



Public Safety Communications Commission 2023 Report BFY 2025/2026 & BFY 2027/2028

Public Safety Communications Commission 2023 Report

Executive Summary Update

The Wyoming Department of Transportation's Emergency Communications Program, and specifically the WyoLink Support Office, achieved several notable accomplishments during the 2021-2023 period. The items listed below will be highlighted within the context of this report.

- Expansion of the Public Safety Communications Commission (PSCC) to include one member from Wyoming Homeland Security (WOHS) and one member from the Wyoming Association of Professional Communications Officials and the National Emergency Number Association (APCO/NENA – Next Generation 911 [NG 911]) federal representation.
- Administering American Rescue Plan Act (ARPA) funds and projects
- System Maintenance Agreement (SMA) signed for six years, including hardware and system upgrades
- Expansion of tower capitalization projects to increase system operability
- Inter Sub-System Interface (ISSI) now provides a roadmap to connect WyoLink to adjacent systems/states, and Long Term Evolution (LTE) over Land Mobile Radio (LMR) for cell technology interoperability
- Broadband connectivity with radio sites and local dispatch centers continue to migrate to the Wyoming Unified Network (WUN) via fiber optic connections
- Subscriber Unit contract awarded for state and local agencies to qualify for discounted, bulk purchases

Purpose

The purpose of this document is to satisfy the WyoLink reporting requirements of W.S. 9-2-1104(a)(vii):

“On or before May 31 of each odd numbered year, submit to the Governor and the Joint Transportation, Highways and Military Affairs interim committee a report covering the period beginning July 1 of the following year and ending June 30 in the fourth succeeding year detailing the expected costs of implementing the statewide system networking plan. The report shall include projections of one-time and recurring costs.”

Public Safety Communications Commission Background

Day in and day out our state's highway patrol, police, sheriff, fire, emergency medical services, and other public safety personnel put themselves in harm's way to protect the communities they serve. At the encouragement of Wyoming's public safety community and the federal government,

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the Wyoming Legislature recognized a need for a comprehensive and coordinated statewide emergency communications network and established (through W.S. 9-2-1101-1104) Wyoming's Public Safety Communications Commission (PSCC) effective July 1, 2004. This occurred at a time when federal funding for public safety communications peaked following the 9/11 incidents. Today, most of the federal funding options for public safety communications have been eliminated. Initially, the PSCC was assigned to the Wyoming Office of Homeland Security (WOHS); however, in 2017 the Wyoming Legislature moved the commission to the Wyoming Department of Transportation (WYDOT). In 2022, the Wyoming Legislature increased the Commission membership to 13 members. The legislature added one representative from WOHS and one representative from the Wyoming Association of Professional Communications Officials /National Emergency Number Association (APCO/NENA)

To capture representation from the broad spectrum of entities reliant upon mission critical communications in Wyoming, members currently include:

- Wyoming Fire Chiefs Association - Mark Harshman (Chairman)
- Wyoming Association of Professional Communications Officials & the National Emergency Number Association - Monte McClain (Vice Chairman)
- Wyoming Association of Sheriffs and Chiefs of Police - Dwane Pacheco (Secretary)
- Wyoming Association of Municipalities - John Wetzel
- Wyoming Association of Sheriffs and Chiefs of Police - Matt Carr
- Wyoming County Commissioner Association - Paul Bertoglio
- Wyoming Division of Criminal Investigation - Vacant
- Wyoming Department of Transportation & Highway Patrol - Karl Germain
- Wyoming Emergency Medical Services - Phillip Franklin
- Wyoming Game and Fish - Mike Choma
- Wyoming Office of Homeland Security - Cindi Shank
- Tribal Government - Owen St. Clair
- Public-at-Large - Jonathan Downing

The PSCC has been responsible for providing policy-level direction related to planning, design, implementation, best practices, and standard approaches to address public safety communications and interoperability issues. Over the years, WYDOT has primarily completed field implementation of the PSCC policy. The department continues to support the PSCC's work in stabilizing and growing capacity for public safety communications.

Communications Issues

1. Interoperable emergency communications are crucial to public safety statewide. From federal, state, and local law enforcement to military, firefighters, hospitals, emergency medical technicians, and school districts, all users have common needs. Users require a

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communications system that offers uncompromising quality and reliability, as well as comprehensive coverage of their service area, regardless of terrain or density.

2. Until the 2023 Legislative Session, no dedicated, sustainable funding source existed for the state’s critical statewide interoperable public safety communications system, known as WyoLink.

WyoLink Background

During the 2022 and 2023 calendar years, WyoLink’s 16,000 users initiated 21,673,785 calls across Wyoming. Currently, over 500 agencies and entities utilize this critical and essential emergency communications network. WyoLink continues to add new local users to the system.

CURRENT WYOLINK USERS (2023)	
<ul style="list-style-type: none">● 2 federal agencies	<ul style="list-style-type: none">● 68 emergency medical services (ambulances and medical centers)
<ul style="list-style-type: none">● 20 Wyoming agencies	<ul style="list-style-type: none">● 44 educational institutions
<ul style="list-style-type: none">● 144 local government agencies	<ul style="list-style-type: none">● 19 private entities (mine rescue, Life Flight)
<ul style="list-style-type: none">● 94 law enforcement agencies	<ul style="list-style-type: none">● 11 out-of-state
<ul style="list-style-type: none">● 118 fire protection agencies	<ul style="list-style-type: none">● Bureau of Indian Affairs/Wind River Indian Reservation

Since 2004, Wyoming has developed a statewide, interoperable public safety system designed to coordinate and integrate communications among all of these entities. WyoLink is recognized as a premiere communications system that is the envy of many other states. This infrastructure also provides the necessary communications for WYDOT’s Intelligent Transportation Systems’ (ITS) roadside devices including; connected vehicles, variable speed limit signs, dynamic messaging signs, webcams, remote weather stations, and road reports from snow plow drivers and highway patrol.

As in other state owned assets, this system asset requires ongoing maintenance in order to preserve its effectiveness. Including the current upgrades, over \$135,000,000 will be invested in this long-term project Wyoming has provided funding for a large portion of the system capitalization, maintenance, and operation costs from general funds and highway funds. Continued investment ensures success for all users and Wyoming citizens.

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Up until the 2023 Legislative Session, there has been no dedicated, sustainable funding source for the state's critical statewide interoperable public safety communications system, known as WyoLink. During the 2023 session, HB0046 - Wyoming Public Safety Communications System Trust Fund, and SF0022 - Wyoming Public Safety Communications System Funding, did not pass into law. However, the supplemental budget did ultimately allocate \$8.6 million (per biennium) of on-going general funds that will now support the system's operations and maintenance.

American Rescue Plan Act Funds & Projects

In 2022, the Wyoming Legislature awarded WYDOT \$35 million in American Rescue Plan Act (ARPA) funds to be utilized for WyoLink upgrades. These funds will be distributed as such:

- Completion of the GTR8000 Base Repeater and DC Battery Power Plant upgrades (\$5.7 million)
-Updates may be found below under "System Maintenance Agreement"
- Site expansion –additional channels added to sites with high user levels (\$1.2 million)
-Due to increased usage, an additional channel was added to six sites and two channels have been added to one site to allow for extra capacity
- Two additional towers will be located in North Sheridan County and Saratoga, respectively (\$4 million)
-Currently, the contract is under negotiations for construction and the WYDOT Right-of-Way Program is working on leases
- Inter Subsystem Interconnection (ISSI) to LTE providers and adjacent state systems (\$800,000)
-Updates may be found below under "Inter Subsystem Interconnection"
- Assistance for local agencies to purchase WyoLink compatible equipment (\$4.5 million)
-Over \$18 million in applications were received
 - *100 awards for the allocated \$4.5 million were granted to local agencies across the state*
 - *Currently, WYDOT has placed orders and continues to coordinate with agencies for delivery, receipt of equipment, and related services*
- WYDOT subscriber units (mobile and portable) radios (\$1.8 million)
-Currently, the majority of the mobile and portable units are ordered and being installed by WYDOT Emergency Communications staff
-Additional units will be ordered for stationary (office and shop) units
- Microwave upgrades and replacement (\$15 million)
-After PSCC approval, the contract was signed and the vendor started site design in early May
- Dynamic System Resilience (DSR) to provide redundancy and increase system reliability (\$2 million)

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-This is reliant upon the Microwave project and will be initiated as that project progresses

Supply chain shortages and unpredictable equipment deliveries have created challenges with project scheduling and completion deadlines.

The initial WyoLink request for ARPA funds totaled \$85 million. This would have included funding for 15 additional towers strategically located statewide and a complete upgrade and replacement of the microwave system. There are no plans to continue pursuing the expansion at this time.

System Maintenance Agreement

Manufacturer support for the legacy Quantar base repeaters ended in 2020, and DC battery power plant equipment support ended in 2019. To address this, WYDOT successfully negotiated a System Maintenance Agreement (SMA), effective October 1, 2020, for six years. The SMA provides 24/7, 365 services, as well as equipment and hardware upgrades to replace aging and failing systems.

The SMA includes a replacement plan for the new GTR8000 base repeaters and new DC battery power plant equipment. The allocation of ARPA funds for WyoLink helped advance the scheduling for these upgrades from a six-year plan to a three-year plan as supplies and resources allow. Currently, 65 tower sites are slated for GTR replacement, with 27 remaining, and 75 tower sites are slated for DC battery power plant replacement, with 35 remaining. Twenty-four of the remaining locations will be scheduled concurrently while resources are available.

In addition to the upgraded base repeaters and DC battery power plants mentioned above, this SMA also includes the following services:

- **Remote System Monitoring:** notification and dispatch services provided by the vendor's Network Operations Center.
- **Remote System Performance Management:** allowing remote network technicians to diagnose and repair issues as they arise.
- **Technical Assistance:** provided to all WyoLink technicians.
- **On-Site Technician Services:** for two WyoLink master sites (Cheyenne and Casper) as well as the Wyoming Highway Patrol and Transportation Management Center dispatch centers (mission critical locations).
- **On-Site Technician Services:** for three back-up, mission critical dispatch centers (Wyoming Office of Homeland Security, Laramie Transportation Management Center, and WyoLink Office).

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- **Hardware Repairs with Advance Replacement:** for all WyoLink equipment and components.
- **System Security Updates:** providing up-to-date cyber security and testing for the entire system, including local dispatch centers (Windows-based platforms require security patches).
- **System/Software Upgrade Agreement:** an annual system upgrade designed to maintain WyoLink at an “up-to-date” status. This includes software (i.e., moving to Windows 10 prior to the January 2020 expiration) as well upgrading hardware and components no longer capable of supporting an “up-to-date” status. The agreement covers, to an extent, upgrading local dispatch center equipment that would be incapable of supporting an “up-to-date” status.

Fiscal Year Cost for the 2021 System Maintenance Agreement						
	2023	2024	BFY 2023/2024	2025	2026	BFY 2025/2026
System Maintenance Agreement	\$2,903,873	\$3,045,992	\$5,949,865	\$3,104,562	\$3,684,994	\$6,789,556
GTR Replacement	\$1,495,489 (ARPA)	\$1,495,489 (ARPA)	\$2,990,978 (ARPA)	Completed	Completed	Completed
DC Power Plants	\$266,667 (ARPA)	\$266,667 (ARPA)	\$533,334 (ARPA)	Completed	Completed	Completed
Total	\$4,666,029	\$4,808,148	\$9,474,177 (\$3,524,312 = ARPA)	\$3,104,562	3,684,994	\$6,789,556

*The increase in 2026 is due to manufacturer’s warranty expiring on newly installed equipment and migrating to the SMA

*With the availability of sustainable general funds, WYDOT is currently negotiating a three-year extension of the SMA to provide services into 2029.

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System Expansion - Tower Capitalization

WYDOT continues working on the WyoLink system expansion. Twelve sites are complete and operational in the following locations: Buffalo, Wright, Orin, Lusk, Northern Goshen, Alva, Alcova, Blairtown (Rock Springs), Northern Rock Springs, Jackson, Greybull, and Evanston. The remaining four sites: Northern Sublette, Northern Big Horn, Meadowlark, and Newcastle, are scheduled for completion in 2023/2024.

By the end of the 2024 calendar year, 109 WyoLink towers are expected across Wyoming. This number includes up to 13 towers that local entities will have made the investment to be integrated with the statewide WyoLink system.

Core Tower Capitalization

Core tower sites are designed to improve coverage in a wide area with an emphasis on mobile radio end users. Priority was given to sites with licensed frequencies or frequencies in close proximity that may be relocated to a new site. WyoLink end user experience, mobile coverage testing, and overall benefit to WyoLink users were factors in determining the priorities for improved coverage.

Seven locations were preliminarily identified using the evaluation criteria: the Alcova area in Natrona County, Northern Goshen County, the Meadowlark area in Washakie County, Northern Big Horn County, the Orin Junction area of Converse County, the Alva area in Northern Crook County, and Northern Sublette County. Currently, Alcova, Alva, Northern Goshen, and Orin are active and online. The other locations are currently under construction.

Portable Coverage Enhancement Tower Capitalization

Portable Coverage Enhancement tower sites are designed to improve coverage in local areas with an emphasis on portable radio end users. The availability of licensed frequencies and community populations were used to prioritize potential new sites. Coverage needs were determined by WyoLink end user experiences and testing.

Nine locations were preliminarily identified using the evaluation criteria: Rock Springs (two sites – population 23,036), Evanston (population 12,359), Jackson (population 9,577), Buffalo (population 4,585), Newcastle (population 3,532), Greybull (population 1,847), Lusk (population 1,567), and Wright (population 1,807). Currently, Jackson, Buffalo, Greybull, Lusk, Evanston, Blairtown (Rock Springs), Northern Rock Springs, and Wright are active and online. The final location, Newcastle, is currently under construction.

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Inter Subsystem Interface

WYDOT's Emergency Communications Program and the WyoLink Support Office have coordinated efforts with Sublette County to provide interoperable communications to WyoLink users operating in Sublette County. With Sublette County constructing their own communications system, it became apparent and incredibly important to maintain interoperable mission critical communications between users operating on both WyoLink and the county-owned system. This was successfully accomplished with a coordinated approach and involvement from WYDOT, Sublette County and associated vendors. Users on either system will now have the ability to communicate with each other operating within or outside of their "normal" operating regions.

The WyoLink Support Office is planning on expanding a similar connection to our neighboring states of South Dakota and Montana. These states are currently in the process of upgrading their Land Mobile Radio systems, which will allow for the interoperable connection to take place in late 2023/ 2024.

Developing a Roadmap for Land Mobile Radio over Long-Term Evolution

WYDOT's Emergency Communications Program and the WyoLink Support Office have been engaged with ATT "FirstNet" and Verizon "FrontLine" exploring solutions to merge the WyoLink network and cellular networks to expand services, coverage, and operator/membership options. Currently, testing is underway utilizing both cellular providers, as well as Wi-Fi connections, across state and local agencies. However, WyoLink's coverage footprint in Wyoming exceeds the coverage provided by cellular providers and as a result of the mission that each system provides, this is not expected to change in the near future. WyoLink is built and designed to meet Wyoming challenges, whereas most cellular providers focus their build on the number of users. The ability to merge these technologies provides opportunities such as establishing communications with neighboring states, enhancing coverage in buildings (schools, shopping centers, etc.), and enabling smaller agencies to use WyoLink as their primary and interoperable communications network.

Broadband Connectivity

WYDOT is partnering with the Wyoming Department of Enterprise Technology Services (ETS). Legacy T-1 and Metro Optical Ethernet network circuits have been converted to high capacity broadband ethernet circuits and onto the Wyoming Unified Network (WUN). These conversions will improve connectivity, redundancy and reliability thereby reducing costs. WyoLink currently operates with nine tower sites connected via fiber optics, whereas in 2019, there were only two. The upgrades also assist the state with planning for 911 and Next Generation (NG911) connectivity at Public Safety Answering Points (PSAPs – also known as 911 Call Centers). Currently, all

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PSAP's with a WyoLink connection have been upgraded to broadband. Work continues with providers to seek solutions to harden these connections for optimum reliability.

Procurement of New Equipment for End User Mobile and Portable Radios

The purchase and maintenance of radios (subscriber units) has historically been the end user's responsibility. The PSCC anticipates that the mobile and portable radios will continue to be an end user responsibility. The Wyoming Office of Homeland Security (WOHS) annually offers counties and emergency responders the ability to apply for limited federal grant opportunities to aid in purchasing these units. All radios awarded through these grants are required to be P-25 compliant and SafeCom approved to maintain interoperability.

WYDOT and the Wyoming Highway Patrol faced challenges with existing radios exceeding their lifecycle and they were no longer supported or serviceable. Through discussions with other state and local agencies, it became clear that many WyoLink users were experiencing the same challenges. In early 2021, WYDOT released a request for proposal that included extending equipment pricing to all state and local agencies. The contract was awarded in July of 2021, and the vendor continues to work with all interested parties. The discounted pricing made available through the contract has been heavily leveraged to the benefit of many agencies across the state and has allowed for procurement of additional equipment.

Summary

Interoperable emergency communications are crucial to public safety throughout the state. All end users have common needs and require a communications system that offers uncompromising quality and reliability.

The projected state investment is approximately \$135 million since 2004, and local agencies have spent additional millions to develop and interact with a statewide, interoperable public safety system designed to coordinate and integrate communications among state public safety agencies. WyoLink is now known as a premier communications system and is the envy of many other states. The system is maturing, and participating agencies in fully developed areas are realizing its full potential. The future of this system is reliant on state and local support to continue to meet the critical safety needs of citizens and visitors.