



South Dakota Public Safety Communications Council



# **Annual Interoperability Report on Public Safety Communications in the State of South Dakota**

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Chairman, South Dakota Public Safety Communications Council  
December 23<sup>rd</sup>, 2015**

## Executive Summary

The South Dakota Public Safety Communications Council (SDPSCC) was created by Executive Order 2007-05 on March 14th 2007 with the following directive:

*"The South Dakota Public Safety Communications Council shall foster collaboration among stakeholders at the local, federal, and state level."*

The communications landscape has been permanently changed with the construction of the statewide radio network. Previously the state-supported communications system primarily supported state users and traffic. The current system user base has 12% federal/tribal, 22% state, and 64% local participation by radio count. It has become more important that ever to integrate the views and needs of all users on the network.

Appointed to the PSCC are the following individuals:

Dave Kull (Brandon Police -- SD Police Chiefs Association  
Dave Ackerman (Sheriff, McPherson County) -- SD Sheriff's Organization -- **Executive Board**  
Dan Satterlee -- SD Division of Criminal Investigation  
Andy Albon -- SD Game, Fish, and Parks  
Greg Fuller (Director of Operations) -- SD Department of Transportation  
SSG David Goodwin-- SD National Guards  
Harold Timmerman (Lincoln EM) -- SD Emergency Managers Association  
Dennis Gorton (Pennington Co Fire Director) -- SD Firefighters Association  
Scott Duke -- SD Association of Healthcare Organizations  
Matt Tooley (Metro Communications) -- SD APCO/NENA Chapter -- **Chairman**  
JD Geigle -- SD Emergency Medical Technicians Association -- **Vice Chairman**  
Paul Reiter -- Great Plains Interagency Fire Center  
Bob Wilcox -- SD Association of County Commissioners  
Rick LaBrie -- SD Department of Health  
Larry Jandreau (Facilities Director) -- Lower Brule Sioux Tribe  
Jesse Behrain (US Forest Service) Federal  
Jeff Pierce (Engineering Manager) SD BIT -- **Executive Board**  
Jason Husby -- SD Department of Public Safety

The SDPSCC has met twice in Pierre during the 2015 calendar year: April and September, with a December meeting planned. The subject of long-term communications system planning and funding of that planning has been a priority item on each agenda. Other important agenda items covered included the Public Safety Broadband Network (FirstNet), prioritizing of additional system sites, encryption protocols, 700 MHz state plan, and upgrade status of the statewide system.

South Dakota can take pride in the fact that our state has one of the most comprehensive communications systems for first responders in the country. We have approximately 98% geographic coverage and nearly every local, tribal, federal, and state first responder has a radio capable of establishing communications instantly.

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## Purpose

As required by the bylaws of the SDPSCC: (5) *prepare and submit an annual report to the Governor, the BIT Commissioner, and others as necessary on the status of communications interoperability in the state;*

## **Introduction**

The State of South Dakota recognizes the importance of communications interoperability within our state. As a rural state, we rely upon multi-agency response and shared resources to cooperatively provide for the public's safety.

This report serves to update the Governor, BIT Commissioner, and others on the progress of the SDPSCC on the following charges outlined in Executive Order 2007-05.

- Update Protocols and standards for the operation and use of the South Dakota Interoperable Communications System
- Develop strategies and recommendations to improve current and future operations of the radio network
- Develop recommendations for legislation or other state action that may be required to further promote public safety communications in South Dakota
- Develop recommendations and strategies for best utilization of grant funding to improve communications in South Dakota.

## **2015 SD Interoperable Communications System Report**

The progress of the PSCC is not limited to the responsibilities charged to it in the introduction above, but this report will concentrate on those points and then provide a general technical and statistical overview of the network, and other communications activities.

### **Update Protocols and standards for the operation and use of the South Dakota Interoperable Communications System.**

SCIP-- Statewide Communications Interoperability Plan. Each state is required by Public Law 110-53, part of the 911 Commission Act of 2007 to annually update and demonstrate conformity with the conditions and requirements set forth in 110-53. The SCIP is taking on a more encompassing scope including statewide and region-wide communications capabilities and protocols. South Dakota took advantage of Department of Homeland Security Technical Assistance to update the South Dakota SCIP. Changes to the 2015 SCIP include:

- Beginning the process of migrating over to the new electronic or e-SCIP format.
- Further integrating broadband into the document.
- Alignment to changes in the National Emergency Communications Plan.
- Providing a more strategic look at communications planning in South Dakota.

### **Develop strategies and recommendations to improve current and future operations of the radio network.**

Radio System Upgrade. The current trunking network with the upgrades in 2013 and 2014 will provide equipment and software support through at least 2025. Prior to that date when support expires, South Dakota will need a plan for the next generation of communications in our state. At no time in the history of Land Mobile Radio technology have there been such so many changes that affect the view ahead. Advances in radio technology, the emergence of broadband wireless services with public safety applications, and other factors have challenged the council as we struggle to develop a technical and associated business plan for the next quarter century.

### **Develop recommendations for legislation or other state action that may be required to further promote public safety communications in South Dakota.**

The council encouraged adoption of a budget to include an additional \$200,000 to maintain infrastructure within the state. The support payments to Motorola for the software support and security updates increased by that amount in 2014, and we have not realized the cost savings expected with the system upgrade to offset that additional expense. With an upgraded IP-based system it is very important that we maintain the supportability and security of the system

### **Develop recommendations and strategies for best utilization of grant funding to improve communications in South Dakota.**

Homeland Security grants are approximately 10% of the amount received in 2004. With that in mind, the council has been judicious in recommendations not only for the network, but also in any policies that affect users of the system who might rely on grant funds to meet those policies. We have needs for additional coverage in South Dakota, but the communications component of the Department of Homeland Security grants is not sufficient to add a site at this time.

### **Support Efforts of the 700 Mhz committee.**

Each state is tasked with the responsibility of developing a statewide plan for the 700 MHz spectrum allocated to each state. The SDPSCC is acting as the governance body for that committee. We are in the final FCC review of our plan after adjacent state review, and approval is expected at any time.

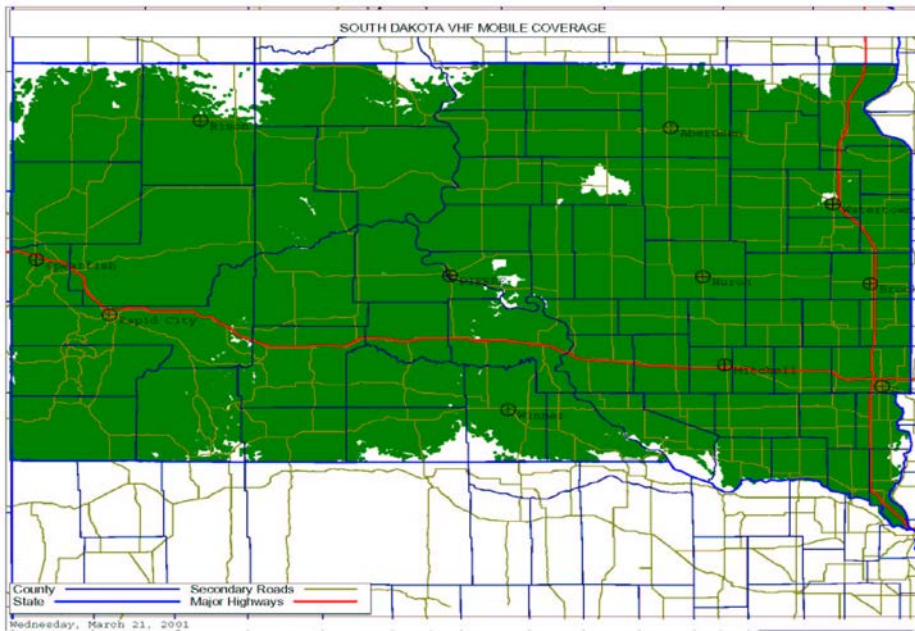
### **National Public Safety Broadband Network**

In keeping with the mission of the SDPSCC and its service to Public Safety Communicators across the state, the council is also serving as the governance for the National Public Safety Broadband Network (NPSBN), also known as the FirstNet project. The council has been providing oversight and guidance for outreach and data-collection activities within the state.

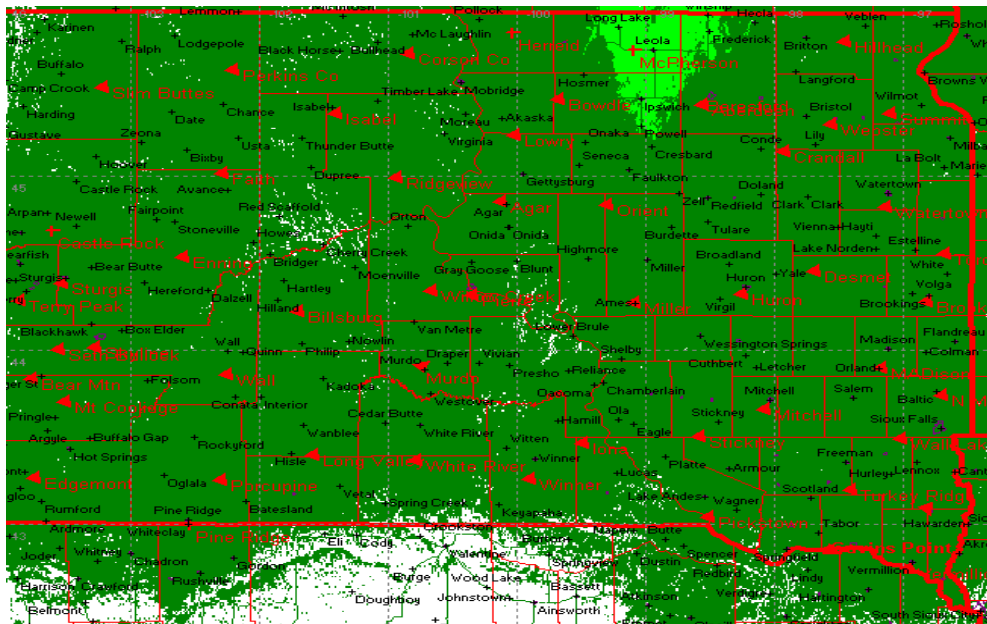
## **Statewide Radio Network**

## System

The current radio system serving the State of South Dakota was offered for service in October of 2002. The system at that time had 35 regional sites, approximately 9,000 radios, and covered 90% of the geography of the state. (See below map)



Over the course of the past 12 years, and additional 23 sites have been installed, and over 14,000 radio ID's have been added to the network. The current system has 58 sites on line, 268 voice repeaters, and now exceeds 98% of the geography of the state. (See below map)



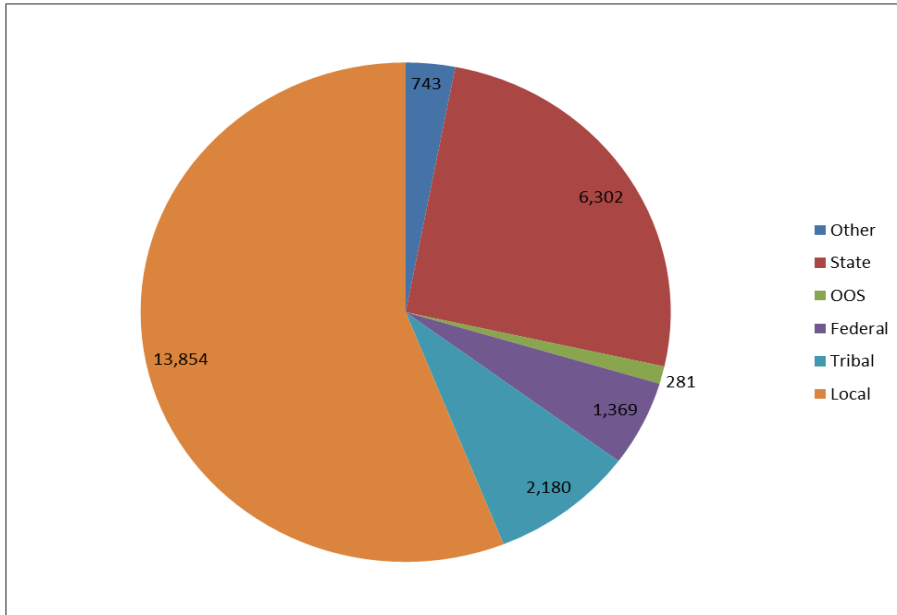
During the course of the current calendar year (January -November) the system has shown:

- 23,512,796 radio calls over the network.

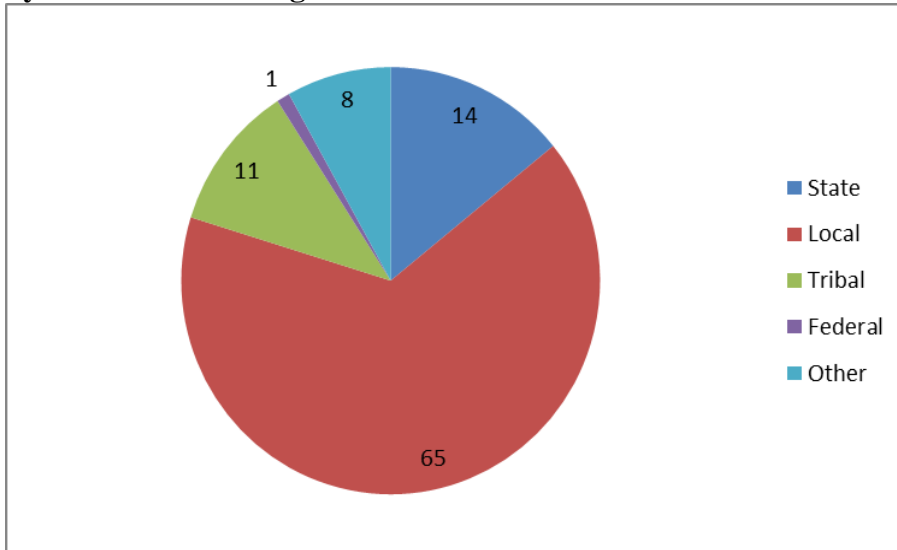
- 70,397 radio calls on the average per day.
- 2,200,209 radio calls over the busiest site -- Sioux Falls Simulcast.
- 5,329 radio calls per month on the least busy site -- Slim Buttes (Harding County)
- 2,325,225 radio calls during the busiest month -- August (Sturgis Rally)

System Statistics

**Radio Users (24,729 Total Radio ID's)**



**System Use Percentages 2015**



**Improvements made in 2015 to the network:**

- Upgrading of tower lighting systems. A number of sites were upgraded from the legacy incandescent lighting to LED lighting systems. These upgraded lighting systems are more energy efficient and in most cases remove the painting requirement for towers.
- Tested and replaced defective antenna systems statewide. In many cases the antennas associated with our statewide system have been in place since turn-up in 2002 and have suffered water or other environmental-related damage. Replacing these systems has improved network performance statewide.

Areas underserved that need to be addressed at some point:

- Union County, southern part of county is not well served by current sites.
- Chamberlain, Presho, Kennebec areas.
- Hot Springs area, work to improve coverage.

Notable events during 2015:

- Towers at the McLaughlin (Corson) and Madison sites failed a structural engineering analysis and are in need of replacement. Both sites are in the permitting and procurement phases for replacement.
- State Radio Engineering maintained staff at the Rally Operations Center in Rapid City for the 75<sup>th</sup> Sturgis Rally, which capped off a year of planning and working with state/local/federal agencies in preparation of this event. The pre-planning paid off as this year had the lowest radio congestion of any rally since 2001.
- Retirement of two of our senior technicians. John Waters (25 years) and Rich Patton (9 years) retired from our Rapid City Office.
- Adoption by the Public Safety Communications Council of the state coverage and buildout plan for South Dakota for the National Public Safety Broadband Network (FirstNet).

#### State Radios

Most radios in used by state agencies have been upgraded and will have continued vendor support for the foreseeable future. Radios that have been pulled from service are tested and those still fully operational are made available to state and local agencies needing radios.

#### Local Radios

Most Motorola radios in used by local agencies have been upgraded and will have continued vendor support for the foreseeable future. Many EF Johnson radios that were originally issued are either still in use or being returned and re-issued to other agencies needing additional radios. State Radio technicians continue to work with local agencies on user training.

#### Tribal/Federal Radios

The BIT State Radio staff does provide limited technical assistance with the federal and tribal radios operating on the statewide system, but they are generally are self-maintained. State Radio technicians also are working with tribal and federal on user training upon request.

## **Wireless Data Networks**



The passage of the Middle Class Jobs Creation Act of 2012 included an outline and initial funding for a nationwide public safety high-speed data (broadband) network, or the National Public Safety Broadband Network (NPSBN). When implemented the system will use commercial standard technology (LTE), and will offer a standard data platform for users across the country. An organization (FirstNet) has been set up under the US Department of Commerce to administer the system.

South Dakota has been preparing for the network by establishing a Point of Contact and backup (Jeff Pierce and Matt Tooley), Project Manager (Mike Waldner) and designation of the South Dakota Public Safety Communications Council as the representative governance. South Dakota was awarded a grant in the amount of \$1,217,103, with an expected match amount of \$309,708 to provide outreach, education, and data collection over the next three years for the ultimate rollout of the nationwide public safety broadband system. A significant amount of time was spent during 2015 to collect data on potential users, generation of a state buildout and coverage plan, and submission of a formal report to FirstNet to be integrated into the national RFP for procurement of the services.

The South Dakota team has also been attending state association meetings and national meetings organized to keep the state teams informed.

## **Regional Communications**

State technical staff has been engaged with bordering states for many years working on cross-border communications. State Radio technicians have been installing repeaters along the border which will enable at minimum dispatch to dispatch communications with the intent on improving unit to unit communications.

The States of Wyoming, Montana, North Dakota, Minnesota, and Iowa have all installed or are in the process of installing networks that would be compatible to the system upgrade being considered in South Dakota. Cross-border interaction of first responders in the Emergency Medical Service, fire, and law-enforcement disciplines is routine and better communications will only improve public safety. South Dakota currently has 281 ID's issued to border state first responders to improve interoperability.

First responders from across the state are participating in a FEMA Region 8 working group on interoperable communications (RECCWG). John McQuillan from the Brown County dispatch center and Jeff Pierce with the Bureau of Information & Telecommunications are representing our state well in this group.

Public Law 110-53 also requires each state to have a full-time interoperability coordinator or equivalent. Jeff Pierce from the SD Bureau of Information & telecommunications is currently serving this function and is part of a national group working on communications both in-state and nationally.

## **Conclusion**

South Dakota maintains one of the more comprehensive communications systems from a coverage and participation standpoint in the nation. It has taken the trust of our entire first-

responder community, and a willingness to understand that in a rural state such as ours that nobody operates alone to accomplish this in our state.

We do have challenges ahead.

- The technology path future is not clear at this time. Although our current system has support for the next 10 years, the design and finance planning for any upgrade needs to be completed and in place before we end up with an obsolete system. A significant challenge for the council and state ahead is determining the technology to move forward with and a financing method to do so.
- Our tower infrastructure is aging, with many sites constructed in the 1970's under significantly lower engineering standards. We will be replacing two towers during 2016 (McLaughlin and Madison) at an estimated cost of \$250,000, but considering the size of our network and that these towers are regularly inspected, we may find more that are deficient.

The PSCC is pleased to report that interoperability in South Dakota is meeting the needs of our first responder community, and is advanced both regionally and nationally. We have challenges ahead to maintain that standing, and will need to maintain this as a priority within our state. Our council will strive to ensure that this progress continues.