State Interoperability Executive Council

Technical Committee

What if/Why Not Questions and Responses V1.0

Presented to the SIEC - February 13, 2007

What If/Why Not Questions and Responses V1.0

Question
1. Why have a microwave only network? Why use a limited technology like microwave?
Response: Over the past half century, microwave networks have proven to be highly reliable. While it is true that microwave technology may be limited (in bandwidth) many companies have developed products that improve the capabilities of today's microwave networks. Over the air, licensed microwave network bandwidths now achieve 180 megabits/s, which, when connected to newer robust technologies, is more than adequate to meet the present and future public safety and emergency response voice and data communication needs. Fiber is seldom in place to the mountain top locations where mobile radio repeaters are located and the capacity required at each mountain top would not justify bringing fiber to most of the mountain tops. If fiber is in place then circuit capacity would have to be leased from the owner of the fiber on a typically non-redundant spur before it is connected to a fiber ring. That fiber ring will in most cases be routed through several states before it closes on locations where the mobile radio controllers are to be located. In addition fiber outages when they do occur have extended durations and the repair is not under the control of the state. Mixed mode systems (e.g. those that mix microwave, fiber, leased line, satellite, etc.) also are difficult to determine where a problem lies when one arises. That is because each of those segments is under a limited management system. In the case of a problem, each entity usually points to the others or to the interface as being the problem. Because no single management system looks at all parts of the network, it is difficult to pinpoint the source of problems. In public safety systems, this corresponds to unacceptable times to restore service simply because of troubleshooting difficulties. The benefits of a microwave only network are great. One or more designated control points in the microwave network could have complete control over the system. This would simplify priority assignment, maintenance and outage resolutions. Those who manage the system would be able to ensure that only trained personnel would have access to the network. To provide the highest possible level of security, only those trained personnel would be able to change network configurations, add or delete circuits, perform maintenance, control MTTR (mean time to restore in the invent of an outage), etc. When outside entities such as telephone companies or other wired or hard line service providers contribute portions of a microwave network to provide "last mile" solutions, increased bandwidth capabilities, or access points to the system, control of the system is diminished. IT departments may unwittingly perform software maintenance in the form of patches or software upgrades that could render the system useless by an unsuccessful upgrade attempt. A telephone company or other hard line service provider may inadvertently switch lines or, hardware connected to fiber may develop a problem, or fiber lines cut. The MTTR on these circuits may be addressed with service contracts, commitments that may or may not be met. The reality is that without the microwave network owner having control over these critical network components it would be difficult to achieve the service levels and network uptime required by public safety professionals and emergency responders.

Question
2. Why not look at satellite systems as a means to cover the last mile of non-critical data links?
Non-critical data links have a tendency to become critical data links as time passes. People and agencies tend to become more and more reliant on all of their resources as they strive to improve their services and become more efficient. Satellite is an alternative that offers low-speed expensive alternatives. Although satellite may have a place in the final design, the OWIN conceptual design places priority on first supporting real time critical voice transmission. Data is considered a secondary use of the transport capability of the system. Satellite technology has been available for quite some time. Though improvements in technology have recently been made it should be a last resort solution for this application. The MTTR (mean time to restore in the event of an outage) could be long should a satellite in use by the state network suffer a complete outage. The equipment and per unit network usage costs are high. Other terrestrial technologies such as phone lines and other similar technologies available to the state cost less to implement and use. Because of the huge cost of deploying satellites, their economic model is that their high cost of operation must either be borne by only the largest and most critical agencies (e.g. The Department of Defense), or the cost must be borne by sharing of links by lots of agencies. In this sharing case, the traffic comes in short bursts where the agency only uses the satellite for a very short time. Use of a single channel on a satellite for a dedicated (full time) purpose most often is measured in $100 to $250 per hour for connection. This is not economically feasible for connection of most locations into a state network. In emergency situations, satellite technology could serve a very useful purpose as a quick setup, data, and/or voice solution similar to a remote television broadcast. This use could provide a relatively quick setup to link a disaster scene to appropriate dispatch centers and other decision making authorities. However, Satellite is an option that offers a low-speed, expensive alternative. In addition, the high cost during emergencies can be justified because of the emergency conditions being addressed.

Question
3. What if existing satellite voice/data solutions could solve "mission critical voice/data" requirements in remote coverage areas?
In emergency situations, satellite technology could serve a very useful purpose as a quick setup, data, and/or voice solution similar to a remote television broadcast. This use could provide a relatively quick setup to link a disaster scene to appropriate dispatch centers and other decision making authorities. However, Satellite is an alternative that offers low-speed expensive alternatives. Further, the equipment and per unit network usage costs are high. Other terrestrial technologies such as phone lines and other similar technologies available to the state cost less to implement and use. Satellite networks could provide another solution in remote coverage areas. However, extensive testing by the Oregon Department of Transportation in the past has shown that satellite penetration in heavily forested highway areas and location with deep canyons or arroyos, such as the geography south of The Dalles, communication coverage was unreliable. The application of satellite technology would best be used in rural areas and remote locations that have clear view of the skies. Again this would be a nice addition to the public safety communications arsenal and should be implemented where practical and conditions dictate a satellite solution. Today's technology in this arena is just not able to meet the mobile mission critical voice/data requirements in all geographic locations across Oregon. The costs per usage for this technology is best suited for short term temporary communications and not long term day to day usage.

Question
4. Why not look at the 42 to 49 MHz band?
The propagation characteristics of 42/49 MHz (low band) makes it difficult to frequency coordinate and isolate interference for other uses. There are very valid reasons why public safety that once heavily used this band, now uses if very little. Radio waves in this band, bounce off of the ionosphere. Because of the sun's effects on the ionosphere during the day time, the bounce off of the ionosphere is relatively short. During the night time, however, the bounce is very long. This is termed "skip". Skip can be very favorable during the day to cover larger parts of the state. At night, however, skip results in such things as poor in-state communications and excellent communications between the transmitter in Oregon and receivers thousands of miles away. All low band equipment is larger than the equivalent VHF, UHF, 700/800 MHz equipment, especially antenna systems. To the best of our knowledge P25 compatible equipment at the 42/49 MHz band would be a one time special build by a single manufacturer – expensive and nearly impossible to maintain after 2-3 years. Even with digital radios, the skip factor interference that accompanies each cycle of sun spot activity make this band best suited for the Amateur Radio Service.

Question
5. Why not define “open standards” as Project 25 or technology which is publicly available and implementable, without a license fee, by at least three radio manufacturers that build mobile/portable terminals and base stations and at least three manufacturers of dispatch console equipment?
The OWIN conceptual design proposes the use of open standards (P25). The standard was fully explored in the Technology Report by ***Federal Engineering***. Project 25 standards are developed under user control by the Telecommunications Industry Association (TIA). Industry participants in TIA must sign a Memorandum of Understanding that says that each of them agree to offer their intellectual property rights (IPR) under fair and reasonable terms if they hold IPR essential to the standard. The user Steering Committee verifies the reasonableness of those terms. This is a matter between many dozens of manufacturers that develop the Project 25 standards. The Project 25 standards developed in TIA are mostly also adopted by the American National Standards Institute (ANSI). There are dozens of companies presently supplying Project 25 equipment and services in the competitive marketplace. It is important for Public Safety to have, as much as possible, an open standards based solution for voice communications. “Open Standards” are essential to provide incentives for manufactures to provide cost effective product solutions to the needs of the public safety community. This is the foundation upon which interoperability will be built. Current and future interoperability in public safety communications depend on a competitive offering of equipment available from several manufacturers. Equipment that will operate seamlessly with other manufacturer’s equipment while providing as many interoperability solutions as is possible.

Question
6. How will you secure OWIN physically (its network of buildings and towers) and virtually (voice/data communications transported across the system) when the location of every microwave tower (and frequencies in use) in the system will be available by law in the FCC database?

Remote site security is always difficult and when is enough… enough? The fact is that someone who is determined to get into a building or cause damage to a tower facility will likely have time to do so at a remote site.

All operators of mobile radio systems, including cellular, that require the placement of antennas on towers or tall buildings face the same problem. Security fencing, locked access gates and doors turn back the curious and casual vandals. The determined shooters and vandals can always find a way to damage an above ground facility, and an antenna site, by physical requirement, is an above ground facility. Video monitoring of the site may provide evidence for prosecution, but due to the remote location of the sites will at best get law enforcement personnel to the bottom of the mountain in the hopes of apprehending the perpetrators leaving the mountain. Over lapping coverage from multiple sites is the best back up for a damaged and off the air location.

Telecommunications site construction standards exist within the telecommunications industry that detail, amongst other parameters, site security. In the past the state has constructed fenced compounds with concertina wire on top of the fence. Gated access exists for some sites. Intruder alarms and site parameter monitoring systems are in use to detect physical and equipment anomalies at many sites.

It is impossible to prevent the reception of a radiated signal since the intent is to send the information contained within that signal to another location through the atmosphere for processing. Where appropriate, two-way radio signals in the new system can be encrypted in critical, confidential communications. Information that is sent from mountaintop to mountaintop usually utilizes microwave technology. That microwave signal is available and could be picked up if proper equipment was placed in a proper location. The reality, however, is that the microwave beam is narrowly focused to 1.6 degrees of beam width or less. This signal would first be very difficult to intercept, and it would also have to have extensive and expensive equipment to de-multiplex the microwave signal to a single circuit. The receiving equipment would have to have the proper decryption code to break out the data into intelligible information.

Some sites will always have vandalism attempts that will destroy the site integrity or even take the site off-line. This cannot be prevented without armed guards at each site which is not a possibility in system such as the state is building. The abovementioned monitoring system will report any system anomalies and trained personnel then will decide on an appropriate response to the situation.

By constructing remote buildings of concrete and steel, and by employing security measures of alarm and supervision, the protection of the OWIN integrity will be properly accommodated.

Question
7. How long will the existing systems last? (State and Local Government)
This is a lot like asking how long a sand castle on the beach at Seaside will last. It could be a minute, and it could be decades. It all depends on whether a high wave comes in and how bad erosion (the effects of time and environment) is over time. An absolute is that the FCC requirement is to narrowband by January 2013, and narrow banding requires replacement of transmitters and receivers. What we do know is that a generally accepted industry custom is to replace base station equipment after 10-15 years in service, mobile radios after 7-10 years, and portable (handheld) radios after 3-5 years. ODOT and OSP have perhaps 200-300 pieces of base station equipment that is 20-30 years old, and mobile and handheld radios that are decades old. Like all other electronic equipment, the longer it remains in service, the more maintenance it requires, and the less reliable it is. One thing to remember is that when a piece of public safety radio equipment fails, the probability is that the user and the public no longer have communications at that point. Much of the voice radio equipment currently used by ODOT and OSP already exceeds its useful life by 10-20 years already. Some agencies have equipment that is no longer supported by the manufacturer due to the age of the equipment. Technically, with continued and intensive maintenance, the ODOT and OSP land mobile radio systems could perhaps last another 5-10 years, however – as stated above - they must, by federal law, be replaced by narrowband radios by 2013. The microwave system is another matter. The analog technology widely used by ODOT has been out of manufacture for 10 years. The manufacturer of this equipment no longer makes replacement parts to service this system. Replacement parts are located on the internet or through contacts and relationships made through the microwave system personnel. Most of these "used" replacement parts carry no warranty and often are not even guaranteed to work when they are purchased. The analog technology and narrow bandwidth of this system render it unusable in modern, digital communication networks. ***This system should have been replaced no later than 2000.*** The existing analog microwave system could last another 3-7 years with continued, intensive, and expensive maintenance, until spare parts and technical talents are exhausted. The OSP microwave system consists mainly of narrowband digital microwave equipment. Some of this equipment is no longer manufactured. Few, if any, of the OSP microwave links are re-usable in the proposed OWIN due to the narrow bandwidth of the equipment and network compatibility issues (e.g. monitoring, configuration, and control functions). The long term viability of the existing digital microwave system components vary but, with continued maintenance, could last another 5-10+ years. As a result of investments made in the past few years, the Oregon Dept of Forestry's radio system will be narrow-band compliant in 2007. All repeaters, base stations, mobiles, and portables are less than 7 years old with the majority of the repeaters and base stations under a year old and are all current production models. This also includes Oregon Dept of Fish and Wildlife's and Oregon Parks and Recreation's mobiles and portables. This equipment should last 10 + years.

Another system issue is the sites themselves. Most of the state radio sites (OSP, ODOT, and ODF) do not meet modern communication site standards for wiring, grounding, HVAC, access, tower structural strength, buildings, backup power systems, etc. Each of these factors has a direct effect on system reliability. These sites have not been up kept up to date due to personnel and budget shortages. Many of these are at risk to lightning strikes, power surges, interference, and other factors that would receive some mitigation if modern site construction standards were implemented.

Question

8. What is the technology roadmap for public safety communications? What is the length of the planning period? Who is responsible for creating the roadmap?

What we do know is that there is a steady increase in conversion of analog radio systems to digital. This both greatly increases what can be done with the system and in the spectral efficiency of it. Frequencies are a finite resource. In order to account for increases in population and in government services, there is a steady demand for increases in wireless communications. Just in spectral efficiency, a modern digital signal only occupies about 33% of the spectrum that present day analog systems occupy. The FCC goal is to reduce that to no more than 25%.

Project 25 is in the final stages of developing standards for the next generation of digital systems. Those systems will start to be deployed in the next 5-7 years. Their primary use will be in places with high population density. The next generation will put two voice channels into the space one occupies today, and within 10 years, will put four voice channels into that same space.

The increased emphasis is for a wireless system that supports both voice and data transmission in a mobile environment. We are moving from a place where much of public safety uses a mobile computer platform to do fundamental file types of inquiries (wants and warrants, DMV inquiries, etc.) to more data intense applications involving transfer of pictures, video, and wide band mapping (GIS) types of applications. Although many agencies are five to six generations deep into mobile data, Oregon state agencies have none. One modern application is to couple Global Positioning System (GPS) devices in the vehicle into a mobile data system for both user safety and for operational efficiency.

In the past, TIA developed standards from technologies that individual members of the industry came up with. Project 25 has changed that in the public safety arena so that industry now develops systems based upon user needs. Project 25 continues to look at succeeding generations of system requirements to define what is next. Nobody else is “responsible for creating the roadmap”.

Question
9. Why not utilize Cellular telephone systems?*
Cellular/PCS Cellular systems will continue to be used as a supplement to mission critical communications systems. Cellular systems depend upon a high number of local users to justify investment in cell sites. That directly translates into coverage in populated areas and in high transportation corridors. For the most part, that leaves rural areas uncovered. Cellular systems also become overloaded quickly in emergencies because so many users immediately try to call someone. Unless there are service shedding agreements where commercial customers are dropped in favor of government priority, these system are unusable just when they are needed most. *On-Star* On-Star is a cellular derived system. It is limited to the underlying cellular system for connectivity. Emergency connectivity also utilizes existing satellite services. *Nextel* Nextel is a cellular service with the inherent problems of all other cellular services..

Question
10. Why not use Satellite communications?*
Low Earth Orbit (LEO) LEO satellite service can be used for specific, rural applications. Because of its high cost, its use is limited to burst types of intermittent traffic. LEO satellite service provides better coverage than geosynchronous satellite service. *Geosynchronous* Geosynchronous satellite service is best used for service restoration and alternate routing. Service is very expensive and is therefore limited to short duration use. It also requires direct line of sight to the southern horizon, and is ineffective in many low elevations and in forested areas.

Question
11. Why not use Fiber-Optics?*
OWIN contemplates the use of fiber-optics in conjunction with microwave and with leased lines. The final OWIN will incorporate all methods of transport as they exist and as they are determined to be the most reliable, secure, and economical choice.

Question
12. Why not use Wi-Fi/Wi-Max?*
At the present time, Wi-FI/Wi-Max are limited to very small coverage areas because of their use of microwave spectrum. In addition, they are presently carried on un-licensed spectrum that is available for all to use for any purpose. This means that there is an ever increasing amount of interference as more and more uncoordinated users are added to the spectrum. To the extent that they can be used, Wi-Fi/Wi-Max will be utilized through routers that automatically select a service when it is the best choice for service (least errors and highest data speed).

Question
13. Why not use a hybrid approach through some form of mixed technology, embracing the "systems of systems" approach? A system that has mixed use of legacy data systems, mesh, Wi-Fi & Wi-Max, satellite or other broadband component in the metro areas and providing connectivity through the state microwave backbone?
This is the OWIN preferred model. In its first project (support of IWN along Interstate 5) OWIN is utilizing state microwave, city owned fiber, and leased circuits secured through various partnership agreements.

Question
14. What is the likelihood of the FCC narrow-banding deadline being extended? What happens if we miss the deadline?
The OWIN team does not believe the FCC deadline will be extended. The FCC has been engaged in the narrowbanding rule-making process for nearly 15 years and finally set a deadline for conversion after a lengthy public comment and notice period. The only way they can respond to the universal need for more spectrum is to make the existing spectrum uses more efficient. That is the reason for narrowbanding. If Oregon misses the deadline, we have two options. First is to apply for waivers to keep operating. It is highly unlikely that the FCC will issue such waivers for very long. Second is to wait until fines are assessed for illegal operation and pay them. The State' FCC licenses will be automatically cancelled in the event of illegal operation. Also, if operating illegally, the State could be open to liabilities for actions taken while such illegal operations were in place.

Question
15. What if only the microwave system were rebuilt to a digital system and nothing else were done?
This would only solve one limited part of the State's problem. The buildings, towers, and power systems also must be rebuilt in order to gain any measure of reliability. The Federal Engineering assessment indicated that nearly 80% of the state's existing tower infrastructure requires replacement. In addition, if only the microwave system were rebuilt there would be no operational gains for the state. Field users would still be with limited capacity and coverage, and there would still be no state mobile data capability.

Question
16. Why not explore more open architecture technologies that use off the shelf parts and pieces (cots)?
The state of Oregon is committed to ensuring its ability purchase, install, deploy, and utilize open technologies wherever it is in the best interest of the state to do so. In general, the uses of commercially available "off-the-shelf" products are preferable to custom development applications and systems. This is particularly true when state requirements can be readily met by commercially available products and where reliable and sustainable maintenance and support services are available and have a high likelihood of remaining available well into the future. The OWIN request for proposal (s) will focus on the functional requirements of the state which include the ability to acquire standards based, open technologies if it is deemed to be in the state's best interest to do so.

Question
17. Why not instead of building a parallel system, leverage the existing systems? If you consider that the majority of the state's population is currently serviced by existing Motorola 800MHz Trunking systems (Multnomah, Washington and Clackamas counties, as well as the cities of Salem, Bend, Newberg, etc.) it would seem like a fairly cost effective plan to purchase a version 7.xx Motorola Zone Controller with the intention of using it to link these existing systems together.
OWIN's preferred approach is to leverage existing systems wherever possible. OWIN shares the view that leveraging existing systems and linking existing systems together would likely be a more economical and efficient approach to take rather than building a parallel system. That is why OWIN has adopted, with the SIEC's endorsement, a "system of systems" approach.

Question
18. What if a separate high speed data system were installed in each of the OWIN sites?
This is OWIN's view also.

Question
19. Why not use an Ethernet platform with appropriate CODECS to perform interoperability seamlessly?
This is part of the current OWIN conceptual design.

Question
20. Why are we spending an enormous amount of money on a system that yields 9.6 kbps of data?
Low speed data is an added feature of the Project 25 voice system. It will support most form-related types of data transfer and it is similar to mobile data used by most such users in the U.S. today. This data rate is all that can be accomplished in the bandwidth of the allocated voice channels.

Question
21. If level 4 interoperability exists in the 5 Southern Oregon Counties (Jackson, Josephine, Klamath and Douglas) why do those communities need OWIN? Will their coverage get better? Will there be talk around channels in poor coverage areas?
Anyone who uses the OWIN system itself will have level 6 interoperability. Level 4 is the goal for all others that do not directly use the OWIN system. The state goal is also to allow aid from units outside of the local area to seamlessly interoperate. This requires use of nationwide interoperability channels integrated into the level 4 system. If the local area chooses to use OWIN sites, and if OWIN can use local sites, total coverage might improve. An example is that Josephine County presently operates on a single site (Onion) while the OWIN design is to use as many as six sites in Josephine County. It is totally a local option whether they see advantages in use of the OWIN or not.

Question
22. Will OWIN have a failsafe mode? How will we know when to use it? How will we train on it?
Yes, the OWIN conceptual design contemplates multiple layers of response to deal with system failure. Even to the point of deploying transportable sites in strategic locations throughout the state in the event of a catastrophic type of failure. As with any disaster recovery plan, it will need to be tested by all affected parties and improved or "hardened" over time.

Question
23. Will the system include subscriber units for agencies that are not digital nor narrowband compliant?
The current OWIN budget request includes subscriber units for state agencies only. At this time (unless the Oregon legislature decides to broaden the scope of OWIN) the OWIN system itself is designed to consolidate state public safety agencies' communications systems and provide for broader system interoperability with the public safety community throughout Oregon to the greatest extent possible.

Question
24. Since VHF is the predominate spectrum for public safety use in Oregon, why wasn't the frequency analysis one of the first thing performed in the engineering study? How are we to utilize mixed frequencies in the field?
The first step in the OWIN conceptual design and engineering process was to gather user needs. Next was to determine the number and location of sites given the coverage requirement. Then, the task of trying to find the needed frequencies given the sites the contractor identified was completed. After much analysis, the contractor and the OWIN team recognized that there are not enough VHF frequencies available to support the number of sites and channels per site across all of Oregon. This led to the decision to pursue a conceptual design for a hybrid approach (700 MHz/VHF). How each agency can use this hybrid approach depends upon their service requirements and will need to be determined in partnership with OWIN and the detailed design and construction vendor once hired.

Question
25. Is Oregon taking a unique approach for OWIN or is it following the lead of the federal government and other state's across the nation?
The approach Oregon is taking is in line with the approach taken across the country over the past 5-10 years and the approach recommended by the Federal government into the future. That said each state is unique. Oregon for example is the 27th largest state by population with roughly 3.6 M people but its geography spans nearly 98,000 square miles (land and water) making it the 9th largest state. OWIN is different from all previous state system replacements in that OWIN specifically addresses replacement of very old infrastructure, addressing statewide interoperability for all levels of government, and mobile data. None of the other state efforts address all of these components. If you equate the radio system only to what other states have done, the FE estimate is entirely consistent with what other state have done/are doing.

Question
26. What have other states done to solve or answer similar questions?

Public Safety Wireless Communications System Projects - Preliminary information gathered at various times throughout 2006

State	Oregon
Square Miles	▪ 98,386 square miles (Total area – land and water) ▪ 9th largest state
Population	▪ 3,641,056 residents – 2005 Estimate
Cost	▪ Estimated OWIN Costs over 6 years - $665 Million
Method of Funding	▪ Certificates of Participation ▪ General Fund ▪ Federal Funds ▪ User Fees ▪ Other
Type of System	▪ Conceptual Design - Digital trunked VHF/700 MHz Hybrid - P-25 compliant public safety communications system ▪ Detail Design to be developed following award of a contract in early 2008
Coverage	▪ Conceptual Design - 257 sites to produce Mobile (in-vehicle) radio coverage that is equal to or better than the combined coverage provided today ▪ Actual number of sites to be determined following detailed design and outcome of partnership/collaboration discussions with Federal, regional, local, tribal governments and/or private sector telecommunications firms
# of Users	▪ Not immediately available

State	Colorado
Square Miles	▪ 104,100 square miles (Total area - land and water)
Population	▪ 4,665,177 residents – 2005 Estimate
Cost	▪ Estimated at $120 million (microwave backbone already in place)
Method of Funding	▪ State funded ▪ County participation is voluntary
Type of System	▪ 800 MHz Motorola ASTRO digital trunked radio system ▪ P25 compliant
Coverage	▪ 125 radio sites, supporting 5 channels ▪ 95% mobile coverage through out the state along major highways
# of Users	▪ State agencies alone; about 11,000 mobile and portable radios

State	Florida
Square Miles	▪ 65,758 square miles (Total area - land and water)
Population	▪ 17,789,864 residents – 2005 Estimate
Cost	▪ $40 million up front for immediate O&M costs ▪ $15 million per year for the next 20 years
Method of Funding	▪ M/A-COM private radio system provides statewide LMR coverage to authorized users on a fee-for-service basis
Type of System	▪ M/A-COM 800 MHz digital radio system (SLERN)
Coverage	▪ 130 sites ▪ Guaranteed coverage over 98% of the state
# of Users	▪ Local, state, and federal law enforcement agencies ▪ Public safety providers operating in state ▪ This digital system serves over 6500 users with 14,000 radios in patrol cars, boats, motorcycles, and aircraft wherever they are in the state.

State	Michigan
Square Miles	▪ 96,810 square miles (Total area - land and water)
Population	▪ 10,120,860 residents – 2005 Estimate
Cost	▪ $234.2 Million
Method of Funding	▪ State Building Authority Funds ($184.4 million) ▪ State General fund/general purpose ($49.8 million)
Type of System	▪ 800 MHz Motorola SmartZone digital trunked radio system ▪ P25 compliant
Coverage	▪ 181 sites (186 towers and 5 antennas) ▪ 97% mobile coverage
# of Users	▪ 83 agencies on system ▪ 7,593 radios ▪ 106 agencies signed letters of intent

State	New York
Square Miles	▪ 54,475 square miles (Total area – land and water)
Population	▪ 19,254,630 residents – 2005 Estimate
Cost	▪ $2 Billion financed over a 20 year period.
Method of Funding	▪ State Wireless Communications Service Surcharge. ▪ Payments will be made only with successful performance and system acceptance
Type of System	▪ M/A-Com 800 MHz OpenSKY ▪ Construction of the complete statewide system will take five years.
Coverage	▪ 90 % Coverage ▪ Coverage gaps will be filled using low-profile sites to cover small geographic areas and serve relatively small numbers of users.

State	Ohio
Square Miles	▪ 44,828 square miles (Total area – land and water)
Population	▪ 11,464,042 residents – 2005 Estimate
Cost	▪ $272 Million
Method of Funding	▪ Not Immediately Available
Type of System	▪ 1998 - Contract Awarded to TRW, Inc ▪ 800 Mhz digital, trunked voice and data communications system
Coverage	As of July 2004: ▪ 161 of the 200 Remote Communication Sites had been constructed, tested, and turned operational. ▪ 60 of the 88 counties had been coverage tested. ▪ 97.5 percent mobile voice and data coverage per county
# of Users	▪ The system is supporting approximately 300 public safety and services agencies statewide at all levels of government. ▪ All county health departments, Emergency Management Agencies, and sheriff's offices will have MARCS' equipment and statewide interoperability. As of July 2004, Customer Unit Totals were as follows: ▪ 4,753 – Mobile, Portable, and Control Station Voice Units ▪ 786 – Data Units ▪ 28 – Computer Aided Dispatch Units

State	Pennsylvania
Square Miles	▪ 46,058 square miles (Total area – land and water)
Population	▪ 12,429,616 residents - 2005 Estimate
Cost	▪ $240-$275 Million
Method of Funding	▪ Not immediately available
Type of System	▪ M/A-COM 800 MHz ▪ Final conversion to the system scheduled in 2007
Coverage	▪ 95% coverage goal by county ▪ 201 high-profile tower sites ▪ To reach the 95 percent goal, about 200 additional cell sites are planned.
# of Users	▪ System designed to support 25000 users

State	Virginia
Square Miles	▪ 42,769 square miles (Total area – land and water)
Population	▪ 7,567,465 residents – 2005 Estimate
Cost	▪ $329 Million
Method of Funding	▪ 2004 General Assembly, approved $159.3 million in bonds to fund the STARS project for the next two years. ▪ First phase to be completed December 2005. ▪ Seventh Phase to be completed in September 2009.
Type of System	▪ Motorola ▪ 130 transportable communication sites. ▪ Project will also incorporate a digital microwave network that will interconnect land mobile radio, mobile data, telephone and alarm and control networks.
Coverage	▪ Average 93% coverage
# of Users	▪ 20+ State Agencies and Local government
# of Users	▪ Not immediately available

State	Wyoming
Square Miles	▪ 97,818 square miles (Total area – land and water)
Population	▪ 509,294 residents – 2005 Estimate
Cost	▪ $51 Million in system including the costs to public safety agencies to acquire modern radios. $107.9 M - lifecycle costs.
Method of Funding	▪ Wyoming Department of Transportation ▪ Participating State agencies ▪ County allocations of Federal grant funds
Type of System	▪ Motorola digital trunked VHF P-25 compliant public safety communications system
Coverage	▪ Mobile (in-vehicle) radio coverage goal for WyoLink is 95%, ▪ 57 sites. Additional sites or shifting of sites will be considered to address particular coverage issues.
# of Users	▪ Not immediately available

Question
27. Why not combine the licenses of all public safety entities in Oregon to create a larger pool of interoperable frequencies around the state (e.g. a Pennsylvania model)?
The potential for pooling of interoperable frequencies around the state will need to be investigated in the next phase of the OWIN project. The SIEC approach to date has been to avoid mandating local government participation and instead try to work with the local governments to design a system that when implemented, would attract local participation.

Question
28. What if locals didn't hold the frequency spectrum licenses? What if all licenses were held at the regional or state level?
Regional or state level coordination and management of the frequency spectrum licenses will need to be investigated in the next phase of the OWIN project in concert with SIEC policy actions and other efforts in this area.

Question
29. What if no local governments sign on as a subscriber to OWIN? Conversely, what if they all want to - right away?
The OWIN estimates assume no upfront local government involvement. If local government agencies indicate their interest in becoming an OWIN subscriber in the near term, this can be factored into the RFP and the resulting contract. If local government agencies do want to sign on, it would be better to do so earlier rather than later.

Question
30. How do we integrate OWIN with newer systems that will be deployed in the future? What if something better, cheaper, faster comes along next year? What is our migration plan?
As long as those systems meet Project 25 compliance (for any trunked or digital systems) or as long as they can be connected via internet protocol conversion devices to an interoperability network, they can be seamlessly integrated. If future systems use proprietary protocols, then the overall functionality for their inclusion in the network goes down.

Question
31. How will OWIN be connected to IWN?
At the present time, IWN chooses not to directly interconnect to any other system. Since it is Project 25 compliant, it could be seamlessly connected. At the same time, IWN through the Federal Partnership for Interoperability Coordination (FPIC) is in the process of partnering with OWIN at the interoperability layer level so that IWN users will have full access to the Oregon Interoperability system.

Question
32. Instead of the state owning the system, what if we had a vendor build and own the system and lease it back to the state for use as a service?
The state of Oregon will issue an RFP for OWIN construction based on the requirements of an OWIN system. As part of that procurement process, vendors will be given an opportunity to propose a design, build, own, lease alternative. A private company could make a proposal to build the system and lease it back to the state for use as a service. However, such a proposal would have to be evaluated based on 1) whether it provided the state with the best value alternatives and 2) whether or not it is appropriate for the State to depend on a private entity for the fundamental service of public safety communications. This policy question is of such a fundamental nature that the Legislature and Executive branch may want to provide specific direction to OWIN about whether it is in the public interest of Oregonians to depend on a private provider for all state agency public safety communications, and perhaps a majority of all public safety communications in Oregon.

Question
33. What if a vendor was willing to provide a guaranteed state-wide radio network design at no cost or obligation to the state?
Clearly, such a proposal would have to be considered and evaluated. At this point in time, there is no information that suggests that a private provider is considering such an offer.

Question
34. Why isn't the SIEC and OWIN working closely with the private sector telecommunications companies in Oregon to craft a solution that would leverage existing private sector capabilities and/or new private sector infrastructure deployment into the overall solution?
Oregon state government public safety agencies currently enjoy numerous site-specific partnerships with private sector telecommunication companies (e.g. the sharing of buildings and/or towers). The state will continue to solicit these types of partnering opportunities during the build out of the OWIN system. Private sector telecommunications companies are aware of the OWIN conceptual design and OWIN and the SIEC have made information concerning the conceptual design and core sites available for review. It is critically important for the private sector to step forward with partnering ideas in a timely manner. One significant complication is the timing for participation of private companies at key sites. If there is private sector interest in, for example, using a site tower/site as a site for a cellular antenna the State and a firm(s) that respond to the OWIN design and construction RFP need that information so they know a larger tower will need to planned into the system to accommodate a private interest. Another complication to partnering with private sector firms is a Certificate of Participation (COP) requirement that the state own the facilities, and that states, or other governmental entities do not earn revenue off of COP financing. This is a direct trade off for the favorable interest rate and tax treatment of COP financed projects. The state may want supplement a portion of the OWIN cost by using other financial methods that would allow greater flexibility for private partnerships.

Question
35. What if the legislature doesn't provide funding for OWIN (or some significant level of funding required to move forward with the replacement of the state's existing public safety wireless communications infrastructure)?
OWIN staff are evaluating various design/build alternatives based on different funding scenarios. These scenarios will provide policy-makers with information about system priorities and the pros and cons related to each design/build alternative. Deferring investment in the state's public safety wireless communications infrastructure may, at best, lead to lost opportunities. At worst, the state of Oregon is exposed to a catastrophic failure of public safety communications leading to loss of life and/or property. Not only will the public policy issue of statewide level 4 interoperability be unattainable (all agencies can talk to each other through gateways), the state systems will fall out of compliance with federal mandates and continue to slowly fail, possibly with significant compromise of a response during a critical public safety event. If the Oregon Legislature doesn't provide funding for OWIN, the Oregon Department of Transportation will still have some funding to invest in keeping their system operating, but a large portion of that expenditure will be wasted on maintaining a system that is obsolete and in need of replacement and will do little to improve statewide interoperability. Beyond these issues, isolated city and county investments will improve interoperability in some areas of the state, but an uncoordinated proliferation of frequency licenses could limit a future option to build OWIN as it is currently conceived. That eventuality will put the state back at square one. It seems likely that a failure on the state's part to provide a statewide vision of coordinated communications will lead to multiple jurisdictions working to take care of there own needs without consideration for others throughout the public safety community. This would limit future interest in a statewide effort to improve communications. The OWIN system is far more than just the investment in towers and buildings. The idea of interoperable systems is driving a complete rethinking of how public safety communications are managed and is bringing with it an intense focus on public safety agency cooperation. While it is impossible to predict what exact effect a legislative decision to defer action on OWIN financing will have, it will clearly dampen the output of energy on resolving the communication void that exists today on a statewide basis.

Question
36. What if we did nothing to the system?
The state systems will experience increasing communication failures, compromise the effective response to daily emergencies, and put at risk the lives and safety of Oregon's citizens and its public safety professionals. Ultimately, investments will be made and the state could end up spending more than is needed if those investments are not coordinated in a ways consistent with the goals and policy established in HB 2101 (2005).

Question
37. Why not have each of the larger cities and/or counties built at least 1 super site to house OWIN and other Public Safety agencies as their contribution to interoperability?
Depending on the financing of OWIN, it is not unrealistic to expect local investments that contribute to the system. However, these opportunities are only worth putting energy and effort into if there is a statewide vision for a legislatively approved investment in public safety communications. Another real factor for many rural parts of Oregon, that will limit their ability to contribute major capital investments to the OWIN system, is the pending uncertainty and effect the loss of federal forest payments will have on their budgets. Local and County governments simply may not be in the position to participate in system capitalization in the near-term. It may be that a state investment in OWIN will contribute some level of financial assistance to cash strapped parts of the state.

Question
38. Why is the state not partnering with some other data company that has presence in Oregon (Nextel or Clearwire for example)?
The opportunity for partnerships exists and private companies with an interest in partnering on efforts will have the opportunity to express that desire through the Request for Proposal process of the state. Today, OWIN does not have the legal authority to simply select a private partner without a open and fair process to determine who that might be. To date, no proposals have been made to OWIN or the SIEC.

Question
39. Why not engage non-traditional Public Safety wireless companies such as Microsoft, Cisco, Intel, Computer Applications, etc., in an effort to be understood & understand what other "open standards based" solutions may be available?
The process of developing the OWIN concept has given the SIEC and OWIN a solid handle on issues concerning "state-of-the-art" technology, and a clear understanding of the systems being deployed throughout the nation. Oregon not only has an OWIN project manager that is a national expert on radio systems, it also brought on a highly qualified firm – Federal Engineering – to produce the conceptual design for the OWIN system. The OWIN system is designed using proven technology to meet the single standard for open architecture of radio systems, known as Project 25. There are no other nationwide standards of this kind in place today. The system is scalable and can be linked with other advanced technologies. If Oregon were not such a large geographic state with two mountain ranges, it is likely that a single 800 MHz system would have been the preferred choice because of its data capabilities, however such a system could double the cost of a statewide system. The OWIN proposals balance cost, capabilities, and coverage to produce a solid system for statewide public safety communications. OWIN is not being designed like a Cadillac system but rather is more like a Chevy pick-up truck and a "like a rock" solid proposal.

Question
40. Why not send out an RFI requesting the cost (if any) and time needed to provide a State-wide Public Safety radio network design that meets predefined criteria including "open standards".
Again, P25 is the only open-standards standard for public safety radio systems, so in effect, when the RFP is issued, it will provide a competitive environment for national firms to compete to meet the P25 requirement for the system.

Question
41. What if local regions already have a system built for 2013?
Local regions would not likely have a specific need to be a part of the OWIN system as a user and will probably have little interest in subscribing to the OWIN network until they have to replace their system. However, OWIN would seek to use their network and co-locate and use local infrastructure to carry the OWIN system and, in return, the jurisdiction could be provided access to OWIN. This set of circumstances could save the state money and provide enhanced statewide communication capabilities to a local region.

Question
42. Why are we building a system that states it will serve all of the public agencies in Oregon, yet the perception is that it is a replacement for aging OSP infrastructure?
That perception is incorrect. The state must replace its aging and at-risk public safety communications infrastructure. The Oregon State Police and Oregon Department of Transportation operate the largest portions of that infrastructure. Much of it should have been replaced more than a decade ago. It is true that the primary purpose of the replacement infrastructure will be to provide service to state public safety agencies. However, it is important to understand that, <u>today,</u> the existing infrastructure supports OSP and ODOT communications needs AND the needs of many other state and local, special districts, tribal and federal agencies. The replacement infrastructure is also intended to provide enhanced capabilities to all public safety agencies throughout the state that are not currently available. The vision of the OWIN proposal is to take advantage of the need for new state infrastructure by broadening the system scope, availability, and interoperability for the benefit of all public safety agencies in Oregon. In fact, the efficiency and cost effectiveness of system use for all agencies is improved with broad utilization by multiple agencies.

Question
43. Wouldn't the amount of funds required for consolidating and upgrading four state agency networks be better spent on a network solution that permits a broader range of users while also providing a larger user base to support the costs?
It would be a mistake to not make the OWIN system available to a wide public safety constituency. To that end, the OWIN proposal provides many opportunities to ensure wide availability and use of the system. A key factor for achieving this policy aim, or not, is how the system is financed. The system must be affordable to local agencies, meaning costs need to be lower than or competitive with their existing services or the state must provide incentives that promote system use. To the extent federal agency partnerships are secured, the cost structure for both infrastructure and ongoing system operations may improve. It is a major policy goal of the State to develop long-term federal partnerships. The OWIN proposal allows the state to target a larger base. At the same time, it is important to understand that because of existing systems, not all users will be ready to fully participate in OWIN until they retire the cost, at the end of life cycle, for existing systems. The other policy consideration regarding finance is that the more responsibility the state takes for developing a broad based system, the less taxpayers have to expend for local investments.

Question
44. Why not create or share a common network backbone with multiple organizations (state government at large, public safety agencies, education community, healthcare community, hospitals, etc)?
The OWIN system can and should provide a shared backbone for as broad of use as possible – however, there are limitations on use. One key is the capacity of the system to be built and the other is that the current concept of OWIN is to build this system using licensed spectrum reserved by the Federal Communications Commission for public safety communications. As OWIN is developed, it can and will provide some level of service for multiple uses. Any communications availability outside of public safety will have to be rigorously managed and priority given to public safety use whenever the need arises. State policy should support broad access to public safety communications systems by non-traditional public safety service providers like hospitals and medical providers and utilities. The caution for policy makers is that "scope creep" – providing too many expectations for use of the system - will likely compromise our ability to make a timely and necessary investment in critical public safety communications. Access and add-on investments should be carefully planned and considered before being implemented. The perfect place to address these multiple needs is within the Interoperable Communication Plan (ICP) that was required by House Bill 2101. This plan is a "living" plan that will be continually developed and refined. The plan should provide great opportunity to increase use of the OWIN system and phase in additional capabilities.

Question
45. What if creating a common network backbone for use by multiple organizations meant we were competing with private sector?
It is expected that the Legislature will balance any expansion of OWIN with issues related to private sector competition. However, the current direction of OWIN and the SIEC is to partner with the private sector, not compete with it. It should be noted that under House Bill 2101, the Legislature provided a greater ability to provide communications services for public safety use than for other non-public safety purposes.

Question
46. Why not just comply with the narrowband mandate?
A strategy to simply comply with the FCC narrowband mandate does not enhance the public safety of Oregonians in a meaningful way. An investment of this kind would allow the state to replace its existing wideband systems and comply with the federal mandate. There would also be modest improvements in buying narrow-band radios for communication with other agencies that have narrow-band communications systems – primarily in forest fire protection. However, that limited investment would provide voice only capabilities (no mobile data), and would do nothing to address the state's lack of coverage or the need for statewide interoperability. For comparison, it is like buying a high-definition television without paying for cable or satellite service that provides high-definition programming. Importantly, HB 2101 already requires compliance with the FCC regulation, but the policy direction of the Oregon Legislative is clearly to plan to replace infrastructure and to promote interoperability for public safety providers because that action would improve the safety and well being of the Oregon public.

Question
47. What if a blanket construction permit were issued by the state to construct sites statewide?
This action would make the building of radio system infrastructure -- towers and buildings – uniform and consistent statewide. A likely benefit would be the timely construction of facilities which could well translate into the saving of time and money for the overall project. Such action would require legislative action.

Question
48. Who will be responsible for installing, maintaining and operating the interoperability package at sites across Oregon? Who will monitor the traffic?
This is a critical issue for the system and must be answered before the state expends millions of dollars building a system. Today, it is envisioned that the State will provide overall policy direction for the management of frequencies, and interoperability channel use. This direction will be coupled with regional agreements that are specific about how local communications will be allocated, managed and monitored. Once the legislature reserves funds for the project and provides a governance structure for OWIN, the management questions for system operation will be specifically resolved and incorporated into the Interoperable Communications Plan (ICP) by January 2008. Resolving this important issue should be an accountability requirement by the Legislature prior to release of any reserved funding for interoperability features of the OWIN system. With decisions from the 2007 Legislature to move forward with OWIN, it is expected that a regional management approach can and will be readily developed by the January 2008 timeline that will allow the system to be deployed on schedule.

Question
49. If I am a City or County and have a new system, what benefit is it to me to join the OWIN system when it may cost me more money?
We don't know if the system will cost a local jurisdiction more or less today. We do not know what the final cost of OWIN as approved by the Legislature will be, nor do we yet know if the Legislature will provide any incentives to help lower local costs. The simple answer is that there is little reason for a local jurisdiction to join or utilize a future state system if their current system costs less. However, when a city or county system reaches the end of its life cycle and is in need of replacement, it may be feasible that a local jurisdiction would join a statewide system at that time. While a local jurisdiction may not have a strong need to join the system today given their built-in cost for communications, the state has many policy reasons to make such a system available to the local jurisdiction and to encourage maximum use of the system. While the state is being asked to invest in infrastructure, it is also being asked to create a governance structure for state public safety communications across Oregon. The state and the SIEC is in the best position to cause management of the void between FCC licensing of spectrum and the use and coordination of the spectrum to advance public safety communication within its borders (and beyond). Without the state taking responsibility for this, public safety investments and operation of communication systems will continue to develop without coordination. The obvious and glaring flaws of the last generation of radio technology and deployment should not be repeated for the next generation of investments. The technology and system management approaches available today can prevent that outcome. This is exactly why public safety organizations across Oregon are working together to form a strong statewide partnership based on cooperation and the common/collaborative management of public safety communications.

Question
50. Why didn't the SIEC start with a public safety radio fund, in the form of legislation, (similar to Florida) four years ago when OWIN and the SIEC were on the drawing board?
Four years ago, the state was entering a dramatic economic down turn and it was not financially feasible to create a reserve fund. Today, the state is in position to consider a variety of models to insure long-term infrastructure replacement and financing for the cost of system operations.

Question
51. Why give up local control of radio system operations?
No control is lost, only responsibility for operational management is transferred, provided a commitment is made and kept to provide quality service. All city, county, sheriff, police and fire services need is the ability to communicate when the buttons on the radio are pushed in the field. If local jurisdictions have specific needs, beyond the services provided by the OWIN, those investments can be made in concert with OWIN. While some areas of the state have local public safety interoperability, many more do not. The OWIN system may provide many areas of the state with increased coverage, more interoperability or operability, and access to data systems that a single jurisdiction might not be able to afford or achieve on its own.

Question
52. What is the Interoperability Communications Plan?
The Interoperable Communications Plan (ICP) is the means by which the State of Oregon will continuously plan for and improve the coordination of public safety communications throughout the state. The SIEC objective is for the plan to lead the state on a path toward achieving Level 4 interoperability statewide. This process will take place over several years and is in its initial year of development. As local interoperability planning advances toward completion, these local plans will be incorporated into the statewide plan. The SIEC will provide overall policy guidance for the statewide ICP. Today there is a limitation on available information about existing systems. The ICP will capture that detail of system operation over time. It will address issues of frequency management, nomenclature or plain language communication requirements, resolution of interference disputes, use of interoperability channels, maintenance of systems, facility requirements, federal and border state coordination, responsibilities for operations, training and drill requirements, tactical communications, and a host of other policy issues to improve the effectiveness of public safety communication systems. During 2007, the state and SIEC will have the initial planning clearly outlined. The state ICP is expected to comply with any Federal Homeland Security requirements that evolve for communication systems. At this point, there is no one size fits all approach to creating a plan at the federal, state, or local level. However, Oregon is in a position to excel in this effort because of the strong state and local partnerships that are in place.

Question
53. Why is a plan necessary?
Public safety communications is a complicated business. Today, it requires the coordination of hundreds of independent decision makers at various levels of government service (and some private). To expect that the complexity of these issues can be coordinated and managed without the benefit of planning is unreasonable. It follows that one of the primary benefits of good planning is that it puts the state in a position to coordinate at a statewide, regional, and local level. This is possible only by the inclusion of a broad constituency at the table and a sustained involvement of this constituency in the planning process over time. The state must provide the clear vision, policy guidance, and strategic direction required to avoid redundant and uncoordinated investments of millions of dollars in public safety communications infrastructure. The best way to do that is through the collaborative development of a statewide Interoperability Communications Plan. Without such a plan, systems will continue to be deployed without a priority on maximizing the availability and interoperability of Oregon's public safety communications. This is an issue faced by every state in the country. Like other states, Oregon needs a reasonable plan and a set of policies and solutions to manage this challenge. It is also important to note that such a plan provides a way to benchmark accountability for the return on investments.

Question
54. What about homeland security criteria for interoperable communications?
The State and OWIN are working to comply with nationwide criteria for interoperable communications. To date, the federal government has provided general guidance for state and local investments. Given the state's current level of experience with this issue, it is not believed that the federal government will adopt unachievable requirements for public safety communication systems. However, national decisions could drive increased expenses for compliance with federal directives. Not only is specific federal direction lacking, so is a program of federal financing for statewide improvements in radio communications systems. While a specific financial mechanism is not in place today, Federal Homeland Security grants and federal partnerships have contributed more money toward public safety communication systems than has the State of Oregon.

Question
55. Who will approve the Interoperability Communications Plan?
The State SIEC will approve the plan and the Governor and Legislature will provide oversight for the plan and its direction. It remains vitally important that users of public safety communications systems understand they have a major stake in interoperability planning and policy development. Coordination of decision making is essential to ensure that the benefits each jurisdiction receives from statewide interoperability can be maximized to the greatest possible extent.

Question
56. When is all this planning going to happen and when will it be done?
Local and statewide plans are being developed today. The SIEC's Strategic Planning Committee is very focused on the issue of plan creation as it was given the central responsibility to create Oregon's first Interoperability Communications Plan (ICP). The SIEC should be in the position to adopt a first statewide ICP in the first quarter of 2007. Major planning will continue through 2007 leading to an updated plan in 2008. Legislative action in 2007 will have a major effect on the direction of the plan and the timing for the achievement of interoperability benchmarks. The plan will be continuously refined and will be officially updated at least on a biannual basis (if not annually).

Question
57. Will state and local entities have to comply with the statewide Interoperability Communications Plan?
A plan achieves little unless it actually directs action that achieves its aims. Successful implementation of the plan will require voluntary compliance. The absolutely critical issue for the success of the plan is user acceptance of any conditions as reasonable and necessary. That is why it is essential that users have a strong presence in the plan development and approval process and it is why the SIEC is recommended as the approving body. The statewide plan will acknowledge memorandums of understanding between agencies and within regions of the state. To the extent these agreements delineate issues of compliance they will also be considered a part of the plan. Compliance is an important concept, but for the most part, the need and desire to comply is not the most significant issue. The issue of increased significance is what sanctions may be applied, in an effort to increase or compel compliance. Already, some federal funding is restricted by the State if counties do not have, or are not developing interoperable communications plans. Urban Area Security Initiative Homeland Security grants also have required that tactical communications plans be developed. Related to these issues is the important role the SIEC can play to help resolve disputes. It is vitally important that all public safety partners have a significant role in making these governance decisions, but it is absolutely necessary that the power to insure orderly communications is reserved by the eventual OWIN governance structure that is put in place as guided by the goals and objectives outlined in the statewide Interoperable Communications Plan.

Question
58. What if federal funds dry up for state or local use?
More responsibility will fall to state and local governments to find the funding and the means to improve public safety communications interoperability. Lack of federal funds will impact the time it takes to achieve interoperability. In any case, it is important to grasp that the opportunity to coordinate pubic safety systems may be a lost opportunity unless efforts to ensure such coordination occurs are made a high priority. The more frequencies or licenses granted to individual jurisdictions will make it more difficult to coordinate their use. Additional investments that are made at the local level without coordination with planned OWIN investments will drive us all further away from the goal of statewide interoperability. The point is that even should federal funds be restricted or reduced, there are significant costs to deferring investments. And there are even higher costs associated with uncoordinated investments designed to achieve the needs of an individual jurisdiction without regard to the achievement of the broader statewide interests of Oregon's public safety community. We must work together to achieve statewide interoperability. We have no other choice.

Question
59. What weight is placed on local systems/plans that have already been put in place before OWIN that meet the 2013 narrow-banding requirements?
It is a factor currently considered in the allocation of Federal Homeland Security Grants. For the past two years, representatives of the SIEC have been a part of the grant review process. Current requirements for allocation of the federal funds by the State of Oregon to local government require either that a jurisdiction have an Interoperable Communications Plan, or that they are in the process of developing one. Local plans for narrow-banding, or investments that lead to narrow-banding represent major opportunities for the OWIN system and for partnership that will allow the OWIN system to leverage local investments and vice versa. To the extent that current local plans are divergent from statewide objectives of interoperability, more consideration, negotiation, and policy and program development and coordination needs to occur to increase the compatibility of local plans with current state efforts.

Question
60. What if a national system is built?
That would be a welcome development. However, there are no known plans to build a national system for federal, state, and local use. The practical reality today is that the states and local jurisdictions are taking the lead on system development. These state and local systems will likely be linked by federal investments to create something akin to a national system over time (i.e. a nationwide "system of systems" much like the approach the SIEC has endorsed within the borders of Oregon).

Question
61. How do we address the border issues?
Local plans are expected to address cross-border issues with other states. The SIEC is also interested in pursuing the common use of systems with other states that border Oregon. In fact, the Urban Area Security Initiative in Oregon is comprised of Multnomah, Washington, Clackamas, and Columbia counties ….. and Clark County, Washington. Today it is believed that investments along Oregon's border with Washington and Idaho are possible. The border issues will remain important issues that must be addressed and will ultimately be incorporated into the state's Interoperable Communications Plan.