STATEWIDE EMERGENCY COMMUNICATIONS BOARD

November 20, 2014
12:30 P.M.
Chair: Mark Dunaski
MnDOT Arden Hills Training Center
1900 West County Road I Shoreview, MN 55126

Call in Number: 1-888-742-5095
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MEETING AGENDA

Call to order

Approval of Today's Agenda

Approval of Previous Meeting's Minutes

Reports of Standing Committees:

Operations and Technical Committee (Glaccum)

- ***Metro Transit Request to Amend Participation Plan*** ***ACTION ITEM***
- ***St. Louis Park and Minnetonka Request*** ***ACTION ITEM***
- ***Pope County Participation Plan Amendment*** ***ACTION ITEM***
- ***Dakota County Participation Plan Amendment*** ***ACTION ITEM***
- ***Mayo Clinic Medical Transport CCGW Request*** ***ACTION ITEM***

Interoperability Committee (Thomson)

Legislative & Government Affairs Committee (Kaase)

Steering Committee (Hartog)

IPAWS Committee (Seal)

NG911 (Pankonie)

Interoperable Data Committee (Risvold)

Finance Committee (Gerlicher)

- ***Request for a Participation Plan grant for Clay County*** ***ACTION ITEM***

- ***Recommendation to direct MNDOT to move forward with the ARMER RFP process extending the SUA contract and pursuing 7.19 upgrade based upon early indications from stakeholders and members.*** ***ACTION ITEM***
- ***Recommendation to create a limited matching grant for equipment for the 7.19 upgrade.*** ***ACTION ITEM***
- ***Recommendation to create an ongoing SECB competitive grant program of $1 million for every biennium, as long as the funding from the state continues, and to create a $1 million grant program from the remaining FY2014 and FY2015 dollars.*** ***ACTION ITEM***

Reports – Other

- ***ARMER Project Status Report (MnDOT OSRC)***
- ***ECN Update (Mines, DPS ECN)***
  - ***SWIC Report***
  - ***911***

Old Business

New Business

- ***NG911 Presentation (Wahlberg)***

Other Business/discussion

Announcements

- ***Presentation and announcement of COML Certificates for:***
  - ***John Blood, HSEM***
  - ***Sara Boucher-Jackson, Minneapolis***
  - ***Keith Christenson, St. Cloud Hospital***

Adjourn

STATEWIDE EMERGENCY COMMUNICATIONS BOARD

MEETING MINUTES

September 25, 2014

Attendance

Members:

PRESENT	MEMBER/ALTERNATE	REPRESENTING
X	Mark Dunaski (Chair)/Jackie Mines	DPS
X	Mukhtar Thakur/Tim Lee/Jim Mohn	MnDOT
X	Tarek Tomes/Dave Van Thiel	MNIT
X	Rodmen Smith/Dan Kuntz	DNR
X	Bob Meyerson/Rick Juth	MSP
X	Vince Pellegrin/Thomas Humphrey	METC
X	Bill Droste/ Vacant	League of MN Cities, Metro
X	Eric Anderson/Pat Novacek	League of MN Cities, Greater MN
	Liz Workman/vacant	Assoc. of MN Counties, Metro
X	Jim McMahon/Tom Kaase	Assoc. of MN Counties, Greater MN
X	Jim Bayer/Darlene Pankonie	MSA, Metro
	Dan Hartog/Scott Turner	MSA, Greater MN
	George McMahon/Mary Jo McGuire	MESB
	Mike Risvold/vacant	MN Chiefs of Police Assoc., Metro
X	Cari Gerlicher/Dave Thomson	MN Chiefs of Police Assoc., Greater MN
X	Ulie Seal/Vacant	MN Fire Chiefs Assoc., Metro
	T. John Cunningham	MN Fire Chiefs Assoc., Greater MN
X	Joe Glaccum/Gordon Vosberg	MN Ambulance Assoc., Metro
	Brad Hanson/Paul McIntyre	MN Ambulance Assoc., Greater MN
X	Steve Cook/Scott Camps	RRBs

Also in attendance:
James Jarvis, HSFM OEC
Jill Rohret, MESB
Cathy Anderson DPS-ECN
Carol-Linnea Salmon, DPS-ECN
Brandon Abley, Televate
Dave Eischens, Motorola
Carrie Oster, Motorola
Mike Fink, Motorola
Bill Burton, Motorola
Rey Freeman, RFCC

Sgt David Pike
Jerry Anderson

CALL TO ORDER

Chair Dunaski calls the meeting to order at 12:32 p.m.

Commissioner Dunaski presents COML certification to Sgt. David Pike and Jerry Anderson and congratulates them on their accomplishment and notes the significant amount of time and work involved to complete certification.

APPROVAL OF AGENDA

Dave Thomson asks to amend the agenda to remove the item Standard 3.31.0 Status Board.

Jim Bayer moves to approve the agenda as amended.
Dave Van Theil seconds the motion.
Motion carries.

APPROVAL OF PREVIOUS MEETING MINUTES

Jim McMahon moves to approve the minutes.
Cari Gerlicher seconds the motion.
Motion carries to approve the August minutes.

REPORTS OF STANDING COMMITTEES:

Operations and Technical Committee Report (Glaccum)

- ***Hennepin EMS Participation Plan Change Request***

Hennepin EMS is requesting to change to MCC7500 consoles and to put in five. There will be four ports allocated from the CCGW account. Approximately 290 I.D.s. will be turned back in. The Operations and Technical Committee (OTC) and MnDot reviewed this and had no objections. The regional Radio Technical Operations Committee (TOC) reviewed the request but the Metropolitan Emergency Services Board (MESB) has not reviewed it yet; it is on their agenda for their next meeting.

On behalf of the OTC, Joe Glaccum moves to approve the Hennepin EMS Participation Plan change request pending approval by the MESB.
Mike Risvold seconds.
Motion carries.

- ***ARMER Participation Plan for Mahnomen County***

This is a request for a full participation plan from Mahnomen County, which is proposed with a two-phased approach. The county has two existing control stations and would like to add two additional

ones. It will operate off existing consoles and start moving people over to using the ARMER system. Next year, pending funding, the county will put in MCC7500 consoles and that will complete the full participation plan. There will be no tower additions, no channel additions, 150 radios coming on initially, 160 I.D.s are being requested to allow for three year growth, 40 talk groups and 8 CCGW ports.

Glaccum, on behalf of the OTC, moves to approve the ARMER Participation Plan for Mahnomen County.
Bob Meyerson seconds.
Motion carries.

Finance Committee Report (Cari Gerlicher)
No report.

Interoperability Committee (Thomson)
No report.

Legislative & Government Affairs Committee (Kaase)
Tom Kaase reports that the committee did not meet this last month. He reports that Director Mines presented at the Association of Minnesota Counties (AMC) public safety meeting. Director Mines gave an information update on FirstNet/Broadband. It was a very good informational session. Some of the questions that were coming forward about the FirstNet project were about cost, updates needed and the associated update costs. Kaase says he thinks it was presented well and we are starting to education people about this and how our state and areas will benefit. The AMC also appointed a representative and an alternate for the FirstNet meeting. Unfortunately, neither could attend the first one but hope to do so in the future.

Steering Committee (Hartog)
No report.

IPAWS Committee (Seal*)*
No report from the Chair. Kaase reports that at the AMC, Julie Anderson from DPS also gave a presentation to the Public Safety Committee with an overview of IPAWS and background on the system and about messages and alerts in MN. It was a very good educational presentation and well received. Kaase stresses the importance of education on these topics.

NG911 (Pankonie)
The committee met but there is nothing to report.

Interoperable Data Committee (Risvold)
The committee met and prepared for the FirstNet Consultation meeting. Mike Risvold says there were significant things learned at the FirstNet Consultation meeting and also many questions remain. One of the interesting findings is that FirstNet is not looking for any upfront capital investment from the states. Their business model is based on user fees.

Brandon Abley reports that the first half of the meeting the FirstNet presented on basic information. Maybe half of the audience knew this information and half did not.

Abley reports that we presented on our project in MN and the work we are doing. FirstNet reported on the best practices they recommend which were very similar to our project in MN. We presented

case studies from MN and Abley thinks the FirstNet board found that enlightening because a lot of them have not had much face time with first responders.

Risvold adds that FirstNet was impressed with where MN is in the process and with the data gathering MN has done. They are looking at where is the starting point—how do you start the conversation about how you build this out. It seemed similar to ARMER, starting where you have the most users and build out from there. He says it sounds like FirstNet is confident that the $7 billion funding stream should be there. Minnesota is one of four pilot states that FirstNet is meeting with; they plan to meet with a total of eight this year. Their plan is that by next March when they put out their draft RFI to have met with all 50 states.

Chair Dunaski says FirstNet's business model is to build out the critical areas where the high call rates are but coincidently our high call areas are where we have good coverage already. The example used was in Stearns County, St. Cloud and up I94. FirstNet is proposing that is where they would build out first because that's where they have the greatest number of users and will get the greatest return on investment and they need that investment to continue to build out into rural areas. But the first responders that were at the meeting said that is kind of backwards—they have commercial coverage in the high call areas but not in the rural areas. If FirstNet is coming to help get better coverage, why not start where we do not have commercial carriers. The response was that it won't fit the business model because it won't take in enough money in the rural areas to offset the cost of building the system out. So it's kind of a vicious cycle, between what first responders thinks makes sense and what FirstNet's business model is dictating they have to do in order to get enough money to build the system out.

Risvold agrees that practitioners gave good examples of how FirstNet would be used in the field and what the benefit would be. He adds that FirstNet main objective is preemptive access. There were examples given of scenarios where there was coverage with a carrier but during an incident the media and others came on and used up the bandwidth and suddenly there wasn't coverage anymore.

Abley adds that the two big pieces of news are that FirstNet has published an RFI due in 28 days. ECN plans to respond to that. FirstNet will be publishing an RFP for comprehensive network services sometime in the spring. The RFP will be published far before any states have completed any of the work they need to consult with FirstNet. Minnesota is not even half way finished and no other state is even close. It will be interesting to see what will come out of it. We encourage the community to respond to the RFI.

Glaccum says his concerns are the unknowns and how we address getting the coverage in the fringe, along with the question of funding—there are a lot of unknowns right now. He is looking forward to the answers to the RFP.

Abley gives a power point presentation on the MN-FirstNet Consultation Project and a summary of the presentation that was given at the meeting with FirstNet. The presentation included an overview of the state's governance structure, its education/outreach program, and results from a recent informal RFI.

Abley says the presentation gave an overview of tribal outreach so far. We gave a summary of the sessions we had at Leech Lake. We provided a snapshot of the surveys that we are doing and talked about the workgroups we've established. We identified some of our challenges. We also wanted to ask what FirstNet was expecting out of the consultation process. We provided information from our

quick start counties—these were counties where we accelerated the process so we would have deliverable material early in the process. The counties account for about 41% of the state's population. We presented several case studies. We presented on a quick, informal RFI that we put out. The idea was to show the partnership opportunities in the state. One of the themes we found was that we have a lot of partnership opportunities but not a lot of people bringing capital. We presented some of our preliminary work group findings. The coverage group rejected the OEC coverage targets. The workgroup felt this was not a good baseline and that we should not use this as a baseline for coverage objectives. We gave some detail on our user population surveys. It represents only about 41% of our users but we are starting to see trends. We talked about our coverage assessment process. We are going to each county in the state to try to identify critical coverage areas. We are building a heat map where we can identify where the hot zones are and the density of those areas to guide the critical coverage areas. We had a criticism that we should do the inverse—we can identify this area and then instruct FirstNet to build in the other areas. The caveat is that you then have critical coverage in remote areas where you are unlikely to respond. We did not have an opportunity to go over some of our examples of wireless data uses. Finally we had a list of questions for FirstNet. These are what the state felt were key questions for entering into a consultation process. We documented some of our lessons learned. We learned to never underestimate our stakeholders; people will give good ideas if you just ask. We also learned to never overestimate our stakeholders; people change and information does not always flow.

Dunaski says this was envisioned to be a consultation but FirstNet did a lot of talking and a lot of presenting. He says he doesn't think FirstNet anticipated coming to MN and running up against a Televate and an ECN so well prepared. He thinks they were geared for a lot of states that really hadn't gone to the level where MN is. The meeting process was somewhat inflexible. FirstNet went through their slides anyway—even though we knew the information. We ended up doubling up our time, even though Abley and his team had all this information. Chair Dunaski appreciates the fact that FirstNet made the comment that nobody in the country is as ahead as MN. If they are developing their presentation to the average, we got a taste of it. Kudos to Brandon Abley and Televate and Director Mines and staff for being so prepared. Minnesota shined yesterday.

REPORTS - OTHER

- ***ARMER Project Status Report (MnDOT OEC)***

To date there are 313 towers completed. Ten sites are in construction, maybe thirteen. Land is being acquired in four areas—Arbor Lake, Beaver Bay, Tower and Sudan. Most of the sites in the Southeast have been completed. The Southwest is all completed as are the Central and Metro regions. In the Northwest, we are waiting for three sites to get land acquisition. In the Northeast there are thirteen sites under construction and eight that need land acquisition. This is the region where land acquisition will be the biggest challenge.

- **ECN Update** No report.

OLD BUSINESS

- ***SECB Strategic Planning Meeting***

Chair Dunaski reports that we met on September 10th and 11th for the strategic planning session and he thought the meeting went really well. The facilitator is compiling the comments into themes

and areas we can look at as a board. On September 10, we had presentations on ARMER, FirstNet, NextGen and IPAWS in the morning and then in the afternoon when through a series of exercises discussing a number of issues. On the second day, the facilitator put up a continuum where those participating could tell this board where they thought we should be on a continuum of activity or aggressiveness in emergency communications in the State of MN. All the way on the left hand side was status quo—we are doing just fine, leave it alone. Then there was the midpoint. On the right side was move quickly—if there's new technology, let's get it now, let's move as fast as we can. Dunaski thought we would be somewhere around the middle, maybe toward the status quo. But people thought we should be in the middle and on the far right side of things. The feedback was that we should be looking forward and looking at new technology; we should be challenging the status quo. The concern was cost. The group talked about better education and better long range planning on how to pay for this.

Dunaski continues that the facilitator tried to have people not get caught up on the cost but that was a reoccurring theme. He says it will be interesting when we get the information back and the themes for this board to sit down and have a longer conversation. We got information from external stakeholders telling us what the expectations are in the State of Minnesota. We need to take a look at that information and have a discussion about creating a plan and a process. He invites other board members who were at the Strategic Planning Session to report as well.

Risvold thought it was well facilitated. He says it was interesting to hear the different perspectives from the various stakeholders. He also thought it was interesting to see the right-lean on the chart to consider new technologies. He reports that someone at that meeting said that in day-to-day they would still be using a radio ten years down the road. That underscored the importance of ARMER and tower replacement, and for the different upgrades. He heard people say we should make sure there is money for FirstNet and make sure there is money for NextGen911 and if not, pool them all together. He thought it was two days worthwhile.

Glaccum echoes the sentiments about the facilitation and the information that came out. He was struck by how it underscored the necessity for education—if we didn't take the time the first half a day to do the education that we had the first day—he doesn't know that we would have been on the continuum where we were. So we really need that campaign with the elected officials, the users out in Greater MN, in the Metro, down at the capital, so people understand, not the deep dive into the technicality, but the criticality of these systems. That something he thinks the board should take on.

Dave Van Thiel thought it was very valuable as well. He says it was two days well spent. He appreciated hearing from different stakeholders and elected officials. Something he hadn't thought about before was the about the changes in elected officials and the dynamics of the groups involved. Dunaski adds that an interesting side note is that we had two staffers from the legislature present who took a far more active role that he had imagined. They were engaged and made thoughtful comments.

Cari Gerlicher thought it was a great two days as well. She says she learned a lot and thought the presentations were awesome. This board needs to make some financial decisions in the next five or six months and those two days were what we needed so we can go into some of the decision making processes with a better understanding of priorities.

Mukhtar Thakur was very impressed by the facilitator and the process. He liked the process because it gave everyone an opportunity to say what they thought was important. While people said moving forward was important, almost everybody said ARMER is what we have today and for

the foreseeable future and to keep it as a first priority and find a way to keep it going. Now we have to figure out how to do that and how to fund the replacements and upgrades. He says that is something still to grapple with but at least there is agreement to keep ARMER up. He thought the meeting was impressive and commends Chair Dunaski as well as the facilitator.

Jim Bayer says it was a good two days spent especially having locals and legislators involved because he thinks they need to see how the money needs to be spent and how to prioritize these projects--ARMER, FirstNet, NextGen 911, GIS. Those are all things that are going to be very important to public safety.

Dunaski says he thinks the educational process was good. It was people who do not normally interact with this body and he hopes they will go forth and spread some of this information.

NEW BUSINESS

ARMER Presentation (Thakur/Lee)

Thakur and Lee give a power point presentation on the ARMER system. This is the same presentation that was given at the Strategic Planning Session. The slides were included in this meeting's materials.

Chair Dunaski says MnDOT did a good presentation and we should do this, as well as the other three presentations, for all new board members.

OTHER BUSINESS/DISCUSSION

Announcements

Chair Dunaski congratulates all of the new COMLs. He announces the names of those earning COML certificates who were not present at the meeting:

- ***Duane Oothoudt from Leech Lake Ambulance***
- ***Judy Sivertson from Cook County***
- ***Kerry Swenson from Cass County***

Chair Dunaski announces that he will not be here in October. Vice-Chair Glacuum will chair the meeting.

Meeting adjourns at 2:14 pm.

September 4, 2014

Jill Rohret
Regional Radio Services Coordinator
Metropolitan Emergency Services Board
2099 University Avenue West
St. Paul, MN 55104

Dear Ms Rohret,

Metro Transit is respectfully requesting a change to our Participation Plan. We are planning on upgrading the eleven Gold Elite consoles at our Transit Control Center (TCC) to the MCC 7500 console system. In addition to this upgrade, we are planning on adding three MCC 7500 consoles to the TCC for a total of fourteen consoles.

Metro Transit will be returning 600 ID's from the Gold Elite consoles that are removed from service.

In addition to the fourteen MCC 7500 consoles, Metro Transit is planning on adding an AIS server and firewall to the TCC site for logging purposes.

This upgrade/addition will utilize fourteen ports on two Conventional Channel Gateways (CCGWs).

Sincerely,

Chad LeVasseur
Manager of Communications
Metro Transit

PSC Alliance Inc.
7900 International Drive – Suite 300
Bloomington, MN 55425
e-mail: jeff.nelson@pscalliance.com

MEMORANDUM

Telephone (612) 216-1502
FAX (888) 384-9171

To: Jill Rohret, MESB
cc: Marv Solberg, Minnetonka
Lt. Lori Dreier, St. Louis Park
Steve Pott, PSC Alliance

From: Jeff Nelson

Re: Minnetonka & St. Louis Park – Diverse Console Connection Routes

Date: September 16, 2014

Jill: I would like to get the item described below on the next MESB Radio TOC agenda for consideration.

Background

Minnetonka and St. Louis Park each today operate Gold Elite radio consoles in their respective PSAPs. In 2015 both communities plan to replace their consoles with the MCC 7500 model. Today each PSAP has a discrete, single route for console connectivity into the Zone 2 master site in Golden Valley. Minnetonka's consoles are connected via a hybrid fiber/microwave route and St. Louis Park's consoles are connected via dedicated fiber from their PSAP to Golden Valley. A one-line block diagram showing existing connectivity is depicted in Figure 1.

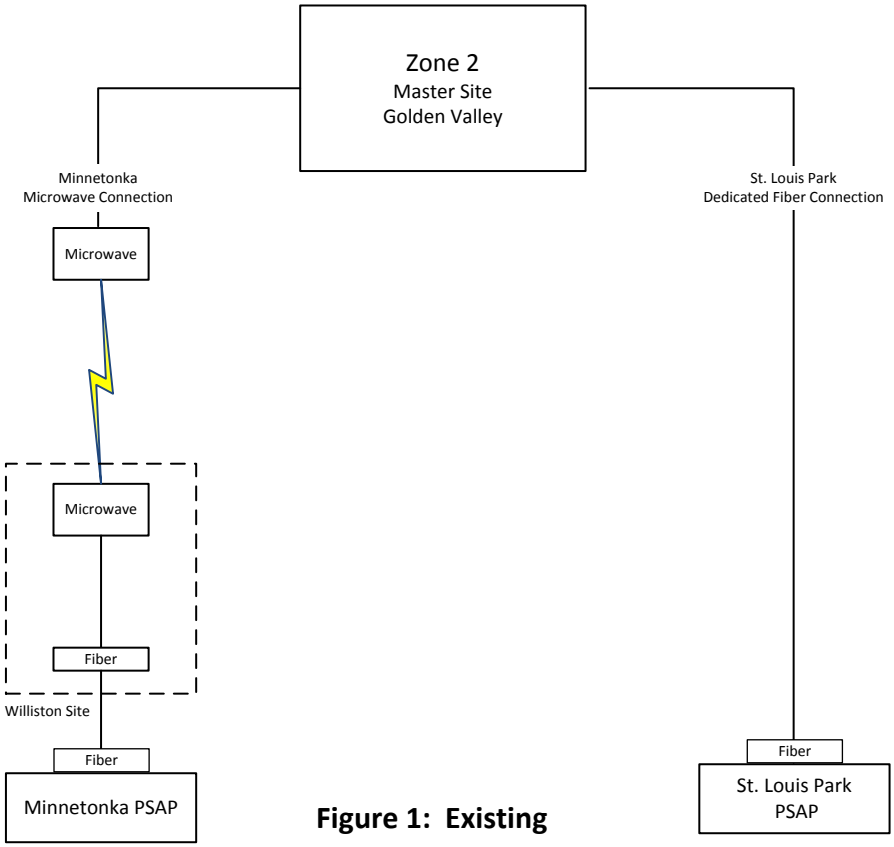


Figure 1: Existing

Figure 2 depicts the proposed configuration for which TOC approval is requested. This configuration consumes the same number of Zone ports (two per PSAP) as other primary dispatch centers operating MCC 7500 consoles within the ARMER system. The intent of the project is to increase Zone Controller connection resiliency by interconnecting the Minnetonka and St. Louis Park console back haul transport systems together as depicted.

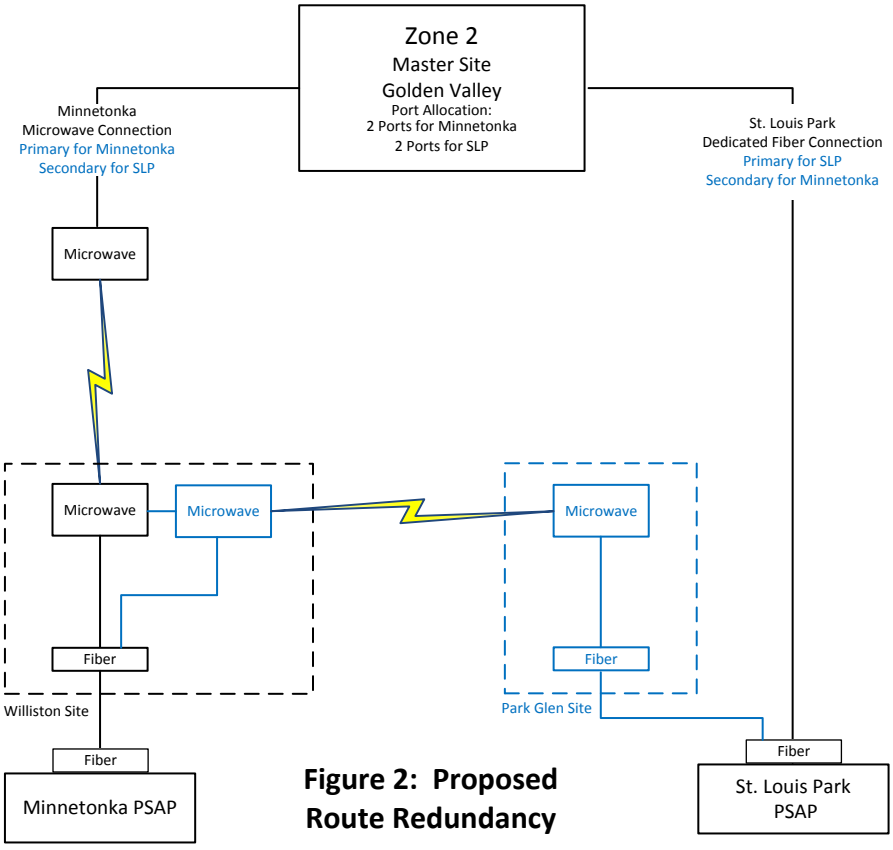


Figure 2: Proposed Route Redundancy

Blue Font = Additions

Thank you for your consideration. Steve Pott will be presenting this topic on my behalf at the September radio TOC meeting.

TIM RILEY
Sheriff
Pope County Sheriff's Office
130 East Minnesota Ave.
Glenwood, MN 56334
Phone: (320) 634-5411
Fax: (320) 634-5457
E-mail: tim.riley@co.pope.mn.us

"WORKING WITH YOU AND FOR YOU TO BUILD A BETTER COMMUNITY"

10-16-2014

To: Joe Glaccum, OTC Chair

From: Tim Riley, Pope County Sheriff

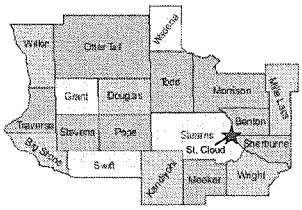
Ref: Pope County Participation Plan update

Dear Mr. Glaccum,

Pope County is seeking approval by the OTC for our Participation Plan Update. Updates were presented to, and approved by, the CM O&O on Thursday, October 16, 2014.

Thank you,

Tim Riley
Pope County Sheriff



CENTRAL MINNESOTA REGIONAL RADIO BOARD
FINANCE (320) 255 - 7208
FAX (320) 255 - 7297

MEMORANDUM

To: Joe Glaccum, OTC Chair

From: Troy Langlie, O&O Chair

Subject: Pope County Participation Plan

Date: October 16, 2014

The Central Minnesota Region is submitting a Participation Plan Change from Pope County. We are seeking approval from the Operations & Technical Committee and SECB for this plan. This plan has been approved on behalf of the CM ESB by the O&O on Thursday, October 16, 2014.

If you have any questions or concerns regarding this plan, please direct them to myself for discussion with the Owners and Operators Committee.

Troy Langlie, O&O Chair
218-685-8280
troy.langlie@co.grant.mn.us

TIM RILEY
Sheriff
Pope County Sheriff's Office
130 East Minnesota Ave.
Glenwood, MN 56334
Phone: (320) 634-5411
Fax: (320) 634-5457
E-mail: tim.riley@co.pope.mn.us

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Section 4.1 Subscribers

Pope County originally asked for 319 unit Id's for subscriber units. At this time we are using 245 unit Id's. We do not see a need to increase this count at this time.

Section 4.2 Talk Groups

Pope County originally request 33 talk groups for the Counties activities, at this present time we are using 31 talk groups. We are requesting an additional 10 talk groups for a new total of 43 talk groups for future growth.

Section 5.1 Console Equipment and Configuration

Pope County Law Enforcement Center will operate with 2 operator positions, using the Motorola MCC 7500 dispatch console. One Patch position will be located in the equipment room and could also be used for additional dispatch position if required.

Connectivity to Zone 4 is shown in Pope County Connectivity diagram. Our main T1 will be through a leased line from dispatch to MNDOT Glenwood site. Our secondary path will be through a Point to Point 4.9 GHz link from our dispatch center to MNDOT Glenwood site.

The conventional resources used within the county and connected to the MCC 7500 are listed below.

Pope County Paging	2 wire	tone	T4R1
Pope County Highway	2 wire	tone	T1R1

Other resources used through conventional resources

Control station	law Backup	CCGW		XTL 5000	tone
Control Station	Fire Backup	CCGW		XTL 5000	tone
Control Station	EMS Backup	CCGW		XTL 5000	tone
Control Station	Site trunking Terrace		CCGW	XTL 5000	tone
Control Station	Site trunking Glenwood		CCGW	XTL 5000	tone
Control Station	Site trunking Starbuck		CCGW	XTL 5000	tone

Section 5.2 Audio Logging

Local logging resources will be the following

PP	Law
PP	Fire
PP	EMS

Conventional resources

Pope County is participating in the Central Minnesota regional logger. Talk groups logged are shown in our Fleet Map.

Section 5.6 Alarming and Monitoring

Since Pope County will be on the ARMER network, it will contract alarm and monitoring services from service providers. The resources monitored will be all connectivity links for the MCC 7500 consoles.

Section 5.7 Interoperability

Interoperability will be achieved with remaining VHF users through the use of control stations and interface through the MCC 7500 console to VHF conventional resources in the MCC 7500.

Site trunking will use the Statewide site trunking talk group. Control stations will control each one of the ARMER towers located in Pope County. Terrace, Glenwood and Starbuck.

Section 5.8 System Administration/Management Plan

Pope County will have a (LSA) Local System Administrator to manage daily and annual activities for this system. Also submit reports per standards. Our LSA will work with our service providers to administer changes made in our system, subscriber units and fleetmap.

Changes and Request made By Pope County Sheriff, Tim Riley

Date 10-14-2014 Sheriff Tim Riley 

To: Ullie Seal, Jill Rohret, and the Metro TOC

Dakota County is requesting to modify its current ARMER participation plan.

The Dakota Communications Center (DCC) will be migrating from the Gold Elite console configuration to the MCC 7500 series configuration. Currently the DCC operates 23 individual console positions on four Central Electronic Banks (CEB's). Two of the four CEB's are configured with an X-Bus connection to the Zone 1 Ambassador Electronic Bank (AEB) and the other two are single T1 links. The reason for this upgrade is primarily due to the upcoming 7.15 revision upgrade of the ARMER system at which time will render the Gold Elite Console positions inoperable. This project is currently schedule to take place in early 2015.

The upgrade will consist of the replacement of all 23 current console positions and addition of the required Motorola patch console position.

Dakota County plans on returning 1,655 radio ID's that are currently in use in the Gold Elite Configurations. Dakota County will also vacate the radio ID block range of 151600 – 153871. The MCC 7500 positions will be assigned ID's from Dakota County's main block of ID's, 131000 – 135999.

The upgrade process will incorporate a quantity of five 4 port CCGW's (Conventional Channel Gateway). Of the 20 available ports, 19 will be configured for connectivity to existing external devises. These devises include VHF Paging, Siren Activation Stations and backup control stations as well as a few other VHF connections.

Three of the four CEB's will be decommissioned upon completion of the project. One CEB will remain active to provide logging support until such time as a new logging system is installed. The current schedule for replacement of the logging equipment is projected for late 2015. Once the new logging equipment has been installed and accepted the final CEB will be decommissioned.

The consoles will be configured with a redundant link configuration to the Watersedge Facility. The T1 circuits that will no longer needed will be freed up for redeployment by MnDOT.

Thank you for your time and consideration of this request,

Best Regards,
Ron Jansen

MAYO CLINIC
Medical Transport

200 First Street SW
Rochester, MN 55905

October 22, 2014

Operations & Technical Committee
Attention: Committee Chair Joe Glaccum
North Memorial Ambulance
4501 68th Avenue North
Brooklyn Center, MN 55429

To the Members of the Operations & Technical Committee:

Mayo Clinic Medical Transport is writing to request permission to add one (1) conventional channel gateway (CCGW) to the Mayo Clinic Emergency Communications Center's MCC7500 system.

The one additional CCGW is needed to enable Mayo Clinic Emergency Communications Center to connect to Mayo Clinic Medical Transport sites in Barron and Osseo, Wisconsin. The Mayo Clinic Medical Transport Wisconsin sites will be using WISCOM and narrow banded VHF radio resources. The one additional CCGW will bring Mayo Clinic Emergency Communications Center's total CCGW count to eight (8). The Mayo Clinic Medical Transport original ARMER migration design plan used ten (10) CCGWs; this plan was amended to accommodate regional needs.

In closing, Mayo Clinic Medical Transport is seeking your permission to add one CCGW for expanded service needs. No further ARMER resources are needed for this service expansion. Thank you for your time and consideration.

Sincerely,

Chad Liedl, M.S., R.N.
Transport Nurse Manager
Emergency Communications Center and Saint Marys Lifeline
Phone507-538-4074, Cell: 507-696-1368
E-mail: liedl.chad@mayo.edu

Mayo Clinic
200 First Street SW
Rochester, MN 55905
www.mayoclinic.org

Northwest Minnesota Radio

Northwest Regional Emergency
Communications Board
C/O Headwaters RDC
PO Box 906
Bemidji, MN 56619

Phone. 218.444.4732
Email.
mthompson@hrdc.org

September 10, 2014

Jackie Mines, Director
Emergency Communications Network
445 Minnesota Street, Suite 137
St. Paul, MN 55101

Re: Clay County ARMER Planning
Director Mines:

Clay County is seeking financial support from the Emergency Communications Board (ECB) to complete an ARMER participation plan. The cost to complete this plan will be 24,0000 dollars.

On August 13, 2014 Northwest Emergency Communication Board and Advisory Committee passed motions in support of Clay County making their request to the ECB. The Northwest Region supports Clay County's effort to complete an ARMER participation plan and their request for financial support from the ECB.

The Northwest Region has seen our members showing interest in transitioning to ARMER as their primary public safety communications system and we support our members in pursuing communication options that fulfill their operational and financial needs, and promotes interoperability within the region and statewide.

Respectfully,

Emergency Communication Networks

445 Minnesota Street • Suite 137 • Saint Paul, Minnesota 55101-5137
Phone: 651.201.7547 • Fax: 651.296.2665 • TTY: 651.282.6555
www.ecn.state.mn.us

Alcohol and Gambling Enforcement

Bureau of Criminal Apprehension

Driver and Vehicle Services

Emergency Communication Networks

Homeland Security and Emergency Management

Minnesota State Patrol

Office of Communications

Office of Justice Programs

Office of Traffic Safety

State Fire Marshal

DATE: 11/7/2014

TO: Finance Committee

FROM: Jackie Mines, Direct ECN

SUBJECT: Request to Develop 7.19 Equipment Match Grant out of E911 Funds

Dear Chair Gerlicher and Members of the Finance Committee,

While the outcomes of the Strategic Planning Session continue to be reviewed by various committees, early indications from members and participants in the Strategic Planning Session are that the Statewide Emergency Communications Board (SECB) should develop a matching grant program for the specific hardware needed for the 7.19 upgrade. This grant program would be funded from raising the 911 fee. I am proposing a fifty percent match on specific hardware. There will be more cost associated with installation, project management and ancillary equipment needed by the owner, however these amounts are subject to change and unknown until the project commitment is made. For budgeting purposes and legislative approval to occur this year, the costs must be projected and fairly solid.

Timing on this request is of the essence because sub-system owners who will need to make significant investment in equipment and project management to be ready for the 7.19 upgrade need to make budget requests as soon as possible. A thorough review of necessary equipment should commence with sub-system owners, MNDOT and ECN to determine the exact funds needed and the timing that sub-system owners will need the money available. Coordination between all parties is essential as ECN will need to understand which fiscal year the money needs to be available for each sub-system upgrade. This cannot all happen in one year but will need to be spread over the next few years to 2019 depending on when local units of government can secure their matching funds.

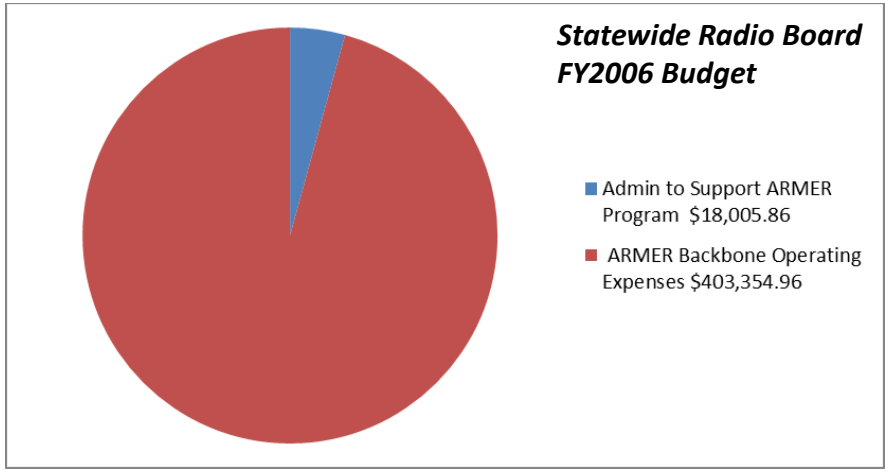
If approved, MNDOT and ECN will begin meeting with sub-system owners and develop the grant guidelines for approval by Finance and SECB in a future meeting.

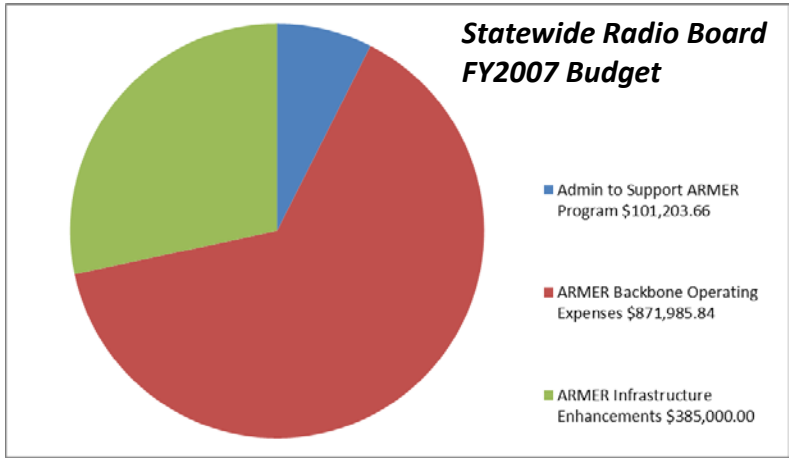
Regards,

Jackie Mines, Director
Emergency Communication Networks

Statewide Radio Board FY 2006/2007 Budget

2005 Session Law: $1,323,00 is allocated each year from the 911 fees collected for the Statewide Radio Board for costs of design, construction, maintenance of, and improvements to those elements of the first, second and third phases and emergency medical services, and for recurring charges for leased sites and equipment for those elements of the first, second, and third phases that support mutual aid and emergency medical communication services.

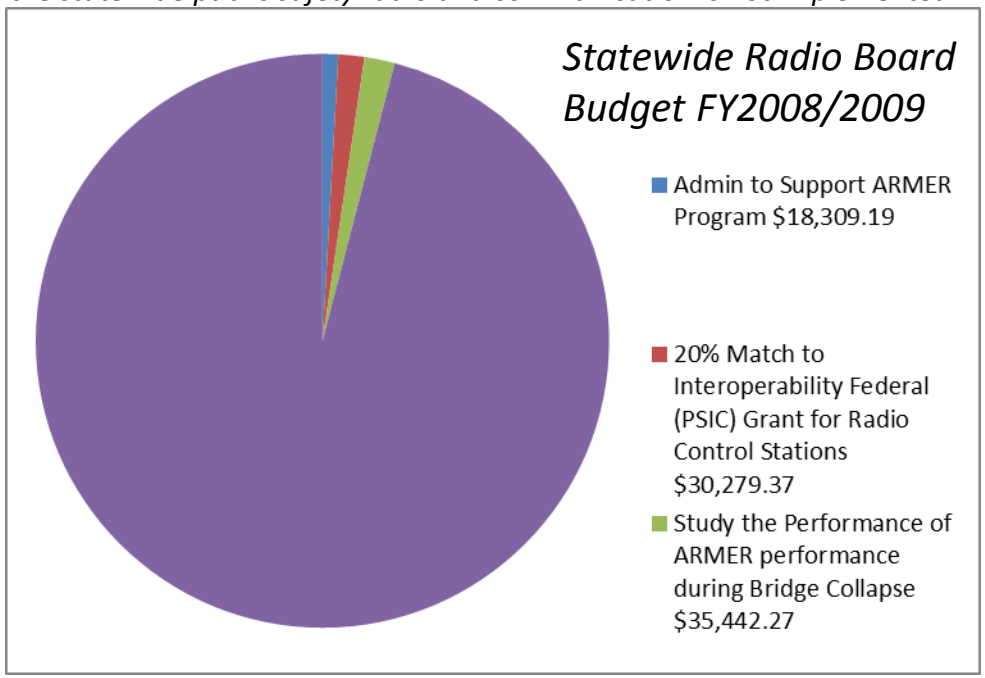




- Administrative support includes salary of ARMER Program Manager in the first biennium; travel and office supplies to support personnel.
- ARMER Backbone Operating Expenses is payment to MNDOT to maintain the ARMER system.
- ARMER Infrastructure Enhancements includes adding towers to improve coverage, channels (repeaters) to improve capacity and microwave connections to provide redundancy over the basic ARMER plan.

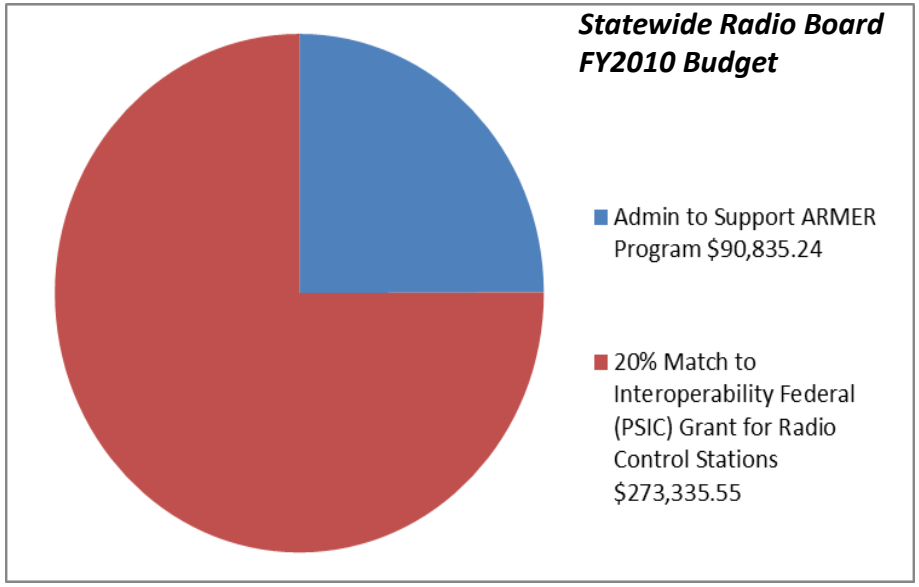
Statewide Radio Board FY 2008/2009 Budget

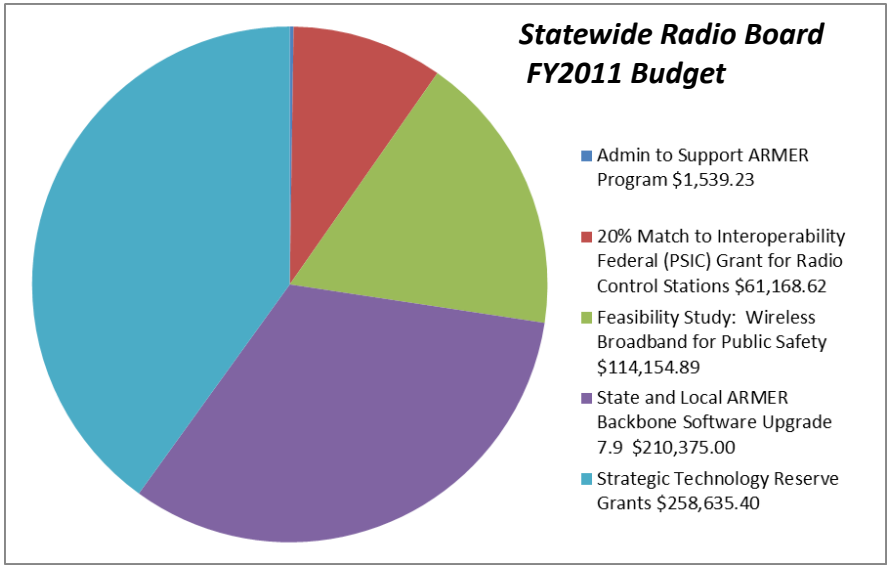
2007 session law provided for $1,000,000.00 each year to Statewide Radio Board for costs of design, construction, maintenance of, and improvement to those elements of the statewide public safety radio and communication system that support mutual aid communications and emergency medical services or provide interim enhancement of public safety communication interoperability in those areas of the state where the statewide public safety radio and communication is not implemented.



- FY2008/2009 shown together because only $10,000 of budgeted projects spent in FY2008.
- Fund the local match for Public Safety Answering Point (PSAP) Radio Control Stations integrating local VHF/UHF systems with ARMER system.
- ARMER Infrastructure Enhancements includes adding towers to improve coverage, channels (repeaters) to improve capacity and microwave connections to provide redundancy over the basic ARMER plan.

Statewide Radio Board FY 2010/2011 Budget

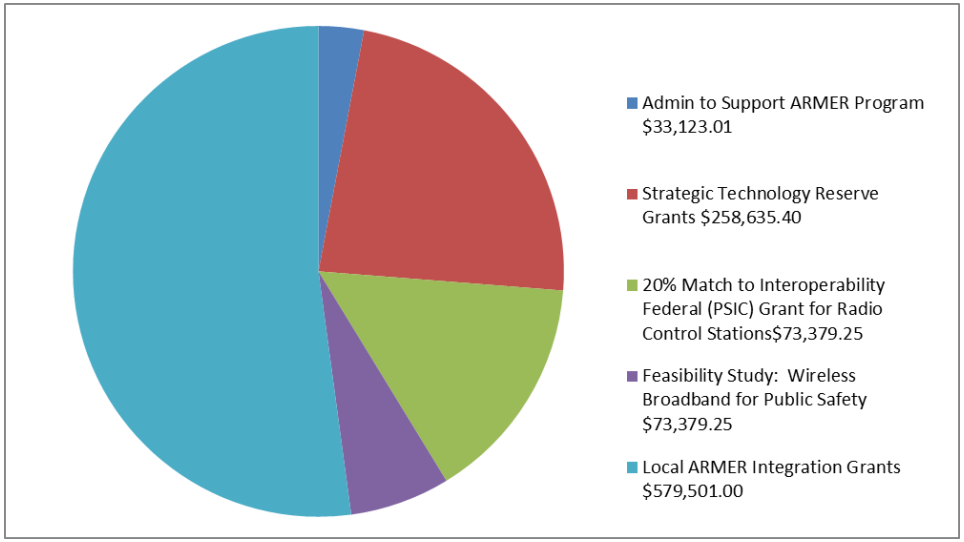




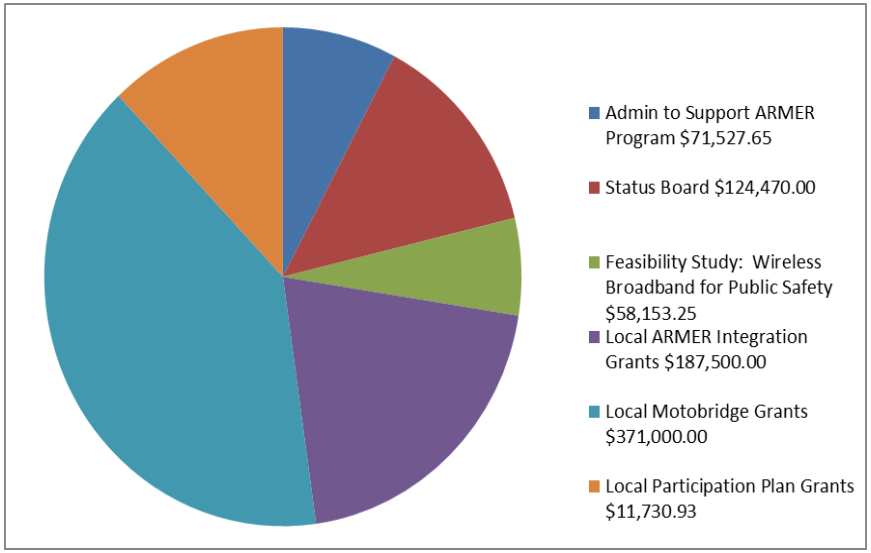
- Strategic Technology Reserve Grants $258,635.40 was moved into FY2012 to complete project.
- Feasibility study to develop needs assessment for a dedicated public safety wireless broadband.
- Software upgrade to bring all ARMER users to same software level and increase radio IDs necessary to add more counties.
- Strategic Technology Reserve consists of portable tower and repeater for each radio region for large emergencies that bring in surrounding regions for assistance. Required by the federal PSIC grant.

Statewide Radio Board FY 2012/2013 Budget

Statewide Radio Board
FY 2012 Budget



Statewide Radio Board
FY 2013 Budget



- Local Motobridge Grants and a portion of Local Participation Plan Grants were moved into 2014 at request to extend by local units of government.
- Local ARMER Integration Grant is grant to counties to fund a portion of the additional cost of local infrastructure to address local coverage and/or capacity issues.
- Status Board is a software application that allows dispatchers to monitor statewide radio resources.
- Local Motobridge Grant is for interoperable communications equipment.
- Local Participation Planning Grants funded planning grants for 16 additional counties that did not participate in the initial planning process.

Allied Radio Matrix for Emergency Response

ARMER

Project Status Report

Reporting Period September 1, 2014 through October 1, 2014

Executive Summary

Overall Status:

	Green (Controlled)	Yellow (Caution)	Red (Critical)	Reason for Deviation
Budget	☒ ☐ ☐	☐ ☐	☐	
Schedule	☐ ☐ ☐	☐ ☒	☐	Land acquisition delays will impact completion of some sites
Scope	☒ ☐ ☐	☐ ☐	☐	

ARMER Backbone

96%

On-the-air

Controls

Issue Status:

Change Status:

- No pending plan changes

Accomplishments

Accomplishments during this Reporting Period:

- The following sites went on the air:

- The land acquisition has been completed for the following sites:
  - o

Budget

Construction Budget Status as of October 1, 2014

Project Funding	Original Budget	Spent to Date	Unspent Balance Remaining	Encumbered	Available Balance
Phase 3	$45,000,000	$44,952,397.19	$47,602.82	$0.00	***COMPLETE**
SRB Funds (FY 09)	$1,902,831.00	$1,902831.00	$0	$0	**COMPLETE**
Phase 456 (FY 09)	61,996,957.89	$61,981,069.99	$15,887.90	$15,887.90	$ 0.00
Phase 456 (FY 10)	$62,015,407.77	$61,803,168.74	$212,239.03	$212,239.03	$ 0.00
Phase 456 (FY 11, 12, 13)	$61,987,634.34	$39,287,911.31	$22,699,723.03	$6,063,082.00	$ 16,636,641.03
Total Phase 456	$186,000,000.00	$163,072,150.04	$22,927,849.96	$6,291,208.93	**$16,636,641.03**
Projected Contingency as of November 1, 2014					$756,641.03

Comments:

-

Scheduled Milestones / Deliverables

Status updated October 1, 2014

Milestone	Total Sites	Sites Not Started	Sites in Progress	Sites Complete
ARMER Backbone Construction	324 Sites			
Tower Site Acquisition	324	0	11	313
Tower Construction & Site Development Work	324	8	10	307
Microwave Connectivity & RF Deployment	324	10	0	314 On the Air

Some Sites are on the air, but on the old towers or temporary towers. They are counted as on the air, but still require construction and/or installation at the new tower sites before they are complete:

- Border(New site under construction)
- Finland
- Beaver Bay (Out for Bid)
- Line Lake(New site under construction)
- Erie Hill(New site under construction)
- Argo Lake (Out for Bid)
- Duluth South

Of the 313, 8 are on temporary sites; sites construct and move still in the works.

SE – all sites completed
SR – all sites done, but working on leased site replacement.
SW – all sites completed
CM – all sites completed
Metro – all sites completed
NW – 3 land acquisitions remaining.
NE – 10 site under construction, 8 land acquisitions remaining.

<u>Completion Targets</u>

ARMER all Phases:

14 sites will be delayed due to delays in land acquisition.

Ongoing ARMER System Work

Motorola System Upgrade

- Upgrade to Motorola system version 7.13 punch list is nearing completion.

Site improvements

- We also have 3 sites that need shelter upgrades to get air handlers and generators upgraded.
- Still working on the addition of card key reader to the equipment shelters. We are gathering the parts and working on the install plans. Parts are in. Working on install plans.
- We are also still working on replacing a number of towers that are on the air, but are not structurally up to standards and need to be replaced. This has limited some of the county requests for other antenna system and microwave additions.
- We are also reviewing some of our leased sites. Plans had always been to build towers in these areas, but to get the project moving we leased site to get on the air. In review of some of the land and lease cost it would make sense to find land in these areas and build towers. Also looking at long term land lease from private parties, would prefer to have towers on state, County or City owned land.

Microwave improvements

- We have developed a process for microwave path review and are working on a number of improvements to the microwave system. For high capacity routes we have taken the target of 20 miles for space diversity down to 17 miles. We are reviewing outage records for the paths and working improvements, space diversity, realignment, etc.
- We are reviewing and rerouting some links sometimes requires changing the link capacity.
- At this point we have identified one bad path where an intermediate microwave site is needed. So we are looking to add a microwave site somewhere in the Cromwell area to split the Lawler – Moose Lake link. Working with the County it appears a site has been identified. Need to work through the environmental reviews and acquisition.
- Working to reroute the Oakland Woods – Alden path through Albert Lea to improve path performance. Working with County.
- We are also working to get the DC power systems updated at all sites to improve system reliability. Battery system contract completed, order parts.
- Still reviewing microwave performance, ongoing through the year.

VHF interop layer

- 109 outstate VHF sites have VLAW31 installed. VLAW31 is connected to CCGW so it is available to any MCC7500 console in the system and any Gold Elite within the zone. With the 7.13 upgrade zone boundaries for 7500 consoles have gone away, you just need to program the resource into the MCC7500.
- 109 sites have the VHF VFS installed and connected to MotoBridge.
- VPN access is being worked on for access to MotoBridge network.

System improvements

- Add redundant router and sink links to all ASR sites. This will help improve the instances of site trunking. Working on install of redundant routers, SW, SC, SE area complete, starting work in CM, NE and NW.
- Replace Lake Crystal leased site with 2 new sites. This adds a new site to the area.

Old towers that need replacement

- We have a number of towers that are on the air for ARMER that are old towers constructed in the 50's. These towers did not pass structural when we added the new ARMER equipment. But the level of structural deficiency was not a risk that required immediate replacement. So we have held off on replacement of these towers to see where we were in the ARMER budget to build what we had planned. We are still holding off on these until we are a little further along with ARMER. We are looking a moving a few of these up due to County co-location request that we have had to turn down and a couple that need to may have to have space diversity dished added.

ARMER Construction Budget (Remaining Work)

			Unencumbered Fund Balance (As of November 2014)		**$16,636,641.03**
Site Name (Green - site on air)	**County**	**Description**	**Land/ Construction**	**Estimate to Complete**	**Balance**
Lutsen	Cook	Replace Shelter	Ready	$175,000.00	$16,461,641.03
Tower	St Louis	Add Shelter/site work	Ready	$150,000.00	$16,311,641.03
Beaver Bay	Lake	Replace Tower	Bid on Street	$630,000.00	$15,681,641.03
Argo Lake	St Louis	New tower	Bid on Street	$505,000.00	$15,176,641.03
Palo	St Louis	New tower	Reviewing Bids	$630,000.00	$14,546,641.03
Soudan	St Louis	New tower	Reviewing Bids	$630,000.00	$13,916,641.03
Berner	Clearwater	New tower	Ready - On Hold	$530,000.00	$13,386,641.03
Island Lake	Beltrami	New tower	Purc	$530,000.00	$12,856,641.03
Cromwell	Carlton	New tower	Envir/Purc	$655,000.00	$12,201,641.03
Duluth South	St Louis	New tower	Lease	$280,000.00	$11,921,641.03
Finland	Lake	Replace Tower	DNR/Envir	$710,000.00	$11,211,641.03
Cascade River	Cook	New tower	DNR/Envir	$790,000.00	$10,421,641.03
NE Lake County	Lake	New tower	DNR/Envir	$840,000.00	$9,581,641.03
Lima Mt	Cook	New tower	DNR/Envir	$1,340,000.00	$8,241,641.03
Sawbill	Cook	New tower	DNR/Envir	$1,390,000.00	$6,851,641.03
Devil Fish	Cook	New tower	DNR/Envir	$640,000.00	$6,211,641.03
Red Lake	Beltrami	New tower	Indent Land	$630,000.00	$5,581,641.03
Eden Valley	Meeker	New tower	Envir/Lease	$500,000.00	$5,081,641.03
Lake Crystal	Blue Earth	New tower	Indent Land	$625,000.00	$4,456,641.03
Madelia	Watonwan	New tower	DOT/Envir	$530,000.00	$3,926,641.03
Molde	St Louis	Replace fire tower	DNR/Envir	$320,000.00	$3,606,641.03
PENDING WORK					
Card Key				$500,000.00	$3,106,641.03
Site clean up, shelter and tower removals				$400,000.00	$2,706,641.03
Hewit: Land Purchase, replace tower.					$2,706,641.03
Scandia: Need to look at land purchase.					$2,706,641.03
Geneva: Need to look at land purchase, new tower ?					$2,706,641.03
Mapleton: Find land and build new tower					$2,706,641.03
Red Wing: Land purchase					$2,706,641.03
MSO - Backup equipment				$1,050,000.00	$1,656,641.03
Microwave DC power - Upgrades to meet run time required				$900,000.00	$756,641.03
TOWER REPLACEMENTS (This work being held until above projects compeleted)					
Russell	Replace tower			$600,000.00	$156,641.03
Freedhem	Replace tower			$600,000.00	
Middle River	Replace tower			$600,000.00	
Hawley	Replace tower			$600,000.00	
Theif River Falls	Replace tower			$600,000.00	
Windom	Replace tower			$600,000.00	
Virginia	Replace tower			$600,000.00	
Cass Lake	Replace tower			$600,000.00	
Viola	Replace tower			$600,000.00	
Kimball	Replace tower			$600,000.00	
Hoffman	Replace tower			$600,000.00	
New London	Replace tower			$600,000.00	
Woodland	Replace tower			$600,000.00	
Littlefork	Replace tower			$600,000.00	
Roosevelt	Replace tower			$600,000.00	

ARMER SITES

Legend

Land Status

- Final Reveiws
- Identified
- Initial Engineering Review
- Initial Mapping
- Prospects
- Search Area

Sites Status

- On Air
- On Air Construction
- On Air Upgrade
- On Air LE
- LE
- No RF
- BDA LE

Construction Status

- RF
- Microwave
- Construction

RAC

- Central
- Metro
- Northeast
- Northwest
- Southcentral
- Southeast
- Southwest

DESIGN BUILD
This is a Design Build project
Portions of the design are subject to change
based on site acquisitions that are still in progress

October 11, 2014

Allied Radio Matrix for Emergency Response

ARMER

Project Status Report

Reporting Period September 1, 2014 through October 1, 2014

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Overall Status:

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Budget	☒ ☐ ☐	☐ ☐	☐	
Schedule	☐ ☐ ☐	☐ ☒	☐	Land acquisition delays will impact completion of some sites
Scope	☒ ☐ ☐	☐ ☐	☐	

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Accomplishments

Accomplishments during this Reporting Period:

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  - Slate Lake

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Phase 456 (FY 11, 12, 13)	$61,987,634.34	$37,365,164.66	$24,622,469.68	$7,347,737.30	$ 17,274,732.38
Total Phase 456	$186,000,000.00	$161,132,903.67	$24,867,096.33	$7,592,033.95	**$17,275,062.38**
Projected Contingency as of September 1, 2014					$832,062.38

Comments:

-

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ARMER Construction Budget (Remaining Work)

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Tower	St Louis	Add Shelter/site work	Ready	$150,000.00	$16,947,062.38
Beaver Bay	Lake	Replace Tower	Bid on Street	$630,000.00	$16,317,062.38
Argo Lake	St Louis	New tower	Bid on Street	$585,000.00	$15,732,062.38
Palo	St Louis	New tower	Bid on Street	$710,000.00	$15,022,062.38
Soudan	St Louis	New tower	Bid on Street	$710,000.00	$14,312,062.38
Berner	Clearwater	New tower	Ready - On Hold	$610,000.00	$13,702,062.38
Island Lake	Beltrami	New tower	Purc	$610,000.00	$13,092,062.38
Cromwell	Carlton	New tower	Envir/Purc	$735,000.00	$12,357,062.38
Duluth South	St Louis	New tower	Lease	$280,000.00	$12,077,062.38
Finland	Lake	Replace Tower	DNR/Envir	$710,000.00	$11,367,062.38
Cascade River	Cook	New tower	DNR/Envir	$790,000.00	$10,577,062.38
NE Lake County	Lake	New tower	DNR/Envir	$840,000.00	$9,737,062.38
Lima Mt	Cook	New tower	DNR/Envir	$1,340,000.00	$8,397,062.38
Sawbill	Cook	New tower	DNR/Envir	$1,390,000.00	$7,007,062.38
Devil Fish	Cook	New tower	DNR/Envir	$640,000.00	$6,367,062.38
Red Lake	Beltrami	New tower	Indent Land	$630,000.00	$5,737,062.38
Eden Valley	Meeker	New tower	Envir/Lease	$500,000.00	$5,237,062.38
Lake Crystal	Blue Earth	New tower	Indent Land	$625,000.00	$4,612,062.38
Madelia	Watonwan	New tower	DOT/Envir	$610,000.00	$4,002,062.38
Molde	St Louis	Replace fire tower	DNR/Envir	$320,000.00	$3,682,062.38
PENDING WORK					
Card Key				$500,000.00	$3,182,062.38
Site clean up, shelter and tower removals				$400,000.00	$2,782,062.38
Hewit: Land Purchase, replace tower.					$2,782,062.38
Scandia: Need to look at land purchase.					$2,782,062.38

Geneva: Need to look at land purchase, new tower ?				$2,782,062.38
Mapleton: Find land and build new tower				$2,782,062.38
Red Wing: Land purchase				$2,782,062.38
MSO - Backup equipment		$1,050,000.00		$1,732,062.38
Microwave DC power - Upgrades to meet run time required		$900,000.00		$832,062.38
TOWER REPLACEMENTS (This work being held until above projects compeleted)				
Russell	Replace tower	$600,000.00		$232,062.38
Freedhem	Replace tower	$600,000.00		
Middle River	Replace tower	$600,000.00		
Hawley	Replace tower	$600,000.00		
Theif River Falls	Replace tower	$600,000.00		
Windom	Replace tower	$600,000.00		
Virginia	Replace tower	$600,000.00		
Cass Lake	Replace tower	$600,000.00		
Viola	Replace tower	$600,000.00		
Kimball	Replace tower	$600,000.00		
Hoffman	Replace tower	$600,000.00		
New London	Replace tower	$600,000.00		
Woodland	Replace tower	$600,000.00		
Littlefork	Replace tower	$600,000.00		
Roosevelt	Replace tower	$600,000.00		

ARMER SITES

Legend

Land Status

- Final Reveiws
- Identified
- Initial Engineering Review
- Initial Mapping
- Prospects
- Search Area

Sites Status

- On Air
- On Air Construction
- On Air Upgrade
- On Air LE
- LE
- No RF
- BDA LE

Construction Status

- RF
- Microwave
- Construction

RAC

- Central
- Metro
- Northeast
- Northwest
- Southcentral
- Southeast
- Southwest

DESIGN BUILD
This is a Design Build project
Portions of the design are subject to change
based on site acquisitions that are still in progress

October 10, 2014

BEFORE THE

FIRST RESPONDER NETWORK AUTHORITY

Proposed Interpretations of Parts of the Middle Class Tax Relief and Job Creation Act of 2012

Dkt. No. 140821696-4696-01

COMMENTS OF THE STATE OF MINNESOTA

The State of Minnesota, the Statewide Emergency Communications Board (SECB), and its respective stakeholders are pleased to provide its response to FirstNet's *Proposed Interpretations of Parts of the Middle Class Tax Relief and Job Creation Act of 2012* ("Public Notice") dated September 24, 2014. We feel that this Public Notice is an excellent opportunity to advance the state consultation process by soliciting feedback from the public, government organizations, service providers, vendors and academia.

About Minnesota

Minnesota's population of 5,420,380 is approximately 71% urban according to the United States Census Bureau.[1] Only a very small percentage of the state's geography of 86,939 square miles is considered "urban." In Minnesota and many other markets, the nationwide public safety broadband network ("NPSBN") faces a significant business challenge in meeting public safety needs for comprehensive coverage while making the business case for providing service everywhere. For population distribution and urban/rural classification, see Figure 1 and Figure 2 below.[2]

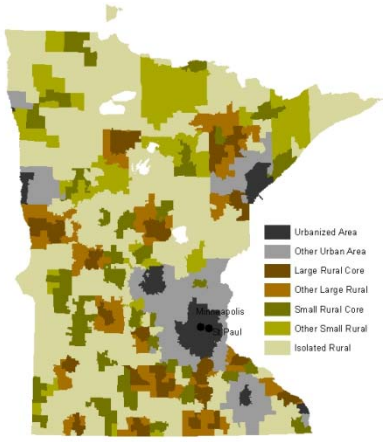

Figure 1: Urban-Rural Classification in Minnesota Error! Bookmark not defined.

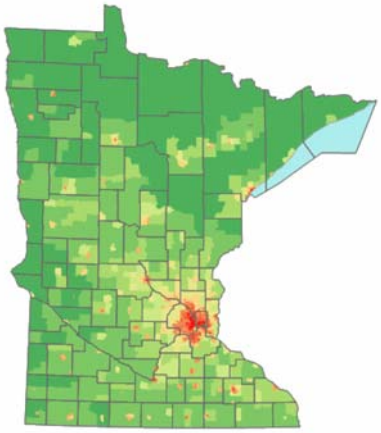

Figure 2: Population Distribution in Minnesota Error! Bookmark not defined.

[1] *See* http://www.census.gov/compendia/statab/2012/tables/12s0029.xls

[2] Figures 2 and 3 are from http://en.wikipedia.org/wiki/Minnesota; data from 20120 Census.

The geography of the State of Minnesota incorporates broad rural areas of farmland and dense forest together with dense metropolitan areas, a variety of mid-sized and small cities, and 11 federally recognized tribal governments. We share an extensive unprotected international border with Canada. The port city of Duluth is the world's largest inland port. With its wide variety of geography types, population densities, governmental structures and uninhabited areas, Minnesota represents a microcosm of the diverse challenges FirstNet faces in designing and deploying the wireless broadband network across the nation.

Implications of the Public Notice

We note that specific interpretations of the Act have far-reaching impacts on FirstNet and State obligations and responsibilities for network build-out, operations and maintenance. The most significant of these impacts are as follows:

- **The scope of FirstNet's build-out and service obligation,** specifically, with regards to how the definition of "rural", and FirstNet's responsibility under the Act to provide service to "rural" areas with substantial rural coverage milestones. In particular, FirstNet's proposed third category, "wilderness" or "frontier" as distinct from "rural," may limit FirstNet's obligation to provide any service in certain markets.
- **Who may access the network.** FirstNet proposes to declare that it can provide service to effectively any party by marketing directly to public safety and government, to and through Opt-out States, and through third parties in covered leasing agreements.
- **Who is considered "public safety,"** and accordingly, who has primary rights to use the network and pre-emptive access.
- **Operational management of the network,** specifically, which parties have control over assigning and configuring access, assignment of priority, and enforcing compliance to standards on the network.
- **Demarcation points,** specifically, those of FirstNet, Opt-out States, third party partners through covered leasing agreements, and vendor and public safety entity enterprise networks.
- **Lifecycle management obligations,** including FirstNet and Opt-out State obligations to build, upgrade, and maintain the network.

Key Points:

The following key points call out our responses to the issues contained within the public notice that contributors to this filing agreed were the most important:

- **We object to FirstNet's proposed definition of "rural" and to FirstNet's proposed classifications for "frontier and wilderness."** FirstNet seeks to define "rural" areas in such a manner that would limit the area that is considered rural and could, in effect, reduce FirstNet's obligation to ensure build-out and coverage milestones across vast geographies of the country, including **42 Indian reservations,** one entire state, the majority of three additional states, and a large portion of Minnesota. See pp. 4-6 of our filing.
- **Universal coverage, including coverage in non-urban areas, is going to be a key factor to adoption in Minnesota and nationwide.** Each state should develop specific rural build-out

milestones as part of its requirements for FirstNet, and FirstNet and the state must agree to these milestones throughout the consultation process. Otherwise, FirstNet is not likely to receive approval from the states for FirstNet's implementation plans.

- **FirstNet's service will materially benefit from state and regional governance structures having a substantive role in managing and authorizing access to the network.** We make this observation based on our experience with statewide and regional governance and its role in managing access to communications systems including land mobile radio systems. See pp. 8-9 of our filing.
- **We recommend that FirstNet remove "device services" and "all other network elements and functions other than the radio access network" from its definition of the core network.** This definition is contrary to the provisions of the Act and is far too expansive. In particular, we are concerned that FirstNet would consider application servers that support device services as part of the core network owned and operated by FirstNet, and that such network architecture would inhibit interoperability, negatively affect the quality of the service, and stifle potential innovations in the vendor community. See pp. 11-13 of our filing.
- **We strongly support FirstNet's interpretation for a single nationwide core that is constructed and operated by FirstNet.** Not only is this interpretation consistent with the provisions of the Act, it allows for the highest level of interoperability in next-generation communications for public safety. See pg. 13 of our filing.
- **FirstNet needs to ensure that users have the same service and experience everywhere they go, regardless of whether they are in their home state, a foreign state, an opt-out or an opt-in state.** The network experience must be seamless in order to facilitate mutual aid during major, multi-agency incidents. See pg. 12 of our filing.

ISSUES:

Definition of "Rural"

We believe the proposed definition of "rural" areas and the separate category "wilderness" or "frontier" areas could limit FirstNet's milestone obligation in a way that would undermine the State consultation process and ultimately fail to meet our needs. FirstNet is required under the Act to include "deployment phases with *substantial* rural coverage milestones."[3] We believe that FirstNet's definition of rural areas, and its contemplated third category "frontier," may *exclude* from rural milestones much of the geography of the state of Minnesota and many other states outside of the east and west coasts of the country. This definition would be contrary to the spirit of the law to provide "*substantial* rural coverage milestones."

FirstNet's proposed definition contributes to ongoing issues with Federal rural development programs that prevent rural governments from taking a holistic approach to use of Federal Rural Development funds due to a lack of common requirements. FirstNet has chosen and suggests modifying[4] one of over 40 competing definitions of "rural" that exist in Federal Rural Development programs alone,[5] effectively introducing another new definition that would limit FirstNet's obligation to provide substantial coverage milestones in nonurban areas.

Valid, competing definitions for "rural" areas in Federal Rural Development programs have use metrics including, but not limited to:

- Population density
  - Based on political jurisdiction or administrative division (*e.g.*, city, county, or census block)
  - Specifically determined areas (*e.g.*, the Empowerment Zones and Enterprise Communities Program which specifies no area greater than 1,000 sq. mi. that does not exceed 30,000 people in population)
- Any area outside the boundaries of a city of certain population (most common benchmarks include 20,000 people for housing programs and 50,000 people for energy programs)
  - Any area outside the boundaries of a city of a certain population and the "urbanized" (generally, no metric given) areas contiguous to that city
- Specific States (*e.g.*, FY 2001, 2004 Processing Labor Demo Housing Grants Program)
- An area that lacks internet service at 5 Mbps upstream and downstream
- An area determined to be "rural in character" by the Secretary of Agriculture[6]

[3] Act, Sec. 6202(b)(3) (emphasis added).
[4] 79 FR 57064. FirstNet adopts the Rural Electrification Act's definition but considers excluding from "rural" any area that meets a new classification designated "wilderness" or Frontier".
[5] 2013 U.S. Department of Agriculture Rural Development Report on the Definition of Rural, pp. 23-77.
[6] *Id.* These metrics taken from the USDA report's summaries.

The Rural Electrification Act, which FirstNet references for its source of the definition of "rural", deviates from a default definition of "rural" introduced in the 2008 Farm Bill[7] which was intended to eliminate inconsistency in defining the term "rural" for federal rural development programs:

> *'(A) IN GENERAL.—Subject to subparagraphs (B) through (G), the terms 'rural' and 'rural area' mean any area other than—*
> *'(i) a city or town that has a population of greater than 50,000 inhabitants;*
> *And ''(ii) any urbanized area contiguous and adjacent to a city or town described in clause (i).*

This definition identifies a "rural area" as any area outside or non-contiguous to a city or town of 50,000 people. According to this definition 100% of areas are either "urban", "urbanized", or "rural", including remote and protected areas such as state and national parks and tribal lands. Using this definition, **FirstNet has an obligation to provide significant rural build-out milestones for 100% of "non-urban" and "non-urbanized" areas, subject to that State's milestone requirements identified in the State and FirstNet consultation process.**

FirstNet's proposed "wilderness" or "frontier" area designation may substantially limit FirstNet's obligation in a way that would undermine the state consultation process. FirstNet also considers whether to define as a "frontier" area as any area with a population of less than five people per square mile.[8] If FirstNet were to do so, it would categorically exclude from rural build-out milestones at least one entire state, the majority or large portions of several other states, and more than 13% of the nation's Indian reservations.[9] Following is a list of some areas that would qualify as "frontier" areas that would not be subject to FirstNet's "rural" build-out milestones:

- **The entire State of Alaska** (average population density statewide of 1.3 people/sq. mi)
- Nearly the entire state of Wyoming (42 of 56 counties potentially qualifying as "frontier" with average population density statewide of 6.0 people/sq. mi)
- Most of the state of North Dakota (35 of 53 counties potentially qualifying as "frontier" with average population density statewide of 10.5 people)
- Over half of the state of Montana (14 of 23 counties potentially qualifying as "frontier"with average population density statewide of 7.0 people/sq. mi)
- Nearly half of South Dakota (31 of 66 counties potentially qualifying as "frontier" with average population density statewide of 11.1 people/sq. mi)
- Five entire counties in Minnesota including Koochiching, Kittson, Lake, Lake of the Woods and Cook Counties (based on average population density).
- **42 Indian Reservations** including Red Lake and Bois Forte Reservations in Minnesota.[10]

[7] 2008 Farm Bill at 6108(a)(13).
[8] 79 FR 57064.
[9] *See*, US Bureau of Indian Affairs Frequently Asked Questions at http://www.bia.gov/FAQs/. Note that the BIA counts "approximately" 326 Indian Reservations, while most publicly-available sources count 310.
[10] This list references various figures from US Census 2010 data.

In light of the challenges of finding a single rural build-out milestone to apply nationwide, FirstNet should leave determination of each State's rural build-out milestones to the State. Each State's rural and non-rural areas include 100% of the state's geography. The order and schedule for rural deployment is a critical part of a State's requirements, and it is the state's responsibility—not FirstNet's—to define each state's requirements. This approach is consistent with the State and Local Implementation Grant Program (SLIGP), under which each State will develop its own coverage needs and user requirements.[11]

This approach is also consistent with the Act. The Act does not specify how FirstNet must arrive at its definition of "rural" or the milestones it applies to rural and nonurban build-out, other than that it must consult with States.[12] The Act does not require that such definition and milestones must be the same in each State. **If each State specifies the deployment plan for the State, accommodating rural and nonurban areas as it sees fit**, FirstNet may endorse that plan and adopt it in the form of "deployment phases with substantial rural coverage milestones"[13] that accommodate the State-specified plan.

Eligibility to Use the Network

We agree with FirstNet's preliminary conclusions that the Act does not expressly preclude any group of users and grants FirstNet discretion to consider a broad range of users within its mission;[14] these conclusions are consistent with both the letter of the Act as well as the policy mandate that the network be financially self-sustaining.[15] Without the ability to serve a broad base of users, FirstNet cannot hope to accomplish sustainability. As more fully developed below, however, **the drive to generate revenues must not hamper access to the network for public safety purposes**. The NPSBN is for public safety, and it must always be available for public safety communications.

Public Safety Entities

The overriding theme of FirstNet's preliminary conclusions in the Notice with regard to "public safety entities" is that that **the term encompasses a broad array of people and entities**, enabling FirstNet to serve them as users of the NPSBN in other than a "secondary" capacity and without need of a "covered leasing agreement." We generally support that direction with the caveats that (1) State and local incident command must always control prioritization and preemption among those public safety users, and (2) non-public safety users are secondary users and gain access to the network only when there is excess capacity not needed by public safety entities. Minnesota urges FirstNet to empower the statewide governance structure to work with its State and local public safety agencies to ensure appropriate prioritization assignments.

"Public Safety Services"

Minnesota concurs with FirstNet's preliminary conclusion that a "public safety entity" under the Act must *either* provide (1) "public safety services", as that term is defined in section 337(f) of the Communications Act of 1934 *or* (2) "services provided by emergency response providers", as that term is defined in section 2 of the Homeland Security Act of 2002—it need not do both.[16] A contrary

[11] *See* FFO at pg. 3
[12] Act, Sec. 6206(c)(2).
[13] Act, Sec. 6206(b)(3).
[14] 79 FR 57060.
[15] Act, Sec. 6208(b).
[16] 79 FR 57061.

interpretation would require an unreasonable reading of the phrase "and includes services provided by emergency response providers, as that term is defined in section 2 of the Homeland Security Act of 2002."[17]

Transportation and Transit

Of the four types of entities FirstNet highlights as being included by the Federal Communications Commission ("FCC") within the scope of "public safety service" providers under Sec. 337(f) of the Communications Act, we underscore particularly the importance of the second: transportation and transit departments.[18] Whether transportation and transit are "public safety entities" under the Communications Act or the Homeland Security Act —and we believe they fit under both— **Transportation and Transit Departments must be considered "public safety entities" that may be prioritized for access to the network in an emergency**.

Transit Departments execute the movement of enormous numbers of people in evacuation scenarios. For example, City of Duluth Transit is an integral part of the emergency response team, and provides buses to serve as shelters or to evacuate residents. In 1992, Duluth Transit assisted in evacuating 50,000 people from the city in response to a major benzene spill near Lake Superior.[19] Fargo and Moorhead Transit also served a critical evacuation function in the 2009 Red River flood in the Red River Valley in the Fargo-Moorhead region.[20] Similarly, while corrections officials may not require prioritized access for most incidents, they are nonetheless public safety users that may, in a prison riot incident, for example, require prioritized access.

Transportation departments maintain roadways and other underlying transportation infrastructure, provide safety signage and otherwise facilitate safe travel. During an emergency such as a mass evacuation, transportation departments play a pivotal role in managing traffic and roadways and deploying emergency signage.

Non-Traditional and Occasional Public Safety Entities

We stress the importance of the fourth category of entity addressed in the FCC interpretation: "Entities protecting the safety of animals, homes, and city infrastructure, particularly in crisis situations."[21] Specifically, we acknowledge the frequency with which electric and other utility workers are called upon in an emergency to protect lives and property. Such **utilities certainly provide "public safety services" and should be considered "public safety entities" under the Act**. Utilities require reliable telecommunications systems to keep the public safe during disasters (downed power lines, gas leaks, etc.) as well as day-to-day operations (including low-bandwidth SCADA systems). Indeed, all public safety telecommunications systems require electricity, including current public safety land mobile radio systems, air traffic control systems, security systems, and the future NPSBN.

Though the FCC's interpretation by its terms applies only to governmental entities and so may be read to cover only municipal utilities, a utility's ownership or corporate structure does not lessen the

[17] 47 U.S.C. 1401(27).
[18] 79 FR 57061.
[19] Media report: http://www.nytimes.com/1992/07/01/us/50000-flee-toxic-vapors-released-as-train-derails.html
[20] Media report: http://www.mprnews.org/story/2009/03/27/red_river_flood
[21] *Id.*

importance of its emergency response function. As described below, the State believes nongovernmental entities (such as cooperative and investor-owned utilities) supporting emergency response are public safety entities under FirstNet's preliminary interpretation of the scope of Section 2 of the Homeland Security Act.

Authorization of Non-Governmental Users

The Notice seeks input on "which governmental entities may authorize non-governmental organizations to provide public safety services" within the "primary mission" limitation of Sec. 337(f). The State suggests that this inquiry is unnecessary: by FirstNet's preliminary interpretation of the Homeland Security Act—which the State supports—virtually any nongovernmental organization that provides "emergency response provider" services would be a "public safety entity" under the Act, regardless of whether it was "authorized by a governmental entity whose primary purpose is the provision" of public safety services.[22] Specifically, FirstNet preliminarily concludes that the Homeland Security Act includes among public safety entities:

> Personnel, agencies, and authorities providing support to Federal, State, and local governmental and nongovernmental emergency public safety, fire, law enforcement, emergency response, emergency medical (including hospital emergency facilities) personnel, agencies, and authorities.[23]

It is difficult to imagine a case where a "nongovernmental organization[] that [is] authorized by a governmental entity whose primary mission is the provision of such services" does not also fit the above definition. Thus, as interpreted in the Notice, **the Homeland Security Act seems to subsume the Communications Act.**

Statewide Governance Structures and Lessons from the ARMER Program

FirstNet should empower statewide governance structures to determine access rights to the NPSBN, and should require that a State has a statewide governance structure before presenting the state plan. Requiring that a State has established an effective governance structure prior to consultation is consistent with state conditions for accepting funds under SLIGP, which requires States to "have established a governance structure to consult with FirstNet."[24] It is reasonable for FirstNet to assume that states will complete their obligations under SLIGP, which requires states to establish or have established a governance structure, and it is therefore reasonable for FirstNet to require the states it consults with to be represented by a governance structure.

The ARMER program[25] and Statewide Emergency Communications Board[26] management of non-traditional entity access to the system serve as excellent examples of statewide governance's ability to

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[22] *Id.,* 79 FR 57062.
[23] 79 FR 57602.
[24] *See* State and Local Implementation Grant Program, Notice of Federal Funding Opportunity ("FFO") at 2: "Throughout the grant period of performance, NTIA will require recipients to show that they are on track to accomplish the following activities by the end of that period: (1) **established a governance structure, or expanded existing structures, to consult with FirstNet** [. . .]"; emphasis added.
[25] Statewide Trunked Project-25 Land Mobile Radio Network operating throughout the state of Minnesota. More information at https://dps.mn.gov/divisions/ecn/programs/armer/Pages/default.aspx

manage access to a public safety network similar in purpose, size and scope to the future NPSBN in Minnesota. The Minnesota ARMER system allows non-governmental and entities that are not traditional public safety to access the system under a variety of scenarios and serves as an excellent example to FirstNet of how a governance structure may manage non-governmental access to the system.

The Statewide Emergency Communications Board is bolstered by Regional Emergency Communications Boards which perform a similar function to the statewide board, but can adopt more (never less) stringent policies, and advise and consult with the statewide board. The relationship between the Statewide and Regional boards is analogous to the relationship between FirstNet and the Statewide Emergency Communications Board.

Non-Traditional Public Safety Partners on ARMER

For the purposes of ensuring seamless and effective communications between disparate public safety entities, a variety of non-traditional public safety organizations are allowed access to ARMER without penalty including, but not limited to:

- Public transit
- Transportation
- Maintenance
- Parks and recreation
- Non-governmental and private, and non-profit and for-profit organizations[27] such as:
    - Health care institutions
    - Ambulance companies
    - Independent firefighting corporations
    - Hospitals
- Non-government disaster relief and aid organizations,[28] including:
    - American Red Cross
    - Salvation Army
- Educational Institutions
    - Training and credentialing programs[29]
    - Universities
    - School Districts

[26] The Minnesota Statewide Emergency Communications Board and Regional Communications Boards are responsible for management of the ARMER system, communications standards in Minnesota, the State and FirstNet Consultation and a variety of other public safety communications issues. More information at https://dps.mn.gov/entity/srb/Pages/default.aspx
[27] ARMER Standard 5.4.0 at https://dps.mn.gov/divisions/ecn/programs/armer/Documents/standard540.pdf
[28] ARMER Standard 5.2.0 at https://dps.mn.gov/divisions/ecn/programs/armer/Documents/standard520.pdf
[29] ARMER Standard 5.6.0 at https://dps.mn.gov/divisions/ecn/programs/armer/Documents/standard560.pdf

- Members of the media on a "read-only" basis[30]
- US National Weather Service to interoperate with PSAPs during major weather events[31]
- Railroads
- Mining Companies

In each of these cases, a multi-jurisdictional, statewide and inter-regional governance structure including the Statewide Emergency Communications Board and Regional Communications Boards carefully reviewed the justification for providing the given entity access to the system. The governance structure discussed impacts and developed a procedure for managing the access and vetted that procedure with the stakeholder community. Furthermore, every device on the network—without exception—is configured in such a way that it can seamlessly connect with any other device on the network and every user of the system without special effort.[32]

Managing Access through a Governance Structure

FirstNet provides a broad and inclusive definition of public safety, but does not define a mechanism for reviewing access requests to the network. We propose that FirstNet defers these requests to governance structures. An effective governance structure provides checks and balances to ensure that the appropriate users are permitted use of the system with reasonable conditions and restrictions placed on their access. For example, ARMER has a number of highly-specialized cases that call for interoperability between government and private sectors, such as with BNSF railroad police or in-house fire and EMS operations at US Steel, Cypress Mining, and United Taconite that would, under normal conditions, not be traditional users of the government's communications network. In their communities, however, seamless interoperability between these entities and traditional first response agencies is within the public interest.

The Governance Structure allows the State and regions to encourage wide adoption of the ARMER system by all appropriate public safety users. It enables interoperable communications between public, private, primarily public safety, and non-primarily public safety entities as required during a major incident, so that the command staff can focus on how to respond and not on how to communicate.

Interpretation of Applicable Provisions of the Homeland Security Act

FirstNet's expansive reading of the Homeland Security Act's definition of "emergency response providers" (and thus "public safety entity" under the Act) is necessary and appropriate because without it, FirstNet would not be able to meet its mandate: providing reliable communications that accommodate the highly incident-specific nature of public safety and emergency response. In Minnesota, for example, security services at casinos are provided by tribal agents who are not sworn law enforcement officers. Casino security responds to medical and criminal calls and communicates regularly with law enforcement, fire, and EMS. Though casino security may come under the definition of

[30] ARMER Standard 5.1.0 at https://dps.mn.gov/divisions/ecn/programs/armer/Documents/standard510.pdf
[31] ARMER Standard 3.35.0 at https://dps.mn.gov/divisions/ecn/programs/armer/Documents/standard3350.pdf
[32] ARMER Standard 3.16.0 at https://dps.mn.gov/divisions/ecn/programs/armer/Documents/standard3160november2013.pdf

"public safety entity" through another means, the FirstNet interpretation is broad enough to capture the wide variety of entities to which incident commanders, in the heat of emergency response, may wish to provide access to the NPSBN on a prioritized basis.

The State supports the direction of FirstNet's preliminary conclusion that individuals may be "public safety entities,"[33] but it urges FirstNet to address head-on the legal basis for the conclusion. The Notice explains that Sec. 2 of the Homeland Security Act specifically includes "personnel" within the definition of "emergency response providers," from there making the leap that "individuals may fall within the definition of 'public safety entity' so long as they are serving in their official capacity."[34] The leap is apparent in the citation: FirstNet cites Sec. 337(f)(1)(A) of the Communications Act, a provision which, as the Notice acknowledges, "indicates that public safety services are services provided only by governmental entities and nongovernmental organizations."[35] FirstNet should address explicitly the legal basis for extending to the Communications Act the definition of "public safety services" a provision that exists only on the Homeland Security Act of the definition. Minnesota encourages the broad reading of the Act reflected in FirstNet's preliminary conclusion, but in order to help States identify potential users and set appropriate expectations, it urges FirstNet to shore up its underlying legal reasoning.

Eligibility for Public Safety Status

FirstNet is correct in its preliminary conclusion that the *quantity* or relative *proportion* of "public safety services" provided (beyond a *de minimis* quantity) cannot disqualify an organization or individual from "public safety entity" status.[36] The Act makes no such limitation; the only reference to an entity's public safety focus is in the Sec. 337(f) requirement that "public safety services" when provided by nongovernmental entities must be authorized by a "governmental entity whose primary mission is the provision of such services." The Act itself does not indicate a quantity of "public safety services" that an entity must provide in order to be a "public safety entity." Accordingly, part-time officials such as volunteer firefighters qualify as public safety users at all times, even when they are not responding to a call. There is also a practical reason to support FirstNet's preliminary conclusion in this regard: **a responder using a device or service all the time will use it far more effectively in emergencies.** During an incident, there is not time to refresh one's memory by looking through a user guide.

Volunteer Responders and Non-Public Safety Traffic

Volunteer responders, including firefighters and EMTs, are not responding to incidents most of the time. However they would have access to a BC14 device issued to them, so they would likely have access to BC14 and the NPSBN at all times. However, we see no manageable means to migrate a particular user or device in and out of "public safety user" status. A public safety entity is always a public safety entity—volunteer, full time, on the clock or off—and during a major, "all-hands" event anyone and everyone that is a public safety entity may be called to act. **The State therefore proposes that the user is considered a "public safety user" at all times, whether responding to an incident or not.**

[33] 79 FR 57062.
[34] *Id.*
[35] *Id.*
[36] *Id.*

The Role of Governance in Determining Public Safety Eligibility

Governance structures within the States and regions are best-equipped to deal with the issues associated with assigning public safety status to such a broad range of users: chiefly, the probability that the network could become congested with non-public safety traffic. Governance structures can assign priority and pre-emption capabilities, for example, to specific data types that traverse the network that are not likely to be related to official activities and/or not likely to be critical to the mission at hand (*e.g.*, external web requests).

However, there must be established some sort of common nationwide framework for configuration parameters that might vary from state to state. For example, two neighboring states may handle HAZMAT operations differently in their priority schemes. During a mutual aid HAZMAT event along this hypothetical two-state border, responders from the visiting state may not fit smoothly into the host state's prioritization scheme. A nationwide framework and set of standards needs to be established to resolve these sorts of potential conflicts. This is particularly important in the case of opt-out RANs where a state may have a much higher degree of autonomy over how the network operates.

We note that NPSTC has performed some initial work related to assigning priority on the public safety broadband network.[37] While most of the work done to prepare this report predates FirstNet and it may not wholly apply to FirstNet's deployment, we feel that there is value to the technical contents of the report and encourage FirstNet to consider NPSTC's recommendations in forming standards for the network.

Related Personnel

The State supports FirstNet's interpretation of the phrase "related personnel, agencies, and authorities" in the Homeland Security Act definition of "emergency response provider" as including "personnel, agencies, and authorities that provide support" to the emergency response effort.[38] The provider of any such support would be "related" to the public safety entity by virtue of providing the support; to argue otherwise would effectively read the term "related" out of the statute, violating the basic principle of statutory interpretation that courts should "give effect, if possible, to every clause and word of a statute."[39]

Opt-Out States as Public Safety Entities

The Notice asks whether Opt-out states are "public safety entities" or some other, unspecified type of "NPSBN users."[40] The question presumes, incorrectly, that an Opt-out State itself can be a "NPSBN user." An Opt-out State, taking responsibility for the RAN in the State, will connect to the FirstNet core network to provide service to its public safety entities and secondary users. End-users of the NPSBN in Opt-out States will contract with the Opt-out State for service; they will not have a contractual relationship with FirstNet. Thus, FirstNet must have a mechanism to recover its costs of providing core

[37] Priority and QoS in the Nationwide Public Safety Broadband Network http://www.npstc.org/download.jsp?tableId=37&column=217&id=2304&file=PriorityAndQoSDefinition_v1_0_clean.pdf
[38] *Id.*
[39] Montclair v. Ramsdell, 107 U.S. 147, 152 (1883).
[40] 79 FR 57063.

services to those Opt-out State end-users; Section 6302(f) provides that mechanism, since Opt-out States will have a contractual relationship with FirstNet. Opt-out States, as they market service to public safety entities and secondary users via "public-private partnerships" (see discussion below), will determine each entity's "user" type just as FirstNet will in an Opt-in State, pursuant to the definition in the Act.

FirstNet cannot treat an Opt-out State as an "NPSBN user" and thus cannot charge it a "network user fee" under Sec. 6208(a)(1) because the Opt-out State provides its own RAN and thus does not "seek access to or use of the nationwide public safety broadband network." If a State elects to opt-out, it takes on the risks of deployment, operation, and maintenance of the RAN, and its only obligation to FirstNet is to pay the costs of core services for that access to the NPSBN from within the State and to comply with technical, operational and other standards dictated in the opt-out spectrum lease agreement.[41] Opt-out states are authorized to charge network user fees; if a state opts-out, FirstNet is not authorized to charge network user fees to that state's customers. The opt-out state has to pay core service fees and only core service fees to FirstNet. It need not meet any other obligation to FirstNet in order to provide service to "public safety entities" and entities receiving service through "public-private partnerships for construction, maintenance, operation, and improvement of the network."[42]

Elements of the Network

Defining the Core and the RAN

We recommend that FirstNet remove "device services" and "all other network elements and functions other than the radio access network" from its definition of the core network; the definition is too expansive. We see potential negative impacts to public safety operability over the long term if demarcation is established according to FirstNet's definition. The Act defines the RAN as "[Consisting] of all cell site equipment, antennas, and backhaul equipment, based on commercial standards, that are required to enable wireless communications with devices using the public safety broadband spectrum."[43] This means that the RAN consists of equipment at the cellular site and the backhaul supporting that site, which is consistent with FirstNet's definition of the RAN.[44]

FirstNet concludes that the core is "all other network elements and functions other than the radio access network,"[45] including all "device services,"[46] which would include the application servers that provide these services. This is a broad interpretation of the "national and regional data centers" and "other elements"[47] that provide access to "the public internet" and/or the PSTN.[48] We do not feel that

[41] Section 6302(f) describes the fee as one "associated with State use of elements of the core network." Thus, the amount of the fee must be determined by the cost to FirstNet of providing the core services consumed by end-users within the Opt-out State. Section 6302(f) does not authorize FirstNet to impose upon Opt-out States through this fee costs resulting, for example, from the construction and maintenance of the RAN in Opt-in States.
[42] Act, Sec. 6302(g)(1).
[43] *See* Act at 6202(b)(2)
[44] *See* Notice at pg. 8.
[45] Notice at 7.
[46] *Id.*
[47] Act, Sec. 6202(b)(1).

the law defines all aspects of the network other than the RAN and core as owned and operated by FirstNet.

Specifically, we are concerned that FirstNet's interpretation means all application servers will be either FirstNet-operated or accessed through traversing an external network—that no application servers deployed by vendors or public safety agencies are resident natively on the NPSBN on a nationwide WAN.

The NPSBN's potential to provide a shared, nationwide WAN presents tremendous value to public safety; public safety agencies and vendors could be able to deploy, share and market applications on a shared, nationwide WAN without the requirement to traverse the public internet or external networks to access or share information with other agencies or provide service to customers.

FirstNet's interpretation of the Act defines all "device services" as part of a "core network" that is exclusively FirstNet's domain. We feel that defining "device services" as part of the core network is an impediment to seamless interoperable data sharing into the future and a barrier to innovation in the vendor community to provide products to public safety.

Opt-Out RANs and a Common Core

We concur with FirstNet's interpretation that the law requires opt-out RANs to use a shared nationwide core. Not only do we feel this is the letter and the intent of the law, it is also the best means through which to ensure nationwide interoperability.

The Act unambiguously describes a single nationwide core that is constructed by FirstNet. The Act refers throughout the body of its text to "the" core network and to "a" core network in singular.[49] Furthermore, the Act refers to a single nationwide core that is built by FirstNet in consultation with the states,[50] and provides an opportunity for the states to opt-out and construct their own RAN, but not their own core.[51] The clear letter and intent of the law is for the NPSBN to have a single nationwide core network built by FirstNet, not multiple core networks, and not one core network built by many parties.

There are functional benefits to operating on a common nationwide platform. All public safety entities in the nation operating on and having access to a common nationwide WAN can greatly streamline information sharing and interoperability between data stores and application services deployed on the network by public safety and by FirstNet. A single nationwide core also allows FirstNet to utilize an economy of scale that no individual local government, state, or a consortium of states could ever achieve.

Services

Defining Consumers

Minnesota agrees that Section 6212 of the Act, which states that FirstNet "shall not offer, provide, or market commercial telecommunications or information services directly to consumers" imposes no

[48] *Id.*
[49] Act, Sec. 6202(b)(1), 6202(c)(2)(A)(i), 6302(f), and 6001(12).
[50] Act, Sec. 6206 (c)(2)(A)(i).
[51] Act, Sec. 6302(e)(C)(3).

limitation on FirstNet's ability to provide public safety entities and secondary users access to the NPSBN, or on its ability to lease equipment and infrastructure under Section 6208(a). The "directly to consumers" prohibition is fairly straightforward: it simply requires that any offering of FirstNet services to or use of FirstNet services by entities other than public safety entities and secondary users must be done by a secondary user via a covered leasing agreement. In addition, the Act does not prohibit public safety entities from marketing and providing FirstNet services to consumers; such reselling would not qualify as "offer[ing], provid[ing], or market[ing]" *by FirstNet* "directly to consumers."

The rationale behind the "directly to consumers" prohibition is to prevent FirstNet from competing directly with private industry for customers beyond public safety entities and secondary users that enter covered leasing agreements. Commercial cellular carriers, for example, fully expect that FirstNet will compete with them for public safety entities' business, but for other potential subscribers, carriers will be able to negotiate covered leasing agreements with FirstNet allowing them to use FirstNet services to serve their own commercial customers. As a result, rather than competing with FirstNet for commercial customers, carriers will compete with each other to serve the consumer via a combination of their own services and resold FirstNet services.

The rationale is the same for the similar prohibition imposed on Opt-out States by Section 6302(f) of the Act:

> A State that chooses to build its own radio access network shall not provide commercial service to consumers or offer wholesale leasing capacity of the network within the State except directly through public-private partnerships for construction, maintenance, operation, and improvement of the network in the State.

Opt-out States

Opt-out States stand in the shoes of FirstNet with regard to the RAN in the State, including the leasing of excess network capacity accessed within the State. The Act provides for FirstNet to lease excess capacity in Opt-in States through covered leasing agreements; in Opt-out States the leasing mechanism is a "public-private partnership" between the Opt-out State and a private "partner." Indeed, Section 6208(a)(1)(B) of the Act defines "covered leasing agreement" much as Section 6302(f) describes the agreement an Opt-out State would use to "offer wholesale leasing capacity:"

> A written agreement resulting from a public-private arrangement to construct, manage, and operate the nationwide public safety broadband network between the First Responder Network Authority and secondary user.

Evaluating Existing Infrastructure

The States should be required to research availability and evaluate the economic desirability of existing infrastructure in the State. This requirement is consistent with State duties after accepting funds under SLIGP for collecting asset and infrastructure inventories for SLIGP Phase 2.[52] The States are

[52] FFO at 3 ("The second phase [of SLIGP] will fund data collection activities provided that FirstNet has determined that it needs standardized asset and infrastructure inventories from the States in designing the nationwide public safety broadband network.").

better-positioned to review the infrastructure that exists within their states and determine whether it meets their individual coverage requirements.

FirstNet's Notice appears to place exclusive or nearly-exclusive value on cost and not quality or the State's coverage requirements. Relevant sections of the Notice[53] request comment on how Federal Acquisitions Regulations (FAR) should be interpreted,[54] how RFPs should be structured[55] and how responsive proposals should be evaluated[56] to determine "economic desirability" as well as how to categorize different types of infrastructure.[57] Nowhere in this section, however, does FirstNet seek input on how economic desirability should be weighed against a State's requirements, what test any proposed infrastructure must pass to be determined suitable for public use prior to an economic evaluation, or how FirstNet and a State should approach remediation of any infrastructure incorporated into the network which fails or otherwise does not ultimately meet public safety's needs.

We propose that the States and FirstNet adopt measurable requirements in each state during the state consultation process to evaluate infrastructure, and that States index and value the infrastructure in each State according to those requirements. The development of these requirements and performing the related data collection activities fits within the work required by SLIGP.[58] Furthermore, states are better-positioned than FirstNet to manage the monumental task of indexing and evaluating all of the pre-existing infrastructure throughout the 56 states and territories with all of their unique characteristics, including municipal broadband infrastructure, land mobile radio systems, government private data systems, rural Telcos and tribally-owned assets to name a few.

Fees

FirstNet is authorized in the Act to charge only four fees: network user fees under Section 6208(a)(1), covered leasing agreement fees under Section 6208(a)(2), fees for use of FirstNet infrastructure and equipment under Section 6208(a)(3), and fees for Opt-out State use of the FirstNet core network under Section 6302(f). FirstNet is not authorized to charge any fees other than these four.
Had Congress not specifically identified these four fees and specifically authorized FirstNet to charge them, FirstNet may arguably have been less limited in its authority to charge fees—in order to meet its mandate to construct and provide ongoing service, it would have needed to generate revenue by relying upon its broad authority under Section 6206(b)(4) to "take such other actions as may be necessary to accomplish the purposes set forth in this subsection" which include "the building, deployment, and operation of the nationwide public safety broadband network."[59] But Congress did specifically identify and authorize these four fees and no others. FirstNet argues at some length that the Act's use of the word "including" in Section 6208(a)(1) (FirstNet may charge a network user fee to "each entity, including any public safety entity or secondary user, that seeks access …") provides FirstNet authorization to

[53] Notice at 28-32.
[54] Notice at 31.
[55] *Id.*
[56] *Id.* at 30.
[57] *Id.* at 31.
[58] FFO at 3.
[59] Act, Sec. 6206(b)(1).

charge such a fee to "a group of other, unspecified entities."[60] If FirstNet is correct that the word "including" converts a closed set to an unbounded one, then it cannot reasonably ignore the absence of "including" or any similar term in another context. In Section 6208(a)(1), Congress "demonstrated … that it knew how to" insert the word "including" when it so intended.[61]

As explained elsewhere in these comments, **the State disagrees with FirstNet's preliminary conclusion that the fee authorized under Section 6302(f) for use of core elements is a subset of the fees authorized under Section 6208(a)(1) for use of the NPSBN.**

The State agrees generally with FirstNet's preliminary conclusion that it may assess authorized fees "individually, and cumulatively as applicable,"[62] but with the following two caveats:

(i) **FirstNet is not authorized to charge an Opt-out State any fee other than the core network fee** under Section 6302(f) and the infrastructure and equipment fee under Section 6208(a)(3), if applicable; and

(ii) The Act does not authorize FirstNet to charge fees directly to an Opt-out State's public safety entities, secondary users, or other end-users, though the Opt-out State may permit such fees by agreement.

The State is not aware of any authority other than the Act under which FirstNet may charge fees.

Network User Fees

Based on the presence of the word "including" in Section 6208(a)(1) of the Act, FirstNet preliminarily concludes that there is an unspecified group of entities in addition to public safety entities and secondary users to which it "may charge a user fee."[63] The word "including" is specifically applicable only to the fee for an entity "that seeks access to or use of the nationwide public safety broadband network." It is not applicable to all "users." Thus, the group that "is not limited to only public safety entities or secondary users, but could potentially include other entities" includes only those that may be charged a fee for usage of the NPSBN—and not any other group, such as Opt-out States that do not seek to use the NPSBN, as explained above.

The State expects both FirstNet and Opt-out States to pursue agreements with secondary users such as commercial cellular carriers and sees great potential for such efforts to help quickly and efficiently deploy and operate the network, particularly in such areas as billing and network maintenance. Though the State agrees that "FirstNet may charge a user fee to any eligible customer, including secondary users who may have already entered into a covered leasing agreement,"[64] it would expect such agreements to incorporate and detail any such fees, effectively obviating the need for authority outside the agreement to charge them. The State also cautions FirstNet against piling up fees on eligible users for fear of suppressing growth of the user base.

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[60] 79 FR 57060.

[61] *Meghrig v. KFC Western, Inc.*, 516 U.S. 479, 485 (1996) ("Congress thus demonstrated in CERCLA that it knew how to provide for the recovery of cleanup costs, and that the language used to define the remedies under RCRA does not provide that remedy.").

[62] 79 FR 57066.

[63] *Id.*

[64] *Id.*

State Core Service Fees

The State agrees with FirstNet's preliminary conclusion that the core usage fee that FirstNet is authorized to charge Opt-out States is "separate and distinct from any other fees authorized by the Act."[65] This conclusion, however, conflicts with FirstNet's stated view that "user fees described in Section 6302(f) [is] a specifically authorized subset of fees under Section 6208(a)(1) for 'use of' the core network,"[66] a conclusion with which the State does not agree.

FirstNet states that "user fees authorized by Section 6208(a)(1) are distinct from … lease fees related to network equipment and infrastructure authorized by 6208(a)(3)."[67] Such fees are defined in Section 6208(a)(3) of the Act as "A fee from any entity that seeks access to or use of any equipment or infrastructure … constructed or otherwise owned" by FirstNet. Just as use of equipment and infrastructure is qualitatively distinct from "access to or use of the nationwide public safety broadband network" under Sec. 6208(a)(1) so, too, is "use of elements of the core network" under Section 6302(f). Accordingly, **the Act authorizes FirstNet to charge an Opt-out State for usage of core elements only under Section 6302(f) and not under Section 6208(a)(1).**

Lease Fees Related to Network Capacity and Covered Leasing Agreements

The Act defines a "covered leasing agreement" in Section 6208(a)(2)(B) as "a written agreement resulting from a public-private arrangement to construct, manage, and operate the [NPSBN];" from the term "public-private arrangement" FirstNet reaches the preliminary conclusion that a covered leasing agreement must be between FirstNet and a private entity.[68] This interpretation is more restrictive than necessary and ignores the phrase "a written agreement resulting from." The language does not state that the "public-private arrangement" *is* the "written agreement" itself; indeed, it suggests that the two are distinct. To endow all of the provision's language with meaning, **FirstNet should adopt a broader interpretation under which a covered leasing agreement would also include, for example, a written agreement between FirstNet and a State (as "secondary user" in this case) resulting from the State's partnership with a private entity.** FirstNet's narrow reading is not required by the language of the Act.

Minnesota supports FirstNet's preliminary conclusion with regard to the "public-private arrangement" referenced in the Act's definition of a "covered leasing agreement" that "there is no minimum amount, other than a *de minimis* amount, of constructing, managing, and operating that a CLA lessee must do in order to satisfy the definition." Likewise, the State agrees that "a secondary user is not required to perform all three functions of constructing, managing, and operating a portion of the network, so long as one of the three is performed as part of the CLA."[69] A contrary reading would severely restrict the potential population of entities with which FirstNet's could engage in a covered leasing agreement. The State believes that simply paying the covered leasing agreement fee would be adequate to meet the "construct, manage, and operate" requirement in the Act.

The State also strongly supports the view that the Act's description of a covered leasing agreement permitting access to network capacity on a "secondary basis" must be read to mean access to capacity

[65] *Id.*
[66] *Id.*
[67] *Id.*
[68] *Id.*
[69] *Id.*

not needed for "public safety services."[70] On an operational basis, however, the State is concerned that it will be difficult to determine when a public safety entity is using network capacity for public safety services and when it is not. As explained elsewhere in these comments, public safety users must use their devices and services day-to-day in order for them to be of maximum value in an emergency. Minnesota urges FirstNet to consider revising its conclusion to define access to network capacity on a "secondary basis" to mean access to capacity not needed for "public safety entities" rather than "public safety services."

Network Equipment and Infrastructure Fee

FirstNet states that the fee for use of network equipment and infrastructure under Section 6208(a)(3) is "distinct and separate" from fees for NPSBN usage and covered leasing agreements.[71] The State agrees with that preliminary conclusion and suggests that leases for use of equipment and infrastructure would define themselves in contractual language. The language would be drafted to specify what the fee covers and would reference and distinguish any fees charged by FirstNet for NPSBN usage, covered leasing agreements, or (for Opt-out States) usage of core network elements.

[70] *Id.*
[71] *Id.*

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SUMMARY

Purpose of this Document

The State of Minnesota is pleased to provide our response to FirstNet's Request for Information for Comprehensive Network Solutions dated September 17, 2014. It was prepared in close collaboration with State, county, local, tribal, and private stakeholders and represents the collective recommendations from the State of Minnesota and the Statewide Emergency Communications Board.

We applaud FirstNet's proactive efforts to solicit the opinions and recommendations from a broad base of solution vendors, the academic community, knowledgeable consultants and other individuals, and most importantly, from the government stakeholder community who will benefit the most from the successful deployment and operation of a robust and sustainable broadband wireless network dedicated to public safety.

The State of Minnesota has been actively engaged in advancing wireless public safety broadband communications within our state. We have gained important insights and experiences over the past three years, and most recently in managing outreach, governance and requirements gathering over the course of the State and Local Implementation Grant Program (SLIGP). We have achieved extensive participation from state, local and tribal stakeholders and we are proud to say that our response represents the collective input from a diverse group or rural, metro and tribal public safety focused individuals.

The geography of the State of Minnesota incorporates broad rural areas of farmland and dense forest together with densely populated Twin City metropolitan areas and a variety of mid and small cities as well as 11 federally recognized tribal governments. We share an extensive border with Canada and the port city of Duluth is the world's largest inland port. We believe that our State represents a microcosm of the diverse geographic challenges that FirstNet faces in designing and deploying the wireless broadband network. As such, we take great pride and are hopeful that in articulating our response to the RFI that we will provide meaningful information and advice to benefit FirstNet and the nation as we collaboratively pursue this important endeavor.

Key Points:

Following are key points including in our response, ranked in order of importance:

- **FirstNet must establish a measurable minimum standard for buildout in rural areas**. Based on our experience, we recommend a specific percentage of each county. See pg. 5.
- **We are concerned that FirstNet did not include the State and FirstNet consultation as one of its core objectives**. We feel this is one of FirstNet's principal duties under the law and should be listed as a core objective. See pg. 4.
- **FirstNet's preliminary metrics defined under its core objective for "System Reliability and Restoration" do not meet public safety needs in Minnesota**. Specifically, we believe that FirstNet's targeted throughput figures are not sufficient. See pg. 3.

- **Coverage is King**. Several of FirstNet's prompts in its RFI focused on potential areas of compromise to manage costs and buildout timelines, particularly with respect to reaching Initial Operating Capability. We believe that Minnesota stakeholders will not compromise on coverage and will hold FirstNet to a very high standard on coverage offered. Any potential compromises will have to be made in other areas.
- **FirstNet needs to provide states with an SLA.** We propose the following initial metrics for consideration:
    - Cell sector or per-user minimum throughput
    - Geographic coverage
    - Availability of Service
    - Response window for network problems
        - Acknowledgement of problem
        - Repair of problem
        - Preventative action
    - Time for deployables

DETAILED RESPONSE:

FirstNet Statement of Objectives

Generally, we concur with FirstNet's stated objectives. However, as detailed below, we disagree with the values provided for system reliability and restoration. Furthermore, we are very concerned that FirstNet has not included the integration of the state's requirements and the overall consultation process as a stated core objective.

System Reliability and Restoration

FirstNet's throughput values provided under "System Reliability and Restoration" would not qualify as "broadband service" in Minnesota. Minn. Stat 116J.39(b) defines "broadband service" as "any service providing advanced telecommunications capability and Internet access with transmission speeds that, at a minimum, meet the Federal Communications Commission (FCC) definition for broadband;" the FCC's definition is 1 Mbps uplink/4 Mbps downlink[1] as of this writing. Minn. Stat 237.012 states that Minnesota's statutory goal is to provide broadband access to all state residents at "minimum download speeds of 10 to 20 megabits per second and minimum upload speeds of 5 to 10 megabits per second" by 2015. The state's broadband speed goals are technology neutral and we believe they are reasonable targets for FirstNet to provide to first responders with its wireless service. Throughput speeds currently available commercially are significantly higher than FirstNet's target values, and will not be attractive to the user community that has become accustomed to the faster commercially available service. Furthermore, first responders should not be held to a lower service standard than the state's residents.

We are unclear on what FirstNet means by "end-to-end availability"; it appears, from the reading, that FirstNet is committing to offer only 99% per-user availability for its services including internet access, network services and transport to public safety enterprise networks. FirstNet needs to clarify what it means by "end-to-end availability". Our stakeholders, when polled, reject 7.2 hours of downtime per month as a service goal. We strongly encourage FirstNet to set a per-user Initial Operating Capability target (e.g., 99.99%), and a Final Operating Capability, "mission-critical" or "public safety-grade" target (e.g., 99.999%).

Minnesota has experienced several major outages affecting all telecommunications, including 9-1-1 service, telephone, cellular and internet service. In January 2010, a complete outage of all telecommunications followed a fiber cut for a large portion of the "arrowhead" region of the state and over 5400 square miles of geography.[2] This outage lasted for over 12 hours.[3] A similar 8-hour outage occurred in Carlton County, Minnesota in 2009.[4] In both cases, the service provided would have met and exceeded FirstNet's proposal for 99% "end-to-end availability".

State Consultation

[1] *See* FCC Sixth Broadband Deployment Report, GN Dockets 09-137 and 09-51; FCC 10-129.
[2] Lake and Cook counties were affected by this outage.
[3] Media report: http://www.mprnews.org/story/2010/02/03/north-shore-phone-outage
[4] Media report: http://www.twincities.com/ci_12313149

We are very concerned that State Consultation is not included as one of FirstNet's Core Objectives. The State and FirstNet consultation is one of FirstNet's principal duties under the law[5], an essential part of FirstNet developing a sustainable product that its market wants and the central purpose of the $116.5 million NTIA State and Local Implementation Grant Program (SLIGP).[6] FirstNet has committed to expend substantial resources into its state consultation program, but has failed to list this consultation as a core objective of the organization. Doing so may inadvertently undermine stakeholder belief in the consultation process.

Accordingly, we strongly recommend that FirstNet adopts a core objective **to successfully complete the consultation process with U.S. states and territories** in such a manner that facilitates its remaining core objectives.

[5] *See* specifically US Middle Class Tax Relief and Job Creation Act of 2012 Sec. 6206(a)(1), Sec. 6206(c)(2)(A) and (B)
[6] *See* NTIA State and Local Implementation Grant Program, Notice of Federal Funding Opportunity, pp. 4-21. Available at: http://www.ntia.doc.gov/files/ntia/publications/sligp_ffo_02062013.pdf

Rural Buildout Milestones:

FirstNet must establish a measurable minimum standard for buildout in rural areas. We make this recommendation to (a) best manage the relationship between FirstNet and its clients, (b) ensure a high rate of adoption, and (c) satisfy FirstNet obligations under the Act[7]. We make this observation based on the State's experiences with a similar program, the buildout of the Allied Radio Matrix for Emergency Response (ARMER).[8]

Until the commitment was made to build out ARMER at 95% in each county statewide with a minimum of four (4) voice channels per site, ARMER participation and interest throughout rural areas in the State of Minnesota was very low. Once this commitment was made, jurisdictions throughout the state began rapidly adopting the service from the years 2010-2014 until, as of this writing, all but two (2) counties in the state of Minnesota are using or plan to use the ARMER system for primary public safety communications (see Figure 1).

This *measurable* minimum standard is essential to the ability for the State to market the ARMER service as a viable option and for managing governance and funding issues between multiple units of government across diverse geographies within the State. First, there is a reasonable assumption that the service will provide adequate coverage, as the State is committed to covering 95% of the county with four (4) voice channels. If there are coverage gaps, local units of government have the option to invest in additional voice channels or additional sites—there is rarely meaningful protest that the State has not built out the network adequately, as it has met its agreed-upon obligation to provide coverage at 95% of geography with four (4) voice channels.

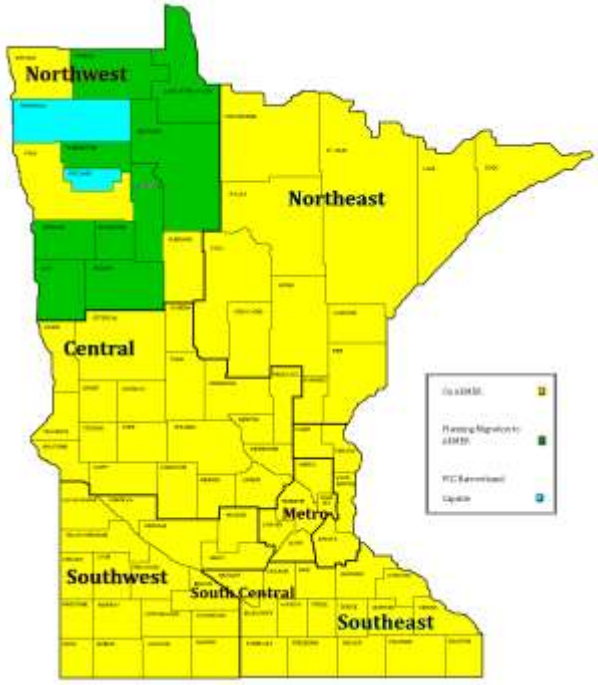

Figure 1: ARMER Adoption as of October 9, 2014

Accordingly, we strongly recommend that FirstNet negotiates a measurable minimum standard with each of its state clients through the consultation process. In rural Minnesota, that expectation will be based on the State's experience with ARMER, which is that 95% of each county has mobile coverage and capacity sufficient to support four (4) concurrent users.

FirstNet will not be able to avoid a comparison to ARMER by its stakeholders and customers in the State. That expectation is 95% geographic coverage in each county. The State is not presenting this figure as an inflexible requirement at this time, but we anticipate the stakeholder community will be very disappointed in the service if offered anything with less coverage than ARMER.

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[7] *See* Middle Class Tax Relief and Job Creation Act of 2012, Sec. 6206 (b)(3). FirstNet is required to meet "Substantial Rural Coverage Milestones" not defined in the Act.

[8] Statewide, trunked Project-25 radio system operating on ASTRO25 platform. As of this writing, 96% of sites are on the air. More information available at: https://dps.mn.gov/divisions/ecn/programs/armer/Pages/default.aspx

State, county and local jurisdictions may well be interested in making additional investments into the network—assisting FirstNet in achieving its challenging demands of providing service equal to or better than its commercial partners. However, it will be difficult or impossible for FirstNet to compel those investments until FirstNet has made a reasonable and measurable obligation and has expended resources to meet the commitment.

Providing Ubiquitous Coverage, and Cost-Benefit Tradeoffs

Coverage is King. The State appreciates the substantial investments that ubiquitous, nationwide coverage will require. However, the State has substantial coverage through commercial carriers today, including a near acceptable level of in-building coverage. FirstNet needs to meet or exceed that level of coverage in order to have a compelling product for public safety. The service *must* meet or exceed commercial carrier coverage to be marketable in Minnesota.

We assume that FirstNet's service is going to include roaming and failover to a commercial carrier. In that respect, the State strongly desires to have some degree of control over how devices roam; e.g., to set specific throughput or signal strength thresholds at which the device will roam from one network to the other. Ideally, FirstNet will also facilitate handoff to and from commercial carrier partner networks.

Combining Core, RAN, and Leasing Across Entire United States:

FirstNet must have some mechanism that is responsive to the needs of the state articulated during the consultation process. While we decline to recommend a specific procurement vehicle or acquisition approach, we do observe that a state-by-state approach would afford each state the ability to provide substantial input into FirstNet's procurement in each state, and, subsequently, FirstNet's likelihood of a successful offer in that state. However, a state-by-state approach could dramatically slow the pace of procurement, as FirstNet would be required to negotiate 56 awards instead of one. We do however, strongly recommend that each state's respective requirements be integrated into the Request for Proposal (RFP) process to ensure that vendors are fully aware of and commit to meeting these requirements.

We also note that a single nationwide vendor may not be the best solution for all markets. For example, a particular cellular provider may have excellent coverage in some high-profile markets in the country, but not in Minnesota. Selection of one nationwide vendor would speed deployments in those high-profile markets but would be a disadvantage to Minnesota.

Seeking a single, nationwide solution versus acting as an integrator:

While we will decline to recommend a specific business model, we do observe that **FirstNet has limited institutional experience or expertise functioning as a cellular carrier**. It is unlikely that FirstNet would be able to act as an integrator in a cost-effective manner as opposed to utilizing the resources available in the commercial market.

From a public safety perspective, we are most interested in being provided service that meets our requirements for priority, capacity, reliability, and interoperability. From the customer perspective, whether or not FirstNet builds the network through a major contractor should have no bearing on FirstNet's goals and public safety requirements.

From the perspective of leveraging Covered Lease Agreements to maximize the value of the spectrum for reinvestment back into FirstNet, we believe that such leases should be offered on national, regional and local basis. We interpret "Covered Lease Agreements" broadly to include any assets or resources that can be capitalized, including spectrum, network capacity, network facilities and hardware including towers, shelters and backhaul; and any other assets. The State's preliminary investigation into potential local partners in our state indicates that there are multiple entities, including utilities, rural Telcos, governments and others, interested in exploring FirstNet partnerships. FirstNet should balance the benefits of local and regional Lease Agreements in conjunction with national opportunities.

Priority and Preemption:

We require that the Statewide Emergency Communications Board (SECB)[9] and regional governance bodies have significant control over network performance and configuration parameters, especially priority and preemption. We credit much of Minnesota's success in communications during major, multi-agency incidents to the state's robust governance structure and its comprehensive communications standards.[10] While these standards presently apply primarily to land-mobile radios and in particular those used by ARMER, the SECB has recently been granted the authority legislatively to adopt and enforce standards for emergency calling (9-1-1), emergency alerting (IPAWS) and public safety wireless broadband. These standards cover issues ranging from standardized universal required channel configurations for radio equipment in the State, how radio equipment should be configured to manage roaming or site loading, how to request deployable assets, the degree of access media has to the network, and countless other activities that collectively promote and govern statewide interoperable communications. The standards are written by members of the community, debated and marked up in committee and vetted by a variety of representative bodies throughout the State. We feel that our communications standards make first responders in the state safer and more effective during major incidents. They are central to a culture that takes interoperability very seriously.

Our requirement is for a degree of local control where the governance structure has control over the configuration, operation and behavior of the network. We feel that real-time dynamic control over the network should be assigned conservatively; e.g., an individual dispatcher or PSAP should not have a meaningful degree of local control over how individual eNodeB sites operate or behave. It is our expectation that FirstNet will provide states the tools and guidance to facilitate local government management of priority and preemption and that at the state level, state's will develop standard operating procedures and governance to manage and inform our statewide FirstNet subscribers of incident driven priority and preemption activities.

We do not feel that prioritizing data based on responder discipline in real-time will be manageable. It is more likely that the network should prioritize traffic based on data type. E.g., streaming video which consumes substantial bandwidth can be buffered and may be a good candidate for a lower priority, while CAD data updates consume short bursts of relatively little bandwidth, deal primarily with emergent data needs and may be a good candidate for higher priority on the network.

[9] The Statewide Emergency Communications Board (SECB) is the oversight governance board within the State with responsibility to guide and direct interoperable communications initiatives and capabilities within Minnesota.
[10] Available at: https://dps.mn.gov/divisions/ecn/programs/armer/Pages/armer-standards.aspx

FirstNet Evaluation of Existing Infrastructure

Valuation of existing infrastructure in each state is a central goal of the State and Local Implementation Grant Program (SLIGP) under Phase 2 Data Collection. States should be required to collect data on *all* suitable infrastructure—including commercially-owned and government infrastructure—in Phase 2 of SLIGP. This process should begin immediately so that the results can be used in state and FirstNet business plan development as well as the formulation of vendor proposals. Such assets may prove to be of significant value to perspective bidders and it is in the best interest of the overall procurement process to catalog these assets. Importantly, many of these assets are already hardened to public safety grade requirements, and while we recognize that some of the assets may not be usable or may be in certain situations challenging to enter into agreement to lease, these assets represent potentially significant value to FirstNet and represent investments already made by tax payers.

Minimizing FirstNet's Costs

FirstNet's best opportunity for minimizing costs is likely to work with commercial partners and government organizations to add BC14 RAN to existing sites. Not only does this reduce overall capital expenditures, it substantially improves FirstNet's time-to-market.

FirstNet should aggressively pursue revenue generation opportunities through covered leasing agreements. By building a nationwide public safety WAN, FirstNet can offer significant service to government organizations above and beyond wireless service, such as NG911 transport and secure database access. These assets should be leveraged to introduce additional capital to the network and to benefit public safety communications as a whole.

Our preliminary market research shows many interested commercial partners in the State of Minnesota, offering resources ranging from backhaul and tower sites to switching facilities and, in some cases, complete network solutions. However, we have few compelling offers from parties offering capital to help fund the initial buildout.[11] We recommend that FirstNet focus much of its public-private partnership research in Minnesota into identifying sources of additional capital.

FirstNet needs to work with device manufacturers and commercial carriers to introduce consumer devices to the market that operate on FirstNet spectrum. Potential spectrum lease or network access agreements are not going to be palatable to secondary user entities unless there is a critical mass of consumer devices capable of operating on BC14. As of this writing, no known leading consumer cellular handsets are capable of operating on BC14. We encourage FirstNet and Congress to aggressively pursue options to secure BC14 chip sets into all commercial devices.

Assuring Sustainability of the Service Post-2027

If FirstNet develops a sustainable service that provides good value, it is likely there will be congressional support to extend FirstNet's term. The ideal outcome is that FirstNet becomes self-sustaining and evolves with industry, and in achieving this level of success it will be self-evident that Congress should continue to support the service. Additionally, FirstNet should enter into Spectrum Leasing Agreements

[11] *See* Minnesota Initial Consultation Meeting Preparation Report, pp. 23-29.

and partnerships with network management entities that provide flexibility for renewable extension of contract, or dismissal for poor service with a manageable transition of "ownership" back to FirstNet.

To make the case that FirstNet's service is of value to the community, FirstNet should measure its progress and subsequent service delivery by quantifiable milestones and metrics in a public report. In quantifying these milestones FirstNet should continue its ongoing dialogue with the states and solicit feedback from governing entities. These reports should be published not less than annually. Opt-out states should be held to the same public reporting requirements as FirstNet, and some provision should be provided should an opt-out state fail to meet the same milestones as the larger network.

Features that Will Drive Adoption

FirstNet needs to offer bandwidth and coverage at least as good as current commercial cellular carriers. Generally, our urban constituents are interested in exclusive bandwidth and may be interested in paying a slight premium for it. There is huge value in having exclusive access to priority spectrum. Rural constituents are primarily interested in FirstNet filling the coverage gaps that they have today. Commercial carriers provide a moving target; they will always offer a viable alternative to public safety, and they will always be improving the quality of their service in a competitive marketplace. FirstNet will need to keep pace with their benchmark to maintain its customer base into the future.

FirstNet is not entitled to Public Safety's business, and many public safety organizations are pleased with the commercial data service and pricing schemes they are using today. While deploying commercial data is a significant expense for many organizations, public safety organizations have been able to secure support for funding commercial data based on increased responder safety, effectiveness and productivity. In order for agencies to justify future funding requests, FirstNet needs to provide a meaningful and measurable improvement over the commercially-available services that are and will always be a viable alternative for public safety.

Ensuring Reasonable Fees

FirstNet must establish a critical mass of guaranteed users. Because FirstNet's operational costs will be relatively fixed regardless of the user population, its per-user costs will decline on a logarithmic scale as the population of users increases. Therefore the single most significant factor in achieving reasonable user fees will be achieving a critical mass of users. Once FirstNet reaches that critical mass there will be declining value in each additional subscriber. Below that point, however, it will be very difficult to make a business case.

Minnesota performed a high-level budgetary study in 2011-2012[12] showing that a public safety LTE network operator could achieve a rate reasonably competitive with commercial carriers if it achieved a critical mass of users. Minnesota's break-even point from that study is shown in the Figure 2 below. A key objective of Minnesota's work under SLIGP is to evaluate and update this business model in terms of the FirstNet service subscription.

It is important to note that the business model explored by this study was very different from that of FirstNet. Our model in that study assumed the State would build and operate a stand-alone LTE network

[12] Available at: https://dps.mn.gov/divisions/ecn/programs/armer/Pages/studies-reports.aspx

and would have access to its own infrastructure at little to no cost. Additionally, the implementation model is budgetary only and includes a number of assumptions and extrapolated data. However, this research, with these qualifications, demonstrates the feasibility of an initiative like FirstNet's in Minnesota.

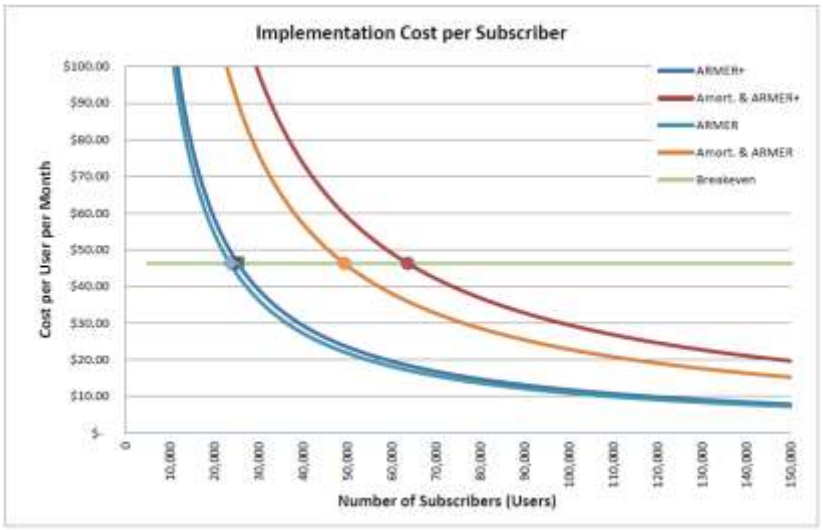

Figure 2: Break-even Point from 2011-2012 Minnesota Public Safety Broadband Study

Technical and Deployment Milestones and Initial Operating Capability

FirstNet should not market service until it has reached a very high level of capability. Public safety agencies have data services through commercial operators that they are very happy with now.[13] This negatively influences the urgency of implementing public safety service: FirstNet may offer an incremental or substantial improvement, but it won't offer a novel product without viable alternatives. FirstNet should not damage its brand or credibility by offering a service at Initial Operating Capability inferior to commercial options available to public safety.

Site Hardening

FirstNet should include an availability metric in its SLA with the States. That said, the State considers availability as a potential compromise area to manage costs; generally, when queried to prioritize a single performance metric for this filing, our stakeholders prioritized either coverage (rural areas) or throughput (urban areas). None queried for this filing prioritized availability as the single most important service metric.

Data is not the primary means of communications back to the PSAP for public safety today: the responder's radio is considered primary for any mission critical communications. It will remain so until there is a better-performing and more reliable substitute. Our stakeholders do not anticipate FirstNet providing a highly-reliable, mission-critical service at Initial Operating Capability; they expect service

[13] There are certainly coverage gaps, and an inability to achieve priority service is an operations issue during peak network demands on commercial cellular networks, but these networks have set a high watermark for FirstNet.

equal to or incrementally better than their commercial carrier's service provided on public safety-exclusive spectrum.

In the long-term, high availability service provided on hardened infrastructure will be a central requirement to reclassify FirstNet's service as a mission-critical, *primary* means of communication. However, our stakeholders do not believe this is a reasonable requirement for Initial Operating Capability.

We highly recommend that FirstNet consider NPSTC's publication on Public Safety Grade Systems and Facilities,[14] and in particular, its section on hardening.[15] Public safety has expended considerable time in preparing standards and Statements of Requirements (SOR) that individually and collectively provide important insight and standards based options and recommendations for FirstNet considerations. We highly recommend that FirstNet reference these documents and integrate them into the RFP process and eventual operational standards.

Unique Homeland Security Needs

Individual states will have a variety of homeland security needs and unique operational requirements. We feel that identifying these needs, and communicating them to FirstNet, are fundamental components of SLIGP Phases 1 and 2. FirstNet should identify high-value or sensitive targets during the consultation process and provide those areas higher priority in terms of design goals, availability, coverage, throughput, reliability and priority.

It is likely that for any given high-value target, emergency management officials and commercial cellular carriers have implemented response plans already, including network hardening and availability of deployables. We highly recommend that FirstNet consult with these entities when developing plans for ensuring the security of targets with a substantial homeland or national security interest.

Requirements for Opt-out RANs

In general terms, opt-out jurisdictions should be held to the same technical standards as FirstNet and the rest of the nation. If a State opts-out, the State should be held to assume the risk and responsibility of meeting FirstNet's minimum technical standards; opting-out should *not* be a means to a less robust or interoperable public safety network. These minimum technical standards must be published and agreed upon prior to a state's opportunity to make an opt-in or opt-out decision.

Opt-out RANs that Require Changes to the Core Network

FirstNet should not prohibit any potential partnerships that contribute significant value to public safety or to a business case in a particular state and should encourage opt-out states to pursue innovative partnerships as partners in building the NPSBN.

[14] Available at: http://www.npstc.org/download.jsp?tableId=37&column=217&id=3066&file=Public_Safety_Grade_Report_140522.pdf

[15] *See* Id. at pp. 45-92.

However, FirstNet should establish a technical governing body, representing the broad national public safety subscriber community, to evaluate such changes. This technical committee should better represent the direct concerns of the user community than the full FirstNet Executive Board.

FirstNet should hold opt-out state proposers liable for funding any major changes to the national Core network required to implement opt-out RAN. While it is expected that FirstNet will publish standards on which opt-out states would adopt in advancing RAN deployment and integration, in the event that the RAN requires a modification of the national Core, the affected state should be required to fund the required change, and in the event that the RAN cannot be properly integrated, then it should be denied in the best interest of the nationwide network.

As an example, Minnesota has a procedure for evaluating major changes to ARMER infrastructure proposed or required by a member of the user community.[16] The litmus tests for evaluating these major changes include but are not limited to the following:

- A change that requires backbone hardware to be upgraded, reconfigured or replaced
- A change that materially affects a large number of users
- A change that requires end-user device equipment to be reconfigured above and beyond the equipment managed by the proposing party
- A change that requires backbone improvements above the existing operational budget
- A change that incurs cost on other user entities

Such changes are vetted throughout the governance structure, multiple regions and the Statewide Emergency Communications Board's Operations and Technical Committee prior to adoption and implementation. If authorized and once implementation starts, the associated changes are managed by the State just like any other major project including work breakdown, stakeholder engagement, outreach, risk and change control.

Reliability and Restoration

FirstNet could substantially increase the appeal of its offer by providing faster and more effective response to network availability and surge issues. For example, FirstNet could offer rapid provision of deployables to meet coverage requirements during emergency incidents that occur beyond the reliable coverage footprint of the network, and during planned events that stress the normal capacity of the network. These deployable cell-on-wheels (COW) and cell on light trucks (COLT) could be managed locally, or at minimum have local visibility and be available with a high degree of control throughout the state. Status of deployable availability, if they are presently in use and who is using them, along with maintenance schedules and a process to initiate a deployment should be properly managed. In support of such deployments, FirstNet should enter into agreement with broadband satellite providers to ensure guaranteed uplink, particularly when competing with commercial carriers and the news media for access.

[16] *See* Minnesota ARMER Standard 1.8.0
https://dps.mn.gov/divisions/ecn/programs/armer/Documents/standard180.pdf

FirstNet should consider partnerships with *all* major cellular carriers—regardless of whether a particular carrier is FirstNet's integrator or service provider or not—to add BC14 to deployable sites to ensure the highest and most rapid availability of BC14 deployable sites in all markets.

Presently, agencies in Minnesota have little insight into the status of deployables provided by carriers. Public safety agencies in Minnesota routinely request that a carrier augments their service for major planned events as well as extended incidents, but it can take up to several days for a major carrier to respond and the agency has little to no control or visibility over the resource.

Local agencies should be allowed to provide their own deployables that operate on FirstNet's network. Several agencies in Minnesota maintain deployable command vehicles equipped with satellite backhaul that provide ARMER and WiFi service. Incorporating BC14 LTE to these vehicles would facilitate an essential incremental upgrade and we encourage FirstNet to enable the availability of the required RAN and broadband satellite uplink capabilities. Such an approach would require a carefully documented process and adherence to technical standards to ensure no harm is done to FirstNet's network by locally-owned deployables. However, it would provide public safety agencies with the most rapidly accessible FirstNet deployable infrastructure possible and substantially increase the value of FirstNet's service at minimal cost to FirstNet.

Service Metrics

FirstNet must establish an SLA with each State with defined service metrics to differentiate itself from commercial carriers as well as provide a degree of confidence in FirstNet's offer.

We strongly recommend a minimum level of guaranteed coverage, per unit of geography, with a guaranteed level of throughput. For example, FirstNet could commit to covering 95% of each county at 4 Mbps on the downlink and 1 Mbps on the uplink for each user within an average distribution of users. In the 2011-2012 Minnesota Public Safety Broadband Data Network Requirements Study, we assessed the feasibility of implementing an LTE network according to the minimum levels of service in Table 1.

The levels of service employed for our 2011-2012 study are not necessarily the minimum levels of service the State anticipates negotiating through the consultation process. For example, we anticipate something closer to symmetrical uplink/downlink rates and significantly higher data throughput speeds, as these figures were agreed-upon several years ago when LTE Release 8 was first available. We also anticipate a requirement for rural trade centers and county seats as distinct from the requirements for the county as a whole. However, we do not anticipate substantially different stakeholder demand from these coverage requirements, as they are based on minimum requirements for ARMER.[17]

[17] 95% geographic coverage of each county excluding the Boundary Waters Canoe Area Wilderness

Table 1: 2011-2012 Preliminary Network Requirements, state of Minnesota

Area	UL Required	DL Required	Coverage Level	Geographic Target
Urban Areas[18]				
Minneapolis	256 kbps	1437 kbps	In-building, on-hip	95% within city
St. Paul	256 kbps	1437 kbps	In-building, on-hip	95% within city
Rochester	256 kbps	1437 kbps	In-building, on-hip	95% within city
Duluth	256 kbps	1437 kbps	In-building, on-hip	95% within city
St. Cloud	256 kbps	1437 kbps	In-building, on-hip	95% within city
Metropolitan Areas[19]				
Hennepin County	256 kbps	1437 kbps	Outdoor, on-hip	95% by county
Ramsey County	256 kbps	1437 kbps	Outdoor, on-hip	95% by county
Washington County	256 kbps	1437 kbps	Outdoor, on-hip	95% by county
Anoka County	256 kbps	1437 kbps	Outdoor, on-hip	95% by county
Isanti County	256 kbps	1437 kbps	Outdoor, on-hip	95% by county
Sherburne County	256 kbps	1437 kbps	Outdoor, on-hip	95% by county
Wright County	256 kbps	1437 kbps	Outdoor, on-hip	95% by county
Carver County	256 kbps	1437 kbps	Outdoor, on-hip	95% by county
Scott County	256 kbps	1437 kbps	Outdoor, on-hip	95% by county
Dakota County	256 kbps	1437 kbps	Outdoor, on-hip	95% by county
Greater Minnesota[20]				
All other counties	256 kbps	1437 kbps	Outdoor, mobile	95% by county

We recommend that the SLA includes an average per-user availability of a specific percentage. For example, that the user is able to access FirstNet's WAN and the public internet through a wireless device 99.99% of the time provided that user has adequate coverage.

We recommend that the SLA includes a defined acceptable response window for (1) acknowledging unplanned service-affecting issues, (2) addressing them, and (3) implementing future mitigation strategies. For example, that an unplanned service-effecting issue is responded to within 10 minutes of receipt, is addressed within 4-hours, and a future mitigation strategy is implemented within 20 days.

In its SLA FirstNet should provide some form of remediation for not meeting its service obligation, such as a service credit. FirstNet should provide service reports on a periodic basis and communicate any initiatives to correct ongoing problems or issues.

Technology Enhancement and Upgrades

In general terms, **both FirstNet and opt-out states must maintain the state of the art** and maintain a service offering competitive and in step with commercial carriers.

[18] All Cities of First Class per Minn. Stat. 410.01 as well as St. Cloud, a large central trading area for Central Minnesota.
[19] 7-county metropolitan area per Minn Stat. 437.12 as well as Sherburne, Wright, and Isanti counties
[20] All counties not included in a metropolitan area and their except for Cities of First Class and St. Cloud.

Pricing and Deploying Products

Our preliminary research[21] obtained over the initial course of SLIGP stakeholder requirements gathering shows a great deal of price-sensitivity when offering the FirstNet service at significantly higher cost than commercial services (see Figure 3 and Figure 4). For example, we found that over 60% of agencies in Minnesota surveyed report that cost of current commercial service is *already* a major barrier to adoption of cellular data services;[22] any increase above current commercial rates will only exacerbate this problem. Furthermore, about 50% of agencies report that any increase in price compared to current commercial rates will lead them to not subscribe to FirstNet service at all.

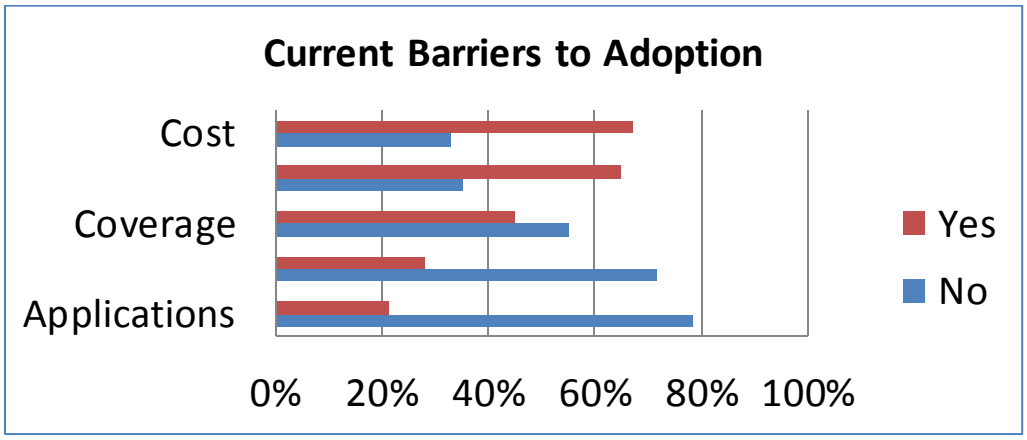

Figure 3: Barriers to Adoption in Minnesota

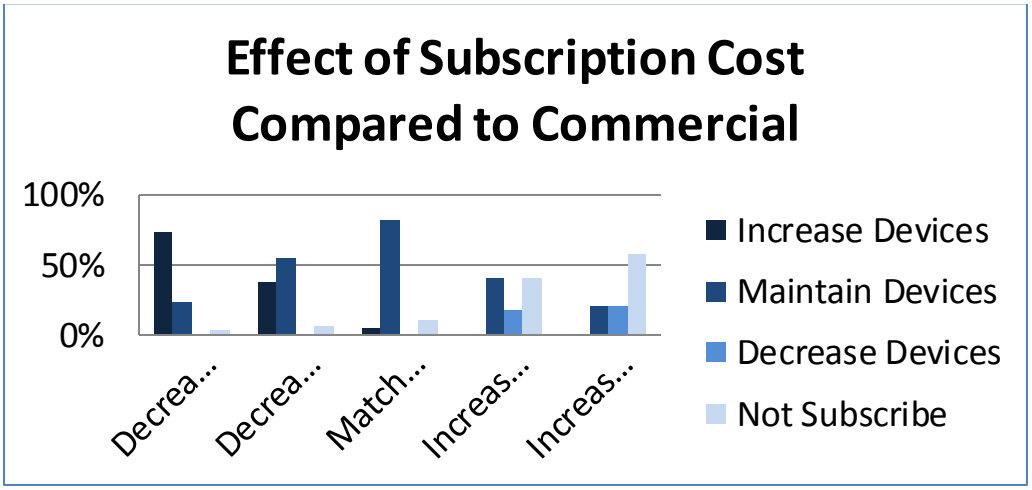

Figure 4: Stated Effect of Cost on Subscribership

Our preliminary research shows FirstNet's most reliable means to ensure a high subscribership in Minnesota will be to offer service at a cost competitive with commercial carriers.

[21] *See Minnesota Initial Consultation Meeting Preparation Report,* pp. 54-55. Note that these results are preliminary and only approximately half of jurisdictions in Minnesota have been polled as of this publication.
[22] Note that in Figure 3 and in our survey, "cost" means "cost of commercial wireless data services is prohibitive and is a barrier to adoption of cellular data service" and "peripherals" means "cost of laptops and/or vehicle router is prohibitive and is a barrier to adoption of cellular data service".

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We thank the following individuals who volunteered a significant amount of their time to contribute to this filing on short notice. This filing represents direct feedback from dozens of stakeholders throughout Minnesota working on a very aggressive schedule of 11 business days.

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Jake Thompson
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MnFCP Weekly Status Report

Minnesota Department of Public Safety – **MnFCP**

EXECUTIVE SUMMARY Status Meeting

Status on 10 November 2014	Prior Status	Green	Current Status	Green

Green	The project is within 20% variance of the currently approved baseline for budget and schedule, and is expected to substantially meet all of the business objectives established in the startup report.
Yellow	The project has exceeded 20% variance of the currently approved baseline for budget and/or schedule and is expected to substantially meet all of the business objectives established in the startup report.
Red	The project is at risk of termination, or at risk of not substantially meeting the business objectives established in the startup report.

Attendees/Invitees:

- DPS: Jackie Mines, Dana Wahlberg, Marcus Bruning, Randy Donahue,
- Televate/IG: Mark Navolio, Rick Burke, Ken Boley, Brandon Abley, Elizabeth Herring

Meeting Notes & Agenda

- **Task 2 – Governance (Ken):**
  - Outreach Interviews status:
    - All identified, prioritized interviews are complete, except tribal contacts
    - Effort to develop plan for better engaging tribes on governance:
      - Call held with Anna Marie Hill, MN Indian Affairs Council 5/20;
      - Monte Fronk call on 6/4, he proposes that we organize a meeting with the Emergency Manager at Ripley at a date to be determined
      - Also interviewed Greg Hayes 6/18 (Shakopee Mdewakanton Sioux)
      - Others to possibly contact: Mike Keyport (Grand Portage Ojibwe)
    - Outline of Governance Report distributed to team 11/14
      - Team setting date for dedicated call to discuss outline
      - Ken is updating the Governance recommendations based on feedback from the group
- **Task 6 – MOA (Ken), Standardize Templates:**
  - Tim Lee (MnDOT) re MOA -- Call completed (with Shane), documents delivered
  - Jim Johnson (MN.IT) re MOA
    - Per 8/7 call, forwarding sample JPA used for asset sharing (not yet received)
    - Asset sharing w gov't is fine but probably problematic if the asset was commercialized via a private partner, OAG has usually resisted; he will go back to OAG for specific opinion.
- **Task 12 – Additional Projects**
  - **FirstNet RFI:** FN RFI Response: Final submitted to the FirstNet
  - **FirstNet Public Notice:** Final submitted to the FirstNet
  - Documents to be published on the MnFCP webpage
  - **https://dps.mn.gov/divisions/ecn/Pages/broadband.aspx**
- **Task 4 – Education and Outreach:**
  - Training Modules have been defined:
    - *What is Wireless Broadband* – **Delivered & Posted**
    - *LTE Technical Review (Deep Dive)* – **Delivered (under review**
    - *Public Safety Broadband for the PSAP* – Pending
    - Network Requirements (just before Phase 2) – Pending

Status on 10 November 2014	Prior Status	Green	Current Status	Green

Green	The project is within 20% variance of the currently approved baseline for budget and schedule, and is expected to substantially meet all of the business objectives established in the startup report.
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  - Newsletter – "Coverage Assessment Process" – **Delivered**
  - Newsletter: **"Outcome of FirstNet Consultation" – Delivered**
- **Task 5 – Stakeholder Entities & CAD Data Status**
  - **User POP+ Survey:** After surveys are sent, Televate will follow up with recipients to accelerate the response rate
  - Outreach to all county PSAPs is in progress to assess the points of contacts for all first responders
  - Follow up with Bruce West to enlist the help of Regional Fire Marshals
- **Task 8 – Coverage Reviews**
  - Upcoming Reviews: Polk; Benton; McLeod; Todd; Becker, Mahnomen, Clearwater, White Earth; Otter Tail; Stevens; Pope; Faribault
  - Pending Confirmation: Wilkin
  - Tribal areas, to be paired wherever possible with the county where they reside
- **Task 8 – Subcommittees (Work Group)**
  - New tasks pending

This Week's Tally

Task	Sub-Tasks & Status						
	POC Data Received	CAD Data Received	User POP Survey Sent	Utilization Survey	CAD Geocoded	KML Created	Coverage Review Completed
Metro/Central	90%	87%	44%	0%	87%	87%	13%
Marcus Bruning	44%	50%	34%	0%	47%	47%	19%
Randy Donahue	20%	48%	25%	0%	40%	40%	8%
Count Totals:	57	69	38	0	65	65	14

Previous Week's Tally

Task	Sub-Tasks & Status						
	POC Data Received	CAD Data Received	User POP Survey Sent	Utilization Survey	CAD Geocoded	KML Created	Coverage Review Completed
Metro/Central	90%	87%	41%	0%	87%	87%	13%
Marcus Bruning	44%	50%	31%	0%	47%	47%	16%
Randy Donahue	20%	48%	23%	0%	40%	40%	8%
Count Totals:	57	69	35	0	65	65	13

Status on 10 November 2014	Prior Status	Green	Current Status	Green

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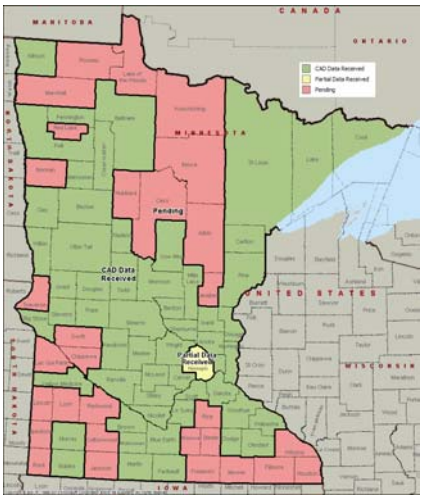
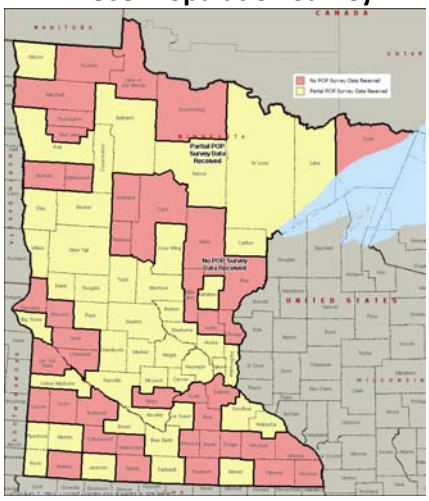
Status MAPS as of this week:

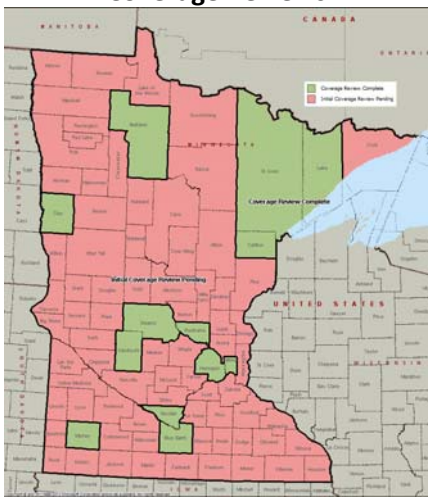
CAD Data



User Population Survey

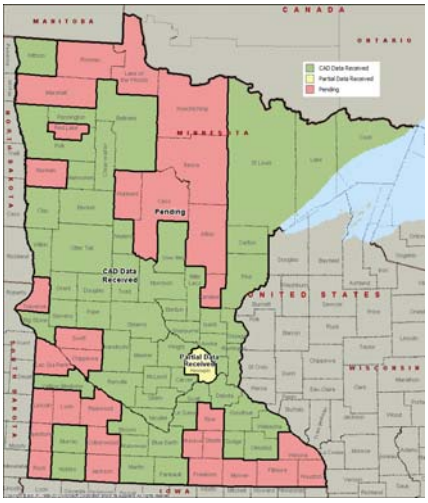


Coverage Reviews

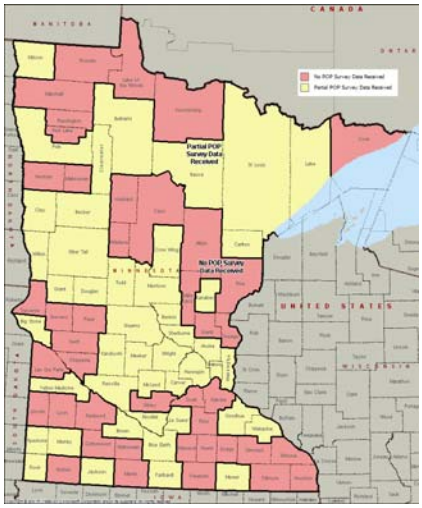


Status MAPS as of LAST week:

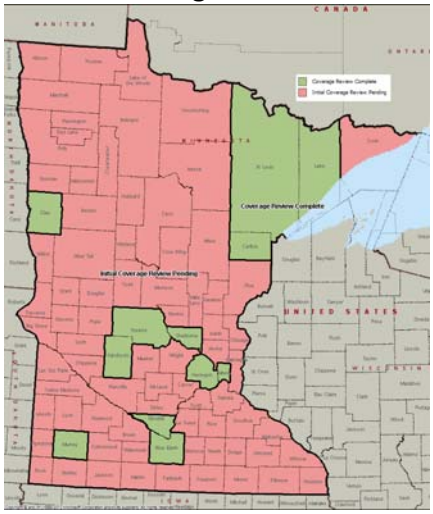
CAD Data



User Population Survey



Coverage Reviews



- **Upcoming Events/Travel:**
  - None to date
- **New Business:**
  - New Business?

1 Notes

- Wireless Contracts:
  - State Contract – check back with Dale Stevens concerning the number of subscribers on each contract
  - GSA Contract – Mark to check in with contract administrator; no luck yet
    - Add questions on PSAP applications to the NG911 Survey; (from working group)
- PSAP coordination with Dana Wahlberg;
  - Add questions on PSAP applications to the NG911 Survey; (from working group)
- Legislative Activities are potentially coming.
  - Met with legislator, not likely to be capital costs
  - Legislature is not necessarily involved in the program
- Website: https://dps.mn.gov/divisions/ecn/Pages/broadband.aspx;
- POC Survey Releases:
  - Process: Brandon/RIC to email hyperlink and message to all stakeholders on a PSAP-by-PSAP basis; Mark to send out reminders every Tuesday
- Additional Newsletter Topics:
  - Coverage & Radio Propagation Basics
  - Differences between NPSBN LTE, Commercial Services & P25
  - Capacity Basics
  - Quality of Service Basics
  - Coverage Augmentation Strategies & Advantages/Disadvantages
  - Public Safety Broadband Devices
- Great River Outreach conference call on 12 May with Kathleen
  - Reaffirmed their interest; UTC is enthusiastic, but waiting for more direction from FirstNet
  - Kathleen to help coordinate; to forward relevant contacts relative to the data gathering when needed
  - Follow up for Device numbers & types
- **GIS Data**
  - Will need to coordinate with Danna Mackenzie, Danna.Mackenzie@state.mn.us, with regard to the phase 2 infrastructure assessment; however, the data will likely come from NTIA as GIS has restriction its release
- **Task 3 – Tribal**
  - Continue updates to "Tribal Consultation Recommendations"; to include output from Governance
- **Fire Chief Association:** Summary of key data points:
  - Bruce: has agreed to distribute the letter to every fire departments throughout the state
  - 780 fire departments throughout the state ~20,700 fire fighters
  - We can send a message through the state Fire Marshall's office
  - Address letter to the State Fire Marshall's office
  - Some money available from old grants for travel expenses; volunteer only
  - Brandon: Will try to get refreshments available for the evening meetings;
  - Bruce: can send us a link that contains the name and address for every fire department thought out the state of Minnesota

- **Bureau of Criminal Apprehension**; keep on the horizon when it comes time to assess applications
- **Tribes:**
  - Need to keep a running list of coordination activities with the tribes as proof of our outreach efforts.
- **NTIA Officer:** Caroline Dunn
- **Task 3 – Tribal**
  - In the context of the Governance and MOA/MOU tasks, FirstNet does not expect the State to resolve all issues with regard to the tribes. FirstNet does expect:
    - The States to summarize what exists and to "characterize" the relationship with each Tribe
    - Indicate the level of tribal participation in the State's governance structures
    - Highlight the issues that would impact the implementation of the network on tribal lands
    - We are expected to collate the points of contact at each tribe
    - We are expected to quantify the number of potential users at each tribe
  - Background Materials on tribes that were suggested for review:
    - Review of the United States Code, Title 16, Supremacy Clause
    - Review of the State's Constitution wrt tribes
  - Keep running list of outreach efforts for the Tribes (Mark)
    - Summarize attendance from tribal areas; Outline gaps
    - Keep informed Cassandra O'Hearn

Minnesota State Emergency Communications Board Stakeholder Meeting

September 10 and 11, 2014

Meeting Summary

Prepared by Judy Plante, Facilitator

The SECB Stakeholder Meeting was designed to elicit advice from a wide variety of public safety stakeholders on possible strategic directions to be considered by the SECB. The invited participants included law enforcement, fire, EMS and other first responders, technology users, health care systems, elected public officials, a subset of the SECB, and state agency and legislative staff.

The two day meeting was designed to do the following:

- To provide in depth opportunities for all stakeholders to learn about current and potential technologies
- To review the changes in public safety challenges and communications methods that have taken place over the past quarter-century
- To identify public safety communication gaps and challenges that exist today
- To anticipate trends and challenges that will face public safety in the future
- To suggest criteria or values that the SECB should keep in mind as it plans for the future
- To elicit advice from each individual participant on the strategic direction the SECB should consider, and
- To identify funding options for the future.

Specific notes from participant discussions are found in the meeting notes, including each individual's recommendations to the SECB. Highlights from these discussions, summarized by the facilitator, are as follows:

CHANGES IN PUBLIC SAFETY OVER 25 YEARS: Key changes identified were the vast leaps in technology for both public safety and individual citizen use, with related security risks; the escalation of threats, including terrorism; the increased diversity of MN demographics, including culture and generational differences.
GAPS AND CHALLENGES THAT EXIST TODAY: Across the system, not all have the same systems or equipment. Location information is lacking. The appetite for technology and user demands outpace the ability to pay.

ANTICIPATED TRENDS AND CHALLENGES FOR PUBLIC SAFETY:

- Demands and Expectations are greatly expanding.
- The need for reliability has increased.
- A robust system requires stable and sustainable funding.
- There will be an ever increasing need to connect with communities who may be disconnected for reasons of culture, language, history or distance
- Particularly as existing staff retire from service, finding and training skilled replacements will be challenging and critical
- The technology will continue to evolve, and the need to move from antiquated forms will accelerate
- Law enforcement will face increasing challenges
- Having systems interact will be critical to providing the information needed by first responders

CRITERIA OR VALUES FOR SECB TO CONSIDER IN PLANNING:

- A balance between local control and consolidation, with an emphasis on collaboration
- Prioritization so that emphasis is given to necessity
- Affordability across the state
- Equity of service across communities
- Invest in the people who run the systems
- Optimum technology needed usable, flexible, compatible, simple, reliable
- SECB should take a big picture view; provide leadership, set the vision and set a technical roadmap
- Make sure current and future systems work for Minnesotans and for first responders

ADVICE FROM INDIVIDUALS:

Key messages from the notes and presentation by individuals included:

There is investment in existing systems, and stakeholders want SECB to support and flesh out the ARMER system and NG 911, and don't neglect upgrades. GIS location information is critical.

There is interest in FirstNet – but with some caution to wisely assess what is involved and influence how it is shaped along the way. Some see FirstNet as a luxury – and others and a necessity that will meet emerging needs. Most focused on a thoughtful, planful approach to exploring it, preparing for it, and carefully implementing.

There is a request for strategic direction from the SECB – setting vision, setting priorities, and leading the way in statewide communications. There is also an acknowledgement that support for that direction is needed from local officials and stakeholder groups.

While some expressed concern about funding, others advised that the SECB "go big": meaning, identify what Minnesota really needs to have, then seek the political will and funding to make it happen. In addition, make the funding of upgrades and replacements of equipment, towers, etc. more predictable,

so that both local and legislative funders can prepare for those costs.

The full text of the individual participants' advice will provide more detailed suggestions.

FUNDING OPTIONS:

Common themes among the groups included:

- Review and consider increasing the 911 fees
- Broaden the base of funding to include charging for-profit entities that use public safety information for their businesses, charging by ISP provider, technology tax, or other method
- Charge in a different way – based on address or other method
- Incentivize carriers
- Consider general fund, special revenue funds
- Examine pros and cons of paying bonds early, re-bonding, using funds that would repay bonds early for other investments

SECB Stakeholder Meeting Notes – September 10 and 11, 2014

Wednesday, September 10 began with presentations on emergency communications systems. Following those presentations, participants had a series of structured discussions.

First was a discussion of the changes face by public safety over the past 25 years. Participants noted:

- Computers
- Cell phones
- Internet
- Growth in population
- Diversity
- Community expectations
- Terrorism
- Standards
- Demand for efficiency
- Access to information
- Data security
- Training
- Growth in government
- Generational Differences
- Data insecurity (celebrity photo issues)
- Tech skills
- Virtual workplace
- Community diversity
- Bridge collapsing
- Squad car technology
- Litigious society
- Interoperability

Second, participants noted public safety communication gaps and challenges that exist today:

- VHF paging issues
- Data sharing
- Lack of accurate caller location
- Communicating with different shifts/locations
- Data privacy
- Resistance to change
- Intelligence sharing
- Disparate data systems
- Mission creep – what is a “public safety situation”
- Inconsistency in audio quality over different platforms
- Competition for attention for critical communication
- User training

- Speed of information
- Ability to pay
- Technical problems with technology
- Reliability of information – so many sources/some unreliable
- Secure transmissions
- High availability dis. Recovery
- End user tech support
- Convergence of communications we have
- Appetite for technology/user demand

Third, the group was asked to discuss anticipated trends and challenges in public safety. Some included recommendations of what is needed as well. The participant items were grouped and titled by the facilitator:

- INCREASED DEMANDS AND EXPECTATIONS
    - Demand for coverage everywhere by everyone
    - High demand for real-time data and competing with commercial users
    - Expectations: video transmission, "CSI" mentality; increased demand on resources; IT dedicated support requirements
    - Public thirst for knowledge
- NEED FOR RELIABILITY
    - Reliability of data/information sources/ systems
    - Cyber security
    - Impact of technology on staffing
    - Reliance on electricity
- NEED STABLE SUSTAINABLE FUNDING
    - Cost – initial, ongoing, sharing
    - Educating policy-makers on the needs/demands of public safety for long-term funding needs
    - Money!
    - Speed of change and cost management across various sized services
    - Resources – support, competition, cost management/sharing
- CONNECTING WITH DISCONNECTED COMMUNITIES
    - Diversity
    - Cultural diversity and communicating effectively
    - Diversity of language, culture, communication
    - Communicating with the public
- NEED FOR WELL PREPARED STAFF
    - Staffing shortage
    - Technical ability required of staff
    - Time commitment
    - Technical training – ongoing
    - Smaller quality work force for public safety
- TECHNICAL CHANGES
    - Move away from VHF paging

    - Technology to work as advertised
    - Accommodate multimedia @ PSAP
    - Are we realizing efficiencies in technology usage
    - Marketing and choosing technology
    - IT demands
- LAW ENFORCEMENT CHALLENGES
    - Preventive law enforcement criminal intervention
    - Mental health and drugs
    - Social disparity and disconnection
- KNITTING TOGETHER OUR SYSTEMS
    - Alignment of business plans
    - Continuation of operations standardization
    - Change in procedures – SOP, efficient use of resources, management training, standards
    - Application – sharing, data, intelligence, statewide RMS
    - Universal data access
    - Partnership: government to government; government to private; consolidation of resources
    - Training for high impact/ high risk but low frequency events/incidents

Fourth, participants were asked what criteria – or values – SECB board members should use in making decisions for a strategic plan (again, grouped and titled by the facilitator):

- BALANCE OF CONTROL
    - Strike a balance between local control and consolidation
    - Provide more regional direction
    - Collaborative – input from all partners and all regions
- PRIORITIZE
    - Solves a legitimate need
    - Necessity (need versus want)
    - A Priori: first things first
    - Risk assessment to prioritize resources
- AFFORDABLE, WITH EQUITABLE FUNDING
    - Affordability
    - Cost effective and efficient
    - Achieve fiscal sustainability
    - Cost equity
    - Sustainability
    - Focus on value
    - Assure funding prioritization criteria is global
- EQUITY ACROSS COMMUNITIES
    - Level of service equal in all counties
    - Equity of service across communities
- DON'T FORGET THE HUMAN RESOURCES
    - Invest in non-tech (people)
- OPTIMUM TECHNOLOGY

    - Meets needs in a reliable manner
    - Usability
    - Flexibility
    - Compatibility
    - Support/enhance interoperability
    - Effective data solutions
    - Simplicity
    - Reliability
- TAKE THE 50,000 FOOT VIEW
    - Global (big picture)
    - Provide leadership, set vision and technical roadmap
- WORKS FOR MINNESOTANS
    - High level customer service – person calling helps gets help
    - Respect cultural diversity
    - Educate stakeholders
    - Public education is important (manage expectations and inform)
    - More regional education on major initiatives
    - Minnesota data practices
- WORKS FOR RESPONDERS
    - Responder safety

The first day ended with a session of Q and A on the technology currently in use and possible in the future.

On the morning of the second day, participants were asked to talk at their tables about the following questions:

1. Given where we are, how things are expected to change, and our needs, what do we recommend the SECB plan to do?
2. What investments make sense to position Minnesota for this future?
3. If funding was no object, what would be the right things to have in place?
4. If we view this as a system, how do we handle differences in needs based on geography and demographics?

Participants were given 45 minutes to discuss as a group. Then, each individual participant was asked to make a personal recommendation of where Minnesota should be on a continuum from status quo to full implementation of FirstNet. Please note that the instructions given to participants were to identify where Minnesota ought to be in 3 – 5 years, assuming that resources would be available. The intent was that these discussions unveil the aspirations of the participants, while funding and resource considerations would be discussed separately. The comments from the participants (and their relative placement on the continuum from 1 at status quo to 10 at full implementation) are as follows:

1* (placed here but most likely a 4 or 5 in comparison with others) We need to complete the ARMER system. Planned, review gaps. We need to maintain the system. We need to carefully review and prioritize requested changes to the system. We will be using 2 way mobile/portable radios in 5/10/15/20 years.
2. Finish ARMOR system statewide first. (upgraded) If funding is available move towards FirstNet. Stress importance of regionalization. Educating policy makers and public, funding will follow.
2. SECB should seek statewide input on the value of FIrstNet implementation – which will require education/e3xplanation (RE: first Net region by region. If there is global acceptance/agreement, SECB should offer a similar education for state legislators. SECB should not make a decision with fiscal implications for greater Minnesota without buy-in from greater Minnesota.
2. Stabilize the funding stream. Establish state/local funding formula for ARMER – similar to how 911 is done. Complete a statewide public safety WAN – diverse/redundant. Back haul for ARMER/FirstNet. Support 911. Support sharing (applications, workload. Allow local decisions on where people should work (e.g. consolidation, after hours). Upgrade ARMER system wide to packet-based protocols.
3. Rationale: we need to focus and prioritize (cannot be or do all). Resources are constrained and we need to maintain our existing infrastructure and investments (ARMER). Data is useless, if PSAP and first responders cannot get it or use it. Will not be as efficient as market and will not compete with them. Learn from our past. Explore data issues but do not pursue First Net: reliability of service, redundancy of service, cost of service. Consider regulation or technological or partnering solutions to use existing commercial services/infrastructure. Partnerships/co-investments versus separate systems. Focus on ARMER completion and maintenance: funding stream, limited non-PS use, local flexibility and some monetary assistance. Pursue NG-911: geospatial/GPS data; seek legislative, regulation to get wireless data; transition legacy routers; get text/video/picture data.
3. Comprehensive plan, including NG911, ARMER, FirstNet, etc. and including funding. NG911 – fully implement and fund. FirstNet – develop system plan, including funding, user fees, etc. ARMER – at least have a plan and be ready to implement it, to get to new infrastructure platforms including long-term funding plan. Engage legislature and local stakeholders on plan. Don't do piecemeal funding; what we do for one do for all. Don't sacrifice one system to benefit another.
3. Next Gen 911 is a priority. Continue with ARMER improvements. Focus on dispatching piece. Slow the technology updates with software and infrastructure. Ensure funding of current system and equipment and future system and equipment for rural and metro. Eliminate VHF if possible. Carefully push forward with first net ensuring that all entities are getting what they currently need and what they don't know they need yet. Ensure we are selecting the correct backbone for FirstNet and that it is easily adaptable to future technology. Develop a funding model that works for metro and rural areas. Focus on 911 surcharges. Rationale – want versus need.
4. Do this: Maintain and improve ARMER since that investment has been made, but be cognizant of cost to local governments. Help consolidation: less equipment and helps with personnel issues. Move to NG911 and specifically the GIS address system. Raise 911 fees to fund. Require cell providers to provide info on 911 calls. Don't do this: Investing in a totally new broadband system seems unnecessary when the private market is doing it. Work with them instead. Don't forget about cost of system and maintaining systems. It is all great, but what are priorities and what is really needed. Don't forget about end users – make it as user friendly as possible and train.
4. I recommend that the SECB work to secure the long term viability of the ARMER system by identifying a user/subscriber fee system, preferably based on system usage, subscribers and population base. Secondly, work with Motorola to better define needed upgrades and establish service level agreement with Motorola if upgrades are not delivered on time or function as described. Finally, seed a unique funding stream, like a fee or surcharge on private systems that profit from 911 services, like telematics

systems, personal emergency response systems and private security systems. Regarding FirstNet, pursue this through public/private partnerships; leveraging existing systems. I see the regional hospital preparedness model as an example of how FirstNet could be established. I also thin SECB needs to develop a public awareness/education campaign of the current 911 system. The general public assumes 911 systems are using state of the art technology – our risks/limitations are not understood. Next 3 – 5 years public education and pilots should be the focus. Re NG911, do whatever it takes to complete GIS initiative.
4. Continue and complete 800 radio; all counties participating fully; ensure adequate funding for continued support. Next Gen 911; continue support for system, critical for all counties. Exploration of consolidation of technology between counties/cities to all areas served; define short comings – not all counties and cities have adequate IT support. Explore and develop FirstNet: use same process as 800 radio; allow ample time to educate on benefits of building a network; fund it – it will be used but only if it is reliable (more reliable than what we currently have) and is affordable locally.
4. FirstNet: Don't build out infrastructure. Work with carries and align with the lifecycles. Put tablets in the hands of existing network rather than building out separate network. Get towards commoditization of data needs, being vendor agnostic. Better pulse on software innovation, pilot ideas, especially autonomous reporting.
4. More educational outreach. Keep ARMER current. Training is key to success. Look to sustainable funding options beyond 911 fees. Specifically articulate the benefits to rural areas on FirstNet. Don T stagnate on growth – keep Minnesota moving forward. Don't offer funding options that are not consistent statewide - ex: tax breaks. Public education.
4. Think globally. The ARMER and #911 systems is an incredible tool that serves the population and vision of Minnesota with exceptional governance. Treat all counties and tribes equally. Invest in the systems as a whole; not segmented but unified. Fund the basics (construction, build-out and maintenance) with a known and consistent formula. One time at the legislature. A funding system to cover all maintenance, software and hardware. Locals responsible for end user. FirstNet: need more info.
5. ARMER: continue to build a robust system and update as needed, not just because Motorola has a "plan"; educate folks about costs and "needs" associated with them. 911: continue to have a consistent funding source so that we can upgrade our obsolete equipment to work with future 911 technologies; don't stop thinking of funding sources (i.e.: last mile ISP). First Net: be proactive; don't forget about other public safety needs while moving forward with this. Rationale – people expect this to work, need to pay.
5. Get a clear understating of ARMER update requirement dates so a budgeting plan can be better implemented. Increase 911 fees. From a county board perspective, the cost of ARMER implementation was hard to stomach - bringing the FirstNet on too fast may see political push back. Text 911 should be fully implemented ASAP. Continue to work on FirstNet plans while educating. Target implementations start at 5 or more years.
5. Do this: educate legislators, they listen to constituents; focus on statewide, uniformity of upgrades; seek dedicated funding stream/hardware/software contract; consider local assistance program to ensure upgrades or successful timetable; incentivize local governments to join existing and future systems to maximize benefit (assist in first radio purchase, etc.); bring the legislature as a part of a package – bigger is better; take necessary steps to modernize 911 to prepare for First Net – redundancy is important, however antiquated systems present challenges; focus on reducing local costs. Don't do: minimize the ask – go big, tell funders what you need. Rationale: Don't know what future funding prospects are, so go big. Antiquated systems present challenges. More users = greater benefit.

5. Complete ARMER build out; fund and maintain infrastructure to last at least until 2025. This gives the FirstNet initiative enough time for full exploration of its potential as a potential ultimate solution for wireless communication and data. If FirstNet is determined to be the best solution, don't phase the project for a statewide rollout on a lengthy timeline (5+ years) ARMER project timeline as an example.
5. Do this: support regionalization to lower costs and increase efficiency; implement a maintenance upgrade strategy for ARMER network; develop more accurate funding requirement for state and local enhancement costs; develop funding models for support; maximize lifecycle of capital investment while developing transition plans to adopt new technology as it develop0es; provide information on technology roadmap and costs that allows for consideration in local budget cycles; provide for some base level of technology for all entities on a statewide basis. Don't do this: treat technology in silos; fail to communicate vision for public safety communication.
5. Do this: complete all ARMER, civil/radio/matrix elements in 2 – 3 years (including punch list items). Rationale: LM radio is critical for stakeholders today, we have huge investments in ARMER products, and we need to complete and maintain ARMER fully for at least the first five years and prepare for a 30 year life cycle for ARMER with at least a five year upgrade refresh cycle. This forecast should give the locals enough notice to be administratively prepared budget-wise. As technology changes, we should be prepared to change with the state/locals being 2 – 5 years behind the technology curve. This gives time for our budgetary and oversight processes to catch up. For FirstNet matter, stay involved federally and plan out a vision to implement broadband in 3 – 5 years on a graduated scale, if "scale" usage is potentially likely. If it is not likely, hesitate to implement. Prepare for broadband/LTE usage with budgeting planning and forecasts for the next 4 – 5years. Keep need of tribal governments in mind especially if they need significant training and other support to catch up.
6. Do this: continue ARMER build out to achieve 95% statewide coverage; maintain ARMER network to meet status quo performance of system. (Rationale: equitable service level statewide; maintain investment.) Text to all (with financial support); encourage facilitation of shared services; GIS project; interoperability training. (Rationale: public expectation/hearing impaired needs; GIS statewide benefits 100% of users, serves multiple purposes during development through completion. Don't do this: spend resources on FirstNet without more due diligence; perhaps competitive/private government partnership or hybrid.)
6. ARMER: continued improvement of the system through coverage, redundancy, maintenance, enhancements. NG911: GIS – statewide map and map services. FirstNet: Pilot applications and track app development; establish private/public partnerships; roadmap for build-out. IPAAWS: keep current initiatives funded should be complete within 5 years.
6. Continue to solidify ARMER and its resiliency. Establish timeframes for needed refresh and a refresh plan. Determine sta6ekholder positions/budgets for upgrade cycle to develop our upgrade plan. Research/back haul options and how they could be used to support the integration of 911 ARMER and potential for FirstNet, of First Net like capabilities, through public private partnerships. Explore training certification potential to better prepare dispatches (esp. the HR side of things) through focus groups, special interest groups.
6. DO this: invest in GIT; the future depends on it. Continue investment in maintenance/support of ARMER – it works exceptionally well and we need to invest in the future so it continues to work well. Be visionary and skeptical of future technology – it has to work, be accepted, and be affordable. Don't do this: Invest blindly in the next best thing without widespread support and demonstrated need. Chase our tails about being first, newest, greatest. Be realistic about needs and operational capacity. Rationale: We all rely on technology but can only fund, support and institutionalize so much, so fast.
7. Do this: Continue to advance technology interoperability for first responders; invest in ARMER; IPAWS; FirstNet mobile preemption; NG911. Ensure infrastructure exists statewide to allow local

participation OR provide entire package statewide. Don't do this: Neglect support for maintaining systems; discount funding challenges at local levels (ARMER experience); assume all responders have smartphones, tablets, and computers.
7. Keep ARMER up to date but use threat of a "freeze" to keep cost under control. Proceed with FirstNet under the assumption that five years from now, users will be demanding mobile data bandwidth for "must have" applications that they cannot envision today, and that they can't live without. Look for opportunities to use spectrum as leverage to get carriers to provide coverage we need at affordable level. Avoid having to build state owned infrastructure for mobile data unless there is no other viable option. Press forward with full deployment of NG911 with PSAPs, interconnected with as much band width as possible. Create an environment where application sharing (like CAD, RMS, etc.) is encouraged and supported.
7. Complete build out of ARMER statewide to each county and public service agency and bring everyone to the same level of equipment. Implement the all-encompassing systems upgrade plan so costs can be properly budgeted for system upgrades and equipment stay current. Sign on with FirstNet and build a statewide system that includes same level of current commercial carrier service and build out service in critical areas.
7. Do this: Ensure current system is robust and meets needs – maintain current infrastructure. Invest in GIS locater tech. Advocate an increase in 911 surcharge. Don't do this: Let current infrastructure go to waste. Fail to fund necessary upgrades. Rationale: funds need to be invested wisely in the technology that is going to keep rescuers safe and serve end users well.
7. Fully support education and outreach to build statewide consensus regarding FirstNet planning and implementation. Continue to enhance coverage and capacity of the ARMER network statewide – recognizing that we are not done. Work to integrate the requirements of NG911 and PSAPS into all future voice and data planning.
7. Complete ARMER and keep it up to date. E911 needs to be facilitated. Our focus needs to be on the people we serve first, then the people responding to that service. FirstNet, while it could be beneficial, it is a luxury.
7. Maintain and protect voice communi6iations system – critical infrastructure; plan for improvements/replacements; focus on providing tools to provide service to customers (public safety and public). Maintain/improve existing system/technology (until next best thing is identified). Position to take advantage of improvements/advances in all communications technology (data, voice, telemetry new technology). Agree/implement a base level for everyone: improve investment based upon geographic/demographic needs; plan and position how to support and fund the effort. Limit or eliminate non-public safety uses. Any system cannot be all things to all people. Technology needs to work for us; we should not work for technology.
8. Do this: keep ARMER current. Education decision makers on the needs of ARMER, NG911 and FirstNet. Explore funding sources, expand the 911 fee, and look at other fees on cable/Internet. Ensure this is a statewide initiative that includes everyone in public safety. Don't do: let people go backwards – back to VHF. Do nothing – need to be pro-active. Rationale: technology is changing and we need to keep up with the public's demands and what they have.
8. Work towards eliminating VHF paging; make it part of the ARMER system or part of a reliable, fast digital paging system. Determine a way to prevent civil defense siren systems from being hacked or move towards replacing this current system. NG911 – do whatever it takes to develop the ability for in-building location and improve current location data for cellular calls. Move towards all PSAPs in Minnesota; use the same mapping system, CAD and 911 phone system to improve sharing capabilities and evacuation choices. Training is critical: continue to develop training programs/classes for PSAP personnel and users. I would like to see more incident based training – similar to COML training.

Continue to improve the ARMER infrastructure. Very interested in FirstNet and what it will provide.
8. DO: complete the build out of ARMER and help locals with infrastructure costs to get to 100% if funding available. Complete 911 upgrades to accommodate cell phone identification and work with FCC to push cell phone company cooperation for identification. Move forward on the 7.15 upgrade in 2016. Plan for tower upgrade and replacement every 30 years. Don't: lock into the 7.19 upgrade in 2019; we need time and better plan for the mass changes and costs; work with the counties and locals to better forecast costs associated with the upgrade and slow upgrades to every 5 years with clear cost layouts. Need to be realistic as to what we want this system to accomplish.
8. My feeling is that you first need to focus on the needs that affect the public as well as public safety. Don't leave ARMER incomplete. Strive for all counties. Secondly, the citizens need and expect an IPAQS and NG 911 system that is reliable, funded, and easily usable. They pay taxes so when a tornado, vapor cloud, explosion, the boogey man, etc. is affecting them, we will notify them and advise them of the proper course of action, as well as being able to contact 911 by whatever means available, and know where they are. I do feel FirstNet is extremely important. I feel it falls under the want and not need category, especially given the mobile broadband network currently available by commercial carriers. That being said, now is the time to implement it if we want the system for the future. I think the major obstacle is funding. I feel as a group (fire, law enforcement, EMS, SECB) we need to actively engage our state officials that a separate stream of funding needs to be put in place to make a complete public safety system with FirstNet, AFMER, IPAQS, and NG911. The SECB has shown their commitment to making a reliable system but is falling short on funding. This is not an open hand looking for money, but is a supplement to a strong well thought out effort. Challenge everyone at home to lobby at a local level to push it up the ladder. Together we are a strong voice.
9. Focus on responders needs; dispatchers' needs. Prioritize features by needs/usefulness. Protect the technology investments. Focus on customer service to those who dial 911; location accuracy; finding them. Focus on training and we need county commissioners and city administrators to support that and hold users accountable (911 money is used the least for training). Determine more effective way to get regional and county buy in. Determine a better way to determine priorities (county input to regions, then to SECB)
9. Private industry is ahead of us. 5 years: don't reinvest the wheel – catch up to the private sector (GIS).
9. Generally, I would favor full implementation of FirstNet and all associated benefits – with the caveat of public and private education of what it is and what it can do and how it benefits large jurisdictions and small jurisdictions. County boards and city councils are still recovering from large investments in ARMER. Consideration need to be made on effect s of major technology advancement pushed out to the end users (lo of people in this area struggle with technology).
9. Technology changes at a very rapid pace. We don't know today what our technology opportunities will be 5 years from now. We should continue on a path to partner with FirstNet and remain on the front end – helping to shape the project/outcomes to best meet our needs. We should continue on a path to be leaders in the nation in public safety technologies and take advantage of opportunities for public safety personnel to be as safe and efficient as possible in the field. We should seek out other opportunities for efficiencies in areas that currently bog us down such as upgrades to software, etc. We should strive to partner with private enti6ites to create further efficiencies and reduce costs. We should work closely with our elected officials relative to funding needs as well as benefits to their constituents. Full speed ahead provided funding. 911 fee increase with good justifications.
9. Do this: Keep system architecture and backbone current, develop a plan and strategy. Develop strategy to address aging subscriber equipment. Education. Continue forward progress towards FisrtNet, recognizing diverse needs of Minnesota. Next Gen 911. Develop long-term funding strategy.

Statewide data sharing standards. Don't do: Freeze system or ignore updates Forget our mission. Why? Technology is constantly evolving, recognizing greater reliance on mobile communications and broadband.
10. Do this: Priorities: Fully invest in ARMER (mission crucial system) (continue complete build out, maintain with upgrades). Invest in FirstNet – this is our future – we are already pushing on the limits of existing broadband capabilities. Learn from/leverage lessons learned in the ARMER build out. Make FirstNet scalable so counties can all participate at a base level, but allow expansion as needed. Encourage regional cooperation/consolidation of ARMER/FirstNet. It is not necessary for each county to operate a SAP. Push GIS. NG911 – already a plan – work through; not a huge investment. IPAQS – not a huge investment. Don't' do this: Do not assume that we must limit our expectations based on costs. We (my city) have invested heavily in technology as a more affordable option than increasing staff.
10. Plan to converge NG911 with ARMER and FirstNet. Do this: build out fiber. Redundant links. ARMER towers. OSI model for proof of concept testing. Sustain technical work groups – FirstNet. Determine roles/usage – FirstNet. Don't do: non-phased approach. Leave out operator viewpoint. Rationale: NG911 will incur expense – functionality replaced by FirstNet. OSI model end to end analysis on capacity and availability. Go big network infrastructure. Small incremental steps toward FirstNet.
10. Continue to invest in ARMER, upgrades, capacity and coverage needs as identified. Training at all levels to continue. Must be able to keep cost effective. We still have some today that don't have what they need due to costs. User fees or higher fees could really hurt some agencies. Prioritize next gen 911, text to 911 and related services; regulate GIS location information; prioritize GIS mapping needed. Move forward with exploring FirstNet. The future will depend on reliable data and the build out to do so. Must prioritize coverage areas. Keep cost affordable for service and devices. Need to be able to work with current and future services.
10. All counties on ARMER. NGI3 fully deployed. State option of FirstNet entity participation via participation plan. SECB demand for regional cost efficiencies through systems sharing (virtual or physical consolidation). SECB standards completed. SECB direction.
10. Make the mission of the board to build the best, practical, most reliable public safety systems possible. Invest in a strong sustainable educational campaign and lobbying effort to all local entities, especially decision makes and to the legislators. Rationale: If we have the support through well informed individuals and we have a lot of them, the funding issues will take care of itself. Make the question not if, but how.

Finally, participants were asked their thoughts on funding, both current tools and options and new approaches. They responded by table with the following:

TABLE 1:

- Information on funding needs (PPT) for the future
- Raise 911 fees (currently middle of the road in fees versus leading the nation in technology)
- Medical alert/alarm (residential, business) fees
- Technology tax
- Incentivized sharing of 911 fee resources

TABLE 2:

- Broaden funding: For profits include medical alarms, security/fire alarms, OTT devices (ISP fees). Non-profits include ETC “free” phones
- Deepen: fee increase, educate about why
- Strengthen: Incentivize carriers re participation; PSAP consolidation

TABLE 3:

- Build a coalition.
- General fund?
- Special revenue?
- Level of service?
- Pay bonds early?
- Allow funds to be banked?

TABLE 4:

- Increase 911 fees
- Per address fee – households, businesses ‘allow for state infrastructure rentals to market rates
- ISP service provider fee
- Long-term planning

TABLE 5:

- Raise fee to ____
- Priorities: PSAP raise 5% (1 cent)
- Systems maintenance (13 cents)
- GIS (2 cents)

TABLE 6:

- Local costs: legislation to allow separate line on property tax statement outside of local levy limits, to specifically fund local equipment replacement
- State costs: surcharge increase, bonding

TABLE 7:

- Expand the surcharge: last mile network subscriber;
    - bill and keep (egg. 5% to the network provider for collection and device location);
    - internet pipes pro-rated by bandwidth
- Distribution
    - Continue the 911 formula; reassess local costs, may need to adjust
    - Develop an ARMER distribution formula:
        - state backbone costs,
        - local backbone grant program (e.g. 50% match with state assuming the ongoing costs);
        - subscriber (e.g. 50% match for a mid-range Motorola radio)