

Executive Summary: For Next Generation 911 (NG911) Presentation

- **Current 911 System Issues:** The current system faces challenges with reliability, aging equipment, and funding shortfalls. Outages are increasing and can have life-threatening impacts. The system struggles to keep pace with modern technology and public expectations. **NG911 Benefits:** NG911 offers faster call routing, more accurate caller location, the ability to receive additional data (text, video, photos), increased resiliency, better audio quality, and the ability to transfer calls out-of-state. It utilizes IP/broadband networks, which are more flexible and reliable than the current phone line-based system.
- **Funding Challenges:** Current 911 funding, based on a 1986 statute, is inadequate. The current maximum surcharge of \$0.75 per line per month needs to be increased to keep up with inflation and the rising costs of operating modern 911 centers. Many counties are experiencing deficits, and the current funding model doesn't cover all of the operational expenses. Raising the \$0.75 "ceiling" would allow the local governing bodies to reduce or eliminate the funding deficits they are experiencing, while also planning for NG911 migration.
- **Partnerships and Legislation:** Successful implementation of NG911 requires partnerships between local, state, and federal entities. Statutory updates will be required in order to address funding and development of an NG911 system that works for Wyoming. The Public Safety Communication Commission (PSCC) plays a key role in guiding NG911 development.

Based on the information presented, here are some key recommendations:

- **Increase 911 Funding:** Raise the maximum allowable 911 surcharge to address inflation and operational costs.
- **Upgrade to NG911:** Transition to an IP-based NG911 system for improved reliability and capabilities.
- **Statutory Updates:** Update state statutes to support NG911 funding for local entities and the development of the NG911 Network and systems.

Wyoming Public Safety Communications Commission (PSCC)
Governing Body for NG911 and WyoLink:

- Wyoming Association of Professional Communications Officials & the National Emergency Number Association (WY APCO / NENA)
- Wyoming Association of Sheriffs and Chiefs of Police (WASCOP)
- Wyoming Association of Municipalities (WAM)
- Wyoming County Commissioner Association (WCCA)
- Wyoming Division of Criminal Investigation (DCI)
- Wyoming Department of Transportation & Highway Patrol (WHP)
- Emergency Medical Services (EMS)
- Wyoming Game and Fish (WY G&F)
- Wyoming Office of Homeland Security (WOHS)
- Tribal Government
- Public-at-Large

Moving Forward NG911



2025/V1

Expectations When 911 is activated

Dial 911

911 Connects
Telecommunicators
Responders



When someone dials 911, they expect their call to be answered quickly and that help will be ready and waiting when it's needed most. Behind the scenes, each county works tirelessly to maintain and improve the emergency response system — investing in updated software, equipment, personnel, wages, benefits, and essential infrastructure to ensure this service is reliable 24/7.

For many years, we operated under the E911 standard, which set the framework for how these services should be provided. But technology has advanced dramatically since then. Today, Next Generation 911, or NG911, is the new standard. It leverages cutting-edge networks and services designed to handle modern communication methods—such as texting, video, and mobile data—so first responders can get the information they need faster and more accurately.

Upgrading to NG911 isn't just an improvement; it's a vital step to meet today's expectations and prepare for future challenges in emergency response.

911 System and Maintenance

Maintaining the equipment and software



NG911: The Essential Upgrade for Modern Emergency Services

Next Generation 911 (NG911) represents a critical leap forward, bringing emergency response systems fully into the digital age. To understand why this upgrade is necessary, consider that the current emergency system in Wyoming relies on technology installed in 1972—four years after the 911 emergency number was first implemented nationwide. At the time, the selective router system used was cutting-edge, much like buying a brand-new 1972 Chevy Corvette for \$5,296. But just as no one would expect to keep driving that same Corvette without upgrades for over 50 years or expect it to match today’s vehicles, our 911 systems need modernization to keep pace with current technology.

Over the decades, funding for 911 systems has not kept up with inflation or technology advances. The 911 surcharge, a fee collected on phone bills to support emergency services, was only introduced in Wyoming in 1986—14 years after 911 services began in the state—after phone companies pushed for a way to recoup their costs. However, the current surcharge rate of \$0.75 per device has not been adjusted for inflation, leaving emergency services underfunded as costs rise.

For example, Monte McClain from Park County explains that his county pays more than \$81,000 annually in mileage charges for eight key emergency communication lines—expenses that would be eliminated with an NG911 system using IP-based networks. Transitioning to NG911 would save Wyoming significant operational costs by

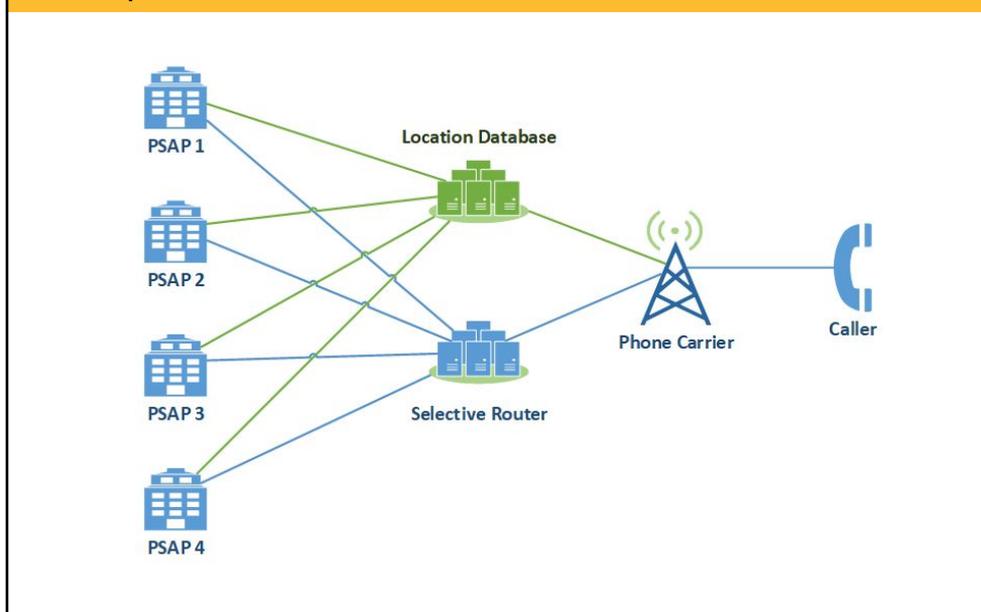
removing these mileage fees and by providing a faster, more reliable digital network capable of supporting modern emergency services.

Given that \$1 spent in 1986 now requires \$2.84 to maintain the same purchasing power in 2021, it's clear the current funding model is outdated. That's why we propose increasing the maximum allowable 911 surcharge from \$0.75 to \$5.00 per device, allowing each county to decide the best amount to fund essential emergency services sustainably. This change will ensure Wyoming can build, maintain, and improve vital 911 infrastructure for the next 30 years, providing the public with reliable, state-of-the-art emergency response capabilities.

To protect lives, reduce costs, and keep Wyoming on the cutting edge of emergency communications, we must support NG911 funding reforms now.

Legacy 911 Network

Example



Understanding the Legacy 911 Network

In the traditional 911 system—often called the legacy 911 network—emergency calls are routed through physical phone lines. When you call 911, your call travels over a dedicated phone line to a Selective Router, which is a central piece of equipment that directs calls to the appropriate Public Safety Answering Point (PSAP), or dispatch center.

In Wyoming, there is only one Selective Router located in Cheyenne, which means all calls statewide are routed through this single hub. Because these connections use physical phone lines, service providers charge fees based on the distance, or mileage, between the PSAP and the Selective Router. This mileage-based charging adds significant costs to the operation of emergency services statewide.

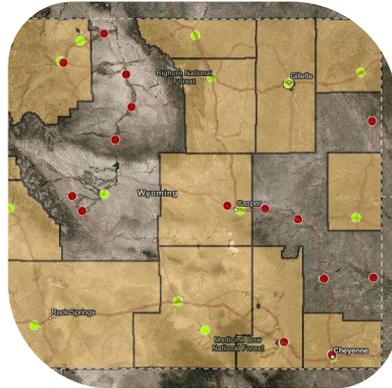
The system also relies on a Location Services database linked to the PSAP, which provides emergency dispatchers with the caller's address and location information. While functional, this approach uses old technology that limits the speed, accuracy, and efficiency of location data delivery.

Overall, the legacy 911 network is outdated. It depends on physical infrastructure subject to mileage fees and slower data transfer, creating bottlenecks and higher costs. That's why upgrading to a Next Generation 911 (NG911) system—which uses internet protocol (IP) networks to route calls and transmit data digitally—is essential for improving emergency response and reducing costs.

Call Routing

E911

- Legacy 911 uses a database of addresses to route calls to the appropriate PSAP.
- Wireless calls are sent to the PSAP based on the tower location.



NG911

- Location Based Routing uses a map with PSAP boundary layers to route 911 calls.
- Each PSAP has defined boundaries.
- Call is routed to the PSAP based on the caller's location within the map.
- Improves accuracy and speed of emergency response.

E911

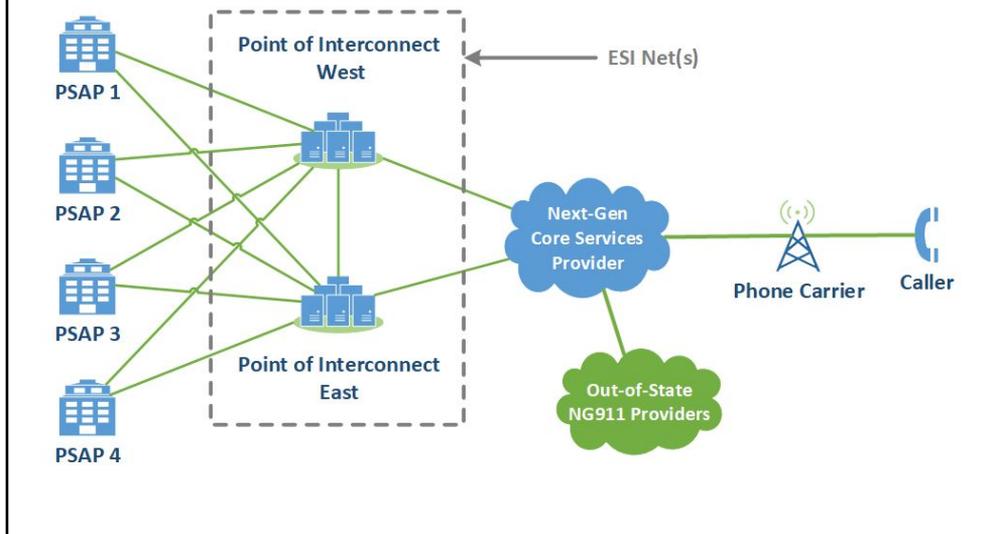
Routes a call based off of a database of addresses and cellular tower locations.

NG911 Location Based Routing for NG911

Location-Based Routing revolutionizes 911 call handling by using precise geographic boundaries to route calls directly to the correct Public Safety Answering Point (PSAP). By automatically matching a caller's location to the nearest PSAP, this system ensures faster, more accurate emergency response. Implementing Location-Based Routing not only enhances public safety but also optimizes resource allocation, ultimately saving lives when every second counts.

Next-Gen 911 Network

Example



Building a More Reliable and Efficient Emergency Network with ESI-net

The new Emergency Services IP Network (ESI-net) will create a stable, resilient foundation for Wyoming's 911 system, featuring built-in redundancy to ensure calls are never lost—even during outages or high-traffic situations.

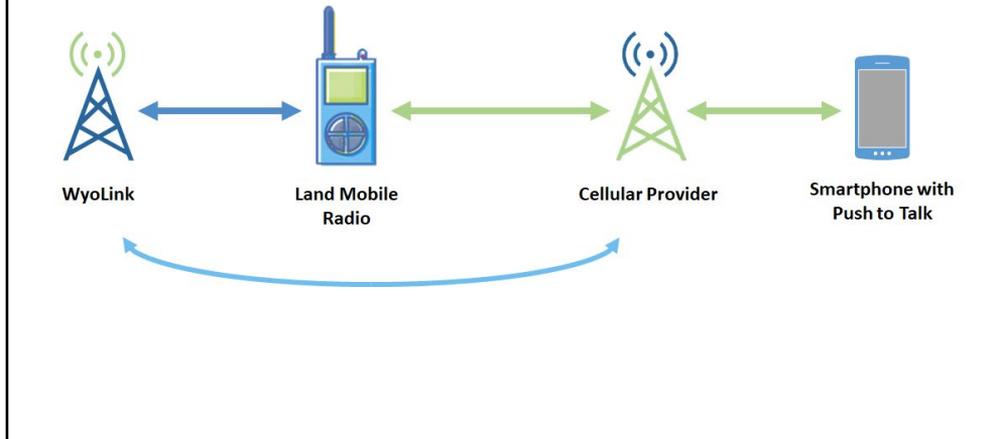
At the heart of this network is the Core Services gateway, which connects multiple Public Safety Answering Points (PSAPs) across the state. This unified platform transforms how emergency services can operate by integrating critical functions like call handling, call recording, Computer Aided Dispatch (CAD), and Geographic Information Systems (GIS) into a single, streamlined system.

Why does this matter?

- **Significant Cost Savings:** By combining these services within the Core, counties reduce duplication, lowering overall expenses while improving service quality.
- **Smarter Call Routing:** Calls will be routed based on the caller's exact location, activating Location Based Routing that ensures calls reach the correct PSAP quickly. Address validation services further enhance accuracy, minimizing delays and errors.
- **Enhanced Collaboration:** PSAPs can seamlessly share Dispatch information across county lines, no matter the caller's location, enabling coordinated and faster emergency responses.

In short, ESI-net and its Core Services empower Wyoming's emergency response system to be faster, more cost-effective, and better connected—delivering the reliable, modern 911 service that every resident deserves.

911 uses WyoLink to send resources and communicate with responders.



WyoLink is Wyoming's statewide public safety radio network that connects law enforcement, fire departments, EMS, and other emergency responders across the state. By providing a unified, reliable, and interoperable communication system, WyoLink enables rapid coordination and seamless information sharing, even in Wyoming's most remote areas. This connectivity enhances responder safety, accelerates emergency response times, and ensures that agencies can work together efficiently to protect communities across Wyoming.

NG911 Capabilities

- Faster call routing
- Location-Based Call Routing
- Text, video, photo, and medical data
- Significantly more resilient
- Interconnected emergency service networks
- Better audio quality
- Ability to transfer 911 calls to out-of-state PSAPs with CAD information

Local Control

With Partners Across Jurisdictions

Primary and Secondary PSAP Development

Funding of personnel, contracts for operations, equipment, software and connections with 911 fees and local budget

Report of 911 funds collected to Public Safety Commission (PSC)

Staffing, Networking, GIS data

Home Rule State

PSAP's developed and operated at the local level of government with the ability to identify the community need and build Primary and Secondary centers. Funding Source are used to support: Personnel, operations contracts, equipment, software, and 911 connections are funded through 911 fees and local budgets.

- Accountability: Collected 911 funds are reported to the Public Safety Commission (PSC) and the Federal Communications Commission (FCC).
- Key Components: Staffing, network infrastructure, radio, call handling and Geographic Information System (GIS) data are essential elements in PSAP development.

Funding 911 Services

Current and Future Considerations

WY Statutes 16-9-109

911 Funds

WY Stat § 16-9-109 requires collection of top 3 categories.

Wireline

Wireless

Prepaid Wireless

Consideration for development and reporting:

Voice Over Internet Protocol (VoIP) serviced by Broadband

The 911 funds are required for collection by three categories, wireline, wireless and prepaid wireless.

Calls are received by a dispatch center using Voice Over Internet calls. Currently this service does not have a 911 fee associated with it.

Stable Funding

Statutes - How fees can be used.

WY State Statute: 16-9-105

- **Contracts** between local, state or public agency for administration of a 911 system
- **PSAP and Service Suppliers** equipment and service costs
 - installation costs
 - maintenance costs
 - monthly recurring charges
- **Personnel**
 - Telecommunicator - taking the calls and dispatch them
 - IT support for maintenance of the computer database, radio, recorders

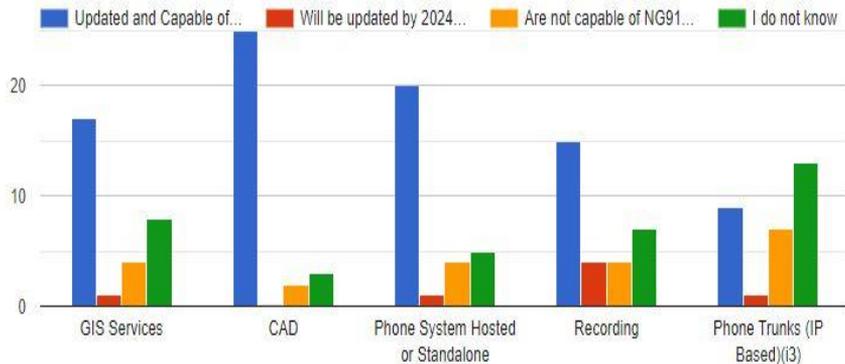
When fees or taxes are collected for 911 services, it's important to understand how those funds are managed and allocated. In Wyoming, state law specifically governs the use of 911 funds to ensure they support essential emergency communication services. These funds can be used for a variety of purposes, including:

- Contracting for the administration and management of 911 systems
- Purchasing, installing, and maintaining emergency communication equipment
- Covering personnel costs for staff who answer emergency calls and dispatch responders
- Maintaining the Public Safety Answering Point (PSAP) computer databases
- Upgrading and integrating existing legacy 911 systems with Next Generation 911 (NG911) technologies

These regulations ensure that collected fees are used effectively to enhance emergency response capabilities and maintain reliable, up-to-date 911 infrastructure.

PSAPS Ready for NG911

Information from PSAP for Calendar Year 2023



Partnerships Matter:
Computer Aided Dispatch : 6 Vendors across 27 systems
Call Handling: 3 Vendors across 27 systems

2024 Statistics

- 27 agencies responded
- 25 Primary PSAPs
- 1 Secondary PSAP
- 1 Dispatch Center

PSAP administrators have been actively using their funds to upgrade equipment essential for call-taking and dispatching operations. To achieve full Next Generation 911 (NG911) integration, five key categories of equipment must be updated. The following summary reflects the status of this equipment as of the end of 2023.

Partnerships Matter

Collaborative efforts between agencies can allow some services to be shared during the NG911 buildout. This approach helps reduce costs and improve operational efficiency across multiple PSAPs.

Computer-Aided Dispatch (CAD) Systems

There are 6 vendors supporting 27 systems across the responding agencies:

- Spillman: 15 systems
- RIMS: 7 systems
- Tyler: 2 systems

- Other: 1 system

Call Handling Systems

There are 3 main vendors providing call handling solutions for the 27 systems:

- Call Works (Motorola): 15 systems
- Viper (AT&T): 7 systems
- Vesta (Motorola): 3 systems
- Other: 2 systems

Opportunities for Cost Savings

Certain expensive services and infrastructure could be shared through the new NG911 networks and core services, leading to significant cost savings and enhanced interoperability among PSAPs.

911 Postpaid Assessment Rate

911 Funding - Created in 1986

Funding: 911 Fees

- Wyoming State Statute Title 16, Chapter 9
- Postpaid set by County Commissioners – Capped by Statute at \$.75/Line
- Collected by Telecom Company Remitted to County Treasurer
- **Overall Counties Experienced Approx. 30% or \$3,000,000 deficit in 2023**

Calculation of the 911 Post Paid Assessment Rate Needed Per Access Line to Cover the 911 Revenue Deficit Experienced in 2023					
2023 Post Paid 911 Tax Revenues As Reported by the Counties	2023 Pre-Paid 911 Tax Revenue as Reported by DOR	Total 2023 911 Tax Revenue	2023 Total 911 Expenditures as Reported by the Counties	Current Post Paid Rate Per Access Line	Calculated Post Paid Rate Per Access Line Needed to Cover the Revenue Deficit
A	B	C=A+B	D	E	F=(D-B)/(A/E)
\$ 7,741,865.44	\$ 476,108.27	\$ 8,217,973.71	\$ 11,210,090.05	\$ 0.75	\$ 1.04

The surcharge for 911 services in Wyoming was originally established by state statute in 1986, setting a maximum fee of 75 cents per device per month for both wireless and landline phones. Adjusted for inflation using the Consumer Price Index (CPI), that amount would be approximately \$1.68 today.

In addition, prepaid wireless services are subject to a 1.5% fee on every retail sale.

The figures shown here represent the total revenue generated from 911 fees in Wyoming during 2023, alongside the total expenditures made by local jurisdictions from their dedicated 911 funds. These numbers reveal a persistent annual shortfall of nearly \$3 million, highlighting that current revenues do not fully cover the fundamental costs of operating 911 systems.

It's important to note that this deficit only reflects basic operational expenses covered by the 911 fees—such as equipment and system maintenance—and does not include broader costs like dispatch center staff salaries, benefits, or other operating and capital expenses. The true cost of maintaining emergency communication services is therefore significantly higher than these figures suggest.

911 Prepaid Assessment Rate

No Rate Parity Between Postpaid and Prepaid

Prepaid Wireless Phone set by Statute

- 1.50% on every retail sale of prepaid wireless communications greater than \$5.01
- Collected by Vendors → Department of Revenue → County Treasurer

Calculation of Pre Paid Rates to Accomplish Rate Parity Between Post Paid and Pre Paid Customers			
Total 2023 WY Gross Intrastate Retail Revenues	Current Pre Paid Rate	Calculated Average Post Paid Tax Percentage at Current Assessment Rate of \$0.75	Calculated Average Pre Paid Tax Percentage Based on the Assessment Rate of \$1.04
<i>G</i>	<i>H</i>	$I=A/G$	$J=(A/E)*F/(G)$
\$ 88,585,863.89	1.50%	9%	12%

The prepaid assessment for the 911 rate is collected by prepaid wireless providers at a rate of 1.50% on every retail sale of prepaid wireless communications greater than \$5.01. The funds are collected by the vendors and sent to the Department of Revenue. The funds are then sent to the County Treasurer.

What does it cost to Run 911?

Personel, Facility, Equipment, Software

Examples:

Teton County

Total cost of operating 911 Center: \$2,025,047.00

Revenue from 911 fees: \$327,822.31

Sweetwater County

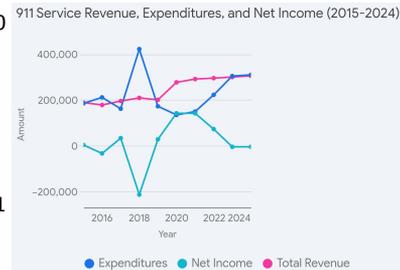
Total cost of operating 911 Center: \$3,968,337.21

Revenue from 911 fees: \$409,762.08

Park County

Total cost of operating 911 Center: \$1,584,377.31

Revenue from 911 fees: \$305,245.90



911 is experiencing a deficit annually of 3 million dollars just to cover the basic expenditures from 911 funds. However, this does not capture the total cost of operating a PSAP, including other operating costs, capital expenses, or staff salaries or benefits, because at the moment we still have humans answering 911 calls in WY.

For examples, in Teton County, 911 funds are used to cover 911 phone line expenses, software and call handling equipment and cover yearly maintenance of those systems. We bring in about \$327,000 in 911 revenue and the expenditures from this fund as reported to the PSC are about the same. As you can see here, the 911 fees collected only cover about 16% of our total budget to operate the county PSAP and the remaining 84% or approximately 2 million are absorbed by the county's general funds. This including salaries, benefits, capital, and additional 911 operating costs. In Sweetwater County 911 fees cover about 10%. In Park County, about 19%. In other words, the fee set in 1986 no longer adequately covers the expenses of operating a 2024 dispatch center, let alone making improvements to the system. If these same 3 counties were to cover ALL of their 911 PSAP costs with 911 fees, their current rate of 75 cents per line would have to increased to approximately \$6.50, \$9 and \$3.50 respectively.

Notations:

Surcharge set by W.S.S. in 1986 authorizing a maximum of .75 cents collection per device.

Not included in the revenue expenditures for each of these counties as reported to the PSC would be Payroll, Benefits and Capital Expenditures These categories were included in the 2024 911 fee report to show a more accurate cost of providing 911 service.

If the 911 fees were adjusted for current CPI/inflation should be \$1.68

This amount would be needed in the 911 Surcharge to bring the counties to whole

Park would need 3.45

Sweetwater 9.10

Teton 6.56

Examples:

Teton County

Total cost of operating 911 Center: \$2,820,000

Estimated revenue from 911 fees: \$340,000 (12%)

Deficit covered by general funds: \$2,525,800 (88%)

Sweetwater County

Total cost of operating 911 Center: \$4,559,000

Estimated revenue from 911 fees: \$404,000 (9%)

911 eligible deficit covered by general funds: \$3,138,000 (69%)

Park County

Total cost of operating 911 Center: \$1,300,000

Estimated revenue from 911 fees: \$300,000 (23%)

Funding Deficit

2024

Deeper Dive into the REAL Cost of 911

	2024	
Total Revenues		\$48,622,017.27
Total Expenditures		\$73,285,217.38
Deficit		\$24,663,200.11

The information is referenced from the Public Service Commission report that was collected from the Department of Revenue and County Treasurers between 2015 and 2024.

Moving Forward

Prioritize Partnerships

Legislative Updates and Creation for

1. 911 Surcharge Increase
2. Funding and Authority for Statewide NG911 Network/Services

In front of most people, in one form or another, there is likely a computer—be it a laptop, iPad, tablet, or smartphone. These devices provide quick and efficient access to information for completing tasks. Unfortunately, the same luxury does not extend to 911 services. Due to outdated technologies, only limited information can be retrieved, such as a phone number, possibly the account holder’s name if it’s a landline, and GPS coordinates for cellular calls. The process does not resemble popular TV shows where a caller’s detailed life history appears on screen for analysis.

To bridge this gap, multiple third-party software applications, like RapidSOS, are used to gather more detailed location information for callers. Some of these applications are free, while others require payment. The FCC mandates providing location information for routing calls, such as GPS coordinates that determine which 911 center receives the call. Covering over 97,000 square miles, Wyoming 911 faces significant challenges; therefore, enabling the use of modern technologies is essential.

Next Generation 911 (NG911) is simply a dedicated broadband IP-based network designed to offer higher speeds, vastly improved information sharing between communication centers, and unprecedented redundancy for 911 services across Wyoming. For example, while texting pictures is a common way to share information today, 911 services currently cannot receive images or any data beyond basic call information.

Some have suggested reducing the number of 911 centers in Wyoming to save money.

However, given the vast area and significant tourism industry, maintaining county-level dispatch centers staffed with personnel who are experts in local geography is critical. Reducing dispatch centers would negatively impact public safety and the quality of emergency response across the state. With fewer than 300 public safety communications officers statewide, regionalizing communications would concentrate workloads rather than distribute them, likely leading to longer wait times for callers. Currently, wait times do not exist, but this balance could be disrupted.

The implementation of NG911 would enable the sharing of essential resources needed to operate Public Safety Answering Points (PSAPs), potentially creating financial efficiencies without compromising the quality of services across Wyoming.

Terminology

1. **ECC** - Emergency Communications Centers (40) in Wyoming
 - a. **Dispatch Center** (6) in Wyoming. (Do not receive 9-1-1 calls may be a state or federal entity)
Wyoming Highway Patrol , Great Plains, Cody and Teton Interagency Dispatch, Base Defence Operations Center, Wyoming Wind River Police Department
 - b. **PSAP** - Primary (31) / Secondary (3) Public Service Access Point - take the 911 call and dispatch the right resource to assist the caller.
 - c. **CAD** - Computer Aided Dispatch
2. **Legacy System**
 - a. **Selective Router** - Required service for sending the call to a dispatch center. Cost is per mile from Cheyenne.
 - b. **ALI-ANI** - Required service providing Automatic Location Identification/Automatic Number Identification
3. **NG911** - Next Generation 911 - IP/Broadband Network
 - a. **ESI-Net** - The network required for the service
 - b. **Core Services** - The gateway connecting multiple PSAPs allowing for information sharing and redundancy of service if there is a network outage.
4. **CAD - Computer Aided Dispatch** - The backbone of 911 operations
5. **Call Handling Software** - Call handling and mapping software required for 911 service operations
6. **GIS** - Geographic Information System: Spatial Data Architecture "mapping"
 - a. **Location Based Routing** - routing a call to the correct jurisdiction based off of a map coordinate of the person using 911.
7. **NENA** - National Emergency Number Association - Standards Development, Training
8. **PSCC** - Public Safety Communication Commission - Governing Body for WyoLink & NG911

State Statutes - 911

- 9-2-1102. Commission; composition; appointment of members; removal; terms; officers; vacancies; meetings
- 9-2-1104. Commission; powers and duties; advisory capacity to promote system development; public meetings; clerical and administrative support.
- 16-9-103. Imposition of tax; liability of user for tax; collection; uncollected amounts; discontinuing service prohibited.
- 16-9-104. Remittance of tax to the governing body; administrative fee; establishment of rate of tax.
- 16-9-105. Agreements or contracts for 911 emergency reporting systems; use of funds collected.
- 16-9-106. Private listing and wireless subscribers, 911 service.
- 16-9-107. Confidentiality of information.
- 16-9-108. Immunity for providers.
- 16-9-109. State-wide imposition of tax; prepaid wireless; collection; distribution; immunity.
- 16-9-110. Statewide 911 coordinator.