



Wyoming's Statewide Public-Safety Interoperable Radio Communications System

WyoLink – Frequently Asked Questions (FAQ)

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Goals

1. What is WyoLink supposed to accomplish?

WyoLink is Wyoming's Statewide, Public Safety, Interoperable Radio Communications System.

- It is a statewide system — meaning that participating public safety agencies within Wyoming will be able to communicate within and outside their home areas, as they will be on a shared radio system.
- It is a public-safety system — meaning that it is intended for the use of agencies whose mission is to protect the lives of their neighbors and respond to emergencies.
- It is an interoperable system — meaning that public safety agencies will be able to have direct communications, when needed, to operate with one another across disciplines and jurisdictions.
- It is a radio communications system — meaning that the system is designed to exchange short operational voice and data messages, in real time. WyoLink is for mobile users and is not intended to be a replacement for wire-line telephone systems, cell phones, or full Internet access.

The goal of WyoLink is: ***emergency service providers will be able to communicate with each other as needed on a daily basis and during major events.***

2. Who will oversee WyoLink implementation?

The Public Safety Communications Commission (PSCC) is responsible for providing policy level direction related to planning, designing and implementing guidelines, best practices and standard approaches to address Wyoming's public safety communications interoperability issues. WyoLink's basic premise is cooperation for a truly statewide system, not a system dominated by any one agency. This implies integration with local, adjacent state, federal, and other agency initiatives. Cooperative planning and implementation will allow Wyoming to avoid communications chaos that could result from independently pursued systems.

The PSCC is a Governor appointed Commission with 17 members representing the following agencies and organizations: Wyoming Police Chief's Association, Wyoming Sheriff's Association, Division of Criminal Investigation - Office of the Attorney General, Wyoming Game and Fish Department, Wyoming Department of Transportation, Department of Health, Wyoming Office of Homeland Security, Wyoming Fire Marshal, Wyoming Livestock Board, Department of State Parks and Cultural Resources, Wyoming Fire Chief's Association, The Public at large, Municipal Government or a municipal government association, County Government or county government

association, An Ambulance and Emergency Medical Services Organization, Tribal Government or tribal government association and Federal Government or federal government association. The PSCC holds four meetings per year at various locations throughout Wyoming.

More information on the PSCC and its activities may be reviewed on the PSCC website at: <http://pscc.wyoming.gov>

3. When will WyoLink be implemented?

Currently, WyoLink is logging over 1.5 million calls per month. WyoLink has 70 sites planned or operational throughout the state. WyoLink is fully operational in 21 of the 23 Counties, four sites in Lincoln and Teton Counties should be completed in 2013. There is no mandate that agencies transition to WyoLink, this is a local decision.

More information on WyoLink and the current WyoLink site map may be reviewed on the WyoLink website at: <http://wyolink.wyoming.gov>

Planning

4. Is this an unfunded mandate for local governments to buy new equipment?

No. It was always intended to take full advantage of new technology for those that can buy new mobile radio equipment without degrading service to those who have to wait to buy new equipment. One of the big advantages of WyoLink is that new radios that are fully compatible with Project-25 trunking are also capable of communicating with existing radio systems. Many communications grants now require the Project-25 equipment be purchased with the grant funds. Many Homeland Security Grants have been used to purchase WyoLink capable radio equipment.

The FCC has mandated that all radios be narrow-banded by 2013. Narrowbanding requires the radios to operate on a 12.5 kHz channel spacing instead of the current 25 kHz spacing. This mandate may require agencies to replace their current base stations, repeaters, vehicle mounted radios and handheld radios. WyoLink capable radios meet this requirement.

5. Can we just keep using our existing system?

Yes. Continued use of existing systems is an option for several years, although eventually the FCC will require all radio systems to change to “narrowband” operations, which in most cases will require replacement of all radios. (This FCC requirement is

designed to increase spectrum availability for all radio users.) Even then, nothing would force an agency to join WyoLink. WyoLink's functional and operational advantages must be weighed against cost. The WyoLink strategy has the flexibility for agencies to transition to WyoLink gradually as funding is available. The WyoLink strategy was based on an extensive business case analysis to find the most cost-effective solution for public safety agencies within Wyoming. The long-term analysis shows that agencies are likely to pay more by upgrading and staying on their own systems than by joining the shared WyoLink system.

6. What will it cost an agency to be part of WyoLink?

Each agency will be responsible to purchase and maintain its own subscriber units, the equipment carried by staff, installed in its vehicles, and used by its dispatchers.

A negotiated pricing structure has been developed. This agreement allows Wyoming agencies to purchase of subscriber radio equipment at prices equal to or better than GSA or WSCA contract pricing. Information regarding this agreement is posted at the WyoLink web page: <http://wyolink.wyoming.gov>

7. Will there be user fees to support WyoLink?

The answer depends very much on how the question is asked.

No. There are no plans to impose user fees. WYDOT will maintain the basic system infrastructure.

Yes. Where an agency requires specific services and features, and where those costs are directly attributable, clearly measurable, and plainly reasonable, those costs would be passed on to the agency.

Maybe. Ultimately, the issue of user fees is a policy question to be decided by the Public Safety Communications Commission. Depending on the Wyoming Legislature's budget process, the PSCC may have to review user fees.

8. Who will maintain WyoLink infrastructure?

The WyoLink Support Office with the assistance of the WYDOT Telecommunications will be responsible for maintaining the system infrastructure, which is all the equipment at the radio sites and the control system. WyoLink includes a 24/7 – 365 day monitoring system of all WyoLink infrastructure and systems. The WyoLink Support Center is available 24/7 by calling 307-777-9565.

Individual agencies will be responsible for maintaining their own subscriber units, which is all the equipment they have mounted in vehicles, used at dispatch centers, and/or carried by staff members.

The PSCC has developed a WyoLink subscriber and system support policy, published in the WyoLink Handbook and a quick reference guide. Both of these documents are available on the WyoLink website: <http://wyolink.wyoming.gov> and the PSCC website: <http://pscc.wyoming.gov>

9. Are agencies required to provide their FCC licenses to WyoLink?

No. Local agencies will not be asked to provide their current FCC licenses to WyoLink if they decide to join and use WyoLink. WyoLink has developed a frequency plan that includes FCC frequencies and has requested use of Federal frequencies to complete the radio system and to provide the minimum of five channels per radio site. If an agency requests additional services in their local area, discussion on how to support the additional services may include additional frequencies and who would provide those frequencies.

10. Will dispatching services still be done locally for agencies joining WyoLink?

Yes. WyoLink will provide the statewide communications infrastructure, not a statewide dispatching service. WyoLink does not require changing your existing dispatching procedures and agreements, although it will enable improvements if desired. The PSCC has provided grants to help dispatch centers upgrade their equipment to become WyoLink capable.

11. What differences will a dispatcher see when WyoLink is developed?

In many ways dispatcher's lives get easier; they will be able to focus more on operational issues and less on running the radio system. Today many dispatchers need to be conscious of which radio site to use to contact a unit in a given location. WyoLink will automatically route traffic to the appropriate radio site for the location of the user. WyoLink also provides options for dispatchers that are not available on non-trunking systems like unit identification, emergency notifications and operator priorities. Automatic vehicle location (AVL) will provide the dispatcher with an additional tool to use when coordinating activities.

12. Will WyoLink support encryption?

Absolutely. Project-25 includes standards for encryption. WyoLink will support multiple encryption keys so that user agencies will be able to restrict their communications to only be received by the intended audience. By sharing a specific encryption key, different agencies would be able to communicate with one another while still maintaining the security of communications. WyoLink is currently supporting DES and AES encryption. Over-The-Air-Rekeying (OTAR) is supported by WyoLink.

13. What will happen to the pagers used by public safety agencies?

Pager services are not included in WyoLink. Currently, no manufacturer produces a pager that would work on the WyoLink Project-25 trunking infrastructure that is comparable to pagers used by public safety agencies on analog systems now. Agencies using analog pagers will need to maintain their systems for paging.

14. Will WyoLink offer better coverage than my agency has today?

Your agency should see overall coverage equal or better than what you have today. The mobile (vehicle mounted) radio coverage goal for WyoLink is 95% statewide, and the consultant's preliminary analysis in the statewide plan indicates that over 94.6% coverage may be possible with 57 sites. Additional sites or shifting of sites will be considered to address particular coverage issues.

WyoLink users will have statewide coverage. The WyoLink system will allow users to access radio sites outside of their normal coverage area. With the design of the WyoLink system, the user will have multiple radio sites that can be used, the radio will select the best sites for each radio call.

15. What about portable radio coverage?

The PSCC has recognized the need for improved portable radio coverage and created the following goal on providing portable radio coverage:

Therefore, the goal of WyoLink coverage enhancement is to achieve interoperable public safety communications comparable with existing portable radio coverage and in areas of critical concern, identified through testing and cooperative efforts with local public safety providers, determined after statewide deployment in an area. There is an expectation of local participation within the jurisdictional area of influence.

The Wyoming Legislature has provided funding for enhanced portable radio coverage. WyoLink will work with local agencies on testing coverage in local areas and solutions to identified areas needing additional portable radio coverage. The local participation may include site leasing and/or site development including power, shelter and tower.

WyoLink Membership

16. How do I join WyoLink?

The WyoLink application is available on the PSCC website: <http://pscc.wyoming.gov> or on the WyoLink website: <http://wyolink.wyoming.gov> Once the application and the Attachment A – Relationship Manager forms are completed, they are sent to the PSCC Administrative Support, address is on the application. The Interoperability Executive Committee will review the application and pass it on to the PSCC for consideration.

Upon the approval of the PSCC, a membership agreement will be developed and signed by the PSCC and Member.

A Readiness Document for Joining WyoLink is available on the WyoLink and PSCC websites that outlines the process for migrating to WyoLink.

17. Will there be training to help us learn to use WyoLink?

YES. The PSCC has included a training requirement within the Membership Agreement. The State of Wyoming has received grants to help provide WyoLink and Interoperability Training to all users. The Wyoming Fire Marshal's Office and the Wyoming Law Enforcement Academy have instructors that will present the training within the local agency. Some train-the-trainer classes will be held to help agencies with continuing training.

User training has two elements. The first element would equip the user to operate the features and functions of the radio equipment. The second element would equip the user to understand the communication resources provided through WyoLink, to know which radio channel to use in which situation and understand the operational plans that support and direct these decisions.

18. Who programs the radios for WyoLink usage?

This is a multi part question. The end user is responsible for the programming costs for their radios. Adding the WyoLink talkgroups to a radio codeplug does not cost the user, this is provided by WyoLink support. The users will need to have someone program their conventional channels and radio parameters – Alias, buttons, switches and menu items. The radio will need to be read using a computer program to save the current radio programming (codeplug), this codeplug is emailed to WyoLink Support which adds the approved talkgroups into the codeplug. The revised codeplug is then sent back to the user, who is responsible to have the codeplug wrote back into the radio. Classes are available to train users on using the radio programming software.

Technology

19. What is Project-25?

Project 25 (P25) is the standard for interoperable digital two-way wireless communications products and systems. Project-25 is an open standard rather than a proprietary standard. Radios produced by different manufacturers will be able to communicate with one another because they are developed to the same technical standards. Project-25 is actually a suite of technical standards. Different standards address how different elements of a radio communications system should function with each other.

It is important to note that not all Project 25 radios will work on the WyoLink system. Only radios that support Project 25 trunking will function on WyoLink. Several manufacturers are producing Project 25 radios, but not all of those radios support trunking.

20. What is trunking?

Simply put, trunking permits a large number of users to share a relatively small number of communication paths, called trunks. A computer manages this sharing of communication paths automatically. The central controller, a computerized switch, makes channel selections and other decisions normally made by the radio user. Channel assignment is automatic and completely transparent to the individual users. When a radio user needs to speak, the frequency is assigned by the system from the pool of available frequencies and used for the call. When that user is finished with their call, the frequency is placed back into the pool for another individual to use.

This is very similar to the workings of the telephone system. When a call is placed, the phone system patches together a series of circuits from the calling party to the intended receiver. When the call is complete the circuits become available to be used in constructing another call. In practical terms, when a radio user selects a channel on their radio they are defining who they want to talk to, rather than selecting which repeater on which mountaintop they want to use. Even if the unit are trying to communicate with is on the other side of the state, the system will set up the call.

Trunking provides the following advantages:

- Flexibility — Adding user channels (talk groups) does not require adding more radio frequencies or transmitters. Channels are added by programming the system and the user radios rather than by constructing additional transmitters.

- Efficiency — Radio frequencies are shared between users, thus fewer frequencies are needed. The number of radio frequencies at a given site is a function of the traffic volume rather than the number of channels in the user's radio.
- Reliability — The control system automatically works around faults, sends alarms to the technicians, without users even knowing. Should a transmitter fail, the control system would simply not assign that frequency when it sets up calls.

21. Is there a back up if a failure occurs in the WyoLink radio system?

The WyoLink system will be designed to avoid any single-point-of-failure. The master control site will have multiple levels of redundancy to maintain operation in the event of a computer failure. Likewise, each system zone has built-in redundancy to be able to operate in the event of failure of one of its controllers. If the microwave link to a radio site fails, the radio site has the ability to operate as an independent trunked radio site. The site will allow radio users in its coverage to communicate with each other; however, wide-area communications involving other sites would be lost. When a failure occurs within the radio system the failure will be detected by the alarm system and technicians will be automatically notified.

22. How far will I be able to talk on the WyoLink system?

Trunking technology will set up a call regardless of the sending and receiving unit locations in Wyoming. Units will automatically “log in” to a radio site, and to the talkgroup that the user has selected. When a call is initiated on that talk-group, the system will direct the user's radio to a specific radio frequency at that site so communications may occur. If required, the system would set up a call from one corner of Wyoming to the other.

23. What will happen if all of the frequencies at a site are in use and I have an emergency?

First, the talk-group structure within the system supports a series of priority levels. It is possible for one unit to assert a higher level of priority for system access than other units.

Second, user radios are equipped with an emergency button. All user radios communicate with the system on what is called the “control channel,” which is how they receive frequency assignments. When a user presses the emergency button on their radio, that information is communicated on the control channel and the system assigns that user the highest priority. If necessary, in this situation, the system may actually drop a low priority caller in order to set up the call for the unit that has declared an emergency.

Depending on the configuration of the dispatch radio console, pressing the emergency button will set off alarms and indicate the unit ID of the sending unit. The dispatcher would then initiate a response according to the emergency operations plans developed by the agency.

24. Are there scanners that will work on the WyoLink system?

Yes. Scanners are available that will receive project 25 digital radio signals and that can understand the control signals of the trunking system. Desktop and handheld versions are available, and either can be had in the \$500-\$600 price range. However, an agency's use of encryption will block the scanners ability to receive communications.

25. Where can I get more information about WyoLink?

WyoLink Website: <http://wyolink.wyoming.gov>

PSCC Website: <http://pscc.wyoming.gov>

The WyoLink website contains information about WyoLink, current status, background information, WyoLink compatible equipment, maps and WyoLink membership information.

The PSCC website contains information about the PSCC organization, commissioners, rules, PSCC documents – minutes, strategic plan and newsletters, and WyoLink membership information.

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