



ECN Mission Statement

Utilize emerging technologies to provide the most comprehensive emergency communication networks available. By developing professional partnerships and collaborating with our customers we will deliver customer-focused network solutions that enhance public safety.

Background

The Division of Emergency Communication Networks encompasses two programs that manage two critical public safety communication networks: the 911 network and the Allied Radio Matrix for Emergency Response (ARMER) statewide shared radio communications network.

Funding

The Minnesota Statewide 911 Program costs were funded from the state's general fund until December 1986. In 1987, the state began collecting a 911 service fee on wired telephone lines to pay expenses related to the 911 program. Beginning July 1994, the fee was extended to include wireless telephone lines and today it includes voice over internet protocol providers. Revenues from the 911 fee are deposited into a special revenue account from which the 911 Program costs are paid. In the 2010-2011 biennium, over \$136.7 million

was appropriated from the 911 Special Revenue Account to fund the 911 Program, 911 wireline and wireless carrier cost recovery, 911 PSAP and equipment and proficiency expenses. The special revenue account also provides funding for the east and west medical resource communications centers, debt service on the revenue bonds sold to construct the ARMER system, ARMER back bone maintenance and operation costs, and Minnesota's interoperability program. The current 911 fee assessed is 80 cents per line (effective August 1, 2010) with the authority to raise the fee up to 95 cents.

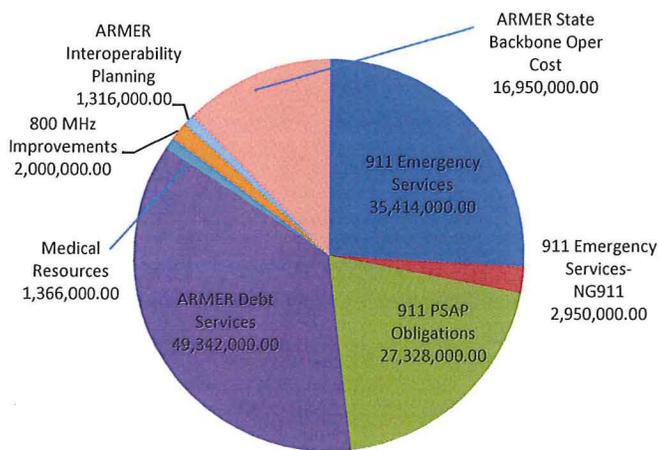
911

The Minnesota Statewide 911 Program provides immediate access from all telephones to critical public safety services. The 911 Program, which has been administered by the Department of Public Safety since December 2003, coordinates the maintenance of 911 systems and is charged with formulation of concepts, methods and procedures which will improve the operation and maintenance of 911 systems that handle more than two million emergency calls annually.

ARMER

Established in 2004, the Allied Radio Matrix for Emergency Response (ARMER) Program, administered in coordination with the Statewide Radio Board, manages the implementation of the 700/800 megahertz (MHz) shared digital trunked radio communication system. The ARMER back bone is a robust, scalable, state-of-the-art system that will be capable of servicing the radio communications needs of every city, county, state agency, tribal government and non-government public safety entity operating in the state. The ARMER system is the fundamental infrastructure necessary for emergency responders to achieve seamless interoperable communications.

**ECN 2012-13 Base Budget
7 Direct Appropriations by Fund**



**Total of All Funds
\$136,666,000.00**

911 Program Overview

The Minnesota Statewide 911 Program collects a monthly fee assessed on all wired, wireless and packet based telecommunication services to assist with the costs related to maintaining the network within the state. The fees collected are used to provide the statutory required programmatic services as follows:

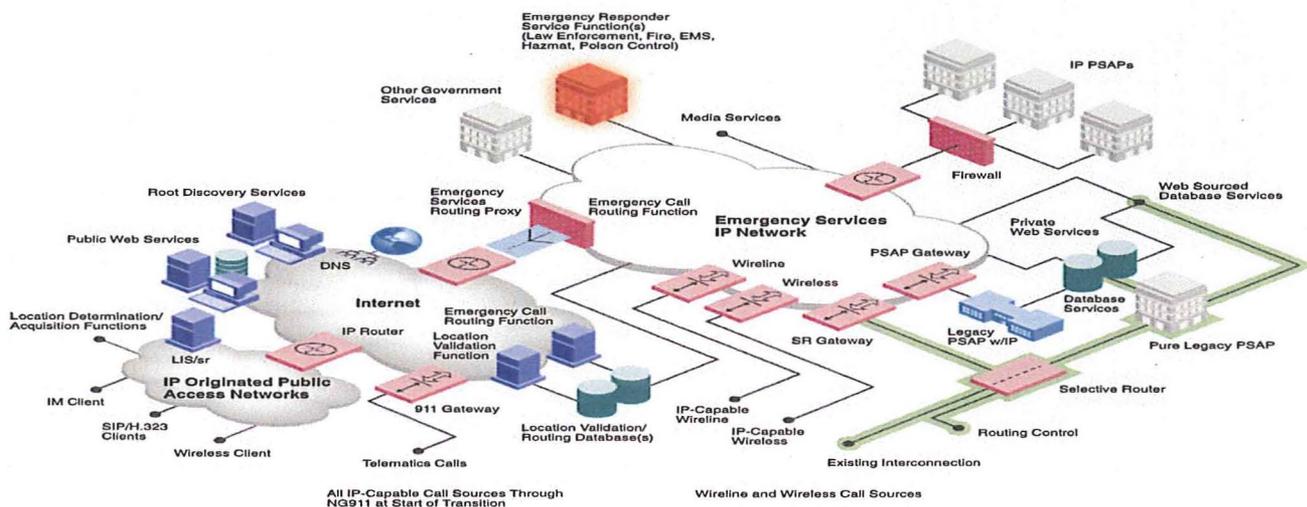
- Technical assistance and administration of grant funds to Public Safety Answering Points (PSAPs) to ensure the integrity of the 911 system
- Network costs, which reimburse the telephone companies for the cost of connecting the 911 system to the selective routers that deliver the emergency calls to the correct PSAP
- Costs of maintaining the databases that allow the PSAP to receive name and location information with the emergency call
- Enhanced 911 grants, which cover a portion of the cost of PSAP equipment needed to provide 911 services
- Grants to the Minnesota State Patrol to cover a portion of the cost of answering and routing wireless 911 calls
- Reimbursement to wireless service providers for implementation and operating 911 service costs
- Administrative expenses related to the operation of the 911 Program
- Grants for PSAP shared services arrangements.

evolving system that is required to adapt to new and changing technologies. The basic evolution of the system is as follows:

- Basic 911 provided for the connection of wired 911 calls to a PSAP and reported the callback phone number.
- Basic 911 with selective routing provided for the connection of wired 911 calls to the PSAP where emergency services would be dispatched and the ability to immediately transfer calls between PSAPs.
- Enhanced 911 provides for the connection of wired 911 calls to a PSAP, reporting the phone number and location of the caller. The Local Location Identification (LLI) is complete within each county and the Automatic Location Identification (ALI) is a consolidated data base, which provides greater flexibility and reliability in 911 service.
- Wireless E911 provides for the connection of wireless 911 calls to a PSAP and reports the location of the caller to within 100 meters.
- Next Generation 911 (NG911) Conceptual Architecture consists of the following:
 - Design and implementation of new high-speed Internet Protocol (IP) network infrastructure
 - Network support for voice, data and video
 - Fully interoperable emergency network
 - Combined local, state and national approach
 - Elimination of call transfer data problems
 - Enhanced capabilities for persons with disabilities
 - Remote network access
 - Enhanced redundancy.

The Minnesota Statewide 911 Program contracts with telephone companies to provide 911 services. It is an

NG911 Conceptual Architecture



ARMER Program

ARMER Program Overview

The Allied Radio Matrix for Emergency Response program began in January 2004 with a mission to develop a strategy for statewide emergency communications to address the lack of interoperability between emergency response agencies. The development and implementation of that strategy has resulted in a comprehensive approach to interoperability and the creation of a representative governance structure that brings all emergency response disciplines together.

The ARMER system is owned and operated by the Minnesota Department of Transportation. The basic communication system uses the Motorola Smart Zone technology which is a 700/800 megahertz (MHz) digital trunked radio communication system rooted in the non-proprietary APCO P25 architecture.

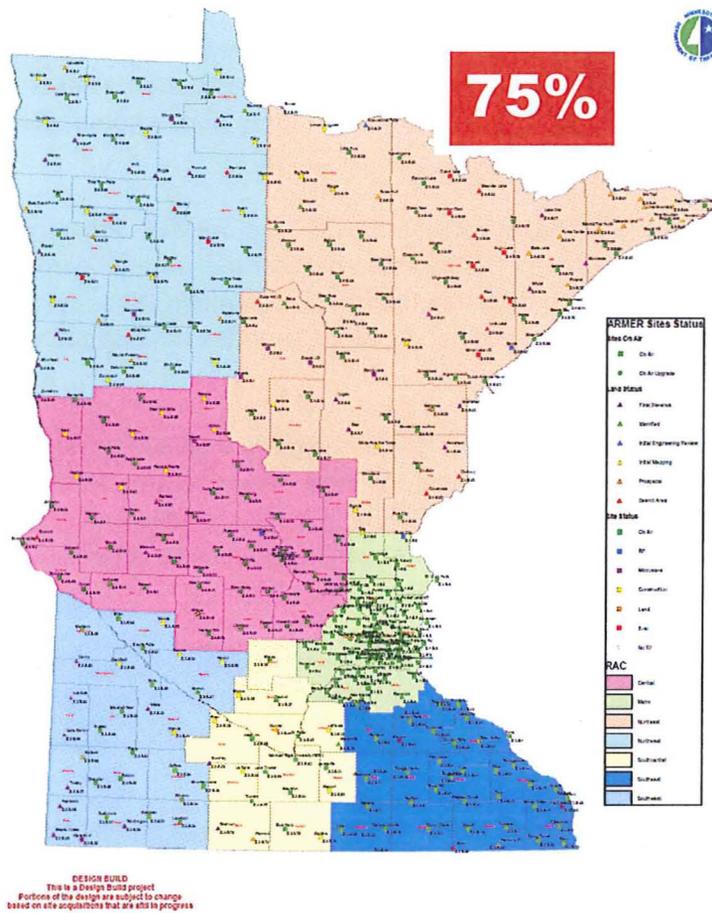
The vision for the ARMER Program is to incorporate all local, regional, tribal and nongovernmental agencies supporting public safety in Minnesota into a governance structure that supports the development of a communication infrastructure capable of providing routine access to a voice and data communications system. This system will be seamlessly interoperable between jurisdictions, across public safety disciplines and support routine day-to-day operations, regional operations, statewide operations, interoperability across state and national borders and capable of supporting the National Incident Management System requirements. Migration to the ARMER system will be possible, though not mandatory, for any public safety agency in the state.

ARMER History

Planning for a Twin Cities metropolitan area system started in the 1980s. In 1993 a request for proposal was developed through the Metropolitan Council for the construction of a regionwide shared radio system in the metropolitan area. In 2001 a plan was developed to extend the metro system into a statewide system. The original plan called for six phases. Phase 1 was the initial metro area backbone; Phase 2 was local enhancements to the metro area back bone; and Phases 3 through 6 provided for the extension of the backbone into Greater Minnesota. Use of the metro system began in 2002 when the City of Minneapolis, Hennepin County, metro operations of the State Patrol and MnDOT, Metro Transit, Carver County and several suburban agencies in Hennepin County transitioned on the shared communication system.

There are a number of important factors driving a national effort to coordinate public safety interoperability. Foremost is the inability of emergency responders to communicate with each other at emergency events. Additionally, the narrowbanding mandate will require substantial replacement of legacy communication systems prior to 2013. To address the narrow band requirement, Phase 3 was

funded by the Minnesota Legislature in 2005. In 2007, the Legislature provided funding for the completion of the ARMER backbone in the remaining 55 counties in Greater Minnesota. The operating and maintenance costs, and the debt service on the 911 revenues issued to construct the system are paid for out of the 911 special revenue account.



ARMER Program

ARMER Status and Progress

In 2005, the Minnesota Legislature provided funding for the continued implementation of the ARMER backbone in 23 counties of central and southeastern Minnesota. Implementation is underway and will be substantially complete in 2010. Implementation in the remaining 55 counties of the state was authorized in 2007; MnDOT has completed the detail design and began initial implementation in July 2008.

All metro-area cities and counties are now operating on the ARMER system. In Phase 3, Olmsted and Stearns counties, including the cities of Rochester and St. Cloud, are operating on the ARMER system. In southeast Minnesota, the counties of Freeborn, Goodhue, Wabasha, and Winona are in the process of migrating to the ARMER system. In central Minnesota, Benton, Douglas, Grant and Otter Tail counties are in the process of transitioning to ARMER; Kandiyohi, Sherburne and Wright counties have completed the process. The remaining counties in the Southeast and Central Regions, except Mower and Waseca counties, are in the process of completing their participation plans and will migrate to the ARMER system.

With the authorization and funding to complete the statewide implementation provided by the Legislature in 2007, and the ARMER Program having completed the studies required by that legislation, Phases 4, 5 and 6 were rolled in to a single phase referred to as "Phase 456." In that phase, Itasca County built a compatible infrastructure that has been integrated into the system.

The remaining counties in Phases 456 have partnered with the ARMER Program to complete county-specific assessments of their communications systems. The assessments assisted county boards and emergency responders to make informed business decisions related to updating their radio communications systems prior to the FCC-mandated narrowbanding deadline of January 1, 2013. To date, 71 of 87 counties have submitted participation plans with the intention of migrating to the ARMER system.

The map on the previous page shows the planned location of the more than 300 towers that will comprise the backbone of the ARMER system once implementation is complete. As owner and operator, MnDOT is at various stages in the site development process throughout Phase 3 and Phase 456. The process includes land acquisition, construction of towers, and equipping the towers with microwave and radio frequency equipment. Approximately one year to 20 months is required to construct an operable tower and bring it online.

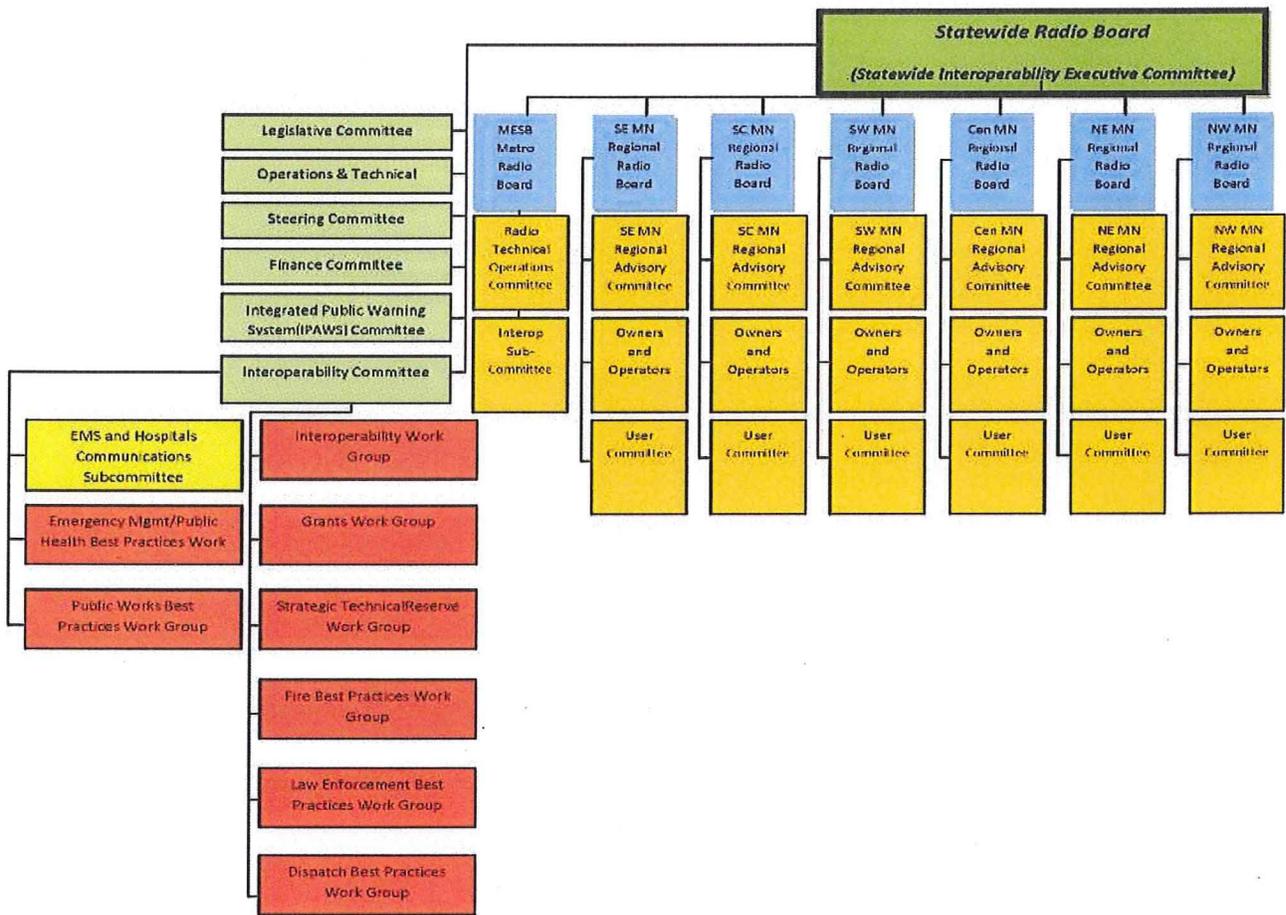
With towers in northeast Minnesota coming on the air in December 2010, the basic backbone of the ARMER Program has reached 75 percent statewide coverage. The goal of the ARMER Program is to provide 95 percent mobile coverage in each county of the state by the end of 2012, prior to the FCC-mandated narrowbanding deadline.

Construction Budget Status as of January 18, 2012

Project Funding	Original Budget	Spent to Date	Unspent Balance Remaining	Encumbered	Available Balance
Phase 3	\$45,000,000	\$44,623,199	\$376,801	\$340,638	*COMPLETE
SRB Funds (FY 09)	\$1,902,831	\$1,902,831	\$0	\$0	COMPLETE
Phase 456 (FY 09)	\$62,000,000	\$61,955,789	\$44,211	\$44,188	\$23.00
Phase 456 (FY 10)	\$62,000,000	\$44,983	\$17,016,873	\$12,469,392	\$4,547,481
Phase 456 (FY 11)	\$62,000,000	\$431,091	\$61,568,909	\$2,193,239	\$59,375,670
Total Phase 456	\$186,000,000	\$107,370,007	\$78,629,993	\$14,706,819	\$63,923,174
Projected Contingency as of July 2011					\$15,000,000

- *The Unencumbered balance in Phase 3 will be cancelled (\$36,163)
- *Funding for Phase 3 ended 12/31/10

Minnesota Radio Governance Structure



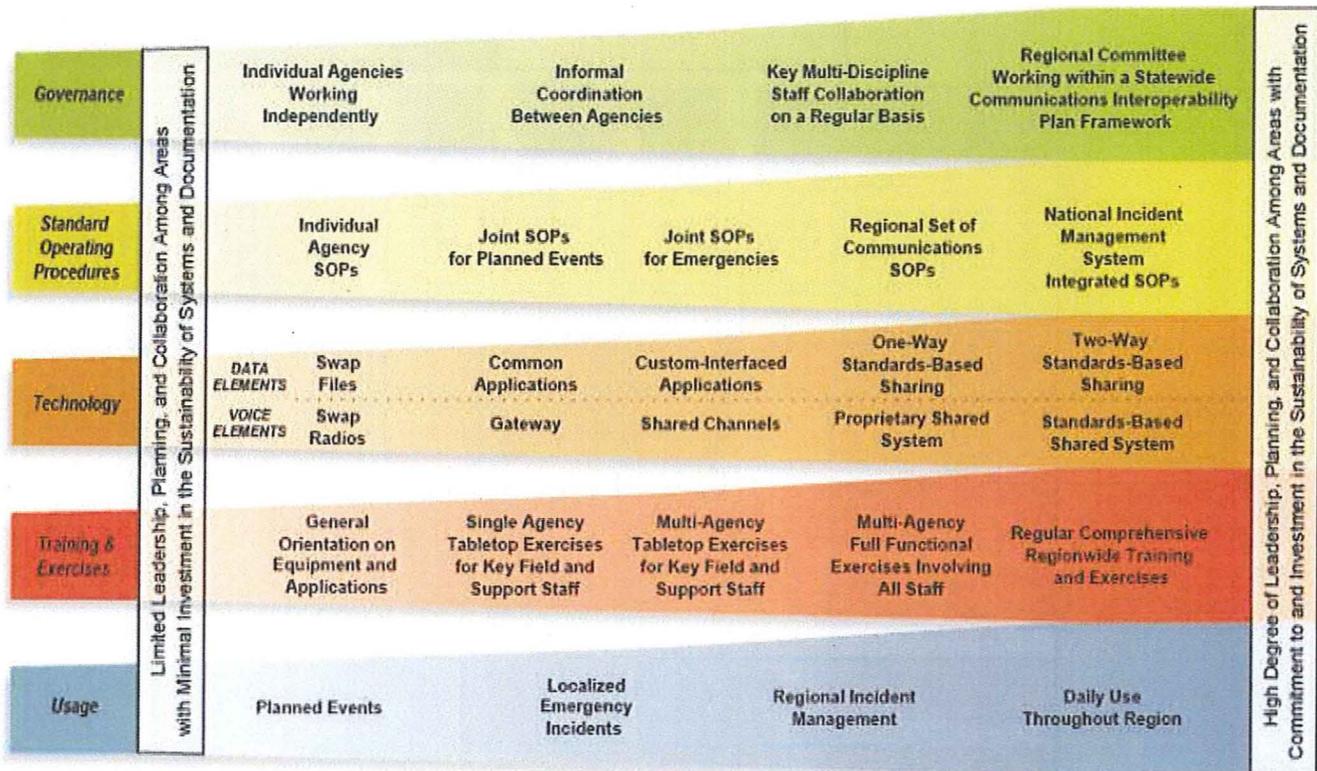
<https://dps.mn.gov/entity/srb>

With the construction of the basic communication and interoperability back bone in the metropolitan area, focus for the communication infra structure shifted from a regional focus to a statewide focus. The 2004 Legislature created the Statewide Radio Board (SRB). The SRB is a multi disciplined body com posed of 21 members with seven state members and 14 non-state members evenly divided between representatives from the Twin Cities metropolitan area and Greater Minnesota. The SRB establishes technical and operational standards of the ARMER backbone and monitors its implementation throughout the state. The SRB has also been designated Minnesota’s State Interoperability Executive Committee (SIEC) which administers and over sees Minnesota’s Statewide Communication Inter operability Plan, including technical and operational issues of public safety communication inter operability among all public safety entities.

The 2004 Legislature also provided for the creation of Regional Advisory Committees (RAC) and Regional Radio Boards (RRB) to deter mine and administer regional enhancements, and to facilitate local and regional planning for integration with the ARMER system. The RRBs play a key role in the broader discussion of public safety interoperability among all public safety agencies (local, state, tribal and federal) and with neighboring states and Canada. As governance is one of the five essential elements for solving interoperability, as noted by SAFECOM’s interoperability continuum, Minnesota’s bottom-up governance structure has been widely regarded across the country as nation-leading. At the end of 2008, every county and most major cities in Minnesota have become part of this governance structure by participating in a RRB.

Statewide Interoperability Program

Interoperability Continuum



Statewide Interoperability Program

Thirty months ago, Minnesota had two regional radio boards: the Metropolitan Emergency Services Board and the Central Minnesota Regional Radio Board.

Also only 30 months ago, only five counties were operating on the ARMER system. Today, 71 counties are either on the ARMER system or have committed through county board resolution to join. The level of local participation puts Minnesota in the top five states in the country in terms of local and state collaboration.

Today, all 87 counties and a number of cities are participating in regional governance structures. These legally recognized joint powers boards are made up of elected county commissioners and city council members. The boards' mission is to fill the interoperability gaps on a regional level and manage local migration to the ARMER system. The Regional Advisory Committees and Regional Radio Boards are the core of Minnesota's governance structure.

Local officials across our state readily recognize that a lack of communications interoperability is a significant public safety issue for their citizens and emergency responders. As a result, many elected officials have willingly embraced participation on joint powers boards, and joint powers agreements that have been reached among many county and city attorneys—clear testament to the value and importance of the ARMER system and the goal of achieving seamless statewide interoperability.

Resolving communications interoperability gaps is fundamentally changing how emergency services are delivered across Minnesota—and the success to-date as well as future success is only possible with the continued support of Minnesota's state and local elected officials.



Minnesota Department of Public Safety Emergency Communication Networks

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