cross spectrum interoperability and “system of systems” approach can be found in the VHF Interoperability Infrastructure Report maintained on the (SRB) website.

Minnesota’s strength in cooperative governing is reflected in the governance structure developed around the implementation of the ARMER system. That governance structure evolved from the multi-discipline regional structure established to oversee the implementation of the ARMER system in the Twin Cities metropolitan area. The statewide public safety communication system planning committee that originally developed the ARMER plan was replaced in 2004 when the legislature created the SRB with broad multidiscipline representation. A balanced geographic representation is maintained on the SRB with state and local membership, including a balance between Twin City metropolitan area members and Greater Minnesota members. This governance structure addresses the need for local and regional planning and participation by providing for the development of Regional Radio Boards (RRB).

Under this structure, seven Regional Radio Boards have been formulated, as reflected in the following map:



The SRB was also designated as Minnesota's State Interoperability Executive Committee (SIEC) in 2007. Under the Governor's Executive Order the role of the SRB was expanded to include public safety communication interoperability among all public safety agencies operating within the state. Through this designation, the SRB is responsible for assuring that the implementation of the ARMER system addresses Minnesota's broader public safety interoperability needs, for governance of this SCIP, and for assuring interoperable communication grant funds made available to Minnesota are administered and used in accordance with the SCIP. The Governor's Executive Order was adopted into statute by the legislature in 2009.

Finally, upon identifying the current status of interoperability and Minnesota's strategic goals this SCIP assigns responsibility for planning initiatives and articulates benchmarks and timelines upon which to measure progress toward achieving the highest practical level of interoperability within the State of Minnesota.

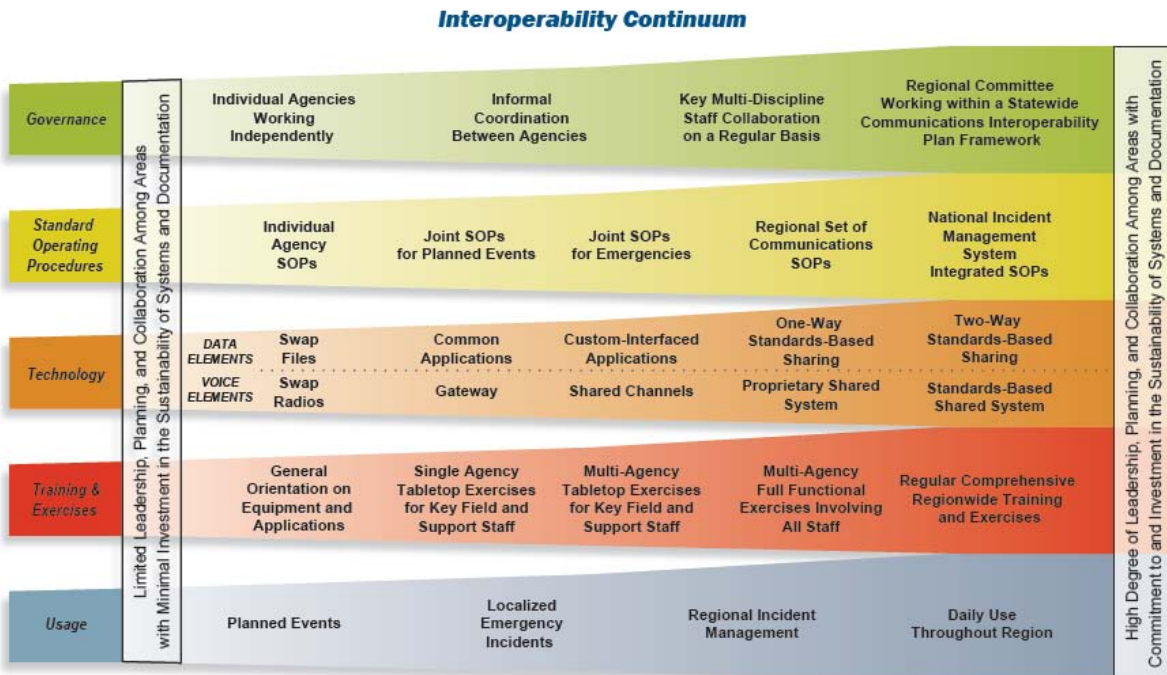
This document serves as a communications interoperability resource and guide to Homeland Security regions, counties, municipalities, non-governmental organizations and tribal jurisdictions throughout the State. Additionally, the document will provide the U.S. Departments of Commerce and Homeland Security a vehicle to benchmark and measure progress, performance and allocation, and utilization of funds for interoperability initiatives within the State pursuant to their guidelines and requirements. Another vital part of Minnesota's interoperable communication strategy is the continued development and implementation of Tactical Interoperability Communications Plans (TICPs) that include training and exercises to ensure optimal public safety communication capabilities consistent with the Public SAFETY COMmunications Program's (SAFECOM) Interoperability Continuum, the National Emergency Communications Plan (NECP), the National Incident Management System (NIMS), and the National Response Framework (NRF).

### **SAFECOM Interoperability Continuum**

As part of the SCIP update process, Minnesota sought to articulate goals and objectives against standards that demonstrate how Minnesota compares at a national level. In November of 2009, key stakeholders met to update this SCIP and recast Minnesota's goals and objectives against the SAFECOM Interoperability Continuum which is widely recognized as the national standard. The SAFECOM Continuum is shown on the following page.

As reflected in Minnesota's Vision and Mission statements, it is Minnesota's Goal to achieve the highest practical level of public safety communications in governance, standard operating procedures, technology, training and exercise and in usage. Collectively, achievement of these goals results in completion of the mission. Each goal is supported by corresponding outcome-based and time-sensitive objectives.

## Minnesota Statewide Communications Interoperability Plan



### National Emergency Communications Plan (NECP)

The NECP identifies the capabilities and initiatives needed for communications operability, interoperability, and continuity of communications for emergency responders nationwide. By establishing the ARMER system as a 'system of systems', the State plan complements and supports overarching federal Homeland Security and emergency communications legislation, strategies, and initiatives such as the National Response Framework (NRF), the National Incident Management System (NIMS), the National Preparedness Guidelines, and the Target Capabilities List. All of these combined form a unified national structure for response and recovery efforts.

Compliance with these federal guidelines will eventually allow all public safety personnel at all levels to communicate as needed, on demand, and as authorized across all disciplines. The three basic goals of the NECP are as follows:

- Goal 1 By 2010, 90 percent of all high-risk urban areas designated within the Urban Areas Security Initiative (UASI) are able to demonstrate response-level emergency communications within one hour for routine events involving multiple jurisdictions & agencies.

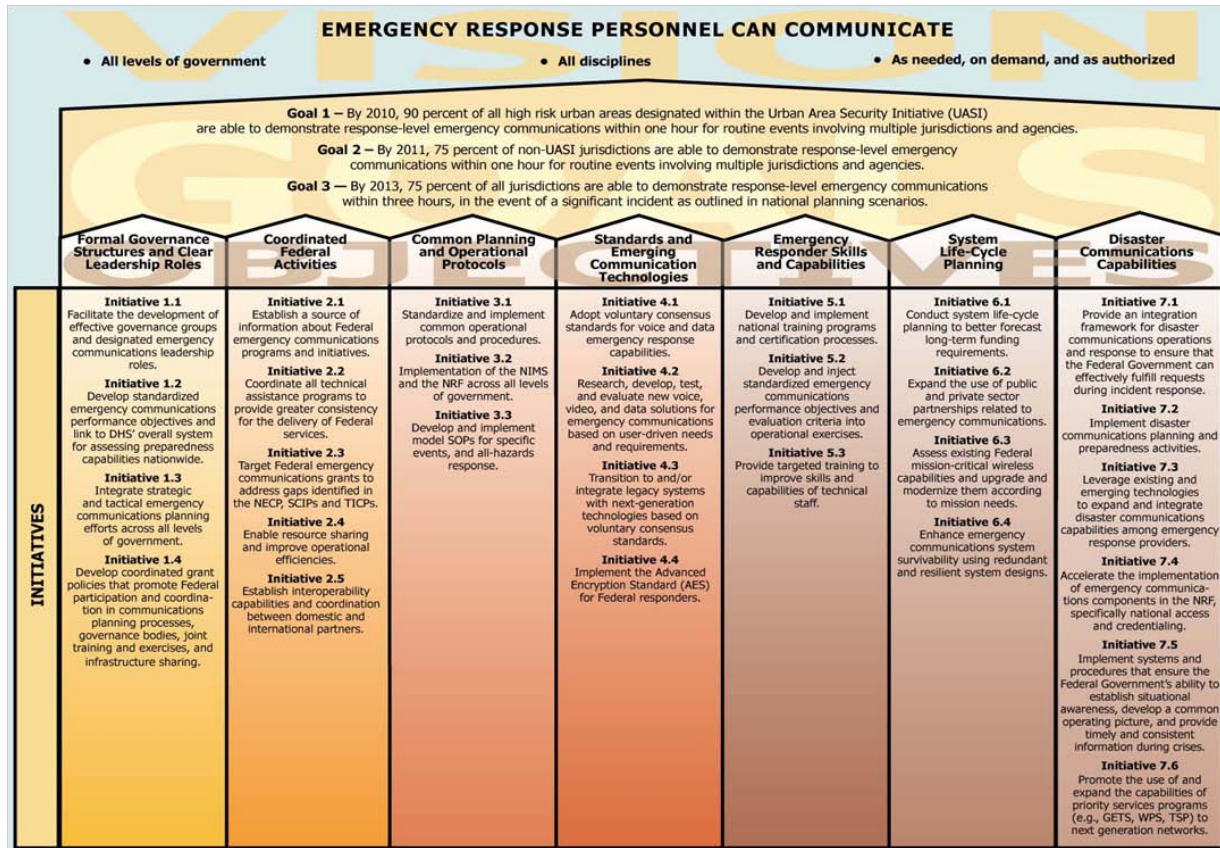


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**Goal 2** By 2011, 75 percent of non-UASI jurisdictions are able to demonstrate response-level emergency communications within one hour for routine events involving multiple jurisdictions and agencies.

**Goal 3** By 2013, 75 percent of all jurisdictions are able to demonstrate response-level emergency communications within three hours, in the event of a significant event as outlined in national planning scenarios.

The individual Objectives and Initiatives required to accomplish the NECP goals are outlined in the following diagram.



(NOTE: A detail listing and cross reference matrix of this chart is available in Section 9 of this report)

**National Incident Management System (NIMS) Compliance**

The Minnesota SCIP along with regional and local communications and emergency response planning all integrate the National Incident Management System (NIMS) elements into their processes. The NIMS establishes the minimum operating procedures for all public safety agencies in Minnesota.

As part of its comprehensive public safety communication strategy, Minnesota has adopted the following Vision and Mission:

## **VISION**

All agencies supporting public safety in Minnesota will operate daily on or have access to a standards-based shared voice and data system that has integrated National Incident Management System Standard Operating Procedures and supported by regional committees working in conjunction with a Statewide Interoperability Governance structure that provides comprehensive training and regional exercises.

## **MISSION**

The mission of the SCIP is to provide a communication backbone throughout the State of Minnesota that supports a system of systems and the appropriate organizational and governance structure needed to achieve the highest level of interoperability between all agencies supporting public safety in Minnesota through the sharing of resources, the integration and coordination of local systems where appropriate and through routine planning, training and usage of all communication resources within the State.

The following Strategic Initiatives were adopted in 2007 as part of Minnesota's original SCIP and remain valid:

### **STRATEGIC INITIATIVES**

The State of Minnesota has identified several key initiatives essential to the support for and the accomplishment of the State's interoperable communications vision. They include:

#### **Strategic Initiative One**

Fund and construct the backbone for a 700/800 MHz scalable statewide shared public safety communication backbone that can support present and future needs of state and local public safety communication within the State of Minnesota.

#### **Strategic Initiative Two**

Leverage state, federal and local funding opportunities to encourage the greatest degree of participation by local units of governments, tribal governments and non-governmental public safety entities in the shared public safety communication backbone.

#### **Strategic Initiative Three**

Develop a collaborative governance structure that supports the partnerships, shared planning and resources for public safety and public service communication needs

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among all entities supporting public safety in the State of Minnesota and provide for regional differences and autonomy, wherever possible.

**Strategic Initiative Four**

Identify and implement comprehensive public safety communication interoperability strategies and solutions that strike an appropriate balance between the present and future needs to address all levels of interoperability (local operability, regional interoperability and statewide interoperability) with all public safety responders (including tribal and non-governmental, military, federal and neighboring states/Canada), including public safety entities that do not elect to participate in the State's core strategy.

**Strategic Initiative Five**

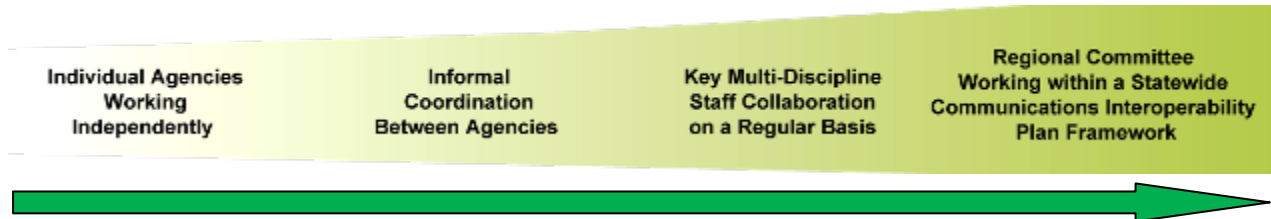
Maintain and further develop high-level elected official support (state and local) for interoperable communications and its expanding role in the public safety response to routine activities, regional incidents and major statewide incidents.

**Strategic Initiative Six**

Identify opportunities to leverage resources and seek more efficient ways to deliver public safety services through the use of advanced technologies; improved spectrum efficiency and seamless interoperability; a broader view of the public safety communication network.

## 1. GOVERNANCE

### SAFECOM Continuum – Governance



*Level 5 achieved and ongoing*

Minnesota has achieved a very high level of governance development through the establishment of the Statewide Radio Board and through the establishment of seven Regional Radio Boards and their respective committee structures.

The SCIP Update Planning Committee identified the following issues and priorities necessary to sustain this result:

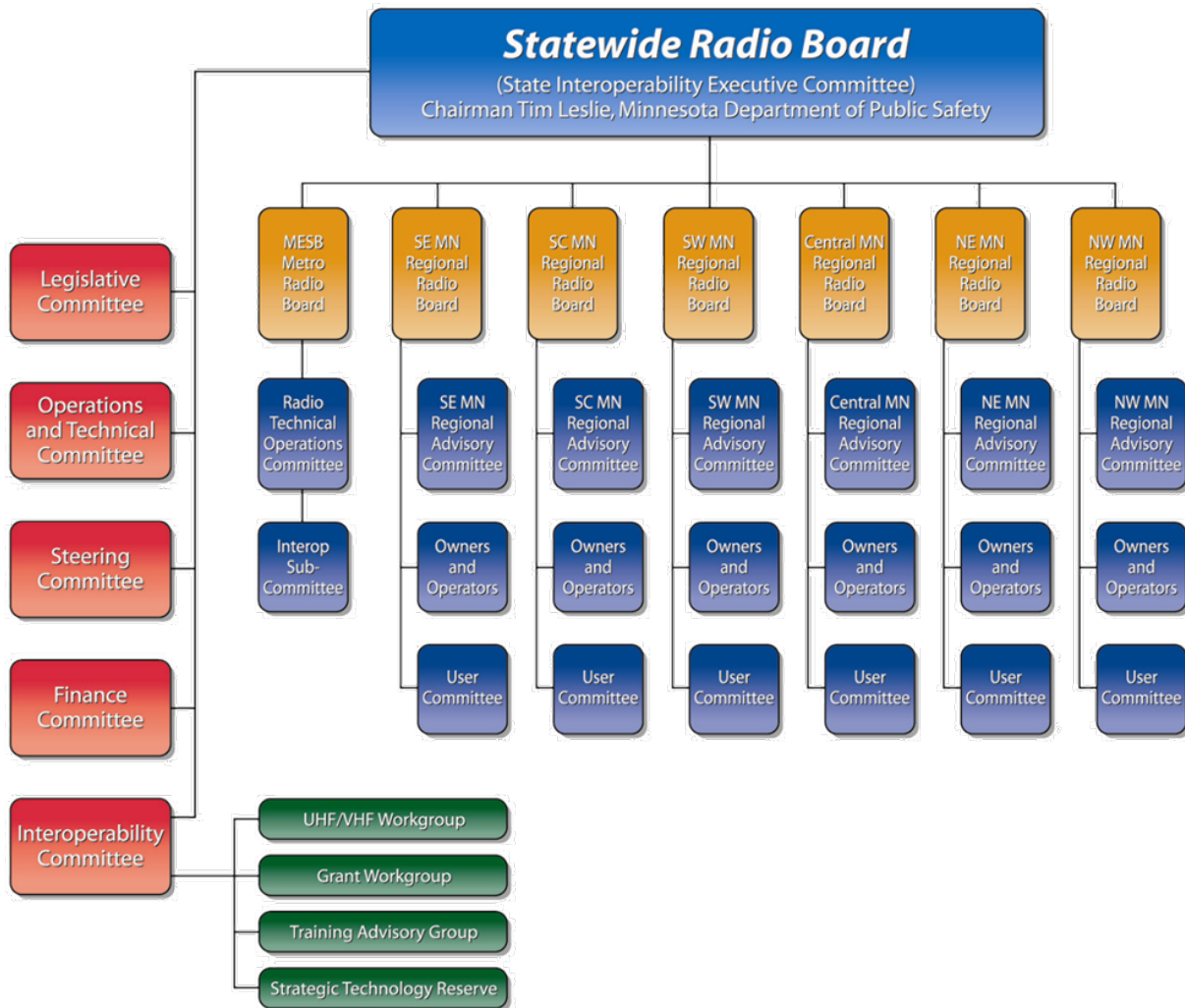
- Continued engagement and involvement of RRBs and their committees addressing meaningful and significant issues of interoperable communications

- Identification and provision of support necessary to assure that Regional Radio Boards have the ability to do their job

- Development of the State's strategic plans, training (seminar, training, peer interactions) that provide public safety personnel the resources and ability required to do their job

- Development of the leadership of the RRB various committees (Regional Advisory Committees, Users Committees, and Owners and Operators Committees)

## MINNESOTA'S CURRENT GOVERNANCE STRUCTURE



### 1.1 MINNESOTA GOVERNANCE GOAL NUMBER ONE

Support the continued development of Regional Radio Boards, their subordinate committees, and other stakeholders through collaboration, technical support, education and engagement.

#### Benchmarks:

1. Develop an outline of information (learning objectives) required for elected officials to carry out the responsibilities of their position. (9/30/2010)

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2. Develop and provide learning opportunities, including training, seminars, peer interaction, to provide regional governance members with the information they require to carry out the responsibilities of their position. (3/31/2011)
3. Articulate a comprehensive plan of action, goals and expectations, for Regional Radio Boards. (12/31/2010)
4. Develop and provide a statewide Interoperability Conference, which provides an opportunity for specific training and peer interactions regarding public safety interoperable communication. (9/30/2010)
5. Identify and articulate the level and areas of support needed from the Statewide Radio Board and the Department of Public Safety (DPS) necessary for regional radio boards to operate effectively. (9/30/2010)
6. The Minnesota Division of Emergency Communication Networks (ECN) to bring on technical support staff person(s), as necessary to provide consistent technical support to regional radio boards and their committees. (6/30/2010)

**Ownership:**

SRB, ECN, RRBs

**Primary NECP Objective and Initiatives**

**NECP Objective 1:** Formal decision-making structures and clearly defined leadership roles coordinate emergency communications capabilities.

Initiative 1.1 - Facilitate the development of effective governance groups and designated emergency communications leadership roles.

Initiative 1.3 - Integrate strategic and tactical emergency communications planning efforts across all levels of government.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

**1.2 MINNESOTA GOVERNANCE GOAL NUMBER TWO**

Develop plans to address the continued enhancement of the ARMER system, the changing dynamics of local participation, enhanced ability to provide cross spectrum interoperability, and to monitor, respond to and adapt to changing Federal Communication Commission regulations and relevant standards adopted by various standards organizations.

**Benchmarks:**

1. ECN to bring on technical support staff person(s), as necessary to provide technical support necessary to develop plans to address the continued evolution of wireless communications technologies and to monitor, respond to and design approaches to adapt to changing regulatory and standards environment. (12/31/2010)
2. Identify and implement ways to communicate current public safety communication and interoperability topics to interested regional radio board members and committee chairs, as necessary to support continued engagement and to elicit comments and input on important public safety interoperable communication issues. (12/31/2010)

**Ownership:**

SRB

**Primary NECP Objective and Initiatives:**

**NECP Objective 1:** Formal decision-making structures and clearly defined leadership roles coordinate emergency communications capabilities.

Initiative 1.1 - Facilitate the development of effective governance groups and designated emergency communications leadership roles.

Initiative 1.3 - Integrate strategic and tactical emergency communications planning efforts across all levels of government.

Initiative 1.4 - Develop coordinated Grant policies that promote federal participation and coordination in communications planning processes, governance bodies, joint training exercises, and infrastructure sharing.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

**1.3 MINNESOTA GOVERNANCE GOAL NUMBER THREE**

Develop a lifecycle funding plan for public safety communications resources, including initial infrastructure capital costs, sustainment costs and acquisition and routine replacement of subscriber equipment costs.

**Benchmarks:**

1. Develop a comprehensive outline of the costs to acquire and maintain public safety communication infrastructure and of the costs to acquire and maintain public safety radio equipment (portables and mobiles). (12/31/2010)

*Minnesota Statewide Communications Interoperability Plan*

2. Identify and articulate alternatives to fund various public safety equipment costs, including examples of best practices. (9/30/2010)
3. Develop a lifecycle funding plan for public safety communication equipment. (12/31/2010)

**Ownership:**

SRB

**Primary NECP Objective and Initiatives:**

**NECP Objective 1:** Formal decision-making structures and clearly defined leadership roles coordinate emergency communications capabilities.

- Initiative 1.1 - Facilitate the development of effective governance groups and designated emergency communications leadership roles.
- Initiative 1.2 - Develop standardized emergency communications performance objectives and link to DHS's overall system for assessing preparedness capabilities nationwide.
- Initiative 1.3 - Integrate strategic and tactical emergency communications planning efforts across all levels of government.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

**1.4 MINNESOTA GOVERNANCE GOAL NUMBER FOUR**

Develop a strategic plan for the role of the Statewide Radio Board and the Regional Radio Boards in public safety communications planning, resource development and in developing policy and procedures needed to support interoperability across agencies and disciplines.

**Benchmarks:**

1. Coordinate the development of a vision for public safety communications by the SRB. (6/30/2010)
2. Identify gaps and the real and perceived obstacles to implementing the common vision. (6/30/2010)
3. Redefine the vision, as appropriate, and identify steps necessary to implement the redefined vision of public safety communications in Minnesota. (9/30/2010)



**Ownership:**

SRB, ECN, RRBs

**Primary NECP Objective and Initiatives:**

**NECP Objective 1:** Formal decision-making structures and clearly defined leadership roles coordinate emergency communications capabilities.

- Initiative 1.1 - Facilitate the development of effective governance groups and designated emergency communications leadership roles.
- Initiative 1.3 - Integrate strategic and tactical emergency communications planning efforts across all levels of government.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in the summary sheet provided at the end of this document.

**1.5 MINNESOTA GOVERNANCE GOAL NUMBER FIVE**

Implement Tactical Interoperable Communication Plans in each region of the state and coordinate the development of a comprehensive plan.

**Benchmarks:**

1. Complete regional Tactical Interoperable Communication Plans in every region of the state. (9/30/2010)
2. Coordinate the identification of inter-regional interoperability issues, inter-state interoperability issues and international interoperability issues and identify potential technology and operational solutions. (6/30/2011)
3. Develop standards necessary to address inter-regional interoperability issues, inter-state interoperability issues and international interoperability issues. (6/30/2011)
4. Incorporate tactical communication resources, including Strategic Technology Reserve resources, into a statewide Tactical Interoperable Communication Plan and articulate interoperability standards. (12/31/2010)
5. Identify procedures and resources necessary to update and maintain both regional and statewide plans.(12/31/2010)

**Ownership:**

SRB, ECN, RRBs

**Primary NECP Objective and Initiatives:**

**NECP Objective 1:** Formal decision-making structures and clearly defined leadership roles coordinate emergency communications capabilities.

- Initiative 1.1 - Facilitate the development of effective governance groups and designated emergency communications leadership roles.
- Initiative 1.3 Integrate strategic and tactical emergency communications planning efforts across all levels of government.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

### **1.6 MINNESOTA GOVERNANCE GOAL NUMBER SIX**

Develop coordinated grant policies within the State that promotes coordination in communications planning processes, governance bodies, joint training exercises, and infrastructure sharing.

#### **Benchmarks:**

1. SRB to develop and articulate comprehensive funding priorities for the use of federal and state grant funds. (9/30/2010)
2. Expand the engagement of federal public safety agencies in Minnesota's comprehensive public safety communication planning through involvement in the SRB Interoperability Committee. (6/30/2010)
3. Integrate federal agencies into the basic ARMER cross spectrum interoperability plan. (3/31/2011)
4. Identify resources and capabilities necessary to assure appropriate public safety communications with federal public safety agencies essential to Minnesota's disaster response capability and develop strategies to support federal to state and local interoperability. (12/31/2010).

#### **Ownership:**

SRB, ECN, RRBs

#### **Primary NECP Objective and Initiatives:**

**NECP Objective 1:** Formal decision-making structures and clearly defined leadership roles coordinate emergency communications capabilities.

### *Minnesota Statewide Communications Interoperability Plan*

- Initiative 1.3 - Integrate strategic and tactical emergency communications planning efforts across all levels of government.
- Initiative 1.4 - Develop coordinated Grant policies that promote Federal participation and coordination in communications planning processes, governance bodies, joint training exercises, and infrastructure sharing.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

## **1.7 MINNESOTA GOVERNANCE GOAL NUMBER SEVEN**

Improve information sharing from the SRB and feedback to the SRB

### **Benchmarks:**

1. Update the ECN/SRB website including additional information on the ARMER program.
2. Regional Interoperability Coordinators to present a quarterly report to the SRB at their regular monthly meeting.
3. Video Conferencing of the SRB meeting, the OTC meeting and the Interoperability Committee meeting in order to increase statewide participation.
4. Encourage the use of phone conference lines and video conferencing for other SRB committee meetings and Regional Meetings.
5. Development of the SRB Executive Committee which will meet monthly prior to the SRB meeting to discuss upcoming agendas and any issues that may be taking place.

### **Ownership:**

SRB, ECN, RRB's

### **Primary NECP Objective and Initiatives:**

**NECP Objective 1:** Formal decision-making structures and clearly defined leadership roles coordinate emergency communications capabilities.

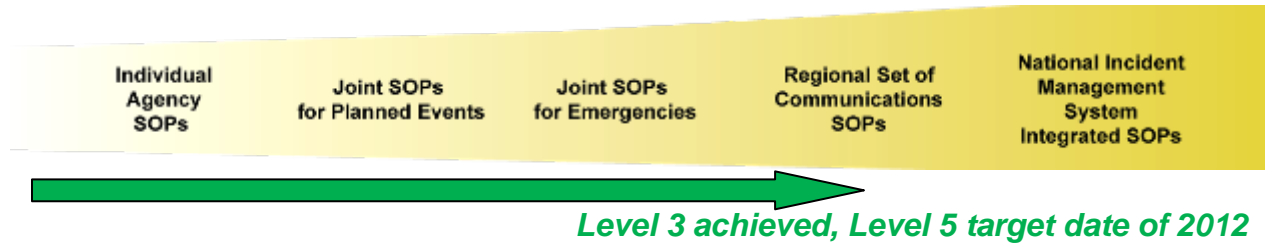
- Initiative 1.1 - Facilitate the development of effective governance groups and designated emergency communications leadership roles.
- Initiative 1.3 - Integrate strategic and tactical emergency communications planning efforts across all levels of government.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

## 2. STANDARD OPERATING PROCEDURES (SOPs)

The goal under this SAFECOM Interoperability Continuum track is National Incident Management System Integrated SOPs as shown in the SAFECOM Continuum for Standard Operating Procedures.

### SAFECOM Continuum – Standard Operating Procedures



On a regional level the Minneapolis-St. Paul metropolitan area has achieved a very high level of performance in this category. The multi-jurisdictional and multi-disciplinary response (over 75 agencies in total), and the efficacy of the communications processes and operational flows which occurred during the catastrophic bridge collapse in Minneapolis on August 1, 2007, shows Minnesota's efforts are targeted to plan, develop, implement and utilize the NECP, NIMS, NRF and the highest levels of the Interoperability Continuum in critical situations. This result can be attributed to two significant factors, as follows:

- The availability of a common communication platform providing the technical capability for broad multi-discipline and cross jurisdictional communication interoperability.
- The establishment in 1995 of a governance structure supporting the integrated multi-disciplinary planning and development of standard operating procedures necessary to assure first responders could use the common communication platform appropriately.

With the establishment of similar regional governance structures in Greater Minnesota, the foundation is in place for the evolution and development of standard operating procedures necessary to achieve a similar level throughout the remainder of the state. However, there is still significant work necessary to achieve a similar capability in the other regions of the state and there are no short cuts to process of engaging regional public safety officials in the process of developing and implementing standard operating procedures that address regional needs.

Throughout the remainder of the state, the process of implementing the ARMER backbone is at various stages of deployment. Similarly, the regional governance structures have not had the benefit of a common platform and common planning process around which to develop standard operating procedures. Within the confines of local resources, public safety interoperability has traditionally developed around shared

interoperability channels, including but not limited to the Minnesota Statewide Emergency Frequency (MINSEF), Point-to-Point, Statewide Fire Mutual Aid, Emergency Medical Services Hospital Emergency Ambulance Radio (EMS-HEAR), and formal and informal cross programming of agency main frequencies. As the ARMER backbone is implemented throughout Greater Minnesota, it provides the opportunity and need to determine regional standard operating procedures that will provide the maximum level of interoperability among public safety entities within each region and to coordinate those standards with standards adopted by the Statewide Radio Board to assure an appropriate level of coordination between regions at the statewide level. This potential need and opportunity exists for local agencies electing the ARMER system as their primary public safety communication system and by virtue of Minnesota's "system of system" approach for local agencies continue to operate upon independent legacy communication systems.

To accomplish these initiatives the following SOP goals have been established by the SCIP planning participating public safety entities within the State. The SCIP SOP goals along with the associated benchmarks will assist in addressing and meeting the three NECP Goals.

## **2.1 MINNESOTA SOP GOAL NUMBER ONE**

Continue the development, implementation and maintenance of technical and operational standards on the operation of the ARMER system and on the use of the ARMER backbone as a system-of-systems to maximize public safety communication interoperability among public safety agencies throughout the state, with neighboring states and across the international border with Canada.

### **Benchmarks:**

1. Develop and promulgate a statewide interoperable frequency and talkgroup plan for all public safety spectrum (Very High Frequency (VHF), Ultra High Frequency (UHF), 700/800 MHz), which identifies the frequencies and their usage. (6/30/2010)
  - a. Explore opportunities to coordinate with neighboring states and Canadian provinces.
2. Develop and promulgate standards related to the usage of ARMER cross spectrum resources, including Public Safety Answering Point (PSAP) and Emergency Operations Center (EOC) radio control stations, gateways, and overlay frequencies. (6/30/2010)
3. Develop a plan to assure that interoperable frequencies and interoperability resources (gateways, donor radios, etc.) are available to all public safety users in the state. (12/31/2010)
4. Adopt operational standards related to the usage of interoperability frequencies and talkgroups. (6/30/2010)
5. Integrate usage of interoperability frequencies and talkgroups into training and exercises. (12/31/2010)

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6. Adopt an SOP for all agencies which incorporates the National Public Safety Planning Advisory Committee (NPSPAC) national naming standards necessary to promote usage of common naming standards by public safety officials throughout the state. (3/01/2010)

**Ownership:**

SRB, ECN, RRBs

**Primary NECP Objective and Initiatives:**

**NECP Objective 3:** Emergency responders employ common planning and operational protocols to effectively use their resources and personnel.

- Initiative 3.1 - Standardize and implement common operational protocols and procedures.
- Initiative 3.3 - Develop and implement model SOPs for specific events, and all-hazards response.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

**2.2 MINNESOTA SOP GOAL NUMBER TWO**

To develop standardized Memorandum of Understanding (MOU) documents with instructions that may be used for agency to agency, discipline to discipline, and cross border interoperability among local, regional, state, federal, tribal, and cross-border public safety communication situations that identify tactical and operational standards necessary to assure interoperability between public safety agencies.

**Benchmarks:**

1. Identify principal public safety agencies where formal MOU's will be necessary to define operational and technical standards. (6/30/2010)
2. Develop and circulate standardized documents and define their purpose and usage. (12/31/2010)
3. Develop and maintain model standard operating procedures for cross border interoperability using VCALL and VTAC frequencies and other appropriate frequencies. (12/31/2010)
4. Incorporate MOU's into regional and statewide Tactical Interoperable Communication Plans. (12/31/2010)

**Ownership:**

SRB, DEC. RRBs

**Primary NECP Objective and Initiatives:**

**NECP Objective 3:** Emergency responders employ common planning and operational protocols to effectively use their resources and personnel.

- Initiative 3.1 - Standardize and implement common operational protocols and procedures.
- Initiative 3.2 - Implementation of the NIMS and the NRF across all levels of government.
- Initiative 3.3 - Develop and implement model SOPs for specific events, and all-hazards response.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

### 3. TECHNOLOGY - VOICE

The goal under this SAFECOM Interoperability Continuum track is a standards-based shared system.

#### SAFECOM Continuum – Technology (Voice)



#### Level 5 achieved, completion of ARMER construction - 2012

Minnesota’s implementation of the ARMER system seeks to make a standards-based shared system available to all public safety agencies in the state. The current ARMER plan provides for substantial completion of the ARMER system by the end of 2012. The ARMER system is a P25 trunked radio system operating in the 700/800 MHz spectrum with over 300 tower sites with an RF and microwave backbone built to provide a very high level of reliability required to a mission critical public safety standards.

Cross spectrum and interoperability with legacy systems are essential elements of Minnesota’s implementation of the ARMER plan. The statewide footprint of the ARMER backbone provides the opportunity to enhance interoperability among all public safety agencies through the use of radio control stations located at all emergency operation centers (EOCs), public safety answering points (PSAPs) and at other critical communication sites, including federal agencies and bordering counties. Routine cross spectrum and independent system interoperability is available through gateway operations, including console based patches at all PSAPs and through a VHF channel overlay that will be implemented into the ARMER backbone. Specific details of the ARMER plan and cross spectrum and independent system interoperability are available on the SRB website at <https://dps.mn.gov/entity/srb>.

Homeland Security funds have been used to support the acquisition and deployment of mobile repeaters and caches of radios in greater Minnesota where backup, redundancy and interoperable communications are limited. As part of the Public Safety Interoperable Communications Grant Program (PSIC), a Strategic Technology Reserve (STR) was established to build additional redundancy and backup capacity within the State. These reserves and capacity have the ability to be deployable to other states.

Technology is separated into two distinct subheadings, Voice and Data. While each is required for a complete public safety communications system, each has distinct applications and needs that must be addressed.

Voice is an important objective, and the mechanism put in place by the State is the ARMER system described above. These completed goals will provide the mechanism to monitor and assure accomplishment.



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The necessity to adopt communication standards would not prevent local governments from acquiring analog or non-standard digital equipment with their own funds but would inhibit the acquisition of many grant funding sources. Adopting a single open-standard communication infrastructure reduces the complexity of non-ARMER interoperability components, making the most efficient use of capital investments by avoiding life limited assets. Equipment that is designed to be P25 upgradable through software changes would be acceptable. For this reason the State has adopted the P25 open standard for its voice communications system.

Addressing the need to begin planning for a fully developed system, the State has achieved unexpected results in anticipated local participation. Now the State must begin planning for the impact of large scale participation. In this equation, all entities must anticipate continued expansion to non-traditional public safety users (those permitted under Federal Communications Commission (FCC) Reg. 90.02). Capacity issues are the largest pending question. The State seeks to resolve the question of capacity for itself and its system partners. State and local participants are jointly responsible for any capacity issues and the goals set forth.

Strategic Technology Reserve (STR) planning is also a vital issue that the State and its partners address in this section. All participants in the communications system need to be aware of what is available during a time of crisis and just as paramount, the procedure of how to access those assets when needed. This makes the requirement to develop and maintain a current STR, usable by all within the State, a priority.

To accomplish these initiatives at present, the following voice technology goals have been established by the SCIP planning participating public safety entities within the State. With the exception of SCIP technology (voice) goal number one, all other goals and the associated benchmarks will assist in addressing and meeting all three of the NECP Goals. Goal number one will assist in addressing and meeting NECP goals number one and number two.

### **3.1 MINNESOTA TECHNOLOGY (VOICE) GOAL NUMBER ONE**

Substantially complete (95 percent of base radio sites operational) the construction of the ARMER backbone by the end of 2012

#### **Benchmarks:**

1. Construction of 65% of base radio sites. (12/31/2010)
2. Construction of 85% of base radio sites. (12/31/2011)

#### **Ownership:**

SRB, DPS, Department of Transportation (Mn/DOT)

**Primary NECP Objective and Initiatives:**

**NECP Objective 4:** Emerging technologies are integrated with current emergency communications capabilities through standards implementation, research and development, and testing and evaluation.

- Initiative 4.1 - Adopt voluntary consensus standards for voice and data emergency response capabilities.
- Initiative 4.2 - Research, develop, test, and evaluate new voice, video, and data solutions for the emergency communications based on user-driven needs and requirements.
- Initiative 4.3 - Transition to and/or integrate legacy systems with next-generation technologies based on voluntary consensus standards.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

**3.2 MINNESOTA TECHNOLOGY (VOICE) GOAL NUMBER TWO**

Adopt the Association of Public Safety Communications Officials (APCO) Project 25 (P25) digital standard for all new public safety communication equipment in the state.

**Benchmarks:**

1. SRB adopt APCO P25 digital standard for public safety infrastructure and subscriber equipment in the state. (3/31/2010)
2. APCO P25 digital standard shall be applied to all state and federal grant funding as a minimum standard under the State Communication Interoperability Plan. (3/31/2010)

**Ownership:**

SRB, DPS, Mn/DOT

**Primary NECP Objective and Initiatives:**

**NECP Objective 4:** Emerging technologies are integrated with current emergency communications capabilities through standards implementation, research and development, and testing and evaluation.

- Initiative 4.1 - Adopt voluntary consensus standards for voice and data emergency response capabilities.

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- Initiative 4.2 - Research, develop, test, and evaluate new voice, video, and data solutions for the emergency communications based on user-driven needs and requirements.
- Initiative 4.3 - Transition to and/or integrate legacy systems with next-generation technologies based on voluntary consensus standards.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

### **3.2 MINNESOTA TECHNOLOGY (VOICE) GOAL NUMBER THREE**

To develop long term plans for the ongoing operation and maintenance of the ARMER system which identifies coverage and capacity issues based upon anticipated levels of participation and estimates of future participation levels.

**Benchmarks:**

1. Complete a regional capacity assessment which identifies operational characteristics affecting ARMER system capacity and projects state use, local use and transient use to develop system utilization and capacity predictions for the system. (9/30/2010)
2. Develop standardized procedures to review actual system usage and address any unanticipated patterns effecting capacity and availability. (12/31/2010)
3. Determine sources of funding for future capacity needs. (12/31/2010)
4. Develop a plan for the integration of 700 MHz frequencies into the ARMER system plan. (12/31/2010)
5. Develop and articulate a process that reflects a bias for identifying and, where appropriate, integrating new on-the-horizon technologies, such as, Internet Protocol, Time Division Multiple Access (TDMA), future narrowbanding, and multi-band radios, into long term plans. (12/31/2010)
6. Develop a plan to assess any differences between design and actual coverage. (12/31/2010)
7. Complete a study of Statewide and regional voice logging. (9/30/2010)

**Ownership:**

SRB, DPS, Mn/DOT

**Primary NECP Objective and Initiatives:**

**NECP Objective 4:** Emerging technologies are integrated with current emergency communications capabilities through standards implementation, research and development, and testing and evaluation.

- Initiative 4.2 - Research, develop, test, and evaluate new voice, video, and data solutions for the emergency communications based on user-driven needs and requirements.
- Initiative 4.3 - Transition to and/or integrate legacy systems with next-generation technologies based on voluntary consensus standards.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

**3.4 MINNESOTA TECHNOLOGY (VOICE) GOAL NUMBER FOUR**

Investigate, develop, and test specific cross-spectrum interoperable resources that might be integrated into public safety communication systems (ARMER and non-ARMER systems).

**Benchmarks:**

1. Develop and implement a plan for basic cross spectrum interoperability through the placement of radio control stations with gateway capabilities in all PSAPs in the state. (12/31/2010)
2. Implement a VHF channel overlay channel throughout the ARMER backbone to provide basic VHF to ARMER interoperability. (12/31/2011)
3. Develop standardized procedures for the implementation of basic cross spectrum interoperability through PSAP radio control stations and VHF channel overlay. (12/31/2010)
4. Determine technical requirements necessary to establish interoperability with neighboring states and with Canadian public safety officials, where appropriate. (6/30/2011)
5. Determine additional interoperability resources and capabilities necessary to provide appropriate local, state and federal interoperability and develop a plan for implementation of that capability. (6/30/2011)

**Ownership:**

SRB, Mn/DOT

**Primary NECP Objective and Initiatives:**

**NECP Objective 4:** Emerging technologies are integrated with current emergency communications capabilities through standards implementation, research and development, and testing and evaluation.

- Initiative 4.2 - Research, develop, test, and evaluate new voice, video, and data solutions for the emergency communications based on user-driven needs and requirements.
- Initiative 4.3 - Transition to and/or integrate legacy systems with next-generation technologies based on voluntary consensus standards.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

**3.5 MINNESOTA TECHNOLOGY (VOICE) GOAL NUMBER FIVE**

Develop a plan for the implementation, maintenance, and sustainability of a Strategic Technology Reserve (STR) to pre-position or secure interoperable communications in advance for immediate deployment in an emergency situation or disaster.

**Benchmarks:**

1. Identify specific technologies to be used in each regional STR based on need, cost, and time needed to implement a system based on PSIC-mandated timelines by March 31, 2010.
2. Advise and assist local and state agencies in choosing STR capabilities and consider current statewide capabilities into the overall planning process by June 30, 2010.
3. Identify how each region will manage, maintain, and sustain an STR as part of their governance structure by June 30, 2010.
4. Create a statewide training standard and standard operating procedures for operating maintaining, and exercising an STR by December 31, 2010.

**Ownership:**

SRB, DPS, Mn/DOT, RRBs, Homeland Security Emergency Management (HSEM) Regions

**Primary NECP Objective and Initiatives:**

**NECP Objective 4:** Emerging technologies are integrated with current emergency communications capabilities through standards implementation, research and development, and testing and evaluation.

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- Initiative 4.2 - Research, develop, test, and evaluate new voice, video, and data solutions for the emergency communications based on user-driven needs and requirements.
- Initiative 4.3 - Transition to and/or integrate legacy systems with next-generation technologies based on voluntary consensus standards.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

### **3.6 MINNESOTA TECHNOLOGY (VOICE) GOAL NUMBER SIX**

Establish subscriber equipment specification standards to support interoperability,(local, regional, state and national).

**Benchmarks:**

1. Publish on ECN's website subscriber equipment approved for use on ARMER.
2. Develop a standardized comprehensive testing process that is consistent for all models of subscriber radios offered for use on the ARMER system.
3. Develop a standard detailing specific optional features recommended by the Statewide Radio Board when purchasing subscriber equipment.

**Ownership:**

SRB, ECN, Systems Managers Group, MN/Dot OEC

**Primary NECP Objective and Initiatives:**

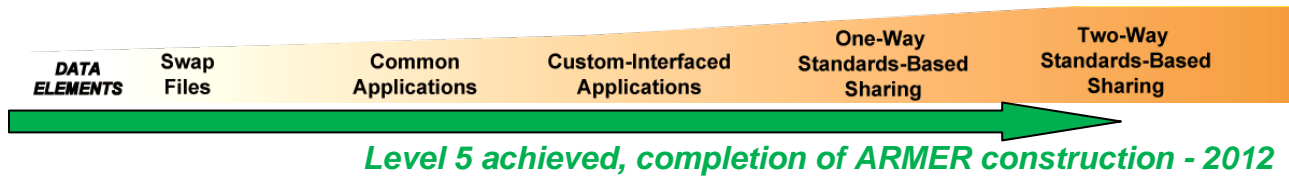
**NECP Objective 4:** Emerging technologies are integrated with current emergency communications capabilities through standards implementation, research and development, and testing and evaluation.

- Initiative 4.1 – Adopt voluntary consensus standards for voice and data emergency response capabilities.
- Initiative 4.2 – Research, develop, test and evaluate new voice, video, and data solutions for emergency communications, based on user-driven needs and requirements.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

## 4. TECHNOLOGY - DATA

### SAFECOM Continuum – Technology (Data)



Currently, various regional and local public safety data initiatives are in place in Minnesota. A number of those systems are currently using technology platforms that are at or near the end of their useful life. Others are based upon technology platforms that currently limited by the uncertainty of the 700 MHz D-Block issue. In 2009, Minnesota conducted a comprehensive assessment of the alternatives upon which the state might adopt a public safety wireless data strategy. A copy of that study is available upon the SRB website at [www.srb.state.mn.us](http://www.srb.state.mn.us). (Under ARMER margin title, click on Studies/Reports, and then click on 'Wireless Data Feasibility Report'.)

Until the 700 MHz D-Block issue is resolved by the Federal Communication Commission, it is hard to identify a strategy or approach for wireless public safety data in Minnesota. It may be possible for the State to take some actions around the fringes of that topic and to make its interests known. But, until a national direction is identified this is an issue that must be parked until the D-Block issue and wireless data technologies solidify.

The National Justice Information Sharing Institute (NJIS), a nonprofit organization, was awarded a fiscal year (FY) 2009 initiative grant from the Department of Justice (DOJ) Bureau of Justice Assistance (BJA) for the support, adoption, and implementation of information sharing projects using the National Information Exchange Model (NIEM). Minnesota anticipates that open data standards will be set in the near future, allowing the public safety community to articulate standards necessary to maximize the sharing of public safety data.

To accomplish these initiatives at present, the following data technology goals have been established by the SCIP planning participating public safety entities within the State. The SCIP technology (data) goals along with the associated benchmarks will assist in addressing and meeting the three NECP Goals.

### 4.1 MINNESOTA TECHNOLOGY (DATA) GOAL NUMBER ONE

Develop a strategy to provide the highest level of broadband data to public safety officials throughout the state.

**Benchmarks:**

1. Identify the potential and opportunities to leverage the ARMER system (spectrum, towers and microwave) to make broadband data available to public safety officials across the state through a public and private partnership. (12/31/2010)
2. Develop a strategy, including a proposed timeline, to provide the broadest availability of broadband public safety state to public safety officials. (9/30/2011)
3. Seek information from commercial wireless telecommunication vendors upon the possibility to pursue a public private partnership to expand the availability of broadband data services to public safety agencies across the state. (6/30/2010)
4. Determine the scope and availability of commercial wireless data services throughout the state and determine whether a potential exists to coordinate access to those services collectively on behalf of public safety agencies throughout the state. (12/31/2010).
5. Monitor and comment, where appropriate, upon the status of the public safety 700 MHz data channels (D-Block) before the Federal Communication Commission (FCC). On going.
6. Determine a viable approach to implement public safety data and develop a strategy for the implementation of the strategy. (1 year after resolution of D-Block issue).

**Ownership:**

ECN

**Primary NECP Objective and Initiatives:**

**NECP Objective 4:** Emerging technologies are integrated with current emergency communications capabilities through standards implementation, research and development, and testing and evaluation.

Initiative 4.1 - Adopt voluntary consensus standards for voice and data emergency response capabilities.

Initiative 4.2 - Research, develop, test, and evaluate new voice, video, and data solutions for the emergency communications based on user-driven needs and requirements.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

**4.2 MINNESOTA TECHNOLOGY (DATA) GOAL NUMBER TWO**

Develop standards leveraging the Common Alerting Protocol and the Emergency Data Network.



**Benchmarks:**

1. Develop a Minnesota Study on Public Safety Broadband to include:
  - A detailed assessment of users needs
  - An assessment of cellular network capabilities
  - A statement of network requirements
  - An implementation model
  - A funding model
2. Explore and establish integration with the National Emergency Alerting System
3. Establish an IPAWS National Alert System Committee under the SRB

**Ownership:**

SRB, ECN, HSEM, IPAWS Committee

**Primary NECP Objective and Initiatives:**

- Initiative 4.1 - Adopt voluntary consensus standards for voice and data emergency response capabilities.
- Initiative 4.2 - Research, develop, test, and evaluate new voice, video, and data solutions for the emergency communications based on user-driven needs and requirements.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

### **4.3 MINNESOTA TECHNOLOGY (DATA) GOAL NUMBER THREE**

Develop a strategy for state systems interoperability (governance, legislation, common operating platforms for computer aided dispatch, more than just the connectivity)

#### **Benchmarks:**

1. Investigate creating standards for general data systems interoperability where standardized interfaces exist (for example, in NG911 [i3]).
2. Perform market research to determine vendor product capabilities for general data systems interoperability in Minnesota.
3. Determine and document where governance and legislative gaps exist.

#### **Ownership:**

SRB, ECN

#### **Primary NECP Objective and Initiatives:**

- Initiative 4.1 - Adopt voluntary consensus standards for voice and data emergency response capabilities.
- Initiative 4.2 - Research, develop, test, and evaluate new voice, video, and data solutions for the emergency communications based on user-driven needs and requirements.
- Initiative 4.3 – Transition to and/or integrate legacy systems with next-generation technologies based on voluntary consensus standards.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

## 5. TRAINING AND EXERCISE

The goal under this SAFECOM Interoperability Continuum track is regular comprehensive region-wide training and exercises.

### *SAFECOM Continuum – Training and Exercise*



Proper training and regular exercises are critical to the implementation and maintenance of Minnesota's successful interoperability solution. Training and exercise allows vital objectives to be achieved promoting familiarity with the communications systems and developing an understanding of standard operating procedures required to achieve the highest practical level of interoperability. These objectives are:

### **General Orientation on Equipment**

Provide initial orientation to users in the appropriate use of their communication equipment and in the features upon which advanced interoperability is provided. Multi-jurisdictional/multi-agency operations are required for this objective to be successful.

### **Single and Multiagency Tabletop Exercises for Key Field and Support Staff**

Conduct structured tabletop exercises to promote planning and identification of response gaps. As agencies and disciplines begin working together to develop exercises and provide field training, workable interoperability solutions are expected to emerge.

### **Multi-agency Full Functional Exercises**

Multi-agency/multi-discipline exercises will be developed at the management and supervisory level. They will be followed by a determination and provision of training in critical skills that all public safety personnel participating in the exercise or involved in actual incident will need to be proficient.

## **Regular Comprehensive Regional Training and Exercises**

Optimal interoperability involves equipment familiarization and an introduction to regional/state interoperability at time of hire (or in an academy setting). Success will be assured by regular, comprehensive, and realistic exercises that address potential problems in the region and involve the participation of all personnel.

## **Communications Unit Leader (COML) Training**

For those critical and unprecedented incidents that require expertise that can immediately adapt to any situation, the Incident Command System (ICS) within the NIMS document identifies these specialists as Communications Unit Leaders. The role of the Communications Unit Leader is a critical function that requires adequate training. Proper training of these individuals is of significant importance to a region's ability to respond to unexpected events, and it should prepare them to manage the communications component of larger interoperability incidents, applying the available technical solutions to the specific operational environment of the event.

As Minnesota transitions from the use of basic communication infrastructures offered by legacy public safety communication systems, there is a growing need to establish routine and standardized training for all public safety personnel. Modern digital and trunked communication systems offer the opportunity for greater interoperability, but also require much higher level of initial and recurring training in both equipment operations and in the standard operating procedures. The successful response to the 35W Bridge collapse in Minneapolis in 2007 demonstrated the benefits of a common platform, strong regional governance, standardized procedures and in the depth of training required to respond to such an incident. Critical assessments of that event also demonstrated the need to continue to support that training, support recurring training or reinforcement of critical skills and the need for routine exercise of those critical skills.

Although de facto training standards have evolved for public safety use of the ARMER system, those training standards and capabilities will require greater refinement. The challenge is complicated by the fact, that a significant portion of local jurisdictions in Minnesota are still considering their alternatives for replacement of public safety communication infrastructure in response to the 2013 narrowbanding requirement. The continued development of standardized interoperable communication training, including basic and advanced equipment usage, standard operating procedures and recurring refresher training is a high priority in Minnesota, as is the desire to identify new and innovative ways to deliver that training.

## **5.1 MINNESOTA TRAINING AND EXERCISE GOAL ONE**

Establish communication training requirements for all public safety officials that provide and maintain the highest practical level of interoperability between public safety officials across jurisdictions and disciplines, in both day-to-day operations and in disaster responses.

**Benchmarks:**

1. Establish detail learning objectives for all public safety disciplines that include operation of communication equipment, appropriate utilization of interoperability resources (talkgroups, shared channels) and supports NIMS concepts. (9/30/2010)
2. Establish learning objectives for refresher training which supports the maintenance of required capabilities for public safety officials, reinforces critical skills and reviews operational standards.(9/30/2010)
3. Identify the best approaches to deliver basic user training and refresher training that reinforces critical skills. (9/30/2010)
4. Establish requirements (education, experience and background) for instructors providing public safety communication training at each level. (12/31/2010)
5. Establish a plan for COML training, which expands the number of COML within each region, provides for the continued maintenance of essential skills and provides for periodic reinforcement and critical assessment of COML skills through periodic exercise. (6/30/2010)
6. Develop and promote the incorporation of communication skills into all public safety training situations. (6/30/2010)

**Ownership:**

SRB, ECN, Statewide Communications Interoperability Coordinator (SWIC), Regional Interoperability Coordinators (RICs), RRBs

**Primary NECP Objective and Initiatives:**

**NECP Objective 5:** Emergency responders have shared approaches to training and exercises, improved technical expertise, and enhanced response capabilities.

- Initiative 5.2 - Develop and inject standardized emergency communications performance objectives and evaluation criteria into operational exercises.
- Initiative 5.3 - Provide targeted training to improve skills and capabilities of technical staff.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

**5.2 MINNESOTA TRAINING AND EXERCISE GOAL TWO**

Establish and maintain communication exercises that support the highest practical level of interoperability between public safety officials across jurisdictions and disciplines in both day-to-day operations and in disaster responses.

**Benchmarks:**

1. Develop model criteria for communication exercises and communication elements of generic exercises that demonstrate and reinforce essential skills required for public safety officials to utilize communication resources to the highest practical level. (9/30/2010)
2. Establish statewide and regional exercise plan, that are reasonable and that adequately addresses the need to periodically exercise interoperability skills among public safety officials. (3/31/2011)
3. Establish a supportive mechanism to assure compliance with exercise standards and exercise plan and which supports the identification of issues to be incorporated into initial and refresher training curricula. (6/30/2011)

**Ownership:**

SRB, ECN, SWIC, RICs, RRBs

**Primary NECP Objective and Initiatives:**

**NECP Objective 5:** Emergency responders have shared approaches to training and exercises, improved technical expertise, and enhanced response capabilities.

Initiative 5.2 - Develop and inject standardized emergency communications performance objectives and evaluation criteria into operational exercises.

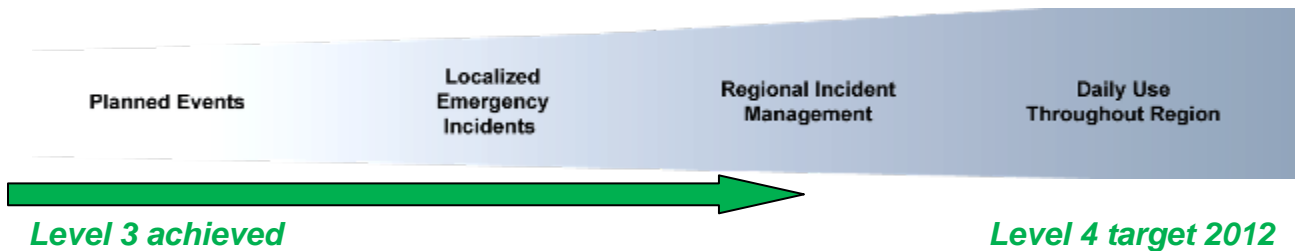
Initiative 5.3 - Provide targeted training to improve skills and capabilities of technical staff.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

## 6. USAGE

The goal under this SAFECOM Interoperability Continuum track is daily use throughout the region.

### SAFECOM Continuum – Usage



Usage refers to how often Minnesota’s interoperable communications technologies are used. Success in this element is contingent upon progress and interplay among the four elements.

#### Planned Events

Planned events are events for which the date and time are known. Examples include athletic events and large conferences/conventions that involve multiple responding agencies.

#### Localized Emergency Incidents

Localized emergency events involve multiple intra-jurisdictional responding agencies. A vehicle collision on an interstate highway is an example of this type of incident.

#### Regional Incident Management

Regional incident management is the routine coordination of responses across a local/region that includes automatic aid response to natural and manmade disasters while utilizing the ICS during the response.

#### Daily Use throughout the Region

Daily use throughout the region is defined as interoperability systems that are used every day for managing routine as well as emergency incidents. In this optimal solution, users are familiar with the operation of the system and routinely work in concert with one another.

Considering a significant portion of local jurisdictions in Minnesota are in the midst of updating their public safety communication infrastructure in response to the 2013

narrowbanding requirement, Minnesota has not thoroughly resolved the technical and operational issues required to promote the highest level of usage. The use of a standards based shared infrastructure in the metropolitan area since 2001 has provided the opportunity to identify operational practices that reinforce the routine use of features supporting interoperability. As the ARMER backbone is implemented throughout the remainder of the state, similar opportunities must be identified and implemented at the regional and local level. Similarly, cross spectrum and ARMER to independent system operations will require substantially consideration to assure interoperability features are incorporated into routine usage to the highest practical degree.

## **6.1 MINNESOTA USAGE GOAL NUMBER ONE**

Promote an environment that enables the highest practical level of day-to-day usage in all operational aspects of public safety communication infrastructure and user equipment.

### **Benchmarks:**

1. Develop a process to incorporate a consideration of the practical implications of technical and operational standards upon usage. The process must include a statement that the standard has no impact upon usage or that the standard is designed to support the highest level of day-to-day usage under the circumstances. (6/30/2010)
2. Promote and encourage local operational practices that support capabilities and abilities to use interoperability resources. (6/30/2010)
3. Identify essential interoperability resources and capabilities that are not used on a day-to-day basis and develop training and exercise protocols that will assure the availability of those resources and capabilities when they are required. (12/31/2010)

### **Ownership:**

HSEM, SRB, RRB's, local agencies

### **Primary NECP Objective and Initiatives:**

**NECP Objective 7:** The nation has integrated preparedness, mitigation, response, and recovery capabilities to communicate during significant events.

- Initiative 7.1 - Provide an integration framework for disaster communications operations and response to ensure that the Federal Government can effectively fulfill requests during an incident response.
- Initiative 7.2 - Implement disaster communications planning and preparedness activities.



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- Initiative 7.3 - Leverage existing and emerging technologies to expand and integrate disaster communications capabilities among emergency response providers.
- Initiative 7.4 - Accelerate the implementation of emergency communications components in the NRF, specifically national access and credentialing.

Secondary NECP Objectives and Initiatives met by this goal can be viewed in Section 9 of this document.

## **6.2 MINNESOTA USAGE GOAL NUMBER 2**

Continued reinforcement of Interoperability protocols with dispatchers and users (examples: use of Plain Language and Use of Common naming Conventions.

### **Benchmarks:**

1. Development of Web Based training sponsored by the SRB which reinforces Board operational standards.
2. Targeting training towards both ARMER and non ARMER primary radio communications

### **Ownership:**

SRB, RRB's, RAC's, and ECN

### **Primary NECP Objective and Initiatives:**

**NECP Objective 7:** The nation has integrated preparedness, mitigation, response, and recovery capabilities to communicate during significant events.

- Initiative 7.1 - Provide an integration framework for disaster communications operations and response to ensure that the Federal Government can effectively fulfill requests during an incident response.
- Initiative 7.2 - Implement disaster communications planning and preparedness activities.
- Initiative 7.3 - Leverage existing and emerging technologies to expand and integrate disaster communications capabilities among emergency response providers.

## **6.3 MINNESOTA USAGE GOAL NUMBER 3**

Develop best practices for all disciplines (law enforcement, fire, emergency management, EMS, Hospitals, Public Health, dispatch and public works) and for VHF/800 MHz Interoperability.

**Benchmarks:**

1. Identify, Organize and develop best practices work groups in all public safety disciplines.
2. Meet on a regular schedule in order to develop best practices guides for each public safety discipline.
3. Document the work completed and forward to the Interoperability Committee for approval and forwarding to the Statewide Radio Board for approval and implementation.

**Ownership:**

SRB, RRB, RAC's and ECN

**Primary NECP Objective and Initiatives:**

**NECP Objective 7:** The nation has integrated preparedness, mitigation, response, and recovery capabilities to communicate during significant events.

- Initiative 7.1 - Provide an integration framework for disaster communications operations and response to ensure that the Federal Government can effectively fulfill requests during an incident response.
- Initiative 7.5 – implement systems and procedures that ensure the Federal Government's ability to establish situational awareness, develop a common operating picture, and provide timely and consistent information during crises.

## **7. IMPLEMENTATION**

An essential element in achieving the vision for public safety communication interoperability is the allocation of duties and assignment of responsibilities to accomplish the specific objectives. Minnesota has established a basic framework for the allocation of duties and the assignment of responsibilities in Minn. Stat. §403.36, subdivision 1e where it states the following with respect to the planning and implementation of the ARMER system:

**“Implement plan and establish statewide system.** The Statewide Radio Board has overall responsibility for the statewide, shared radio and communication system project plan. The commissioner of public safety shall implement the plan adopted by the Statewide Radio Board. The commissioner of public safety shall contract with the commissioner of transportation to construct, own, operate,

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maintain, and enhance the elements of the backbone system defined in the plan. The commissioner of transportation, under appropriate state law, shall contract for, or procure by purchase or lease (including joint purchase and lease agreements), construction, installation of materials, supplies and equipment, and other services as may be needed to build, operate, and maintain the system backbone. The Department of Transportation shall own, operate, and maintain those elements identified in the project plan as the system backbone, including, but not limited to, radio towers and associated structures and equipment related to the system backbone.”

With the expansion of the ARMER system to a statewide system, the broader role and the expanded vision of public safety communication interoperability was a logical outgrowth of the need to address regional differences and priorities. The executive order establishing Minnesota’s Statewide Radio Board as the SIEC was designed to assure that the resources committed to public safety communication interoperability are spent wisely.

To achieve Minnesota’s vision for public safety communication interoperability there are seven different constituencies necessary to accomplish the objectives, as follows:

**SRB/SIEC**--Statewide Radio Board/ Statewide Interoperability Executive Committee

**DPS**--Department of Public Safety, which includes ECN and the ARMER, 911 and Interoperability Programs, Division of Homeland Security and Emergency Management and the Commissioner’s Office.

**Mn/DOT**--Department of Transportation, including the Office of Electronic Communications

**RRB**--Regional Radio Board

**RAC**--Regional Advisory Committees

**HSEM Regions**--The Homeland Security Emergency Management Regional Governance Structures

**Local Units**--Local units of government, including regional, county and municipal governments and tribal governments

Each constituent group is responsible for accomplishing and maintaining objectives which support the SCIP’s goals.

The overall approach to implementation of the SCIP strategic initiatives, short and long-term goals and objectives leverages the processes in place and developed as part of the SCIP. The State of Minnesota is committed to providing the basic standards-based

shared communication backbone across the state. The SCIP implementation builds upon the structure and planning first implemented in the Twin Cities Metropolitan Area. The process provides for the unique local and regional needs of all regions of the State to develop plans to plan and to implement the SAFECOM SCIP Methodology.

The State of Minnesota recognizes technology alone will not create effective interoperable communications and practices. Technology facilitates; however, people make it work through education, planning, coordination, training, exercising and usage.

The planning and implementation efforts described in this document have been and will continue to be supported by DPS in the form of informational meetings and materials designed to educate and encourage participation in the planning process through the Statewide Interoperability Coordinator (SWIC)/Statewide Interoperability Program Manager (SWIPM), the ECN Director and HSEM regional planning coordinators.

## **8. REVIEW AND UPDATE PROCESS**

At minimum, a bi-annual review and update of the SCIP is an essential element to achieving Minnesota's vision for interoperable communications and operations. The Statewide Radio Board in their role as SIEC assumes the primary responsibility for maintaining and updating the SCIP.

From a more substantive procedural view, the process and periodic progress and status reports will be vested in the SRB's Interoperability Committee, designed to broadly represent the multitude of public safety disciplines (federal, state and local) including representatives from non-governmental organizations, military and tribal governments operating in the State of Minnesota.

The Interoperability Committee is also designed to include representation from each of the radio regions and regional advisory committees where a similar multi-disciplinary approach is reflected in their organizational structure. Administrative support and coordination for this process will be a significant responsibility of the Statewide Interoperability Coordinator (SWIC)/Statewide Interoperability Program Manager (SWIPM), who will provide technical assistance and input on the status and activities throughout the State, including the status of interoperability in bordering states and along the Canadian border.

## 9. SUMMARY OF GOALS, OBJECTIVES, and INITIATIVES

Safecom Interoperability Continuum	Governance							Standard Operating Procedure (SOPs)		Technology (Voice)						Technology (Data)			Training and Exercises		Usage			
	1	2	3	4	5	6	7	1	2	1	2	3	4	5	6	1	2	3	1	2	1	2	3	-
Goal Number																								
<b>NECP Roadmap Objective #1</b>	1	2	3	4	5	6	7	1	2	1	2	3	4	5	6	1	2	3	1	2	1	2	3	
Formal Governance Structures And Clear Leadership Roles																								
Initiative 1.1	X	X	X	X	X		X	X	X															
Initiative 1.2			X						X															
Initiative 1.3	X	X	X	X	X	X	X	X	X															
Initiative 1.4		X				X	X																	
<b>NECP Roadmap Objective #2</b>	1	2	3	4	5	6	7	1	2	1	2	3	4	5	6	1	2	3	1	2	1	2	3	
Coordinated Federal Activities																								
Initiative 2.1									X															
Initiative 2.2									X															
Initiative 2.3																								
Initiative 2.4									X															
Initiative 2.5																								
<b>NECP Roadmap Objective #3</b>	1	2	3	4	5	6	7	1	2	1	2	3	4	5	6	1	2	3	1	2	1	2	3	
Common Planning and Operational Protocols																								
Initiative 3.1		X	X	X	X			X	X			X	X	X		X			X	X	X			
Initiative 3.2	X				X				X			X	X	X		X			X	X	X			
Initiative 3.3								X	X															
<b>NECP Roadmap Objective #4</b>	1	2	3	4	5	6	7	1	2	1	2	3	4	5	6	1	2	3	1	2	1	2	3	
Standards and Emerging Communication Technologies																								
Initiative 4.1									X	X	X				X	X	X	X	X	X				
Initiative 4.2			X		X					X	X	X	X	X	X	X	X	X	X	X				
Initiative 4.3			X		X			X	X	X	X	X	X	X		X		X	X	X				
Initiative 4.4																								
<b>NECP Roadmap Objective #5</b>	1	2	3	4	5	6	7	1	2	1	2	3	4	5	6	1	2	3	1	2	1	2	3	
Emergency Responder Skills and Capabilities																								
Initiative 5.1																								
Initiative 5.2	X											X	X		X			X	X	X				
Initiative 5.3										X	X	X	X		X			X	X	X				
<b>NECP Roadmap Objective #6</b>	1	2	3	4	5	6	7	1	2	1	2	3	4	5	6	1	2	3	1	2	1	2	3	
System Lifecycle Planning																								
Initiative 6.1		X	X									X	X	X		X								
Initiative 6.2					X							X	X	X		X								

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Initiative 6.3																						
Initiative 6.4		X	X		X						X	X	X		X							
<b>NECP Roadmap Objective #7</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>3</b>	
Initiative 7.1								X	X	X	X			X			X	X	X	X		
Initiative 7.2									X	X	X	X	X				X	X	X	X		
Initiative 7.3								X	X	X	X	X	X				X	X	X	X		
Initiative 7.4									X			X	X	X			X			X	X	
Initiative 7.5																					X	
Initiative 7.6																						

**NECP Objective 1: Formal Governance Structures and Clear Leadership Roles**

- Initiative 1.1 - Facilitate the development of effective governance groups and designated emergency communications leadership roles.
- Initiative 1.2 - Develop standardized emergency communications performance objectives and link to DHS’s overall system for assessing preparedness capabilities nationwide.
- Initiative 1.3 - Integrate strategic and tactical emergency communications planning efforts across all levels of government.
- Initiative 1.4 - Develop coordinated Grant policies that promote federal participation and coordination in communications planning processes, governance bodies, joint training exercises, and infrastructure sharing.

**NECP Objective 2: Coordinated Federal Activities**

- Initiative 2.1 - Establish a source of information about federal emergency communications programs and initiatives.
- Initiative 2.2 - Coordinate all technical assistance programs to provide greater consistency for the delivery of federal services.
- Initiative 2.3 - Target Federal emergency communications grants to address gaps in the NECP, SCIPs, and TICPs.
- Initiative 2.4 - Enable resource sharing and improve operational efficiencies.
- Initiative 2.5 - Establish interoperability capabilities and coordination between domestic and international partners.

**NECP Objective 3: Common Planning and Operational Protocols**

- Initiative 3.1 - Standardize and implement common operational protocols and procedures.
- Initiative 3.2 - Implementation of the NIMS and the NRF across all levels of government.
- Initiative 3.3 - Develop and implement model SOPs for specific events, and all-hazards response.

#### **NECP Objective 4: Standards and Emerging Communication Technologies**

- Initiative 4.1 - Adopt voluntary consensus standards for voice and data emergency response capabilities.
- Initiative 4.2 - Research, develop, test, and evaluate new voice, video, and data solutions for the emergency communications based on user-driven needs and requirements.
- Initiative 4.3 - Transition to and/or integrate legacy systems with next-generation technologies based on voluntary consensus standards.
- Initiative 4.4 - Implement the Advanced Encryption Standard (AES) for federal responders.

#### **NECP Objective 5: Emergency Responder Skills and Capabilities**

- Initiative 5.1 - Develop and implement national training programs and certification processes.
- Initiative 5.2 - Develop and inject standardized emergency communications performance objectives and evaluation criteria into operational exercises.
- Initiative 5.3 - Provide targeted training to improve skills and capabilities of technical staff.

#### **NECP Objective 6: System Life-Cycle Planning**

- Initiative 6.1 - Conduct system life-cycle planning to better forecast long-term funding requirements
- Initiative 6.2 - Expand the use of public and private sector partnerships related to emergency communications.
- Initiative 6.3 Assess existing federal mission-critical wireless capabilities and upgrade and modernize them according to mission needs.
- Initiative 6.4 - Enhance emergency communications system survivability using redundant and resilient system designs.

#### **NECP Objective 7: Disaster Communications Capabilities**

- Initiative 7.1 - Provide an integration framework for disaster communications operations and response to ensure that the Federal Government can effectively fulfill requests during an incident response.
- Initiative 7.2 - Implement disaster communications planning and preparedness activities.
- Initiative 7.3 - Leverage existing and emerging technologies to expand and integrate disaster communications capabilities among emergency response providers.
- Initiative 7.4 - Accelerate the implementation of emergency communications components in the NRF, specifically national access and credentialing.

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- Initiative 7.5 - Implement systems and procedures that ensure the Federal Government's ability to establish situational awareness, develop a common operating picture, and provide timely and consistent information during crises.
- Initiative 7.6 - Promote the use of and expand the capabilities of priority services programs (e.g., Government Emergency Telecommunications Service (GETS), Priority Network Services Wi-Fi Protected Setup (WPS), and Telecommunications Service Priority (TSP) to next generation networks.



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AES	Advanced Encryption Standard
APCO	Association of Public-Safety Communications Officials
ARMER	Allied Radio Matrix for Emergency Response
BJA	Bureau of Justice Assistance
COML	Communications Unit Leader
DHS	U.S. Department of Homeland Security
DOJ	U.S. Department of Justice
DPS	Department of Public Safety
ECN	Emergency Communication Networks
EMS-HEAR	Emergency Medical Services-Hospital Emergency Ambulance Radio
FCC	Federal Communications Commission
FY	Fiscal year
GETS	Government Emergency Telecommunications Service
HSEM	Homeland Security Emergency Management
ICS	Incident Command System
IP	Internet Protocol
MESB	Metro Emergency Services Board
MINSEF	Minnesota Statewide Emergency Frequency
Mn/DOT	Minnesota Department of Transportation
MOU	Memorandum of Understanding
NECP	National Emergency Communications Plan
NIEM	National Information Exchange Model
NIMS	National Incident Management System
NJIS	National Justice Information Sharing Institute
NPSPAC	National Public Safety Planning Advisory Committee
NRF	National Response Framework
P25	APCO Project 25 - a suite of standards for digital radio communications

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PSAP	Public Safety Answering Point
PSIC	Public Safety Interoperable Communications Grant Program
RAC	Regional Advisory Committees
RIC	Regional Interoperability Coordinator
RRB	Regional Radio Board
SAFECOM	An acronym for the Department of Homeland Security's Public SAFETY COMMUNICATIONS Program (SAFECOM). SAFECOM provides research, development, testing and evaluation, guidance, tools, and templates on interoperable communications issues related to local, tribal, state, and Federal emergency response agencies.
SCIP	State Communications Interoperability Plan
SIEC	State Interoperability Executive Committee
SOP	Standard Operating Procedures
SRB	Statewide Radio Board
STR	Strategic Technology Reserve
SWIC	Statewide Communications Interoperability Coordinator
SWIPM	Statewide Interoperability Program Manager
TDMA	Time Division Multiple Access
TICP	Tactical Interoperability Communications Plans
TSP	Telecommunications Service Priority
UASI	Urban Areas Security Initiative
UHF	Ultra High Frequency
VHF	Very High Frequency
WPS	Priority network services Wi-Fi Protected Setup