



Saving Lives and Property Through Improved Interoperability

***Post-Symposium Support Report—
Wyoming Public Safety Communications
Interoperability Conference***

Final

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Wyoming Public Safety Communications Interoperability Conference

The Public Safety Wireless Network (PSWN) Program and the Wyoming Public Safety Mobile Communications (PSMC) Plan Steering Committee jointly hosted the Wyoming Public Safety Communications Interoperability Conference in Casper, Wyoming, on November 7, 2002. The conference brought together approximately 80 local, state, and federal officials to discuss public safety communications and interoperability within the state. During this full day of presentations, a panel discussion, and audience questions, participants gained a better understanding of public safety communications interoperability issues within the state, and learned about the State of Wyoming's effort to improve statewide public safety wireless communications.

Interoperability Efforts

Mr. Kelly Hamilton, Chairman, Wyoming Statewide PSMC Steering Committee, opened the conference with welcoming remarks. Mr. Hamilton thanked everyone for attending and for his or her past and current efforts in improving and fostering interoperability throughout the state. He encouraged everyone to maintain the commitment and hard work that has already been demonstrated towards improving communications. Additionally, he encouraged everyone to actively participate in the current planning effort.

Who packs your parachute and whose parachute do you pack?

Major General Ed Boenisch, Chairman, Wyoming Homeland Security Council delivered the keynote address and discussed terrorism, the Wyoming Homeland Security Council, Wyoming communications interoperability, and the state's short- and long-term plans. The General began the address with a quote by Thomas Jefferson, "The price of freedom is eternal vigilance." He stated that the quote applies to all citizens because homeland security is much broader than terrorism. Furthermore, he discussed the *National Security Strategy for the United States of America's* definition of terrorism. "The enemy is not a single political regime or person or religion or ideology. The enemy is terrorism—premeditated, politically motivated violence perpetrated against innocents." He stated that the definition of terrorism is accurate but doesn't portray the horror.

General Boenisch stressed that public safety officials in the state cannot forget that terrorism is now in the United States. However, he stated that there are other threats in Wyoming to be concerned about that impact citizens and communications including agricultural/environmental, biological, cyber, and HAZMAT threats. There were 360 hazardous material spills in Wyoming in 2000. General Boenisch also stated that the greatest threat is "complacency and stagnation" especially as more time passes since the attack on September 11, 2001.

Next, the General discussed the mission of the Wyoming Homeland Security Council, "to facilitate the development of a comprehensive strategy designed to protect Wyoming's people, our economy and way of life, and our critical facilities and infrastructure against catastrophic

events and man-made disasters including all forms of terrorism.” He stated this could only be accomplished through a coordinated team effort between all state agencies, local governments, private enterprise, and our people. He also noted that one of the homeland security Council’s six priorities is “statewide communications equipment reliability.”

Additionally, the General stated that Homeland Security could be viewed as an iceberg with federal, state, and local agencies as the visible part of the iceberg while the most significant part of the iceberg, which includes the private sector and citizens, is below water. He noted that it is important for all of these entities to work together as a team.

Next, General Boenisch discussed the role of communications in the *National Security Strategy for the United States of America* (July 2002) and the findings from the Hart-Rudman Task Force (October 2002). According to the Hart-Rudman Task Force, “first responders . . . are not ready to respond to chemical or biological attack. Their radios cannot talk with one another. The consequences of this could be the unnecessary loss of thousands of American lives.” The General stated that solutions for addressing communications issues in Wyoming are “optimistic but realistic.” The long-term solutions included the development of a public safety mobile communications plan, a one-year statewide study on public safety communications, a full assessment and plan by October 2003, seeking legislative appropriations in 2004, and determining a five-to-ten year funding solution. The short-term solution includes portable interoperability communication systems (PICS) that will be installed in six trucks. Additionally, the General pointed out that the “short-term solution will not eliminate the need for a major upgrade of Wyoming’s wireless communications system (the long-term solution), but will complement the long-term solution.” External issues include “reality issues” because “there hasn’t been a problem yet” and “historical/funding issues” because money was just spent on the short-term solution and people may not realize the need for a long-term solution. Additionally, the fact that “no one seems to be supporting the proposal” needs to be addressed by “taking ownership and speaking with one voice to the legislators.”

General Boenisch stated that the next steps for improving communications include—

- Achieve consensus and commitment among all stakeholders
- Promote both short- and long-term solutions
- Document vulnerability of every county, every community
- Educate (i.e., citizens, stakeholders, elected and appointed officials, first responders).

The State of Interoperability in Wyoming

The purpose of this session was to give conference attendees an overview of the PSWN Program and interoperability, in addition to an open discussion on interoperability challenges in Wyoming.

PSWN Program and Interoperability Presentation

Mr. Rick Murphy, PSWN Program Manager, Department of the Treasury, explained the purpose of the PSWN Program and the program’s past efforts to improve interoperability. Mr.

Murphy noted that the PSWN Program is interesting because “it is a federally funded program, but it is not a program for Federal agencies.” It was started for local, state, and tribal governments in 1996 before the concept of interoperability was popular. Additionally, Mr. Murphy stated that the PSWN Program “hopes to be a clearinghouse of information for the public safety community.” Fourteen solutions for interoperability have been piloted and tested. Mr. Murphy also stated that the PSWN Program “tries to be the catalyst and gel that helps get groups together and hold them together, so they can address interoperability issues.”

Case Studies and Perspective on Communications Interoperability

Dr. Robert J. Wyatt, Wyoming Telecommunications Council, moderated a panel discussion on communications interoperability challenges. The panel consisted of Commissioner Marilyn Connolly, Commissioner, Johnson County, Mr. Kim Lee, Chairman, Wyoming State Emergency Response Commission (SERC), and Mr. Dan Perko, President, Wyoming Chapter, Association of Public Safety Communications Officials (APCO). The panel members presented various examples of interoperability challenges, which then led into an interactive session with conference attendees.

Mr. Wyatt began the session by asking conference participants to think about their areas of responsibility, someone who was lost, a situation that “got out of hand”, and the responsibility and role participants played in these situations. Next, he asked participants to remember who they are individually and professionally. He stated that participants may feel the weight on their shoulders is a little heavier and that they should feel better about themselves. He also stated that all participants are in a peculiar situation because they “bear the risk of those who care for others.”

Mr. Perko presented an overview of APCO’s Homeland Security White Paper. The major topics covered in the white paper include radio spectrum, interoperability, planning, survivability/redundancy, security, and personnel/training. Mr. Perko focused on radio spectrum and interoperability. The paper Mr. Perko presented discussed the lack of sufficient radio spectrum and the consequences this has on public safety agencies. Additionally, the presentation defined three types of interoperability, day-to-day, mutual aid, and task force, and six essential ways to achieve interoperability including—

- Swap radios
- Talk around
- Mutual aid channels
- Gateway/console patch
- System-specific roaming
- Standards-based shared system.

Next, Commissioner Marilyn Connolly discussed her roles as an ambulance attendant in the Buffalo area. According to Ms. Connolly, the major issue in addition to interoperability is lack of radio coverage. In some areas, coverage issues need to be resolved before agencies can interoperate. When Ms. Connolly discussed the issues at a commissioner meeting, she had to wear “two hats”, a first responder hat and a county commissioner hat. She also stressed that one

has to be “careful when talking about funding mechanisms [for radios systems] at the local level” because local officials are “not very educated on how radios work.” Ms. Connolly concluded by stating that there is a “need at the state and local level for a new system.”

Finally, Mr. Lee discussed the interoperability challenges he has faced since the 1970’s, while giving an overview of communications in the state. Mr. Lee stated that he is “constantly looking at ways to improve interoperability.” Mr. Lee gave examples when various agencies were unable to communicate during an emergency situation. Additionally, he discussed the importance of not “reinventing the wheel” from the county commissioners’ perspective and the need to build a consensus from within. He felt that everyone can “work together collectively to determine a 21st century technology” to solve the problem and that the key is “networking and working together.”

Next, questions and comments were accepted from the audience. Mr. Charley Whiton, Commissioner, Sheridan County, began the discussion by expressing the need for the federal government to determine a “a cogent plan for interoperability.” He also expressed concern over the fact that the Bureau of Land Management (BLM) and U.S. Forest Service, two federal agencies, operate on incompatible systems in Wyoming. The BLM operates on a digital, narrowband system while the Forest Service operates on an analog, narrowband system

In response to Mr. Whiton, Mr. Rick Murphy, discussed the federal allocation process for spectrum. He also discussed the narrowband mandate for federal agencies. Additionally, he stated the Forest Service began the narrowbanding process before digital narrowband equipment was available. Mr. Murphy noted that public safety officials across the country often talk to their Congressional representatives because federal agencies need to know if they are following a path that is not migrateable.

Next, Ms. Patricia Bauer, Dispatch Manager, Wyoming Highway Patrol, discussed the dispatch situation in Johnson County with Ms. Connolly. They discussed a situation where an ambulance was dispatched by the Johnson County Sheriff’s Office to an accident scene 35-to-50 miles outside of Buffalo. Wyoming Highway Patrol received word that the truck driver was not injured but was unable to contact the ambulance. Ms. Bauer and Ms. Connolly agreed that this is a situation where “interoperability would have benefited all of us.”

Mr. Jim Wilson, Deputy Director, Wyoming Division of Criminal Investigations, expressed the need for mobile data terminals (MDT), especially in patrol cars, and was glad to see an interest in MDTs throughout the state.

Major General Boenisch then posed the question, “Can Wyoming successfully upgrade its wireless network given the uncertainty of spectrum at the National level?” Mr. Robert Wilson, Program Manager, Wyoming PSMC Plan, answered the question and stated, “we are studying this of course and yes, and we certainly can.” He also stated that congestion and interoperability are definite problems for Department of Transportation, Maintenance, and Highway Patrol, especially during the winter.

Mr. Perko closed the open discussion by stating the following—

“We sit in a stationary spot. The earth that we sit on is turning and revolving around the sun. Things are changing around us, with us or without us. If we do nothing, we will have exactly the same problems we have today. If we act independently, we will spend more money and not resolve some of the issues. We need to go forth and resolve issues collectively, not independently. There may be a way to resolve coverage issues if we collectively approach solutions which is the purpose of the PSMC effort.”

Successful Models

Conference attendees also heard success stories from the South Dakota Statewide System, the Consolidated Communications Network of Colorado (CCNC), and the Nebraska Statewide Public Safety Mobile Communications Strategy. As summarized in Table 1, these three examples provide examples of critical factors that states like Wyoming may face when installing a new communications system.

South Dakota Statewide System

Mr. Jeffrey Pierce, Project Manager, Bureau of Information and Telecommunications, State of South Dakota described the process that the state has gone through while installing a new statewide communications system. This included an overview of the issues leading up to installing a new system, the decision process, and an overview of the system. First, Mr. Pierce outlined the procurement process in South Dakota, which was driven by the governor and was not a “grass roots” effort. An evaluation team composed of individuals from the governor’s office, the Bureau of Information and Telecommunications, and local public safety officials determined the direction the state would take for system procurement. The evaluation team decided to procure a VHF (150 MHz) trunked system that could be built upon the existing high-band Department of Transportation System. Next, Mr. Pierce discussed the benefits of a new system including improved federal-state-local communications, improved emergency response, and standardized communications. He also outlined the benefits of installing a trunked network.

Also, Mr. Pierce outlined the “critical elements” of the project. First, he stated that political support was essential. In South Dakota, the governor drove the project and Senate Majority Leader, Tom Daschel, also supported the project. Local support was also a key, along with having a project manager whose sole duty is management of the effort.

Finally, Mr. Pierce discussed how South Dakota funded their system and the importance of a realistic time frame for system planning, installation, and implementation. Mr. Pierce stated that the system cost \$30 million. The system was funded through an appropriation from the state legislature in 2001 (\$4 million) and \$2 million in agency money. The remaining funding came from various federal grants including the Community Oriented Policing Services (COPS) grant to the State Highway Patrol. The South Dakota Division of Agriculture also obtained federal grants used for the system. Additionally, the State of South Dakota “handed out radios” to local public safety agencies. For example, the South Dakota Department of Health used bioterrorism funding to purchase radios for every EMS unit and hospital. Funding for subsequent years has

been built into the general funds budget. Mr. Pierce also stressed the need to have a realistic time frame for system implementation. South Dakota spent 2 years deciding what type of system to build and 1 year implementing the system. Issues, especially those dealing with frequencies, may have been avoided if the system was installed over an additional year. The largest problem with system migration has been user education because users do not understand the difference between conventional and trunked systems.

A slide presentation summarizing the state radio communications plan can be found at <http://www.state.sd.us/governor/press/speeches/2001/vhfradio/>.

Consolidated Communication Network of Colorado

Lieutenant Michael Coleman, President, CCNC, discussed the process CCNC developed to improve public safety services responsiveness and provide complete radio interoperability statewide for participating agencies. First, Lieutenant Coleman discussed the history of the Digital Trunked Radio System (DTRS) project that began in 1992. DTRS or CCNC is a standard based digital radio network comprised of partnerships at the local, county, and state levels. Currently, there are over 12,000 subscribers on the system with eastern Colorado coverage. Lieutenant Coleman also discussed the CCNC organization, membership, and financing for the system. Additionally, he detailed the time line and phased approach for the project. Finally, he outlined the challenges that CCNC faced including funding, buy-in, understanding, misinformation, and unbudgeted group needs. CCNC's successes included wide-area coverage, partnerships, interoperability, user based management, broad attendance at regional presentations, and a huge influx of users.

Nebraska Statewide Public Safety Mobile Communications Strategy

Mr. Michael Jeffres, Radio Communications Manager, Department of Administrative Services, Division of Communications, State of Nebraska, detailed the State of Nebraska statewide public safety communications study that resulted in an RFP and evaluation of two vendor bids for a new statewide system. First, Mr. Jeffres provided a historical overview of the project. A study was published in December 2000, which assessed public safety communications throughout the state. From the study, an interoperability model was developed. Mr. Jeffres stated that coordination was the hardest aspect of developing a strategy because an approach was needed to create interoperability on a large scale. Next, agency migration was discussed including developing migration strategies and timelines, integrating participating users and systems, and establishing operational procedures. Mr. Jeffres also provided an update of the system status. Mr. Jeffres stated that an intent to award was issued and the system contract, detailed design, and review were pending. Finally, he concluded with recommendations for other states based on Nebraska's efforts. Some of the recommendations included determining the governance and operational structures, cost impacts, fees and funding and managing grant opportunities.

**Table 1
Critical Factors for Developing a Statewide System**

| State | Critical Factors |
|---------------------|--|
| South Dakota | • Garner political support – Governor and Congressional |
| | • Garner local public safety support |
| | • Ensure project manager – sole duty |
| | • Develop a funding plan including grants and appropriations |
| | • Develop an on-going budget – support staff /plans |
| | • Establish a realistic time frame for completion |
| Colorado | • Funding for agencies |
| | • Gain buy-in |
| | • Manage misinformation - rumors |
| | • Get organized |
| | • Manage unbudgeted group needs |
| Nebraska | • Determine governance structure |
| | • Determine operational structure |
| | • Determine cost impacts, fees, funding |
| | • Conduct mobile data assessment |
| | • Develop migration/interoperability strategies |
| | • Establish policies and procedures |
| | • Manage grant opportunities |

Fostering Collaboration

The final session of the conference presented by Mr. Al Rhodes, Federal Engineering Inc., detailed the Wyoming Statewide PSMC. Mr. Rhodes is the project manager for Federal Engineering, Inc. contractor support to the PSMC effort. First, Mr. Rhodes provided an overview of Federal Engineering’s history; work in rural states like Wyoming, and philosophy. Mr. Rhodes stressed that even though areas have similar problems and issues “one size does not fit all” when planning and developing public safety radio communications systems. Mr. Rhodes detailed the project plan for coordination and the assessment phase methodology. The methodology applied during the assessment phase includes a review of past reports, site visits, and coverage analysis. Next, Mr. Rhodes supplied various milestones for the assessment phase including the completion of the assessment phase by April 16, 2003. Then, Mr. Rhodes discussed the planning phase methodology, which included the following steps—

- Request for Information (RFI)
- Develop potential system architecture
- Select optimal architectures
- Coverage analysis
- Develop business case
- Performance and testing specifications.

According to Mr. Rhodes, the planning phase will be completed by October 16, 2003. Finally, Mr. Rhodes outlined targeted recommendations that included a system that meets or exceeds current statewide capabilities, permits future expansion of capabilities, provides

increased (seamless) interoperability, and utilizes standards based solutions. Mr. Rhodes also stated that “this is not just another study” because it will provide a detailed plan for resolving differing user needs, while fostering stakeholder support, and developing an improved statewide wireless network for the public safety community in Wyoming.

Next Steps—Wyoming Moving Forward

Teamwork and coordination were the resounding themes of the Wyoming Public Safety Communications Interoperability Conference. Conference attendees understood by day’s end the importance of working together in order to improve public safety communications interoperability.

Mr. Robert Wilson, Project Manager, Wyoming PSMC Plan, encouraged conference attendees to participate in the planning process by providing needed information. Public safety officials throughout the state will have the opportunity to interact directly with Federal Engineering and have their voices heard.

This conference provided opportunities for public safety officials from agencies across all levels of government in the State of Wyoming to communicate their own needs, understand those of other participants, and began to build relationships that make coordinating easier. By the end of the conference, attendees gained a better understanding of “who packs their parachute and whose parachute they pack.” It is essential for conferences attendees to take advantage of the collaboration opportunities presented during the conference.

As a team, the public safety community can develop a communications plan to fulfill the short- and long-term needs of first responders throughout the state. The Wyoming PSMC Steering Committee has made great strides in ensuring that the need for public safety communications interoperability is understood throughout the state. However, more can be done to develop the strategy and ensure its implementation. The public safety community should support and participate in the Wyoming PSMC Committee. For more information, about WY PSMC, please contact, Mr. Robert Wilson, Wyoming Department of Transportation, at (307) 777-4440.

Conference attendees can also obtain additional information about interoperability and nationwide efforts to implement solutions that address public safety radio communications interoperability through the PSWN Program at www.pswn.gov. PSMC project status reports, Steering Committee documents, studies done for the State of Wyoming and other background information are available at http://ipc.state.wy.us/radio_index.asp.