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# **Statewide Radio Board Structure and Governance Assessment**

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# Introduction

The Statewide Radio Board (SRB) was created by the 2004 Minnesota Legislature and authorized to plan and implement a statewide, shared radio and communication system. The SRB was the successor to the ARMER (Allied Radio Matrix for Emergency Response) and Communication Planning Committee created in 2002. This committee oversaw the broader statewide development of a shared public safety radio system initially built for the Twin Cities metropolitan area. As the system started moving into Greater Minnesota, the Legislature created the Statewide Radio Board.

Under current statute, the implementation of the ARMER system involves three bodies, as follows:

- The Statewide Radio Board (SRB) has overall responsibility for the statewide, shared radio and communication system project plan.
- The Department of Public Safety is responsible for implementing the plan and contracts with the Minnesota Department of Transportation (MNDOT) to construct, own, operate, maintain, and enhance the elements of the backbone system (ARMER) defined in the plan.
- The Minnesota Department of Transportation is responsible for construction, installation of materials, supplies and equipments, and other services needed to build, operate, and maintain the system. Further, MNDOT owns the ARMER system including items such as radio towers, and associated structures and equipment related to the system.

The ARMER system is a major element of Minnesota's long term interoperable communication planning, but not the only element. As Minnesota's public safety communication planning efforts have developed into a statewide plan, there is a critical need for interoperable public safety communication planning and coordination among all emergency responders. The role of the Statewide Radio Board as a broad forum representing all public safety disciplines from across the state has been expanded to address this broader role of public safety interoperability. With Executive Order 07-15 in 2008, Governor Pawlenty made the SRB responsible for development of a statewide plan to increase interoperability with public safety communications equipment. The order states: "The SRB will develop and adopt guidelines and operational standards for local and private public safety communications interoperability within Minnesota and will promote coordination among local, state, federal and tribal public safety agencies in addressing statewide communications interoperability within the state."<sup>1</sup> The language of the Governor's Executive Order was codified in to law in the 2009 legislative session.

The current statutes also provide for the establishment of regional advisory committees and Regional Radio Boards to coordinate regional interests and to develop regional technical and operational standards for the ARMER system.

The purpose of this study was to evaluate how the current SRB organizational and governance structure addresses the needs of stakeholders. Further the study focuses on how the current organizational and governance structure is capable of addressing the

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<sup>1</sup> Executive Order 07-15 designating Statewide Radio Board to coordinate public safety communication interoperability -- October 2, 2007

changing nature of public safety communications. Finally, the study also reviews the institutional location of the ARMER system.

## Methodology

The study team interviewed members of the Statewide Radio Board, Chairpersons of the Regional Radio Board, and other key public safety stakeholders. The study team completed 27 interviews. Interviewees were asked about the Board's organizational structure, governance, relationships, critical issues and institutional location of the ARMER system.

Additionally, a best practices review was done with four other states (Michigan, Arizona, Oregon, and Virginia) to identify: 1) how the current organizational and governance structure addresses the needs of stakeholders; 2) how the current organizational and governance structure is capable of addressing the changing nature of public safety communications; and to discuss the institutional location of their state public safety communication system.

## Study Findings and Conclusions

### Structure

#### **Solid balanced Statewide Radio Board structure**

The twenty-one member Statewide Radio Board (SRB) established in Minnesota Statute<sup>2</sup> has balanced membership between state public safety agencies, metropolitan public safety entities, and Greater Minnesota public safety entities. The Board meets monthly in St. Paul, Minnesota. It is responsible for the implementation of the ARMER project (an 800 MHz trunked radio system for Minnesota) and planning and coordination for Minnesota's public safety communication interoperability. The Board has five committees focusing on the areas of overall steering, legislative, operations and technical issues, finance, and interoperability. In addition, there are seven regionally focused radio boards.

The people interviewed gave the SRB high marks for a broad inclusive structure. Further, they appreciated the balance the structure offered between the various entities. Specific comments include:

- Allows for a broad base of input, most of the users of the system have a seat at the table
- Diverse make-up of the Board
- Provides a venue for good conversation on issues and good decision making
- Helps build trust among the parties involved
- The seven state, seven Metro, and seven Greater Minnesota balance keeps it equal

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<sup>2</sup> Minnesota Statutes 403.36

### **A large Board makes it difficult to act quickly**

Conversely, the large size and balance in the membership make it difficult to make decisions quickly. Topics are discussed at length and frequently decisions are not made until a consensus has been reached. While many interviewed noted the slowness of the process, they all stated it did not change the value and importance of the Board's structure and make-up.

### **Grass root involvement from Regional Radio Boards**

Minnesota Statutes provide for the creation of Regional Radio Boards (RRB) to "implement regional and local improvements to the statewide, shared, trunked radio communication system."<sup>3</sup> There are seven Regional Radio Boards in Minnesota; Northwest, Northeast, Central, Metro, Southwest, South Central, Southeast.

The interviewees said the Regional Radio Boards, while still under development, are at the grass-roots level and their broad-based structure and inclusiveness get the right organizations and the right people involved. For many, it was too soon to tell how valuable the boards would be, but the enthusiasm for the Regional Radio Board concept was high.

A concern raised about the Regional Radio Boards was local governments' struggle with the costs and volume of participation. Some of the boards and committees can become large and with costs for mileage to meetings and the expenses for training and hiring consultants. These costs can be expensive for local governments.

## **Governance**

### **Complex inclusive governance**

The large structure of the Board and its committees, plus the complexity of the topic, created a challenge for operation of the Board. Those interviewed remarked (as mentioned earlier) that the size and complexity made it difficult to keep everyone informed and tough for members to grapple with the complexity of the topic. Further, because of the size, it was difficult to make decisions quickly.

Conversely, interviewees observed the inclusiveness of the Board and its attempt to gain input from a multitude of sources in the decision-making process. The committee structure also allows for a wide variety of stakeholders to be involved in some part of the governance process. A number of suggestions were made for additional members to be invited on the Board but none were universal and it was frequently mentioned that it was critical not to break apart the 7-7-7 balance of the Board. Further, most of the entities identified were included in either the Regional Radio Boards or the Board's committees. Some of the entities specifically identified to be included are tribal governments, federal government, Forest Service, National Guard, Homeland Security, hospitals, university and state university systems, Bureau of Land Management, Camp Ripley, and ICE (Immigration and Customs Enforcement).

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<sup>3</sup> Minnesota Statute 403.39, Subdivision 1, Powers of Statewide Radio Board, 2007

Specific comments included:

- Involves a wide variety of agencies and entities that would not normally work together
- Time-heavy process and decision may take months
- Tough to keep people informed and involved
- Struggle to wade through all the information and technical detail
- Plenty of opportunity to comment on topics
- Good venue for conversation and making good informed decisions

### **Strong effective Board leadership**

The people interviewed spoke highly of the Statewide Radio Board's leadership. Interviewees noted the Board's leadership was fair, open minded, and encouraging of a participative process where multiple points of view could be shared, discussed, and eventually reached. Specific comments included:

- Willingness to listen and work through issues with the Board
- Support from leaders in key departments
- Collaboration focus from leaders

### **Good but lean staffing**

Interviewees stated the staff was doing a good job but thought staffing was lean. They commented there was not enough staff to handle any additional work the Statewide Radio Board might want to add. Additional work efforts mentioned included education/training, outreach, video conferencing, and web support. Interviewees appreciated staffs quick response time to questions but also said staff seemed at times overwhelmed with the volume of work.

### **Need to keep momentum going**

Interviewees commented the initial work of the Board was well underway, and parts were at or nearing completion. Potential for members to think a lot of the hard work was done could lead to a potential for complacency to exist. They stated that while the ARMER radio system was moving toward completion, the Board is still faced with discussing and making decision on system maintenance, funding, data delivery options, and software upgrade plus a host of other topics.

It was noted that some Statewide Radio Board meetings had been canceled because not enough members could attend and overall attendance by Board members at the meetings had been dropping off. Further, others cited the falling behind on Phase III as a sign of the Board not asking the tough questions on why the delay. It was noted positively the Board's use of interactive television to keep people from having to travel so much to the monthly Board meetings in St. Paul. It was also stated that the Board should occasionally meet in Greater Minnesota.

An interesting comment from a few interviewees was that trust among some of the entities has been an issue in the past. Because of the effort of inclusiveness with the Board structure and operation, trust among the parties has been building. It was mentioned that with the increased trust, people were less likely to ask the difficult questions, challenge people on an issue, or attend all of the meetings.

Specific comments included:

- Board members are not showing up at meetings, complacency
- Much is done but much more needs to be done
- Once trust is built, then there seems to be a loss of interest
- Need to hold Board meeting around the state
- Number of items still needing to focus on including data delivery over the system and system maintenance
- While there are different systems in use and different needs, the issue of interoperability will need to be discussed and worked on for a long period of time
- No capital plan to replace or upgrade the system in 10 to 15 years

## **Relationships**

### **Successful efforts of the Statewide Radio Board have built stronger relationships among members**

Interviewees noted the structure and leadership of the Board coupled with the work of Board members has led to a successful deployment of the ARMER system, to date, and a willingness by the SRB to address interoperability issues as they arise. They said Board members had built good working relationships, were able to talk issues out, and develop solutions to critical problems. Further, Board members understand their role as ambassadors to their specific areas (geographic or entity) and do a good job of going back to these groups and informing them of the actions of the Board and why. In addition, they also do a good job bringing ideas to the Board to discuss or for input on a topic.

A number of interviewees noted the quality of the people on the Board, on committees, and on staff. They are willing to listen, discuss, and make informed decisions. The members' passion for the topic, public safety communication, helps bring about spirited debates but also a willingness to support the final decision so action can take place.

As mentioned earlier, trust among the various parties had been a concern in the past. One of the issues in the Statewide Radio Board's development was to increase the trust among the public safety communication entities in Minnesota. While building trust is always a concern, the success of the Board and its efforts have improved the trust among key public safety parties. The one example a number of interviewees noted was the lack of public safety communication problems during the Interstate 35W bridge collapse in 2007.

Specific comments include:

- Good people, see greater good of the system
- Diversity of the group is a key, have all parts of state and levels of law enforcement
- Trust in Board, feels like a partnership
- Confidence in Board to get the job done

### **Boundaries among Department of Transportation, Department of Public Safety and the Office of Enterprise Technology**

One area noted by several interviewees was a concern with the relationship between the Department of Public Safety, the Department of Transportation and the Office of Enterprise Technology (OET). Few interviewees gave specific examples but those that

brought it up noted a “tension behind the scenes” especially between Mn/DOT and DPS. Some thought that there seemed to be an issue in certain areas with who oversees what in public safety communications, and others mentioned the handling of customer service. OET was mentioned because of the technological issues involved and the overwhelming complexity and level of effort it may take to resolve these issues and manage the integration of the technology infrastructure to create an effective and efficient system in the future.

Some interviewees saw the potential for future problems, in a currently good working relationship, if the roles and responsibilities of these key players were not clear and understood. It was mentioned that the decision-making roles between Mn/DOT, DPS, OET, and the SRB were not always clear. It could be a concern if there was a challenge to a Board action or a divisive issue came before the Board. In good economic times, it was stated, everyone got along but an issue could arise between the entities if funds diminished to complete the planned work or in taking the next step in developing the system.

Specific comments included:

- Behind-the-scenes issues on who has control
- Not a clear definition of roles in decision-making between Mn/DOT and DPS, who does what
- The technology needs to be coordinated as we look to the next level of operation
- Not a big issue now but the curtain may be pulled back in future, potential to lose funds may create issues

**Keep communicating** (to policy makers at all levels, local public safety officials, and all entities involved in public safety communication in general)

Interviewees noted the critical importance of explaining the value and need for the system to key stakeholders. The public safety communication issue is not well known to most people. While many in the public safety community “get it,” the issue is not fully understood by local and state policy makers, other government officials, and the public at large. The issue is complex and technical, and many people do not want to take the time to understand the specific nuances.

Further, they said that some in the public safety area know pieces of public safety communication but have difficulty spending the time and effort to understand the whole topic. Communication is a critical factor in building the trust among the various parties involved to effectively discuss the critical issues that come before the Board. Further, with a large board it is difficult to have the personable communication it takes for people to question and discuss the technical aspects of public safety communication. It was also mentioned that the efforts of the Board need to be communicated so the local public safety community sees the dedication to getting the job done and the shift of focus to interoperability.

Specific comments included:

- Board members need to be ambassadors of the radio system to Greater Minnesota, need to tell officials the story on what is being done and why

- This is a long-term issue and key stakeholders change, need to keep the conversation going so we do not lose momentum
- Key to building trust is face-to-face communication, we need to keep telling our story
- Many of us are not “techies” and it takes time and repetition for us to understand some of the complex issues the Board is dealing with

### **Continue to build the public safety communication system into Greater Minnesota**

The creation of the Regional Radio Boards (RRB) and the expanded role of the SRB to address interoperability issues were noted as key pieces in addressing some of the barriers in moving the system into Greater Minnesota. Further, the balanced make up of the Board is also important. A number of interviewees stated that the system has evolved and come together. They mentioned the steps of building the system, managing it, and then integrating the system with others in the state as a key process for the various parties involved to accept the changes that will eventually need to take place for public safety communication in Minnesota.

Interviewees mentioned that the Board itself has expanded its focus from building the ARMER system to a more expansive focus of working with the public safety community in Minnesota for communication interoperability. The expanded focus helped alleviate some of the fears in having to accept the single system. Further, it was stated that grant money made available from the Board was also helpful in allowing local units of government to address the cost issue of expensive new communication equipment.

A number of interviewees noted the RRB concept was in the early stages of development, that some of the regions were up and running while others were still working on creating their boards. Overall the interviewees positively viewed both the ARMER system and the SRB performance at this point. They noted the struggle the new RRBs and their members have with the complexity of the subject matter and put a high priority on the education the state can provide to them. They said it was important for the RRB members to understand the system in detail but commented it was a long learning curve to gain enough knowledge to make decisions with confidence. They see the system and process having two definite phases: ARMER system build-out and the development and/or implementation of interoperability. They noted the two phases overlap but someday the build-out phase will be substantially complete; interoperability and maintaining the system will be ongoing responsibilities.

Those interviewed said the RRB members highly value the knowledge state agency representatives have and the training given to local participants. They would like to have state give the local board more direction, advice and/or consultation in selecting the best alternatives available and what they cost, in addition to providing for more training.

Interviewees brought up an ongoing need for the SRB to support the regions, especially in helping them stay coordinated. They noted that RRBs do not have the statewide perspective, and many have more work than they can handle. Further, the SRB needs to facilitate the sharing of ideas from one region to another, build upon those things that work and communicate it to the other RRB, and learn from issues that have to be addressed. They said the state needs to do this from a neutral, independent position and not from what the state wants the regions to do.

Specific comments included:

- The SRB has the flexibility and dedication to get the job done, and that job is communication interoperability for the state
- A large board is cumbersome but it also provides for allowing participation and building trust; it goes a long way to build trust
- Have an educational and/or organization conference between the SRB and RRB to allow the board to interact and build relations along with the key knowledge concepts
- We need common protocols to how one system can communicate with another system; also the use of group purchasing will get an economy of scale for getting some of these items cheaper
- Money is the huge issue, we do not have it to buy communication equipment
- I like the idea of interoperability – that’s the right direction

### **The ARMER system is in the right location with the right governance**

Interviewees overwhelmingly support the current placement of the ARMER system and the role of the SRB in governing it. They noted that technology has a key role but the main issue is public safety, and the SRB structure allows for a full discussion and resolution to issues on public safety communication. One interviewee noted, “in comparison the technology is easy, it’s the relationships that are hard.”

Specific comments include:

- The missions are different, the focus is public safety
- OET is a significant player, and critical in providing the technology information for the current structure and especially for future planning, but it works best with the blended structure that is there

## **Findings from other states**

Four other states (Arizona, Michigan, Oregon, and Virginia) were interviewed for how they handle the governance and structure of their statewide public safety communication systems. The findings from these interviews include:

### **States are in the process of building systems**

States are sharing, upgrading, and incorporating other state and local systems. They are building 700 MHz systems or preparing to adapt to 700 MHz. Michigan and Virginia have built backbone systems and Oregon is in Phase I of developing its system. Arizona currently does not have a statewide system.

### **Mixed placement of system management**

States have placed the management of their radio interoperability system high in the state hierarchy, often in close relationship and proximity to their governor's office. Arizona and Michigan locate their interoperability management offices in their state information technology agencies. Oregon and Virginia locate their offices in state police agencies.

### **Inclusive process**

State and local governments around the nation are trying to include as many groups as possible that impact public emergencies and safety. The ones sometimes overlooked by others include tribal units, federal representatives, local IT directors, state colleges,

corrections, and hospitals. The broad-based boards, committees and working groups are creating a wealth of participation that has given the systems enthusiasm, expertise, and a cooperative spirit. The states' approach of not forcing things on the locals has been a key factor in success. (See Chart in Appendix A for details and a list of who is involved)

### **A variety of ways to address conflict**

Conflict resolution and decision making are influenced by several factors: memoranda of understanding can effectively address conflicts; the input and debate that come from representation on groups also resolves conflicts; budgets – the greatest source of conflict – actually resolve some conflicts because of the limitation of funding; the need to cooperate and agree in order to get funding is another factor. Conflicts that are more intractable work their way up to state-level working groups, boards, and governors' offices where final decisions may be made.

The four specific states handle conflict in a variety of ways. In Arizona conflict is handled at the regional level. Michigan said users do not really have conflict among themselves, that conflict is usually between the users and non-users (a county decides to have its own system). Michigan stated it has disagreements over frequencies. In Oregon the governor's office makes some of the decisions to resolve conflicts, while in Virginia conflicts are solved informally in a working group of state agencies. Decisions may go to the State Interoperability Executive Committee level if they cannot be resolved.

### **Radio communication interoperability is an idea whose time has come**

There is a great deal of support and enthusiasm for it around the country. Some states receive high-level political support from governors, legislative oversight groups, and individuals who emerge as champions. Program directors are positioned high in state hierarchy such as cabinet level. This institutionalizes support and frees it from personality dependence. State offices (all four interviewed) use outreach staff to promote the system with stakeholders and encourage champions in the field. Oregon staffs its state office with state agency employees that rotate jobs through the interoperability office. This creates understanding and commitment.

### **Need for education and promotion**

The states interviewed noted a great need for education and promotion. The complexity of interoperability and myriad of choices places a premium on knowledge. Participants generally struggle to keep up with learning enough to make good decisions with confidence. Participants need education to help grasp the whole picture of what interoperability is and is not – from the top down to the basic level. They need to understand the technology alternatives and their cost implications initially and into the future.

### **Drawbacks with being in technology office**

Based on this limited sample, placing the system with the information technology agency has drawbacks. System users want to know that whoever is running the system has experience with radio emergencies so they understand what people in the field are going through and need. IT has a disadvantage in that it may tend to view radio interoperability as another IT application and miss its public safety priority needs. The interviewees noted

Minnesota appears to have an ideal arrangement because it splits responsibilities between agencies which forces them to cooperate and prevents anyone from getting too much power or steering the system toward a specific agency's proprietary needs.

### **Higher staffing levels**

The states in this study have more full-time staffing at the state level than Minnesota. In addition to a director/coordinator, at the state level they have liaisons in the field, siting and partnership groups, grant and financial coordinators, legislative liaisons, procurement staff and IT support. (See chart in Appendix A for specific staffing numbers) (Caution: staffing levels were given via phone conversations and not checked. Because staff may have multiple duties it is difficult to do an apples-to-apples comparison.)

### **Oregon provides a future revenue stream**

In Oregon, ownership of the physical system gives control and sets the stage for future revenue streams by leasing tower space and services to other public and private parties. This ranges currently from tower leasing for cell phones to system sharing with the Coast Guard.

The states also use a variety of funding sources. Interviewees mentioned the following:

- State general funds – both capital and O&M
- Highway funds
- Game and Fish funds
- Homeland Security grants
- RICO – Anti-Racketeering Fund
- Other Federal funds
- Public and private partnerships
- Lease to purchase agreements.
- MDOT and DNR pay for support of their mobile radios.
- Subscriber fees for radios
- State bonding authority for capital funds
- Leasing assets to private sector, for example, tower space for cell phones
- Indian Tribe grants from DHS that need matching funds
- Communication cache reimbursements from inter/intra state, federal, private users
- Localities maintain the upkeep of the personnel, training, equipment

### **Minnesota seen as a model**

More than one interviewee questioned why we were calling them for best practice information. They noted that Minnesota has a great reputation in the public safety communication field and that they were looking to Minnesota's board structure as a model. They were interested in bringing all the parties to the table to address issues in an inclusive and participative manner.

# Recommendations

## 1. Maintain the current structure of the Statewide Radio Board

Little in the interviews suggests a change from the current structure and governance roles of the Statewide Radio Board. Most interviewees said that the Board was doing a good job and suggestions offered by interviewees were intended to make the Board even better. Likewise, when contacting other states, they were looking to Minnesota as a way to do their work better. This is not to say the Board can become complacent. As noted earlier in the report, this has the potential of becoming an issue. The Board and its leadership need to keep issues fresh and parties interested. There does seem to be enough to keep the parties engaged for some period of time.

## 2. Engage in a strategic planning effort to develop future goals and directions for the Board (and public safety communication in Minnesota).

Many of those interviewed thought a future-oriented focus for the Board needed to be developed. They noted the success of rolling out the ARMER system and the shift to an interoperability focus but then raised the issue of what's next. The issues of system maintenance, funding, bringing various partners on board, addressing interoperability issues, continuing and/or improving coordination between parties, especially the Regional Radio Boards, are all areas of future work for the Board. The interviewees also noted the need to engage or include the Regional Radio Boards in the planning process. Several noted the idea of a conference including all the key parties to kick off the planning effort. Many interviewees support the use of interactive television, and that practice should be continued to make it easier for Board members to attend meeting. It was also noted that interactive television could also be an option for Regional Radio Board meetings.

As a part of the strategic planning process, the roles and responsibilities between the Board, the Department of Public Safety, the Department of Transportation, and the Office of Enterprise Technology should be reviewed, discussed, and clarified, if needed. This is a way to understand if there are issues between the departments, if and how they will impact the work (current and future) on public safety communication, and what can be done to address them.

Further, the planning process should also incorporate a review of staff workload. Interviewees noted that staff at times seemed overwhelmed by the load, and additional duties could be problematic.

## 3. Support and nurture the Regional Radio Boards

The Regional Radio Boards are in various stages of getting up and operating. They need assistance from the Statewide Radio Board in the expertise gained in discussing these difficult issues and building an inclusive, area-wide governance structure. They need to

know some of the key things the Statewide Board has learned (what to do and what not to do) and to facilitate the process between the Regional Radio Boards (who does what best and how to coordinate). Further, the Regional Radio Boards need the technical expertise the state has and the broad statewide perspective. It was noted that the Regional Radio Boards want assistance but also need to understand the technology from their own perspectives. This may be a difficult “dance” between the state and the regions with both not certain exactly what the other is doing. This is where communication and trust are critical. Keep the communications going between the Statewide Radio Board and Regional Radio Boards and between the Regional Radio Boards themselves.

#### **4. It is important to occasionally hold Board meetings in Greater Minnesota**

“Get out of town” was a frequent response from interviewees. The Board members need the perspective of going out into Greater Minnesota and seeing how someone else does it, what issues are faced, and how they are overcome. Further, the ARMER system is moving statewide, and the Greater Minnesota communities need to be recognized for their efforts. Several interviewees noted an outstate meeting could include an information session for the Board on topics that are of particular interest to the location. Just moving the meetings is not sufficient; all parties need some education in the effort.

It was noted that the initial Greater Minnesota meeting could be coupled with a conference bringing together all the member of the Statewide Board and the regional boards.

# Appendix A: Best Practices in Statewide Radio Interoperability Systems

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## 1. Relationships between agencies involved in developing and implementing a statewide communication system.

What is your state's interoperability backbone system? What is its implementation timing?			
<ul style="list-style-type: none"> <li>▪ The states are building new assets as well as sharing, upgrading, and incorporating other state and local systems.</li> <li>▪ States are building 700 MHz systems or preparing to adapt to 700 MHz</li> <li>▪ Some states are proceeding in phases starting with the most populous areas first. Others are developing their systems piecemeal.</li> </ul>			
Arizona	Michigan	Oregon	Virginia
<p>Arizona does not have a statewide infrastructure backbone.</p> <p>Different agencies such as DPS and ADOT have their own systems. Locally there are regional systems, partial microwave systems.</p> <p>The state focuses on interoperability and will use local systems with patches.</p> <p>The Governor's goal is to ensure that 85% of state's population has interoperable systems within 2 years. They want a statewide system in 3-5 years.</p> <p>The Arizona SCIP plan has a timeframe of eight years (2007–2015).</p> <p>It does not have phases but is being done piecemeal</p>	<p>Michigan's backbone is a statewide 800 MHz trunked microwave tower system costing \$230,000,000 to build. The state owns it completely and can add users and purposes to accommodate other functions - potentially even money making ones.</p> <p>It consolidated disparate state systems such as police, DNR, and DOT that were due for mediation or had towers deemed unsafe by OSHA. It has 97% mobile coverage (233 towers - includes local towers), 46,000 users, and 1,400 agencies.</p> <p>State agencies use mostly radio and data communication to vehicles. They hope to leverage the 700 MHz system.</p> <p>It was constructed in 5 phases beginning in 1997 and was completed in the early 2000s. The phases were done on geographic basis with the most populous first. Upgrades are also based on population</p>	<p>Oregon is developing a statewide 700 MHz microwave backbone network. It is on Phase I of 5 and will own the system - not lease.</p> <p>It partnered with the department of Justice and Indian Tribes which had special DHS grants that needed matching funds. The state provided the matching funds and built a system with it along Interstate I5.</p>	<p>Statewide Agencies Radio System (STARS) is Virginia's only backbone. It is for state agencies. It replaces and upgrades the Virginia State Police legacy system (land mobile microwave radio network).</p> <p>STARS will create a statewide, wireless voice and data communications system and upgrade technology to increase capacity. It will facilitate the communications of 21 state agencies and will cost over \$300 million just for state agencies.</p> <p>COMLINC (Commonwealth's Link to Interoperable Communications) is the interconnection between the state and local systems.</p> <p>It is a system of systems combining STARS and COMLINC and is piecemeal. About 40% of locals have gotten financial help from the state. The funding is for building out regional connections and</p>

			replacing outdated and obsolete local systems. <sup>4</sup>  It is being built in phases in each of the 7 state regions. Richmond is up and running; then it will move to another region
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**What is the state interoperability governance structure? Where is the ownership and operation of the statewide infrastructure located organizationally?**

Other states have placed the management of their radio interoperability system high in the state hierarchy, often in close relationship and proximity to their governor's office. They have ready access to the governor's office organizationally or through appointments.

- Arizona and Michigan locate their interoperability management offices in their state information technology agencies.
  - Arizona's operational responsibilities remain with the state legacy systems in public safety and transportation. Its office manages the state's interoperability system with five staff.
  - Michigan's office consolidated disparate state agency systems and has 77 staff to operate and manage the system.
- Oregon and Virginia locate their offices in their state police agencies.
  - Oregon's interoperability office (OWIN) manages and coordinates the system while operational responsibilities remain with the agencies with interoperability assets.
  - Virginia's legacy system is at the Virginia State Police while the interoperability office (CICO) is in the Governor's Office on Commonwealth Preparedness. It coordinates and manages interoperability activities and implementation.

<b>Arizona</b>	<b>Michigan</b>	<b>Oregon</b>	<b>Virginia</b>
The Public Safety Interoperable Communications (PSIC) Office moved to GITA (Government Information Technology Agency) in June 2008 but operations remain at the agencies and	The Michigan Public Safety Communications System (MPSCS) office is located in the Department of Information Technology (DIT). It manages, maintains and operates the	In 2005, legislation combined the GIS/Communications sides of four state agencies - police, DOT, Corrections and Forestry - to create OWIN - Oregon Wireless Interoperability Network. The	The Commonwealth Interoperability Coordinator's Office (CICO - in the Governor's Office of Commonwealth Preparedness) ensures implementation of the Statewide Plan and coordinates major

<sup>4</sup> Virginia also has the [State Interdepartmental Radio System \(SIRS\)](#) SIRS - a low band frequency 39.54 MHz system developed in 1978 that is used statewide by local law enforcement to communicate between localities and the Virginia State Police (VSP). SIRS is widely used by rural localities to communicate with Virginia State Police (VSP) on a daily basis as many of these localities still operate on low band radio systems. Many localities have migrated to 800 MHz and high band radio systems. These situations require a patch or interconnectivity to continue the use of SIRS. In some cases 800 MHz users have discontinued their use of SIRS due to the costs associated with maintaining two systems.

<p>jurisdictions with interoperability assets.</p> <p>The PSIC is the support office for the Public Safety Communications Advisory Commission (PSCC) - the state commission responsible for enabling real-time, interoperable communications between governments and organizations. It also moved to GITA in June 2008.</p> <p>This takes advantage of GITA's extensive experience managing strategic initiatives, partnering with subject matter experts to build coalitions and delivering large, complex information technology projects.</p> <p>Arizona's governance structure:</p> <ul style="list-style-type: none"> <li>▪ The GITA director chairs the Public Safety Communications Advisory Commission (PSCC).</li> <li>▪ PSIC staff in GITA oversee and manage the PSCC and SIEC.</li> <li>▪ PSCC consists of 15 governor-appointed members representing public safety, police, fire, EMS, sheriff, communications, and the Arizona Department of Homeland Security.</li> <li>▪ The State Interoperability Executive Council (SIEC) - advisory committee to the PSCC has authority over 700 MHz, VHF and UHF interoperability frequencies</li> <li>▪ The SIEC has technical and Operational subcommittees</li> </ul> <p>Fire departments are highly interoperable. Police are not. Operational interoperability is event driven.</p>	<p>statewide interoperability backbone. The state owns the system. The MPSCS has policies and an advisory board created by executive order. The Governor appoints representatives of various groups and entities. She appoints the chair and vice-chair. Michigan does not have all branches of government on the advisory board - executive branch users are on the board.</p> <p>Members include public safety entities such as state or local government agencies, their authorized employees, and approved service providers. Service providers must be operating under a sanctioned government emergency response using the system to implement the plan.</p>	<p>governor appoints the OWIN director.</p> <p>OWIN is under state police as its administrative arm and was chartered to put together a system to support the agencies. It has consolidated new projects instead of allowing agencies to pursue them individually. Each agency operates its own system.</p> <p>They collaborate on building their own systems as best they can and got \$76 million from the legislature for phase I.</p> <p>OWIN is developing its project management office now with 15 staff.</p> <p>State agencies have an executive work group to go over developments at the project. This gives buy in from the state agencies.</p> <p>The SIEC has different members who do oversight of OWIN.</p> <p>Agency directors, associations, cities have a steering committee for SIEC. There are 16 members in the OWIN steering committee.</p> <p>A legislative group oversees system progress with the phases.</p>	<p>interoperability activities across Commonwealth Secretariats and levels of government.</p> <p>The CICO coordinates initiatives, communicates information, and facilitates discussion on interoperability efforts among state, local and federal stakeholders. It allocates resources between agencies of state government. The Office serves as a direct liaison between the Governor and Virginia's local governments and first responders on issues of emergency preparedness.</p> <p>The STARS has its own governance group - the Executive Board - comprised of several agency commissioners and some others. It has user groups that talk details. State police has operational lead because STARS replaced its legacy system.</p> <p>The SIEC has 30 members - one is a representative from STARS as a liaison. IT is heavily engaged.</p> <p>The SIEC has good cooperation. It has mostly representatives of associations, IT folks (see the 14 groups below), and also the Secretary of Pub Safety.</p>
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<b>Staffing levels</b>			
<b>Staffing of specific statewide radio interoperability offices:</b>			
Arizona: 5 FTEs			
Michigan: 77 FTEs (15 are program management)			
Oregon: 16 FTEs			
Virginia: 12.5 FTEs			
In addition, some local governments provide staffing to local systems and state agencies may staff their specific systems that are part of the statewide backbones			
<b>Staff responsibilities</b>			
<ul style="list-style-type: none"> <li>▪ Statewide interoperability coordinator; program or state office director/manager</li> <li>▪ Liaison/outreach manager who promotes the statewide system with stakeholders, especially in the field with local participants.</li> <li>▪ Siting and partnership groups</li> <li>▪ Physical construction, engineering, site maintenance, system monitoring</li> <li>▪ Coordinate grant funds and oversee financial activity, integrates program management and budget</li> <li>▪ Liaison with the legislature</li> <li>▪ Procurement staff</li> <li>▪ Information technology support</li> </ul>			
Arizona	Michigan	Oregon	Virginia
<p>5 FTEs:</p> <ol style="list-style-type: none"> <li>1. Statewide Interoperability Coordinator</li> <li>2. PSIC Oversight Manager - Managing the PSCC, looking over outreach, help manage the decisions</li> <li>3. PSIC Operations Manager is a new position. Managing the grants and financials, reporting to the legislature. Day-to-day nuts and bolts.</li> <li>4. PSIC Outreach Manager - travels around the state; meets with locals; drums up support</li> <li>5. PSIC Support Specialist</li> </ol> <p>PSIC would contract out writing of protocols if it did it again. SAIC is a contractor for rewriting the SCIP plan or doing grants. SAIC would meet with all the players to execute plans.</p>	<p>We have 77 FTEs available head count - (26% fewer people now than we had 5 years ago). They physically work on it. They are all doing technical stuff and support every inch of the system.</p> <p>We used to administer the program with 30 people, we are down now to 12-15 (out of 77). Engineering management, frequency coordinator, system monitoring experts, steeple jack classification, local agency integration of management and budget including grants, local communications - visits locally.</p> <p>We don't have the people to talk to all the locals. One is engineering and support, One is field operations - communications part - what comes out of the tower, One is monitoring the system. Site maintenance such as land and towers.</p>	<p>We have 16 FTEs:</p> <ul style="list-style-type: none"> <li>▪ Director, deputy, two executive administrative staff</li> <li>▪ Budget manager, two procurement staff;</li> <li>▪ Public information officer</li> <li>▪ Project management office - two individuals;</li> <li>▪ Siting and partnerships group – three to four people;</li> <li>▪ Interoperability coordination; one coordinator, two technical staff, plus contract engineers; a senior staff person works with contract people.</li> </ul> <p>NOC - network operations center will bring on a few people.</p>	<p>12.5 FTEs: 10 FTE - higher level - at the STARS system</p> <p>I have 1.5 FTE administrative assistants. I lean a lot on SIEC members. I can call them at 10 pm on a Saturday and they answer the phone.</p> <p>A number of engineers are deployed around the regions.</p> <p>CICO is staff to the SIEC. It provides outreach and contact with stakeholder communities - in person, over the web, it coordinates grant funds. It appears before the general assembly concerning interoperability. CICO has a close trusting relationship with the SIEC</p>

<b>Users. Who are the state parties involved? (law enforcement, fire, emergency medical, road maintenance, other)</b>			
<b>Arizona</b>	<b>Michigan</b>	<b>Oregon</b>	<b>Virginia</b>
<p>Groups represented on the PSCC:</p> <ul style="list-style-type: none"> <li>▪ GITA - State CIO/Director,</li> <li>▪ Arizona DPS</li> <li>▪ ADOT</li> <li>▪ Arizona DHS</li> <li>▪ La Paz County Sheriff</li> <li>▪ City of Casa Grande Communications Manager</li> <li>▪ Phoenix Police Department</li> <li>▪ Tucson Police Department</li> <li>▪ Oro Valley Police Department</li> <li>▪ Tucson Fire Department</li> <li>▪ Arizona Fire District Association</li> <li>▪ Apache Junction Fire Department</li> <li>▪ Sedona Fire District</li> <li>▪ Ganado Fire District</li> </ul> <p>Phoenix Fire Department Other State agencies, local and tribal governments, and non-governmental agencies are engaged and help in the creation and maintenance of the SCIP. There are bi-national agreements with Mexico so each party can provide assistance to the other in times of emergency or disaster, and provide training and exercise opportunities.</p> <p>DPS and ADOT play big roles. ADOT has a statewide system on the highways. Homeland Security is on the PSCC advisory committee and is the parent organization for grants.</p>	<p>MPSCS users (but not advisory board)</p> <p><u>Federal Agencies:</u></p> <ul style="list-style-type: none"> <li>▪ Border Patrol</li> <li>▪ Bureau of Alcohol, Tobacco, and Firearms</li> <li>▪ Customs</li> <li>▪ Drug Enforcement Agency</li> <li>▪ Federal Bureau of Investigation</li> <li>▪ US Forestry</li> <li>▪ Environmental Quality</li> <li>▪ US Fish and Wild Life</li> </ul> <p><u>State Agencies</u></p> <ul style="list-style-type: none"> <li>▪ Attorney General</li> <li>▪ Community Health</li> <li>▪ Corrections</li> <li>▪ History, Arts and Libraries</li> <li>▪ Human Services</li> <li>▪ Information</li> <li>▪ Labor &amp; Economic Growth</li> <li>▪ Military Affairs</li> <li>▪ Natural Resources</li> <li>▪ Secretary of State</li> <li>▪ State Police</li> <li>▪ Transportation</li> <li>▪ Treasury</li> <li>▪ Lottery</li> <li>▪ House of Representatives</li> <li>▪ Senate</li> <li>▪ Supreme Court</li> </ul> <p><u>Local governments and their service providers</u></p>		<p>The State Interoperability Executive Committee (SIEC) is the steering group; it provides guidance and recommendations to the CICO for the Commonwealth Preparedness Working Group of state agencies and Governor's office.</p> <p>The SIEC consists of 14 representatives from local and state public safety associations and government including (it has 30 members):</p> <ul style="list-style-type: none"> <li>▪ CICO</li> <li>▪ Virginia Association of Chiefs of Police</li> <li>▪ Virginia Fire Chiefs Association</li> <li>▪ Virginia Sheriffs' Association</li> <li>▪ Virginia Association of Governmental EMS Administrators</li> <li>▪ Virginia Association of Public Safety Communication Officials</li> <li>▪ Virginia Association of Counties</li> <li>▪ Virginia Municipal League</li> <li>▪ Virginia Military Advisory Committee</li> <li>▪ Statewide Agencies Radio System</li> <li>▪ Virginia Information Technologies Agency</li> <li>▪ Office of the Secretary of Public Safety</li> <li>▪ Office of the Secretary of Technology</li> <li>▪ Office of Commonwealth Preparedness</li> </ul>

**Who is not at the table? Who is not participating in the users' part of your system?**

Michigan: tribal units, federal representatives, distinct regional representatives from each of the 8 DHS regions.  
 Oregon: state parks have a radio system but is overseen by Forestry. IT groups are interested and sit in the SIEC meetings.  
 Virginia: local IT directors association wants to be on SIEC but isn't yet. They are invited to regional meetings. The state added volunteer fire fighters association in the code.

Arizona	Michigan	Oregon	Virginia
	We use the advisory board model. We don't have tribal units, federal representatives, distinct regional reps (There are 8 regions - the 8 DHS regions)	State parks have a radio system but are overseen by forestry. Interest coming from IT group - they sit in the SIEC.	The volunteer fire fighters association was added in the code. Local IT directors Association wants to be on SIEC but isn't yet. They are invited to regional meetings

**Decision making and resolution of conflict. How are agencies tied to each other for decision making? What mechanisms do they use?**

- The most mentioned conflicts are over budgets.
- Budgets actually resolve some conflicts because of the limitation of funding.
- Memoranda of understanding address resolving conflicts<sup>5</sup>
- Representation on groups resolves some conflicts because the parties have input and can debate.

Arizona: conflict is handled at the regional level.

Michigan said users do not really have conflict among themselves. Conflict is between the users and non-users (a county decides to have its own system). Michigan has disagreements over frequencies.

Oregon: the governor's office makes some of the decisions to resolve conflicts

Virginia: conflicts are solved informally in a working group of state agencies. Decisions may go to the SIEC level if they cannot be resolved.

<sup>5</sup> The Interoperable Communications Technical Assistance Program in the Department of Homeland Security released an "Interoperability Initiatives Best Practices" report in 2005. It concluded that agencies which were successful in implementing interoperability used memoranda of understanding, "Other areas that created problems for some agencies was a failure to create memoranda of understanding with partners regarding costs, sharing resources, policy, procedure development, training requirements, procurement processes, and commitments for lifecycle funding. Policy and procedural standardization involving interagency response and cooperation, incident management and communication protocol, interagency, intra-agency, and discipline training are critical components of regional interoperability. When addressed properly, they were key to the agency's success in implementing multi-jurisdictional interoperability. Successful agencies worked to understand the operational requirements of the system. They took the business process descriptions and needs and made them into statements of requirements that describe how the pieces must function together."

<b>Arizona</b>	<b>Michigan</b>	<b>Oregon</b>	<b>Virginia</b>
It varies around the state based on issues and level of government. We have 7 regions that meet regularly (theoretically) everyone is informed but not engaged. Conflict is handled at the regional level. There are tactical plans for day-to-day emergencies (like border issues).	The MPSCS users do not really have conflict among themselves. The only conflict is between the users and non-users (a county decides to have its own system). They try to hook in through patches. Policies help resolve conflict.  There is disagreement over frequencies. Conflicts are mostly over budget	Governor's office is very involved and makes some of the decisions to resolve conflict.	The key interoperability agency staffers are on the Commonwealth Preparedness Working Group (CPWG) which has monthly meetings. Conflicts are solved in this group informally. Decisions may go to SIEC level if it cannot be resolved. In statute - SIEC makes recommendations to the Governor.

<b>Do entities feel heard in process?</b>			
All interviewees said the entities feel heard but it seemed from answers to other questions that not everyone is happy in every state.			
<b>Arizona</b>	<b>Michigan</b>	<b>Oregon</b>	<b>Virginia</b>
I think so. There are always a couple people who say, "You never listen to me." There is always spirited discussion. They feel involved and engaged.	Generally yes. It is mixed for some local entities. It is more personality than anything else. Those who provide comments may say their needs are not being met; they may not understand we don't have the money.		Everyone has a type A personality. They are heard

<b>Where does political support come from in your state? Do you have champions at the various levels?</b>			
<ul style="list-style-type: none"> <li>Arizona has an outreach coordinator who goes all around the state and encourages champions. Oregon, Virginia and Michigan also have similar outreach positions.</li> <li>Arizona, Oregon, Virginia said their governor is a strong advocate.</li> <li>Interoperability program directors are positioned high in state hierarchy; some are cabinet level and/or out of governor's office</li> <li>Oregon state agency staffs rotate jobs through the interoperability office. This creates understanding and commitment among state agencies.</li> <li>Legislative subcommittees oversee interoperability offices and projects and become advocates. This was mentioned by Arizona and Oregon.</li> <li>Ad hoc sporadic leaders or groups step forward, sometimes encouraged by state leaders and interoperability staff.</li> </ul>			
<b>Arizona</b>	<b>Michigan</b>	<b>Oregon</b>	<b>Virginia</b>
Ad hoc sporadic leaders rise up We have an outreach coordinator who goes all around the state. He encourages champions to step up. Groups will step up from time-to-time.	It is more localized within the public communications system. Our IT chief is spread too thin to focus on it. We have people going around the state working on towers.	We have staff that rotates jobs a lot with state agencies. This creates bonds and understanding.  Our director has done a great job. He	Two factors contributed to the success of Virginia's processes: 1) passionate practitioners who kept their eye on the prize even during the toughest of obstacles and 2) a State Executive Committee who supported,

<p>Leaders all over the state step up from their roles.</p> <p>Our governor (Napolitano) has been a strong advocate.</p> <p>A legislative subcommittee oversees us. So does DHS</p>	<p>Our challenge is that some agencies (police) voice their support but then back off when it comes to going to the legislature.</p> <p>We moved from police to IT (we are the oddball out within IT)</p>	<p>facilitates getting the Governor's support.</p> <p>SIEC has different members who do oversight of OWIN.</p> <p>A legislative group oversees our progress with the phases. This gives champions on the legislative side.</p>	<p>and participated in the process.</p> <p>In addition, it helps having a program manager dedicated to keeping this process on track (this is now Constance McGeorge, Executive Director Virginia Interoperability Program). There are many time consuming responsibilities, so it helps to have a person committed to be the driving force to complete the details.</p>
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## 2. Relationships between state and local entities in developing statewide communication system

<b>Locals – Who are the local parties involved? (counties, cities, metro planning districts, etc.)</b>			
Interoperability regions generally follow regional lines already established for some other purpose. Generally, a local unit of government must take the lead responsibility in each region and then have agreements with local partners.			
<b>Arizona</b>	<b>Michigan</b>	<b>Oregon</b>	<b>Virginia</b>
<p>Federal, county, tribal, and municipal leaders serve on each of the five Regional Advisory Councils (RACs) to develop, implement, and maintain regional initiatives, and recommend use of the funds within their regions.</p> <p>They use MOUs back to GITA or other state agencies who contract out the work to be done. GITA is working on a consistent procedure for MOUs. When people start doing things, they need more clarity and formal arrangements</p> <p>Arizona has two large metro areas where fire and law enforcement are active; in most rural areas - towns, private ambulance companies are involved in the region.</p>	<p>Local agencies appoint a regional board to identify how DHS dollars will be spent.</p> <p>The governance board aspect is based on DHS rules and structures for dissemination of state dollars.</p>	<p>Local governments, associations, and private industry are involved</p> <p>Some companies are involved where they had older agreements when they developed some of the system.</p> <p>The legislature wanted to see our utilization of partnerships. We work with sheriffs, associations, 911 communities, local governments to share communications sites. For example, 911 has microwave; sheriffs control communications sites and towers. We have some multiple agreements - with city, police dept, sheriff's office, public works department.</p>	<p>Typical characters are local parties. Local districts vary. Virginia has them form however they want but conform roughly to the state DHS planning districts which is what the grants are for. Grants are given to only one jurisdiction in the group. Under the state code a recognized local government must be the grantee. It then has agreements with local parties.</p> <p>Initiative Action Teams (IAT's) are established as-needed to help implement Statewide Plan initiatives. They include local practitioners and others. IATs have a limited time charter and timeline for specific tasks by the SIEC. The IATs are directed primarily by CICO working with the SIEC and CPWG.</p>

**Decision making and resolution of conflict; how are agencies tied to each other for decision-making. What mechanisms do they use? Are local governments working on their own? Collectively? With state or against state?**

Several factors drive participation and cooperation at the local level:

- Cooperation is necessary to get grants within regions and between regions
- Local systems have obsolete equipment and need upgrades; insufficient local resources may push cooperative effort
- State initiatives constitute opportunities to join a more widespread and robust system
- Local systems can achieve efficiencies and affordability from sharing and cross utilization of system assets
- State management of the network adds value for the locals
- Statutes, executive orders or statewide plans may establish performance goals that have to be met.
- Natural disasters may drive emergency responders and jurisdictions to cooperate with each other and the state to solve their common interoperable communication problems.
- Some states hire staff as liaisons and advocates between state and local governments/systems
- A technique to gain cooperation is to use scenarios collected from stakeholder interviews and focus groups to describe operational requirements, highlight technology already in place, and state technical constraints. Realistic examples were a powerful way to ascertain requirement compliance.

Typically, only one jurisdiction in each region is an eligible grantee. Local public and private participants must form a regional group and designate one jurisdiction to act as the grantee for the region. The jurisdiction in turn, must establish cooperation agreements or memoranda of understanding with the participants. One model is to have a general cooperation agreement with addenda added for each participant with special conditions reflecting their role, contributions, and rights and responsibilities.

If local participants find state requirements and assets insufficient for their particular needs, states may change their approach from enticing locals to join the state system to patching them into state assets.

Arizona	Michigan	Oregon	Virginia
<p>I don't see anyone working against the state. Often they are very focused regionally on very different challenges. Managing the borders in the south, big city and crime, managing physical beauty and tourists.</p>	<p>Those working against us is all politics. They are selecting independent vendors to do their own systems/solutions.</p> <p>My county has excellent coverage on the state radio system, but built its own system for \$18 million.</p>	<p>It's easy to share the towers. Quid pro quo arrangements with the locals.</p> <p>The grants make them work together - they form committees. Grants go to groups of locals.</p> <p>Some have governance structures where someone can sign on behalf of a larger group. We made a generic agreement for all and then specific agreements for</p>	<p>The MOU stipulates a locality would receive funding for a communication cache and agree to deploy it under a mutual aid agreement. Each locality would gain a communication cache and provide the Commonwealth with mutual aid communications support. A grant application was created with the following stipulations:</p> <p>a. An MOU between the locality and Virginia Department of Emergency</p>

		<p>separate parties and what they would bring to the agreement. (General sharing agreement, supplementals.)</p> <p>Some have to upgrade based on technology obsolescence. Sharing infrastructure is a big deal for locals.</p>	<p>Management (VDEM) says they agree to enhance interoperability during incidents in order to protect the environment, health, and safety of the citizens.</p> <p>b. Funding could only be given to a legally recognized planning region. Each application identified one locality to receive the funding. That locality would then sign MOUs with surrounding localities and the ad hoc region could pool its resources to participate in managing the cache regionally.</p> <p>If multiple regions were awarded the funding, they were required to work together to establish the MOU requirements and equipment specifications and models for purchases.</p> <p>After localities submitted applications, SIEC managed a peer review process to review and score based on the criteria developed by an Initiative Action Team.</p>
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<b>How does the state work with the technology and cost issues where locals cannot afford the expense?</b>			
<p>States try to meet them where they are.            The states try to achieve efficiencies through sharing and giving financial credits for local assets, such as towers, or in-kind contributions.            States will finance and lease assets and then spread the cost of upgrades across the whole system to make it affordable.            States and DHS help with grants.</p>			
<b>Arizona</b>	<b>Michigan</b>	<b>Oregon</b>	<b>Virginia</b>
<p>We have same problems everyone faces. We have a \$1.2 billion deficit with the state. Hardware enhancements are slowing down so they are trying to get federal grants for it.</p> <p>Through education about the grants. We</p>	<p>This is our significant challenge. We cannot meet the deliverables in the next 6-8 years with the money we have. As more data is available, the amount of voice data decreases.</p> <p>For example, license plate checks do not</p>	<p>Making sure we have enough capacity is a challenge. Locals will pay 1/3 for use. It will continue to be negotiated as it develops.</p> <p>OWIN manages the network (this adds value for locals) and pays for operations</p>	<p>Technology changes every day. Big challenge is that we have to be narrow band compliant by 2015 - it is an unfunded federal mandate.</p> <p>The feds do not require compliance with P25 yet. We have to answer what P25</p>

<p>encourage them to apply for grants. We have dirt-poor towns that can't afford it. P25 compatible radios - we try to get them to this.</p>	<p>need voice transmission anymore. Officers can check plates through data transmission. But then the number of plate checks explode.</p> <p>State installs and pays for some patches but local entities pay continuing costs.</p>	<p>and maintenance costs. We can maintain loop integrity across the state even when there is diverse routing.</p> <p>Mixing the new and old technologies is a problem. We have to leave old systems in place until the new ones come online.</p>	<p>and compliance are. Will P25 be required? When some users go to P25 they become uninteroperable with others.</p> <p>Now they must justify not buying P25. Usually it is the cost but they may also not want to become uninteroperable with neighbors. It's unresolved at this point</p>
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**One size fits all?**

State backbones are presented more as opportunities for locals rather than dictates. Arizona represents this approach, "We don't impose. Regions figure out how to tap into state resources. There are not a lot of top down laws. They are put on the ballot a lot. Local and home rule is a big deal. East coast states tend to give edicts more."

### 3. Relationship with “Homeland Security” structure - the state Homeland Security office

**How involved is Homeland Security? How does it interact with state players and fit into the statewide radio communications system?**

DHS has memberships on boards and committees (some policy, some tactical and technological) - sometimes as voting members. DHS and states hold joint training exercises and assessments. In general, states seem to pursue close, cooperative, and functional relationships with DHS.

Arizona	Michigan	Oregon	Virginia
<p>Creating the framework and conducting workshops, drive the technological involvement stuff from the Federal side.</p> <p>They are going to lead us through the SCIP process to make it compliant with the fed standards</p> <p>The state DHS office is a buffer between us and the Feds. They have a seat on the PSCC - as a voting member. They have oversight.</p>	<p>They are on all levels of the advisory boards and the users. They have the federal systems they are leveraging but they have our system too. We have heavy operability with federal people.</p>		<p>DHS has a close relationship. It conducts capability assessments for when they move in here</p> <p>We are trying to fund Tactical Interoperable Communications Plans - TICPs - for all the regions.</p> <p>We participate in regular DHS exercises and statewide annual training. For example, Radio CACHE capability and the Emergency Response Council (ERC).</p>

## 4. Support for statewide communication system

<b>Sources of funding</b>			
<ul style="list-style-type: none"> <li>▪ State general funds - capital and operations and maintenance</li> <li>▪ Highway funds</li> <li>▪ Game and Fish funds</li> <li>▪ Homeland Security grants</li> <li>▪ RICO - Anti-Racketeering Fund</li> </ul>	<ul style="list-style-type: none"> <li>▪ Other Federal funds</li> <li>▪ Public and private partnerships</li> <li>▪ Lease to purchase agreements</li> <li>▪ MDOT and DNR pay for support of their mobile radios</li> <li>▪ Subscriber fee for radios</li> </ul>	<ul style="list-style-type: none"> <li>▪ State bonding authority for capital funds</li> <li>▪ Leasing assets to private sector e.g. tower space for cell phones</li> <li>▪ Indian Tribe grants from DHS that need matching funds</li> </ul>	<ul style="list-style-type: none"> <li>▪ Communication cache user reimbursements from inter/intra state, federal and private users</li> <li>▪ Localities maintain the upkeep of the personnel, training, equipment</li> </ul>
<b>Arizona</b>	<b>Michigan</b>	<b>Oregon</b>	<b>Virginia</b>
<p>From 2004-2007 (3 yrs) a total \$7.6 million in non-lapsing funds has been provided for the statewide microwave system by the state from State General Funds, Highway Funds, and Game and Fish. Homeland Security will grant \$4.8 million over three years starting in 2008.</p> <p>The state will invest an additional \$1.38 million in lapsing funds to complete the statewide interoperability design in 2008 using both General Funds and Anti-Racketeering Funds. An additional \$2.2 million from the Anti-Racketeering Fund will be used to fund the system detailed design according to the SCIP.</p> <p>The PSCC will review a series of options for funding this project including, general funds from state government, other state and federal funds, public and private partnerships, and lease to purchase agreements.</p> <p>We will use the above sources and grants in the future. RICO is federal - each state gets some. It is usually put back into law enforcement to fight organized crime.</p>	<p>Challenges for the state board - as the state identified money to build the system, it never provided for ongoing money. There is no operating money. Life cycle remediation has no money. We have not been able to define the lifecycle because we do not have the money to keep up with it. We have pursued the 911 fees without luck so far.</p> <p>DHS funds are limited. Michigan's system was in place before Sept 11. So we had smaller purchases. Some counties have used fed funds to build more towers. A state board oversees how the dollars are spent.</p> <p>MDOT and DNR put in money to pay for time and materials for support of their mobile radios.</p> <p>Subscriber fee for radios - range is \$200 at the top down to \$50 for fully functioning radios. It is \$0 for emergency use only. We have 46,000 radios.</p> <p>We have accumulated \$770,000 in uncollected fees from local agencies. The</p>	<p>This is a hot topic. We don't use a 911 tax. Bonding authority from the state. O&amp;M budget comes through general funds. Last biennium was \$6,000,000 - personnel and administration of OWIN, some capital construction (planning); \$76,000,000 for building the system. The partnerships put money in too.</p> <p>But we will lease to privates if they are on the tower such as tower space for cellular phone. It can be lucrative. We charge from \$500 per year up to \$3,500 per month for operations and maintenance. It depends on the situation and location. Many of the locations are well known.</p>	<p>Department of Homeland Security (DHS) funding was not to be used for sustaining the communication caches (e.g., personnel, maintenance, training). Virginia solved this problem by writing the following into their MOU:</p> <ul style="list-style-type: none"> <li>▪ Communication caches could be used for planned events and the requesting party's reimbursement for the deployment could be used to cover the costs of maintenance and other ongoing funding requirements. <ul style="list-style-type: none"> <li>○ For example, if NASCAR needed the communication cache, it would reimburse the locality that sent the asset.</li> <li>○ If the President declares a national emergency, FEMA would reimburse the locality.</li> <li>○ If VDEM requests the asset, it will reimburse the locality.</li> </ul> </li> </ul> <p>The localities near the statewide caches agreed to maintain the personnel, training,</p>

<p>Interoperable communications fit into fighting crime.</p> <p>With the 2009 year, we have a large grant request into DHS to develop statewide standard operating procedures.</p>	<p>larger ones always pay except for Detroit, which has problems. Total fees per year are \$3-6,000,000 that we could collect. We give credits for locally built towers. We actually get \$1.2 million per year.</p>		<p>and equipment - a couple salaries, batteries, upgrades to software in a region. Fairfax County budget is almost as big as the state and picks up the costs.</p> <p>We also have compacts with other states.</p>
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## 5. What do they think are strengths and weaknesses of their own system?

### Strengths and weaknesses

#### Strengths:

- The network of people throughout the governance structure
- Building partnerships because of the need to build interoperability
- Buy-in at the local and state leadership levels.
- Ownership of the physical system. This gives control and sets the stage for future revenue streams by leasing tower space and services to other public and private parties. This ranges currently from tower leasing for cell phones to system sharing with the Coast Guard.
- Redundancy makes system interruption almost impossible

#### Weaknesses:

- All report limitation of funds to be a system weakness
- Prioritization due to funding limitations is painful but works
- Grasping the whole picture of what interoperability is and is not...from the top down to the granular level.
- Need to improve governance model

### **The merits of locating with a state information technology agency (comments from Michigan):**

The point that came out most clearly is that system users want to know that whoever is running the system has experience with radio emergencies so they understand what people in the field are going through and need. IT has a distinct disadvantage in that it lacks field experience and tends to view radio interoperability as another IT application; it may miss its priority needs. IT people have not used the radios in emergencies in the field. Interoperability is not an 8-5 proposition like other IT programs. No doubt, public safety knows the priorities of the system.

Interviewees gave two examples of IT limitations: 1) Service interruptions must be treated as emergencies in themselves, not another thing on IT's "to do" list. 2) Tower facilities may need air conditioning that IT has trouble understanding as a budget priority. Each tower is like a mini server station to them. IT does not know why HVAC is needed at the tower sites. IT staff may think they should do all the servers the same even though radio interoperability servers vs other IT servers are completely disparate systems with significant differences. As a result, people associate negativity with IT. IT works well for sharing support in a mixed model that has desktop people and radio people.

Michigan also said the interoperability office is not deeply integrated into the other things its Department of Information Technology does. However, locals are happy that the state office is not part of the state police. The interviewee thought DPS would be the best location for an office if there was a dedicated funding source. Communications must be raised to a level of authority over public safety.

Arizona shifted its office to GITA only months ago and is trying to revamp its governing structure to move beyond the planning stage. It is supposed to use the strengths GITA has in complex IT project management and bringing coalitions together. However, up to this point the state does not have much experience with locating the office in the information technology agency.

Arizona	Michigan	Oregon	Virginia
<p>Strengths - Weakness - shoring up our governance model. We need to take the model to the next level of delivery and get to the point of execution; it has been planning the plan up to now.</p> <p>How do you take diverse people and get them to work together getting the SCIP to be a true statewide operational SCIP? People understand the problem and want to get together to solve it.</p>	<p>Strengths - we cover all of the state in one interoperable communication system. When a disaster occurs, you will be able to communicate with someone if you use a MPSCS radio. During a power outage over wide areas we stayed operating. We are robust to adapt to future technology needs. We would not have so many on the system if they did not believe in it.</p> <p>Also it's a state owned and operated system. No one else can take our stuff down. We are redundant and will likely never have communications interrupted.</p> <p>Weaknesses - budget - lifecycle remediation. Adamant approach of no new taxes to the citizens.</p>	<p>Strengths - hard to say, we're building it. It's an opportune time to build partnerships because they have to build interoperability</p>	<p>Strengths - the network of people through the governance structure - because of the buy-in at the local level and the leadership at the top. DHS has watched us evolve over 6 years to become a SIEC with 30 members and 15 subcommittees.</p> <p>Weakness - limitation of funds. Prioritization can be painful but it works. Another weakness is grasping the whole picture of what interoperability is and is not in Virginia from the top down to the granular level. There are so many levels of it. We built an operations model last year.</p>

## 6. How do they communicate with critical partners and build support/ knowledge of the system?

**How do you get others to understand the value? How do they promote it and get others to buy into it - bring them into the fold?**

- Natural disaster – a 2006 Oregon storm took down a number of 911 centers. This was a powerful message to governments of the need for better interoperable communications.
- The state asked for stakeholder input into operational planning and tactical details.
- Outreach staff promote the system with stakeholders.
- The fact that others have needs to upgrade and have limited funding drives them towards cooperation.
- Funding is contingent on cooperative planning.

Arizona	Michigan	Oregon	Virginia
<p>That is a big part of the outreach. Outreach person knows a lot of players around the state. He's on the road. He'll see Chief X and say "We haven't seen you at the meetings. What can we do to get you involved?"</p>	<p>State agencies are our smaller user base. In early days, it was a lot of politicking, chiefs of police or fire associations; It was not for local administration but to meet state needs originally. Independent evaluators became proponents at the local level - they explained that the locals would save money to cooperate with state system instead of building their own. The locals are talking to each other. There are outliers who want to go in their own direction. There are nay-sayers. We intend to patch with them.</p>	<p>Dec 2006 - we had major storms - a lot of the 911 centers went down. This highlighted the need for a statewide communications system. We have similar interests - people came to us for help as their budgets have been squeezed. Timber funds were cut drastically.</p>	<p>Regional meetings have been outstanding. We piggybacked our pitch in regional meetings onto the PSIC funding. It was a big carrot to show up. We asked for their input into operational planning and tactical details.</p>

## 7. What advice do you have for Minnesota?

### What should we be sure to do or avoid? What do we have to manage carefully?

- The process should not be personality dependent. It should be institutionalized so it will outlive the person. It should provide for high-level influence.
- Partner amongst public safety entities. Co-locate assets
- Keep the operations and planning with people who understand usage
- How much do you want to own or have someone else do? Leasing costs more. You have operational and budget control when you own it. You can add other uses free like solar panels, wind generation or whatever.
- Leverage metro system to the greatest extent possible. This helps with legislatures and pub safety officials.

Arizona	Michigan	Oregon	Virginia
	<p>Advice:</p> <ol style="list-style-type: none"> <li>1. Trainers - think about them - you can hire a contractor but users are looking for trainers they can relate to. Have fire personnel teach fire usage and law enforcement teach law enforcement. Has the teacher held a fire hose during a fire?</li> <li>2. How much do you want to own or have someone else do? Leasing costs more. You have operational and budget control when you own it. You can add other uses free like solar panels, wind generation or whatever.</li> <li>3. Partner amongst public safety entities. Co-locate with Coast Guard to support water safety. They use our system instead of building own.</li> <li>4. Operational effectiveness. If a tower is down the vendor may agree to have a tech on site within 2 hours. That may not be enough but it meets the contractual requirement.</li> <li>5. IT or public safety? Pleading your case is harder with someone else who doesn't understand the usage.</li> </ol> <p>The main problem is a lack of support</p>	<p>Leverage metro system to the greatest extent possible. This helps with legislatures and pub safety officials.</p>	<p>It can go organizationally wherever you want but do it for altruistic reasons not for their own purposes. I come out of the Governor's office so I can lean on agencies. I'm on the cabinet level. If someone in an agency can coordinate and entice cooperation, it would also work but it would be personality dependent. The process should be institutionalized so it will outlive the person.</p>

	<p>funding on an ongoing basis.</p> <p>If you had a dedicated funding source, DPS would be the best organizational home for interoperability.</p> <p>Communication must be raised to the level of authority over public safety. It's not 8-5 like IT.</p>		
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