
Attachment 1:
Team Member Qualifications

Overview of Qualifications

With more than 130 professionals, Sparling is the largest specialty electrical consulting firm in the nation and the first in the region to offer integrated design for electrical, telecommunications, data networking, audiovisual and broadcast, and architectural lighting systems. Sparling is focused on helping its clients prepare for future technologies and changing building environments. Our designers have thorough know-ledge of educational trends as well as an understanding of the need for finding creative solutions to meet an educational institution's tight schedule and budget. We give careful consideration to technological changes, growth and economic factors, and we marshal the best available in-house and outside resources to create innovative, unique and cost-effective applications that stand the test of time.

For this project, Sparling has teamed with NetCity Engineering, known nationally for its practice in strategic planning and operations for innovative telecommunications networks, including the development of the public safety “radio utility model” - collaborative, shared, regional architectures for public safety radio systems. NetCity serves a vital role in providing technical expertise, as well as expert strategic telecommunications planning. NetCity is also a locally owed, woman-owned technology practice.

Sparling has also teamed with the Center for Wireless Network Security (WiNSeC), a nationally recognized academic center for research and development and spectrum policy. WiNSeC is located in New Jersey at the Stevens University of Technology, one of the nation’s most prestigious engineering institutions, and holds multiple research contracts with DARPA, the National Science Foundation and others. WiNSeC brings unparalleled experience in shaping the nations’ spectrum policy.

The partners in this proposal, under the leadership of Sparling, have combined the best local and national talent to serve the Oregon SIEC.

The Sparling team has included the following:

Brian Nordlund, P.E.: A registered professional electrical engineer, Brian has over 17 years of experience in telecommunications and electrical engineering. Specializing in the engineering and implementation of radio, cable and fiber optic systems for private and public telecommunications networks, he has a variety of experience in utility and telecommunications planning, design, engineering, and project management . He has consulted on the engineering and deployment of private and public communications networks performing detailed design as well as high level planning and engineering studies. He has developed design standards, documentation standards, and technical specifications for a variety of clients and has been responsible for detailed engineering of critical infrastructure supporting the utility and public safety fields. He has particular expertise in microwave system design, fiber optic and radio transmission engineering, digital and analog multiplex, DC power plants, and grounding systems.

Art Walker has over 30 years experience in public safety. He is retired from the Oregon State Police and was the director of that agency's Information Resource Services Division. In

that role, he planned, organized, and directed the consolidation of 26 separate dispatch operations into 4, then 3 regional dispatch centers, providing statewide dispatch services for Oregon State Police and other public safety providers. To accomplish this extensive work, he facilitated multiple meetings with large and diverse groups of participants. He brings a wealth of knowledge and experience in matters related to Public Safety Answering Points (PSAP's), in the drafting of statewide communication systems policy, and in development and monitoring of work plans and budgets.

James DeRosier is a Wireless Network Consultant with extensive experience in all phases of public and private wireless communications at the technician, engineering and management levels. Mr. DeRosier is a past President of the Oregon chapter of APCO and has been certified by that organization as a Public Safety Frequency Coordinator. Stemming from his service in frequency coordination, he has established relationships with a wide range of public safety wireless communications users throughout Oregon. Prior to his retirement, he was manager and chief engineer for the Oregon State Police -Wireless Communications unit where he provided network design for the conversion of agency wireless network from Low Band to High Band VHF. He brings valuable working knowledge of spectrum management and FCC regulation issues.

The WiNSeC team has included the following:

Dr. Paul Kolodzy, the Director of WiNSeC, acted as one of the principal consultants on this project. Dr. Kolodzy has been the Director of the Center for Wireless Network Security (WiNSeC) at Stevens Institute of Technology since 2002. WiNSeC provides leadership in advanced technology to provide secure, interoperable wireless operations for consumer, commercial, financial, defense, and public safety applications under duress and within complex environments. Dr. Kolodzy also is a member of the faculty in the schools of Engineering and Technology Management. Dr. Kolodzy is also a Senior Spectrum Policy Advisor at the Federal Communications Commission (FCC) and past Director of Spectrum Policy Task Force. The final product of the Task Force recommended a substantial overhaul of the FCC's spectrum management model and modernization of the approach to governing spectrum usage.

Dr Kolodzy is also a Program Manager at the Defense Advanced Projects Agency (DARPA) in the Advanced Technology Office He Manages R&D for communications programs to develop generation-after-next capabilities. Inclusive in these efforts are developments in the areas of a man-portable software definable radio prototyped and a key enabling spectrum utilization project using dynamic frequency assignments that has profound impact to commercial and military spectrum policy.

The Overall Project Manager for the Project was Nancy Jesuale, President of NetCity Engineering Inc.

Nancy Jesuale: provided the overall program management for Sparling and the "on the ground" presence for WiNSeC. She is the principle data analyst.

Ms. Jesuale has provided the program management of WiNSeC's public safety program since its inception. Nancy Jesuale is very familiar with the issues and challenges to working with radio system providers and users in the State. For six years prior to forming NetCity, Ms. Jesuale ran the City of Portland/Multnomah County 800 MHz radio system. Prior to that, Ms. Jesuale worked for the Department of Administrative Services (DAS) where she operated a large V-SAT based teleconferencing network for state and local agencies, installed a large videoconferencing system for the Department of Corrections and collaborated with the Department of Transportation on a number of efforts. Ms. Jesuale works closely with SAFECOM on interoperability issues in her role as program manager for WiNSeC, and previously as the Director of ComNet for the City of Portland. She was appointed to the National Task Force on Interoperability, and was a member of their spectrum sub-committee.

Ms. Jesuale assisted WiNSeC to establish a national advisory panel of public safety representatives, a mission and goals statement for the Center, and secure several key relationships in the public safety community. Currently, Ms. Jesuale is working with WiNSeC on an interoperability assessment in New Jersey, funded by the Army. She is also assisting to develop long-range public safety spectrum reform recommendations. This year, Ms. Jesuale and Dr. Kolodzy were invited to make a joint presentation to the International Symposium on Advanced Radio Technologies (ISART) in Boulder Colorado, at the SAFECOM sponsored tutorial on new public safety technology.

**Attachment 2:
Survey Instruments**



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory PSAP Survey

I. Introduction

The improvement of public safety communications systems, including but not limited to interoperability, is a statewide goal. In September of 2002, Governor John Kitzhaber signed Executive Order 02-17 forming the State Interoperability Executive Council (SIEC), which stated the SIEC's purpose as being to "...provide policy level direction for matters related to planning, designing and implementing guidelines, best practices, and standard approaches to address Oregon's public safety communications interoperability issues."

The SIEC is now undertaking a comprehensive inventory of all public safety radio systems in the state. This inventory will provide important data on interoperability and give vital information towards the SIEC's strategic planning for the future. The first step of creating this inventory is to survey PSAP managers and radio system managers throughout the state. Your participation in this survey is essential to our efforts.

The enclosed survey has been sent to the Oregon PSAP managers. If you are also the owner/manager of your radio system, please fill out the included System and Site Survey. In that event, we must ask that you complete both survey instruments. We realize that we are asking for a set of information that will be a task to collect, but the resulting database is critical as we plan for the future of public safety communications in our state.

The Governor and the members of the SIEC (listed below) appreciate your participation in this effort. Thank you.

- Oregon State Police
- Office of Emergency Management
- Department of Forestry
- Department of Corrections
- Department of Transportation
- Department of Administrative Services
- Department of Human Services (EMS)
- League of Oregon Cities
- PSAP Managers
- Region 35 700MHz Planning Committee
- Oregon Association of Public Safety Communications Officials/National Emergency Number Association
- Oregon Military Department
- Oregon Fire Chiefs Association
- Oregon Association of Chiefs of Police
- Oregon State Sheriff's Association
- Association of Counties
- Special Districts Association of Oregon

If you have received this survey in error, we ask that you forward it to the person most qualified in your organization to answer the questions. **Survey responses should be returned no later than August 31, 2004 using the included addressed envelope:**

Any questions concerning the completion of the survey should be directed to:

Art Walker (503) 540-7662
awalker@monartassoc.com

Jim DeRosier (503) 588-3912
wmsinc@earthlink.net

Marcus Kohler (503) 372-3650
mkohler@whpacific.com

Thank You for your participation,

Chief Jeffrey D. Johnson, Chair SIEC



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory PSAP Survey

II. PSAP Demographics

Please save this document using your PSAP name as the file name (PSAPName.doc).

1. Please provide the following information.

Name of Person Answering the Survey	Position	Agency Name and Mailing Address
Name of PSAP	PSAP Physical Address	PSAP's Primary Contact Information (Name and Phone #)
Phone/Fax Number	E-Mail/Web Address	Emergency 24 hour Phone #
(Phone)		
(Fax)		
Name of Secondary PSAP and Emergency 24 hour Phone #	Name of Secondary PSAP and Emergency 24 hour Phone #	Name of Secondary PSAP and Emergency 24 hour Phone #

2. What category best describes the agencies your responsible for dispatching and the level of government they represent?

Category	Tribal	Local	State	Federal	Commercial	N/A
9-1-1 / Dispatch / Communications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Medical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ambulance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Law Enforcement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Search and Rescue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hazardous Materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dept. of Transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dept. of Public Works	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information Technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utility:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: Please Specify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory PSAP Survey

4. Based on your experience, indicate the severity of each of the following obstacles to interoperability. Additionally, indicate the top three challenges to interoperability with a check mark in the last column.

Obstacle	Major Problem	Significant Problem	Moderate Problem	Minor Problem	Not a Problem	Top 3 (√)
Lack of Frequencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Different Frequency Bands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incompatibility between Radio Systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incompatibility of Equipment From Different Manufacturers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equipment Reliability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Equipment Issues: <u>Please Specify</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Backhaul Reliability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coverage Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interference	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voice Clarity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Different Technology (Digital vs. Analog or Trunked vs. Conventional)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Funding Limitations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jurisdictional Authority	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Political Issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Security Concerns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of consolidated radio system (regional or statewide)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of cooperation between end user agencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of compatibility between public safety radio and IP systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of compatibility between public safety radio and commercial cellular services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: <u>Please Specify</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory PSAP Survey

5. What do you consider the most important action(s) that could improve interoperability among public safety communications users for the future?

6. If you dispatch multiple agencies, what were the major drivers behind consolidation/sharing?

- | | | |
|--|--|---|
| <input type="checkbox"/> Efficient use of tax revenues | <input type="checkbox"/> Efficient use of frequencies or equipment | <input type="checkbox"/> Enhanced communications capabilities |
| <input type="checkbox"/> Improved mutual aid | <input type="checkbox"/> Interoperability | <input type="checkbox"/> More efficient use of staff |
| <input type="checkbox"/> Other: <u>Please Specify</u> | | |

IV. Funding

7. Please detail the funding resources and arrangements that apply to your PSAP. Check all that apply in the table below.

Funding Source	Check All That Apply	Source
Local tax revenue (e.g., general fund)	<input type="checkbox"/>	<input type="checkbox"/> By yearly budget submission request <input type="checkbox"/> Receive automatically <input type="checkbox"/> Other: _____
Federal funds (e.g., community development block grants, and seizure funds)	<input type="checkbox"/>	<input type="checkbox"/> By yearly budget submission request <input type="checkbox"/> Receive automatically <input type="checkbox"/> Other: _____
Grants (e.g., TOPS, COPS)	<input type="checkbox"/>	<input type="checkbox"/> By yearly grant application submission <input type="checkbox"/> Other: _____
Subscriber fees (if system is leased to other agencies)	<input type="checkbox"/>	<input type="checkbox"/> One-time program fee <input type="checkbox"/> Annual subscription fee <input type="checkbox"/> Other: _____
Bond Measure(s)	<input type="checkbox"/>	<input type="checkbox"/> By yearly budget submission request <input type="checkbox"/> Receive automatically <input type="checkbox"/> Other: _____
Capital Funds or Capital Reserves	<input type="checkbox"/>	<input type="checkbox"/> By yearly budget submission request <input type="checkbox"/> Receive automatically <input type="checkbox"/> Other: _____
Other: <u>Please Specify</u>	<input type="checkbox"/>	<input type="checkbox"/> By yearly budget submission request <input type="checkbox"/> Receive automatically <input type="checkbox"/> Other: _____



**State of Oregon State Interoperability Executive Council
Public Safety Radio Communications Inventory
PSAP Survey**

V. Additional Information

8. What homeland security funds or other grant funds have you received for communications and what were they utilized for?

9. Do you have any additional comments concerning your agency's communications systems or issues related to your agency's ability to optimize communications?

10. How do you envision the implementation of statewide public safety agency interoperability?

11. Do you own/manage a public safety communications radio system? Yes No

If "Yes" please end the PSAP survey here fill out the System and Site Survey.

If "No" please complete the following table.



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12. Identify which of the following you or user agencies currently use or plans to use within the next 5 years, what role they play, and how the service is used. Check all that apply.

- Legend: **1**=Logistical or Administrative Non-Tactical Traffic
2=Contact Off-Duty Personnel
3=Interoperate With Other Agencies
4=Reach Users While Outside of LMR Coverage Area
5=Support Mobile Data Applications
6=Other (Specify)

- a**=More Cost Effective
b=Less Channel Congestion
c=Increased Reliability
d=Better Coverage
e=Higher Security
f=Other (Specify)

Service Type	Use				Role	Reason
	Do Not Use	Current	Planned	Not Planned		
Cellular Mobile Telephone Service (PCS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Cellular Digital Packet Data (CDPD) or similar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Specialized Mobile Radio (SMR) (e.g., NEXTEL)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Site Circuit Connectivity (microwave circuits)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Site Circuit Connectivity (leased Telco T1 lines)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Site Circuit Connectivity Other: <u>Please Specify</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Expansion into the 700MHz band	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Reverse 911	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
911 Alert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
PSAP Alert, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Satellite	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Unlicensed Wireless (Wi-Fi, Wi-Max, etc.) for data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Unlicensed Wireless (Wi-Fi, Wi-Max, etc.) for voice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory PSAP Survey

Service Type	Use				Role	Reason
	Do Not Use	Current	Planned	Not Planned		
Unlicensed Wireless (Wi-Fi, Wi-Max, etc.) for video	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Broadband data over <u>licensed</u> frequencies (e.g. 4.9 GHz)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Broadband video over <u>licensed</u> frequencies (e.g. 4.9 GHz)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Mobile Data Terminals using own wireless network	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Mobile Data Terminals using CDPD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Voice over IP (VOIP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>
Other: <u>Please Specify</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <u>Specify</u>	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <u>Specify</u>

Please return this survey by August 31, 2004 to:

Marcus Kohler
mkohler@whpacific.com



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

I. Introduction

The improvement of public safety communications systems, including but not limited to interoperability, is a statewide goal. In September of 2002, Governor John Kitzhaber signed Executive Order 02-17 forming the State Interoperability Executive Council (SIEC), which stated the SIEC's purpose as being to "...provide policy level direction for matters related to planning, designing and implementing guidelines, best practices, and standard approaches to address Oregon's public safety communications interoperability issues."

The SIEC is now undertaking a comprehensive inventory of all public safety radio systems in the state. This inventory will provide important data on interoperability and inform the SIEC's strategic planning for the future. The first step of creating this inventory is to survey radio system managers throughout the state. Your participation in this survey is essential to our efforts.

The enclosed survey is being sent to public safety and public service radio system managers in the State, as well as the following SIEC member organizations. We realize that we are asking for a set of information that will be a task to collect, but the resulting database will be useful to all of us as we plan for the future of public safety communications in our state.

- Oregon State Police
- Office of Emergency Management
- Department of Forestry
- Department of Corrections
- Department of Transportation
- Department of Administrative Services
- Department of Human Services (EMS)
- League of Oregon Cities
- PSAP Managers
- Region 35 700MHz Planning Committee
- Oregon Association of Public Safety Communications Officials/National Emergency Number Association
- Oregon Military Department
- Oregon Fire Chiefs Association
- Oregon Association of Chiefs of Police
- Oregon State Sheriff's Association
- Association of Counties
- Special Districts Association of Oregon

An electronic form version of this survey has been created to allow you to electronically submit your response. If you prefer to fill this survey out electronically, please send a request via email to Marcus Kohler at the email address listed below. If you have received this survey in error, we ask that you forward it to the person most qualified in your organization to answer the questions. **Survey responses should be returned no later than August 31, 2004 using the included addressed envelope.**

Any questions concerning the completion of the survey should be directed to:

Art Walker (503) 540-7662
awalker@monartassoc.com

Jim DeRosier (503) 588-3912
wnsinc@earthlink.net

Marcus Kohler (503) 372-3650
mkohler@whpacific.com

Thank You for your participation,

Chief Jeffrey D. Johnson, Chair SIEC



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

II. System Information

1. Please provide the following information.

Name of Person Answering the Survey	Position	Agency Name and Mailing Address
Phone/Fax Number	E-Mail/Web Address	
(Phone)		
(Fax)		
Primary Contact for this System (if different from above)	Position	Agency Name and Mailing Address
Phone/Fax Number	E-Mail/Web Address	
(Phone)		
(Fax)		

2. Do you provide access to your voice, data or microwave radio system to other agencies? Yes No
If so, what agency and what system? (Names of agencies). Is there a written agreement?

Agency Name	System Name	Written agreement	
		Yes	No
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

3. If other agencies have access to any of your systems, are subscriber (user) fees charged? Yes No

3.1. Do you have written agreements for user access to your systems? Yes No Don't know

3.2. If fees are charged, what is the annual subscriber unit charge? \$_____ Don't know

4. Do you allow interoperability communications on your system? Yes No

5. On average, what is annual cost for operations and maintenance of your system? \$ _____



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

6. Who is the primary PSAP for your system? _____

7. How many radios does your system support? Please enter the number of Analog, Digital, and P25 Capable units.

Use	Portable			Mobile			Base / Control		
	Analog	Digital	P25	Analog	Digital	P25	Analog	Digital	P25
Law Enforcement									
Fire									
Ambulance									
Hospital									
Public Works									
Transportation									
Utility									
Schools									
Others									

8. How many mobile data units does your system support? _____

9. Do you maintain a cache of spare radios? Yes No If "Yes" please indicate the amounts of Analog, Digital, and P25 Capable portables and mobiles.

Portable			Mobile		
A	D	P25	A	D	P25

10. Please answer the following regarding your system. Check all that apply.

Coverage	
What is the approximate total population covered by this system?	_____ persons <input type="checkbox"/> Urban <input type="checkbox"/> Rural <input type="checkbox"/> Urban and Rural Mix
If the system supports multiple agencies, what were the major drivers behind consolidation/sharing?	<input type="checkbox"/> Efficient use of tax revenues <input type="checkbox"/> Efficient use of frequencies or equipment <input type="checkbox"/> Enhanced communications capabilities <input type="checkbox"/> Improved mutual aid <input type="checkbox"/> Interoperability <input type="checkbox"/> More efficient use of staff <input type="checkbox"/> Other: _____
Is there a regional system that provides communications to multiple entities over more than one jurisdictional area (region)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

Coverage	
Is there a dedicated forum or committee that oversees the region's communications interoperability issues? If "Yes", please provide the name of the organization.	<input type="checkbox"/> Yes _____ <input type="checkbox"/> No <input type="checkbox"/> Don't know
System Coverage Reliability Benchmarks: Service Area (list type of benchmark area i.e. a name of a city, county, area, river or highway corridor) and check if its rural or urban	
Estimate Coverage provided for each area for mobile and portable radio. A - acceptable B - marginal C - unacceptable.	
_____ <input type="checkbox"/> Urban <input type="checkbox"/> Rural	Portable - <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C Mobile - <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C
_____ <input type="checkbox"/> Urban <input type="checkbox"/> Rural	Portable - <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C Mobile - <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C
_____ <input type="checkbox"/> Urban <input type="checkbox"/> Rural	Portable - <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C Mobile - <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C
_____ <input type="checkbox"/> Urban <input type="checkbox"/> Rural	Portable - <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C Mobile - <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C
_____ <input type="checkbox"/> Urban <input type="checkbox"/> Rural	Portable - <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C Mobile - <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C
_____ <input type="checkbox"/> Urban <input type="checkbox"/> Rural	Portable - <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C Mobile - <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C

11. Please provide the following general information regarding your current operations. Respond to all that apply.

Basic Information	
Are you familiar with and use TIA/EIA-102 (Project 25) compliant systems?	Familiarity? <input type="checkbox"/> Yes <input type="checkbox"/> No Use? <input type="checkbox"/> Yes <input type="checkbox"/> No
Are you planning to implement this standard in your next acquisition?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know

III. Communications Security

12. Please indicate whether your user agency currently uses or needs communications security measures for the following infrastructure components. Provide a brief description of methods or technologies used.

Components	Use	Need	Description of Technology Used
Infrastructure and Radios			
Over-the-Air-Rekeying (OTAR)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Proprietary <input type="checkbox"/> P25
Data Encryption Standard (DES)	<input type="checkbox"/>	<input type="checkbox"/>	
Triple Data Encryption Standard (3DES)	<input type="checkbox"/>	<input type="checkbox"/>	
Advanced Encryption Standard (AES)	<input type="checkbox"/>	<input type="checkbox"/>	
RC4	<input type="checkbox"/>	<input type="checkbox"/>	
Other	<input type="checkbox"/>	<input type="checkbox"/>	



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

Network Dispatch Equipment			
Configuration Management (i.e. password protection)	<input type="checkbox"/>	<input type="checkbox"/>	
Password Protection	<input type="checkbox"/>	<input type="checkbox"/>	
Remote Network Access (i.e. remote diagnostic telephone line to console system)	<input type="checkbox"/>	<input type="checkbox"/>	
Auditing of Security Activities on Network Hosts	<input type="checkbox"/>	<input type="checkbox"/>	

IV. Additional Information

13. Do you have a person to research and develop applications for grant funds? Yes No

14. What homeland security funds or other grant funds have you received for communications and what were they utilized for?

15. Do you have any additional comments concerning your agency's communications systems or issues related to your agency's ability to optimize communications?

16. What do you consider the most important action(s) that could improve interoperability among public safety communications users for the future?



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

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17. Is the current quantity of internally owned/leased communications equipment adequate for carrying out your system's operation? Yes No. If "No", please estimate *the number* of additional equipment components needed in 1-5 years and 5-10 years to meet your communications requirements.

Equipment Type	Not Applicable	1-5 years	5-10 years	As Needed	No Plan
Towers/Sites	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Base Stations/Repeaters (Voice)	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Base Stations/Repeaters (Data)	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Control Stations	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Consoles	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Remote Receivers	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Comparators/Receiver Voters	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Standalone Repeaters	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Trunking Controllers	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Microwave Links	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Mobile Radios	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Portable Radios	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Mobile Data/Computer Terminals	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Pagers	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Cellular Telephones	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Other: _____ _____					

18. Do you plan on replacing your existing system in total in the future? If so about when and with what?



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

VI. Communications Site

Please copy the following sheets as needed to complete a sheet for each communications site in your system.

20. Please provide an inventory of your system (add additional pages as required): Please note that site location information will not be publicly disclosed except in conformance with ORS 192.501(22) as amended by HB 2425

Site	
Site Name: _____	
FCC Latitude (NAD83): _____	FCC Longitude (NAD83): _____
Actual Latitude (NAD83): _____	Actual Longitude (NAD83): _____
Elevation (ft): _____	
Do you own the land? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If "No" please fill in the following:	
Owner: _____	Phone #: _____
What is your lease agreement? _____	

Years remaining on your current lease agreement? _____	
Tower	
Registration # (if applicable): _____	Height (ft): _____
Make: _____	Model: _____
Serial Number: _____	
Condition: _____	

Do you own the tower? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If "No" please fill in the following:	
Owner: _____	Phone #: _____
What is your lease agreement? _____	

Years remaining on your current lease agreement? _____	
Building	
Size: _____ X _____	<input type="checkbox"/> Cooling Capacity (BTU/hr) _____
Ceiling Height (ft): _____	<input type="checkbox"/> Heating Capacity (BTU/hr): _____
1 ton refrigeration = 12,000 Btu/hr = 3,516 W	
Seismic Zone IV compliant ? <input type="checkbox"/> Yes <input type="checkbox"/> No	UL Level IV Bullet Resistant? <input type="checkbox"/> Yes <input type="checkbox"/> No
Automatic Fire suppression system? <input type="checkbox"/> Yes <input type="checkbox"/> No	Grounding system meets industry standards: <input type="checkbox"/> Yes <input type="checkbox"/> No



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

Available Space: _____

Condition: _____

Do you own this building? Yes No

If "No" please fill in the following:

Owner: _____ Phone #: _____

What is your lease agreement? _____

Years remaining on your current lease agreement? _____

Access Road

Who owns the access road to the site?

Owner: _____ Phone #: _____

Does the road have any gates? Yes No

Who can be contacted to get site access?

Name: _____ Phone #: _____

What is the general condition of the road? _____

Winter access: (check all that apply): 4WD Snow Cat Helicopter Other _____

Other access road notes: _____

Backhaul

Sites with link to this site and link capacity:

Site	Transport Media	Capacity



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

Telephone Service	
Type (T1, POTS, etc): _____	Provider: _____
Power:	
What is the primary power source for this communications site?	
<input type="checkbox"/> AC Service <input type="checkbox"/> Generator <input type="checkbox"/> Solar <input type="checkbox"/> Other: _____	
AC Service	
Power Company: _____	Aerial/Underground: _____
Service Rating (A): _____	<input type="checkbox"/> 120 <input type="checkbox"/> 240V
Who owns the service to site (if not the power company)?	
Owner: _____	Phone #: _____
Generator	
Prime Power <input type="checkbox"/> OR Backup <input type="checkbox"/>	
Make: _____	Model: _____
Size (kW): _____	Age: _____
Condition: _____	
Fuel Type: _____	Fuel Storage Capacity: _____
Prime Power <input type="checkbox"/> OR Backup <input type="checkbox"/>	
Make: _____	Model: _____
Size (kW): _____	Age: _____
Condition: _____	
Fuel Type: _____	Fuel Storage Capacity: _____
DC Power	
Voltages: 12VDC <input type="checkbox"/> 24VDC <input type="checkbox"/> 48VDC <input type="checkbox"/>	Battery Capacity (Ahr): _____
Charger Make: _____	Charger Model: _____
Charger Capacity (A): _____	Is battery system OSHA compliant: Yes <input type="checkbox"/> No <input type="checkbox"/>
Site Security	
Is the site fenced in? Yes <input type="checkbox"/> No <input type="checkbox"/>	Is there video surveillance of the site? Yes <input type="checkbox"/> No <input type="checkbox"/>
Is the building secured? Yes <input type="checkbox"/> No <input type="checkbox"/>	Is there a monitored alarm system at the site? Yes <input type="checkbox"/> No <input type="checkbox"/>
Is site access logged? Yes <input type="checkbox"/> No <input type="checkbox"/>	Estimated Police/Fire response time: _____
Notes/Comments	



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

21. Is this site shared with any other agencies or entities? Yes No If "Yes" please list them below:

Agencies		



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

Equipment Information

22. Please provide an inventory of your antenna equipment at each site (add additional pages as required). In each column when an antenna is listed please fill in the system number as assigned in Question 19 above.

Site Name:				
Antennas				
RX Multicoupler Make and Model				
RX Antenna Make and Model				
RX Antenna Centerline (Height)				
RX Antenna Gain (dBd)				
RX Antenna Downtilt Mechanical/Electrical				
RX Antenna Heading (Degrees, True or Omni)				
System Number RX Antenna Supports	System: _____	System: _____	System: _____	System: _____
TX Combiner Make and Model				
TX Antenna Make and Model				
TX Antenna Centerline (Height)				
TX Antenna Gain (dBd)				
TX Antenna Downtilt Mechanical/Electrical				
TX Antenna Heading (Degrees, True or Omni)				
System Number TX Antenna Supports	System: _____	System: _____	System: _____	System: _____
Lightning Suppression Manufacturer				



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

23. Please provide an inventory of your radio equipment at each site (add additional pages as required).
In each column when equipment is listed please fill in the system number as assigned in Question 19 above.

Site Name:				
Radios				
System Number Radio Supports	System: _____	System: _____	System: _____	System: _____
Radio Manufacturer				
Radio Model				
TX Frequency				
TX CTCSS Tone				
RX Frequency				
RX CTCSS Tone				
TX Output Power				
Transmitter Intermod Panels Manufacturer and Model				
Narrowband Capable? (Y/N)				
System Number Radio Supports	System: _____	System: _____	System: _____	System: _____
Radio Manufacturer				
Radio Model				
TX Frequency				
TX CTCSS Tone				
RX Frequency				
RX CTCSS Tone				
TX Output Power				
Transmitter Intermod Panels Manufacturer and Model				
Narrowband Capable? (Y/N)				



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory System and Site Survey

24. Please provide an inventory of your microwave equipment for this site (add additional pages as required).

Site Name:				
Microwave Equipment				
Microwave Ant Center Line (Height)				
Microwave Ant Dish Size				
Microwave Ant Make and Model				
MW Ant Azimuth				
MW TX/RX Frequencies				
MW Radio Manufacture				
MW Radio Model				
Loop Protection (Yes/No)				
Diversity (Yes/No)				
Hot Standby (Yes/No)				
AC or DC Powered And Voltage				
MW link to / from (Site Name)				
Other Comments:				



**State of Oregon State Interoperability Executive Council
Public Safety Radio Communications Inventory
System and Site Survey**

Please return this survey by August 31, 2004 to:

Marcus Kohler
W&H Pacific
9755 SW Barnes Road, Ste. 300
Portland, OR 97225



State of Oregon State Interoperability Executive Council Public Safety Radio Communications Inventory User Agency Survey

I. Introduction

The improvement of public safety communications systems, including but not limited to interoperability, is a statewide goal. In September of 2002, Governor John Kitzhaber signed Executive Order 02-17 forming the State Interoperability Executive Council (SIEC), which stated the SIEC's purpose as being to "...provide policy level direction for matters related to planning, designing and implementing guidelines, best practices, and standard approaches to address Oregon's public safety communications interoperability issues."

The SIEC is now undertaking a comprehensive survey of all public safety radio users, as well as an inventory of all public safety radio systems in the state. This survey and inventory will provide important data on interoperability and inform the SIEC's strategic planning for the future. Your participation as a radio communications user in this survey is essential to our efforts.

The enclosed survey has been sent to the end users of radio systems. If you are also the owner/manager of your radio system, you will also receive the radio system managers' survey. In that event, we must ask that you complete both survey instruments. We realize that we are asking for a set of information that will be a task to collect, but the resulting data-base will be useful to all of us as we plan for the future of public safety communications in our state.

The Governor, and the members of the SIEC (listed below) appreciate your participation in this effort. Thank you.

- Oregon State Police
- Office of Emergency Management
- Department of Forestry
- Department of Corrections
- Department of Transportation
- Department of Administrative Services
- Department of Human Services (EMS)
- League of Oregon Cities
- PSAP Managers
- Oregon Association of Public Safety Communications Officials/National Emergency Number Association
- Oregon Military Department
- Oregon Fire Chiefs Association
- Oregon Association of Chiefs of Police
- Oregon State Sheriff's Association
- Association of Counties

If you have received this survey in error, we ask that you forward it to the person most qualified in your organization to answer the questions. **Survey responses should be returned no later than August 31, 2004 to:**

**Marcus Kohler
W&H Pacific
9755 SW Barnes Road, Ste. 300
Portland, OR 97225**

Any questions concerning the completion of the survey should be directed to:

Art Walker (503) 540-7662

Jim DeRosier (503) 588-3912

Marcus Kohler (503) 372-3650

Thank You for your participation,

Chief Jeffrey D. Johnson, Chair SIEC



State of Oregon State Interoperability Executive Council Public Safety Radio Inventory User Agency Survey

II. Agency Information

1. Please provide the following information.

Name of Person Answering the Survey	Position	Agency Name and Mailing Address
Phone/Fax Number	E-Mail/Web Address	
(Phone)		
(Fax)		
Primary Agency Contact (if different from above)	Position	Agency Name and Mailing Address
Phone/Fax Number	E-Mail/Web Address	
(Phone)		
(Fax)		

2. Does your agency own your communications system? Yes No If "Yes" please make sure the "System and Site Survey" is filled out for your system (this can be obtained by visiting). If "No" please fill out the following information:

What agency provides your land mobile radio communications services? (Do not list commercial maintenance provider)	Name of Agency: _____
How long has this arrangement existed?	_____ Years
Are there memoranda of understanding or contracts in place to maintain this arrangement?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are subscriber fees paid to the owner of the system?	<input type="checkbox"/> Yes <input type="checkbox"/> No

3. If you are the owner, please list all other governmental agencies that use your system.

Agency Name	Written agreement	
	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

4. Which PSAP is you agency dispatched by? _____



State of Oregon State Interoperability Executive Council Public Safety Radio Inventory User Agency Survey

5. What category best describes the mission of your agency and the level of government it represents?

Category	Tribal	Local	State	Federal	Commercial	N/A
9-1-1 / Dispatch / Communications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Medical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ambulance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Law Enforcement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Search and Rescue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hazardous Materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transportation or Transit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dept. of Public Works	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information Technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utility:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: (please describe) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. How many subscriber units does your agency use? Please enter the number of Analog, Digital, and P25 Capable units along with the number of cellular, pagers, and MDTs.

Portable			Mobile			Cellular	Pagers	MDTs
Analog	Digital	P25	Analog	Digital	P25			

7. Do you maintain a cache of spares? Yes No If "Yes" enter the number of Analog, Digital and P25 Capable units along with the number of cellular, pagers, and MDTs.

Portable			Mobile			Cellular	Pagers	MDTs
Analog	Digital	P25	Analog	Digital	P25			



State of Oregon State Interoperability Executive Council Public Safety Radio Inventory User Agency Survey

III. Commercial Services, Frequency Expansion and Mobile Data

1. Identify the services your agency currently uses or plans to use within the next 5 years, what role they play, and how the service is used. Check all that apply.

Service Type	Use				Role	Reason
	Do Not Use	Current	Planned	Not Planned		
Cellular Mobile Telephone Service (PCS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____
Cellular Digital Packet Data (CDPD) or similar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____
Specialized Mobile Radio (SMR) (e.g., NEXTEL)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____
Site Circuit Connectivity (e.g, leased Telco T1 lines or microwave circuits)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____
Expansion into the 700MHz band	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____
Reverse 911, 911 Alert, PSAP Alert, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____
Satellite	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____
Unlicensed Wireless (Wi-Fi, Wi-Max, etc.) for data, voice or video	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____
Broadband data or video over licensed frequencies (e.g. 4.9 GHz)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____
Other (specify): _____ _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____
Mobile Data Terminals using own wireless network	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____
Mobile Data Terminals using CDPD or another commercial service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____
Voice over IP (VOIP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 _____	<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f _____

Legend: 1=Logistical or Administrative Non-Tactical Traffic
 2=Contact Off-Duty Personnel
 3=Interoperate With Other Agencies
 4=Reach Users While Outside of LMR Coverage Area
 5=Support Mobile Data Applications
 6=Other (Specify)

a=More Cost Effective
 b=Less Channel Congestion
 c=Increased Reliability
 d=Better Coverage
 e=Higher Security
 f=Other (Specify)



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8. Indicate your agency's use of wireless data applications and whether those applications are agency owned or commercially owned. Check all that apply.

Data Communications	Agency Owned	Commercial Services	Combination	N/A
E-mail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wireless Messaging (MDT-to-MDT)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Paging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access Databases: NCIC, NLETS, state criminal records, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mapping (directions to call)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automatic Vehicle Location (AVL)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wireless Dispatch via MDT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Report filing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CJIS – Encryption / Authentication Compliance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: (describe) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: (describe) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IV. Funding

9. Please detail the funding resources and arrangements that apply to your agency. Check all that apply in the table below.

Funding Source	Check All That Apply	Source
Local tax revenue (e.g., general fund)	<input type="checkbox"/>	<input type="checkbox"/> By yearly budget submission request <input type="checkbox"/> Receive automatically
Federal funds (e.g., community development block grants, and seizure funds)	<input type="checkbox"/>	<input type="checkbox"/> By yearly budget submission request <input type="checkbox"/> Receive automatically
Grants (e.g., TOPS, COPS)	<input type="checkbox"/>	<input type="checkbox"/> By yearly grant application submission <input type="checkbox"/> Other: _____
Subscriber fees (if system is leased to other agencies)	<input type="checkbox"/>	<input type="checkbox"/> One-time program fee <input type="checkbox"/> Annual subscription fee <input type="checkbox"/> Other: _____
Bond Measure(s)	<input type="checkbox"/>	<input type="checkbox"/> By yearly budget submission request <input type="checkbox"/> Receive automatically
Capital Funds or Capital Reserves	<input type="checkbox"/>	<input type="checkbox"/> By yearly budget submission request <input type="checkbox"/> Receive automatically
Other: _____	<input type="checkbox"/>	<input type="checkbox"/> By yearly budget submission request <input type="checkbox"/> Receive automatically

10. Do you have a dedicated person to research and develop applications for grant funds? Yes No



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V. Interoperability

11. Please indicate all the specific agencies (local, state, and federal) you currently interoperate with and the methods used to communicate. If no methods exist enter the agency and leave the boxes unchecked.

Agency / Organization	Same Radio System		Communications Method to Achieve Interoperability									
	This Agency's System	Other Agency's System	Reprogram Radio	Mutual Aid Frequency	Exchange Equipment	Console Patching	Audio Matrix Switch	Dispatch Relay	Cellular phones	Crossband Repeater	Paging	E-mail, Text Messenger, IP
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



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12. Please indicate any specific agencies that you may desire to interoperate in the future and the preferred methods used to communicate.

Agency / Organization	Same Radio System	Communications Method to Achieve Interoperability									
		Reprogram Radio	Mutual Aid Frequency	Exchange Equipment	Console Patching	Audio Matrix Switch	Satellite	Cellular phones	Crossband Repeater	Paging	E-mail, Text Messenger, IP
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VI. Additional Information

13. What homeland security funds or other grant funds have you received for communications and what were they utilized for?



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14. Do you have any additional comments concerning your agency's communications systems or issues related to your agency's ability to optimize communications?

15. What do you consider the most important action(s) that could improve interoperability among public safety communications users for the future?

Attachment 3:
List of Respondents

Four lists of respondents follow, one for PSAPs, one for systems, one for agencies responding to the short online survey, and one for agencies responding to the comprehensive inventory survey.

PSAPs

Astoria Police Department
Baker County Consolidated 9-1-1 Dispatch
Brookings Police Department
Bureau of Emergency Communications
Central Lane Communications
Columbia 9-1-1 Communications District
Coos Bay Police Department
Corvallis Regional Communications Center
Curry County Sheriff's Office
Deschutes County 9-1-1
Douglas County 9-1-1
Eastern Lane 9-1-1
Florence Police Department
Hermiston Police Department
Hood River County Dispatch Center
John Day Police Department
Klamath County 9-1-1 Communications
Lake Oswego Communications
Milton-Freewater Police Department
Newberg Police Department 9-1-1 Center
Northern Oregon Regional Communications
Prineville Police Department
Rogue Valley Consolidated Communications
South Lane County 9-1-1
Tillamook County Emergency Communications
Toledo Police Department
Tri-County Communications
Umatilla County Sheriff's Office
Union County Communications
Wasco County Communications
Washington County Consolidated Communications
Willamette Valley Communications Center
Yamhill Communications

Systems

Astoria Police Department
Baker County Consolidated 9-1-1 Dispatch
Cottage Grove
Curry County Sheriff's Office
Jackson County Fire District #3
Klamath County 9-1-1 Communications
La Grande Police Department
Milton-Freewater Police Department
Newberg Police Department 9-1-1 Center
Oakland Rural Fire District
Oregon Department of Transportation
Prineville Police Department
Rogue Valley Consolidated Communications
Siuslaw Valley Fire and Rescue
Toledo Police Department
Washington County Consolidated Communications
Willamette Valley Communications Center - 800
Willamette Valley Communications Center - MDT
Willamette Valley Communications Center - UHF
Willamette Valley Communications Center - VHF
Woodburn
Yamhill Communications

Agencies Responding to Short Online Survey

Amity Fire District
Amity Police Department
Astoria Police Department
Bandon Police
Boardman Police Department
Brookings Police Department
Bureau of Emergency Communications
Central Point Police Department
City of Drain
City of Newberg
City of Sherwood
City of St. Helens
City of Wood Village
Clackamas County Sheriff's Office
Crook County Sheriff's Office
Deschutes County Sheriff's Office

Douglas County Sheriff's Office
Eagle Point Police Department
Eugene Police Department
Gladstone Police
Grants Pass Department of Public Safety
Gresham Police Department
Hillsboro Police Department
Hines Police Dept.
Hood River County Sheriff's Office
Hubbard Police
Independence Police Department
Jefferson County Dispatch
John Day 911
Josephine County Sheriff's Office
Keizer Police Department
King City Police Department
Klamath County Sheriff's Office
Klamath Falls Police
La Grande Police Department
Lake Oswego Police
Lebanon Police Department
Lincoln County Emergency Services
Linn County Sheriff's Office
Malheur County Sheriff's Office
Marion County Public Works
McMinnville Police Department
Medford Police Department
Mid-Columbia Fire and Rescue
Milwaukie Police Department
Molalla Police Department
Monmouth Police
Mt. Angel Police Department
Myrtle Point Police Department
North Bend Police Department
North Marion County Comm Center
Pendleton Police Department
Portland Police Bureau
Reedsport Police
Rockaway Police
Roseburg Police Department
Scappoose Police Department
Seaside police Department
Springfield Police Department

Sutherlin Fire Department
Sweet Home Police Department
Talent Police Department
The Dalles Police Department
Tigard Police Department
Tillamook County
Tillamook Police Department
Toledo Police Department
Tualatin Police Department
Vernonia Police Department
Washington County Sheriff's Office
West Linn Police Dept
Woodburn Police Department
Yamhill Communications Agency (YCOM)
Yamhill County Sheriff's Office

Agencies Completing the Comprehensive Inventory

Bend
Fire & Rescue
City of Medford
Coos County Sheriff's Office
Corvallis Police Department
Estacada Rural Fire District #69
Hillsboro Police Dept
Jefferson County Sheriff's Office
Keizer Police Department
Lane County Fire District #1
Mt. Angel Fire District
Nehalem Vol. Fire Department
Oregon State Police
Santa Clara RFPD
Scappoose Rural Fire Protection District
Sherwood
Turner Rural Fire Protection District
Wasco County Sheriff's Dept.

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**Attachment 4:
Site Visit Strategy**

SITE VISIT STRATEGY

July 19, 2004

As per the contract we have identified 15 PSAP's for visits that fall within the I-84/US 30 (Columbia River and East), I-5 and US 97 corridors as these comprise the greatest population base and also encompass areas where critical communications needs and greater interoperability demands could be expected. Should additional funding be available we will schedule visits at PSAP's along the remainder of those corridors and along US Highways 20, 26 and 395.

Primary PSAP visits will be conducted within the following counties:

Baker County, Clatsop County, Deschutes County, Douglas County, Hood River County, Jackson County, Jefferson County, Josephine County, Klamath County, Lane County, Linn County, Malheur County, Marion County, Umatilla County, Wasco County

We have intentionally bypassed some PSAP's/Counties where it is believed that recent communications projects have been completed and/or PSAP's have accurate and comprehensive documentation detailing their systems and their capabilities. These entity's records should be readily available and it believed that they have personnel who possess the technical expertise to fully complete the documents being sent to them as part of the survey process.

Information to be taken at each site includes:

- Site Access Contact Name, Address, Telephone Number, Email, other
- Site location in 1983 NAD coordinates
- Elevation data
- Site/Tower ownership
- Site Security (gate, shared space, cameras, etc.)
- Tower height and type
- Tower registration number
- FCC licensing information (license number, radio frequency, etc.)
- Backhaul links
- Observed Effective Isotropic Radiated Power (EIRP)

- Characteristics of installed power systems (prime and backup)
- Shelter composition and environment (concrete; air conditioning; grounding)
- Apparent current level of interoperability
- Interoperability needs
- Age of equipment
- Level of traffic
- PSTN interface
- Paging capability
- Verification of Questionnaire Inventory

Our questions to PSAP Managers and Users will generally be along the following lines:

How do you handle interoperability in your area?

How does your equipment currently handle your interoperability needs?

How would you improve it?

What would be an ideal solution for interoperability in your area of responsibility?

How would this fit into a statewide and then nationwide interoperability plan?

How would you feel about a statewide plan for interoperability for the short term future?
Long Term?

What would your suggestions be for a short term statewide interoperability plan? Long term?

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**Attachment 5:
Site Inventory Data**

Radio site data was collected under this project for a total of 504 sites. Sources of site data include project team member site visits and data provided by radio system owners who completed their written survey forms. Using these methods, information was collected on 92 radio sites. Additionally, data was imported from an on-line FCC license database and from a site list provided by state agencies. Both of these sources of data provided basic site location and identity of the owners of radio systems using each site.

Site Inventory Survey Forms

56 sites in the database were documented by system owners, who typically provided relatively complete data. Also, those system owners who reported site details, tended to document all the sites associated with their systems. As a result, this source of data appears to be the most complete.

Sites Visited by Project Team Members

36 sites in the database were actually visited by project team members. Although the collected data was relatively complete and accurate, many of the owners of systems being surveyed did not have the resources to provide site escorts to all sites under their control. As a result, sites documented in this fashion tend to be a subset of key sites within each documented radio system.

Sites Imported From the State-Provided List

313 sites were imported into the database from a list including sites used and shared among three state agencies: Oregon State Police (OSP), Oregon State Forestry (OSF), Oregon Department of Transportation (ODOT), and the Oregon State Fire Marshall (SFM). This data provided basic site location details, and the identity of the agencies using each site. As a result, a complete list of state used sites has been established in the database. However, a limited amount of data could be correlated or translated into specific database fields. As a result, additional information should be entered, possibly over time, to complete the data entry for these sites before any significant analysis can be performed.

Sites Imported From the FCC License Database

99 unique sites were imported from an on-line FCC license database. Of all the sources of data available under this project, the FCC database was the least complete and was assumed to be the least accurate. As a result, the FCC data was filtered so as to minimize the potential for conflict with data provided by system owners or the project team through site inspections. Therefore, FCC data was only used for systems for which there was no other source of data. Starting with a total database of 5922 fixed radio license entries, the list was filtered to only include entries attributed to systems where other data sources were not available. The list was then filtered down to 692 that could be identified as being attributed to PSAPs. Of those, the project team was able to identify 578 unique transmitters at a total of 99 sites. Similar to the state-provide data discussed above, a limited number of fields could be correlated between the FCC and project databases, Therefore, additional information should be researched and entered into the database prior to performing analysis on the site database.

A summary of the data collected from each source of data follows. Data indicated as being “Included” indicates that the referenced source of data may have provided the specific details if they were available from the source.

Summary of Collected Data, Based on Data Source

Question / Question Groups	Notes	Data Source	
		Owner-Provided and Visits	Imported Data (State & FCC)
Question Group 20:		92 Sites	412 Sites
1 Site Location Information	Site name, latitude, longitude, elevation, ownership	Included	Included
2 Tower Data	Tower height, tower registration number, ownership, etc	Included	Not Included
3 Building Data	Building size, inside height, HVAC, ownership, etc.	Included	Not Included
4 Access Road	Road ownership, condition	Included	Not Included
5 Backhaul	Identifies connectivity, media (m/w, fiber, etc.), capacity, and remote site	Included	Not Included
6 AC Power	Commercial or private, voltage, service rating, aerial or underground	Included	Not Included
7 Generator	Make, model, capacity, age, fuel, fuel capacity	Included	Not Included
8 DC Systems	Voltage, battery capacity, charge information	Included	Not Included
9 Site Security	Fencing, video surveillance, alarm monitoring	Included	Not Included
10 Site Notes	General comments	Included	Not Included
Question 21 (Site Sharing)	Listing of agencies sharing the site	Included	Not Included
Question Group 22	Receive and transmit antenna system data	Included	Not Included
Question Group 23	Radio system identification, equipment make, model, frequencies, narrowband capabilities	Included	Partially Included with FCC Data
Question Group 24	Microwave equipment manufacturer, model, frequencies, antenna size, model, and height	Included	Not Included

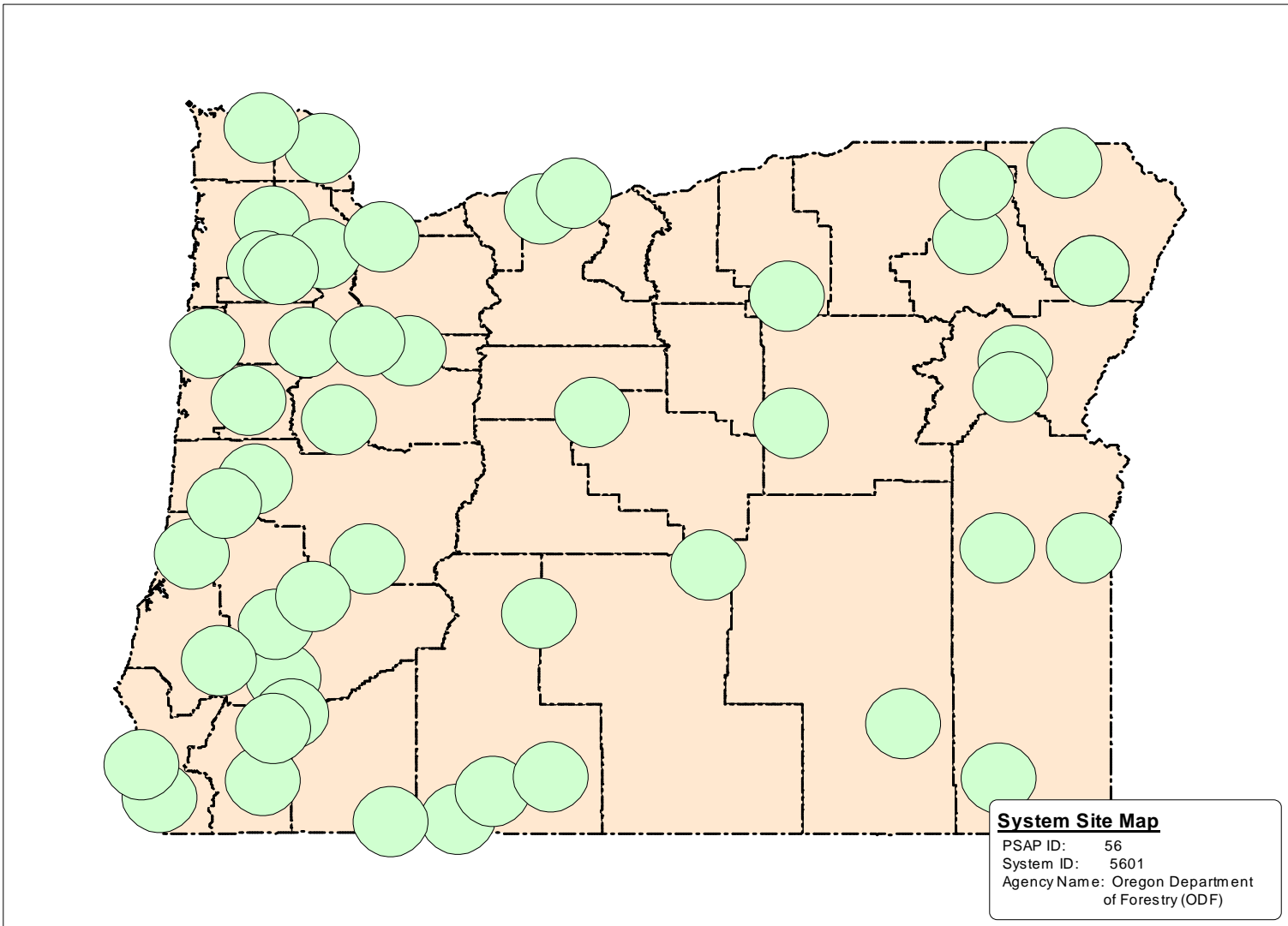
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**Attachment 6:
Graphical Examples of System
and Site Inventory Data**

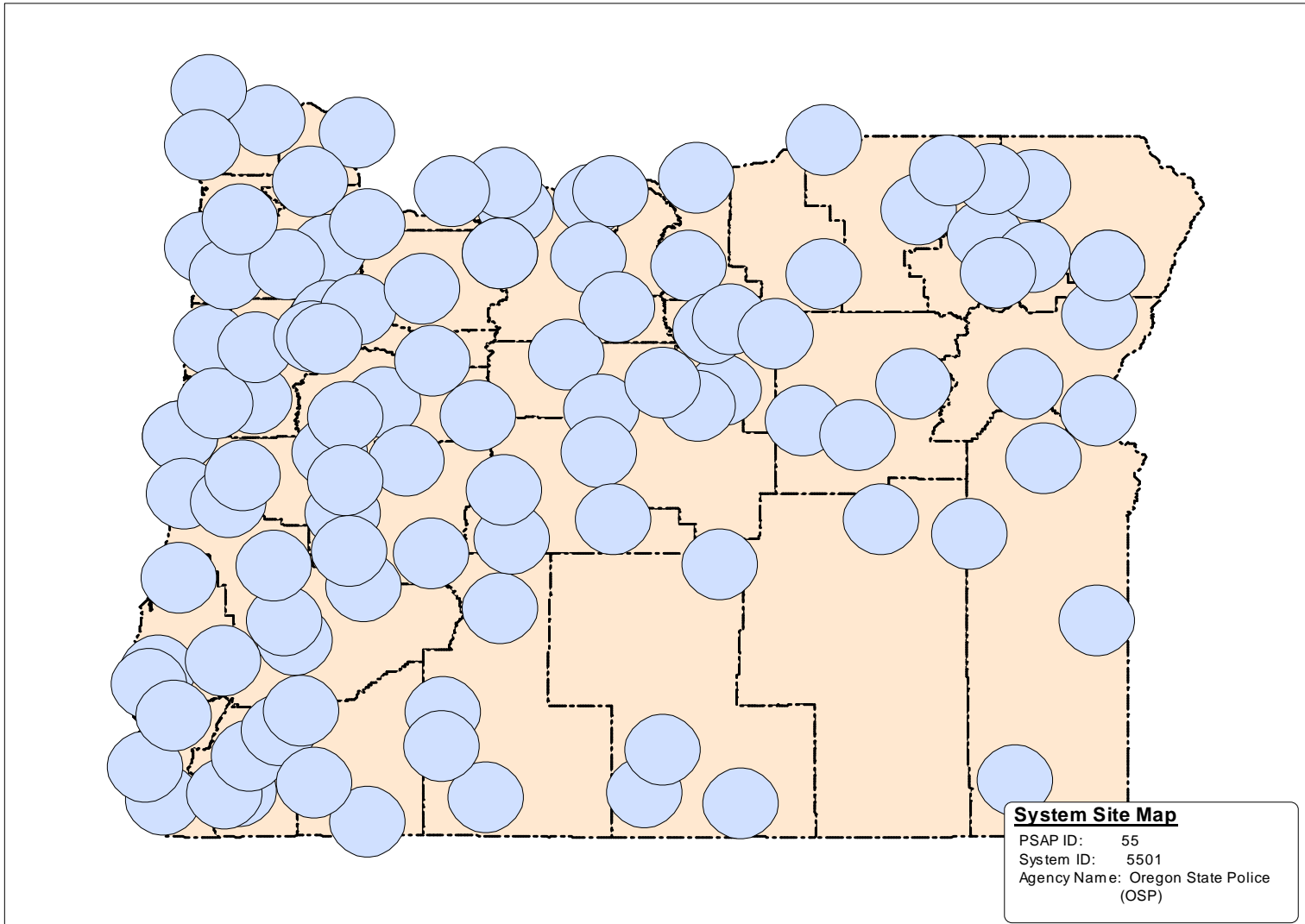
Overview of Graphical Examples of System and Site Inventory Data

Graphical examples of system and site inventory data have been included on the following pages. Each example has been produced directly using the data available in the project database. However, since this project does not include the implementation of a server-based GIS or web-based database server system, the examples shown were created using desktop versions of GIS and web authoring applications. If the state moves ahead with plans to implement a web and GIS-based database server, a reasonable amount of planning and technical effort will be required to design the web page interfaces, decide on the database queries to make available, and design the GIS output.

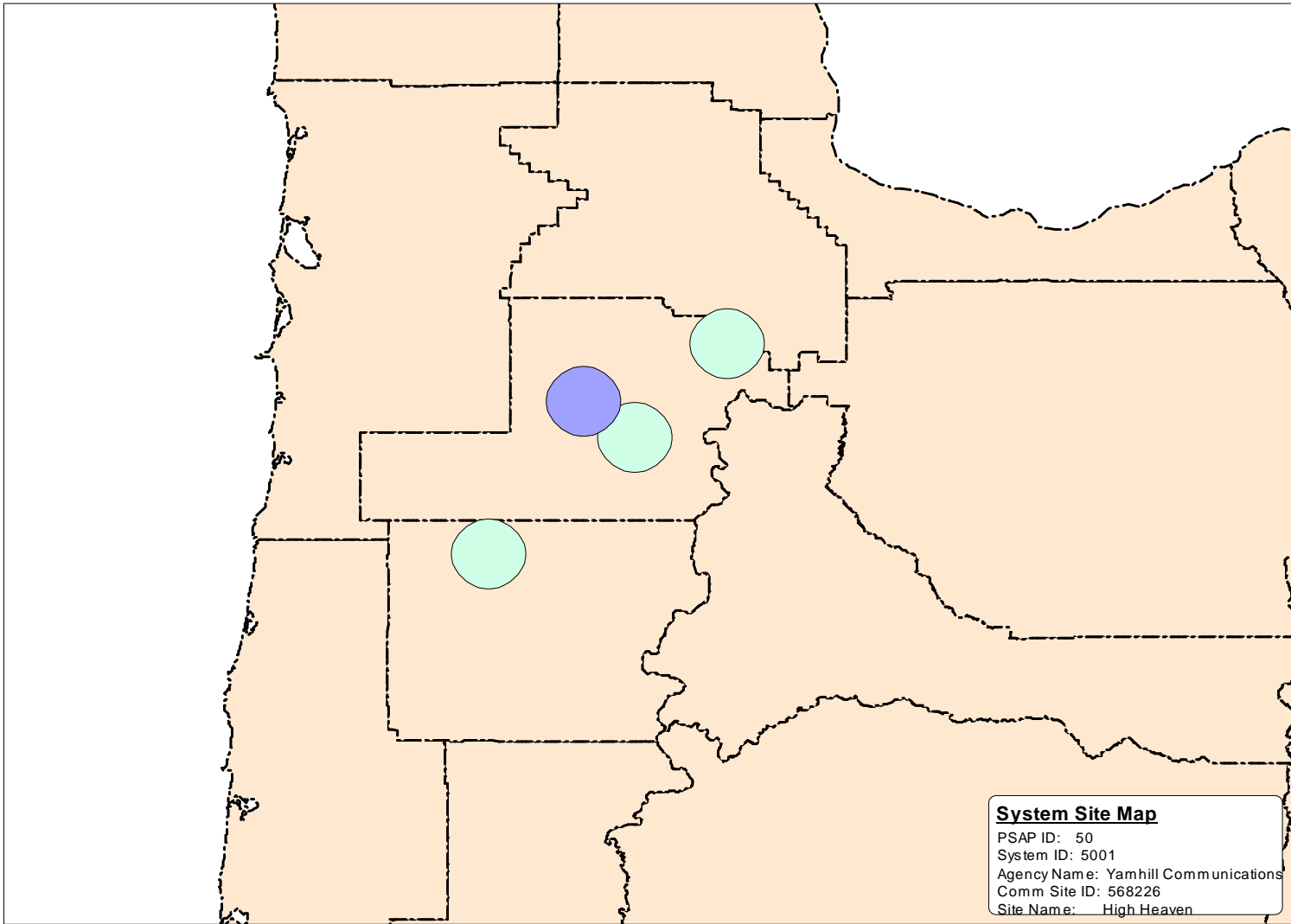
While the examples shown can be easily implemented using the data already entered into the project database, many more queries and displays could be implemented, depending on the needs of the potential users of the system. In fact, a valuable element of such a system would be to allow for input from the users, such as system owners, PSAP managers, and public safety representatives, especially after the system is made available for use (only after people have some degree of experience with the available data will they be able to decide what they want to be able to do with it).



1. An example of graphical query results showing the system site map for the Oregon Department of Forestry



2. An example of graphical query results showing the system site map for the Oregon State Police




3. An example of graphical query results showing the system site map for Yamhill Communications with an individual site (High Heaven) selected

DaDaBIK - http://www.dadabik.org/ - Microsoft Internet Explorer

Address http://vm-siec-w2k3/form.php?table_name=commsites&function=details&where_field=CommSiteID&where_value=568226

SIEC Database 1.0.0 - State of Oregon, State Interoperability Executive Council



Details of the record

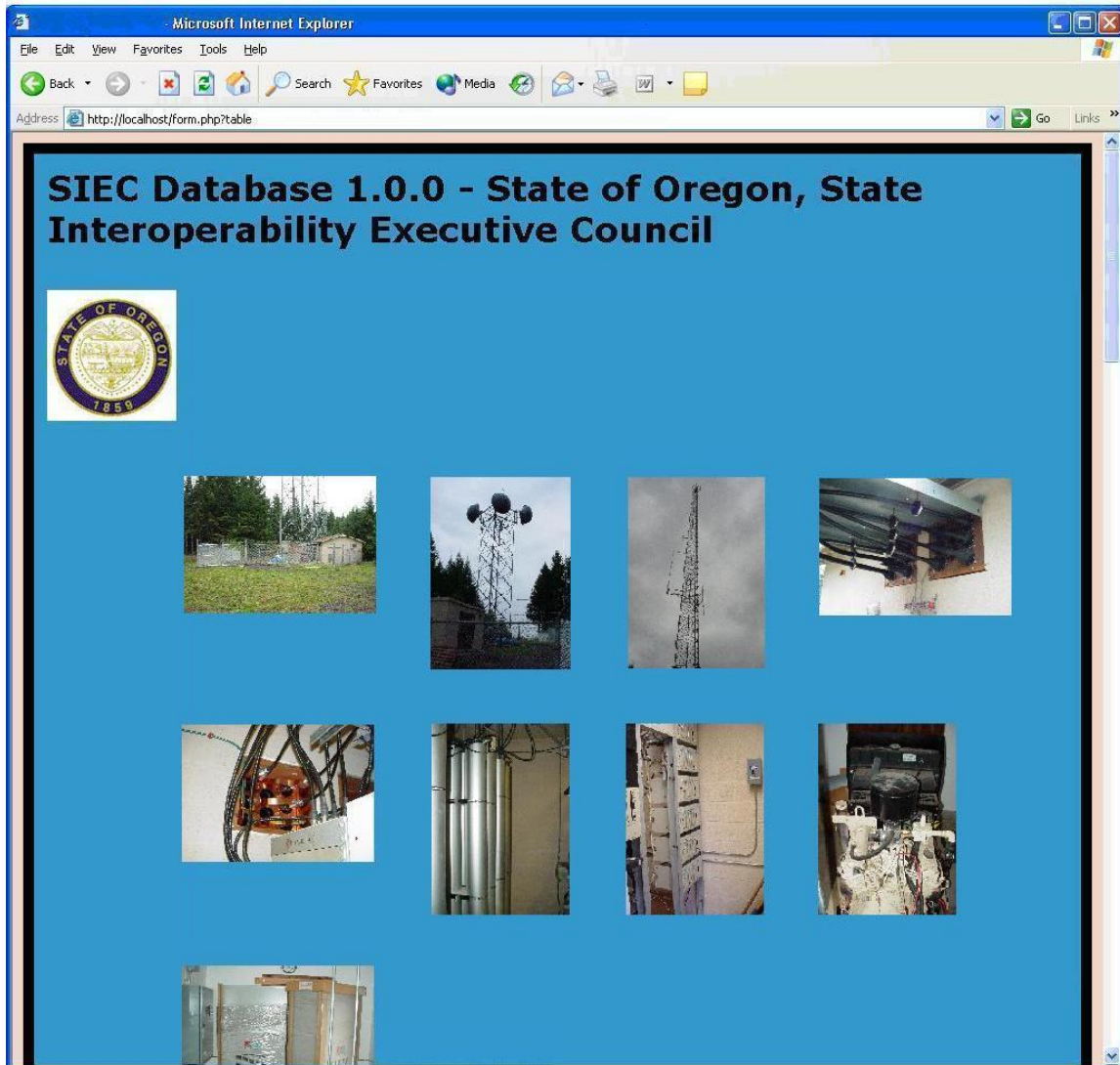
CommSiteID 568226
 SystemID 5001
 SystemID 2 (optional) 0
 SystemID 3 (optional) 0
 SystemID 4 (optional) 0
 SystemID 5 (optional) 0
 SystemID 6 (optional) 0
 SystemID 7 (optional) 0
 SystemID 8 (optional) 0
 SystemID 9 (optional) 0
 SystemID 10 (optional) 0

(1.1) Site Name High Heaven
 (1.2) FCC Latitude 45.2667
 (1.3) FCC Longitude 123.308
 (1.4) Actual Latitude 45.2667
 (1.5) Actual Longitude 123.308
 (1.6) Elevation(ft) 1748
 (1.7) Own Land no

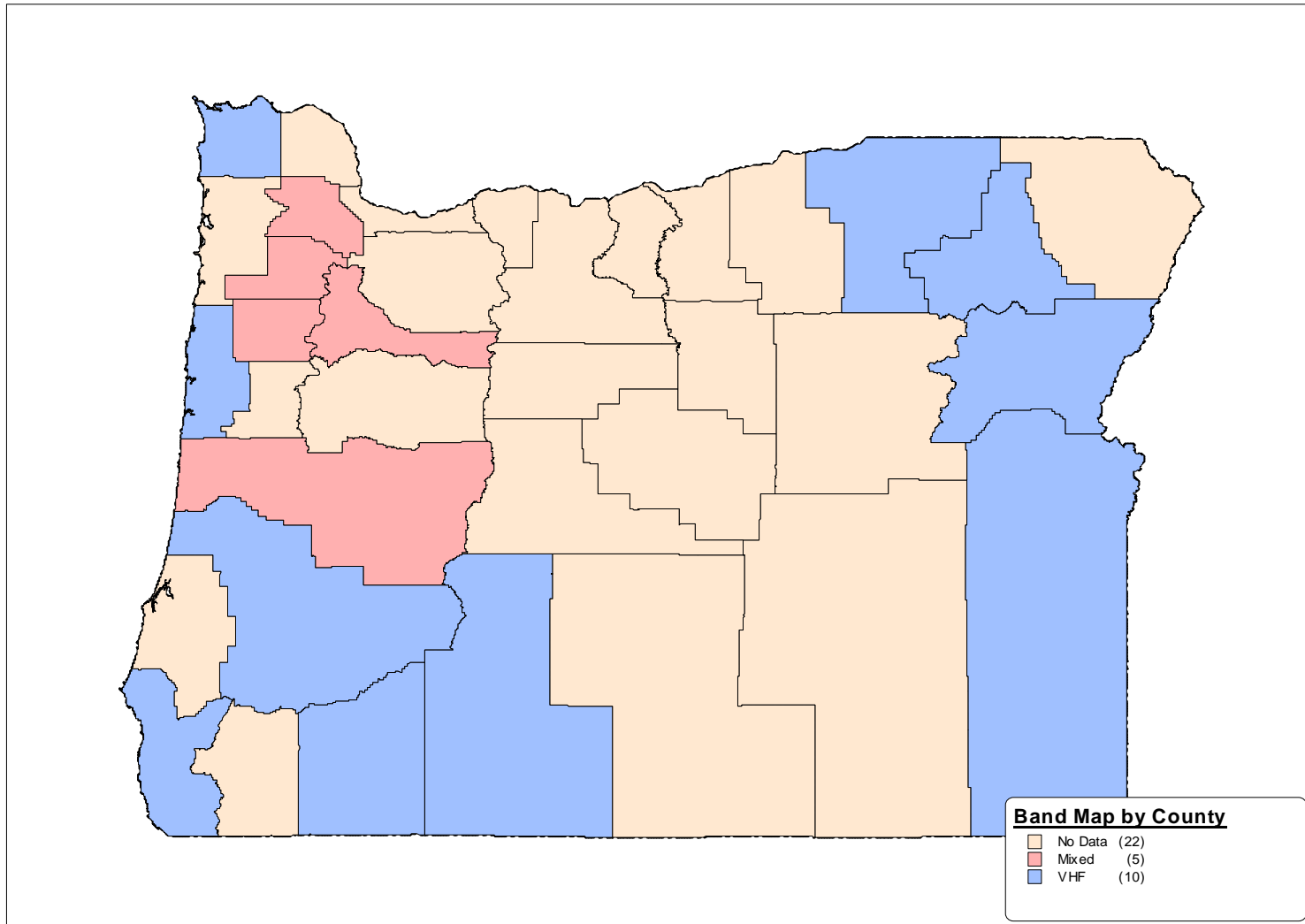
(1.7a) Land owner (if no above) Bureau of Land Management
 (1.7b) Land Lease Agreement (if applicable) 50
 (1.7c) Land Years Remaining on Lease 38
 (1.7d) Land Contact Info 5038086002

(2.1) Tower_Reg Number 0
 (2.2) Tower Height 140
 (2.3) Tower Make Pi-Rod
 (2.4) Tower Model 8 x 140

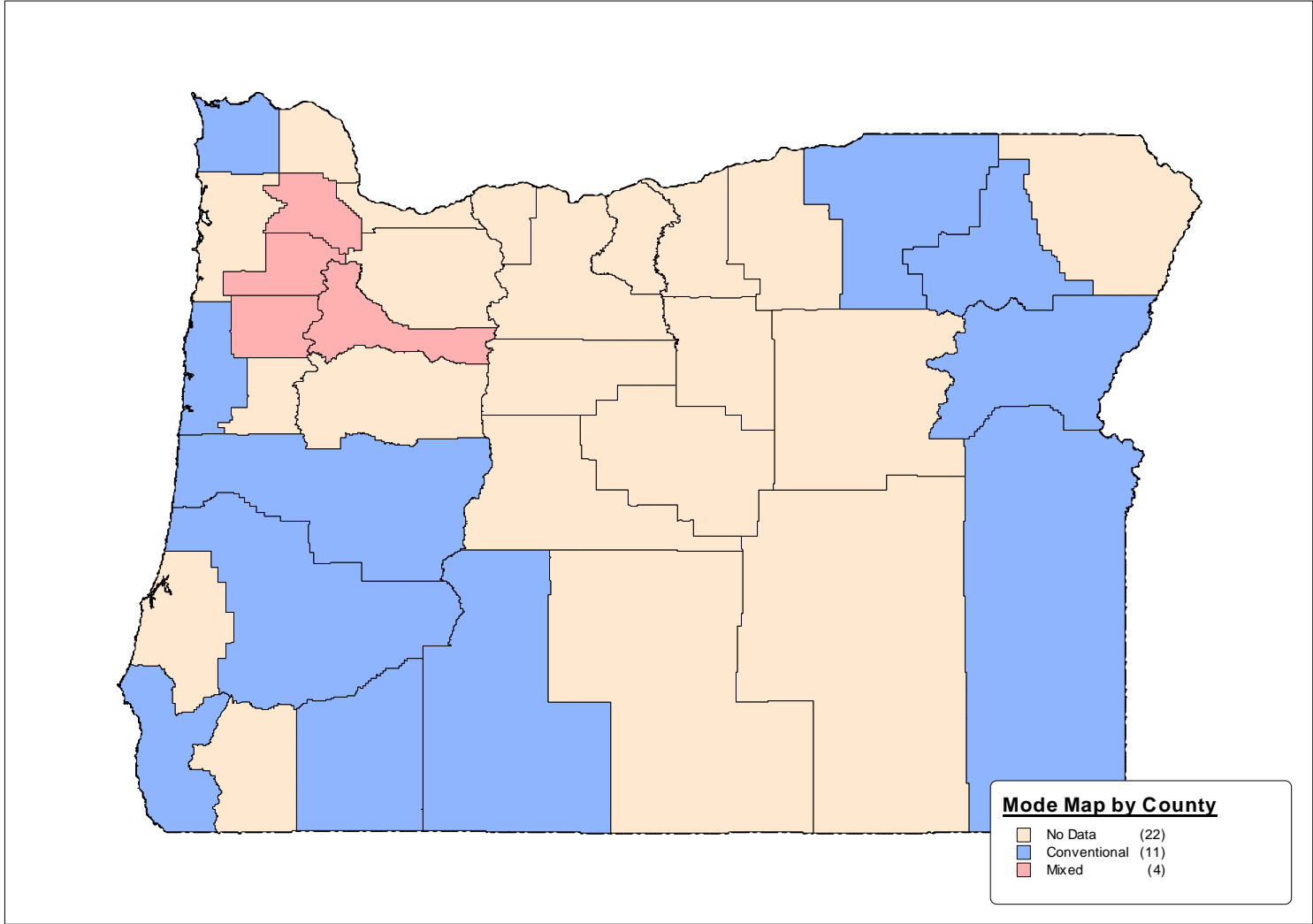
4. An example of a query based on an individual site, High Heaven



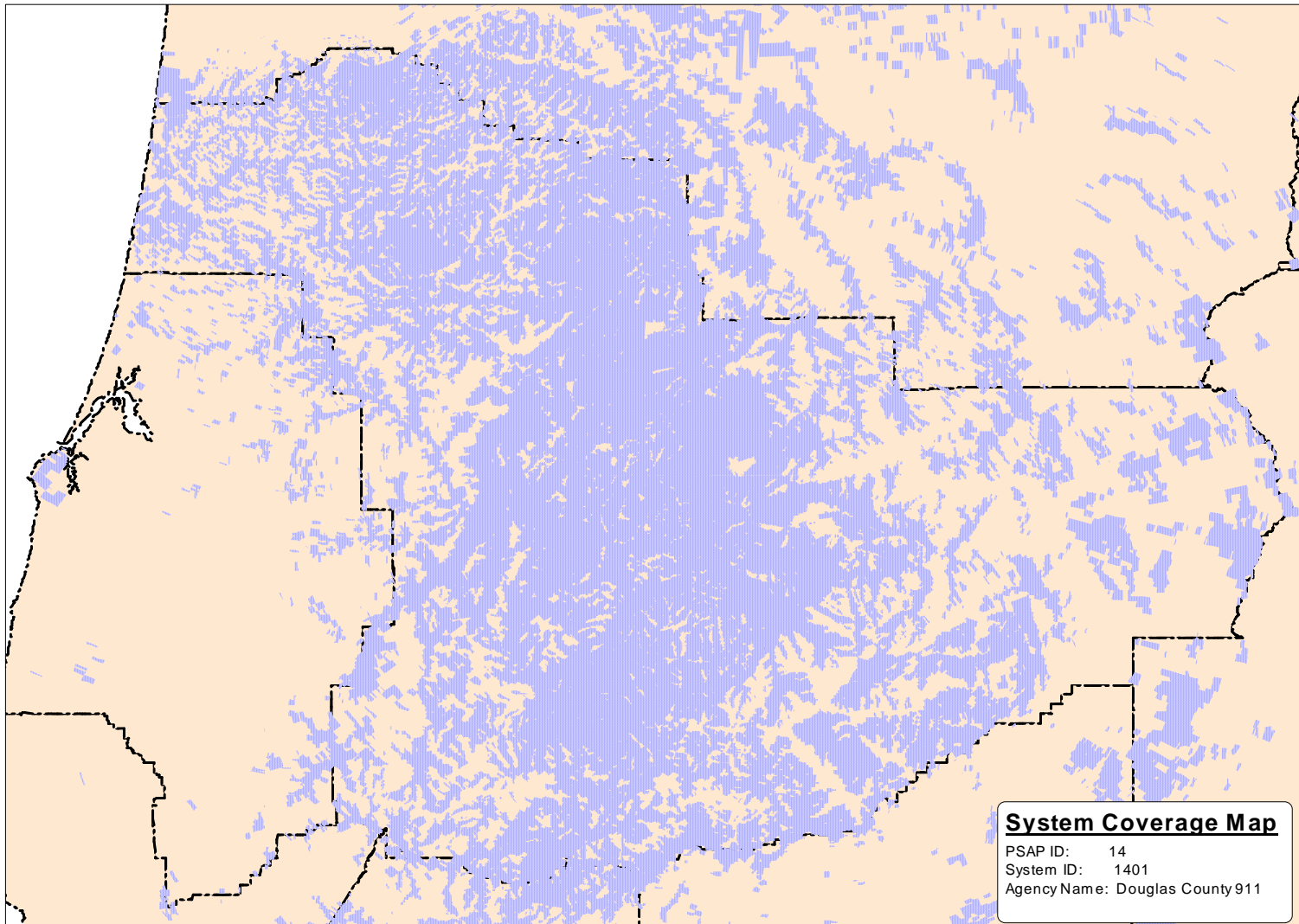
5. An example of query results showing site pictures for a particular site, High Heaven



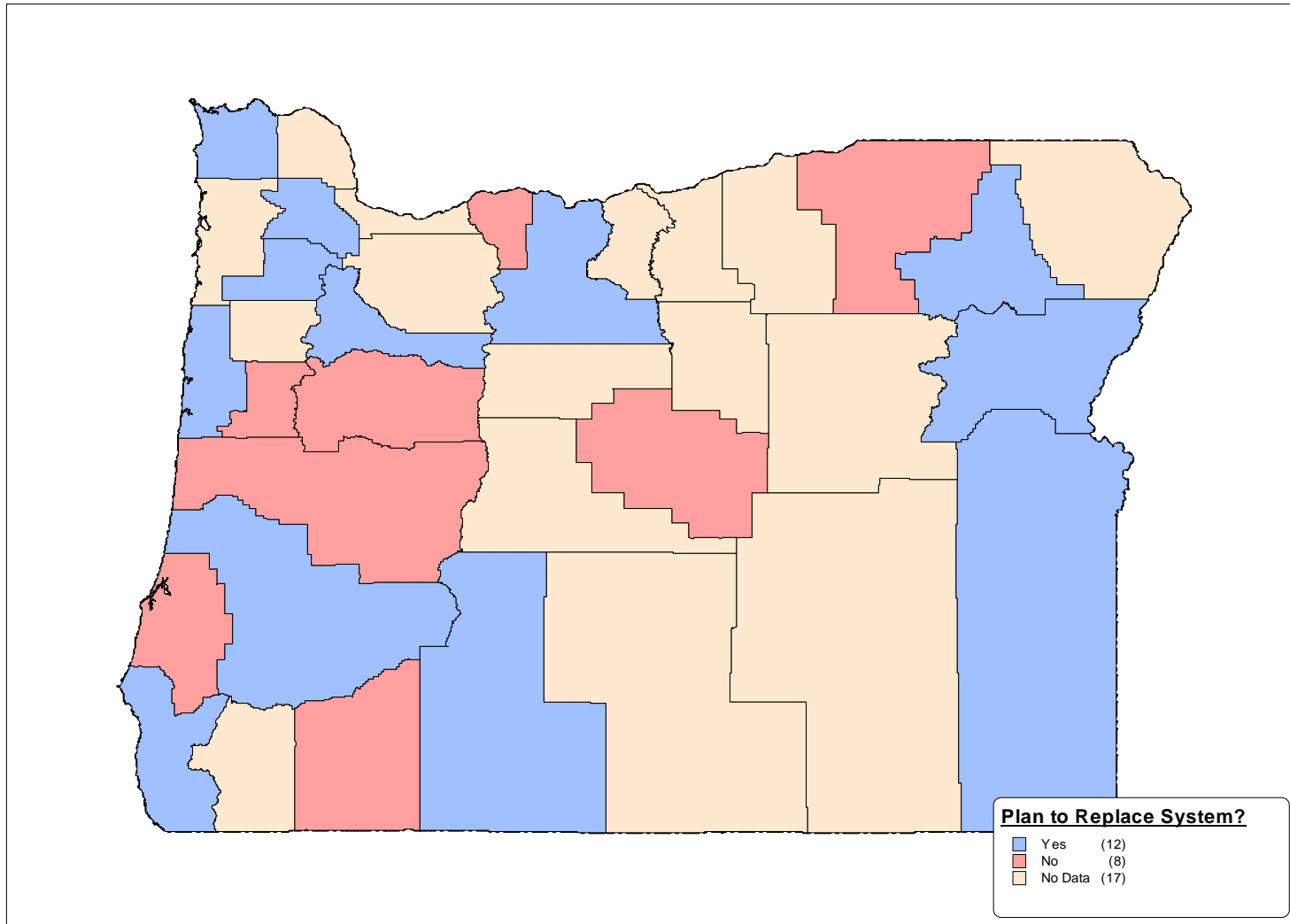
6. An example of graphical query results showing the primary dispatch frequency band, by county



7. An example of graphical query results showing the primary dispatch system mode, by county



8. An example of graphical query results showing the radio frequency coverage of a single system (Douglas County)



**9. An example of graphical query results showing the response to system and site survey question no. 18:
*Do you plan on replacing your existing system in total in the future?***

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Attachment 7:
SIEC Statewide Interoperability Guide



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.



Oregon State Interoperability Executive Council

Guide for Short Term Interoperability

Adopted by the SIEC Technical Committee
November 17, 2004

The Oregon State Interoperability Executive Council (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. To most, the issue of "interoperability" is a confusing maze of trade journal articles, technical mumbo jumbo, and vendor hype. The SIEC has assembled this guide to assist the non-technical, everyday public safety personnel in achieving simple, short-term interoperability solutions to enhance day-to-day operations and that afford preparation for major multi-jurisdictional events. These short-term efforts are leading to longer term and much more comprehensive solutions to wireless interoperability for public safety agencies throughout the entire State of Oregon.

Radio Programming: The simplest means to gaining a measure of interoperability is programming existing, operational channels from agencies that are adjacent to each other geographically and that operate in the same frequency band, into your radio. Each county, state agency, municipal and special district radio manager should agree to allow other responders, on the same frequency band, to use their radio system on designated interoperable channels when necessary. Formal model agreements can be obtained through the SIEC. As an aside, it is highly recommended that adjacent agencies think about radio templates that follow some predictable rationale and that use common nomenclature for channel identification.

The second simplest means to another level of interoperability is found in the FCC's newly established nationwide interoperability channels. Every portable and mobile radio in Oregon should include all of these interoperable channels that are within the same band of operation as the basic radio. Interoperability channels are available in all of the public safety bands and are designed to allow folks to communicate anywhere in the country, within each frequency band.

Make sure new radios you purchase have adequate channel capacity to accommodate all of the additional interoperability channels. It is the SIEC's recommendation for both interoperability and for the receipt of federal funds based upon interoperable communications that these nationwide interoperability channels shall be programmed into every Oregon public safety subscriber radio. In VHF subscriber radios, the other channels that should be in every radio are the State Fire Net (154.280 MHz) and the State Police Net – OPEN (155.475 MHz). VHF interoperability channels can be utilized on a secondary basis to interoperable communications for day-to-day tactical needs as well so that personnel are accustomed to utilizing them.

The following is the SIEC's guide for programming the FCC designated interoperability (I/O) channels into existing radios and all new radios that are added to any system. Due to space limitations in some radios, it may not be possible to program all of the I/O channels into all radios. In that case, at a minimum, the calling channel and the first tactical channel should be programmed. The frequencies listed are in each of the three bands and are listed by order of priority, with highest priority shown at the top of the list. They are to be programmed into the radios with the highest priority first, as space permits.

Note: As of January 1, 2005, existing systems on these channels and those existing systems on the adjacent channels become secondary to these interoperability channels. In the event of interference, existing systems must cease use when interference occurs to interoperability channels.

VHF Radios

<u>Channel (MHz)</u>	<u>Label</u>	<u>Description</u>
155.7525 base/mobile	VCALL	National Calling
151.1375 base/mobile	VTAC 1	National Tactical
154.4525 base/mobile	VTAC 2	National Tactical
158.7375 base/mobile	VTAC 3	National Tactical
159.4725 base/mobile	VTAC 4	National Tactical

UHF Radios

<u>Channel (MHz)</u>	<u>Label</u>	<u>Description</u>
458.2125 mobile	UCALL	National Calling
453.4625 base/mobile	UTAC 1 a	National Tactical
458.4625 mobile	UTAC 1	National Tactical
453.7125 base/mobile	UTAC 2a	National Tactical
458.7125 mobile	UTAC 2	National Tactical
453.8625 base/mobile	UTAC 3a	National Tactical
458.8625 mobile	UTAC 3	National Tactical

800 MHz Radios

<u>Channel (MHz)</u>	<u>Label</u>	<u>Description</u>
821/866.0125	ICALL	National Calling
821/866.5125	ITAC-1	National Tactical
822/867.0125	ITAC-2	National Tactical
822/867.5125	ITAC-3	National Tactical
823/868.0125	ITAC-4	National Tactical
821/866.3250	OROPS1	Oregon Tactical
821/866.3875	OROPS2	Oregon Tactical
821/866.7500	OROPS3	Oregon Tactical
821/866.7750	OROPS4	Oregon Tactical
821/866.8000	OROPS5	Oregon Tactical
867.5375	STATEOPS-1	Washington Tactical
867.5625	STATEOPS-2	Washington Tactical
867.5875	STATEOPS-3	Washington Tactical
867.6125	STATEOPS-4	Washington Tactical
867.6375	STATEOPS-5	Washington Tactical

Use of interoperability channels

Calling channel: The calling channel shall be used to contact other users in the region for the purpose of requesting incident related information and assistance, and for setting up tactical communications for specific events. In most cases, the calling party will be asked to move from the calling channel to one of the TAC channels for continuing incident operations or other interoperability communication needs. This channel can be implemented in full repeat mode in 450 MHz or 800 MHz systems. In the 150 MHz, 450 MHz, and 800 MHz bands, direct or a talk-around/simplex mode can be used.

Tactical channel: By FCC rules, the tactical channels are to be used for coordination activity between different agencies in a mutual aid situation. However, in non-interference instances, they may be used on a case-by-case basis for emergency activities of a single agency. Incidents requiring multi-agency participation will be coordinated over these channels by the agency controlling the incident. These channels can be implemented in full repeat mode in 450 MHz or 800 MHz or they may be used on a direct direct (talk-around/simplex) mode in 150 MHz, 450 MHz, or 800 MHz.

Dispatch Centers and Interoperability: On a short term basis, the 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. The SIEC is working on longer term methods of coordination of interoperability channels on a statewide basis. Gateways, interoperability switches, or console patching are strongly encouraged at 9-1-1 dispatch centers in the short term to allow connection of interoperable VHF, UHF, and NPSPAC channels to the operating channels within the center's range.

Purchasing New Radios And Systems: If your agency is in the market to purchase new subscriber radios or a new radio system, you may choose to utilize the SIEC Technical Committee as a sounding board to help clear the confusion and provide guidance and suggestions to assure maximum interoperability in the most effective manner. By FCC rules, all new VHF and/or UHF systems (meaning below 512 MHz) shall be implemented using narrowband (12.5 kHz bandwidth) technology.

Note: As of January 1, 2008, FCC rules will no longer allow manufacture or importation of any radio that has a mode in it that works on existing wide band systems.

If your agency intends to remain on VHF and/or UHF public safety radio frequencies, it is important to start the migration to meet FCC timelines for conversion to narrowband operation. The mandate for a complete conversion to narrowband operation is January 1, 2018.

When purchasing new VHF and/or UHF portable or mobile radios, make sure they are narrowband compatible. This is consistent with FCC requirements. All VHF radios must be capable of programming on 7.5 kHz and 12.5 kHz channel assignments.

The SIEC's recommendation for priority in receipt of federal funding for interoperable communications is to strongly encourage conversion to digital technologies. The primary reason is that digital technologies operate in only 72% of the band occupied by narrowband analog technologies, and they suffer no reduction in voice quality or in system range with this added efficiency.

The SIEC recommends that all radios procured for interoperability shall, at a minimum, be capable of programmable conversion from analog to digital operation. The only acceptable digital operation is in compliance with the Project 25 standards. The applicable standards are within the ANSI/TIA/EIA 102 series. All portions of that standard that define the common air interface and the vocoder are to be complied with. Whenever encryption is also used, the Project 25 encryption documents must be complied with as well.

It suggested that you consider the use of multimode (digital and analog) technologies, and multi-band operation as these features might become available. You may choose to not implement Project 25 technologies while you are continuing to operate or are building an analog system. As of 2004, federal Homeland Security grant funding is being allowed for these analog solutions, but indications for the 2005 grant funding cycle are that all interoperable communications grants will be required to adhere to the Project 25 standards.

Note: If you build a new system or convert an existing one to narrowband, it is likely that some of your older mobile and portable radios will not work on the narrowband frequencies. However, you will need to verification from your vendor. The newer radios will work in both modes.

For more information about the Oregon SIEC, go to <http://egov.oregon.gov/SIEC/>

Attachment 8:
Glossary of Terms

Glossary of Terms¹

Analog: A signal that may vary continuously over a specific range of values.

Band*: The spectrum between two defined limited frequencies. For example, the Ultra High Frequency (UHF) is located from 300 MHz to 3,000 MHz in the radio frequency spectrum.

Bandwidth: The range within a band of frequencies; a measure of the amount of information that can flow through a given point at any given time.

CAD: Computer Aided Dispatch

Channel*: A single unidirectional or bidirectional path for transmitting or receiving (or both) electrical or electromagnetic signals.

COTS: Commercial off-the-shelf

DSA: Dynamic Spectrum Access

EOS: Emergency Operations Center

Interoperability: The ability of public safety agencies to talk across disciplines and jurisdictions via radio communications systems, exchanging voice and/or data with one another on demand, in real time, when needed, and as authorized.

Communications system*: A collection of individual communication networks, transmission systems, relay stations, tributary stations, and data terminal equipment usually capable of interconnection and interoperation to form an integrated whole. The components of a communications system serve a common purpose, are technically compatible, use common procedures, respond to controls, and operate in unison.

Coverage*: The geographic area included within the range of a wireless radio system.

Cycle: One complete performance of a vibration, electrical oscillation, current alternation, or other periodic process.

Digital: Voice communication normally occurs as an analog signal, that is, a signal with a voltage level that continuously varies. Digital signals occur as the presence or absence of electronic pulses, often representing only one of two values: a zero (0) or a one (1). Voice transmissions may be sent over digital radio systems by sampling voice characteristics and then converting the sampled information to ones and zeros.

First responders: Individuals who in the early stages of an incident are responsible for the protection and preservation of life, property, evidence, and the environment, including emergency response providers, as well as emergency management, public health, clinical

¹ Terms marked with an asterisk (*) are as defined in the National Task Force on Interoperability (NTFI) "Why Can't We Talk? Working Together To Bridge the Communications Gap To Save Lives," Washington, D.C., February 2003.

care, public works, and other skilled support personnel (such as equipment operators) who provide immediate support services during prevention, response, and recovery operations.²

Frequency*: The number of cycles or events of a periodic process in a unit of time.

Frequency bands*: Where land mobile radio systems operate in the United States, including the following:

High HF: 25–29.99 MHz

Low VHF: 30–50 MHz

High VHF: 150–174 MHz

Low UHF: 450–470 MHz

UHF TV Sharing: 470–512 MHz

700 MHz: 764–776/794–806 MHz

800 MHz: 806–869 MHz

Grant: Funding made available to local agencies from State and Federal government agencies, as well as from private sources, such as foundations. Grants usually require the submission of a formal application to justify the funding request.

Hertz: Abbreviation for cycles per second.

Infrastructure*: The hardware and software needed to complete and maintain the radio communications system.

Interference*: Extraneous energy, from natural or man-made sources, that impedes the reception of desired signals.

Jurisdiction: The territory within which power or authority can be exercised.

Locality: A particular neighborhood, place, or district.

Local revenue fund: Funding obtained by local governments through local taxes (e.g., sales tax, property tax), user fees, and other user charges, as well as through the issuing of debt instruments, such as bonds.

Mutual aid: The mutual aid mode describes major events with large numbers of agencies involved, including agencies from remote locations. Mutual aid communications are not usually well planned or rehearsed. The communications must allow the individual agencies

² First Responder as defined the December 17, 2003, Homeland Security Presidential Directive/Hspd-8, Subject: National Preparedness.

to carry out their missions at the event but that must follow the command and control structure appropriate to coordinating the many agencies involved with the event.

Mutual aid channel: A radio channel specifically allocated for use during emergency mutual aid scenarios.

Narrow-banding: Generally, narrowband describes telecommunication that carries voice information in a narrow band of frequencies. For state and local public safety, narrow-banding typically refers to the process of reducing the useable bandwidth of a public safety channel from 25 kHz to 12.5 kHz. The FCC issued the migration of Private Land Mobile Radio systems using frequencies in the 150–174 MHz and 421–512 MHz bands to narrowband technology. These rules set deadlines on applications for new wideband systems, modifications of existing wideband systems, manufacture and importation of 25 kHz equipment, the requirement for public safety to migrate to 12.5 kHz systems by January 2018.

NIMS: National Incident Management System

NIST: National Institute for Public Safety Standards and Training

NTFI: National Task Force on Interoperability

OHS: Oregon Office of Homeland Security

OPSCAN: Olympic Public Safety Communications Alliance Network

P25: P25 is the only national standard for digital public safety radios accepted by the Association of Public Safety Communications Officers (APCO).

PSAP: Public Safety Answering Point

PSWN: Public Safety Wireless Network (the forerunner of SAFECOM)

QoS: Quality of Service

Receiver: The portion of a radio device that converts the radio waves into audible signals.

Refarming: An administrative process being conducted by the FCC to reallocate channel bandwidths and, as a result, promote spectrum efficiency.

Repeater: In digital transmission, equipment that receives a pulse train, amplifies it, retimes it, and then reconstructs the signal for retransmission; in fiber optics, a device that decodes a low-power light signal, converts it to electrical energy, and then retransmits it via an LED or laser source. Also called a “regenerative repeater.”

SIIEC: State Interoperability Executive Council

Spectrum: The region of the electromagnetic spectrum in which radio transmission and detection techniques may be used.

Spectrum efficiency: The ability to optimize the amount of information sent through a given amount of bandwidth.

Steering committee: A group of usually high-level officials charged with setting policy for a project.

Supplemental responders: Responders who provide support to first responders during incidents requiring special assistance. Supplemental responders include the following:

Emergency Management: Public protection, central command and control of public safety agencies during emergencies

Environmental Health/Hazardous Materials specialists: environmental health personnel

Homeland Security and Defense units

Search and Rescue teams

Transportation personnel

Transmitter: The portion of a radio device that sends out the radio signal.

Trunked radio system*: A system that integrates multiple channel pairs into a single system. When a user wants to transmit a message, the trunked system automatically selects a currently unused channel pair and assigns it to the user, decreasing the probability of having to wait for a free channel for a given channel loading.

TVFR: Tualatin Valley Fire and Rescue

VoIP: Voice over Internet Protocol

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Attachment 9:
Raw Data

PSAP Survey Responses (33 Responses)

Question	Responses																																																																																											
1	Identifying information																																																																																											
2	Refer to the complete database.																																																																																											
3	<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Reprogram Radio</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Mutual Aid Frequency</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Exchange Equipment</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Console Patching</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Audio Matrix Switch</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Dispatch Relay</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Cellular phones</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Cross-band Repeater</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Paging, E-mail, Text Message, IP</td> </tr> <tr> <td>61</td> <td>177</td> <td>7</td> <td>56</td> <td>0</td> <td>122</td> <td>119</td> <td>4</td> <td>164</td> </tr> </table>	Reprogram Radio	Mutual Aid Frequency	Exchange Equipment	Console Patching	Audio Matrix Switch	Dispatch Relay	Cellular phones	Cross-band Repeater	Paging, E-mail, Text Message, IP	61	177	7	56	0	122	119	4	164																																																																									
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4	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Obstacle</th> <th>Weighted:</th> <th>No. of Total Responses</th> <th>Major Problem</th> <th>Significant Problem</th> <th>Moderate Problem</th> <th>Minor Problem</th> </tr> </thead> <tbody> <tr> <td>Lack of Frequencies</td> <td>46</td> <td>18</td> <td>5</td> <td>3</td> <td>7</td> <td>3</td> </tr> <tr> <td>Different Frequency</td> <td>59</td> <td>22</td> <td>7</td> <td>7</td> <td>2</td> <td>6</td> </tr> <tr> <td>Incompatibility of Radio Systems</td> <td>58</td> <td>22</td> <td>6</td> <td>7</td> <td>4</td> <td>5</td> </tr> <tr> <td>Incompatibility of Equipment</td> <td>37</td> <td>19</td> <td>3</td> <td>2</td> <td>5</td> <td>9</td> </tr> <tr> <td>Equipment Reliability</td> <td>48</td> <td>20</td> <td>4</td> <td>6</td> <td>4</td> <td>6</td> </tr> <tr> <td>Other Equipment Obstacles (Describe)</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Other Equipment Obstacles (level)</td> <td>19</td> <td>6</td> <td>3</td> <td>2</td> <td>0</td> <td>1</td> </tr> <tr> <td>Back Haul Reliability</td> <td>18</td> <td>9</td> <td>1</td> <td>2</td> <td>2</td> <td>4</td> </tr> <tr> <td>Coverage Area</td> <td>78</td> <td>29</td> <td>9</td> <td>6</td> <td>10</td> <td>4</td> </tr> <tr> <td>Interference</td> <td>50</td> <td>26</td> <td>3</td> <td>5</td> <td>5</td> <td>13</td> </tr> <tr> <td>Voice Clarity</td> <td>39</td> <td>22</td> <td>2</td> <td>3</td> <td>5</td> <td>12</td> </tr> <tr> <td>Different Technology</td> <td>47</td> <td>23</td> <td>2</td> <td>6</td> <td>6</td> <td>9</td> </tr> </tbody> </table>	Obstacle	Weighted:	No. of Total Responses	Major Problem	Significant Problem	Moderate Problem	Minor Problem	Lack of Frequencies	46	18	5	3	7	3	Different Frequency	59	22	7	7	2	6	Incompatibility of Radio Systems	58	22	6	7	4	5	Incompatibility of Equipment	37	19	3	2	5	9	Equipment Reliability	48	20	4	6	4	6	Other Equipment Obstacles (Describe)	0	0	0	0	0	0	Other Equipment Obstacles (level)	19	6	3	2	0	1	Back Haul Reliability	18	9	1	2	2	4	Coverage Area	78	29	9	6	10	4	Interference	50	26	3	5	5	13	Voice Clarity	39	22	2	3	5	12	Different Technology	47	23	2	6	6	9
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	Funding Limitations	99	31	15	8	7	1
	Jurisdictional Limitations	21	11	0	2	6	3
	Political Issues	43	23	4	2	4	13
	Security Concerns	42	23	1	3	10	9
	Lack of consolidated radio system	58	21	5	8	6	2
	Lack of cooperation between end user agencies	30	17	1	2	6	8
	Lack of compatibility (public to IP)	32	18	0	3	8	7
	Lack of compatibility (public safety radio)	38	18	2	4	6	6
	Other Obstacle(1)	0	0	0	0	0	0
	Other Obstacle rate(1)	10	3	2	0	1	0

5	Most Important Interoperability Action			Planning	Funding	Technology
	MDT type technology, improved coverage, security of transmissions				1	1
	Common CAD (Computer Aided Dispatch). Ideally, statewide.					1
	In my jurisdiction interoperability is available for all public safety agencies. Trunking is the next step to achieving true interoperability. This would allow communication between users without intervention by PSAP					1
	A system that utilizes multiple users that do not interfere with others. Be able to deal with different terrains and easy ability to operate a system.			1		1

	Planning	Funding	Technology
Most Important Interoperability Action			
Adequate stable funding source- statewide planning and guidance that involves all affected parties	1	1	
A well developed plan that would address all interoperability issues for agencies both rural and in the metropolitan areas and then the funding to implement that plan	1	1	
Adequate coverage-added repeater sites. Additional, compatible mutual aid frequencies, interference control through FCC. Better equipment and funding.	1	1	
adequate funding		1	
Regional communications plan that has defined parameters and purpose. Needs to have buy in from all user agencies and have a funding mechanism to sustain the infrastructure beyond the initial installation. This is needed to better use the Grant funds that are available to serve a common purpose rather than each agency purchasing based on individual needs	1	1	
Level funding- consideration for mutual aid capabilities, i.e., LSEPP area- backfill of emergency providers is bi-county area-should include communications interoperability for Milton-Freewater police, fire and EMS	1	1	
Provide funding		1	
Better funding mechanisms for smaller rural areas to improve/update their technology		1	
Money		1	
We just made a major step in the interoperability for the agencies in Umatilla and Morrow County with the implementation of the 450 UHF system. The coverage has been optimal except for the far north and south end of the county where we still have to use our VHF system.		1	
a common regional frequency	1		
develop a region and/or statewide communications plan	1		
one common frequency that is not used for normal day to day operations	1		
a common regional frequency	1		
Regional and Statewide frequencies	1		
Have statewide police/fire frequency	1		

		Planning	Funding	Technology
	Most Important Interoperability Action			
	Agreement on priorities for interoperability locally, then identifying current ideal to achieve and future plan to increase efficiency	1		
	Develop statewide radio network that all could use	1		
	Open communications and willingness to share all frequencies with other agencies. Agencies will share frequencies you can listen too, but not to transmit	1		
	A proactive state plan that can provide adequate radio frequencies to agencies and assist with countywide and state wide radio backbones to enhance ability to communicate with own agencies and mutual aid agencies	1		
	Require every public safety entity to program, monitor and have dispatch capabilities on common frequencies	1		
	Regional uniform frequency standardization and the funds to accomplish the goal. Would not be opposed to looking at a statewide uniform frequency standardization but need much more discussion and information.	1		
	It is currently not an issue for Jackson County FD#3. As state and federal agencies move to narrow band equipment it will be hard to maintain interoperability, especially for smaller agencies.	1		
	All on the same frequency band of UHF/VHF	1		
	Provide interoperability with the State of Idaho	1		
	All users operate on the same system.	1		
	Total	24	11	6
6				
	Drivers Behind Consolidation/Sharing	Yes	No	Total Responses
	Efficient use of tax revenues	24	9	33
	Efficient use of frequencies or equipment	16	17	33
	Enhanced communications capabilities	22	11	33
	Interoperability	18	15	33
	More efficient use of staff	20	13	33
	Other consolidation/sharing Driver(s)	0	0	0

7	Ranking:			
	Most Important	Local tax revenue		30
		Subscriber fees		17
		Capital Funds or Reserves		13
		911 Tax		12
		Grants		11
		Federal funds		7
		Bond Measure(s)		4
	Least Important	Other Fund Sources (Specify)		3
8	Refer to the complete database for the essay answers.			
9	Issue	No. of Mentions		
	Interoperability	6		
	Coverage	5		
	Frequencies	4		
	Funding	3		
	Border Issues	2		
	Also refer to the complete database for the essay answers.			
10	Refer to the complete database for the essay answers.			
11	23 of 33 respondents (70%) said they own/manage a public safety communications radio system			

12	Planned	Current	Planned	Grand Total
	911 Alert	2	1	3
	Broadband data over licensed frequencies (e.g. 4.9 GHz)		1	1
	Cellular Digital Packet	8		8
	Cellular Mobile Telephone	20		20
	Expansion into the 700MHz band	1	2	3
	Mobile Data Terminals using CDPD or another commercial service	6		6
	Mobile Data Terminals using RD-LAP	1	5	6
	Mobile data via 800	1		1
	other spectrum Link, ie 802.11		2	2
	Reverse 911	9	3	12
	Satellite	4	1	5
	Site Circuit Connectivity (leased Telco T1 lines)	10	1	11
	Site Circuit Connectivity (microwave circuits)	4	4	8
	Specialized Mobile Radio	5	4	9
	Unlicensed Wireless (Wi-Fi, Wi-Max, etc.) for video	1	1	2
	Unlicensed Wireless (Wi-Fi, Wi-Max, etc.) for voice		2	2
	Unlicensed Wireless (Wi-Fi, Wi-Max, etc.) for data	1	6	7
	Unlicensed Wireless (Wi-Fi, Wi-Max, etc.) for video		2	2
	Unlicensed Wireless (Wi-Fi, Wi-Max, etc.) for voice		2	2
	Voice over IP	3	4	7
	Grand Total	76	43	119

Summary of System and Site Survey Responses (31 Responses)

Question	Responses																																																																																											
1	Identifying information																																																																																											
2	17 no; 57 yes; total 74																																																																																											
3	17 of 31 have written agreement; 6 of 31 responding showed annual subscriber unit charge																																																																																											
4	30 of 31 do allow interoperability on their system																																																																																											
5	Average cost: \$307,490; high cost: \$2.4 million; low cost: \$1200																																																																																											
6	30 of 31 could respond																																																																																											
7	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Total Analog (98%)</td> <td style="text-align: right;">8469</td> </tr> <tr> <td>Total Digital (2%)</td> <td style="text-align: right;">156</td> </tr> <tr> <td>Total P25 (0%)</td> <td style="text-align: right;">0</td> </tr> <tr> <td>Total All Types</td> <td style="text-align: right;">8625</td> </tr> </table>	Total Analog (98%)	8469	Total Digital (2%)	156	Total P25 (0%)	0	Total All Types	8625																																																																																			
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17	<p data-bbox="375 978 1422 1098">Of 31 responders, 12 say the current quantity of internally owned/leased communications equipment is adequate for carrying out their system's operation; 19 say that equipment is inadequate. Responders used only half of all infrastructure items identified in outlining their future needs.</p> <table border="1" data-bbox="375 1098 1003 1843"> <thead> <tr> <th colspan="2" data-bbox="375 1098 1003 1171">Needs Identified for Major Infrastructure</th> </tr> <tr> <th colspan="2" data-bbox="375 1171 1003 1207">1 to 5 Years</th> </tr> </thead> <tbody> <tr> <td data-bbox="375 1207 912 1243">Towers/Sites</td> <td data-bbox="912 1207 1003 1243">36</td> </tr> <tr> <td data-bbox="375 1243 912 1278">Base Stations/Repeaters(Voice)</td> <td data-bbox="912 1243 1003 1278">155</td> </tr> <tr> <td data-bbox="375 1278 912 1314">Base Stations/Repeaters(Data)</td> <td data-bbox="912 1278 1003 1314">17</td> </tr> <tr> <td data-bbox="375 1314 912 1350">Control Stations</td> <td data-bbox="912 1314 1003 1350">18</td> </tr> <tr> <td data-bbox="375 1350 912 1386">Consoles</td> <td data-bbox="912 1350 1003 1386">22</td> </tr> <tr> <td data-bbox="375 1386 912 1421">Remote Receivers</td> <td data-bbox="912 1386 1003 1421">4</td> </tr> <tr> <td data-bbox="375 1421 912 1457">Comparators/Receiver Voters</td> <td data-bbox="912 1421 1003 1457">24</td> </tr> <tr> <td data-bbox="375 1457 912 1493">Standalone Repeaters</td> <td data-bbox="912 1457 1003 1493">7</td> </tr> <tr> <th colspan="2" data-bbox="375 1493 1003 1549">5 to 10 Years</th> </tr> <tr> <td data-bbox="375 1549 912 1585">Towers/Sites</td> <td data-bbox="912 1549 1003 1585">21</td> </tr> <tr> <td data-bbox="375 1585 912 1621">Base Stations/Repeaters(Voice)</td> <td data-bbox="912 1585 1003 1621">97</td> </tr> <tr> <td data-bbox="375 1621 912 1656">Base Stations/Repeaters(Data)</td> <td data-bbox="912 1621 1003 1656">14</td> </tr> <tr> <td data-bbox="375 1656 912 1692">Control Stations</td> <td data-bbox="912 1656 1003 1692">13</td> </tr> <tr> <td data-bbox="375 1692 912 1728">Consoles</td> <td data-bbox="912 1692 1003 1728">14</td> </tr> <tr> <td data-bbox="375 1728 912 1764">Remote Receivers</td> <td data-bbox="912 1728 1003 1764">1</td> </tr> <tr> <td data-bbox="375 1764 912 1799">Comparators/Receiver Voters</td> <td data-bbox="912 1764 1003 1799">8</td> </tr> <tr> <td data-bbox="375 1799 912 1835">Standalone Repeaters</td> <td data-bbox="912 1799 1003 1835">3</td> </tr> </tbody> </table>	Needs Identified for Major Infrastructure		1 to 5 Years		Towers/Sites	36	Base Stations/Repeaters(Voice)	155	Base Stations/Repeaters(Data)	17	Control Stations	18	Consoles	22	Remote Receivers	4	Comparators/Receiver Voters	24	Standalone Repeaters	7	5 to 10 Years		Towers/Sites	21	Base Stations/Repeaters(Voice)	97	Base Stations/Repeaters(Data)	14	Control Stations	13	Consoles	14	Remote Receivers	1	Comparators/Receiver Voters	8	Standalone Repeaters	3
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Question	Responses			
	1-5 Year Requirements		6-10 Year Requirements	
	Trunking Controllers	10	Trunking Controllers	9
	Microwave Links	41	Microwave Links	20
	Mobile Radios	291	Mobile Radios	355
	Portable Radios	466	Portable Radios	575
	Mobile Data/Computer Terminals	228	Mobile_Data/Computer	
	Terminals		Terminals	350
	Pagers	221	Pagers	220
	Cellular Telephones	0	Cellular_Telephones	35
18	16 of 31 say yes, they plan on replacing their existing system in total in the future. Responses about when and with what are included in the full database.			

Question	Responses				
19	Manufacturer/Model	Motorola	28		
		GE/Ericsson	6		
		M/A-COM			
		EF Johnson			
		Tait	1		
		Other (Motorola/GE/Ericsson)	7		
	Type of System	Conventional	40	Analog	40
		Trunked	2	Digital	2
	If the system is <i>trunked</i> , what type of trunking protocol is used?	EDACS			
		LTR			
		MPT1327		1	
		Project 25			
		Project 25 Hybrid			
		SmartNet		1	
	SmartZone		1		
	Other (Specify) (Note trunked)		39		
Band (MHz) Transmit / Receive Frequencies in use	25-50	7			
	138-144 / 148-174	24			
	Maritime 156-162				
	220-222				
	406-420 / 450-470	4			
	470-512	1			
	764-776 / 794-806				
	806-824 / 851-869	6			
	Other (Specify)				
Primary Use	Voice	39			
	Data	1			
	Paging	2			
	Other:				
Number of Repeaters	Average: 7		Number of Tower Top Preamps	Average: 1	
Number of RX Antennas	Average: 2		Number of RX Multicouplers	Average: 1	
Number of TX Antennas	Average: 3		Number of TX Combiners	Average: 1	
Installer/Maintainer	In-house	20			
	Manufacturer	1			
	Electronics shop	21			
	Other:	0			
Approximate Age of System Equipment	1-3 years	6			
	4-6 years	0			
	7-11 years	9			
	11+ years	25			
	NA	2			
Approximate Age of Subscriber Units	1-2 years	3			
	3-4 years	4			
	5-6 years	9			
	7+ years	23			
	NA	3			
20	Not possible to summarize; refer to the complete database				
21	Not possible to summarize; refer to the complete database				
22	Not possible to summarize; refer to the complete database				
23	Not possible to summarize; refer to the complete database				
24	Not possible to summarize; refer to the complete database				

Short Online Agency Survey Responses (88 Responses)

Question		Response	
1	Identifying information		
2	Does your agency own its own comm system?	Yes	46
		No	37
3	Are you aware of the efforts of the SIEC?	Yes	60
		No	23
4	Do you have a dedicated person to research and develop applications for grant funds?	Yes	21
		No	61
5	Is data or voice communications more critical for your agency today?	Voice	58
		Data	14
		Don't know	16
6	In the future do you expect the demand for data to grow faster than voice?	Yes	66
		No	8
		Don't know	14
7	Can you talk to all agencies you want/need to, using your current radio system?	Yes	38
		No	41
		Don't know	9
	Please explain your answer from number 7	Refer to the complete database	
8	Do you have a coordinated communications plan with surrounding jurisdictions?	Yes	51
		No	23
		Don't know	14
9	In general, what homeland security funds or other grant funds have you received for communications and what are they utilized for?	Refer to the complete database	
10	What do you consider the most important actions(s) that could improve interoperability among public safety communications users for the future?	Refer to the complete database	

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