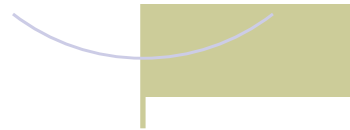




## **Oregon Public Safety Community is Working to Improve Wireless Communications**



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Oregon State Interoperability  
Executive Council

FALL 2004





## Oregon Public Safety Community is Working to Improve Wireless Communications

*Saving lives and protecting the public during a disaster, or during any day of the year, depends upon reliable communication systems that allow public safety officers and other emergency officials to talk to one another. Not only does new digital communication technology offer us the ability to protect lives, over the long-term, it can reduce – and help avoid – costs of operating public safety agencies.*

*This new world of “interoperable” communication technology is coming to Oregon, but it will take time, planning, training, and capital investments to make it happen. That is what the Oregon State Interoperability Executive Council (SIEC) is all about. This guide will help you understand some of the tough issues that are being tackled by this Advisory Council to the Governor. It will also answer some of the important questions about what interoperability is and why it is important to all citizens.*

### WHAT IS INTEROPERABILITY?

Simply put, interoperability is the ability of people to talk to one another, efficiently, timely, effectively. In the area of public safety, interoperability encompasses all public safety efforts to improve the capacity for officials from multiple public safety agencies and disciplines to communicate wirelessly. The National Task Force on Interoperability defines interoperability as “...the ability of public safety agencies to talk to one another via radio communications systems – to exchange voice and /or data with one another on demand, in real time, when needed.”

As in many parts of America, this capability is not yet available in Oregon. Often, public safety

agencies and services that work side by side are likely to have difficulty communicating with one another, and in many parts of Oregon, access to radio signals is limited, or not available at all.

Gaining increased public safety interoperability is both a national priority and a priority for Oregon. To solve the complex technological and political problems that must be overcome to achieve this priority will require focused effort, investment, and adequate time.

### WHY IS THIS IMPORTANT TO YOU AND ALL OREGONIANS?

The need to increase the ability of public safety agencies to communicate with each other is critically important to the safety of the citizens of Oregon. The protection of citizens’ lives and property is the primary mission of public safety agencies. To carry out this mission, law enforcement and emergency first responders need to have swift and seamless capabilities to communicate with one another. Just as important, swift and seamless communications capabilities help protect the very lives of law enforcement and other emergency first responders.

The investments we make today will help us immediately. The results of improved communication are improved responses to the emergencies of the public:

*To get medical care to the sick and injured quickly;*

*To improve the ability for law enforcement to coordinate command and tactical actions in life threatening situations;*

*To allow federal, state, tribal, and local governments and emergency management to coordinate their responses to natural and man-made disasters; and,*

*To help firefighters locate victims and then help them escape to safety.*

Emergency response is often a matter of time; increments of minutes and seconds can make the difference in life savings and dangerous emergency response situations. The public protection that timely communications offer us is reason alone to make new investments in public safety communication technology.

**NEW INVESTMENTS IN COMMUNICATIONS TECHNOLOGY WILL HELP OREGON AVOID COSTS AND GAIN EFFICIENCIES**

What makes the argument for communication system improvements and investments even more compelling is the efficiency and cost savings they will bring to the operation of public safety communication systems. A system that allows public safety officials to talk and communicate data between officers in the field and those officials helping to manage the emergency from afar holds great potential.

Yes, it will be expensive to improve the infrastructure and to provide the training necessary to manage and successfully operate technologically advanced communication systems. On the front-end, the investment of millions of dollars in capital improvements will be necessary.

A new communication system (or even a system of systems), however, will bring cost avoidance savings to state and local governments while increasing the efficiency and effectiveness of daily operations. As well, but more difficult to quantify is the prevention of loss and damage to peoples' property and prevention of loss of live.

Public safety agencies own their own independent communications systems, but those systems are often not coordinated or connected to neighboring systems or statewide systems. Efficiencies can be achieved by coordination that will help avoided the cost and expenditures each individual agency would otherwise have to make on its own. As the SIEC and Oregon moves forward on this priority, the cost and benefits of system improvements will need to be fully identified. Many

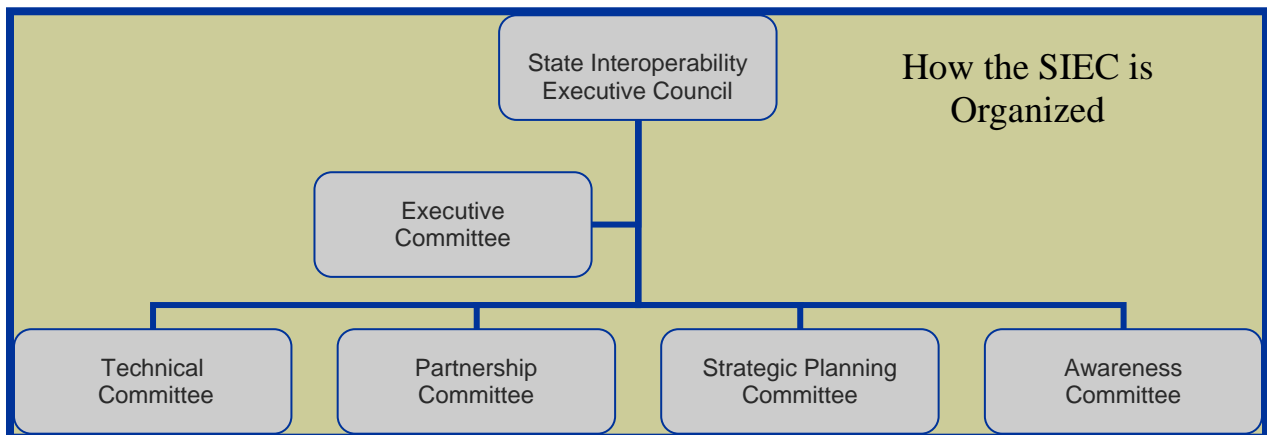
states that are now making investments in interoperability are citing millions of dollars in potential cost savings and Oregon will be no different. This is one investment that will truly be a win-win for the citizens of Oregon.

**OREGON'S KEY EMERGENCY RESPONSE ISSUES**

As we learned from the September 11 attack on America, communication is absolutely vital to saving lives. No doubt, many lives were saved by radio communications when the twin towers came tumbling down, but as we know from the National Commission on September 11 Report, many lives were lost because of poor communications.

Oregon faces many challenges to improving the communications capabilities during a statewide emergency response, or an event that is local in nature but requires the capabilities of many statewide resources to address a local emergency. To provide some context for the necessity of quality communication systems in Oregon, imagine the statewide communication challenges and resource coordination issues presented by the following scenarios and real events:

- In the event of a powerful regional earthquake centered in Portland metropolitan area, emergency assistance is likely to come to the region from Oregon and the State of Washington.
- During the statewide flooding we experienced in 1996, Oregon's emergency responders had problems with timely communication. Fortunately, the response of Oregon's public safety personnel and community officials was, by all accounts, a successful response under difficult circumstances.



- Public safety first responders learned of many weaknesses in Oregon's communication systems in the aftermath of the September 11 attacks; one of the things learned was that information could be communicated to the local level, but it was difficult for information to flow up to the state and federal levels.
- The destruction of munitions and chemical stockpiles at the Umatilla Depot raised serious communication concerns in the event of an accident. Many measures to protect the public and ensure communication if an emergency occurred were implemented.
- Each summer fire season presents challenging issues of communication. Fortunately, those officials responsible for radio communication at the scene of a forest fire command have developed measures that provide for necessary radio communications.

*“To effectively protect citizens, responders must be able to communicate. This requires investments in technology both today and in the future. And the beauty is we can avoid a lot of expense by coordinating and cooperating with each other.”*

*Fire Chief Jeffrey Johnson, Chair SIEC*

### **THE STATE INTEROPERABILITY EXECUTIVE COUNCIL IS WORKING TO SOLVE WIRELESS RADIO COMMUNICATION PROBLEMS**

To make certain Oregon is ready to address these problems is the task of the Oregon State Interoperability Executive Council (SIEC).

We have a vast geography to cover with a statewide communication system (linked systems). Insuring reliable communication across Oregon's mountains, major waterways and roadways, communities large and small, and rural areas poses problems and issues that must be addressed in creating a successful system of communication. To improve the quality and coverage of the airwaves, transmission facilities, and receiving radios that tie emergency responders together in a

modern communication network will be a complicated technical task, but an important one.

While many citizens believe and expect that public safety agencies already have the ability to effectively communicate, the reality is that this ability is limited and compromised by a multitude of gaps between communications systems.

Some of the key issues that will need to be tackled are:

- ⇒ Incompatible and aging communications equipment;
- ⇒ Limited and fragmented funding and budget cycles amongst multiple agencies;
- ⇒ Limited and fragmented planning and coordination between agencies;
- ⇒ Problems associated with the availability of adequate capacity and licensing of radio spectrum dedicated to public safety; and,
- ⇒ Limited equipment and programming standards coupled with a lack of training.

To attend to these problems, the State of Oregon initiated a broad based and far-reaching process to create the foundation for a public safety partnership that will recommend solutions to our public safety communications problems.

The 17 voting members of the SIEC represent a unique partnership of state and local public safety organizations that have a strong interest in the creation and operation of public safety communication systems. The Council Chair is Jeffrey Johnson, Chief of Tualatin Valley Fire and Rescue, and representative of the Oregon Fire Chiefs Association.

The SIEC involves counties, cities, special districts, fire and law enforcement associations, 911 communicators, state agencies, emergency management, the Governor's Public Safety Advisor, and other people who are working together to create a blueprint for coordination.

It is important that these interests all have a direct role in helping to define and create Oregon's interoperability future. All of these entities own and operate radio systems, and it is the ability of these different groups to work together that will allow the full development of interoperability in

Oregon. If each makes investments in achieving common standards and system capabilities, the goals of the SIEC will be readily attained.

## **SIEC PRIORITIES**

The Oregon State Interoperability Executive Council (SIEC), created by Governor's Executive Order 02-17 in 2002, is charged with improving and developing interoperable public safety communication systems in Oregon.

The SIEC and the governor's executive order focus on the priorities of:

- ◆ Recommending strategies to improve Oregon's wireless interoperability between public safety agencies communication systems;
- ◆ Determining standards to ensure consistent development of existing and future wireless communications infrastructure;
- ◆ Identifying immediate short-term technological and policy solutions that tie existing infrastructure together into an interoperable communication system;
- ◆ Developing long-term technical and policy recommendations to establish a statewide public safety radio backbone to improve emergency response and day-to-day public safety operations; and,
- ◆ Developing recommendations for legislation and the development of state and local policies necessary to promote wireless interoperability in Oregon.

## **THE SIEC IS MANAGING THE TASKS AHEAD**

Today the SIEC is leading Oregon's efforts to deal with the problem of increasing the ability of all public safety agencies to communicate with one another through common communications infrastructure and standards.

This is a complicated yet vitally important task. It must involve all the key partners that own and operate communication systems. Its success will be dependant upon the ability of many agencies to work together to improve the overall ability of each to respond to public safety emergencies.

The task ahead is largely a management and political exercise. Multiple state agencies and multiple local governments must find the means to work together to achieve the higher levels of communications compatibility. Though the potential for disagreements is high, Oregon's public safety officials have a long history of working well together, and Oregon's state and local government elected officials have advanced many successful examples of intergovernmental cooperation. This is an important backdrop for the challenges that lie ahead.

## **THE SIEC'S IMMEDIATE ACTION AGENDA**

The SIEC's immediate agenda includes:

- ◇ Increase the awareness of the issue of interoperability and the role of the Oregon State Interoperability Executive Council in addressing these communication problems;
- ◇ Survey and inventory all state and local public safety radio communication systems to better understand the gaps in service and capacity throughout the state;
- ◇ Develop recommendations for creating an interoperability partnership governance process that will be the blueprint for legislation for consideration by the Oregon Legislature;
- ◇ Recommend allocations and criteria that will ensure Federal Homeland Security Grant dollars dedicated to communications are efficiently used to serve the interests of all public safety agencies in Oregon;
- ◇ Make recommendations for phase-one investments that will begin the process of replacing old analog-based radio wave transmitting technology with a digital voice and data system that serves the entire state;
- ◇ Continue the process of making recommendations on low-level, inexpensive, immediate short-term actions and policy changes that will increase interoperability using existing technology;

- ◇ Research and develop specifications for a statewide, interoperable, communications backbone system, and develop estimates of the capital requirements and operational cost savings of alternative technological solutions;
- ◇ Implement an effort to insure intergovernmental coordination and cooperation by developing “best practices” guidelines for intergovernmental coordination agreements; and,
- ◇ Educate the public and elected officials about the necessity and policy issues surrounding public safety communications interoperability.

### **A CHALLENGE THAT MUST BE MET**

In today’s world, we no longer can afford to hope that our communications technology and systems are adequate to meet the challenges and demands of emergencies — we know they are not. The old paradigm of public safety agencies managing and developing their own radio systems is not only inefficient, today it is clear that the “stand alone and fight alone” systems of the past compromise our interconnected public safety future. The fact is, today’s technology will allow communications abilities between all public safety agency officials while maintaining an ability to have internal, secure, communications within each agency.

Achieving a high-level of interoperability is a challenge that must be met if we are going to have a safe and secure future. It is a challenge that must be met if we are going to require efficient operation of public safety agencies. Fortunately, it is a challenge that will be met with the dedicated and persistent efforts of many public safety and government officials. Oregon is well on the way to that new future. ■



### **Message from the Governor**

*"Oregon communities will be safer because of the important work being done by the dedicated Oregonians serving on the SIEC. One of my six Oregon Principles is that citizens should be safe in their homes, communities and public institutions — and public safety communication systems play a critical role in achieving this goal. I look forward to helping the SIEC develop the plans and resources necessary to ensure that Oregon's public safety communications systems are effective and that we are as prepared as possible for public safety emergencies."*

**Governor Theodore Kulongoski**





## Oregon State Interoperability Executive Council

### SHORT TERM RECOMMENDATIONS FOR INTEROPERABILITY

**Adopted: August 5, 2003**

**Revised and Adopted: December 2, 2003**

**Revised and Adopted: September 7, 2004**

Oregon SIEC recognizes that the short-term recommendations below are only intended to start the journey toward universal public safety wireless communications interoperability for all of Oregon's public safety agencies. SIEC's adoption of the standards listed in this plan is a recommendation to facilitate interoperability and there is no intent or action of the SIEC to mandate such use. SIEC and the State of Oregon encourage Oregon's public safety agencies to develop interoperable communications systems that encompass all of the elements of public safety.

#### OREGON SIEC SUPPORTS:

1. All new, VHF and/or UHF systems (meaning below 512 MHz) shall be implemented using narrowband (12.5 kHz bandwidth) technology.
2. All agencies that intend to remain on VHF and/or UHF public safety systems in Oregon shall start a migration to meet FCC timelines for conversion to narrowband operation.
3. All new VHF and/or UHF portable or mobile radios purchased by public safety agencies in Oregon shall be narrowband compatible. This is consistent with existing FCC type acceptance requirements for equipment made for operations in FCC regulated radio spectrum. All VHF radios in the NTIA and FCC frequencies band shall be capable of programming on 7.5 kHz and 12.5 kHz channel assignments.
4. To the extent that channel capacity exists, nationwide VHF and UHF interoperability channels should be programmed into every existing Oregon VHF and UHF public safety subscriber radio and shall be programmed into all new Oregon VHF and UHF public safety subscriber radio.
5. All VHF and UHF public safety subscriber radios in Oregon shall consider maximum utilization of narrowband bandwidths, and should consider the use of multimode technologies, and multi-band operation as these features become generally available.
6. Whenever a multimode, digital, subscriber radio is purchased, one digital mode shall be the Project 25 Common Air Interface.
7. All 9-1-1 dispatch centers in Oregon should add base stations and/or control stations on the VHF, UHF, and NPSPAC 800 MHz interoperability channels as are appropriate for use in any statewide supporting infrastructure.
8. Switches, or console patching, are strongly encouraged at 9-1-1 dispatch centers to allow connection of interoperable VHF, UHF, and NPSPAC channels to the operating channels within the center's range.
9. The OPEN and State Fire Marshal's VHF interagency channels should be converted to repeater operation in order to expand areas of coverage if compatible frequencies can be identified.
10. All 800 MHz public safety radios purchased in Oregon are to have the interoperable channels programmed into them. This is consistent with the FCC's existing NPSPAC rules.
11. Applicants are encouraged to add the use of NTIA, interoperable channels for interoperability with Federal agencies. This will require local interaction with Federal agencies for the needed permission to occupy these frequencies.
12. State and Local agencies should build communications facilities that include adequate environmental, seismic, emergency power, lightning and power surge grounding, and security elements that will maximize the ability to collocate communications facilities of public safety agencies. Such measures should be consistent with the goals of reliability and good engineering practice.

# SIEC

## INTEROPERABILITY ON THE WEB

See what the Oregon State Interoperability Executive Council (SIEC ) is up to by checking us out at our website:

<http://egov.oregon.gov/SIEC/>

Citizens, local government managers, elected officials, and public safety first responders will find important interoperability resource information such as:

- Short Term SIEC Recommendations for Interoperability;
- Statewide interoperability survey forms;
- Useful grant information;
- The updated SIEC Strategic Plan; and,
- Web links and other information about the SIEC and interoperability.

To link to federal homeland security interoperability resources, please see the following Department of Homeland Security sites:

[www.safecomprogram.gov](http://www.safecomprogram.gov)

<http://www.dhs.gov/dhspublic/display?content=4044>

## Acknowledgements

*The SIEC would like to recognize the many men and women first responders and communications professionals that are working to keep our citizens safe from harm.*

*We thank all of these public safety professionals, and the many public officials and citizens of Oregon that are voluntarily contributing their time and talent to the SIEC mission of improving public safety communications in Oregon.*

***Oregon Public Safety Community is Working to Improve Wireless Communications, Fall 2004***

was produced on behalf of all the partner agencies represented on the Oregon State Interoperability Council.

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