

WyoLink Support Manager Report to the PSCC
March 12, 2013

There are 64 WyoLink sites in operation, 60 of which have had construction funded by WyoLink. Six additional sites under construction should be completed during 2013 and will bring the count of operational WyoLink sites to 70. The latest site to become active is Gillette PCE.

Due to the anticipated high cost (\$5.5M) of constructing Pow Wow, we're evaluating two or three sites to provide approximately the same coverage. We continue working with Union Wireless to share their site at Signal Mountain to provide coverage in the Togwotee Pass area. After we are given permission to co-locate with Union, they will approach the Grand Teton National Park to secure the necessary permit.

The Portable Coverage Enhancement sites at Douglas, Green River, Powell and Rawlins are currently under construction. We are working to have PCE agreements signed for sites at Pinedale and Wheatland.

There are about 15,642 radios and consoles able to use WyoLink. There are 267 agencies approved to use WyoLink with 112 State and Federal agencies and agencies in 19 Counties having moved their operations to WyoLink. During a typical day, there are between 2,500 and 3,100 radios affiliated with WyoLink depending on the time of day, weather conditions and other factors. WyoLink has completed 689 codeplugs to date in 2013, with an average wait time of 2 weeks. There are currently 14 codeplugs on the schedule to complete. The average wait for codeplugs to be created so far this year has been 2 weeks. The projected wait for newly requested codeplugs is about 3 days at this time. I urge everyone who has codeplug work scheduled to contact WyoLink if there are any questions about their codeplugs or their place on the schedule.

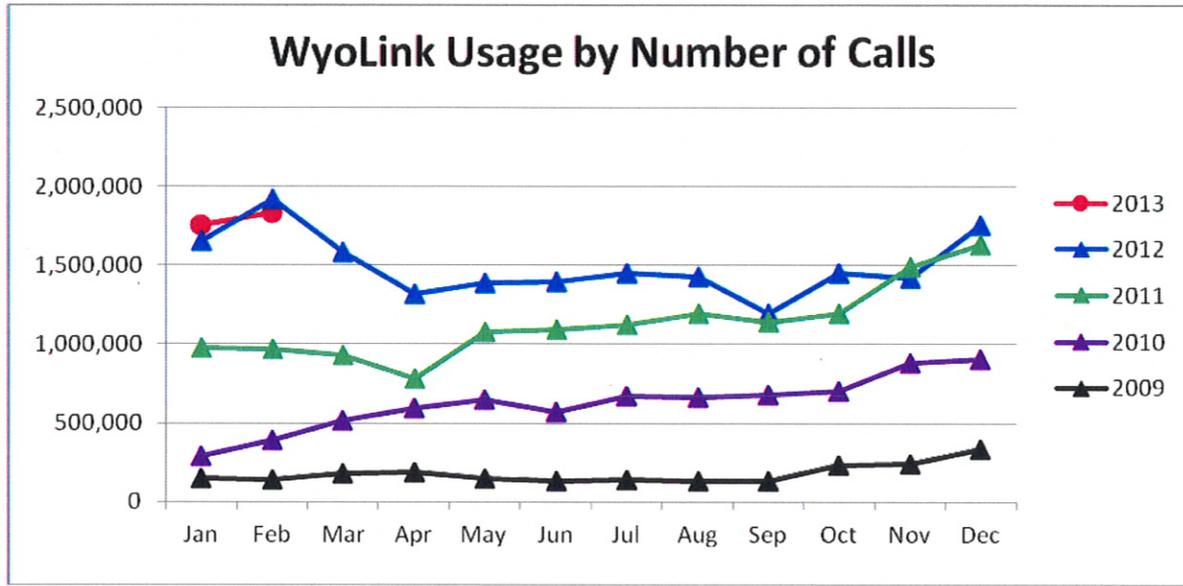
We continue to track WyoLink performance on a daily basis and are taking all possible steps to ensure the system continues to operate at it's best. There have been an increased number of busy indications in the south east portion of the state. Two WyoLink towers (85 South and Cheyenne Water Tank) have been seeing very high usage and may benefit from the addition of a couple of channels. An analysis of busy indications has been shared with the Operations Workgroup. We are continuing to perform coverage testing across the state, and WYDOT's GIS program has created a map to display our test results in an easy to understand form. This will be posted on the WyoLink web site and shared with subscriber agencies in the next month. I encourage any agency having radio communication needs or issues with WyoLink to contact the WyoLink Support Office at 307-777-WLNLK (9565) and we will be happy to help.

The monthly WyoLink Status Meeting Agenda and Minutes are an excellent source of information regarding the status of WyoLink. If there is anyone interested who isn't receiving these, please let me know and I'll add their name to the mailing list.

To date in 2013 (January 1st through February 28th) the WyoLink system handled 3,586,675 radio calls. This chart shows WyoLink usage visually. Busy indications have been 0.017% of total call time system wide. WyoLink reliability so far in 2012 has been over 99.9%.

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County Commissioner WyoLink Survey Summary

Survey Summary – According to the Survey, there are 17 counties using WyoLink and 6 counties not using WyoLink – Big Horn, Lincoln, Sublette, Uinta, Washakie and Weston. Since the survey, Washakie County has migrated to WyoLink. The PSCC and WyoLink have had discussions on WyoLink migration with the 5 remaining counties.

Sublette, Lincoln and Teton counties have WyoLink sites which are under design or leasing. Completion of the Pow Wow (Lincoln and Teton Counties), White Pine (Sublette County) and Signal Mountain (Teton County) sites will greatly improve the WyoLink coverage in these Counties. The development of the McCoullough Peak site in Park County should help the coverage in Big Horn County and portable coverage in Powell.. Weston, Crook and Uinta Counties are developing talkgroup plans and planning possible WyoLink migration.

Cost of New Radios – The cost of trunking radios are higher than conventional analog radios. The WyoLink compatible radios operate as conventional analog radio and digital trunking radios, essentially two radios in one box.

BLM & USFS – two radios – The BLM is operating on WyoLink, Working with the BLM and Forest Service to develop talkgroups for fire incidents and creating an interoperability plan between the Federal fire agencies, state agencies and local fire agencies.

Coverage – WyoLink was built as a mobile radio system which would provide 95% mobile radio coverage state-wide except for Yellowstone National Park. With the addition of the 12 portable coverage sites, the coverage has been enhanced. WyoLink is currently drive testing radio coverage statewide, which will identify poor coverage areas. A map is being created by WYDOT will help identify the coverage problems.

Radio maintenance costs – The agencies have always been responsible for their radio maintenance. WyoLink is responsible for the system maintenance.

Radio firmware updates – One vendor spent a considerable amount of time traveling Wyoming updating the radios which needed a firmware update. This was completed in 2010. Another vendor identified problems with one model of radio and has worked to update their radios.

Codeplug turn-around time – WyoLink has identified this problem and currently the codeplug turn-around time has been greatly reduce, 4 to 6 weeks to less than 2 weeks. WyoLink is striving for a less than 10 working day turn-around for codeplug development

Signal quality better than analog – With digital there is either good voice quality or none, with a small area of digital transmissions. With analog, users are able to have poor voice quality, but still able to comprehend the call.

List of user agencies – knowing how to have interoperable communications - This is a very good comment and the PSCC and WyoLink will work on developing a reporting method so that agencies will be able to access the information on which agencies are using WyoLink. The

PSCC completed and distributed the Wyoming Interoperability Plan in March 2012. This plan is available on the PSCC webpage – psc.wyoming.gov

Will the State continue to fund WyoLink? The PSCC and WyoLink cannot guarantee or have control over what the legislature does. The PSCC and WYDOT will continue to work with the legislature to continue the WyoLink maintenance funding. The County Commissioners could be helpful in the discussions with the legislature and budget process.

Training – Training has been identified by the PSCC as an area which needs improvement. With the loss of grant funds, the training program will need to be revised. The training needs to include the end user radio programming and usage. The revised training program will include a train-the-trainer program.

Paging – Paging is an important notification system for the fire service and EMS agencies. Unfortunately, trunking does not offer paging. The local agencies will need to maintain their paging systems. From the planning stages of WyoLink, the agencies have been told that WyoLink will not be able to provide paging.

Scanning – WyoLink talkgroups can be scanned. There are problems with scanning which the users must understand. The radios will not scan conventional and trunking at the same time. The radios are capable of scanning the conventional channels OR the Trunking talkgroups. There are ways to work around the scanning problems and the PSCC will help agencies with the scanning training and concerns.

Radios – All radios operating on WyoLink need to be aligned for optimal performance. The radios may work right out of the box, but the new radios are not aligned for best performance. There have been many complaints about WyoLink coverage when the real reason is the alignment has not been performed. The radio vendors should be performing this work before delivery of the radios to the end user. The alignment of the radios is not the responsibility of WyoLink.

County Commissioner WyoLink Survey Comments

Survey Summary – According to the Survey, there are 17 counties using WyoLink and 6 counties not using WyoLink – Big Horn, Lincoln, Sublette, Uinta, Washakie and Weston. Since the survey, Washakie County has migrated to WyoLink. The PSCC and WyoLink have had discussions on WyoLink migration with the 5 remaining counties. There are agencies in Big Horn, Lincoln and Weston counties using WyoLink.

Sublette, Lincoln and Teton counties have WyoLink sites which are under design or leasing. Completion of the Pow Wow (Lincoln and Teton Counties), White Pine (Sublette County) and Signal Mountain (Teton County) sites will greatly improve the WyoLink coverage in these Counties. The development of the McCulloch Peak site in Park County should help the coverage in Big Horn County and portable coverage in Powell.. Weston, Crook and Uinta Counties are developing talkgroup plans and planning possible WyoLink migration.

Cost of New Radios – The cost of trunking radios are higher than conventional analog radios. The WyoLink compatible radios operate as conventional analog radio and digital trunking radios, essentially two radios in one box. There are radios from 6 different vendors approved for use on WyoLink. Pricing of these radios varies considerably, so agencies concerned with the price of radios capable of operating on WyoLink may benefit from comparing prices among vendors.

BLM & USFS – two radios – The BLM is operating on WyoLink, Working with the BLM and Forest Service to develop talkgroups for fire incidents and creating an interoperability plan between the Federal fire agencies, state agencies and local fire agencies. It should not be necessary to utilize two radios for proper operations. There are radios currently available and approved for use on WyoLink that support keypad programming of operating frequencies on the fly. In addition, all radios currently approved for use on WyoLink will allow programming of the conventional, analog portion of their radio program file by a local technician.

Coverage – WyoLink was built as a mobile radio system which would provide 95% mobile radio coverage state-wide except for Yellowstone National Park. With the addition of the 12 portable coverage sites, the coverage has been enhanced. WyoLink is currently drive testing radio coverage statewide, which will identify poor coverage areas. A map is being created by WYDOT will help identify the coverage problems. The PSCC and WyoLink Support Office realize that WyoLink will provide coverage in some places where agencies current conventional system does not, and will lack coverage in areas where agencies' current conventional system does. WyoLink is intended to be another tool in the box for agencies to use for their communications. There is no mandate for local agencies to abandon their existing conventional analog radio systems. When this map is ready, it will be posted on the WyoLink web site and will be mentioned in the monthly WyoLink Status Meeting agenda and minutes.

Radio maintenance costs – The agencies have always been responsible for their radio maintenance. WyoLink is responsible for the system maintenance. In general, newer radios are proving to require less maintenance and fewer repairs than older model radios.

Radio firmware updates – One vendor spent a considerable amount of time traveling Wyoming updating the radios which needed a firmware update. This was completed in 2010. Another vendor identified problems with one model of radio and has worked to update their radios. Any radios purchased since that time should have a firmware version capable of handling the WyoLink system.

Codeplug turn-around time – WyoLink has identified this problem and currently the codeplug turn-around time has been greatly reduced, 4 to 6 weeks to less than 2 weeks. WyoLink is striving for a less than 10 working day turn-around for codeplug development. The 6+ week turn around time that was experienced in October of 2012 has been rectified and turn around time has been less than 2 weeks since that time.

Signal quality better than analog – With digital there is either good voice quality or none, with a small area of digital transmissions. With analog, users are able to have poor voice quality, but still able to comprehend the call.

List of user agencies – knowing how to have interoperable communications - This is a very good comment and the PSCC and WyoLink will work on developing a reporting method so that agencies will be able to access the information on which agencies are using WyoLink. The PSCC completed and distributed the Wyoming Interoperability Plan in March 2012. This plan is available on the PSCC webpage – psc.wyoming.gov

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Training – Training has been identified by the PSCC as an area which needs improvement. With the loss of grant funds, the training program will need to be revised. The training needs to include the end user radio programming and usage. The revised training program will include a train-the-trainer program.

Paging – Paging is an important notification system for the fire service and EMS agencies. Unfortunately, trunking does not offer paging. The local agencies will need to maintain their paging systems. From the planning stages of WyoLink, the agencies have been told that WyoLink will not be able to provide paging. The difficulty with providing paging is that there are no vendors that currently offer pagers that will operate on a digital trunked system. At least one vendor is working on a solution, but nothing is available on the market yet.

Scanning – WyoLink talkgroups can be scanned. There are problems with scanning which the users must understand. The radios will not scan conventional and trunking at the same time. The radios are capable of scanning the conventional channels OR the Trunking talkgroups. There are ways to work around the scanning problems and the PSCC will help agencies with the scanning training and concerns. The difficulty with scanning trunked talkgroups and conventional channels simultaneously does not lie with the WyoLink system, but with the manufacturers of the radios that are currently available. To reliably scan both trunked talkgroups

and conventional channels and not miss calls on the priority talkgroup or channel, the radio needs to be able to listen to two frequencies simultaneously. At this time, there are no vendors with radios approved for use on WyoLink that are capable of this. With time, this may change.

Radios – Motorola radios operating on WyoLink need to be aligned for optimal performance. The radios may work right out of the box, but the new radios are not aligned for best performance. There have been many complaints about WyoLink coverage when the real reason is the alignment has not been performed. The radio vendors should be performing this work before delivery of the radios to the end user. The alignment of the radios is not the responsibility of WyoLink, but rather of the vendor selling the radio. Motorola has issued a memo stating this, and the WyoLink Support Manager will provide a copy of this upon request. This issue has been shown to be a definite contributing factor to poor radio performance on many occasions and it has been proven that tuning Motorola radios properly will resolve the vast majority of radio performance issues. Other vendor's radios may or may not require tuning after purchase to function properly on WyoLink. The WyoLink Support Office recommends asking the vendor for their recommendation.