Statewide Investment Summary

Summary of PSIC Investments

The attached Statewide Communication Interoperability Plan and these Investment Justifications (IJ's) constitute Minnesota's comprehensive submission for Public Safety Interoperable Communication funds under the Deficit Reduction Act of 2005, as amended by the Call Home Act of 2006 and the Implementing Recommendations of the 9/11 Commission Act of 2007.

Background

The Minnesota legislature adopted a plan to build a statewide shared public safety radio system in 2002. That plan provided for the extension of the shared platform, a standards based shared infrastructure operating in the 800 MHz spectrum (now expandable into the new 700 MHz spectrum), implemented in the Minneapolis/St. Paul metropolitan area in 2001. In 2004, the legislature established a multi-disciplinary Statewide Radio Board (SRB) with seven state agency members and 14 local members (evenly split between metropolitan area members and members from outside the metropolitan area) to oversee the development of the statewide implementation, which became known as the Allied Radio Matrix for Emergency Response (ARMER). The legislation creating the SRB also provided for the creation regional governance structures known as regional radio boards.

The continued implementation of the ARMER system was delayed by state fiscal issues. However, in 2005 the legislature provided for the expansion of the ARMER system into 23 counties of central Minnesota and southeastern Minnesota. That implementation is currently underway. In June of 2007 (In the midst of the SCIP and PSIC planning process) the Minnesota legislature provided for the completion of the ARMER backbone in the remaining 55 counties of the state and also finally resolved the continuing question over backbone operating costs by providing funding to the department of transportation to operate and maintain the backbone of the ARMER system.

In 2007 the role of the SRB was expanded to address interoperability throughout the state on a broader bases. Governor Pawlenty designated the SRB as Minnesota's State Interoperable Executive Committee and the SRB established an Interoperability Committee broadly representing public safety disciplines, with multi-jurisdictional participant representing state, local, regional, tribal governments and federal agencies.

Investment Justifications

Minnesota's comprehensive strategy for interoperable communications is built upon the presumption that the backbone of the ARMER system provides a network upon which to establish statewide interoperability as a "system of systems". There is no absolute presumption that all public safety entities will be integrated onto the ARMER system, although plans and capacity anticipate a substantial level of local integration. There is, however, a presumption that the communication network of towers, microwave interoperability talkgroups can be used to establish cross spectrum interoperability throughout the state. Thefollowing IJs represent the cumulative efforts to develop Minnesota's SCIP and to collaboratively determine the use of PSIC grant funds:

-Investment One and Two- Strategic Technology Reserve

These investments relate to the requirement to establish a Strategic Technology Reserve for the State of Minnesota, which will be described separately but as part of this summary section. It should be noted that the SRB funded the match required for this investment.

-Investment Three- ARMER System Radio Control Stations

This investment provides for the acquisition of ARMER system Radio Control Stations (RCS) for approximately 75 counties in the state. It provides that two RCS's will be placed in each Public Safety Answering Point (PSAP) and one RCS will be placed in each Emergency Operation Center in the state (including tribal PSAP's and EOC's). The RCS provide access to regional and statewide interoperability talkgroups and provide the equipment necessary for cross spectrum linking (patches) between local communication systems to talkgroups in the ARMER backbone. It is also noted the SRB funded the match required for this investment to assure broad application and implementation.

-Investment Four- Local and Regional Communication Infrastructure Assessment

This investment provides funding to regional governance structures for a comprehensive assessment of the status of public safety communication infrastructure in 55 counties of the state, including an assessment of potential solutions to renew infrastructure where necessary.

-Investment Five-ARMER based VHF/UHF Interoperability

This investment provides funds to regional governance structures to determine specific plans for a base level of VHF and/or UHF capacity to be designed into the ARMER backbone and provides funds for the acquisition of communication equipment to implement the solution.

-Investment Six and Seven- Equipment and Interoperability Training

These investments make up the state and local share of an investment to develop a comprehensive curricula and learning objectives for interoperable communication training and provide the funds to deliver that training over the PSIC grant period.

-Investment Eight and Nine- ARMER Subscriber Equipment

These investments make up the state and local component of a plan to acquire and distribute subscriber equipment (portable, mobile and radio control stations) to public safety users across the state. The local share will be allocated through regional governance structures (includes tribal governments and non-governmental entities)with the concurrence of the SRB and the state share will be administered by the commissioner of public safety with the concurrence of the SRB.

IJ Process

As part of the 2007 homeland security IJ process, the Department of Public Safety, Division of Homeland Security and Emergency Management established an Interoperable Communication workgroup. The group represented all regions of the state and various public safety disciplines. The workgroup conducted weekly telephone conferences and met twice. The workgroup established and prioritized a group of communication investments that provided that were used to complete the IJs for the 2007 DHS grant process.

The product of that workgroup was the starting point for the PSIC grant IJs. As part of the SCIP and PSIC process, the SRB designated a Core Workgroup to direct the SCIP process. The communication investments from the 2007 DHS grant process was submitted to the Core Workgroup and presented at regional meetings where input was received from participants. As the SCIP was refined and gaps analyzed the IJs were

submitted to the Core Workgroup and to the Statewide Radio Board (Minnesota's SIEC) for refinement and final adoption.

Participants Involved in Evaluation and Selection Process

The final selection of I J's was done by the Statewide Radio Board (Minnesota's SIEC) on November 27, 2007. As indicated those investments and the recommendation to the SRB were the product of input from a number of sources which are documented in Minnesota's SCIP, including the input from the 2007 DHS Interoperable Communication Workgroup, the SRB designated Core Workgroup, discussion at regional meetings on the SCIP development and finally among members of the SRB. An additional STR Workgroup was created representing state, local and federal participants to assist in the evaluation of that proposed investment. It is also noted that with the designation of the SRB as Minnesota's SIEC, the SRB established an Interoperability Committee to provide much greater engagement of all regions, disciplines and governments (local, state, tribal, federal and non-governmental).

The SRB is composed of 21 members with 7 state members representing various state agencies (including the metropolitan transit authority) and 14 local members, representing law enforcement (sheriff and police), fire, emergency medical services, municipal governments and county governments and with collective representative of the regional radio boards.

List of Consultants

Alliant Consulting, Inc. 555 W.7th Street, Suite 101 Saint Paul, MN 55102 651-291-0607 651-291-1498 (fax) www.alliantconsulting.com	Ronald L. Whitehead Retired Director of DPS, ARMER/911 Program Consultant engaged to aid in development of SCIP.

Describe Strategic Technology Reserve Component

Minnesota addresses the STR requirement in Investment Justifications One and Two which make up a state portion and a local portion. The basic capabilities Minnesota seeks to establish as part of those IJ's are as follows:

• Develop regional deployable communications capabilities using deployable VHF repeaters, towers, generators and appropriate radio cache (note: will require coordination of VHF frequencies).
• Expand upon the capability of a deployable statewide communication capability to establish an independent 700/800 MHz trunked communication capability (deployable intelli-repeater).
• Develop or expand upon existing resources to provide a deployable satellite communication capability.
• Develop standard operating procedures and agreements for the activation and deployment of these resources.

The specifics of those investment justifications are still under development with continued meetings of the STR Workgroup. However, the Statewide Radio Board

provided funding for the required match upon this investment to assure its development as a statewide resource.

Overall Funding Summary

Please use the following worksheet as an overall self-check and summary of all funding allocated to your states investments. All self-checks must be 'OK' prior to submitting to GPD. For American Samoa, Guam, Northern Mariana Islands and U.S. Virgin Islands which are exempt from first $200,000.00 of calculated match, please ignore error in match and overall self-check.

Federal Award from Guidance	$ 14,262,071.00		**Total Federal Funding Allocated:**	$ 14,262,071.00		**Remaining Funds Available**	$ -

		Match				
Statewide Plan (up to 5%):	$ 150,000.00		**Max Fed Planning:**	$ 713,103.55	**Statewide Plan Self-Check:**	OK
M&A (up to 3%):	$ 427,494.00	$ 106,873.50	**Max Fed M&A:**	$ 427,862.13	**M&A Self-Check:**	OK
Total STR Funds Applied:	$ 1,104,577.00		**Min Matched M&A:**	$ 85,498.80	**Match Self-Check:**	OK
			Max Training:	$ 2,852,414.20	**Training Self-Check:**	OK
Total PSIC Federal Funds Requested:	$ 14,262,071.00					
Total State/Territory Cost:	$ 17,095,088.75		**Min Matching:**	$ 2,180,915.40	**Matched Self-Check:**	OK
					Overall $ Self-Check:	OK

Investment(s)	PSIC Acquisition and Deployment Funds Requested	PSIC Training Funds Requested	Planning and Coordination	Total PSIC Federal Funds Requested	Non-Federal Match	Total Investment*
Investment Match Provided by State						
Strategic Technology Reserve- State Component	$ 318,200.00	$ -	$ 150,000.00	$ 468,200.00	$ 79,550.00	$ 547,750.00
Strategic Technology Reserve- Local Component	$ 636,377.00	$ -	$ -	$ 636,377.00	$ 159,094.25	$ 795,471.25
Radio Control Stations- ARMER System to provide cross spectru	$ 1,400,000.00	$ -	$ -	$ 1,400,000.00	$ 350,000.00	$ 1,750,000.00
Local/County/Regional comprehensive public safety communicat	$ -	$ -	$ 1,200,000.00	$ 1,200,000.00	$ -	$ 1,200,000.00
VHF/UHF Interoperability- ARMER Backbone (78 Counties- effec	$ 3,000,000.00	$ -	$ 300,000.00	$ 3,300,000.00	$ 750,000.00	$ 4,050,000.00
Planning and Training for Equipment and Communications Interc	$ -	$ 200,000.00	$ 330,000.00	$ 530,000.00	$ -	$ 530,000.00
Training for Equipment and Communications Interoperability- Loc	$ -	$ 600,000.00	$ -	$ 600,000.00	$ -	$ 600,000.00
Subscriber Equipment- Statewide Shared Infrastructure-Local Co	$ 4,500,000.00	$ -	$ -	$ 4,500,000.00	$ 1,125,000.00	$ 5,625,000.00
Subscriber Equipment- Statewide Shared Infrastructure-State Co	$ 1,050,000.00	$ -	$ -	$ 1,050,000.00	$ 262,500.00	$ 1,312,500.00
	$ -	$ -	$ -	$ -	$ -	$ -
Grand Total	**$ 10,904,577.00**	**$ 800,000.00**	**$ 1,980,000.00**	**$ 13,684,577.00**	**$ 2,726,144.25**	**$ 16,517,594.75**

* - Total investment includes the Non-Federal Match and Total PSIC Federal Funds Requested

I. Investment Heading

INVESTMENT # **1**

State/Territory Name: Minnesota

Investment Name: Strategic Technology Reserve- State Component

Grantee Type: Other State Agency (Non-SAA)

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: All local, regional and state entities within the state (Resource deployable to other states).

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management other public safety entities

V. Funding Plan

V.A. Funding Plan

Detail the total estimated cost for the Investment throughout the PSIC period of performance (FY 2007 – FY 2010). Describe any other concurrent funding sources that may also support this Investment, including form of cost share. Detailed estimated expenditure plan which credibly demonstrates ability to meet expenditure deadline of September 30, 2010.

	PSIC Federal Funds Requested	Non-Federal Matching Fund Amount	Total Investment*
Acquisition	$ 318,200.00	$ 79,550.00	$ 397,750.00
Deployment			$ -
Training			$ -
Planning/Coord.	$ 150,000.00		$ 150,000.00
Total	**$ 468,200.00**	**$ 79,550.00**	**$ 547,750.00**

** - Total investment includes the Non-Federal Match and Total PSIC Federal Funds Requested. 20% match is required for all Acquisition and Deployment funds; however, match can be identified and allocated at either the Investment level or the total PSIC IJ level (on the Overall Funding Summary tab). Therefore, individual investments can be undermatched or overmatched according to the needs of the applicant.*

V.B. Matching Plan

How does your Investment meet the non-Federal cash or in-kind matching requirement? Please itemize both the funding category and amount in the table below. (1,000 Char. Max)

The Statewide Radio Board will provide the 20% match for state funds available to them for the acquisition of equipment required to establish the STR. This approach was pursued to assure that resources acquired in this investment would be maintained as a regional and statewide resource.

Non-Federal Matching Fund Category	Non-Federal Matching Fund Amount
Cash - State	$ 79,550.00
Cash - Local/Tribal	
Cash - Non-governmental	
In-Kind - Donated volunteer services	
In-Kind - Donated salaries	
In-Kind - Donated equipment	
In-Kind - Donated property	
In-Kind - Indirect costs	
Other*	
Total	**$ 79,550.00**

** - Please explain "Other" in the 'Matching Plan' dialog box above.*

Total Matching Fund Amount Must be Equal to Section V.A. Total Matching Fund Amount of: $ 79,550.00

Matching Self Check: OK

Investment #1

Investment Name: Strategic Technology Reserve- State Component

Project Narrative

This investment provides an element of the Strategic Technology Reserve that will be maintained by the State. It builds upon existing deployable interoperability capabilities and provides additional resources directed toward catastrophic communication failures. This proposed investment in combination with Investment #2 will provide funding for Minnesota to develop the following capabilities:

• Develop regional deployable communications capabilities using deployable VHF repeaters, towers, generators and appropriate radio cache (note: will require coordination of VHF frequencies).
• Expand upon the capability of a deployable statewide communication capability to establish an independent 700/800 MHz trunked communication capability (deployable intelli-repeater).
• Develop or expand upon existing resources to provide a deployable satellite communication capability.
• Develop standard operating procedures and agreements for the activation and deployment of these resources.
• Coordinated with similar capabilities in bordering states, deployed and coordinated with Canada along Minnesota's border or otherwise structured as a statewide or national resource. Although this proposal is still under development, this investment will relate to the development of satellite capabilities and centralizing procedures of all resources.

This investment will be multi-discipline and involve local communities of behalf of regional solutions (engaging all jurisdictions within the region). Resources will be available statewide and capable of addressing a catestrophic failure of communications in the Twin City, MN UASI, the Port of Duluth, along the Canadian border or any other region in the state.

Baseline- Historical Funding and Request Name

There has been no comprehensive statewide assessment of the resources available to address this STR requirement. The available resources are generally maintained locally or regionally. Prior funding of communication equipment has focused upon linking communication resources (gateways) over providing core communications during a catastrophic failure. In some cases, existing resources might be supplemented to provide core communication systems as part of a comprehensive deployable resource. Some UASI and homeland security funds were used to fund a portion of the cost of a transportable 800 MHz repeater in 2003/2004. Similarly, the National Guard may have used federal funds to acquire the satellite capability that will be integrated into the STR proposal. Although the particular details of this investment are still being developed, this investment is structured as a separate and distinct phase with match requirements provided from state funds.

Baseline- Description of Need

A preliminary assessment indicates that a limited regional STR capability exists. During the process of developing this investment justification, four primary gaps were identified, as follows:
• Lack of deployable VHF repeaters, transportable towers, generators and radio caches.
• Lack of VHF frequencies upon which to coordinate implementation of VHF repeater resources.
• Development and expansion of a plan to field a deployable intell-repeater site providing trunked communications for ARMER system users (currently 20,000 units).
• Assessment of I.P. based satellite communications necessary to provide basic communications (telephone, e-mail and voice and data communications).
This and other investments would provide for the thorough assessment of STR resources, provide for the development of agreements to assure availability of resources and provide funding for equipment necessary to sustain a STR capability. These resources will ultimately be incorporated into tactical interoperability plans and coordinated throughout the state.
The specifics of this investment are still underdevelopment. Important contributors to that development are as follows:
• Hennepin County Sheriff's Communication Unit- extensive experience with deployment of communication resources to New Orleans in the aftermath of Katrina. Also key member of Twin City, MN UASI- involved in 35W Bridge collapse of 8/1/2007.
• Minnesota Interagency Fire Center- State/Federal Agency with extensive experience with fire response to northern Minnesota and along Canadian Border.
• Minnesota National Guard- recent involvement in responding to flooding in SE Minnesota.
• FBI- involved in major crime response to tribal areas where very little infrastructure exists.
Other local participants from different regions of the state (NW, NE and SW Minnesota) and the DPS, Division of Homeland Security and Emergency Management State Communication Officer.

Baseline- Description of Governance Structure and Activities

The primary focus of this investment is to develop a resource that can be deployed regionally and called into use across the state. As such, the DPS, Division of Homeland Security and Emergency Management will take a lead role in coordinating these resources, through the State Duty Officer Program and by the State Communication Officer.
Minnesota is in the process of expanding its public safety communication governance structure. The Statewide Radio Board (SRB) which was initially formulated to oversee the implementation of Minnesota's ARMER system has recently been designated as Minnesota's State Interoperability Executive Committee (SIEC) and has established an Interoperability Committee to deal with interoperability issues. The statute creating the SRB provides for the establishments of regional advisory committees and regional radio

board under Minn. Stat. §403.39 which will be a integral part of the STR planning process.

Based upon the PSIC grant process regional organizational efforts have moved ahead. The SRB Interoperability Committee will form the basis for interoperability planning, but the continued integration of regional planning continues to be necessary to assure full participation by regional members, including non-governmental and tribal organizations. This process anticipates the development of regional tactical interoperability plans, standard operating procedures and, where necessary, memorandums of understanding.

See the attached diagram of regional radio boards and regional advisory committees. At the present time, there are two regional radio boards (joint powers authorities) covering 27 counties (Metropolitan Emergency Services Board and Central MN Regional Radio Board). Formation of regional advisory committees (precursor to regional radio boards) is underway in the remaining 60 counties into five regions with preliminary drafts of joint powers agreements under consideration in at least two of those five regions. Regional activities are multi-discipline and include invitations to tribal governments, non-governmental public safety agencies and federal agencies operating within their regions.

Baseline- Stakeholder Involvement

A stakeholder workgroup was established to provide input into the development of this investment. It included state and local members from various regions of the state and representing various disciplines, including representation from the Twin City, MN UASI region, MN Interagency Fire Center (MIFC) and the MN National Guard. The Interoperability Committee of the SRB will be utilized to provide a broader input from regional interests, including non-governmental, tribal, federal and state interests.

Strategy- Statewide Communication Interoperability Plan Objectives

This investment is designed to address a specific requirement of the Public Safety Interoperable Communication (PSIC) grant program and the underlying congressional requirement. As previously noted, Minnesota's comprehensive ARMER communication system plan provides a comprehensive public safety communication system with a very high level of reliability and redundancy.

As part of the PSIC criteria, Minnesota was required take a more comprehensive look at the potential for catastrophic failure of communications and our ability to provide communication resources to various regions of the state and to other regions of the nation. Through that process, gaps were identified in our assessment of resources, the existence of MOU's and in our ability to address a broad spectrum of potential catastrophic failures that could occur.

This investment specifically addresses the following goals and objectives of Minnesota's SCIP:

Goal #5- Develop a plan to provide the highest practical level of interoperability between the ARMER backbone and independent public safety communication systems, between other existing public safety communication systems within the state (local, regional, state, tribal, military and federal) and with appropriate public safety agencies bordering states and counties; Objection #6- Develop specific plans identifying how deployable resources

(transportable trunked systems, portable repeaters, mobile gateways, satellite communications and other deployable technologies) might be integrated into Minnesota's public safety communication network to provide enhanced interoperability by December 31,2008. Objection # 7- Develop a plan for the implementation and maintenance of a strategic technology reserve (STR) to pre-position or secure interoperable communication equipment in advance for immediate deployment in an emergency situation or major disaster by June 30, 2008.

This investment and others provide resources for a comprehensive assessment of Minnesota's capability to provide and maintain an STR, of the best way to address the gaps in our planning and in the need for MOU's and Standard operating Procedures to assure availability of resources.

Strategy- Technology Priorities

The specifics of this investment are still under development. However, this investment is designed to address a broad spectrum of solutions to meet the demands of a catastrophic loss of the public safety communication infrastructure. At the low end of this investment, this need will be addressed through deployable VHF repeaters, towers and radio caches to provide a basic level of communications which are hard to characterized as advanced technologies. However, this item has been identified as a resource that can be implemented quickly and effectively.

At its next stage, this investment utilizes advanced trunking technologies available as part of a deployable 700/800 MHz intelli-repeater site that can be integrated into the ARMER backbone through a satellite connection or other I.P. based communications. This solution would continue to provide spectrum efficiency of a trunked system to remote locations of the state.

The third priority under this investment seeks to expand the ability to provide I.P. based communication, including telephone, e-mail and data communications utilizing satellite communications. This capability has the potential of addressing new solutions that can be brought to the scene of disaster through I.P. connectivity, including the benefits of mesh networking and other newer technologies.

These capabilities are all technically feasible, can use equipment currently available on commercial markets and can be acquired and deployed within the PSIC period performance.

Strategy- All Hazards Mitigation Priorities

This investment is designed to address the catastrophic loss of communications, but is not directed toward any specific hazard. The low level capability, VHF repeaters and towers, is designed to be rapidly deployable to any region of the state and to any hazard and public safety discipline. The next level of this investment, a deployable 700/800 MHz deployable intelli-repeater site is similarly designed to be deployable to any region of the state but might be categorized as a resource directed at the more pressing needs of the Twin City UASI region where 700/800 MHz systems is well entrenched. Similarly, the development of I.P. based satellite communications capability might be deployed

anywhere in the state, but is most directly applicable to the needs of urban Minneapolis/St. Paul area.

The STR developed from this investment could be used to provide basic and enhanced communication in the Twin City, MN UASI, any urban area, the Port of Duluth or along the Canadian border during forest fires, floods and any other man made or natural disaster.

Program Management

The overall direction and coordination of this investment will be provided by the Statewide Radio Board, acting as Minnesota's State Interoperability Executive Committee. As a practical matter, the SRB will rely upon its Interoperability Committee (broadly representing all regions and public safety disciplines, including tribal and non-government entities and federal agencies) to identify the specific priorities for this investment. The Interoperability Committee will serve a primary role in developing memorandums of understanding and standard operating procedures.

The department of public safety has created a public safety interoperability program and staffed that program with a program administrator and three regional interoperability coordinators (contract employees). A fundamental responsibility of that program will be the development of regional Tactical Interoperable Communication plans, which include this STR investments and to see that those TIC plans are exercised. Regional interoperability coordinators will provide direct assistance with acquisition and deployment of STR resources where necessary.

Funds allocated to local units of government (See Inv #2) will be expended by those local units of government. Because the SRB is providing the matching funds, the department of public safety will assure compliance with investment objectives before matching funds are provided. Similarly, funds allocated to state agencies must be expended consistent with the State Interoperable Communication Plan (SCIP) and this investment justification. Comprehensive oversight is provided by the DPS ARMER/911 Program through contract and administrative oversight.

As the primary focus of this investment is to develop a resource that can be deployed regionally and called into use across the state, the DPS, Division of Homeland Security and Emergency Management will take a lead role in coordinating these resources, through the State Duty Officer Program and by the State Communication Officer.

The Division of Homeland Security and Emergency Management will also provides overall administrative oversight for the PSIC grant funds and assures funds have been expended consistent with investment justifications.

Investment Challenges

Unable to get agreements (MOU) into place with respect to STR resources.		Mitigation: Seek to create broad involvement and consensus over the STR planning process and SOP development through regional advisory

		committees and the SRB-Interoperability Committee.
Unable to identify frequencies appropriate (including coordination with neighboring states) for deployable repeaters, thus reducing their viability.		Mitigation: Through assessment of available VHF frequencies, consider using UHF frequencies, consider asking for alternative frequencies from NITA, consider using V-TAC narrowband frequencies.
Transportable Intelli-repeater site conflicts with the basic ARMER backbone and is not viable.		Thoroughly vet the proposed Intelli-repeater site with vendor and other consultants. Consider using interop frequencies in 800 MHz or 700 MHz spectrum.
Unable to make agreement with National Guard concerning the deployment or usage of satellite system		Involve National Guard early in the process and determine the feasibility. If this issue could not be resolved, would be required to seek alternative such as acquire satellite access via contract or seek funding for another entity.

Impact- Outcomes

The most important outcome from this investment will be the development of an ability to provide scalable public safety communication infrastructure at a location where existing communication capabilities are destroyed or substantially diminished. This same capability will also provide the ability to enhance existing communication (add resources) at locations where the demand for communication resources is substantially increased due to disaster or other catastrophic event (missing person or forest fire).

That capability is focused around three distinct subordinate capabilities, as follows:

• A regional ability to deploy self sustained VHF repeaters and towers with a small cache of radios to provide basic voice communications capabilities.

• One deployable and self sustained intelli-repeater capable of providing high level trunked communication.

• Development of or integration of existing satellite communications capability to provide I.P. connectivity.

Collateral aspects to this investment will be the engagement of the SRB and its Interoperability Committee in the development of standard operating procedures and memorandums of understanding necessary to assure timely and appropriate availability of STR resources. Similarly, the engagement of the department of public safety division of

homeland security and emergency management and the ARMER/911 Interoperability program to implement and exercise this investment will be an important outcome. Integrating these resources into the state Tactical Interoperable Communication plan and establishing the agreements and procedures to assure timely and appropriate deployment of these resources is an essential outcome. The final evaluation of this investment will be accomplished through regional exercises where this communication capability will be specifically evaluated.

Impact- Cost Effective Measures

This investment is the most cost effective way to address this requirement. It addresses the need to provide deployable public safety communication resources from three different perspectives. The response can be scaled to address the needs of any given situation, thus assuring the least costly solution is used to address regional needs.

Of particular importance is the fact that regional solutions, deployable VHF repeaters and associated equipment will be maintained locally by personnel capable of implementing those solutions. The trunked intelli-repeater will be maintained and deployed by personnel familiar with the system and its ability. Finally, satellite system will be maintained by the National Guard where members possess the experience and training to maintain and operate the equipment.

Impact- Sustainability

The equipment acquired under this investment will require continuous maintenance and training to maintain the ability to deploy the equipment promptly and effectively. The basic equipment, VHF repeaters, generators and transportable towers do not require a high level of technical skills to deploy and operate. This equipment will be situated in each region and maintained as part of regional communication equipment. Routine exercising with the equipment and periodic inspection by users will assure proper maintenance and the ability to deploy the equipment when needed. The deployable 700/800 MHz intelli-repeater will be maintained by an agency within the metropolitan area that maintains its local enhancements to the ARMER backbone and has the technical staff to assure continued operation of the intelli-repeater site. The satellite capability will be maintained by the National Guard, which pays satellite access fees and maintains a continued capability to operate and maintain the system.

I. Investment Heading

INVESTMENT # 1

State/Territory Name: Minnesota

Investment Name: Strategic Technology Reserve- State Component

Grantee Type: Other State Agency (Non-SAA)

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: All local, regional and state entities within the state (Resource deployable to other states).

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management other public safety entities

VI. Milestones

VI. Milestones

Provide specific milestones for the Investment over the PSIC period of performance (FY 2007 – FY 2010), including a description, and start and end dates for each milestone; up to 10 milestones may be provided. (850 Char. max per milestone)

Milestone #1

Complete assess of existing STR capability, including capability to add equipment to existing deployable resources (adding transportable repeaters, generators and towers to existing communication vans and resources).

Start Date: 01/01/08 **End Date:** 03/31/08

Milestone #2

Determine frequencies and spectrum upon which to program deployable repeaters (coordinate this neighboring states to the extent possible).

Start Date: 01/01/08 **End Date:** 09/30/08

Milestone #3

Determine equipment needed to provide STR resources (VHF repeaters, towers, generators and transport equipment), complete the planning and engineering to expand existing intelli-repeater site, complete the planning and engineering necessary to assure deployable I.P. capability through a satellite site.

Start Date: 03/31/08 **End Date:** 09/30/08

Milestone #4

Acquire and deploy equipment needed to implement the STR investment.

Start Date: 10/01/08 **End Date:** 12/31/08

Milestone #5

Integrate STR capability into regional and statewide Tactical Interoperability Plans.

Start Date: 06/30/08 **End Date:** 12/31/08

I. Investment Heading

INVESTMENT # 1

State/Territory Name: Minnesota

Investment Name: Strategic Technology Reserve- State Component

Grantee Type: Other State Agency (Non-SAA)

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: All local, regional and state entities within the state (Resource deployable to other states).

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management other public safety entities

Milestone #6

Integrate STR into regional emergency plans and conduct exercises in each region of the state demonstrating capabilities and training needs.

Start Date: 12/31/08 **End Date:** 12/31/09

Milestone #7

Establish memorandums of understanding and standard operating procedures necessary to assure continuous availability of elements of the STR, including a centralized point of contract for deployment of STR resources.

Start Date: 06/30/08 **End Date:** 12/31/08

Milestone #8

Start Date: **End Date:**

Milestone #9

Start Date: **End Date:**

Milestone #10

Start Date: **End Date:**

I. Investment Heading

INVESTMENT # **1**

State/Territory Name: Minnesota

Investment Name: Strategic Technology Reserve- State Component

Grantee Type: Other State Agency (Non-SAA)

Is this a multi-jurisdictional or statewide project? Yes

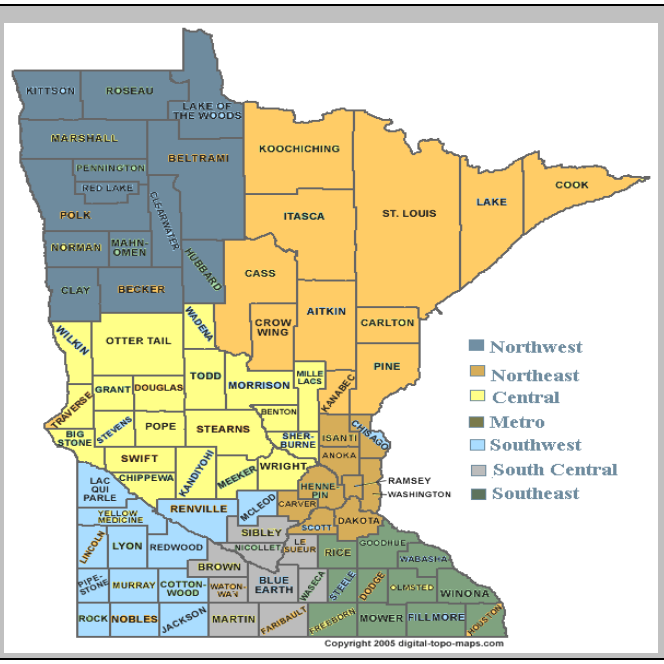
List the jurisdictions served by this project: All local, regional and state entities within the state (Resource deployable to other states).

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management other public safety entities

X. Attachments

X. - Attachment(s)



I. Investment Heading

INVESTMENT # **2**

State/Territory Name: Minnesota

Investment Name: Strategic Technology Reserve- Local Component

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: All local, regional and state entities within the state (Resource deployable to other states).

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

V. Funding Plan

V.A. Funding Plan

Detail the total estimated cost for the Investment throughout the PSIC period of performance (FY 2007 – FY 2010). Describe any other concurrent funding sources that may also support this Investment, including form of cost share. Detailed estimated expenditure plan which credibly demonstrates ability to meet expenditure deadline of September 30, 2010.

	PSIC Federal Funds Requested	Non-Federal Matching Fund Amount	Total Investment*
Acquisition	$ 636,377.00	$ 159,094.25	$ 795,471.25
Deployment			$ -
Training			$ -
Planning/Coord.			$ -
Total	**$ 636,377.00**	**$ 159,094.25**	**$ 795,471.25**

** - Total investment includes the Non-Federal Match and Total PSIC Federal Funds Requested. 20% match is required for all Acquisition and Deployment funds; however, match can be identified and allocated at either the Investment level or the total PSIC IJ level (on the Overall Funding Summary tab). Therefore, individual investments can be undermatched or overmatched according to the needs of the applicant.*

V.B. Matching Plan

How does your Investment meet the non-Federal cash or in-kind matching requirement? Please itemize both the funding category and amount in the table below. (1,000 Char. Max)

The Statewide Radio Board will provide the 20% match for state funds available to them for the acquisition of equipment required to establish the STR. This approach was pursued to assure that resources acquired in this investment would be maintained as a regional and statewide resource.

Non-Federal Matching Fund Category	Non-Federal Matching Fund Amount
Cash - State	$ 159,094.25
Cash - Local/Tribal	
Cash - Non-governmental	
In-Kind - Donated volunteer services	
In-Kind - Donated salaries	
In-Kind - Donated equipment	
In-Kind - Donated property	
In-Kind - Indirect costs	
Other*	
Total	**$ 159,094.25**

** - Please explain "Other" in the 'Matching Plan' dialog box above.*

Total Matching Fund Amount Must be Equal to Section V.A. Total Matching Fund Amount of: $ 159,094.25

Matching Self Check: OK

I. Investment Heading

INVESTMENT # **2**

State/Territory Name: Minnesota

Investment Name: Strategic Technology Reserve- Local Component

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: All local, regional and state entities within the state (Resource deployable to other states).

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

VI. Milestones

VI. Milestones

Provide specific milestones for the Investment over the PSIC period of performance (FY 2007 – FY 2010), including a description, and start and end dates for each milestone; up to 10 milestones may be provided. (850 Char. max per milestone)

Milestone #1

Complete assess of existing STR capability, including capability to add equipment to existing deployable resources (adding transportable repeaters, generators and towers to existing communication vans and resources).

Start Date: 01/01/08 **End Date:** 03/31/08

Milestone #2

Determine frequencies and spectrum upon which to program deployable repeaters (coordinate this neighboring states to the extent possible).

Start Date: 01/01/08 **End Date:** 09/30/08

Milestone #3

Determine equipment needed to provide STR resources (VHF repeaters, towers, generators and transport equipment), complete the planning and engineering to expand existing intelli-repeater site, complete the planning and engineering necessary to assure deployable I.P. capability through a satellite site.

Start Date: 03/31/08 **End Date:** 09/30/08

Milestone #4

Acquire and deploy equipment needed to implement the STR investment.

Start Date: 10/01/08 **End Date:** 12/31/08

Milestone #5

Integrate STR capability into regional and statewide Tactical Interoperability Plans.

Start Date: 06/30/08 **End Date:** 12/31/08

Investment #2

Investment Name: Strategic Technology Reserve- Local Component

Project Narrative

This investment provides an element of the Strategic Technology Reserve that will be acquired and maintained by local units. It builds upon existing deployable interoperability capabilities and provide additional resources directed toward catastrophic communication failures.

This proposed investment in combination with Investment #1 will provide funding for Minnesota to develop the following capabilities:

• Develop regional deployable communications capabilities using deployable VHF repeaters, towers, generators and appropriate radio cache (note: will require coordination of VHF frequencies).
• Expand upon the capability of a deployable statewide communication capability to establish an independent 700/800 MHz trunked communication capability (deployable intelli-repeater).
• Develop or expand upon existing resources to provide a deployable satellite communication capability.
• Develop standard operating procedures and agreements for the activation and deployment of these resources.
• Coordinated with similar capabilities in bordering states, deployed and coordinated with Canada along Minnesota's border or otherwise structured as a statewide or national resource. Although this proposal is still under development, this investment will relate to the development of satellite capabilities and centralizing procedures of all resources.

This investment will be multi-discipline and involve local communities of behalf of regional solutions (engaging all jurisdictions within the region). Resources will be available statewide and capable of addressing a catestrophic failure of communications in the Twin City, MN UASI, the Port of Duluth, along the Canadian border or any other region in the state.

Baseline- Historical Funding and Request Name

There has been no comprehensive statewide assessment of the resources available to address this STR requirement. The available resources are generally maintained locally or regionally. Prior funding of communication equipment has focused upon linking communication resources (gateways) over providing core communications during a catastrophic failure. In some cases, existing resources might be supplemented to provide core communication systems as part of a comprehensive deployable resource. Some UASI and homeland security funds were used to fund a portion of the cost of a transportable 800 MHz repeater in 2003/2004. Similarly, the National Guard may have used federal funds to acquire the satellite capability that will be integrated into the STR proposal. Although the particular details of this investment are still being developed, this investment is structured as a separate and distinct phase with the matching funds requirement provided from state funds.

Baseline- Description of Need

A preliminary assessment indicates that a limited regional STR capability exists. During the process of developing this investment justification, four primary gaps were identified, as follows:
• Lack of deployable VHF repeaters, transportable towers, generators and radio caches.
• Lack of VHF frequencies upon which to coordinate implementation of VHF repeater resources.
• Development and expansion of a plan to field a deployable intell-repeater site providing trunked communications for ARMER system users (currently 20,000 units).
• Assessment of I.P. based satellite communications necessary to provide basic communications (telephone, e-mail and voice and data communications).
This and other investments would provide for the thorough assessment of STR resources, provide for the development of agreements to assure availability of resources and provide funding for equipment necessary to sustain a STR capability. These resources will ultimately be incorporated into tactical interoperability plans and coordinated throughout the state.
The specifics of this investment are still underdevelopment. Important contributors to that development are as follows:
• Hennepin County Sheriff's Communication Unit- extensive experience with deployment of communication resources to New Orleans in the aftermath of Katrina. Also key member of Twin City, MN UASI- involved in 35W Bridge collapse of 8/1/2007.
• Minnesota Interagency Fire Center- State/Federal Agency with extensive experience with fire response to northern Minnesota and along Canadian Border.
• Minnesota National Guard- recently involved in responsding to flooding in SE Minnesota.
• FBI- involved in major crime response to tribal areas where very little infrastructure exists.
Other local participants from different regions of the state (NW, NE and SW Minnesota) and the DPS, Division of Homeland Security and Emergency Management-State Communication Officer.

Baseline- Description of Governance Structure and Activities

The primary focus of this investment is to develop a resource that can be deployed regionally and called into use across the state. As such, the DPS, Division of Homeland Security and Emergency Management will take a lead role in coordinating these resources, through the State Duty Officer Program and by the State Communication Officer.
Minnesota is in the process of expanding its public safety communication governance structure. The Statewide Radio Board (SRB) which was initially formulated to oversee the implementation of Minnesota's ARMER system has recently been designated as Minnesota's State Interoperability Executive Committee (SIEC) and has established an Interoperability Committee to deal with interoperability issues. The statute creating the SRB provides for the establishments of regional advisory committees and regional radio

board under Minn. Stat. §403.39 which will be a integral part of the STR planning process.

Based upon the PSIC grant process regional organizational efforts have moved ahead. The SRB Interoperability Committee will form the basis for interoperability planning, but the continued integration of regional planning continues to be necessary to assure full participation by regional members, including non-governmental and tribal organizations. This process anticipates the development of regional tactical interoperability plans, standard operating procedures and, where necessary, memorandums of understanding.

See the attached diagram of regional radio boards and regional advisory committees. At the present time, there are two regional radio boards (joint powers authorities) covering 27 counties (Metropolitan Emergency Services Board and Central MN Regional Radio Board). Formation of regional advisory committees (precursor to regional radio boards) is underway in the remaining 60 counties into five regions with preliminary drafts of joint powers agreements under consideration in at least two of those five regions. Regional activities are multi-discipline and include invitations to tribal governments, non-governmental public safety agencies and federal agencies operating within their regions.

Baseline- Stakeholder Involvement

A stakeholder workgroup was established to provide input into the development of this investment. It included state and local members from various regions of the state and representing various disciplines, including representation from the Twin City, MN UASI region, MN Interagency Fire Center (MIFC) and the MN National Guard. The Interoperability Committee of the SRB will be utilized to provide a broader input from regional interests, including non-governmental, tribal, federal and state interests.

Strategy- Statewide Communication Interoperability Plan Objectives

This investment is designed to address a specific requirement of the Public Safety Interoperable Communication (PSIC) grant program and the underlying congressional requirement. As previously noted, Minnesota's comprehensive ARMER communication system plan provides a comprehensive public safety communication system with a very high level of reliability and redundancy.

As part of the PSIC criteria, Minnesota was required take a more comprehensive look at the potential for catastrophic failure of communications and our ability to provide communication resources to various regions of the state and to other regions of the nation. Through that process, gaps were identified in our assessment of resources, the existence of MOU's and in our ability to address a broad spectrum of potential catastrophic failures that could occur.

This investment specifically addresses the following goals and objectives of Minnesota's SCIP:

Goal #5- Develop a plan to provide the highest practical level of interoperability between the ARMER backbone and independent public safety communication systems, between other existing public safety communication systems within the state (local, regional, state, tribal, military and federal) and with appropriate public safety agencies bordering states and counties; Objection #6- Develop specific plans identifying how deployable resources

(transportable trunked systems, portable repeaters, mobile gateways, satellite communications and other deployable technologies) might be integrated into Minnesota's public safety communication network to provide enhanced interoperability by December 31,2008. Objection # 7- Develop a plan for the implementation and maintenance of a strategic technology reserve (STR) to pre-position or secure interoperable communication equipment in advance for immediate deployment in an emergency situation or major disaster by June 30, 2008.

This investment and others provide resources for a comprehensive assessment of Minnesota's capability to provide and maintain an STR, of the best way to address the gaps in our planning and in the need for MOU's and Standard operating Procedures to assure availability of resources.

Strategy- Technology Priorities

The specifics of this investment are still under development. However, this investment is designed to address a broad spectrum of solutions to meet the demands of a catastrophic loss of the public safety communication infrastructure. At the low end of this investment, this need will be addressed through deployable VHF repeaters, towers and radio caches to provide a basic level of communications which are hard to characterized as advanced technologies. However, this item has been identified as a resource that can be implemented quickly and effectively.

At its next stage, this investment utilizes advanced trunking technologies available as part of a deployable 700/800 MHz intelli-repeater site that can be integrated into the ARMER backbone through a satellite connection or other I.P. based communications. This solution would continue to provide spectrum efficiency of a trunked system to remote locations of the state.

The third priority under this investment seeks to expand the ability to provide I.P. based communication, including telephone, e-mail and data communications utilizing satellite communications. This capability has the potential of addressing new solutions that can be brought to the scene of disaster through I.P. connectivity, including the benefits of mesh networking and other newer technologies.

These capabilities are all technically feasible, can use equipment currently available on commercial markets and can be acquired and deployed within the PSIC period performance.

Strategy- All Hazards Mitigation Priorities

This investment is designed to address the catastrophic loss of communications, but is not directed toward any specific hazard. The low level capability, VHF repeaters and towers, is designed to be rapidly deployable to any region of the state and to any hazard and public safety discipline. The next level of this investment, a deployable 700/800 MHz deployable intelli-repeater site is similarly designed to be deployable to any region of the state but might be categorized as a resource directed at the more pressing needs of the Twin City UASI region where 700/800 MHz systems is well entrenched. Similarly, the development of I.P. based satellite communications capability might be deployed

anywhere in the state, but is most directly applicable to the needs of urban Minneapolis/St. Paul area.

The STR developed from this investment could be used to provide basic and enhanced communication in the Twin City, MN UASI, any urban area, the Port of Duluth or along the Canadian border during forest fires, floods and any other man made or natural disaster.

Program Management

The overall direction and coordination of this investment will be provided by the Statewide Radio Board, acting as Minnesota's State Interoperability Executive Committee. As a practical matter, the SRB will rely upon its Interoperability Committee (broadly representing all regions and public safety disciplines, including tribal and non-government entities and federal agencies) to identify the specific priorities for this investment. The Interoperability Committee will serve a primary role in developing memorandums of understanding and standard operating procedures.

The department of public safety has created a public safety interoperability program and staffed that program with a program administrator and three regional interoperability coordinators (contract employees). A fundamental responsibility of that program will be the development of regional Tactical Interoperable Communication plans, which include this STR investment and to see that those TIC plans are exercised. Regional interoperability coordinators will provide direct assistance with acquisition and deployment of STR resources where necessary.

Funds allocated to local units of government will be expended by those local units of government. Because the SRB is providing the matching funds, the department of public safety will assure compliance with investment objectives before matching funds are provided. Similarly, funds allocated to state agencies must be expended consistent with the State Interoperable Communication Plan (SCIP) and this investment justification. Comprehensive oversight is provided by the DPS ARMER/911 Program through contract and administrative oversight.

As the primary focus of this investment is to develop a resource that can be deployed regionally and called into use across the state,the DPS, Division of Homeland Security and Emergency Management will take a lead role in coordinating these resources, through the State Duty Officer Program and by the State Communication Officer.

The Division of Homeland Security and Emergency Management will also provides overall administrative oversight for the PSIC grant funds and assures funds have been expended consistent with investment justifications.

Investment Challenges

Unable to get agreements (MOU) into place with respect to STR resources.		Mitigation: Seek to create broad involvement and consensus over the STR planning process and SOP development through regional advisory

		committees and the SRB-Interoperability Committee.
Unable to identify frequencies appropriate (including coordination with neighboring states) for deployable repeaters, thus reducing their viability.		Mitigation: Through assessment of available VHF frequencies, consider using UHF frequencies, consider asking for alternative frequencies from NITA, consider using V-TAC narrowband frequencies.
Transportable Intelli-repeater site conflicts with the basic ARMER backbone and is not viable.		Thoroughly vet the proposed Intelli-repeater site with vendor and other consultants. Consider using interop frequencies in 800 MHz or 700 MHz spectrum.
Unable to make agreement with National Guard concerning the deployment or usage of satellite system		Involve National Guard early in the process and determine the feasibility. If this issue could not be resolved, would be required to seek alternative such as acquire satellite access via contract or seek funding for another entity.

Impact- Outcomes

The most important outcome from this investment will be the development of an ability to provide scalable public safety communication infrastructure at a location where existing communication capabilities are destroyed or substantially diminished. This same capability will also provide the ability to enhance existing communication (add resources) at locations where the demand for communication resources is substantially increased due to disaster or other catastrophic event (missing person or forest fire).

That capability is focused around three distinct subordinate capabilities, as follows:

• A regional ability to deploy self sustained VHF repeaters and towers with a small cache of radios to provide basic voice communications capabilities.

• One deployable and self sustained intelli-repeater capable of providing high level trunked communication.

• Development of or integration of existing satellite communications capability to provide I.P. connectivity.

Collateral aspects to this investment will be the engagement of the SRB and its Interoperability Committee in the development of standard operating procedures and memorandums of understanding necessary to assure timely and appropriate availability of STR resources. Similarly, the engagement of the department of public safety division of

homeland security and emergency management and the ARMER/911 Interoperability program to implement and exercise this investment will be an important outcome. Integrating these resources into the state Tactical Interoperable Communication plan and establishing the agreements and procedures to assure timely and appropriate deployment of these resources is an essential outcome. The final evaluation of this investment will be accomplished through regional exercises where this communication capability will be specifically evaluated.

Impact- Cost Effective Measures

This investment is the most cost effective way to address this requirement. It addresses the need to provide deployable public safety communication resources from three different perspectives. The response can be scaled to address the needs of any given situation, thus assuring the least costly solution is used to address regional needs.

Of particular importance is the fact that regional solutions, deployable VHF repeaters and associated equipment will be maintained locally by personnel capable of implementing those solutions. The trunked intelli-repeater will be maintained and deployed by personnel familiar with the system and its ability. Finally, satellite system will be maintained by the National Guard where members possess the experience and training to maintain and operate the equipment.

Impact- Sustainability

The equipment acquired under this investment will require continuous maintenance and training to maintain the ability to deploy the equipment promptly and effectively. The basic equipment, VHF repeaters, generators and transportable towers do not require a high level of technical skills to deploy and operate. This equipment will be situated in each region and maintained as part of regional communication equipment. Routine exercising with the equipment and periodic inspection by users will assure proper maintenance and the ability to deploy the equipment when needed. The deployable 700/800 MHz intelli-repeater will be maintained by an agency within the metropolitan area that maintains its local enhancements to the ARMER backbone and has the technical staff to assure continued operation of the intelli-repeater site. The satellite capability will be maintained by the National Guard, which pays satellite access fees and maintains a continued capability to operate and maintain the system.

I. Investment Heading

INVESTMENT # **2**

State/Territory Name: Minnesota

Investment Name: Strategic Technology Reserve- Local Component

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

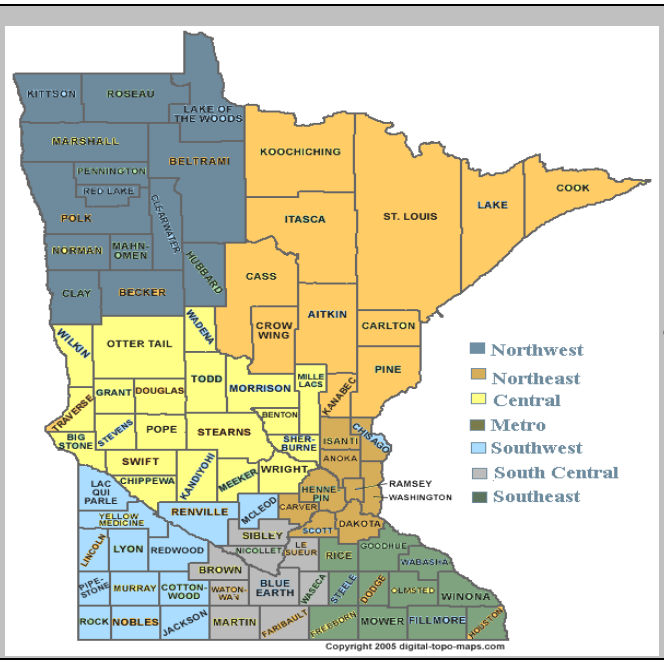
List the jurisdictions served by this project: All local, regional and state entities within the state (Resource deployable to other states).

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

X. Attachments

X. - Attachment(s)



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I. Investment Heading

INVESTMENT # **3**

State/Territory Name: Minnesota

Investment Name: Radio Control Stations- ARMER System to provide cross spectrum interoperability to all PSAP's & EOC's (75 non-metro counties of the state)

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: All PSAP's and EOC operated by counties, tribal governments outside the metropolitan area

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

V. Funding Plan

V.A. Funding Plan

Detail the total estimated cost for the Investment throughout the PSIC period of performance (FY 2007 – FY 2010). Describe any other concurrent funding sources that may also support this Investment, including form of cost share. Detailed estimated expenditure plan which credibly demonstrates ability to meet expenditure deadline of September 30, 2010.

	PSIC Federal Funds Requested	Non-Federal Matching Fund Amount	Total Investment*
Acquisition	$ 1,100,000.00	$ 275,000.00	$ 1,375,000.00
Deployment	$ 300,000.00	$ 75,000.00	$ 375,000.00
Training			$ -
Planning/Coord.			$ -
Total	**$ 1,400,000.00**	**$ 350,000.00**	**$ 1,750,000.00**

** - Total investment includes the Non-Federal Match and Total PSIC Federal Funds Requested. 20% match is required for all Acquisition and Deployment funds; however, match can be identified and allocated at either the Investment level or the total PSIC IJ level (on the Overall Funding Summary tab). Therefore, individual investments can be undermatched or overmatched according to the needs of the applicant.*

V.B. Matching Plan

How does your Investment meet the non-Federal cash or in-kind matching requirement? Please itemize both the funding category and amount in the table below. (1,000 Char. Max)

The Statewide Radio Board (Minnesota's SIEC) will provide the 20% match for state funds available to them for the acquisition of equipment required for this investment.

Non-Federal Matching Fund Category	Non-Federal Matching Fund Amount
Cash - State	$ 350,000.00
Cash - Local/Tribal	
Cash - Non-governmental	
In-Kind - Donated volunteer services	
In-Kind - Donated salaries	
In-Kind - Donated equipment	
In-Kind - Donated property	
In-Kind - Indirect costs	
Other*	
Total	**$ 350,000.00**

** - Please explain "Other" in the 'Matching Plan' dialog box above.*

Total Matching Fund Amount Must be Equal to Section V.A. Total Matching Fund Amount of: $ 350,000.00

Matching Self Check: OK

I. Investment Heading

INVESTMENT # **3**

State/Territory Name: Minnesota

Investment Name: Radio Control Stations- ARMER System to provide cross spectrum interoperability to all PSAP's & EOC's (75 non-metro counties of the state)

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: All PSAP's and EOC operated by counties, tribal governments outside the metropolitan area

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

VI. Milestones

VI. Milestones

Provide specific milestones for the Investment over the PSIC period of performance (FY 2007 – FY 2010), including a description, and start and end dates for each milestone; up to 10 milestones may be provided. (850 Char. max per milestone)

Milestone #1

Radio control stations acquired and installed (capable of patching conventional systems into shared system talkgroup) in 50% of PSAP's and EOC's in the

Start Date: 06/01/08 **End Date:** 06/30/09

Milestone #2

Radio control stations acquired and installed (capable of patching conventional systems into shared system talkgroup) in all PSAP's and EOC's in the state.

Start Date: 06/01/08 **End Date:** 12/31/09

Milestone #3

All PSAP and EOC communication personnel trained in the operation of the radio control stations.

Start Date: 06/01/08 **End Date:** 06/30/10

Milestone #4

Start Date: **End Date:**

Milestone #5

Start Date: **End Date:**

Investment #3

Investment Name: Radio Control Stations- ARMER System to provide cross spectrum interoperability to all PSAP's & EOC's (75 non-metro counties of the state)

Project Narrative

Minnesota is in the process of completing the statewide implementation of a standards based shared infrastructure operating in the 700/800 MHz spectrum. That infrastructure is capable of supporting local needs. However, it is anticipated that local integration on to the shared system will take many years to occur as local governments continue to utilize their existing systems throughout their useful life with some local entities electing to update their conventional systems based upon local needs.. Conventional VHF communication systems dominate the public safety communications environment at the present time throughout Minnesota.

This investment provides the basic level of interoperability between existing public safety communication systems operating conventional VHF and UHF systems, as follows:

• It allows Public Safety Answering Points (PSAP's) or Emergency Operation Centers (EOC) to monitor a predetermined talk group assigned to them and regional or statewide interoperability talk groups.

• Radio control station can be linked to dispatch consoles providing a selectable gateway between any conventional public safety communication systems monitored at the location that can be selectively linked into talkgroups.

This investment would place two radio control stations in every PSAP (local and tribal) in the state and would place at least one radio control station (or other fixed mobile units) in EOC thus assuring each county and tribal government has a basic ability to communication through the statewide backbone. Note: State agency PSAP's and EOC's will be addressed in Investment #9.

This investment is directed at counties and tribal governments outside the Minneapolis/St. Paul metropolitan area (75 counties) where the ARMER backbone is currently being installed (Phase Three) and the 55 counties of Phases 4, 5 and 6. There are at least 75 county PSAP's and EOC's, 1 tribal PSAP and an undetermined number of tribal EOC's throughout the geographic region of this investment. This approach to providing interoperability with existing legacy systems was used in the metropolitan area and has provided a very effective and cost efficient level of cross spectrum interoperability over the last six years. (Note: The metro area will be fully integrated onto the ARMER system in 2008).

The integration of radio control stations into local infrastructure is one of the primary ways of providing fixed and selectable cross spectrum interoperability for conventional VHF and UHF system users. As such, placing radio control stations in EOC's and PSAP's across the state provides the ability of local governments to access a statewide network and provide essential communications with all entities capable of operating on the ARMER system (with radio control stations or subscriber units).

Once implemented, the equipment will be integrated into daily usage, incorporated into Tactical Interoperability Plans and routinely exercised as part of routine exercises.

Baseline- Historical Funding and Request Name

During the implementation of the regional trunked public saftey communication system in the Minneapolis/St. Paul metropolitan area, the radio control stations were placed in PSAP's to provide this basic link into the ARMER backbone for conventional system users. The cost of those control stations was paid for with funds available to the regional radio board at that time and provided an essential link across spectrums. When implementation of phase three of the ARMER system (23 counties outside the metro area) was approved homeland security funds were allocated to provide one radio for each PSAP in county in phase three- where that occurred, the PSAP's allocation will be reduced by one in this subsequent phase.

Baseline- Description of Need

This investment is necessary to provide the basic interoperability link between the ARMER system (standards based shared system) and existing public safety communication systems. Once the shared backbone is in place, the radio control station at its lowest level provides the opportunity to monitor interoperability talk groups on the shared system, and at their highest level can be integrated into the PSAP or EOC communication console to provide selectable gateway capabilities (soft patch) between the statewide backbone and conventional public safety communication systems. It is noted that in some instances a fixed mobile radio may provide a appropriate interface and may be used in place of a radio control station.

This investment establishes statewide interoperability by utilizing advanced technology to give all public safety entities access to spectrum efficient trunked technology. Any radio system monitored (Law Enforcement, Fire, Emergency Medical Service, Public Works, general government) at the PSAP can be immediately linked into a local, regional or statewide talkgroup. Similarly, any other PSAP will be able to link that talkgroup back into any resource on the other end to provide multi-spectrum interoperability widely across the state. In essence, this capability provides the basic tools to utilize the ARMER backbone as a "system of systems" capable of integrating cross spectrum communication.

This approach to providing interoperability with conventional systems was used in the Minneapolis/St. Paul metropolitan area since 2001 and it has provided a very effective level of cross spectrum interoperability.

Of particular importance is the fact this investment provides a substantial enhancement to interoperability across the state that can be applied to any hazard. Although not specifically directed at the Twin City, MN UASI or the metropolitan area, this investment still benefits that region by providing direct access to the statewide network and interoperability talkgroups. Responders from outside the metropolitan area can communicate capabilities and obtain instructions to respond to a major disaster in the Minneapolis/St. Paul metropolitan area. Similarly, providing this level of interoperability across the state will enhance communication throughout all urban centers, the Port of

Duluth and along the border with Canada that is not available otherwise.

Baseline- Description of Governance Structure and Activities

Minnesota is in the process of expanding its public safety communication governance structure. The Statewide Radio Board (SRB) which was initially formulated to oversee the implementation of Minnesota's ARMER system has recently been designated as Minnesota's State Interoperability Executive Committee (SIEC) and has established an Interoperability Committee to deal with interoperability issues. The statute creating the SRB provides for the establishments of regional advisory committees and regional radio board under Minn. Stat. §403.39 which will be a integral part of the STR planning process.

Based upon the PSIC grant process regional organizational efforts have moved ahead. The SRB Interoperability Committee will form the basis for interoperability planning, but the continued integration of regional planning continues to be necessary to assure full participation by regional members, including non-governmental and tribal organizations. This process anticipates the development of regional tactical interoperability plans, standard operating procedures and, where necessary, memorandums of understanding.

See the attached diagram of regional radio boards and regional advisory committees. At the present time, there are two regional radio boards (joint powers authorities) covering 27 counties (Metropolitan Emergency Services Board and Central MN Regional Radio Board). Formation of regional advisory committees (precursor to regional radio boards) is underway in the remaining 60 counties into five regions with preliminary drafts of joint powers agreements under consideration in at least two of those five regions. Regional activities are multi-discipline and include invitations to tribal governments, non-governmental public safety agencies and federal agencies operating within their regions.

Baseline- Stakeholder Involvement

This investment was established as a priority in a workgroup established as part of the 2007 HS application process. That workgroup was composed of a number of state and local participants representing various geographic regions and disciplines throughout the state. The investment was subsequently vetted through the SRB core planning group and presented at regional planning meetings related to the SCIP plan development. Investment justifications were finally approved by the SRB which has a multi-discipline and multi-jurisdictional composition.

Strategy- Statewide Communication Interoperability Plan Objectives

Minnesota's SCIP plan provides that the backbone for the shared statewide communication system will be used to provide communication interoperability by connecting conventional and legacy public safety communication systems together. This investment justification provides the first step in making that backbone available at the communication center level (PSAP and EOC) to provide core monitoring of interoperability talk groups and to link systems together where there is overlapping coverage.

This investment addresses the following goal and objectives in Minnesota's SCIP:
Goal #1: Complete the construction of the shared public safety communication system(ARMER); Objection #5: Develop a preliminary plan for VHF and/or UHF interoperability for the ARMER backbone by December 31,2008
Goal #5: Develop a plan to provide the highest practical level of interoperability between the ARMER backbone and independent public safety communication systems, between other existing public safety communication systems within the state (local, regional, state, tribal, military and federal) and with appropriate public safety agencies bordering states and counties; Objective #4- Investigate, develop and test specific technical and operational plans on how exisitng VHF adn UHF interoperable resources might be organized and integrated into public safety communication systems (ARMER and independent systems) by December 31, 2008.

Minnesota's SCIP plan builds upon the experience and successes experienced in the Minneapolis/St. Paul metropolitan area where the shared system backbone extended the resources of a trunked system to conventional system users. It establishes the familiarity and ability to use those resources when they are needed. Similarly, it provides the resources to facilitate multi-jurisdictional communications across disciplines simply by selecting an appropriate regional or statewide interoperability talkgroup.

It should also be noted that this investment is an essential piece in the process of engaging all public safety entities in the continued development of regional governance processes. That goal is broadly stated at Goal #3.

Strategy- Technology Priorities

This investment provides the resources of a technologically advanced standard based trunked radio system capable of using 700/800 MHz spectrum in the hands of public safety communication personnel across the state. It provides the opportunity to selectively link (patch) conventional VHF/UHF systems into a trunked talk group and depending upon the patched talk group, the ability to extend the communication of operational personnel to any other user across the state.

This investment allows selective patching between two separate communication systems. This assures that simulcasting upon two desperate communication systems, which is only implemented when necessary to provide the required operational interoperability. Similarly, the fact that the shared backbone is a trunked radio system assures the greatest efficiency in spectrum use on at least one of the systems. Finally, this solution is a very cost effective measure that provides flexible interoperability between communication systems at the very minor relative cost.

This investment is clearly technically feasible, utilizes equipment that can be identified and purchased commercially and it can be accomplished within the PSIC period of performance.

Strategy- All Hazards Mitigation Priorities

This investment justification is not specifically designed to address any particular areas of high risk for natural disasters or urban areas at high risk for threats of terrorism, except to note that it is addressed at a broad public safety community across the state. It broadly

enhances interoperable communication across the state, including urban areas, the Port of Duluth and areas along the Canadian border. It also provides a vital link to the response community across the state, all of whom may be needed to respond to any catastrophic event at any location within the state or in neighboring states.

An example of the benefit this investment creates for the state overall, might be demonstrated by the fact that potential responders the 35W bridge collapse on 8/1/2007 from outside the metropolitan area were able to report their capability and obtain response instructions from as far away at St. Cloud and Rochester (75 miles away) over statewide interoperability talkgroups.

This investment justification provides a basic level of statewide interoperability that does not currently exist within the state. It provides a secure communication network to maintain basic communications between EOC's and PSAP's across the state and a secure link to all regions of the state from which public safety responders might be asked to respond.

Program Management

Primary responsibility for this investment will rest with the local jurisdictions (PSAP and EOC operators), however, the department of public safety will provide oversight and assistance in the following manner:

- DPS will provide for central purchasing of equipment, to include service agreements for installation of equipment.
- DPS regional interoperability coordinators will provide non-technical assistance.
- DPS will assist in the development of training curricula related to the use of equipment through standards developed by the SRB. (See Investment# 6 & 7)

Regional advisory committees or regional radio boards will provide oversight, as part of their comprehensive regional planning role and development of regional communication plans. This investment will require technicians to install the equipment, antennas and install links into the dispatch consoles. It will also require the development of a training curricula and material and training personnel.

Funds allocated to local units of government will be expended by those local units of government. Because the SRB is providing the matching funds, the department of public safety will assure compliance with investment objectives before matching funds are provided. Funds must be expended consistent with the State Interoperable Communication Plan (SCIP) and this investment justification. Comprehensive oversight is provided by the DPS ARMER/911 Program through contract and administrative oversight.

The Division of Homeland Security and Emergency Management provides overall administrative oversight for the PSIC grant funds and assures funds have been expended consistent with investment justifications.

Investment Challenges

This equipment represents a		Mitigation: Installation will

significant technology upgrade for a number of potential users who may resist the change. Probability and impact is listed as medium because the particular personnel effected, communication center personnel, tend to be more technically capable.		be addressed as part of the detail regional communication planning process. Users and administrators will be provided with a basic understanding of the purpose and outcomes to be achieved.
The local equipment might not be capable of interfacing with the radio control station.		Mitigation: Other reasonably priced gateway solutions exist that might be deployed to overcome this problem. Technical assistance will be coordinated with service personnel installing the equipment.

Impact- Outcomes

The outcome of this investment will be to provide a basic statewide communication capability to all PSAP's and EOC's in the state. That outcome will be measurable by the actual placement and integration of two radio control stations in every local and tribal PSAP and one radio control station or (similar fixed mobile radio capability) in every local and tribal EOC. The placement of this equipment will also require training for PSAP and EOC in the use of the equipment before it can be effectively integrated into use and finally incorporated into the communication element of regional and state Tactical Interoperability Plans and routine exercises.

This investment will provide an essential link with multiple disciplines, by virtue of the fact that most public safety and governmental communication systems are monitored and dispatched from the county dispatch centers. Generally speaking, law enforcement, fire, emergency medical service, emergency mandagement and general government systems and a number of interoperable freqeuncies are all monitored at the county and tribal PSAP's.

This investment will also provide the basis of further standard development among the regional raido boards and regional advisory committees as they determine the number and use of regional talkgroups and primary talkgroups (metro area provided one talk group for each PSAP to provide direct contact capability). This engagement will foster a greater discussion of interoperability and how the ARMER backbone can be used to provide communication and interoperability in other situations.

Usage and outcomes can be easily monitored with operational statistics maintained by the backbone of the ARMER system. Those statistics will be reported to the Interoperability Committee and the SRB at least annually. Similarly, after action reports following major incidents (35W Bridge collapse) are generally completed with an

assessment of usage and examination of how the communication systems and interoperability resources usage may be improved.

Impact- Cost Effective Measures

This investment providing a basic link of conventional resources for all PSAP's and EOC's throughout the state into the statewide backbone. It provides a basic level of interoperability in a very cost effective way and leverages the investment Minnesota is making in the backbone for a standards based trunk infrastructure. It provides increased interoperability between all jurisdictions and between all disciplines, including tribal and non-governmental public safety entities. At a cost of approximately $30,000 per county (PSAP and EOC) and similar cost for tribal PSAP and tribal EOC's this investment provides very simply solution to enhance and expand interoperability throughout the state.

The benefit of this investment is demonstrated by the fact that the SRB has agreed to provide the match to this investment to assure there are no obstacles to implementation. The PSIC funds and the SRB investment will greatly accelerate this level of integration onto the statewide backbone. From the local perspective, that means there is no local cost to local agencies to gain access to the shared backbone and the cross spectrum interoperability it will provide. Similarly, this investment provides the basis for the initial introduction to newer technology for many local agencies unfamiliar with the benefits.

This investment also provides for greater uniformity in approaches to interoperability, regional development of standards and resources such that training and exercises can be provided collectively at a much more efficient cost.

Impact- Sustainability

The sustaining costs for this investment are not significant. The SRB is committed to devising a sustainable training program. (See Investment# 6 & 7) The equipment, once purchased, does not have a high maintenance cost. It is anticipated that once the equipment in incorporated as standard equipment in all PSAP's and EOC's and used on a regular basis, it will be incorporated into regular maintenance scheduled.

I. Investment Heading

INVESTMENT # **3**

State/Territory Name: Minnesota

Investment Name: Radio Control Stations- ARMER System to provide cross spectrum interoperability to all PSAP's & EOC's (75 non-metro counties of the state)

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

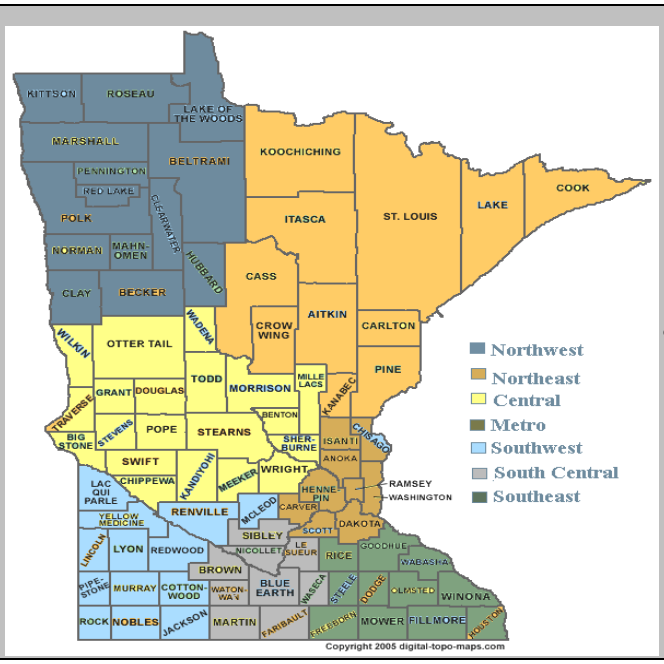
List the jurisdictions served by this project: All PSAP's and EOC operated by counties, tribal governments outside the metropolitan area

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

X. Attachments

X. - Attachment(s)



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I. Investment Heading

INVESTMENT # **4**

State/Territory Name: Minnesota

Investment Name: Local/County/Regional comprehensive public safety communication assessment (Current infrastructure, alternative solutions and alternative selection-55

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: Local and tribal governments and NG P.S. entities within 55 counties of state.

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management to include all P.S. entities

V. Funding Plan

V.A. Funding Plan

Detail the total estimated cost for the Investment throughout the PSIC period of performance (FY 2007 – FY 2010). Describe any other concurrent funding sources that may also support this Investment, including form of cost share. Detailed estimated expenditure plan which credibly demonstrates ability to meet expenditure deadline of September 30, 2010.

	PSIC Federal Funds Requested	Non-Federal Matching Fund Amount	Total Investment*
Acquisition			$ -
Deployment			$ -
Training			$ -
Planning/Coord.	$ 1,200,000.00		$ 1,200,000.00
Total	**$ 1,200,000.00**	**$ -**	**$ 1,200,000.00**

** - Total investment includes the Non-Federal Match and Total PSIC Federal Funds Requested. 20% match is required for all Acquisition and Deployment funds; however, match can be identified and allocated at either the Investment level or the total PSIC IJ level (on the Overall Funding Summary tab). Therefore, individual investments can be undermatched or overmatched according to the needs of the applicant.*

V.B. Matching Plan

How does your Investment meet the non-Federal cash or in-kind matching requirement? Please itemize both the funding category and amount in the table below. (1,000 Char. Max)

There is no matching fund requirement related to this investment. However, it is noted that this investment will be leveraged with state funds allocated to the detail design of the ARMER backbone to provide a more thorough assessment of local improvements needed to upgrade communication infrastructure and improvements necessary to integrate local systems into the ARMER backbone (system of system approach).

Non-Federal Matching Fund Category	Non-Federal Matching Fund Amount
Cash - State	
Cash - Local/Tribal	
Cash - Non-governmental	
In-Kind - Donated volunteer services	
In-Kind - Donated salaries	
In-Kind - Donated equipment	
In-Kind - Donated property	
In-Kind - Indirect costs	
Other*	
Total	**$**

** - Please explain "Other" in the 'Matching Plan' dialog box above.*

Total Matching Fund Amount Must be Equal to Section V.A. Total Matching Fund Amount of: $ -

Matching Self Check: OK

I. Investment Heading

INVESTMENT # **4**

State/Territory Name: Minnesota

Investment Name: Local/County/Regional comprehensive public safety communication assessment (Current infrastructure, alternative solutions and alternative selection-55

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: Local and tribal governments and NG P.S. entities within 55 counties of state.

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management to include all P.S. entities

VI. Milestones

VI. Milestones

Provide specific milestones for the Investment over the PSIC period of performance (FY 2007 – FY 2010), including a description, and start and end dates for each milestone; up to 10 milestones may be provided. (850 Char. max per milestone)

Milestone #1

Contract with regional interoperability coordinators to provide ongoing assistance in the development of regional governance structures and in gathering information necessary for local assessments (positions to be funded from legislative appropriations to the department of public safety).

Start Date: 10/01/07 **End Date:** 01/31/08

Milestone #2

Develop and publish a comprehensive Request for Proposals for qualified communication consultants to conduct regionally based assessments of the existing public safety communication infrastructure. (Note: there is a need to attract more consultants to the state for this purpose).

Start Date: 10/15/07 **End Date:** 12/31/07

Milestone #3

Engage regional advisory committees or regional radio boards in the selection of qualified communication consultants to conduct comprehensive local assessments.

Start Date: 01/01/08 **End Date:** 01/31/08

Milestone #4

Conduct comprehensive local assessments of existing public communication capabilities (including the collection of information needed to develop tactical interoperability plans), of the need for replacement or enhancement of those capabilities across the state and of alternative solutions.

Start Date: 03/01/08 **End Date:** 12/31/08

Milestone #5

Develop regional communication plans based upon local assessments, including regional tactical interoperability plans and enter local resource information into the Communication Survey and Mapping (CASM) tool.

Start Date: 06/30/08 **End Date:** 12/31/08

Investment #4

Investment Name: Local/County/Regional comprehensive public safety communication assessment (Current infrastructure, alternative solutions and alternative selection-55 counties of the state)

Project Narrative

Thorough major portions of the state, there has been no comprehensive assessment of the voice or data public safety communication infrastructure. Where planning has been done, it has been done at the local level (county) and it is generally been limited to law enforcement systems and in most instances it has been accomplished by asking the "local communication shop" to tell us what we need. Comprehensive assessments of voice communications have been focused upon the build out of the ARMER system, which was merely an unfunded plan in a major portion of the state until very recently (2007 Legislative session). This investment provides for a thorough assessment of the current status of the infrastructure to the lowest level in each region of the state and for all public safety providers, including non-governmental and tribal governments within each particular region. The assessment will be followed by an evaluation of potential solutions to equipment obsolescence. It will engage elected officials in the discussion of communications and provide them with the information they need. The basic planning level will be at the county level, which would include all municipalities and public safety entities operating in the county, but will be coordinated by regional advisory committees or regional radio boards to foster a broader discussion and resolution of the regional interoperability issues. Solutions include analog and digital VHF systems and integration onto the shard statewide backbone. Similarly, solution to regional interoperability issues are directly tied to the solutions selected by local officials. The objective is to engage all stakeholders in the broad discussion of public safety communication, to provide local officials with the information they need to make sound decisions related to renewing communication infrastructure, support regional planning for the best approaches to maximize public safety interoperability and to provide the Statewide Radio Board with a comprehensive assessment of the communication interoperability throughout the state.

Based upon the successes of the metropolitan area and the Central Minnesota region, this investment will also be a strong catalyst for the development of the regional organizations. The regional governance structured around the individual need to plan for the renewal of public safety communication infrastructure has gone a long way toward fostering the organizational development in central Minnesota and the Minneapolis/St. Paul metropolitan area. It also legitimizes the structure for the development of standard operating procedures and memorandums of understanding necessary to further broad multi-discipline interoperability planning.

Baseline- Historical Funding and Request Name

Local assessments and planning have been funded in a variety of methods over the last ten years. In the metropolitan area, the regional radio boards provided funding for these efforts as part of its planning efforts. More recently homeland security grants were used

to fund local planning and assessment efforts in central Minnesota. Experience has demonstrated it cost approximately $25,000 per county for qualified communication consultants to throughly engage public safety officials, discuss alternatives and for specific conceptual plans upon which to act. The need to fund local planning efforts was incorporated into one of Minnesota's investment justifications for homeland security. However, based upon funding levels made available that portion of the investment was not funded. This investment will not include any counties where plans have previously been created using federal funds or other funds.

Baseline- Description of Need

This investment addresses the need for a thorough assessment of the current status of the infrastructure to the lowest level in each region of the state and for all public safety providers, including non-governmental and tribal governments within each particular region. Similarly, it addressed the need of local officials to identify and evaluation potential solutions to equipment obsolescence. The lack of this assessment is a significant gap identified in Minnesota's SCIP limiting the state's ability to comprehensively plan and coordinate infrastructure and tactical interoperability planning in the future.

The need addressed by this investment is also designed to educate and engage a broad community of elected and public safety officials where a prevailing attitude among many might be typified as follows:

• A general lack of understanding of contemporary communication capabilities;
• Acceptance and adaptation to existing interoperability problems;
• A lack of urgency to plan, until very recently;
• Unwillingness to raise a new funding priorities, when there are so many other local priorities are unaddressed;
• "We get by just fine with what we have"; and
• It is just another unfunded mandate.

These are not uncommon responses and up until very recently, they represented a large portion of the discussion of interoperable communications in the more rural portions of the state.

In those instances where local communication planning was confronted, it has generally been limited to the law enforcement system and it is frequently done the old fashion way by asking the local radio shop to propose a solution. This ad hoc approach fails to incorporate the broader public safety community and similarly fails to address regional and statewide interoperable communication needs.

Minnesota's plan to build a statewide standards based backbone was adopted by the legislature in 2001. In the 2007 authorized the completion of the backbone funded operating costs and provided bonding authority for the capital costs. As part of that authorization the legislature did provide funding for detail design work for the backbone throughout the state. Collectively the growing national discussion of interoperability, the PSIC grant process and the continued discussion of the impending narrowbanding requirement have created a solid need and desire to collectively engage in this assessment and planning process. Similarly, the lack of comprehensive planning and the engagement of public safety officials in the necessary educational process related to the

communication technology surrounding that assessment is one of the primary needs to be addressed by this investment.

This investment provides the basis to address the gap and need to build regional organizational structures throughout a large portion of the state. It also addresses the need for a comprehensive assessment of the existing capabilities upon which to build regional and statewide interoperability plans.

The board application of this investment assures an assessment and planning that addresses all areas at risk of natural disaster, many smaller urban centers, the Port of Dultuh and counties bordering the Canadian border where unique challenges exist.

Baseline- Description of Governance Structure and Activities

Minnesota is in the process of expanding its public safety communication governance structure. The Statewide Radio Board (SRB) which was initially formulated to oversee the implementation of Minnesota's ARMER system has recently been designated as Minnesota's State Interoperability Executive Committee (SIEC) and has established an Interoperability Committee to deal with interoperability issues. The statute creating the SRB provides for the establishments of regional advisory committees and regional radio board under Minn. Stat. §403.39 which will be a integral part of the STR planning process.

Based upon the PSIC grant process regional organizational efforts have moved ahead. The SRB Interoperability Committee will form the basis for interoperability planning, but the continued integration of regional planning continues to be necessary to assure full participation by regional members, including non-governmental and tribal organizations. This process anticipates the development of regional tactical interoperability plans, standard operating procedures and, where necessary, memorandums of understanding.

See the attached diagram of regional radio boards and regional advisory committees. At the present time, there are two regional radio boards (joint powers authorities) covering 27 counties (Metropolitan Emergency Services Board and Central MN Regional Radio Board). Formation of regional advisory committees (precursor to regional radio boards) is underway in the remaining 60 counties into five regions with preliminary drafts of joint powers agreements under consideration in at least two of those five regions. Regional activities are multi-discipline and include invitations to tribal governments, non-governmental public safety agencies and federal agencies operating within their regions.

The focus of this investment is to provide funding for regions to determine the best approach and solution to regional communication needs and how they impact regional and statewide interoperability. As this is a primary focus of the SRB, Interoperability Committee the underlying approaches of the regional radio boards/regional advisory committees will be coordinated through that body.

Baseline- Stakeholder Involvement

This investment was established as a priority by a Interoperable Communication Workgroup established as part of the 2007 HS application process. That workgroup was composed of a number of state and local participants representing various geographic regions and disciplines throughout the state. The investment was subsequently vetted

through the SRB core planning group and presented at regional planning meetings related to the SCIP plan development. Investment justifications were finally approved by the SRB (Minnesota's SIEC) which has a multi-discipline and multi-jurisdictional composition.

Strategy- Statewide Communication Interoperability Plan Objectives

This investment supports gaps identified in Minnesota's SCIP and the PSIC criteria, in that it provides for a thorough statewide assessment of the existing communication infrastructure on a regional and county by county basis, an inventory of current capabilities needed for regional tactical interoperability planning and provides for the engagement of elected officials and all disciplines involved in public safety in the local and regional public safety communication planning process.

Minnesota's SCIP provides as follows:

Mission: To provide 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 communications resources within the state.

Goal 2: Support the planning and integration of local units of governments, tribal governments and non-governmental public safety entities onto the shared public safety communication backbone. Objective 2: Complete local enhancement studies by December 31, 2008 (note: vendors will assist in collecting baseline capability and resources for TIC plan as part of this process).

From a broader perspective, this investment supports the goals and objectives in the SCIP related to the development of a regional multi-disciplinary governance structure that incorporates tribal governments, federal agencies and non-governmental public safety providers from each region. In various interoperability workgroups related to this project and the SCIP process, the funding of detail local planning has been a top priority for stakeholders.

Strategy- Technology Priorities

This investment does not rely upon any specific technology. However, it is anticipated that in the process of conducting local planning and in evaluating local alternatives local officials will gain a greater understanding of what advantages might be achieved by adopting advanced technological solutions and improving spectrum efficencies. In a significant portion of the state, many users do not understand trunking technology or the attributes of different spectrums. Perhaps the most important element of this process is overlooked by local officials when they neglect to consider the needs of all public safety users within their jurisdiction. This proposed investment assures a thorough and comprehensive assessment of communication needs for all public safety users, including tribal and non-government providers operating in each region.

Strategy- All Hazards Mitigation Priorities

Effective communications is a critical common element in every public safety response. This investment does not relate to any specific hazard while any improvements in public safety communication will improve capabilities with respect to all hazards. Perhaps more important is the fact that full engagement in the planning process will empower regional advisory committees and regional radio boards and provide the basis upon which to build the cooperative planning necessary to develop further collaboration and agreements, including MOU's and SOP's.

The board application of this investment assures an assessment and planning that addresses all areas at risk of natural disaster, many smaller urban centers, the Port of Dultuh and counties bordering the Canadian border where unique challenges exist.

Program Management

The overall direction and coordination of this investment will be provided through the regional radio boards or the regional advisory committees, which are multi-discipline bodies. The department of public safety will provide direct assistance in the following manner:

• Engaging technical consultants to develop information upon plans in adjoining states and solutions developed in other statewide implementations (system of system approach).
• Engaging facilitators to develop the issues regionally and to assure full participation of all disciplines and entities, including tribal communities and non-governmental entities.
• Regional interoperability coordinators provide non-technical support to regional radio boards or regional advisory committees upon governance development and upon the need for memorandums of understanding and standard operating procedures.
• Regional interoperability coordinators will provide non-technical assistance to local officials concerning the process and objectives to be achieved through this planning and implementation process.
• Through the definition of the scope of work and the contracting process, the department of public safety will assure that local planning is done consistently across the state and that necessary information is acquired for tactical interoperability planning and training.

More broadly the Statewide Radio Board, acting as Minnesota's State Interoperability Executive Committee (SIEC) will assure that solutions and alternatives are consistent with the SCIP. As a practical matter, the SRB will rely upon its Interoperability Committee (broadly representing all regions and public safety disciplines, including tribal and non-government entities and federal agencies) to fully engage regional governance structures in this assessment and planning process.

DPS will monitor the progress of regional radio boards or regional advisory committees and report status to the SRB. Similarly, regional radio boards and regional advisory committees will be actively engaged in the basic implementation of the ARMER project with which this investment will be coordinated. In some cases, the implementation of solutions can and will be accomplished by the Department of Transportation in conjunction with the on-going implementation of the ARMER backbone.

Investment Challenges

There are not enough qualified communication consultants available locally to address the number of local assessments needed.		Mitigation: Coordinate the publication of RFP's regionally to attract responses from national consulting firms.
State contracting process is not flexible enough to allow the state to cooperatively achieve the most comprehensive assessment.		Mitigation: Resolve contracting issues at the state level and structure transactions to avoid direct state to local contracting.
The level of understanding of modern communication capabilities among local elected and public safety officials precludes an open discussion and evaluation of trends in public safety communication and solutions.		Mitigation: Structure assessments regionally to garner support from local sources and encourage continued development and engagement of regional advisory committees and regional radio boards to support education and discussion of alternatives.
The department of public safety is unable to provide the high level of non-technical support necessary to accomplish the assessments over the period of time allocated.		Mitigation: DPS staff and contractors will be in place as contracts are made. Time lines can be extended as they are well within the PSIC grant period.

Impact- Outcomes

The most important outcome of this investment will be a comprehensive assessment of the current status of public safety communications throughout the state, including an assessment of the need for upgrades or replacement and an assessment of alternatives solutions and their cost. By necessity this planning, coordination and acquisition process includes the education and engagement of local officials in a discussion of their local communication needs. The process also provides for a discussion of how interoperability will be achieved for each potential solution. The regional construct of the assessment provides the opportunity to coordinate solutions throughout the region and discuss the need or opportunities to coordinate interoperability regionally, with bordering states and with the Canadian provinces.

Through this planning, coordination and acquisition processes each county will be able to develop a comprehensive plan for the replacement of aging public safety communication equipment. Based upon those plans, local officials will need to determine timelines and funding strategies for local improvements.

Through this regional planning and coordination investment, resource information will be gathered for tactical interoperability planning purposes. That information will be entered into the CASM tool for further coordination. The results of this process will be the creation of regional tactical interoperability plans that will be coordinated to address statewide tactical interoperability planning requirements.

Perhaps the most important outcome from this investment will be the establishment of the regional governance structures. Building upon the engagement and education of local public safety officials of this assessment process will help in creating a strong regional governance structure that continues to incorporate the participation of multiple disciplines, tribal governments and the variety of non-governmental public safety entities operating within the region to continue to address the multiple issues of interoperability,

Impact- Cost Effective Measures

A basic premise of Minnesota's plan for a statewide public safety communication system (ARMER), is the fact that a standards based shared infrastructure in the most cost effective way to provide reliable public safety communications. The trunked technology provides the most efficient use of spectrum and a statewide backbone provides the network to link communications together, irrespective of spectrum. Similarly, the trunked technology provides tremendous flexibility in addressing local and regional communication needs by structuring regional talkgroups and gateways to address those regional needs.

A major premise in Minnesota's SCIP is that the ARMER backbone provides a scalable infrastructure for all regional and local pulblic safety entities. Yet, that SCIP also recognizes that where local governments are investing a substantial amount of money in local infrastructure, they must thoroughly assess their alternatives. This investment clearly encourages cost-effective measures by assuring planning to address all the public safety needs of the county and region (including tribal and non-governmental); not just the law enforcement communication system. Similarly, it provides for a regional engagement where the discussion of communication takes on a much greater perspective of interoperability.

Although the subject of another investment justification with distinctly separate scope (See Investment#5), the implementation of a statewide infrastructure provides the opportunity to link legacy systems into the ARMER backbone in a very cost effective manner. The development of a basic VHF/UHF interoperability capability and the coordination of this resource throughout the state provides an enhanced capability for legacy VHF to legacy VHF system users, a scalable migration path and better interoperability planning and discussion across the state. This investment provides for the local assessment and planning necessary for counties to determine their future course of action with respect to public safety communications.

Impact- Sustainability

This investment provides for the basic planning, coordination and preliminary acquisition work related to public safety communications and interoperability. It does not, however, provide the funding for the actual acquisition of a specific solution.

Upon the completion of this basic planning, coordination and preliminary acquisition process, local and regional public safety officials and elected officials will have the information they need to make sound business decisions about the course of public safety communications in their counties and regionally. The resulting comprehensive planning and coordination process, itself, will not require any additional sustainment at the local or regional level.

Information acquired through this process to build regional tactical interoperability plans will require continued maintenance and coordination. The department of public safety has funded an Interoperability program (legislative appropriations) to provide ongoing support for these efforts. Similarly, tactical interoperability planning and coordination continue to be a primary focus of the Division of Homeland Security and Emergency Management in their emergency response planning.

I. Investment Heading

INVESTMENT # **4**

State/Territory Name: Minnesota

Investment Name: Local/County/Regional comprehensive public safety communication assessment (Current infrastructure, alternative solutions and alternative selection-55

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

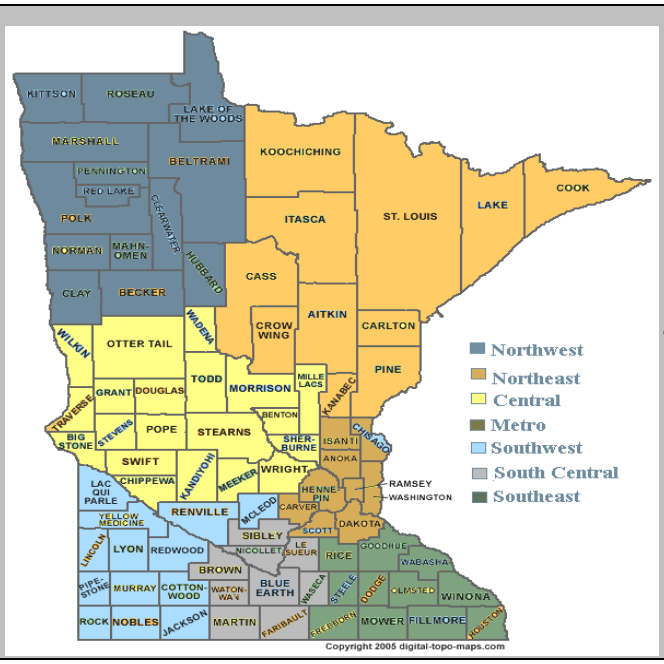
List the jurisdictions served by this project: Local and tribal governments and NG P.S. entities within 55 counties of state.

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management to include all P.S. entities

X. Attachments

X. - Attachment(s)



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I. Investment Heading

INVESTMENT # **5**

State/Territory Name: Minnesota

Investment Name: VHF/UHF Interoperability- ARMER Backbone (78 Counties- effecting all Public Safety services and tribal governments in those counties)

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: Local and tribal governments and NG P.S. entities within 78 counties of state.

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

V. Funding Plan

V.A. Funding Plan

Detail the total estimated cost for the Investment throughout the PSIC period of performance (FY 2007 – FY 2010). Describe any other concurrent funding sources that may also support this Investment, including form of cost share. Detailed estimated expenditure plan which credibly demonstrates ability to meet expenditure deadline of September 30, 2010.

	PSIC Federal Funds Requested	Non-Federal Matching Fund Amount	Total Investment*
Acquisition	$ 3,000,000.00	$ 750,000.00	$ 3,750,000.00
Deployment			$ -
Training			$ -
Planning/Coord.	$ 300,000.00		$ 300,000.00
Total	**$ 3,300,000.00**	**$ 750,000.00**	**$ 4,050,000.00**

** - Total investment includes the Non-Federal Match and Total PSIC Federal Funds Requested. 20% match is required for all Acquisition and Deployment funds; however, match can be identified and allocated at either the Investment level or the total PSIC IJ level (on the Overall Funding Summary tab). Therefore, individual investments can be undermatched or overmatched according to the needs of the applicant.*

V.B. Matching Plan

How does your Investment meet the non-Federal cash or in-kind matching requirement? Please itemize both the funding category and amount in the table below. (1,000 Char. Max)

The $750,000 matching funds will be provided in connection with the implementation of ARMER project when funds authorized for the ARMER project are available (Phase Three funding were authorized in 2005. Bonding for the remaining build out is not authorized until July 2008 after detail design and financial planning is completed. An annual appropriations of uncommitted funds is available to the SRB for this purpose.). The details of the VHF/UHF interoperability infrastructure are not yet determined, but upon the development of specific plans incorporating the interoperability infrastructure into the ARMER backbone and the adoption of those plan by the Statewide Radio Board funds will be made available to provide the matching funds necessary to

Non-Federal Matching Fund Category	Non-Federal Matching Fund Amount
Cash - State	$ 750,000.00
Cash - Local/Tribal	
Cash - Non-governmental	
In-Kind - Donated volunteer services	
In-Kind - Donated salaries	
In-Kind - Donated equipment	
In-Kind - Donated property	
In-Kind - Indirect costs	
Other*	
Total	**$ 750,000.00**

** - Please explain "Other" in the 'Matching Plan' dialog box above.*

Total Matching Fund Amount Must be Equal to Section V.A. Total Matching Fund Amount of: $ 750,000.00

Matching Self Check: OK

I. Investment Heading

INVESTMENT # **5**

State/Territory Name: Minnesota

Investment Name: VHF/UHF Interoperability- ARMER Backbone (78 Counties- effecting all Public Safety services and tribal governments in those counties)

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: Local and tribal governments and NG P.S. entities within 78 counties of state.

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

VI. Milestones

VI. Milestones

Provide specific milestones for the Investment over the PSIC period of performance (FY 2007 – FY 2010), including a description, and start and end dates for each milestone; up to 10 milestones may be provided. (850 Char. max per milestone)

Milestone #1

State to engage contractor to thoroughly develop overview of interoperability needs, to review plans in neighboring states, along Canadian border and in state's with similar statewide backbones and to determine potential technical solutions and approaches (including the availability of spectrum)- DPS Statewide Public Safety Interoperability Program Adminstrator will coordinate these items with regions.

Start Date: 04/01/08 **End Date:** 10/31/08

Milestone #2

State to engage facilitator to engage all regions (regional radio boards and regional advisory committees) and to assure participation of all disciplines and entities (including tribal and non-governmental entities) in determining the local and regional interoperability needs and to coordinate the planning process between regions.- DPS Statewide Public Safety Interoperability Program Adminstrator will coordinate these items with regions.

Start Date: 04/01/08 **End Date:** 10/31/08

Milestone #3

Regional radio boards or regional advisory committees engage consultants to determine the specific requirements for interoperability within each region, develop interoperability plans and present those plans to the Statewide Radio Board for incorporation into the ARMER plan.

Start Date: 04/01/08 **End Date:** 12/31/08

Milestone #4

Develop RFP's for implementation of regional interoperability solutions, contract with vendors to install equipment and to provide initial training on the use of selected interoperability solutions.

Start Date: 01/01/09 **End Date:** 03/31/10

Milestone #5

State to engage contractor to coordinate the development of standard operating procedures and memorandums of understanding necessary to use the selected interoperability solutions.

Start Date: 04/01/09 **End Date:** 10/31/09

Investment #5

Investment Name: VHF/UHF Interoperability- ARMER Backbone (78 Counties- effecting all Public Safety services and tribal governments in those counties)

Project Narrative

This investment addresses the need to design VHF and/or UHF interoperability into the ARMER platform (Minnesota's 700/800 MHz trunked communication system) and to utilize the backbone of the ARMER system as the "system of systems" to coordinate VHF and/or UHF interoperability among all public safety entities in the state. Its primary focus is to assure that both legacy and newer standards based system users operating in the VHF or UHF spectrum are always able to talk into the system, be linked into a talk group (via hard patch or soft patch) and thusly maintain at least a minimum level acceptable level of cross spectrum interoperability between systems.

The statewide implementation of the ARMER project by the 2007 legislature provided the opportunity to utilize the backbone of the ARMER system to enhance interoperability. Although the ARMER backbone will be capable of supporting local needs, virtually all public safety entities operating in the 78 effected counties currently operate conventional VHF systems and will continue to do so for many years. Although existence of a ubiquitous statewide backbone provides an opportunity to enhance interoperability, incorporating interoperability resources into the system also has the potential to change the operational characteristics of those resources.

Emphasizing the development and coordination of VHF and UFH resources can provide multiple benefits. It will assure interoperability between the ARMER system users and legacy communication system users, it establishes a baseline for the same interoperability between separate VHF and UHF systems, and it provides a vehicle for interoperability with adjoining states and federal agencies and is capable of providing cross spectrum interoperability between all VHF and UHF users.

This investment funds a comprehensive level of planning at the state level and the regional level to determine what VHF and/or UHF resources will be built into the ARMER backbone and how those resources must be used within the system and between conventional system users. Once the level of interoperability is determined through a comprehensive planning process, this investment also provides funds to implement solutions separately or within the ARMER backbone.

Baseline- Historical Funding and Request Name

When the ARMER system was first built in the Minneapolis/St. Paul metropolitan area (Phase One and Two) a significant VHF and UHF overlay was added to the backbone. There is currently no similar capability outside the nine county metropolitan area. Funding for that interoperability infrastructure at a cost of approximately $3 million was provided from funds available to the Metropolitan Radio Board which coordinated the project. The basic plan to expand the ARMER system throughout the remaining 78 counties (23 counties funded in 2005 and currently being implemented and 55 counties

authorized in 2007) does not specifically address the issue of VHF and UHF interoperability built into the backbone. Investment justifications for the coordination of VHF interoperability have been drafted as part of the homeland security grant process. However, no federal funds have been allocated to pursue this investment from those sources.

Baseline- Description of Need

This basic need addressed by this investment is to provide a base level of cross spectrum communication throughout the state with the ARMER system. Advanced technology has provided a number of solutions for cross spectrum communications, however, they all require basic infrastructure or overlapping coverage to work. This investment addresses that need by establishing a basic element of VHF coverage throughout the system. Experiences in the metropolitan area have also demonstrated that incorporating the existing VHF interoperability channels into the backbone changes the dynamics of those resources requiring a much greater effort to coordinate and train upon their usage.

In the recent freeway bridge collapse (8-1-2007, Interstate 35W) this VHF interoperability infrastructure provided one of the resources for public responders from outside the metropolitan area to make contact and report their availability and to receive instructions. Similarly, it continues to be important to provide this basic level of VHF interoperability for legacy and conventional VHF and UHF system users as the ARMER system is expanded across the state.

To the extent possible, this investment will identify existing VHF and UHF resources (traditional VHF/UHF interop frequencies and the extent to which they are monitored at PSAP's and EOC's) that can be used presently to enhance interoperability and resources that will become available in the future (VTAC and UTAC frequencies). Similarly, alternate solutions to enhance cross spectrum interoperability will be presented and discussed with intent to develop a comprehensive interoperability plan for the ARMER backbone and for VHF and/or UHF users now and into the future. An effort will be made to coordinate these resources with interoperability plans of our neighboring states. Finally, the greatest portion of this investment will be used for equipment to implement and coordinate those solutions with the ARMER backbone.

This investment will enhance interoperability by funding the planning for and the implementation of a basic level of overlapping coverage across the state necessary to link the spectrums together. It is anticipated that with the implementation of this investment standard operating procedures, training and exercising will be necessary to assure an ability to maintain the capability. (See Investment# 6 & 7) However, it is also anticipated that this basic level of cross spectrum interoperability will be incorporated into daily usage of equipment and resources.

Baseline- Description of Governance Structure and Activities

Minnesota is in the process of expanding its public safety communication governance structure. The Statewide Radio Board (SRB) which was initially formulated to oversee the implementation of Minnesota's ARMER system has recently been designated as

Minnesota's State Interoperability Executive Committee (SIEC) and has established an Interoperability Committee to deal with interoperability issues. The statute creating the SRB provides for the establishments of regional advisory committees and regional radio board under Minn. Stat. §403.39 which will be a integral part of the STR planning process.

Based upon the PSIC grant process regional organizational efforts have moved ahead. The SRB Interoperability Committee will form the basis for interoperability planning, but the continued integration of regional planning continues to be necessary to assure full participation by regional members, including non-governmental and tribal organizations. This process anticipates the development of regional tactical interoperability plans, standard operating procedures and, where necessary, memorandums of understanding.

See the attached diagram of regional radio boards and regional advisory committees. At the present time, there are two regional radio boards (joint powers authorities) covering 27 counties (Metropolitan Emergency Services Board and Central MN Regional Radio Board). Formation of regional advisory committees (precursor to regional radio boards) is underway in the remaining 60 counties into five regions with preliminary drafts of joint powers agreements under consideration in at least two of those five regions. Regional activities are multi-discipline and include invitations to tribal governments, non-governmental public safety agencies and federal agencies operating within their regions.

With respect to this investment, the SRB- Interopability Committee will play a keep role in determining the appropriate operability solutions and in establishing the standards and procedures necessary to assure their usage.

Baseline- Stakeholder Involvement

This priority was first established as part of the Communication Interoperability Workgroup in connection with the 2007 Homeland Security application process. That workgroup was composed of a number of state and local participants representing various geographic regions of the state, including representatives from each homeland security region. Establishing a plan for VHF and UHF interoperability was high priority. It was subsequently vetted through a core planning group appointed by the SRB and presented for discussion at various regional planning committee meetings related to the SCIP plan development. Police, sheriff, fire, emergency medical service (most Non-governmental), emergency management, tribal and federal groups were represented at various meetings. Investment justifications were finally approved by the SRB which has a multi-discipline and multi-jurisdictional composition.

Strategy- Statewide Communication Interoperability Plan Objectives

This investment specifically addresses gaps identified in the SCIP and goals and objectives provided for in the SCIP as follows:

Goal One: Complete the construction of the shared public safety communication system (ARMER); Objective: Develop a preliminary plan for VHF and/or UHF interoperability for the ARMER backbone by December 31, 2008. Note: The time line for this objective must be viewed within the context of the objective to substantially complete the ARMER system throughout the state by December 31, 2012. However,

prelliminary planning is underway to provide the basic level of coverage across the state within the PSIC grant period.

Goal Five: Develop a plan to provide the highest practical level of interoperability between the ARMER backbone and independent public safety communication systems, between other existing public safety communication systems within the state (local, regional, state, tribal, military and federal) and with appropriate public safety agencies bordering states and countries; Objective: Investigate, develop and test specific technical and operational plans on how existing VHF and UHF interoperable resources might be organized and integrated into public safety communication systems (ARMER and independent systems) by December 31, 2008.

Additional note should be taken of the fact that collectively and comprehensively, the goals and objectives establish the need and intent (through goals and objectives) to address the implementation of various solutions, incorporate those solutions in tactical plans, including developing standard operating procedures and to train and exercise those solutions to assure their effectiveness.

This investment provides for the planning and coordination of and acquisition of equipment necessary to provide a basic level of cross spectrum interoperability statewide between legacy systems (VHF & UHF) and the ARMER backbone. It supports interoperability with legacy system users who must continue to use their existing infrastructure throughout the useful life of their systems and provides an element of the migration path for public safety users to transition from existing conventional systems to the ARMER backbone.

Strategy- Technology Priorities

This investment supports advanced technologies by supporting interoperability across spectrums into a standards based trunked communication system operating in the 700/800 MHz spectrum. Although the most efficient use of advanced technology would be to transition all users on to the ARMER system, that objective will not occur for many years to come. Similarly, interoperability can be established more efficiently between systems where there is overlapping coverage through system based gateways or patches. This investment, however, addresses the basic level of interoperability between (VHF/UHF) and the ARMER system backbone throughout the state. That basic level of interoperability is necessary to assures that any VHF or UHF system users can be linked into an appropriate interoperability talk group to provide a connection between users.

It is clear that this investment is technically feasible and can be implemented with equipment and technology that is currently available and that can be acquired and deployed within the PSIC grant period.

Strategy- All Hazards Mitigation Priorities

Effective communications is a critical common element in every public safety response. This investment does not relate to any specific hazard while any improvements in public safety communication will improve capabilities with respect to all hazards. Establishing and coordinating the basic level of VHF/UHF interoperability throughout the ARMER system supports the ability of all public safety responders from across the state to

communication and supports the ability of public safety responders to respond to urban areas where a greater risk from various unspecified hazards exist. Providing this basic level of VHF/UHF interoperability allows for coordination with neighboring states where conventional VHF systems tend to dominate the public safety community.

The importance of this investment is noted with respect to the 35W bridge collapse in Minneapolis on August 1, 2007 where a number of the initial responders were operating on VHF systems. The VHF interoperability infrastructure provided in the backbone of the ARMER system provided the basic level of communication and interoperability for those responders operating outside the coverage of their home systems. Unfortunately, the basic level of interoperability provided for in this investment is only available in the nine counties making up the original phase one and two of the ARMER implementation.

It is the intent of this investment to replicate, to the degree possible, a level of basic VHF/UHF interoperability throughout the remaining portions of the state. And, in doing so, to utilize the regional construct to provide unique solutions for the needs of specific hazards, such as the Port of Duluth, the international border and others.

Program Management

The overall direction and coordination of this investment will be provided through the regional radio boards or the regional advisory committees, which are multi-discipline bodies. The department of public safety will provide direct assistance in the following manner:

• Engaging technical consultants to develop information upon plans in adjoining states and solutions developed in other statewide implementations (system of system approach).
• Engaging facilitators to develop the issues regionally and to assure full participation of all disciplines and entities, including tribal communities and non-governmental entities.
• Regional interoperability coordinators provide non-technical support to regional radio boards or regional advisory committees upon governance development and upon the need for memorandums of understanding and standard operating procedures.
• Regional interoperability coordinators will provide non-technical assistance to local officials concerning the process and objectives to be achieved through this planning and implementation process.
• Through the definition of the scope of work and the contracting process, the department of public safety will assure that local planning is done consistently across the state and that necessary information is acquired for tactical interoperability planning and training.

More broadly the Statewide Radio Board, acting as Minnesota's State Interoperability Executive Committee (SIEC) will assure that identified solutions and alternatives are consistent with the SCIP. Solutions must be incorporated into the ARMER plan by the SRB before matching funds are made available. As a practical matter, the SRB will rely upon its Interoperability Committee (broadly representing all regions and public safety disciplines, including tribal and non-government entities and federal agencies) to fully engage regional governance structures in this assessment and planning process.

DPS will monitor the progress of regional radio boards or regional advisory committees and report status to the SRB. Similarly, regional radio boards and regional advisory committees will be actively engaged in the basic implementation of the ARMER project with which this investment will be coordinated. In many cases, the implementation of

solutions can and will be accomplished by the Department of Transportation in conjunction with the basic implementation process.

Investment Challenges

Regional participants lack an understanding of the basic technical issues.		Mitigation: Provide resources for regional radio boards or regional advisory committees to engage consultants to educate then and to develop issues around regional interoperability needs and requirements.
2. Local portables and mobiles are not capable of providing capacity to operate on interoperability resources developed as part of this investment.		Mitigation: The specific details of this investment are not yet developed and may need to accommodate the lack of flexibility with existing equipment.
3. Developing wideband VHF & UHF resources to be used for regional or statewide interoperability purposes.		Mitigation: Engage a contractor to determine availability of resources and to examine alternatives to free up frequencies and to coordinate those resources with plans in neighboring states and Canada, where applicable. Lacking a solution there, look to V-TAC and U-TAC frequencies and determine the extent to which local entities might be able to operate on those frequencies.
4. Implementation of the ARMER backbone is delayed.		Mitigation: Focus upon existing tower sites (local or state owned- that already provide for basic VHF coverage for state patrol and other state agencies) and connect them into the ARMER system through the existing state's digital microwave network and

		rely upon console level patches to selectively integrate the interoperability infrastructure into the ARMER backbone.

Impact- Outcomes

The impact of this investment will be to establish and coordinate a basic level of VHF and UHF interoperability across the state using the ARMER backbone to integrate that interoperability across spectrums. This investment provides the system based connection between conventional legacy communication systems and the ARMER backbone providing a reliable input link for VHF and UHF system users operating outside the coverage of their local infrastructure. It also provides for the development of the standard operating procedures necessary to assure their usage.

This investment will specifically addresses gaps identified in the SCIP and goals and objectives provided for in the SCIP as follows:

Goal One: Complete the construction of the shared public safety communication system (ARMER); Objective: Develop a preliminary plan for VHF and/or UHF interoperability for the ARMER backbone by December 31, 2008. Note: The time line for this objective must be viewed within the context of the objective to substantially complete the ARMER system throughout the state by December 31, 2012. However, preliminary planning is underway to a basic level of coverage statewide within the PSIC grant period.

Goal Five: Develop a plan to provide the highest practical level of interoperability between the ARMER backbone and independent public safety communication systems, between other existing public safety communication systems within the state (local, regional, state, tribal, military and federal) and with appropriate public safety agencies bordering states and countries; Objective: Investigate, develop and test specific technical and operational plans on how existing VHF and UHF interoperable resources might be organized and integrated into public safety communication systems (ARMER and independent systems) by December 31, 2008.

The ARMER backbone facilitates interoperability in a number of ways. For participants, it provides basic communications on a standard based shared system capable of providing multiple talkgroups upon which to provide essential communications. For non-participating entities (legacy VHF and UHF conventional systems) operating in the coverage area of their systems can be linked together through gateways and console level patches where there is overlapping coverage. Finally, through this investment the basic level of VHF/UHF interoperability designed into the system can be used to provide all conventional system users (VHF/UHF)with a basic communication capability and where that capability is coordinated with neighboring state's operating conventional systems it can provide the basic link for their users. This investment is designed to address that final level of interoperability and to provide an interoperability resource that can be coordinated across the state and with neighboring states.

The success of this investment will be demonstrated first upon the planning process with the submission of technical plans to the SRB for adoption. Next upon the

implementation of the proposed solution and finally upon the exercise and usage of the infrastructure.

The basic timeline for these outcomes would be as follows:

1. Full implementation of the VHF/UHF interoperability infrastructure in Phase Three region by the end of 2008 making that resource availble to all public safety disciplines and tribal governments within that region.
2. Implementation of the VHF/UHF interoperability resources in the remainder of the state provided in this investment upon existing towers during the PSIC grant period making that resource availble to all public safety disciplines and tribal governments within the region.

As the planning and development of this investment will proceeding with the much earlier, along with the development of regional tactical interoperability plans, these resources will be incorporated into TIC plan process and be the subject of training and exercise. Regional communication exercises are anticipated by June 30, 2009 (See: SCIP Goal #3)

Impact- Cost Effective Measures

The exact details of this investment are not totally developed. However, the basic premise upon which this investment is predicated is that there is a need to establish this basic level of VHF and/or UHF interoperability throughout the state and to coordinate that level of interoperability with the plans in adjoining states. Based upon the implementation of a statewide 700/800 MHz standards based shared system throughout the state, the most practical way to accomplish this is to integrate that VHF/UHF communication infrastructure into the backbone providing the flexibility to link that infrastructure into various regional and statewide interoperability talkgroups.

The basic essentials of this investment are to plan, coordinate, acquire and install VHF and/or UHF transceivers at various locations within the state and link them into the ARMER backbone. It is the most cost effective way to accomplish the design objectives.

Similarly, the alternative to simply renew existing systems for all disciplines and users is simply not viable. Minnesota's overall objective is to develop an scalable infrastructure, open to all disciplines and public safety users that will address present and future public safety needs. This investment is an economical way to provide for establish interoperability within the foreseeable future and to allow local entities to plan and budget for the replacement of legacy systems as they approach the end of their life cycle. Additionallly, this investment will continue to provide a level of VHF interoperability that can be coordinated with neighboring states who have elected to stay with strategies dominated by VHF spectrum use.

Impact- Sustainability

The Minnesota legislature has provided funding for the maintenance and operation of the backbone of ARMER system as it is implemented across the state. To the degree that proposed solutions are incorporated into the backbone of the ARMER system, the

sustaining costs to maintain and operate the VHF/UHF infrastructure integrated into the ARMER backbone will be accommodated as regional improvements to the ARMER system.

I. Investment Heading

INVESTMENT # **5**

State/Territory Name: Minnesota

Investment Name: VHF/UHF Interoperability- ARMER Backbone (78 Counties- effecting all Public Safety services and tribal governments in those counties)

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

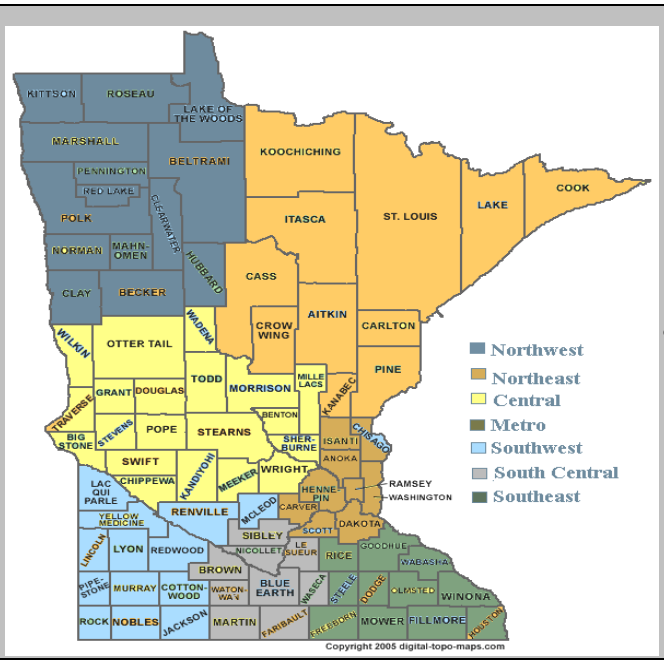
List the jurisdictions served by this project: Local and tribal governments and NG P.S. entities within 78 counties of state.

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

X. Attachments

X. - Attachment(s)



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I. Investment Heading

INVESTMENT # **6**

State/Territory Name: Minnesota

Investment Name: Planning and Training for Equipment and Communications Interoperability- State Component to develop statewide cirrucula and learning objectives

Grantee Type: Other State Agency (Non-SAA)

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: All P.S. entities throughout the state.

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

V. Funding Plan

V.A. Funding Plan

Detail the total estimated cost for the Investment throughout the PSIC period of performance (FY 2007 – FY 2010). Describe any other concurrent funding sources that may also support this Investment, including form of cost share. Detailed estimated expenditure plan which credibly demonstrates ability to meet expenditure deadline of September 30, 2010.

	PSIC Federal Funds Requested	Non-Federal Matching Fund Amount	Total Investment*
Acquisition			$ -
Deployment			$ -
Training	$ 200,000.00		$ 200,000.00
Planning/Coord.	$ 330,000.00		$ 330,000.00
Total	**$ 530,000.00**	**$ -**	**$ 530,000.00**

** - Total investment includes the Non-Federal Match and Total PSIC Federal Funds Requested. 20% match is required for all Acquisition and Deployment funds; however, match can be identified and allocated at either the Investment level or the total PSIC IJ level (on the Overall Funding Summary tab). Therefore, individual investments can be undermatched or overmatched according to the needs of the applicant.*

V.B. Matching Plan

How does your Investment meet the non-Federal cash or in-kind matching requirement? Please itemize both the funding category and amount in the table below. (1,000 Char. Max)

There is no match requirement to this investment.

Non-Federal Matching Fund Category	Non-Federal Matching Fund Amount
Cash - State	
Cash - Local/Tribal	
Cash - Non-governmental	
In-Kind - Donated volunteer services	
In-Kind - Donated salaries	
In-Kind - Donated equipment	
In-Kind - Donated property	
In-Kind - Indirect costs	
Other*	
Total	**$**

** - Please explain "Other" in the 'Matching Plan' dialog box above.*

Total Matching Fund Amount Must be Equal to Section V.A. Total Matching Fund Amount of: $ -

Matching Self Check: OK

I. Investment Heading

INVESTMENT # **6**

State/Territory Name:	Minnesota
Investment Name:	Planning and Training for Equipment and Communications Interoperability- State Component to develop statewide cirrucula and learning objectives
Grantee Type:	Other State Agency (Non-SAA)
Is this a multi-jurisdictional or statewide project?	Yes
List the jurisdictions served by this project:	All P.S. entities throughout the state.
Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)?	Yes
List the disciplines served by this project:	Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

VI. Milestones

VI. Milestones

Provide specific milestones for the Investment over the PSIC period of performance (FY 2007 – FY 2010), including a description, and start and end dates for each milestone; up to 10 milestones may be provided. (850 Char. max per milestone)

Milestone #1

State to engage a contractor to access overall training needs (including interoperable equipment based training and procedural training requirements) throughout the state, review training developed in other states and develop basic training curricula and learning objectives.

Start Date: 06/01/08 **End Date:** 10/31/08

Milestone #2

Basic training curricula, learning objectives and any instructor certification criteria to be established and approved by the SRB (Minnesota's SIEC).

Start Date: 11/01/08 **End Date:** 12/31/08

Milestone #3

SRB (Minnesota's SIEC) to determine immediate interoperable communication training and educational needs that should be addressed with existing resources.

Start Date: 01/01/08 **End Date:** 04/30/08

Milestone #4

Regional Radio Boards and Regional Advisory Committees contract for training, as necessary to address immediate interoperable training needs, including equipment specific training.

Start Date: 05/01/08 **End Date:** 09/30/10

Milestone #5

State to identify a resource and assist in coordinating the provision of Communication Leader training to various regions of the state.

Start Date: 05/01/08 **End Date:** 12/31/08

Investment #6

Investment Name: Planning and Training for Equipment and Communications Interoperability- State Component to develop statewide cirrucula and learning objectives

Project Narrative

This investment addresses the need to aggressively address communication training for broad range of equipment and public safety personnel and elected officials throughout the state. As the state continues to make a substantial investment in communication infrastructure, the need for training upon equipment use, standard operating procedures and incident management principles must be addressed. As the SCIP was developed, the lack of basic education and training upon all aspects of communication and interoperability (basic radio principles, equipment based training and interoperable procedures and standards) was identified as a substantial gap in the process.

Through this investment, the department of public safety (DPS) would take the lead to develop training curricula and learning objectives. The process would require broad involvement of stakeholders in assessing the training needs and would be coordinated with the assessment of equipment and capabilities provided for in other investment to make sure equipment capabilities and attributes are incorporated into the training. Equipment based and procedural based resources, such as radio caches, shared channel use, gateways and the interoperability accessible in the ARMER backbone would be incorporated into the training. The SRB Interoperability Committee (broadly representing all regions, disciplines, tribal governments and federal agencies) would be an essential stakeholder in this process. However, it would also require substantial engagement with the various regional advisory committees and regional radio boards within the state. DPS would contract with a vendor to develop a core group of instructional courses that will address the gap. The qualifications and certification of trainers, who will generally be recruited from the public safety community, would also be addressed. Of particular import is the need to provide Communication Leader training throughout the state (DHS standards and requirements already exist) and the necessity to provide equipment related training for interoperable equipment, such as ACU-1000 and other gateway devices.

This investment corresponds with Investment #7 which provides additional resources to regional radio boards or on behalf of regional advisory committees to pay for the local cost of training. It is anticipated that these training efforts will be coordinated with the regional homeland security regions and more broadly with the Statewide Radio Board Interoperability Committee to assure coordination and efficient delivery.

Of note is the fact that training provided for in this investment would be available to tribal governments and non-governmental public safety entities on an equal basis.

Baseline- Historical Funding and Request Name

Equipment based training has been an essential element of the ARMER system deployment. In 2006, the Statewide Radio Board provided funding for the development

of equipment based training related to 700/800 MHz subscriber equipment. The Metropolitan Radio Board did develop and provide equipment specific training prior to 2004 with funds allocated to them by the legislature. The Metropolitan Emergency Services Board (regional radio board in the Minneapolis/St. Paul metropolitan area) did receive DHS funds to conduct some planning and training in 2005. Training and exercising continues to be a subject of investment justifications in the DHS grant process but funds have not been allocated to training for this purpose in 2007. Training initiatives under this investment are distinctly separate from any previously DHS funded initiatives.

Baseline- Description of Need

This need for specific hands on equipment based and operational based training can not be overemphasized. In years past, equipment based training has been connected with the initial acquisition of communication equipment. With respect to traditional push to talk communication equipment, there is has been very little training associated with acquisition and deployment of equipment.

The implementation of a feature rich standards based shared infrastrucutre in the Minnespolis/St. Paul metropolitan area clearly demonstrated the need for initial scenario based training of the equipment and its capabilities. Similarly, the extensive feature set of a trunked radio system requires periodic reinforcement of advanced interoperability capabilities.

The need and benefits of that training are demonstrated by the perfect score the Twin City, MN UASI region obtained on its Tactical Interoperability Plan exercise and even more clearly during a real event when the 35W bridge collapsed in Minneapolis on 8/1/2007. The initial scenario based equipment training and follow up training that clearly integrated standard operating procedures and appropriate methods were demonstrated in the ability to use the equipment effectively. Similarly, appropriate and timely training are necessary to achieve the spectrum efficencies and other benefits of technology we are trying to achieve. Acquiring advanced technolgies without providing for the training would be a clear waste. Scenario based training reinforces skills and capabilities that can be applied to any hazard or response.

The Statewide Radio Board continues to address this need for training for system users. The lack of formal training related to interoperability equipment and interoperability procedures related to incident command operations has been identified as a gap that must be addressed. The lack of training standards and learning objectives necessary to define a comprehensive level of training for operational personnel at all levels continues to preclude the appropriate development of courses, including basic communication indoctrination, equipment specific training and interoperability procedures.

This investment is designed to develop resources that will be applicable and available throughout the state. A collateral benefit of this standardized training would be the enhanced interaction and interoperability that will come from training together. This investment centralizes the training component for all PSIC investment justifications to assure that sustainable training is developed around equipment and around the procedures.

Baseline- Description of Governance Structure and Activities

Minnesota is in the process of expanding its public safety communication governance structure. The Statewide Radio Board (SRB) which was initially formulated to oversee the implementation of Minnesota's ARMER system has recently been designated as Minnesota's State Interoperability Executive Committee (SIEC) and has established an Interoperability Committee to deal with interoperability issues. The statute creating the SRB provides for the establishments of regional advisory committees and regional radio board under Minn. Stat. §403.39 which will be a integral part of the STR planning process.

Based upon the PSIC grant process and the ARMER implementation regional organizational efforts have moved ahead. The SRB Interoperability Committee will form the basis for interoperability planning, but the continued integration of regional planning continues to be necessary to assure full participation by regional members, including non-governmental and tribal organizations. This process anticipates the development of regional tactical interoperability plans, standard operating procedures and, where necessary, memorandums of understanding.

See the attached diagram of regional radio boards and regional advisory committees. At the present time, there are two regional radio boards (joint powers authorities) covering 27 counties (Metropolitan Emergency Services Board and Central MN Regional Radio Board). Formation of regional advisory committees (precursor to regional radio boards) is underway in the remaining 60 counties into five regions with preliminary drafts of joint powers agreements under consideration in at least two of those five regions. Regional activities are multi-discipline and include invitations to tribal governments, non-governmental public safety agencies and federal agencies operating within their regions.

DPS has established an Interoperability Program with a program administrator and three regional interoperability coordinators who will work closely with regional radio boards, regional advisory committees, local users and the SRB Interoperability Committee to develop standard operating procedures and operational agreements. It is a primary function of this program to provide direct support to regional and local public safety entities in developing tactical interoperability plans, training and exercises. The interoperability program administrator provides direct support to the SRB-Interoperability Committee.

Baseline- Stakeholder Involvement

This priority was has been the topic of various communication interoperability workgroups. Both the UASI region, the metropolitan Homeland Security Region and the two existing Regional Radio Boards have commented upon this topic. Similar discussion with developing regions demonstrate the need for basic communication training, equipment specific training and interoperable communication training. This investment was subsequently vetted through a core planning group appointed by the SRB and presented for discussion at various regional planning committee meetings related to the SCIP plan development. Investment justifications were finally approved by the SRB which has a multi-discipline and multi-jurisdictional composition.

The need for consistent and structured training to educate public safety officials and elected officials on communication technology and interoperable communication issues

is raised in every organizational and governance setting. It is a continuing priority for the SRB.

Strategy- Statewide Communication Interoperability Plan Objectives

Through the development of the SCIP, the lack of a basic understanding of contemporary and emerging communication technology was a fundamental obstacle to the full engagement and participation of a large portion of the regional participants (public safety officials). Public safety communication systems throughout a significant portion of the state tend to be a patchwork of "low tech" solutions provided by local vendors. In an environment where many communities are challenged by basic issues of "operability" within their boundaries a discussion of repeaters, voting receivers, trunking technology, of the characteristics of different spectrum and of gateways and patches is incomprehensible to many.

Similar issues are raised in environments where technical solutions have been implemented. Users of feature rich subscriber equipment (portables and mobiles) must be trained in how to use the equipment and in how to access those features that facilitate interoperability. Principles of operations and scenario based training are needed to assure operators and users are able utilize those resources effectively at the time they are needed.

The need to address these issues of education and training are recognized as a basic deficiency to be addressed in the Minnesota's SCIP development process. The need to engage and educate all participants is represented in virtually every goal and objective of the SCIP. There is specific reference to tactical interoperability training, as follows at Goal #3; Objective 4: "Provide initial and ongoing Communication Leader Training programs for selected regional representatives by December 31, 2008." However, every reference to the development of plans, standard operating procedures and solutions presupposes informed and engaged participants able to contribute to the process and operational personnel that are able to utilize the resources developed under the SCIP. The development of meaningful training curricula in basic communications and in utilizing communication resources to their maximum capability is a well recognized challenge requiring attention and resources.

Strategy- Technology Priorities

This investment is not specifically tied to any specific technology. It is, however, an essential element in the process of placing a priority upon the consideration and use of advanced technology. First way a technology priority is addressed is by assuring the key stakeholders and participants are informed and understand the technology. The next way the technology priority is addressed in this investment is by developing training to assure that users are initially and continuously trained in how to access (standard operating procedures) and use the interoperability resources available to them.

This investment also allows for greatest flexibility in technical solutions that allow cross spectrum operation and the continued integration of legacy communication infrastructure into the shared backbone. A fundamental understanding of how the technical solutions

might be integrated into existing systems provides users with a greater ability to provide input in the development of operational procedures.

Strategy- All Hazards Mitigation Priorities

This investment provides for systemic improvements in the ability to utilize the communication resources and procedures that can be used in any circumstances or in response to any incident. In fact, the most efficient and effective interoperable resource will be one that is integrated into daily use and becomes second nature to users.
It is anticipated that portions of the training curricula developed under this investment will include scenario based training. For training purposes, those scenarios will be based upon local and contemporary hazards. However, the basic skills developed and reinforced in those user based training scenarios will be readily adaptable to new situations and multiple hazards.
This investment justification is not specifically designed to address any particular areas of high risk for natural disasters or urban areas at high risk for threats of terrorism, except to note that it is addressed at a broad public safety community across the state. It broadly enhances interoperable communication across the state, including urban areas, the Port of Duluth and areas along the Canadian border.

Program Management

The overall direction and coordination of the training investments (Inv #6 and Inv #7) will be through the SRB by the establishment of training standards. Regional radio boards or the regional advisory committees, which are multi-discipline bodies, will play a significant role in providing the training and tailoring it to regional needs. The department of public safety will provide direct assistance in the following manner:
• Identify a resource to offer appropriate Communication Leader Training in connection with the development of regional tactical interoperability plans.
• Engaging technical consultants assess interoperable communication training needs and to develop a curricula and learning objectives for that training.
• Present various training issues to the SRB (Minnesota's SIEC) through the Interoperability Committee.
• Assist in developing resource list of trainers who can provide training that addresses immediate training needs and basic training cricula and learning objectives once developed and approved.
• Regional interoperability coordinators provide non-technical support to regional radio boards or regional advisory committees upon governance development and upon the need for memorandums of understanding and standard operating procedures.
• Regional interoperability coordinators will provide non-technical assistance to local officials concerning the process and objectives to be achieved through this planning and implementation process.
More broadly the Statewide Radio Board, acting as Minnesota's State Interoperability Executive Committee (SIEC) will develop additional training standards. As a practical matter, the SRB will rely upon its Interoperability Committee (broadly representing all regions and public safety disciplines, including tribal and non-government entities and

federal agencies) to fully engage regional governance structures in this assessment and planning process.
The Division of Homeland Security and Emergency Management provides overall administrative oversight for the PSIC grant funds and assures funds have been expended consistent with investment justifications.

Investment Challenges

1. Regional participants lack fundamental understanding of the issues necessary to participation in the development of curricula and learning objectives.		Mitigation: Engage local expertise developed in other areas of the state to work with new participants (metropolitan area and central Minnesota). Review similar efforts from other states.
2. Unable to find contractors or vendors able to provide training that specifically addresses local needs.		Mitigation: Develop local training resources, including train the trainer, and utilize local operational personnel to provide the training.
3. Inadequate resources committed to training		Mitigation: Continued engagement of SRB the training development and offering process to demonstrate the value and importance. SRB may be able to seek continued funding for this purpose.

Impact- Outcomes

The impact of this investment will be two fold, as follows:
• The first outcome will be to raise the overall level of discussion and understanding of contemporary communication technology and of interoperable communication planning, standard operating procedures and capabilities to a much higher level among all stakeholder and elected officials. In doing so, it is the intent that a much broader group of public safety responders will be brought into the discussion and that the overall discussion will accommodate a much broader community of public safety entities and users. In particular, tribal governments and non-governmental entities will be engaged in the process along with the traditional core group of public safety officials.
• The second outcome will be to provide a much more formal and structured development of training for operational personnel and to tailor that training to the equipment and needs of each region.
Scenario based training upon the following topics, as examples, are anticipated:

• Basic communication principles- capability
• Equipment based training for basic users (law enforcement, fire, EMS, emergency management, other governmental agencies and participate) and more engaged training for PSAP personnel and supervisors.
• Equipment based training on STR and interoperability resources, including gateways, deployable repeaters, satellite systems and user equipment used by other entities and capabilities of neighboring states and regions.
• Interoperability training to cover standard operating procedures and usage of interoperability resources and, in particular, Communication Leader training.
• Communication exercise design and evaluation.

This investment relates to the development of the curricula and learning objectives related to training of this nature. Similarly an emphasis would be placed upon defining certification of instructors and upon training operational personnel to provide the training.

An essential part of this investment is to engage the SRB (Minnesota's SIEC) in the discussion and adoption of specific training standards. With the continued implementation of the ARMER backbone throughout the state and the intended linkage of that backbone to existing legacy systems, the opportunity exists to standardize training and standards more broadly across the state. It is essential part of the governance structure to empower the regional radio boards and regional advisory committees to actively engage local units of government, tribal governments and non-governmental entities in the formulation standards and in the provision of training related to interoperability.

Measurement of the outcomes would be based upon the completion of ciricula and learn objectives. Once developed, outcomes would be measured and reported to the SRB by the classes and number of persons trained, number of jurisdictions included and the number of disciplines included. Evaluation of the effectiveness would also be measured in routine disaster exercises and in exercises constructed to specifically evaluate interoperable communication capabilities. See: Goal #3; Objective 5: "Conduct at least one regional Tactical Interoperable Communication exercise in each region and provide for formal evaluation of the exercise by June 30, 2009".

Impact- Cost Effective Measures

This investment does not rely upon any specific technology or methods against which the cost effectiveness of the investment might be evaluated. It does, however, recognize that the failure to train users and to institutionalize procedures can be lead to the failure of costly resources.

There are some elements of this training that might be provided "off the shelf." However, scenario based training to specifically incorporate local and regional procedures and equipment will have the most lasting impact. Blending the training requirements of an entire state is a significant challenge that can not be addressed in a generic way. It will require an investment in the engagement of stakeholders, tailoring training to regional needs and infrastructure and, whenever possible, utilizing local operational personnel to provide the training.

Impact- Sustainability

This investment is designed to address the start up costs and the initial sustaining costs to develop and institutionalize the training program needed to educate public safety and elected officials about contemporary communication technology and to provide public safety communication equipment users with the initial and on going training necessary to maintain the ability to utilize those communication resources effectively. It supplements a pre-existing discussion of training needs at the SRB (Minnesota's SIEC) and provides the initial resources necessary to get that initiative moving.

It is likely that a certain level of training will be maintained in a traditional sense. Initial training related to the acquisition of new equipment will be sustained as a capital cost in the acquisition of the equipment. Beyond that measure, however, the engagement of the SRB may be critical to sustaining this very important element. There are some funds available to the SRB for planning and development purposes that might be used to sustain certain portions of this training. However, the key element of this investment may be the establishment of training standards and the development and certification of training personnel capable of providing the training. It is anticipated that the SRB Interoperability Committee will be engaged in this process and will seek to assure the importance of training is maintained in the future.

I. Investment Heading

INVESTMENT # **6**

State/Territory Name: Minnesota

Investment Name: Planning and Training for Equipment and Communications Interoperability- State Component to develop statewide cirrucula and learning objectives

Grantee Type: Other State Agency (Non-SAA)

Is this a multi-jurisdictional or statewide project? Yes

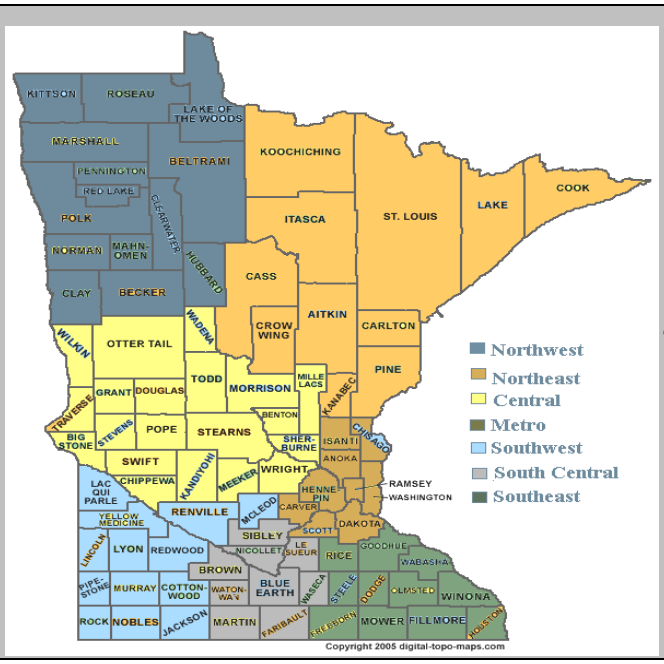
List the jurisdictions served by this project: All P.S. entities throughout the state.

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

X. Attachments

X. - Attachment(s)



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I. Investment Heading

INVESTMENT # **7**

State/Territory Name:	Minnesota
Investment Name:	Training for Equipment and Communications Interoperability- Local component to fund regional costs of training
Grantee Type:	Local Jurisdiction / Entity / NGO / Tribal
Is this a multi-jurisdictional or statewide project?	Yes
List the jurisdictions served by this project:	All P.S. entities throughout the state.
Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)?	Yes
List the disciplines served by this project:	Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

V. Funding Plan

V.A. Funding Plan

Detail the total estimated cost for the Investment throughout the PSIC period of performance (FY 2007 – FY 2010). Describe any other concurrent funding sources that may also support this Investment, including form of cost share. Detailed estimated expenditure plan which credibly demonstrates ability to meet expenditure deadline of September 30, 2010.

	PSIC Federal Funds Requested	Non-Federal Matching Fund Amount	Total Investment*
Acquisition			$ -
Deployment			$ -
Training	$ 600,000.00		$ 600,000.00
Planning/Coord.			$ -
Total	**$ 600,000.00**	**$ -**	**$ 600,000.00**

** - Total investment includes the Non-Federal Match and Total PSIC Federal Funds Requested. 20% match is required for all Acquisition and Deployment funds; however, match can be identified and allocated at either the Investment level or the total PSIC IJ level (on the Overall Funding Summary tab). Therefore, individual investments can be undermatched or overmatched according to the needs of the applicant.*

V.B. Matching Plan

How does your Investment meet the non-Federal cash or in-kind matching requirement? Please itemize both the funding category and amount in the table below. (1,000 Char. Max)

There is no match requirement to this investment.

Non-Federal Matching Fund Category	Non-Federal Matching Fund Amount
Cash - State	
Cash - Local/Tribal	
Cash - Non-governmental	
In-Kind - Donated volunteer services	
In-Kind - Donated salaries	
In-Kind - Donated equipment	
In-Kind - Donated property	
In-Kind - Indirect costs	
Other*	
Total	**$**

** - Please explain "Other" in the 'Matching Plan' dialog box above.*

Total Matching Fund Amount Must be Equal to Section V.A. Total Matching Fund Amount of: $ -

Matching Self Check: OK

I. Investment Heading

INVESTMENT # **7**

State/Territory Name: Minnesota

Investment Name: Training for Equipment and Communications Interoperability- Local component to fund regional costs of training

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: All P.S. entities throughout the state.

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

VI. Milestones

VI. Milestones

Provide specific milestones for the Investment over the PSIC period of performance (FY 2007 – FY 2010), including a description, and start and end dates for each milestone; up to 10 milestones may be provided. (850 Char. max per milestone)

Milestone #1

State to engage a contractor to access overall training needs (including interoperable equipment based training and procedural training requirements) throughout the state, review training developed in other states and develop basic training curricula and learning objectives.

Start Date: 06/01/08 **End Date:** 10/31/08

Milestone #2

Basic training curricula, learning objectives and any instructor certification criteria to be established and approved by the SRB (Minnesota's SIEC).

Start Date: 11/01/08 **End Date:** 12/31/08

Milestone #3

SRB (Minnesota's SIEC) to determine immediate interoperable communication training and educational needs that should be addressed with existing resources.

Start Date: 01/01/08 **End Date:** 04/30/08

Milestone #4

Regional Radio Boards and Regional Advisory Committees contract for training, as necessary to address immediate interoperable training needs, including equipment specific training.

Start Date: 05/01/08 **End Date:** 09/30/10

Milestone #5

State to identify a resource and assist in coordinating the provision of Communication Leader training to various regions of the state.

Start Date: 05/01/08 **End Date:** 12/31/08

Investment #7

Investment Name: Training for Equipment and Communications Interoperability- Local component to fund regional costs of training

Project Narrative

This investment addresses local compenant and the local need and costs to aggressively address communication training for broad range of equipment and public safety personnel and elected officials throughout the state. As the state continues to make a substantial investment in communication infrastructure, the need for training upon equipment use, standard operating procedures and incident management principles must be addressed. As the SCIP was developed, the lack of basic education and training upon all aspects of communication and interoperability (basic radio principles, equipment based training and interoperable procedures and standards) was identified as a substantial gap in the process.

Through this investment, the department of public safety (DPS) would take the lead to develop training curricula and learning objectives. The process would require broad involvement of stakeholders in assessing the training needs and would be coordinated with the assessment of equipment and capabilities provided for in other investment to make sure equipment capabilities and attributes are incorporated into the training. Equipment based and procedural based resources, such as radio caches, shared channel use, gateways and the interoperability accessible in the ARMER backbone would be incorporated into the training. The SRB Interoperability Committee (broadly representing all regions, disciplines, tribal governments and federal agencies) would be an essential stakeholder in this process. However, it would also require substantial engagement with the various regional advisory committees and regional radio boards within the state. DPS would contract with a vendor to develop a core group of instructional courses that will address the gap. The qualifications and certification of trainers, who will generally be recruited from the public safety community, would also be addressed. Of particular import is the need to provide Communication Leader training throughout the state (DHS standards and requirements already exist) and the necessity to provide equipment related training for interoperable equipment, such as ACU-1000 and other gateway devices.

This investment corresponds with Investment #6 which provides basic resources for the state to develop the cirricula and learning objectives and allows the regional radio boards or on behalf of regional advisory committees to pay for the local cost of training. It is anticipated that these training efforts will be coordinated with the regional homeland security regions and more broadly with the Statewide Radio Board Interoperability Committee to assure coordination and efficient delivery.

Of note is the fact that training and funding of expenses provided for in this investment would be available to tribal governments and non-governmental public safety entities on an equal basis.

Baseline- Historical Funding and Request Name

Equipment based training has been an essential element of the ARMER system deployment. In 2006, the Statewide Radio Board provided funding for the development of equipment based training related to 700/800 MHz subscriber equipment. The Metropolitan Radio Board did develop and provide equipment specific training prior to 2004 with funds allocated to them by the legislature. The Metropolitan Emergency Services Board (regional radio board in the Minneapolis/St. Paul metropolitan area) did receive DHS funds to conduct some planning and training in 2005. Training and exercising continues to be a subject of investment justifications in the DHS grant process but funds have not been allocated to training for this purpose in 2007. Training initiatives under this investment are distinctly separate from any previously DHS funded initiatives.

Baseline- Description of Need

This need for specific hands on equipment based and operational based training can not be overemphasized. In years past, equipment based training has been connected with the initial acquisition of communication equipment. With respect to traditional push to talk communication equipment, there is has been very little training associated with acquisition and deployment of equipment.

The implementation of a feature rich standards based shared infrastrucutre in the Minnespolis/St. Paul metropolitan area clearly demonstrated the need for initial scenario based training of the equipment and its capabilities. Similarly, the extensive feature set of a trunked radio system requires periodic reinforcement of advanced interoperability capabilities.

The need and benefits of that training are demonstrated by the perfect score the Twin City, MN UASI region obtained on its Tactical Interoperability Plan exercise and even more clearly during a real event when the 35W bridge collapsed in Minneapolis on 8/1/2007. The initial scenario based equipment training and follow up training that clearly integrated standard operating procedures and appropriate methods were demonstrated in the ability to use the equipment effectively. Similarly, appropriate and timely training are necessary to achieve the spectrum efficencies and other benefits of technology we are trying to achieve. Acquiring advanced technolgies without providing for the training would be a clear waste. Scenario based training reinforces skills and capabilities that can be applied to any hazard or response.

The Statewide Radio Board continues to address this need for training for system users. The lack of formal training related to interoperability equipment and interoperability procedures related to incident command operations has been identified as a gap that must be addressed. The lack of training standards and learning objectives necessary to define a comprehensive level of training for operational personnel at all levels continues to preclude the appropriate development of courses, including basic communication indoctrination, equipment specific training and interoperability procedures.

This investment is designed to develop resources that will be applicable and available throughout the state. A collateral benefit of this standardized training would be the enhanced interaction and interoperability that will come from training together. This investment centralizes the training component for all PSIC investment justifications to assure that sustainable training is developed around equipment and around the procedures.

Baseline- Description of Governance Structure and Activities

Minnesota is in the process of expanding its public safety communication governance structure. The Statewide Radio Board (SRB) which was initially formulated to oversee the implementation of Minnesota's ARMER system has recently been designated as Minnesota's State Interoperability Executive Committee (SIEC) and has established an Interoperability Committee to deal with interoperability issues. The statute creating the SRB provides for the establishments of regional advisory committees and regional radio board under Minn. Stat. §403.39 which will be a integral part of the STR planning process.

Based upon the PSIC grant process and ARMER implementation process regional organizational efforts have moved ahead. The SRB Interoperability Committee will form the basis for interoperability planning, but the continued integration of regional planning continues to be necessary to assure full participation by regional members, including non-governmental and tribal organizations. This process anticipates the development of regional tactical interoperability plans, standard operating procedures and, where necessary, memorandums of understanding.

See the attached diagram of regional radio boards and regional advisory committees. At the present time, there are two regional radio boards (joint powers authorities) covering 27 counties (Metropolitan Emergency Services Board and Central MN Regional Radio Board). Formation of regional advisory committees (precursor to regional radio boards) is underway in the remaining 60 counties into five regions with preliminary drafts of joint powers agreements under consideration in at least two of those five regions. Regional activities are multi-discipline and include invitations to tribal governments, non-governmental public safety agencies and federal agencies operating within their regions.

With respect to this investment, the SRB- Interopability Committee will play a keep role in determining the appropriate training cirricula, learning objectives, the manner of delivering training and in developing the standard operating procedures related to usage of interoperability resources.

Baseline- Stakeholder Involvement

This priority was has been the topic of various communication interoperability workgroups. Both the UASI region, the metropolitan Homeland Security Region and the two existing Regional Radio Boards have commented upon this topic. Similar discussion with developing regions demonstrate the need for basic communication training, equipment specific training and interoperable communication training. This investment was subsequently vetted through a core planning group appointed by the SRB and presented for discussion at various regional planning committee meetings related to the SCIP plan development. Investment justifications were finally approved by the SRB which has a multi-discipline and multi-jurisdictional composition.

The need for consistent and structured training to educate public safety officials and elected officials on communication technology and interoperable communication issues is raised in every organizational and governance setting. It is a continuing priority for the SRB.

Strategy- Statewide Communication Interoperability Plan Objectives

Through the development of the SCIP, the lack of a basic understanding of contemporary and emerging communication technology was a fundamental obstacle to the full engagement and participation of a large portion of the regional participants (public safety officials). Public safety communication systems throughout a significant portion of the state tend to be a patchwork of "low tech" solutions provided by local vendors. In an environment where many communities are challenged by basic issues of "operability" within their boundaries a discussion of repeaters, voting receivers, trunking technology, of the characteristics of different spectrum and of gateways and patches is incomprehensible to many.

Similar issues are raised in environments where technical solutions have been implemented. Users of feature rich subscriber equipment (portables and mobiles) must be trained in how to use the equipment and in how to access those features that facilitate interoperability. Principles of operations and scenario based training are needed to assure operators and users are able utilize those resources effectively at the time they are needed.

The need to address these issues of education and training are recognized as a basic deficiency to be addressed in the Minnesota's SCIP development process. The need to engage and educate all participants is represented in virtually every goal and objective of the SCIP. There is specific reference to tactical interoperability training, as follows at Goal #3; Objective 4: "Provide initial and ongoing Communication Leader Training programs for selected regional representatives by December 31, 2008." However, every reference to the development of plans, standard operating procedures and solutions presupposes informed and engaged participants able to contribute to the process and operational personnel that are able to utilize the resources developed under the SCIP. The development of meaningful training curricula in basic communications and in utilizing communication resources to their maximum capability is a well recognized challenge requiring attention and resources.

Strategy- Technology Priorities

This investment is not specifically tied to any specific technology. It is, however, an essential element in the process of placing a priority upon the consideration and use of advanced technology. First way a technology priority is addressed is by assuring the key stakeholders and participants are informed and understand the technology. The next way the technology priority is addressed in this investment is by developing training to assure that users are initially and continuously trained in how to access (standard operating procedures) and use the interoperability resources available to them.

This investment also allows for greatest flexibility in technical solutions that allow cross spectrum operation and the continued integration of legacy communication infrastructure into the shared backbone. A fundamental understanding of how the technical solutions might be integrated into existing systems provides users with a greater ability to provide input in the development of operational procedures.

Strategy- All Hazards Mitigation Priorities

This investment provides for systemic improvements in the ability to utilize the communication resources and procedures that can be used in any circumstances or in response to any incident. In fact, the most efficient and effective interoperable resource will be one that is integrated into daily use and becomes second nature to users.
It is anticipated that portions of the training curricula developed under this investment will include scenario based training. For training purposes, those scenarios will be based upon local and contemporary hazards. However, the basic skills developed and reinforced in those user based training scenarios will be readily adaptable to new situations and multiple hazards.
This investment justification is not specifically designed to address any particular areas of high risk for natural disasters or urban areas at high risk for threats of terrorism, except to note that it is addressed at a broad public safety community across the state. It broadly enhances interoperable communication across the state, including urban areas, the Port of Duluth and areas along the Canadian border.

Program Management

The overall direction and coordination of the training investments (Inv #6 and Inv #7) will be through the SRB by the establishment of training standards. Regional radio boards or the regional advisory committees, which are multi-discipline bodies, will play a significant role in providing the training and tailoring it to regional needs. The department of public safety will provide direct assistance in the following manner:
• Identify a resource to offer appropriate Communication Leader Training in connection with the development of regional tactical interoperability plans.
• Engaging technical consultants assess interoperable communication training needs and to develop a curricula and learning objectives for that training.
• Present various training issues to the SRB (Minnesota's SIEC) through the Interoperability Committee.
• Assist in developing resource list of trainers who can provide training that addresses immediate training needs and basic training cricula and learning objectives once developed and approved.
• Regional interoperability coordinators provide non-technical support to regional radio boards or regional advisory committees upon governance development and upon the need for memorandums of understanding and standard operating procedures.
• Regional interoperability coordinators will provide non-technical assistance to local officials concerning the process and objectives to be achieved through this planning and implementation process.
More broadly the Statewide Radio Board, acting as Minnesota's State Interoperability Executive Committee (SIEC) will develop additional training standards. As a practical matter, the SRB will rely upon its Interoperability Committee (broadly representing all regions and public safety disciplines, including tribal and non-government entities and federal agencies) to fully engage regional governance structures in this assessment and planning process.

The Division of Homeland Security and Emergency Management provides overall administrative oversight for the PSIC grant funds and assures funds have been expended consistent with investment justifications.

Investment Challenges

1. Regional participants lack fundamental understanding of the issues necessary to participation in the development of curricula and learning objectives.		Mitigation: Engage local expertise developed in other areas of the state to work with new participants (metropolitan area and central Minnesota). Review similar efforts from other states.
2. Unable to find contractors or vendors able to provide training that specifically addresses local needs.		Mitigation: Develop local training resources, including train the trainer, and utilize local operational personnel to provide the training.
3. Inadequate resources committed to training		Mitigation: Continued engagement of SRB the training development and offering process to demonstrate the value and importance. SRB may be able to seek continued funding for this purpose.

Impact- Outcomes

The impact of this investment will be two fold, as follows:

• The first outcome will be to raise the overall level of discussion and understanding of contemporary communication technology and of interoperable communication planning, standard operating procedures and capabilities to a much higher level among all stakeholder and elected officials. In doing so, it is the intent that a much broader group of public safety responders will be brought into the discussion and that the overall discussion will accommodate a much broader community of public safety entities and users. In particular, tribal governments and non-governmental entities will be engaged in the process along with the traditional core group of public safety officials.

• The second outcome will be to provide a much more formal and structured development of training for operational personnel and to tailor that training to the equipment and needs of each region.

Scenario based training upon the following topics, as examples, are anticipated:

• Basic communication principles- capability

• Equipment based training for basic users (law enforcement, fire, EMS, emergency management, other governmental agencies and participate) and more engaged training for PSAP personnel and supervisors.
• Equipment based training on STR and interoperability resources, including gateways, deployable repeaters, satellite systems and user equipment used by other entities and capabilities of neighboring states and regions.
• Interoperability training to cover standard operating procedures and usage of interoperability resources and, in particular, Communication Leader training.
• Communication exercise design and evaluation.

This investment relates to the development of the curricula and learning objectives related to training of this nature. Similarly an emphasis would be placed upon defining certification of instructors and upon training operational personnel to provide the training.

An essential part of this investment is to engage the SRB (Minnesota's SIEC) in the discussion and adoption of specific training standards. With the continued implementation of the ARMER backbone throughout the state and the intended linkage of that backbone to existing legacy systems, the opportunity exists to standardize training and standards more broadly across the state. It is essential part of the governance structure to empower the regional radio boards and regional advisory committees to actively engage local units of government, tribal governments and non-governmental entities in the formulation standards and in the provision of training related to interoperability.

Measurement of the outcomes would be based upon the completion of ciricula and learn objectives. Once developed, outcomes would be measured and reported to the SRB by the classes and number of persons trained, number of jurisdictions included and the number of disciplines included. Evaluation of the effectiveness would also be measured in routine disaster exercises and in exercises constructed to specifically evaluate interoperable communication capabilities. See: Goal #3; Objective 5: "Conduct at least one regional Tactical Interoperable Communication exercise in each region and provide for formal evaluation of the exercise by June 30, 2009".

Impact- Cost Effective Measures

This investment does not rely upon any specific technology or methods against which the cost effectiveness of the investment might be evaluated. It does, however, recognize that the failure to train users and to institutionalize procedures can be lead to the failure of costly resources.

There are some elements of this training that might be provided "off the shelf." However, scenario based training to specifically incorporate local and regional proceudres and equipment will have the most lasting impact. Blending the training requirements of an entire state is a significant challenge that can not be addressed in a generic way. It will require an investment in the engagement of stakeholders, tailoring training to regional needs and infrastructure and, whenever possible, utilizing local operational personnel to provide the training.

Impact- Sustainability

This investment is designed to address the start up costs and the initial sustaining costs to develop and institutionalize the training program needed to educate public safety and elected officials about contemporary communication technology and to provide public safety communication equipment users with the initial and on going training necessary to maintain the ability to utilize those communication resources effectively. It supplements a pre-existing discussion of training needs at the SRB (Minnesota's SIEC) and provides the initial resources necessary to get that initiative moving.

It is likely that a certain level of training will be maintained in a traditional sense. Initial training related to the acquisition of new equipment will be sustained as a capital cost in the acquisition of the equipment. Beyond that measure, however, the engagement of the SRB may be critical to sustaining this very important element. There are some funds available to the SRB for planning and development purposes that might be used to sustain certain portions of this training. However, the key element of this investment may be the establishment of training standards and the development and certification of training personnel capable of providing the training. It is anticipated that the SRB Interoperability Committee will be engaged in this process and will seek to assure the importance of training is maintained in the future.

I. Investment Heading

INVESTMENT # **7**

State/Territory Name: Minnesota

Investment Name: Training for Equipment and Communications Interoperability- Local component to fund regional costs of training

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

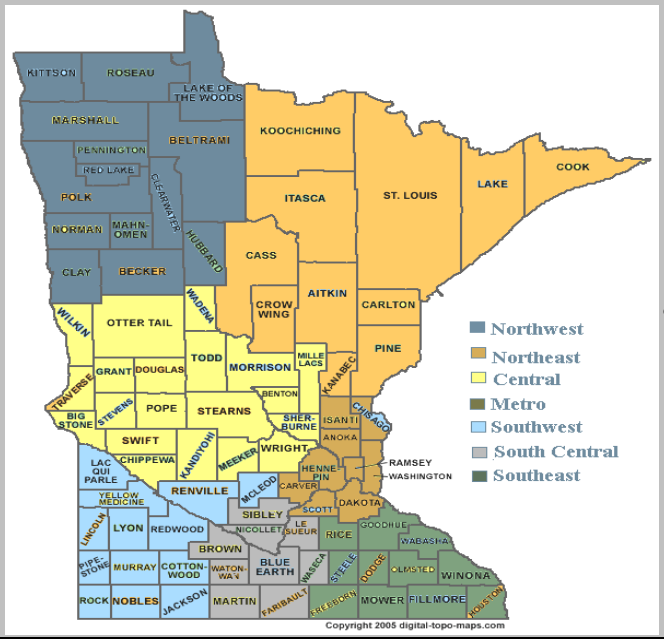
List the jurisdictions served by this project: All P.S. entities throughout the state.

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

X. Attachments

X. - Attachment(s)



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I. Investment Heading

INVESTMENT # **8**

State/Territory Name: Minnesota

Investment Name: Subscriber Equipment- Statewide Shared Infrastructure-Local Component (Throughout state- local governments, tribal governments and non-governmental public safety

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

List the jurisdictions served by this project: List the jurisdictions served by this project:

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

V. Funding Plan

V.A. Funding Plan

Detail the total estimated cost for the Investment throughout the PSIC period of performance (FY 2007 – FY 2010). Describe any other concurrent funding sources that may also support this Investment, including form of cost share. Detailed estimated expenditure plan which credibly demonstrates ability to meet expenditure deadline of September 30, 2010.

	PSIC Federal Funds Requested	Non-Federal Matching Fund Amount	Total Investment*
Acquisition	$ 4,500,000.00	$ 1,125,000.00	$ 5,625,000.00
Deployment			$ -
Training			$ -
Planning/Coord.			$ -
Total	**$ 4,500,000.00**	**$ 1,125,000.00**	**$ 5,625,000.00**

** - Total investment includes the Non-Federal Match and Total PSIC Federal Funds Requested. 20% match is required for all Acquisition and Deployment funds; however, match can be identified and allocated at either the Investment level or the total PSIC IJ level (on the Overall Funding Summary tab). Therefore, individual investments can be undermatched or overmatched according to the needs of the applicant.*

V.B. Matching Plan

How does your Investment meet the non-Federal cash or in-kind matching requirement? Please itemize both the funding category and amount in the table below. (1,000 Char. Max)

The matching portion of this investment will be provided by the public safety entity acquiring the subscriber equipment. When this particular investment justification was approved by the SRB, Finance Committee there was a discussion of how this item would be presented and financial hardships might be addressed. As noted in the Historical Funding section, there is precedence for limiting the funding level to 50% of the cost of a subscriber unit. Similarly, there is a concern that small entities are incapable of providing the 20% match. A continued discussion of this investment and the specific allocation of funds will be undertaken, incorporating input from the various regional radio boards and regional advisory committees with a final resolution by

Non-Federal Matching Fund Category	Non-Federal Matching Fund Amount
Cash - State	
Cash - Local/Tribal	$ 1,125,000.00
Cash - Non-governmental	
In-Kind - Donated volunteer services	
In-Kind - Donated salaries	
In-Kind - Donated equipment	
In-Kind - Donated property	
In-Kind - Indirect costs	
Other*	
Total	**$ 1,125,000.00**

** - Please explain "Other" in the 'Matching Plan' dialog box above.*

Total Matching Fund Amount Must be Equal to Section V.A. Total Matching Fund Amount of: $ 1,125,000.00

Matching Self Check: OK

I. Investment Heading

INVESTMENT # **8**

State/Territory Name:	Minnesota
Investment Name:	Subscriber Equipment- Statewide Shared Infrastructure-Local Component (Throughout state- local governments, tribal governments and non-governmental public safety
Grantee Type:	Local Jurisdiction / Entity / NGO / Tribal
Is this a multi-jurisdictional or statewide project?	Yes
List the jurisdictions served by this project:	List the jurisdictions served by this project:
Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)?	Yes
List the disciplines served by this project:	Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

VI. Milestones

VI. Milestones

Provide specific milestones for the Investment over the PSIC period of performance (FY 2007 – FY 2010), including a description, and start and end dates for each milestone; up to 10 milestones may be provided. (850 Char. max per milestone)

Milestone #1

SRB to determine the allocation of funds among local entities (government, tribal and non-government) and the specific provisions of matching funds requirementthe SRB in consultation with regional radio boards and regional advisory committees.

Start Date: 12/03/07 **End Date:** 03/15/08

Milestone #2

The acquisition of at least one-third of the subscriber units to be placed in service with trained users.

Start Date: 04/01/08 **End Date:** 10/01/08

Milestone #3

The acquisition of the next one-third of subscriber units to be placed in service with trained users.

Start Date: 04/01/08 **End Date:** 04/01/09

Milestone #4

The acquisition of the remaining one-third of subscriber units to be placed in service with trained users.

Start Date: 04/01/08 **End Date:** 12/31/09

Milestone #5

Start Date: **End Date:**

Investment #8

Investment Name: Subscriber Equipment- Statewide Shared Infrastructure-Local Component (Throughout state- local governments, tribal governments and non-governmental public safety entities)

Project Narrative

This investment is specifically directed at getting subscriber units (portable and mobile radios and radio control stations) into the hands of public safety personnel giving them access to the statewide standards based shared infrastructure. It addresses a specific gap identified in Minnesota's SCIP and specific goals and objectives in that plan. This investment provides funding at the local level for subscriber radios which will include all potential ARMER backbone participants (statewide coverage) including local governments, tribal governments and non-governmental public safety entities.

A significant portion of the ARMER backbone will be completed in 32 counties of the state over the next year. In addition, the legislature has provided funding to complete construction of the ARMER backbone throughout the remaining 55 counties of the state. It is anticipated that a basic level of coverage will be available throughout the state during the PSIC grant period thus providing a basic backbone for statewide interoperability upon a standards based shared system throughout the state.

The acquisition of subscriber equipment (portables and mobiles) continues to be a major impediment to potential users in all disciplines. The only consistent source of funds for subscriber equipment has been fire grants made directly to local fire departments. This is particularly true for potential users who maintain existing conventional systems and who are seeking to acquire radios solely for interoperability purposes. This investment addresses the gap between implementing the backbone, which has been funded by the legislature, and subscriber equipment needed by local users and state agencies (Investment# 9) to communicate upon the system.

Although it is clear that grant funds will not fund all the subscriber units required in the state, the regional radio boards and regional advisory committees will be utilized to develop specific proposals. Those proposals will be coordinated through the SRB-Interoperability Committee for evaluation and consistency with PSIC objectives (tribal government and non-governmental entity participation) and with Minnesota's SCIP and determine any competitive issues necessary to balance interests on a statewide basis. The ultimate objective of getting approximately 2,500 radios into the hands of users could be accomplished very quickly. However, it may be necessary to stage the implementation process more to give local units of government, tribal governments and non-governmental public safety entities more time to evaluate the practical impact and cost.

Baseline- Historical Funding and Request Name

Subscriber units are generally purchased with local funds. Fire grants have provided some funding to fire departments. In 2003, the level of funding in DHS programs permitted the allocation of a portion of homeland security grant funds to the acquisition of subscriber units. That funding provided a tremendous incentive to local governments

to participate in the shared infrastructure in the metropolitan area. The need to encourage integration of local users on to the ARMER backbone, and to address communication concerns in population centers and Minnesota's Urban Area Security Initiative (UASI) were considered the highest priority at that time. The basic formula for funding of subscriber (portables and mobiles) public safety (police and fire) radio was one-half of the cost of a public safety radio ($1,400 of a $2,800 cost). Allocation of funds for local subscriber equipment from homeland security grant funds has been limited to residual funds since that initial opportunity.

Baseline- Description of Need

This investment specifically addresses PSIC objectives by implementing an interoperable communication solution that adopts advanced technology, improves spectrum efficiency and is extremely cost effective as it leverages the investment the state of Minnesota is already making in a standards based shared infrastructure. This investment also provides a general improvement to interoperable communication statewide that is consistent with Minnesota's all hazard disaster planning.

The priority for this investment was articulated in the SCIP development process, as follows:

Goal#2: Support the planning and integration of local units of governments, tribal governments and non-governmental public safety entities onto the shared public safety communication backbone; Objective# 4: Determine the potential cost and potential funding sources to provide subscriber radios (portable and mobile radios) for public safety responders throughout the state by December 31, 2008; and Objective# 5: Develop a comprehensive plan to articulate how DHS grant funds, PSIC grant funds and other potential funding sources will be leveraged to encourage the acquisition of subscriber units for first responders by June 30, 2008.

Subscriber units are an essential component necessary to use the ARMER backbone. With the approval of funding to complete the ARMER backbone in all 87 counties of the state, placing subscriber units broadly in the hands of public safety officials provides an incremental improvement in interoperability across the system. Where the state has authorized bonding in the amount of $186 million for the completion of a communication infrastructure, providing broad access to that system for primary communication purposes or for interoperability purposes will benefit the broadest category of users.

The additional benefits of this investment are that a broader, statewide, group of public safety responders will now have the ability to utilize the ARMER backbone. The resulting enhancement to public safety response capabilities in the Twin City, MN UASI and other urban areas is significant. Similarly, the engagement and training that goes along with the broad distribution of subscriber equipment will enhance the development of regional governance structures.

Of particular importance, is the fact that the incremental value of a portable or mobile provides the opportunity to benefit a category of user (tribal and non-governmental public safety entities which must be addressed as part of the PSIC grant process) that are not so clearly benefited by the broader implementation of the communication infrastructure. Similarly, the engagement of a broad category of users in the discussion of interoperability upon the ARMER backbone continues to be the most productive way to

engage system users in the existing governance structure and in the broader discussion of interoperability.

Baseline- Description of Governance Structure and Activities

Minnesota is in the process of expanding its public safety communication governance structure. The Statewide Radio Board (SRB) which was initially formulated to oversee the implementation of Minnesota's ARMER system has recently been designated as Minnesota's State Interoperability Executive Committee (SIEC) and has established an Interoperability Committee to deal with interoperability issues. The statute creating the SRB provides for the establishments of regional advisory committees and regional radio board under Minn. Stat. §403.39 which will be a integral part of the intereoperable communications planning process.

Based upon the PSIC grant process and the ARMER implementation regional organizational efforts have moved ahead. The SRB Interoperability Committee will form the basis for interoperability planning, but the continued integration of regional planning is necessary to assure full participation by regional members, including non-governmental and tribal organizations. This process anticipates the development of regional tactical interoperability plans, standard operating procedures and, where necessary, memorandums of understanding.

See the attached diagram of regional radio boards and regional advisory committees. At the present time, there are two regional radio boards (joint powers authorities) covering 27 counties (Metropolitan Emergency Services Board and Central MN Regional Radio Board). Formation of regional advisory committees (precursor to regional radio boards) is underway in the remaining 60 counties into five regions with preliminary drafts of joint powers agreements under consideration in at least two of those five regions. Regional activities are multi-discipline and include invitations to tribal governments, non-governmental public safety agencies and federal agencies operating within their regions.

DPS has established an Interoperability Program with a program administrator and three regional interoperability coordinators who will work closely with regional radio boards, regional advisory committees, local users and the SRB Interoperability Committee to develop standard operating procedures and operational agreements. It is a primary function of this program to provide direct support to regional and local public safety entities in developing tactical interoperability plans, training and exercises. The interoperability program administrator provides direct support to the SRB-Interoperability Committee.

Baseline- Stakeholder Involvement

This investment is raised and discussed every year among Communication Interoperability Workgroup in connection with the Homeland Security application process. Those workgroup are composed of a number of state and local participants representing various geographic regions of the state, including representatives from each homeland security region. The investment was subsequently vetted through the core planning group appointed by the SRB and presented for discussion at various regional planning committee meetings related to the SCIP plan development. Police, sheriff, fire,

emergency medical service (most Non-governmental), emergency management, tribal and federal groups were represented at various meetings. Investment justifications were finally approved by the SRB which has a multi-discipline and multi-jurisdictional composition. Tribal governments and non-governmental entities have been involved in these discussions at the regional level and this investment addresses their issues.

Strategy- Statewide Communication Interoperability Plan Objectives

Minnesota's SCIP plan provides that the ARMER system (standards based shared system) is a central element in the state's communication interoperability plan. The implementation of a ubiquitous backbone will provide an essential communication capability across the state and will be used to provide interoperability with and between legacy systems. This investment provides an essential piece in making that backbone available to various public safety officials throughout the state for primary use or interoperability purposes.

This investment supports Minnesota's Mission, which states as follows:
"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 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."

It is further demonstrated in the following goals and objectives of the SCIP:
Goal#2: Support the planning and integration of local units of governments, tribal governments and non-governmental public safety entities onto the shared public safety communication backbone; Objective# 4: Determine the potential cost and potential funding sources to provide subscriber radios (portable and mobile radios) for public safety responders throughout the state by December 31, 2008; and Objective# 5: Develop a comprehensive plan to articulate how DHS grant funds, PSIC grant funds and other potential funding sources will be leveraged to encourage the acquisition of subscriber units for first responders by June 30, 2008.

This investment also broadly addresses the need to provide basic interoperable resources for Tactical Interoperable Plan development by providing broader access to the statewide backbone, regional and statewide interoperability talkgroups and the training and interaction required.

Strategy- Technology Priorities

This investment places the resources of a technologically advanced standard based trunked radio system capable of using 700/800 MHz spectrum in the hands of various public safety communication personnel across the state. It provides the opportunity to reduce the demand and congestion in the traditional VHF spectrum by shifting users to a more spectrum efficient trunked communication environment. And, for those users who find the backbone provides adequate coverage and capacity the cost of subscriber radios may be their only cost (backbone capital and operating costs have been provided for by the legislature).

This investment should be considered in connection with other proposed investments, where all PSAP's and EOC's in the state will be equipment with radio control stations to provide primary access to the statewide backbone from those key locations. (Investment# In combination those investments provide the link between existing conventional technolgoy and enable interoperability with other public safety agencies at all necessary levels of government.

Strategy- All Hazards Mitigation Priorities

This investment will provide some resources to areas of high risk for natural disasters or urban areas at high risk for threats of terrorism. However, it is noted that its primary focus is to provide resources statewide. In doing so, there is a recognition that the response community to a significant disaster in urban areas and areas of high risk is from across the state.

Minnesota recently experienced a significant incident on 8/1/2007 when the 35W bridge collapse in Minneapolis. Based upon a number of attributes, the response to that incident was commendable. The communication capability of the ARMER backbone and the ability of public safety responders to use that resource has been attributed for lending to the successful response to that unfortunante incident. Of note, however, was the fact that in the initial response a number of resources were offered and began responding from great distance away, thus demonstrating how an investment to enhance communication capability broadly across the state supports high risk locations. This investment further consolidates that capability by placing subscirber radios throughout the state.

This investment does enhance communication capabilities broadly by placing a number of subscriber radios (portables, mobiles and radio control stations) in the hands of local public safety officials to provide interoperability across the ARMER network. Although directed at a level of interoperability similar to swapping radios on the SAFECOM Interoperability Continuum, this investment assures some measure of interoperability for various public safety entities operating outside their home communication infrastructure. It also provides them with the opportunity to become familiar with the operation and features of a much more sophisticated communication system. These are all attributes that can be applied to any hazard or situation, whether it occurs in a high risk urban area or in the remotest part of the state.

Program Management

Primary responsibility for managing this investment will rest with the regional radio boards or fiscal agents acting on behalf of the regional advisory committees. It is anticipated that the each region will be asked to submit proposals upon how subscriber units might be allocated to users within their region. A final allocation between the regions will be made by the SRB (Minnesota's SIEC). The potential domain of applicants is all local governments, tribal governments and non-governmental public safety entities within the state. Regions will be required to address the needs of tribal governments and non-governmental public safety entities within their jurisdictions.

The state of Minnesota maintains contracts and pricing for subscriber units. Local governments are eligible to acquire equipment from that contract. Regional radio boards

or regional advisory committees acting through a fiscal agent are able to order subscriber units off the state contract on behalf of tribal participants and non-governmental public safety entities.

Programming of subscriber equipment will be coordinated through regional radio boards to assure users have access to the basic statewide and regional interoperability talkgroups. Installation of mobile equipment is a routine matters for most public safety entities. Training will be provided through regional governance structures with that capability addressed in Investment# 6 & 7.

The direction and coordination of this investment will be provided by the Statewide Radio Board, acting as Minnesota's State Interoperability Executive Committee. As a practical matter, the SRB will rely upon its Interoperability Committee (broadly representing all regions and public safety disciplines, including tribal and non-government entities and federal agencies) to aid in resolving the specific priorities for this investment.

The department of public safety has created a public safety interoperability program and staffed that program with a program administrator and three regional interoperability coordinators (contract employees). A primary responsibility of that program is to work with regional governance structures and local public safety officials to provide assistance in the development of regional Tactical Interoperability Plans, training and exercise.

The Division of Homeland Security and Emergency Management provides overall administrative oversight for the PSIC grant funds and assures funds have been expended consistent with investment justifications.

Investment Challenges

1. Public safety entities outside of the metro area and phase three region where implementation of the ARMER backbone is currently underway will not appreciate the value of acquiring subscriber units.		Mitigation: With the appropriation of funds to complete the ARMER backbone statewide, education and outreach has been significant, including the regional organizational efforts in connection with the SCIP and PSIC grant
2. Matching funds will not be available to a number of communities, including tribal governments and non-governmental public safety entities.		Mitigation: SRB Finance committee will discuss approaches to provide match for very small entities and regional radio boards and regional advisory committees will be asked for suggested approaches.
3. The timeline for backbone implementation is not yet determined in a		Mitigation: Department of transportation is currently working on a revised

significant portion of the state.		implementation plan. It eliminates the phasing and will provide a very basic level of coverage throughout the state from existing antenna sites and link that network together on the state's digital microwave network by the end of 2010.

Impact- Outcomes

The anticipated impact of this investment is to provide subscriber equipment for local users of all disciplines and multiple jurisdictions of the ARMER system into the hands of a number of public safety users over the next two years. This outcome is particularly significant, given the legislatures approval in 2007 of bonds to construct the backbone of a standards based shared public safety communication system.

This investment will provide at least 2,000 radios (portables, mobiles or radio control stations) for primary responders and expand the familiarity and usage of the statewide shared system to a large number of entities, thus enhancing interoperability at the user level. With the statewide backbone in place, users gain access to a statewide infrastructure and the interoperability resources of that infrastructure simply by acquiring a subscriber unit.

This investment also leverages a separate investment to acquire radio control stations for all PSAP's and EOC's. (Investment# 3) That investment provides a link between existing conventional communication systems into the ARMER backbone where there is overlapping coverage. This investment will address potential users, whether they intend to become primary users of the ARMER system or simply provide a capability to operate on the ARMER backbone for purposes of interoperability. This investment provides conventional system users with direct access to the ARMER backbone and interoperability talkgroups under any circumstances.

An additional outcome from this investment will be to demonstrate the benefits of a standards based trunked communication system to public safety users who have very little experience or understanding of the benefits of advanced technology. Simple attributes, like the ability to communicate across a statewide interoperability talk group are difficult to conceptualize for public safety users using conventional local radio systems. Similarly, the equipment provides an alternative means of communicating should legacy communication systems fail. Finally, the distribution of subscriber equipment to users outside the urban area provides an enhanced response capability that does not otherwise exist.

From a broader perspective, this investment enhances the need for operational personnel to participate in the regional and statewide governance structures. Access to the interoperability resources of the backbone, necessitates participation in the planning and development of standards operations procedures and agreements necessary to make use of the interoperable resources. In a practical sense, prospective users begin understanding

how the advanced technology of a standards based shared system can broadly supports public safety communication needs and their individual communication needs.

Impact- Cost Effective Measures

Based upon the legislature's appropriation of funds to implement a statewide communication infrastructure and to pay the backbone operating costs, the cost for a number of potential users of the system will be the cost of acquiring and maintaining subscriber units. This investment potentially provides a basic level of interoperability for a number public safety users, demonstrates the attributes of that system and ties a number of users into the regional governance structure and the standards and training of that system for the cost of subscriber units.

This investment clearly leverages the significant investment the state is making in backbone infrastructure and allows a greater number of users to gain access to that system for a very low per unit cost.

Impact- Sustainability

From a much broader perspective, it is unlikely that the state will find the resources to extend funding to acquire subscriber equipment. The Minnesota legislature has extend a number of incentives to ARMER system participants, including the funding of the backbone, the funding of backbone operating costs, sales tax exemption for local enhancements and subscriber equipment, special bonding authority for local enhancements and subscriber equipment and partial funding of local enhancements.

From the perspective of beneficiaries of this investment, the sustainment costs are limited to the cost of maintaining the subscriber units (portable and mobile radios). It is not anticipated that those costs will be significant or present an obstacle to any agency. And, as previously noted this investment constitutes a very cost effective way to provide enhanced interoperability for a number of potential users.

In 2007, the Minnesota legislature made a commitment to pay the costs to operate and maintian the basic backbone of the ARMER system. Until that point, users had struggled with question how much would they be charged simply to use the backbone (various states have addressed this question in different manners). By funding the backbone operating costs, the only local cost will be the cost to maintain their subscriber radios (software upgrades and basic maintenance).

I. Investment Heading

INVESTMENT # **8**

State/Territory Name: Minnesota

Investment Name: Subscriber Equipment- Statewide Shared Infrastructure-Local Component (Throughout state- local governments, tribal governments and non-governmental public safety

Grantee Type: Local Jurisdiction / Entity / NGO / Tribal

Is this a multi-jurisdictional or statewide project? Yes

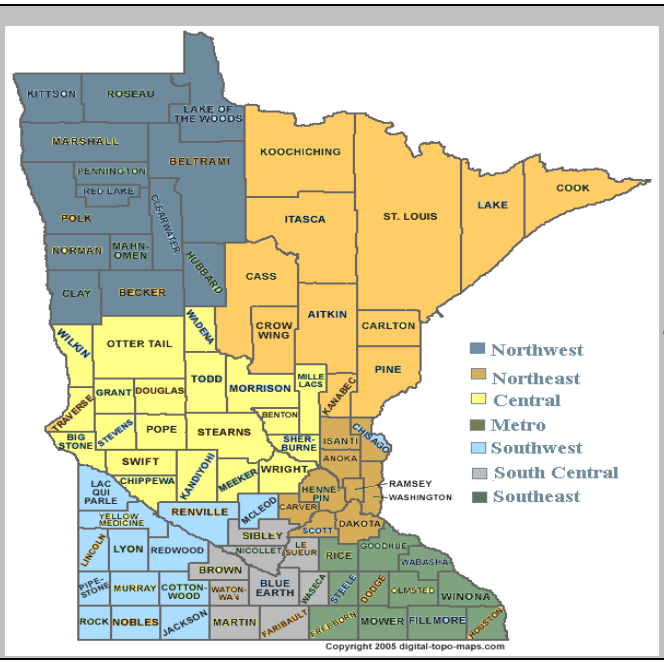
List the jurisdictions served by this project: List the jurisdictions served by this project:

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Fire Service, Law Enforcement, Emergency Medical Services, Emergency Management

X. Attachments

X. - Attachment(s)



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I. Investment Heading

INVESTMENT # **9**

State/Territory Name: Minnesota

Investment Name: Subscriber Equipment- Statewide Shared Infrastructure-State Component (Throughout state- State agencies and other partners)

Grantee Type: Other State Agency (Non-SAA)

Is this a multi-jurisdictional or statewide project? No

List the jurisdictions served by this project: State Agencies

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Law Fnforcement, Fire Services, EMS, Emergency Management, Corrections

V. Funding Plan

V.A. Funding Plan

Detail the total estimated cost for the Investment throughout the PSIC period of performance (FY 2007 – FY 2010). Describe any other concurrent funding sources that may also support this Investment, including form of cost share. Detailed estimated expenditure plan which credibly demonstrates ability to meet expenditure deadline of September 30, 2010.

	PSIC Federal Funds Requested	Non-Federal Matching Fund Amount	Total Investment*
Acquisition	$ 1,050,000.00	$ 262,500.00	$ 1,312,500.00
Deployment			$ -
Training			$ -
Planning/Coord.			$ -
Total	**$ 1,050,000.00**	**$ 262,500.00**	**$ 1,312,500.00**

** - Total investment includes the Non-Federal Match and Total PSIC Federal Funds Requested. 20% match is required for all Acquisition and Deployment funds; however, match can be identified and allocated at either the Investment level or the total PSIC IJ level (on the Overall Funding Summary tab). Therefore, individual investments can be undermatched or overmatched according to the needs of the applicant.*

V.B. Matching Plan

How does your Investment meet the non-Federal cash or in-kind matching requirement? Please itemize both the funding category and amount in the table below. (1,000 Char. Max)

The matching portion of this investment will be provided by the public safety entity acquiring the subscriber equipment.

Non-Federal Matching Fund Category	Non-Federal Matching Fund Amount
Cash - State	$ 262,500.00
Cash - Local/Tribal	
Cash - Non-governmental	
In-Kind - Donated volunteer services	
In-Kind - Donated salaries	
In-Kind - Donated equipment	
In-Kind - Donated property	
In-Kind - Indirect costs	
Other*	
Total	**$ 262,500.00**

** - Please explain "Other" in the 'Matching Plan' dialog box above.*

Total Matching Fund Amount Must be Equal to Section V.A. Total Matching Fund Amount of: $ 262,500.00

Matching Self Check: OK

I. Investment Heading

INVESTMENT # **9**

State/Territory Name: Minnesota

Investment Name: Subscriber Equipment- Statewide Shared Infrastructure-State Component (Throughout state- State agencies and other partners)

Grantee Type: Other State Agency (Non-SAA)

Is this a multi-jurisdictional or statewide project? No

List the jurisdictions served by this project: State Agencies

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Law Fnforcement, Fire Services, EMS, Emergency Management, Corrections

VI. Milestones

VI. Milestones

Provide specific milestones for the Investment over the PSIC period of performance (FY 2007 – FY 2010), including a description, and start and end dates for each milestone; up to 10 milestones may be provided. (850 Char. max per milestone)

Milestone #1

SRB to determine the allocation of funds among local entities (government, tribal and non-government) and the specific provisions of matching funds requirementthe SRB in consultation with regional radio boards and regional advisory committees.

Start Date: 12/03/07 **End Date:** 03/15/07

Milestone #2

Acquire subscriber equipment.

Start Date: 03/15/07 **End Date:** 06/30/09

Milestone #3

Start Date: **End Date:**

Milestone #4

Start Date: **End Date:**

Milestone #5

Start Date: **End Date:**

Investment #9

Investment Name: Subscriber Equipment- Statewide Shared Infrastructure-State Component (Throughout state- State agencies and other partners)

Project Narrative

This investment is specifically directed at getting subscriber units (portable and mobile radios and radio control stations) in the hands of state agency public safety personnel giving them access to the statewide standards based shared infrastructure. This investment includes radio control stations for state operated PSAP', (10 Minnesota State Patrol PSAP's) and various state agency Emergency Operation Centers where deemed appropriate. It addresses a specific gap identified in Minnesota's SCIP and specific goals and objectives in that plan. This investment provides funding at the state agency level for subscriber radios which will include all potential ARMER backbone participants (statewide coverage) including but not limited to state agencies and units, such as the departments of health, human services, corrections and Metropolitan Council, which operates the Metropolitan Transit System.

A significant portion of the ARMER backbone will be completed in 32 counties of the state over the next year. In addition, the legislature has provided funding to complete construction of the ARMER backbone throughout the remaining 55 counties of the state. It is anticipated that a basic level of coverage will be available throughout the state during the PSIC grant period thus providing a basic backbone for statewide interoperability upon a standards based shared system throughout the system.

The acquisition of subscriber equipment (portables, mobiles and radio control stations) continues to be a major impediment to potential users in all disciplines within the state. This investment addresses the gap between implementing the backbone, which has been funded by the legislature, and subscriber equipment needed by local users (Investment# 8) and state agencies to communicate upon the system.

Proposals under this investment will be coordinated through the SRB- Interoperability Committee for evaluation and consistency with PSIC objectives and with Minnesota's SCIP and determine any competitive issues necessary to balance interests on a statewide basis. The ultimate objective of getting approximately 500 radios into the hands of users could be accomplished very quickly. However, it may be necessary to stage the implementation to give agencies more time to evaluate the practical impact and cost.

Baseline- Historical Funding and Request Name

In 1999 the state legislature did provide some funding for subscriber equipment for the department of transportation and department of public safety based upon the metro area implementation of the backbone. Since that point, subscriber units have generally been acquired by state agencies with year end funds. In an era of declining budgets, this approach has not proven very successful. Subscriber units may have been acquired from year to year with residual homeland security funds, but there has not been any specific funding of subscriber units for various state agencies as part of the homland security process.

Baseline- Description of Need

This investment specifically addresses PSIC objectives by implementing an interoperable communication solution that adopts advanced technology, improves spectrum efficiency and is extremely cost effective as it leverages the tremendous investment the state of Minnesota is already making in a statewide standards based shared infrastructure. This investment also provides a general improvement to interoperable communication statewide that is consistent with Minnesota's all hazard disaster planning.

The priority for this investment was articulated in the SCIP development process by the inclusion of the following:
Goal#2: Support the planning and integration of local units of governments, tribal governments and non-governmental public safety entities onto the shared public safety communication backbone; Objective# 4: Determine the potential cost and potential funding sources to provide subscriber radios (portable and mobile radios) for public safety responders throughout the state by December 31, 2008; and Objective# 5: Develop a comprehensive plan to articulate how DHS grant funds, PSIC grant funds and other potential funding sources will be leveraged to encourage the acquisition of subscriber units for first responders by June 30, 2008.

Subscriber units are an essential component necessary to use the ARMER backbone. With the approval of funding to complete the ARMER backbone in all 87 counties of the state, placing subscriber units broadly in the hands of public safety officials and state agencies provides an incremental improvement in interoperability across the system. Where the state has authorized bonding in the amount of $186 million for the completion of a communication infrastructure, providing broad access to that system for primary communication purposes or for interoperability purposes will benefit the broadest category of users.

The additional benefits of this investment are that a broader, statewide, group of public safety responders will now have the ability to utilize the ARMER backbone. The resulting enhancement to public safety response capabilities in the Twin City, MN UASI and other urban areas is significant. Similarly, the engagement and training that goes along with the broad distribution of subscriber equipment will enhance the development of regional governance structures and participation.

Of particular importance, is the fact that the incremental value of a portable or mobile provides the opportunity to benefit a category of user that are not so clearly benefited by the broader implementation of the communication infrastructure. Similarly, the engagement of a broad category of users in the discussion of interoperability upon the ARMER backbone continues to be the most productive way to engage system users in the existing governance structure and in the broader discussion of interoperability.

Baseline- Description of Governance Structure and Activities

Minnesota is in the process of expanding its public safety communication governance structure. The Statewide Radio Board (SRB) which was initially formulated to oversee the implementation of Minnesota's ARMER system has recently been designated as

Minnesota's State Interoperability Executive Committee (SIEC) and has established an Interoperability Committee to deal with interoperability issues. The statute creating the SRB provides for the establishments of regional advisory committees and regional radio board under Minn. Stat. §403.39 which will be a integral part of the interoperable communications planning process.

Based upon the PSIC grant process and the ARMER implementation regional organizational efforts have moved ahead. The SRB Interoperability Committee will form the basis for interoperability planning, but the continued integration of regional planning continues to be necessary to assure full participation by regional members, including non-governmental and tribal organizations. This process anticipates the development of regional tactical interoperability plans, standard operating procedures and, where necessary, memorandums of understanding.

See the attached diagram of regional radio boards and regional advisory committees. At the present time, there are two regional radio boards (joint powers authorities) covering 27 counties (Metropolitan Emergency Services Board and Central MN Regional Radio Board). Formation of regional advisory committees (precursor to regional radio boards) is underway in the remaining 60 counties into five regions with preliminary drafts of joint powers agreements under consideration in at least two of those five regions. Regional activities are multi-discipline and include invitations to tribal governments, non-governmental public safety agencies and federal agencies operating within their regions.

DPS has established an Interoperability Program with a program administrator and three regional interoperability coordinators who will work closely with regional radio boards, regional advisory committees, local users and the SRB Interoperability Committee to develop standard operating procedures and operational agreements. It is a primary function of this program to provide direct support to regional and local public safety entities in developing tactical interoperability plans, training and exercises. The interoperability program administrator provides direct support to the SRB-Interoperability Committee.

Baseline- Stakeholder Involvement

This investment is raised and discussed every year among Communication Interoperability Workgroup in connection with the Homeland Security application process. Those workgroup are composed of a number of state and local participants representing various geographic regions of the state, including representatives from each homeland security region. The investment was subsequently vetted through core planning group appointed by the SRB and presented for discussion at various regional planning committee meetings related to the SCIP plan development. Police, sheriff, fire, emergency medical service (most Non-governmental), emergency management, tribal and federal groups were represented at various meetings. Investment justifications were finally approved by the SRB which has a multi-discipline and multi-jurisdictional composition.

Strategy- Statewide Communication Interoperability Plan Objectives

Minnesota's SCIP plan provides that the ARMER system (standards based shared system) is a central element in the state's communication interoperability plan. The implementation of a ubiquitous backbone will provide an essential communication capability across the state and will be used to provide interoperability with and between legacy systems. This investment provides an essential piece in making that backbone available to various public safety officials throughout the state for primary use or interoperability purposes.

This investment supports Minnesota's Mission, which states as follows:
"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 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."

It is further demonstrated in the following goals and objectives of the SCIP:
Goal#2: Support the planning and integration of local units of governments, tribal governments and non-governmental public safety entities onto the shared public safety communication backbone; Objective# 4: Determine the potential cost and potential funding sources to provide subscriber radios (portable and mobile radios) for public safety responders throughout the state by December 31, 2008; and Objective# 5: Develop a comprehensive plan to articulate how DHS grant funds, PSIC grant funds and other potential funding sources will be leveraged to encourage the acquisition of subscriber units for first responders by June 30, 2008.

This investment also broadly addresses the need to provide basic interoperable resources for Tactical Interoperable Plan development by providing broader access to the statewide backbone, regional and statewide interoperability talkgroups and the training and interaction required.

Strategy- Technology Priorities

This investment places the resources of a technologically advanced standard based trunked radio system capable of using 700/800 MHz spectrum in the hands of various public safety communication personnel across the state. It provides the opportunity to reduce the demand and congestion in the concentional VHF spectrum by shifting users to a more spectrum efficient trunked communication environment.

This investment should be considered in connection with other proposed investments, where all PSAP's and EOC's in the state will be equipment with radio control stations to provide primary access to the statewide backbone from those key locations. (Investment# 3) In combination those investments it provide the link between existing conventional technolgoy and enable interoperability with other public safety agencies at all necessary levels of government.

Strategy- All Hazards Mitigation Priorities

This investment will provide some resources to areas of high risk for natural disasters or urban areas at high risk for threats of terrorism. However, it is noted that its primary

focus is to provide resources statewide. In doing so, there is a recognition that the response community to a significant disaster in urban areas and areas of high risk is from across the state.

This investment does enhance communication capabilities broadly by placing a number of subscriber radios (portables, mobiles and radio control stations) in the hands of local public safety officials (Investment#8) and state agency officials to provide interoperability across the ARMER network. Although directed at a level of interoperability similar to swapping radios on the SAFECOM Interoperability Continuum, this investment assures some measure of interoperability for various public safety entities operating outside their regular communication infrastructure. It also provides them with the opportunity to become familiar with the operation and features of a much more sophisticated communication system. These are all attributes that can be applied to any hazard or situation, whether it occurs in a high risk urban area or in the remotest part of the state.

Program Management

Primary responsibility for managing this investment will rest with the commissioner of public safety. It is anticipated that state agencies will submit proposals requesting subscriber radios or radio control stations. The commissioner of public safety will work with the SRB- Interoperability Committee to assure that SCIP objectives are being adddressed appropriately and to assure consistant application of requirements. Consideration will also be given to making subscriber radios available for use by federal agencies required to work closely with state, regional and local public safety agencies.

The state of Minnesota maintains contracts and pricing for subscriber units. All state agencies are eligible to acquire equipment from that contract.

Programming of subscriber equipment will be coordinated through the department of transportation to assure users have access to the basic statewide and regional interoperability talkgroups. Installation of mobile equipment is a routine matters for most public safety entities. Training will be provided through state and regional governance structures with that capability addressed in Investment# 6 & 7.

The direction and coordination of this investment will be provided by the Statewide Radio Board, acting as Minnesota's State Interoperability Executive Committee. As a practical matter, the SRB will rely upon its Interoperability Committee (broadly representing all regions and public safety disciplines, including tribal and non-government entities and federal agencies) to aid in resolving the specific priorities for this investment.

The department of public safety has created a public safety interoperability program and staffed that program with a program administrator and three regional interoperability coordinators (contract employees). A primary responsibility of that program is to work with regional governance structures and local public safety officials to provide assistance in the development of regional Tactical Interoperability Plans, training and exercise.

The Division of Homeland Security and Emergency Management provides overall administrative oversight for the PSIC grant funds and assures funds have been expended consistent with investment justifications.

Investment Challenges

Agencies do not fully appreciate their role and need for access to statewide communication infrastructure.		DPS to conduct an assessment of state agencies communicaiton plans and needs to engage them in the process.
Agencies do not immediately have funds available for the required match.		Allow sufficent time for agencies to address match requirement in their legislative budget process.

Impact- Outcomes

The anticipated impact of this investment is to provide subscriber equipment for local users of all disciplines and multiple jurisdictions of the ARMER system into the hands of a number of public safety users over the next two years. This outcome is particularly significant, given the legislatures approval in 2007 of bonds to construct the backbone of a standards based shared public safety communication system.

This investment will provide at least 500 radios (portables, mobiles or radio control stations) for primary responders, for state agency PSAP's and EOC's and expand the familiarity and usage of the statewide shared system to a large number of entities, thus enhancing interoperability at all level thorughout the state. With the statewide backbone in place, users gain access to a statewide infrastructure and the interoperability resources of that infrastructure simply by acquiring a subscriber unit.

This investment also coordinates with and leverages a separate investment to acquire radio control stations for all PSAP's and EOC's. (Investment# 3) That investment provides a link between existing conventional communication systems into the ARMER backbone where there is overlapping coverage. The investment will address potential users, whether they intend to become primary users of the ARMER system or simply maintain the ability to communicate for interoperability purposes. This investment provides conventional system users with direct access to the ARMER backbone and interoperability talkgroups under any circumstances.

An additional outcome from this investment will be to demonstrate the benefits of a standards based trunked communication system to public safety users who have very little experience or understanding of the benefits of advanced technology. Simple attributes, like the ability to communicate across a statewide interoperability talk group are difficult to conceptualize for public safety users using conventional radio systems. Similarly, the equipment provides an alternative means of communicating should other communication systems fail. Finally, the distribution of subscriber equipment to users outside the urban area provides an enhanced response capability that does not otherwise exist.

From a broader perspective, this investment enhances the need for operational personnel to participate in the regional and statewide governance structures. Access to the interoperability resources of the backbone, necessitates participation in the planning and development of standards operations procedures and agreements necessary to make use

of the interoperable resources. In a practical sense, prospective users begin understanding how teh advanced technology of a standards based shared system can broadly supports public safety communication needs and their individual needs.

Impact- Cost Effective Measures

Based upon the legislature's appropriation of funds to implement a statewide communication infrastructure and to pay the backbone operating costs, the cost for subscriber only users of the system will be the cost of acquiring and maintaining subscriber units. This investment potentially provides a basic level of interoperability for a number public safety users, demonstrates the attributes of that system and ties a number of users into the regional governance structure and the standards and training of that system for the cost of subscriber units.

This investment clearly leverages the significant investment the state is making in backbone infrastructure and allows a greater number of users to gain access to that system for a very low per unit cost.

Impact- Sustainability

From a much broader perspective, it is unlikely the legislature will provide dedicated funds for state agencies to acquire subscriber equipment. The Minnesota legislature has extend a number of incentives to ARMER system participants that benefit state agencies, including the funding of the backbone, the funding of backbone operating costs, sales tax exemption for enhancements and subscriber equipment (State agencies are required to pay sales tax).

From the perspective of beneficiaries of this investment, the sustainment costs are limited to the cost of maintaining the subscriber units (portable and mobile radios and radio control stations). It is not anticipated that those costs will be significant or present an obstacle to any agency. And, as previously noted this investment constitutes a very cost effective way to provide enhanced interoperability for a number of potential users.

In 2007, the Minnesota legislature made a commitment to pay the costs to operate and maintian the basic backbone of the ARMER system. Until that point, users had struggled with question how much would they be charged simply to use the backbone (various states have addressed this question in different manners). By funding the backbone operating costs, the only agency cost will be the cost to maintain their subscriber radios (software upgrades and basic maintenance).

I. Investment Heading

INVESTMENT # **9**

State/Territory Name: Minnesota

Investment Name: Subscriber Equipment- Statewide Shared Infrastructure-State Component (Throughout state- State agencies and other partners)

Grantee Type: Other State Agency (Non-SAA)

Is this a multi-jurisdictional or statewide project? No

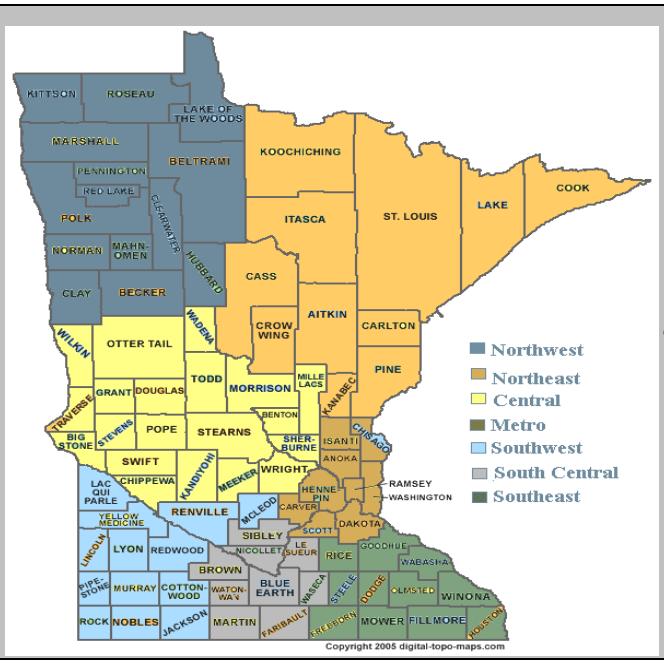
List the jurisdictions served by this project: State Agencies

Is this a multi-disciplinary project (e.g., law enforcement, fire service, public health)? Yes

List the disciplines served by this project: Law Fnforcement, Fire Services, EMS, Emergency Management, Corrections

X. Attachments

X. - Attachment(s)



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