



South Dakota Public Safety Communications Council



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

**Submitted by Matt Tooley
Chairman, South Dakota Public Safety Communications Council
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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 13% federal/tribal, 19% state, and 68% 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:

Jody Frye (North Sioux City Police Chief) -- SD Police Chiefs Association
Dave Ackerman (Sheriff, McPherson County) -- SD Sheriff's Organization
Dan Satterlee -- SD Division of Criminal Investigation
Andy Alban -- SD Game, Fish, and Parks
Greg Fuller (Director of Operations) -- SD Department of Transportation
SSG David Goodwin (State Communications Chief) -- SD National Guard
Brad Stiefvater (McCook EM) -- SD Emergency Managers Association -- **Vice Chairman**
Dennis Gorton (Pennington Co Fire Director) -- SD Firefighters Association
Rebekah Cradduck (Vice President) -- SD Association of Healthcare Organizations
Matt Tooley (Metro Communications) -- SD APCO/NENA Chapter -- **Chairman**
J.D. Geigle (Spearfish EMS) -- SD Emergency Medical Technicians Association
Paul Reiter -- Great Plains Interagency Fire Center
Robert Wilcox -- SD Association of County Commissioners
Rick LaBrie -- SD Department of Health
Larry Jandreau (Facilities Director) -- Lower Brule Sioux Tribe
Bob Fischer (US Forestry Area Lead Technician) -- US Dept of Agriculture
Jeff Pierce (Engineering Manager) SD BIT -- **Executive Board Member**
Sgt Ryan Mechaley -- SD Department of Public Safety -- **Member at Large**

The SDPSCC has met four times in Pierre during the 2012 calendar year: March, June, September, and December. 2012 saw the resignation of three original board members: Steve Christensen (replaced by Jody Frye), Ken Wesche (replaced by Paul Reiter), and Dayton Myers (replaced by SSG David Goodwin). Dan Satterlee of DCI filled that open position so that all disciplines are represented. The subject of the system P25 upgrade and funding of that project, along with narrowbanding have been priority items on each agenda. The Public Safety Broadband Network is increasing on our radar, and will be an important item moving forward.

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.

2012 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.

A. 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. The primary changes to the 2012 SCIP involve gap analysis and identification:

- Public safety broadband strategy for the state.
- Improving training opportunities for system users.

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

P25 Upgrade. The P25 system standard is the first industry-wide common-air interface in the history of land mobile radio. The current trunking network technology utilized was to be phased out by Motorola, but recent developments by that vendor have potentially extended the life-cycle of our system well into the future. A considerable amount of time has been spent during council meetings in discussion of the alternatives to ensure that the 20,000+ radios on the system will be supported both today and in the future.

The adopted alternative by the council involves a phased approach:

1. Replacement of the network controller in Pierre, and install protocol adaptors at the tower sites to ensure that system support will be available beyond 2015. Radios in the field will continue to operate as currently configured through the protocol adaptors at the tower sites. This project was completed late 2011 and was the primary technology being phased out by Motorola.
 - This upgrade also allows for future expansion of the state radio network. Future expansion will help areas of the State that have underserved radio coverage. It will also allow more dispatch centers to be directly connected to the controller in Pierre. Being direct connected to the controller allows for more functionality of the system, and will help to increase officer safety.
2. Replacement of all radios in use that can not be upgraded to the P-25 networking system, and upgrading of those that can. This phase is now under review by the Council. Motorola has made new site equipment backwards compatible, and cost of radios is slowly falling to reduce the cost impact of current proprietary radios.

C. 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 in line with the previous budget to maintain infrastructure within the state.

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

The PSCC during the past year developed specific criteria on eligible equipment to be purchased with the remaining PSIC grant funds and ongoing with DHS State Homeland Security Grant Program (SHSGP). Allowable equipment not only includes equipment compatible with the statewide system, but also can be used to update paging and associated infrastructure to comply with the federal narrowbanding mandate.

E. 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, initially comprised of Jeff Pierce and Todd Dravland from BIT.

F. PSCC Website



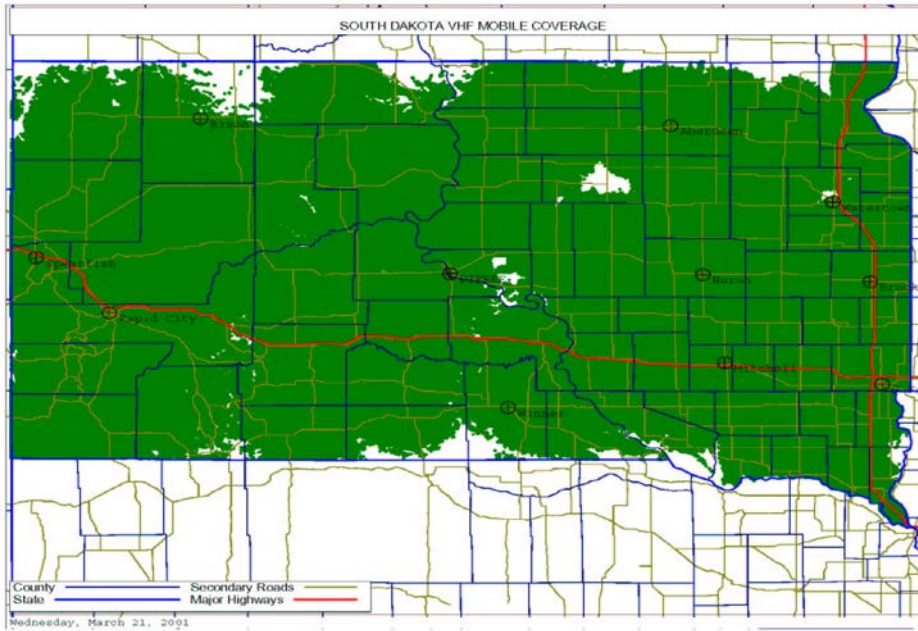
The South Dakota Public Safety Communications Council website is being used extensively to post monthly narrowbanding updates, broadband updates, and other relevant information.

sdpscc.sd.gov

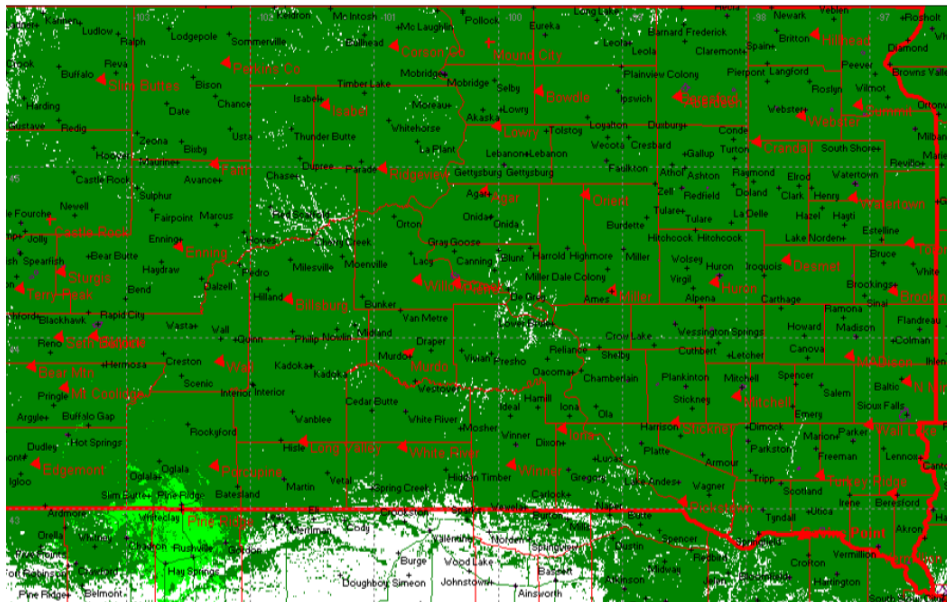
Statewide Radio Network

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 map below)



Over the course of the past 10 years, an additional 20 sites have been installed, and over 11,000 radios have been added to the network. The current system has 55 sites on line, 308 voice repeaters, and now exceeds 98% of the geography of the state. (See map below)



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

- 24,329,538 radio calls over the network.
- 72,843 radio calls on the average per day.
- 2,546,421 radio calls over the busiest site -- Sioux Falls Simulcast.
- 47,317 radio calls on the least busy site -- Slim Buttes (Harding County)
- 2,627,150 radio calls during the busiest month -- July
- 16,463,798 radio calls by local agencies (67.67%)
- 5,432,786 radio calls by state agencies (22.33%)
- 2,432,954 radio calls by Federal/Tribal agencies (10%)
- 14,815 local radios (66%)
- 4,983 state radios (22%)
- 798 Federal radios (4%)
- 1,660 Tribal radios (7%)

Improvements/additions made in 2012 to the network:

- The Watertown 911 PSAP has been direct connected to the network allowing them additional functionality and reducing loading on the Watertown tower.
- Installation of a new site in Pine Ridge. SRC technical staff assisted in the design of the site, procurement of the equipment, and will maintain the site. The tribe financed the site and electronic equipment. This site will take loading off of surrounding towers currently handling tribal radio traffic. Expected to be operational late 2012.
- Replaced antennas at a number of sites across the state to improve and equalize coverage.
- Finished upgrade of the system core network. An upgrade to the network core was necessary to ensure long-term support for the system.
- Other cooperative projects that have been underway in 2012:
 - Rapid City. Two additional sites in the city, and a simulcast controller similar to what is in use in Sioux Falls, which should significantly improve coverage.
 - Rapid City. Planning and engineering for the consolidation of the State Radio and City/County 911 dispatch center has been underway for most of 2012.
 - Pierre. Planning and engineering for the consolidation of the State Radio and City/County 911 dispatch center has been underway for most of 2012.

Areas underserved that need to be addressed at some point:

- McPherson County (Leola area)/northern Brown County work to improve coverage. Financing and tower siting studies have been underway to possibly address this.
- Chamberlain area, work to improve coverage.
- Hot Springs area, work to improve coverage.
- Vermillion, add repeater to improve capacity.
- Wall Lake (Minnehaha County), add repeater to improve capacity (working on identifying frequencies for this site).
- Southern Union County, current sites do not provide adequate coverage.

State Radios

The Council decision to delay full system upgrade to P25 will alleviate the pressure to replace the state radios by 2017. All radios being purchased will be equipped with the software and firmware to be upgraded at some point.

Local Radios

The Council decision to delay full system upgrade to P25 will alleviate the pressure to replace the state radios by 2017. All radios being purchased will be equipped with the software and firmware to be upgraded at some point. The primary local push during 2012 has been to upgrade radios on self-maintained systems to meet the federal narrowbanding mandate by the end of 2012. State Radio technicians have provided limited support to the local radio users through programming and isolating/identifying technical issues.

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 generally service is provided by in-house personnel or contractors.

Wireless Data Networks/Broadband

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), and designation of the South Dakota Public Safety Communications Council as the representative governance. Starting in 2013 states will begin to play a more active role with education, outreach, data collection, and consultation with the FirstNet organization to identify broadband needs within the state.

Training/Outreach

BIT/State Radio has been developing a formal radio training program during the 2012 calendar year. A train-the-trainer format will be used, and an initial curriculum developed was revamped after feedback from a trial class was held. A second trial session will be held late 2012 or early 2013, and once approved will be finalized and training will begin. Also during the year 2012 a Communications Field Operating Guide (CFOG) was developed with the assistance of the US Department of Homeland Security. This resource has been published and will be a valuable operational guide for radio users.

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 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.

First responders from across the state are participating in a FEMA Region 8 working group on interoperable communications. Jay Evenson from the Pennington County Sheriff's office, 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. The capability of any first-responder to pick up a microphone and talk to any unit across the state is something that most states can only envision. 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.

- Most of the system site equipment was installed in 2001, and a refresh of site equipment needs to begin. We are estimating between \$60,000 to \$75,000 per site to upgrade the equipment.
- The nationwide public safety broadband initiative will be a challenge to plan for, implement, and integrate with state-maintained databases. We expect to be presented a state buildout plan by FirstNet within 3-4 years, and will need to have the direction that we plan to go decided prior to that date. A lot of work lies ahead.

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.