

State Radio Project

Frequently Asked Questions

The State Radio Project has the following objectives:

- Modernize the state's failing microwave radio system
- Replace the Oregon Department of Transportation and Oregon State Police two-way conventional radios to meet the Federal Communications Commission mandate for narrowbanding
- Provide a two-way trunked radio system
- Lay the foundation for statewide interoperability

Here are some frequently asked questions about the project.

PROJECT WHYS AND HOWS

Q. Why does Oregon need the State Radio Project?

A. Oregon's microwave radio system, which connects dispatch centers to remote areas of the state, is obsolete and failing at an increasing rate. Some parts can only be obtained on eBay and others aren't made at all anymore. At the same time, the FCC is requiring all license-holders to stop wideband broadcasts and begin narrowband broadcasts by Jan. 1, 2013. These are among the reasons the 2005 Oregon Legislature unanimously endorsed a new radio system.

Q. How did the project come into being?

A. Not long after Sept. 11, 2001, the governor of Oregon established the State Interoperability Executive Council to improve public safety communications statewide. In 2005, the Oregon Legislature unanimously passed House Bill 2101, ordering a new secure and reliable public safety communications system, thus initiating OWIN, the Oregon Wireless Interoperability Network project, which was later rescoped (June 2011) into the State Radio Project.

Q. What are the problems with the existing system?

A. Radios currently used by ODOT cannot broadcast in the narrowband spectrum as stipulated by the FCC. Noncompliant radios must be replaced by the FCC deadline of Jan. 1, 2013.

Further, Oregon's microwave system is 30 years old and has exceeded not only its design life and functional life, but now its practical life. Also, additional microwave infrastructure (sites and equipment) must be constructed, installed and integrated into the system for the trunked radio system to function in the selected areas.

TECHNICAL DETAILS

Q. What kind of new system are we talking about?

A: The State Radio Project is developing a digital P25 conventional radio system with a trunked radio system in selected areas. The project will consolidate and modernize the existing ODOT and OSP radio systems. The new system will have capabilities that make it easier for emergency services to establish connections with one another, such as allowing a local police officer to make radio contact with a state trooper in the same area.

Q. What does trunked mean?

A. A two-way trunked radio system allows simultaneous conversations without waiting for an open channel. Trunked radio systems manage congested airwaves, preserve Oregon's use of the 700 MHz band leased from the FCC, prevent signal interference and provide opportunities for future coordination with local government radio systems.

Q. How much does this trunked system cost?

A. An estimated \$6.1 million in the project's 2011-2013 budget pays for equipment to establish two-way trunked radio in the Willamette Valley from Lane County north, east along the Columbia River and south to Deschutes County.

Q. What does P25 mean?

A. Over the past decade, Project 25, known as P25, has become the widely accepted technical standard for digital radio communications. It has replaced or will replace the aging P16 systems operating in most parts of the state. P16 systems are no longer manufactured and parts are no longer available.

Q. What's so special about a P25, digital, trunked system?

A. This kind of system offers digital voice, encryption and trunking and can be easily adapted for wide interoperability. It provides priority for emergency service calls, is fully interoperable, can survive severe storms, has built-in redundancies to offer operations during failure and can be adapted for data transmission. This is the system that best meets Oregon's financial and public safety needs.

Q. Were other types of technologies looked at besides digital two-way radios?

A. Yes, many systems were considered, among them fiber optics, satellite phones, ham radios, cell phones and Terrestrial Trunked Radio (TETRA), the system widely used in Europe but not in North America. These systems were excluded for a variety of reasons, the most common being high cost, instability under stress and the inability to give priority to emergency service providers.

Q. Why is Oregon's State Radio Project working on tower sites in Washington?

A. In the interest of economy and efficiency, Washington and Oregon agreed that to best serve their emergency response communities, the radio project needed to have tower locations along both sides of the Columbia River. This co-location approach eliminates redundancy, reduces expenses and optimizes signal strength and radio connections. The locations are also points of interoperability that can be capitalized upon for future development.

RADIOS

Q. How many of each type of radio is needed?

A. The State Radio Project will provide OSP with 952 mobile radios and 776 hand-held radios. ODOT will receive 3,214 mobile units and 1,813 hand-held units.

Q. How much will the radios cost?

A. The price of the basic radio starts at \$2,900 and increases as local jurisdictions add features, such as trunking, encryption or a GPS locator. This offers local control over the features each jurisdiction needs.

COST AND FINANCING

Q. What will the State Radio Project cost?

A. For the 2011-2013 biennium, the project estimate is \$108.5 million. When added to OWIN funds spent and future anticipated funding, the budget totals \$209.4 million from inception.

Q. What's the budget breakdown?

A. The project's budget breakdown is:

- 34 percent to replace the failing microwave transmitters, with work starting in the later part of 2012.
- 17.6 percent to meet the FCC narrowbanding requirement.
- 8.4 percent to complete a trunked radio link reaching from Lane County north to Portland, east along the Columbia River and south to Deschutes County.
- 1.3 percent to achieve a small but significant increase in interoperability and lay the groundwork for future interoperability expansion.
- 5.3 percent to honor obligations made with local governments. Keeping these commitments ensures local governments can complete projects started contingent on state participation.
- 26.5 percent to cover operations and the early part of project completed under OWIN.

Q. Where does the money come from?

A. Funding for the State Radio Project is mostly from bonds, including capital construction bonds, general obligation bonds and highway revenue bonds.

NARROWBANDING

Q. What is narrowbanding?

A. Radios today broadcast on wideband frequencies at 25 kHz. The FCC is requiring license holders to begin narrowband broadcasting, at 12.5 kHz, which has become technologically more practical, by Jan. 1, 2013. Licenses to broadcast on the newly available bandwidth are already being issued, many to public safety agencies.

Q. What are the consequences of failing to meet the FCC mandate?

A. The FCC can impose several sanctions to force compliance. Its enforcement arm can issue fines, revoke licenses and, in the worst cases, file suit in federal court, which could mean large fines and even prison terms. The FCC does have a waiver process to extend the deadline for agencies that have demonstrated an effort to comply.

MANAGEMENT

Q. Who will manage Oregon's new upgraded system?

A. When the State Radio Project is complete, the new state system will be managed by the ODOT/OSP Wireless Section, which became part of ODOT's Major Projects Branch in early 2011. The section has offices in 10 communities around the state.

Q. Will new state employees be needed to manage the new system?

A. A Policy Option Package request seeks to increase the Wireless Section staff by eight to help manage the system, some based in Salem and some around the state.

INTEROPERABILITY

Q. What's interoperability?

A. Public safety communications can occur only when the communications paths (frequencies, equipment and signaling) are compatible. Interoperability is an important issue for law enforcement, fire fighting, EMS, and other public health and safety departments, because first responders need to be able to communicate with one another during wide-scale emergencies. As became evident during the Sep. 11, 2011 attacks, many agencies cannot exchange information because they operate widely disparate hardware that is incompatible,

Q. Can Oregon use a system of systems approach and create greater interoperability?

A. No, not now. A system of systems is an overarching network operation control, from which a single operator can monitor a network of radio systems. Such an arrangement requires technologically compatible systems. The State Radio Project will build a P25 system but there are very few P25 systems in Oregon right now. Most are archaic, end-of-life P16 systems, which are no longer made. When P16 systems are upgraded to P25 systems, they will be able to be connected using system interface tools that allow P25 compliant equipment to work together.

Q. Will the new radio system be interoperable?

A. Interoperability allows public safety providers from many jurisdictions to connect with one another immediately. Interoperability depends on agreements between jurisdictions about how they will communicate and operate together.

Once the agreements are in place, the radio project has a budget of \$2.3 million to support increased interoperability through tower-top repeaters and lay the groundwork for future expansion.

Q. Who oversees interoperability in Oregon?

A. In 2002, Oregon's governor established the State Interoperability Executive Council. The mission of the SIEC is to develop policy and guidelines, identify technology and standards, and coordinate intergovernmental resources to facilitate statewide wireless communications interoperability with an emphasis on public safety. The 17 voting members of the SIEC represent state and local public safety organizations that have a strong interest in the creation and operation of public safety communication systems.