

# ***Wyoming Public Safety Communications Commission Business Meeting Packet***



**Videoconference Business Meeting**  
**Held Wednesday, August 9, 2023**





Mark Gordon  
Governor

# Wyoming Public Safety Communications Commission

5300 Bishop Boulevard, Cheyenne, Wyoming 82009-3340  
Mark Harshman, Chairman | Telephone: 307-777-4015



Darin J. Westby  
Interim Director

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# Wyoming Public Safety Communications Commission

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Mark Harshman, Chairman | Telephone: 307-777-4015



Darin J. Westby  
Interim Director

## Agenda

Wednesday, August 9, 2023 at 1:30 p.m.

- I. CALL TO ORDER**
- II. PLEDGE OF ALLEGIANCE**
- III. ROLL CALL**
- IV. INTRODUCTIONS**
- V. CHANGES/ADDITIONS TO AGENDA (Tab 1)**
- VI. ACTION ITEMS**
  1. Consideration of May 3, 2023, Draft Meeting Minutes (Tab 2)  
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  2. Consideration of WyoLink Applications (Tab 3) – Mr. Gardiner
    - A. Federal Reserve
- VII. UPDATES/DISCUSSION**
  1. Director’s Report – Interim Director Westby
  2. Chief Technology Officer’s Report – Mr. Smolinski
    - A. NG911 Updates – Ms. Binning; Mr. Rick Hawkins, Director, Sweetwater Combined Communications; and Mr. Smolinski
    - B. Consideration of the Adoption of the Wyoming NG9-1-1 GIS Data Model (Tab 4) – Mr. Destry Dearden, Director of IT & GIS, Lincoln County
    - C. WyoLink Funding/ARPA
  3. Emergency Communications Program Report – Mr. Kelly
    - A. 16-Tower Buildout Report (Tab 5) – Mr. Smolinski
    - B. WyoLink Operational Updates – Mr. Gardiner
      - i. WyoLink System Reports (Tab 6) – Mr. Gardiner
      - ii. WyoLink System Upgrades – Mr. Gardiner

- C. Statewide Interoperability Coordination Updates – Mr. Kelly and Mr. Smolinski
  - i. SCIP Update
  - ii. PSCC Working Groups Update
- D. Commercial Emergency Communication Services Update – Mr. Kelly and Mr. Smolinski

**VIII. ANNOUNCEMENTS**

**IX. PUBLIC COMMENT**

**X. ADJOURNMENT**



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Governor

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Darin J. Westby  
Interim Director

## Draft Meeting Minutes

### I. Call to Order

The Public Safety Communications Commission (PSCC) met at the District 3 office in Rock Springs on Wednesday, May 3, 2023. Acting Chairman Dwane Pacheco presided, calling the meeting to order at 9:08 a.m.

### II. Roll Call

The following members were present constituting a quorum:

Paul Bertoglio, Commissioner	Dwane Pacheco, Secretary
Mike Choma, Commissioner	Cindi Shank, Commissioner
Jonathan Downing, Commissioner	Owen St. Clair, Commissioner
Karl Germain, Commissioner	John Wetzel, Commissioner
Phillip Franklin, Commissioner	Darin Westby, Ex Officio
Monte McClain, Commissioner	

Chairman Mark Harshman and Commissioner Matt Carr were absent.

### III. Introductions

The following attendees participated in the meeting:

Nathan Smolinski, Chief Technology Officer	Jason Gilmor, WyoLink Office
Mark Kelly, Emergency Communications Manager	Mike Zolner, Union Wireless
Neil Gardiner, WyoLink Support Manager	Kimberly Chapman, Commission Secretary
Aimee Binning, 911 Planning Coordinator	

*Susan Elliott assisted with virtual meeting management.*

### IV. Agenda Adjustments

Agenda item VII-2-C was tabled until the August meeting. It was moved by Commissioner Choma, seconded by Commissioner Franklin, and unanimously carried to approve the agenda.

## V. Action Items

### 1. Draft Meeting Minutes

It was moved by Commissioner Bertoglio, seconded by Commissioner McClain, and unanimously carried to approve the February 8, 2023, business meeting minutes.

### 2. WyoLink Applications

It was recommended by Mr. Gardiner, moved by Commissioner Bertoglio, seconded by Commissioner Downing, and unanimously carried to approve the applications from Bighorn Canyon National Recreation Area and Lincoln County School District #1.

### 3. Officer Election

Commissioner Choma nominated Commissioner McClain to serve as vice chairman. It was moved by Commissioner Downing, seconded by Commissioner Bertoglio, and unanimously carried to close nominations. Commissioner McClain was elected by acclamation.

## VI. Updates/Discussions

### 1. Director's Update

Interim Director Westby presented his update.

Interim Director Westby is the new interim director, and he started in this role five and a half weeks ago. He is still learning about WYDOT, its operations, and the three commissions.

His background is in mechanical and civil engineering (he is a licensed civil engineer). The interim director spent several years in the private sector working for a civil and architectural engineering firm. He then moved to the public sector, working briefly for the Department of Environmental Quality before moving to Wyoming State Parks and Cultural Resources. His career with State Parks spanned 22 years, and he served as the director for the last seven and a half years.

Interim Director Westby stressed that as interim his focus is on agency continuity and stability. He believes that serving as an interim director provides an opportunity for him to better understand the agency and its needs and for the employees of the agency to get to know him. If, after learning more about WYDOT, he feels that the role is compatible with his personal and professional goals, he will apply for the permanent director role. His purpose in the interim role is to analyze all of WYDOT's programs, identify needs, and create a roadmap to success for the eventual, permanent director.

He shared some of his initial observations from his first few weeks with WYDOT. While the agency is large (with over 1,700 employees) the aims are much the same as State Parks—to maintain assets, serve the public, and support the economy. A larger agency may present more issues and challenges, but it also means there are more people available to help solve problems or address issues. Furthermore, he believes that WYDOT is staffed with good people who are proud of the agency and the work they do. There is also a group of committed stakeholders and partners to help the agency achieve its mission.

Interim Director Westby shared his appreciation for the agency's mission, vision, and values. He is proud to serve as the interim director and looks forward to working with everyone.

The interim director has spent his first few weeks meeting with the WYDOT executive team, program managers, and employees. He began traveling to the five WYDOT districts to meet with district leadership as well as personnel in the field. In meetings with maintainers, he gained a greater appreciation for their hard work and efforts to keep roadways open, operable, and safe during the past winter. Staffing in these positions was down 50 percent and some maintainers were working 16 to 18 hour days.

One of his main priorities is addressing employee retention and recruitment. Filling vital roles such as maintainers, Wyoming Highway Patrol troopers, and dispatchers is critical to mission success. Interim Director Westby believes that continuously increasing an employee's workload, year after year, will lead to burnout and even higher turnover. Retention will therefore be a high priority for him, the executive team, and district leaders.

#### National Electric Vehicle Infrastructure (NEVI) Plan

Interim Director Westby has paused the NEVI project for the foreseeable future. He believes that the plan places too much risk on the state in regards to building charging stations. If a local developer pulled out of the project, WYDOT may still be responsible for the funds granted and may be required to repay the full amount to the Federal Highway Administration (FHWA). The return-on-investment for the charging stations is fairly low, so Interim Director Westby felt that there was a strong possibility that developers would decline to participate.

For now, Wyoming will wait to see if other states appeal the grant stipulations. If this happens, and the risk is to WYDOT and the state is lessened, then the agency will reconsider its participation in the program. If not, WYDOT will return the grant funds to FHWA.

Following a question from Vice Chairman McClain, the interim director said that he believed that most of the charging stations were to be built along the Interstate 80 and 25 corridors. There are a few individuals already building these stations in Wyoming, and they have contacted WYDOT to express interest in the project. An additional, significant concern is taxation. Charging station transactions will need to be taxed at a rate commensurate with the gasoline fuel tax. Interim Director Westby felt that all of these issues combined made the project too high-risk to be considered right now.

## 2. Chief Technology Officer's Report

Mr. Smolinski presented his update, with additional information provided by Ms. Binning.

### Customer Satisfaction Survey

Mr. Smolinski informed the commission that WYDOT recently released a report detailing the results of the biennial Customer Satisfaction Survey. While the survey solicits feedback on the entire department, Mr. Smolinski highlighted the section on WYDOT's communication strategies. Customer engagement data shows a dramatic

increase in use of WYDOT's websites and web applications over more traditional methods like phone calls.

Much of the information sought by these customers is information collected by the Transportation Management Center (TMC). As of February 2023, WYDOT's website had received over 2.2 billion hits. Mr. Smolinski reported that the new "roadkill reporting" feature on WYDOT's 511 application had received 2,300 hits within its first year on the app, and over 600 carcasses were collected.

Ms. Chapman will send the commission a copy of the report.

#### Next Generation 911 (NG911) Updates

Ms. Binning thanked the commission for their participation in the tour of the Sweetwater County Combined Communications Center the previous day. Executive Director Rick Hawkins and Information Technology (IT) Director David Halter provided a thorough tour of the center and shared information on their operations.

Ms. Binning shared that the Sweetwater County Combined Communications Center has an innovative communications strategy—the center works with FirstNet while using 911 and WyoLink networks for primary communication. The center has supplied invaluable feedback to the telephone companies on all of the phases of the Federal Communications Commission's (FCC) Enhanced 911 (E911) required data. Ms. Binning also praised the center's leadership for their readiness to share data and information with WYDOT.

Ms. Binning reached out to several telephone vendors—Verizon, AT&T, T-Mobile, and Union Wireless—to collect information on their performance relative to E911 requirements in Wyoming. Ms. Binning reminded the commission that Phase I data provides a public safety answering point (PSAP) with a location based upon the cell tower through which the call is routed. Phase II data provides the latitude and longitude of the caller's location. While E911 is considered legacy technology, and not NG911-ready technology, most Wyoming PSAPs are using E911 technology, so it is crucial that the telecommunications companies are performing well and we maintain positive relationships with the vendors.

#### Annual Reports

Ms. Binning reminded the commission of the two federal reports submitted by the department annually. The 911 Fee Report details the amount of fees collected that year, how the fees are allocated, and the specific programs funded. The NG911 Report describes the state's progress on NG911, including what equipment is being used at the PSAPs and what actions were taken to prepare PSAPs for the conversion.

A survey was sent to the PSAPs in January 2023 to gather data for the reports and the deadline was May 1, 2023. To date, 20 of the 33 PSAPs have responded to the survey. Ms. Binning will reach out to the non-respondents and attempt to gather the missing data to ensure complete accuracy in the final reports.

Ms. Binning reported that her team is working with the Public Service Commission (PSC) to gather financial data for the reports. As mandated by the legislature, the PSC collects information on the 911 fees collected in the state and the total expenditures.

Ms. Binning has a copy of the PSC's report, and she will incorporate the data into the federal reports. The PSC report contains data from all 23 counties, and Ms. Binning thanked all of the counties and county treasurers for submitting their information.

Vice Chairman McClain offered to assist Ms. Binning in obtaining any missing data from the PSAPs.

### WyoLink Funding

Mr. Smolinski updated the commission on the \$35 million in American Rescue Plan Act (ARPA) funds allocated to WYDOT for WyoLink. As previously reported, a grant process was set up last year to award \$4.5 million to local agencies to purchase WyoLink compatible equipment. WYDOT received 119 applications from 116 agencies totaling \$19 million in requests. One hundred awards were made, and most of the equipment has been purchased or approved. WYDOT will pay the invoices for the equipment upon delivery to the local agency. Mr. Smolinski thanked the Emergency Communications Program for their work on the project and the Wyoming Office of Homeland Security's (WOHS) Senior Advisory Committee for assisting with the grant process.

Mr. Smolinski updated the commission on other WyoLink funding issues. During the 2023 General Session, two separate bills to provide sustained funding for WyoLink failed. The legislature then added an amendment to the general government appropriations bill to appropriate \$8.6 million from the General Fund for WyoLink. These funds will be available in fiscal year (FY) 2024 and will be used for general operations and maintenance. In the future, WYDOT will receive \$8.6 million per biennium for WyoLink.

The final informational invoices were sent to the counties in April with a note emphasizing that it was the final round of invoices.

### 3. Emergency Communications Program Manager's Report

Mr. Kelly provided an update on the Emergency Communications Program. The update also included information presented by Mr. Gardiner regarding WyoLink operations.

Mr. Kelly reported that the process to upgrade subscriber units in WYDOT's maintenance fleet is ongoing. The team is reaching out to local entities to see if old units can be donated and reused. South Dakota has expressed an interest in obtaining some of the old units for their local governments and agencies, but Wyoming entities will be given first priority for donations.

Mobile units are scheduled to be installed in Wyoming Highway Patrol vehicles in Districts 3 and 5 the week of June 5<sup>th</sup>.

Following a question from Commissioner Choma, Mr. Kelly assured the commission that he and Mr. Smolinski will contact local agencies, like volunteer fire departments, to alert them about the free radios. Wyoming entities will be contacted and given the first option for the old units. Radios will only be offered to other states after in-state need has been satisfied.

Mr. Smolinski added that, with the ARPA funds grants, the team made a concerted effort to reach small or underfunded agencies, some of which were already WyoLink subscribers that were lacking equipment.

#### 16 Tower Buildout Report

Mr. Smolinski reported that with the severe winter, there was almost no progress made on the tower sites under construction. The team is preparing for the upcoming construction season, but he estimates that three of the four sites—Newcastle, Meadowlark, Little Sheep, and Kismet—are most likely inaccessible because of the snow. While Newcastle might be accessible, it is not economically feasible to bring in a construction crew for one site.

Mr. Smolinski estimates that construction will not begin until late-June or July. It remains his goal to complete construction and finish out the project this calendar year.

Following a question from Commissioner Choma, Mr. Smolinski reported that there was no damage to any of the towers due to winter weather. The winter did lead to a discovery, which will result in a change to high-elevation sites like Meadowlark. The generator exhaust ports that come out of the top of the shelters will be raised to avoid blockages and clogging.

#### WyoLink Operational Updates

##### *WyoLink System Reports*

Mr. Gardiner shared WyoLink usage data from the second quarter (Q2) of 2023. There was an average of about 1.8 million push-to-talks (PTT) and 154,000 minutes of airtime for the quarter.

The top 20 talkgroups for Q2 were mainly law enforcement agencies, as expected. Mr. Gardiner noted that two WYDOT talkgroups appeared in the top 20 list, which indicates how much work maintainers were putting in throughout the winter.

##### *WyoLink System Upgrades*

Mr. Gardiner reported that the winter slowed down the pace of the GTR fixed station/repeater upgrade process. Four upgrades were completed in April, but several more sites that were scheduled for upgrades had to be canceled due to weather or accessibility. Six sites are scheduled for upgrades in May and 10 in June. Mr. Gardiner stated that this is an aggressive schedule, but he feels confident the team can complete it with Motorola's assistance.

Upon the completion of those 16 sites, 15 will still need GTR upgrades. Once all of the sites are completed, Mr. Gardiner and his team will be able to upgrade the whole system to the next software version.

##### *Staffing*

The WyoLink office hired three new employees who started work in March. The team was able to train the new hires on most all aspects of site maintenance and are currently providing equipment training. Mr. Gardiner is glad to have staffing levels increased in advance of the upcoming, busy summer.

Following a question from Commissioner Choma, Mr. Gardiner stated that most agencies and groups learn about WyoLink by word-of-mouth. There was a big push to market and educate stakeholders on WyoLink when it was first created, but the team's focus shifted to upgrades and system maintenance. The office still receives numerous calls about WyoLink, but Mr. Gardiner said they could expand their focus to include outreach.

The main issue is identifying which agencies are not on WyoLink and determining if they are interested. Mr. Gardiner stated that he and Ms. Binning regularly have conversations about the dispatch centers and how those centers are dispatching calls to determine if there are entities who want to be on WyoLink or use it as a secondary communication source.

Following a comment from Chairman Pacheco on the capacity created by new tower sites, Mr. Smolinski shared that the program is not necessarily seeing more new subscriber applications, but they are seeing PTT and airtime numbers increasing. This is because more subscribing agencies are using WyoLink as a primary communications network and moving more of their day-to-day operations onto the system.

#### *Microwave System Upgrade*

Mr. Smolinski informed the commission of an upcoming contract with Motorola to upgrade the microwave system. He shared that an upgrade is long overdue as the department is using legacy equipment (from 2006), which makes it challenging to keep the system operational. Multiple locations statewide were selected for an initial phase, and more sites will be upgraded as the project progresses.

The \$15 million contract will be paid for with ARPA funds, which must be expended by 2026. The contractor will begin work on the project the week of May 15<sup>th</sup>.

#### Statewide Interoperability Coordination (SWIC) Updates

Mr. Smolinski reported that he and Mr. Kelly are sharing the SWIC responsibilities.

Mr. Kelly reported that he attended the Regional Emergency Communications Coordinating Working Group in Salt Lake City, Utah, on April 19<sup>th</sup> and 20<sup>th</sup>. He was able to set up auxiliary communications testing with Montana and Utah. The department already conducts monthly testing with Colorado, and it will be beneficial to cooperate with more neighboring states.

On June 21<sup>st</sup>, there will be a joint Critical Connect training with Montana in Sheridan. Mr. Smolinski reminded the commission that Critical Connect is a system enables allows WyoLink to connect to other communication systems like cellular networks or to other states' systems. Conversations are taking place with Montana, South Dakota, and Colorado on system-to-system communication.

A joint training with Carbon County Search and Rescue and the Albany County Sheriff's Search and Rescue was held April 17-21, 2023. The topic was Snowcat training and interoperable communications.

*Update on Federal Partners*

Mr. Kelly reported that he and Mr. Smolinski will attend the National Council of Statewide Interoperability Coordinators on May 16<sup>th</sup> and 17<sup>th</sup>.

Planning is underway on the Statewide Communications Interoperability Plan (SCIP) meeting to be held in July. A series of planning meetings have been scheduled around different topics, including a governance meeting on May 10<sup>th</sup>, a technology and cybersecurity meeting on May 17<sup>th</sup>, and a funding meeting on May 24<sup>th</sup>.

FirstNet/Front Line Updates

Mr. Smolinski reported that FirstNet will provide an update on their 5-year buildout at the October PSCC meeting. (FirstNet's contract with the federal government stipulated several benchmarks throughout the buildout.) Along with their presentation to the commission, FirstNet will send a report detailing their progress and success to Governor Gordon.

Mr. Kelly reported that the program received the compact rapid deployable (CRD) units from FirstNet. Mr. Gardiner and his team received training on its operation and will provide a demonstration at the October meeting. Commissioner Shank thanked the department for its willingness to share the CRD units with the WOHS for deployment during incidents and events.

Mr. Smolinski reminded the commission that WYDOT has two CRD units—one will be kept in Cheyenne and the second one will eventually be moved to another part of the state. Since the unit only supports FirstNet, the team is looking to position the unit in an area with a high volume of FirstNet users.

**VII. Recognition of Outgoing Commissioner**

Chairman Pacheco recognized Commissioner Forrest "Frosty" Williams, who is leaving the commission because of his retirement. He served as the representative for the Wyoming Division of Criminal Investigation. Although Commissioner Williams was unable to attend the meeting, Chairman Pacheco acknowledged and thanked him for his service to the PSCC. The chairman sent his congratulations and best wishes to Commissioner Williams on a well-earned retirement.

**VIII. Drone Presentation**

Mr. Gilmor shared a video created by WYDOT Public Affairs on drone-conducted WyoLink tower inspections. Following a question from Commissioner Bertoglio, Mr. Gilmor confirmed that the team is able to easily identify issues, because the drones are able to capture very detailed images.

Following a question from Commissioner Downing, Mr. Gilmor and Mr. Smolinski confirmed that drone-conducted inspections reduce the number of tower climbs, which improves safety and saves the organization time. An additional benefit, according to Mr. Gilmor, is the data that will accrue over time. The team will be able to review files of past inspections to compare the data and pinpoint changes in a tower's condition. Following a question from Commissioner Choma, Mr. Gilmor stated that the team manually compares the data from multiple year's inspections as no software or program yet exists that can provide the needed comparative analysis.

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**IX. Public Comment/Announcements**

Mr. Zolner, with Union Wireless, provided information on the transmission of 911 calls originating from mobile devices. He explained the entire process and traced the voice and data paths from the inception of a call to its arrival at a PSAP. After the call is dialed, it is routed to the nearest cell tower/site.

The cell site then routes the call to a radio network controller, which either sends the call on to a mobile switching center (MSC) or to a serving mobile location center (SMLC). The MSC then routes the call to a gateway mobile location center (GMLC). The SMLC provides information on a caller's position and the GMLC provides an emergency services routing key (ESRK) that determines the PSAP to which a call should be routed.

The GMLC then forwards the call back to the MSC so that the call can then be routed over a session initiation protocol trunk to the Union Core. Based on the ESRK, the Core will route the call to a 911 selective router, which in turn sends the call to the appropriate PSAP. The PSAP will receive Phase I and II data with the call.

**X. Announcements**

Ms. Chapman announced that the next meeting will be August 9, 2023, via videoconference.

The Wyoming Attorney General's Office will host the 2023 Board Member Training on Friday, May 5, 2023. The training will be held at the Capitol Auditorium in Cheyenne from 8:30 a.m. to 4:30 p.m. There is a virtual option for anyone unable to travel to Cheyenne. Commissioners were sent an email with more information and instructions on how to RSVP.

Ms. Chapman provided the commissioners with an updated contact list and requested that commissioners send her any updated information.

**XI. Adjournment**

It was moved by Commissioner Choma, seconded by Commissioner Shank, and unanimously carried to adjourn the May 3, 2023, business meeting at 10:39 a.m.



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Darin J. Westby  
Interim Director

## Education Session Minutes

An education session was held for the Public Safety Communications Commission (PSCC) on Tuesday, May 2, 2023. The group toured the Sweetwater County Combined Communications Center in Green River and the Blairtown WyoLink tower site. The tour began at 1:15 p.m.

**The following commission members were present, constituting a quorum.**

Paul Bertoglio, Commissioner	Karl Germain, Commissioner
Matt Carr, Commissioner	Monte McClain, Commissioner
Mike Choma, Commissioner	Dwane Pacheco, Secretary
Jonathan Downing, Commissioner	Cindi Shank, Commissioner
Phillip Franklin, Commissioner	Darin Westby, Ex Officio

Commissioners Mark Harshman and Owen St. Clair were absent.

**The following WYDOT staff and guests were present and participated in the session.**

Nathan Smolinski, Chief Technology Officer	Aimee Binning, 911 Planning Coordinator
Mark Kelly, Emergency Communications Manager	Rick Hawkins, Executive Director, SCCC
Neil Gardiner, WyoLink Support Manager	David Halter, IT Director, SCCC
Kimberly Chapman, Commission Secretary	Jason Gilmor, WyoLink Office

Tour of Sweetwater County Combined Communications Center (SCCC)

Messrs. Hawkins and Halter gave the commission a tour of the SCCC and provided an overview of the center, its history, and its operations.

The SCCC is governed by the Sweetwater County Combined Communication Joint Powers Board (SCCJPB), which is comprised of nine members—with three representatives from Green River and Rock Springs, and three representatives from Sweetwater County. The county and the two cities provide funding for the center through a funding formula based on call volume and population. SCCC staff are employed by the SCCJPB.

Messrs. Halter and Hawkins are part of the Next Generation 911 (NG911) working group. Mr. Halter said the SCCC will follow the state’s NG911 plan when one is developed. He shared that the center, and most all agencies, switched to FirstNet for data connectivity. To his knowledge, Sweetwater County was the first to tie FirstNet’s push-to-talk system to WyoLink.

The SCCC is set up with eight dispatch stations, with an additional three backup stations at the Sweetwater County Sheriff's Office in Rock Springs. The center uses four to five dispatchers per shift and five people are assigned to each of the four crews.

The SCCC has a data center onsite and there is also a backup in Rock Springs.

Each workstation has three computers: one runs the computer aided dispatch (CAD) software, another for radio, and a third for phones. Four of the monitors at each station are dedicated to CAD, one monitor displays radio communications, and a final monitor displays phone calls. Three tabs are always open on the radio screen for law enforcement, fire departments and EMS, and pagers. The National Warning System is tied into the consoles so any dispatcher can respond to calls.

Mr. Hawkins explained how the work is divided during a shift. Three of the workstations are grouped together and each station is dedicated to monitoring radio feeds from law enforcement in Rock Springs, Green River, and the county. The remaining station is dedicated to phones and fire departments/EMS. The SCCC uses a mixed shift schedule with dispatchers working six, 10, and 12 hour shifts.

Mr. Halter stated that of the calls received in 2022, about 90 percent were placed on mobile devices. Of those calls, an estimated 70 percent came in with E911 Phase II data. Mr. Halter said the E911 data received varies by carrier; some are doing better than others. If the center receives a phone number, the dispatcher may query a service call Rapid SOS to determine the GPS location of the caller.

While the SCCC has conventional channels available, Mr. Hawkins said that the center is very close to running 100 percent through WyoLink. He said that the center has also successfully tested WyoLink paging. The SCCC may receive text messages from mobile devices, but cannot send text messages to callers.

The group was also allowed to see the server room before the tour concluded at 2:07 p.m. The group traveled to Rock Springs for a tour of the Blairtown WyoLink tower.

#### Tour of Blairtown WyoLink Tower

Mr. Smolinski provided the commission with a complete tour of the site, including the tower and the shelter. One side of the shelter houses WyoLink GTR repeaters, the DC power unit, the alarm system, and all of the electrical infrastructure and the transfer switch. The alarm is programmed to notify the WyoLink office of shelter access, internal temperature fluctuations, and power outages and generator use.

The generator occupies the other half of the shelter and it supplies power to the site in case of outages. Like all WyoLink sites, the generator is tested once each week to ensure it is in good, working order.

Mr. Gilmor demonstrated a drone-conducted tower inspection and answered commissioner questions. The drone is able to capture many detailed images as it flies a pre-programmed pattern around the tower from top to bottom. Technicians are then able to review the images to determine what needs to be repaired, gather the necessary tools, and make fewer climbs to perform necessary maintenance.

The session concluded and adjourned at 3:30 p.m.



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5300 Bishop Boulevard, Cheyenne, Wyoming 82009-3340  
Mark Harshman, Chairman | Telephone: 307-777-4015



Darin J. Westby  
Interim Director

## Draft Meeting Minutes

### I. Call to Order

The Public Safety Communications Commission (PSCC) met via videoconference on Monday, May 8, 2023. Vice Chairman Monte McClain presided, calling the meeting to order at 11:32 a.m.

### II. Roll Call

The following members were present constituting a quorum:

Mark Harshman, Chairman	Monte McClain, Vice Chairman
Paul Bertoglio, Commissioner	Dwane Pacheco, Secretary
Matt Carr, Commissioner	Owen St. Clair, Commissioner
Jonathan Downing, Commissioner	Cindi Shank, Commissioner
Phillip Franklin, Commissioner	John Wetzel, Commissioner
Karl Germain, Commissioner	Darin Westby, Ex Officio

Commissioner Mike Choma was absent.

### III. Introductions

The following attendees participated in the meeting:

Nathan Smolinski, Chief Technology Officer    Kimberly Chapman, Commission Secretary

### IV. Agenda Adjustments

No adjustments were made to the agenda.

### V. Action Items

#### 1. Use of ARPA Funds to Upgrade WyoLink Microwave Network

Mr. Smolinski requested the commission's support on a contract with Motorola to upgrade the WyoLink microwave network. The network is currently running on legacy equipment that is no longer supported by the manufacturer, which has made it increasingly challenging to operate the system. The microwave system is mission critical as it provides a connection between all WyoLink sites and Cheyenne, making it a true statewide interoperable communication system.

The existing system technology will not be able to keep up with the growing demand as other features are upgraded and subscriber use increases. The new system will

provide up to 160 megabytes of capacity compared to the 1.5 megabytes of capacity currently per site.

Motorola's project proposal was valued at \$12.8 million but the contract awards up to \$15 million. This was done to allow for "known unknown" or unforeseeable project costs. The extra funds may be used to reinforce towers to handle the load of extra equipment, which will be determined by equipment mapping and structural analysis to be completed at each site.

The project will have a tight deadline as the ARPA funds underwriting this project must be expended by December 31, 2026. The funding deadline necessitates a detailed, precise project schedule that accounts for the seasonality of construction and site access.

Action: It was recommended by Mr. Smolinski, moved by Chairman Harshman, seconded by Commissioner Germain, and unanimously carried to approve the contract with Motorola to upgrade the WyoLink microwave network.

#### **VIII. Adjournment**

It was moved by Commissioner Pacheco, seconded by Commissioner Wetzel, and unanimously carried to adjourn the May 8, 2023, emergency business meeting at 11:39 a.m.



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# Wyoming Public Safety Communications Commission

5300 Bishop Boulevard, Cheyenne, Wyoming 82009-3340  
Mark Harshman, Chairman | Telephone: 307-777-4015



Darin J. Westby  
Interim Director

## Draft Meeting Minutes

### I. Call to Order

The Public Safety Communications Commission (PSCC) met via videoconference on Friday, June 23, 2023. Chairman Mark Harshman presided, calling the meeting to order at 11:30 a.m.

### II. Roll Call

The following members were present constituting a quorum:

Mark Harshman, Chairman	Dwane Pacheco, Secretary
Jonathan Downing, Commissioner	Cindi Shank, Commissioner
Phillip Franklin, Commissioner	John Wetzel, Commissioner
Karl Germain, Commissioner	Darin Westby, Ex Officio
Monte McClain, Vice Chairman	

Commissioners Paul Bertoglio, Matt Carr, Mike Choma, Owen St. Clair, and Matt Waldock were absent.

### III. Introductions

The following attendees participated in the meeting:

Nathan Smolinski, Chief Technology Officer    Kimberly Chapman, Commission Secretary

### IV. Agenda Adjustments

No adjustments were made to the agenda.

### V. Action Items

#### 1. WyoLink System Maintenance Agreement

Mr. Smolinski reported that the WyoLink System Maintenance Agreement (SMA) with Motorola is eligible for a three-year extension. The services included in the SMA are necessary for the continued operation and maintenance of the WyoLink system. The contract was approved by the Wyoming Attorney General's office and is ready to be signed and executed.

The cost of the SMA will be covered by the recently approved, \$8.6 million appropriation that WYDOT will receive for WyoLink per biennium. Once the SMA has been funded, any unspent monies will be directed to other operational system needs.

It was recommended by Mr. Smolinski, moved by Commissioner McClain, seconded by Commissioner Franklin, and unanimously carried to approve the renewal of the WyoLink System Maintenance Agreement.

2. Additional WyoLink Towers

Mr. Smolinski asked the commission to consider a contract for the addition of two WyoLink tower sites in Northern Sheridan County and Saratoga. It is estimated that the cost for the Saratoga site will be \$1.4 million. The Northern Sheridan County site will cost an estimated \$1.5 million.

The Saratoga site will be a collocate with the Union Telephone Company. WyoLink equipment will be hung on Union's tower, but WYDOT will build a shelter to hold the generator and radio equipment. This is a challenging site because it is on top of a mountain. Some roadwork will have to be completed in order to get the necessary construction equipment and shelter to the site.

The Northern Sheridan County site will be a new build. Mr. Smolinski reported that there will be a utility fee because there is currently no power at the site and new lines will have to be installed.

The contract for the two additional sites is still under review by the Attorney General's office, but the commission's approval will be taken into consideration.

It was recommended by Mr. Smolinski, moved by Commissioner Downing, seconded by Commissioner McClain, and unanimously carried to approve the contract for two new WyoLink towers, to be located in Northern Sheridan County and Saratoga.

**VIII. Adjournment**

It was moved by Commissioner Wetzel, seconded by Commissioner Franklin, and unanimously carried to adjourn the June 23, 2023, emergency business meeting at 11:37 a.m.

## WYOLINK and WYOMING MUTUAL AID APPLICATION FOR SYSTEM ACCESS OR NEW TALKGROUP

Date: 06/15/2023

Requesting Agency: Federal Reserve Bank of Kansas City – Law Enforcement

Type of Request       New Talkgroup Request  
                                  New Member  
                                  Other \_\_\_\_\_

Type of Agency      **First Responder**  
                                  Law Enforcement  
                                  Fire Department  
                                  Emergency Medical Service  
                                  Homeland Security  
                                  Communications Center  
                                  Other \_\_\_\_\_

**Emergency Response Support**

- Transportation
- Support – Red Cross, Salvation Army, etc.
- Weather Service
- Public Works
- Court Services
- Regulatory
- Other \_\_\_\_\_

Radio System       WyoLink  
                                  Mutual Aid  
                                  SALECS

Reason for Request: A non-governmental entity shall apply for WyoLink Membership with the sponsorship of a public safety agency, attach letter from sponsoring public safety agency.

The Federal Reserve Bank of Kansas City is one of 12 regional Reserve Banks that, along with the Board of Governors in Washington, D.C., make up our nation's central bank. We work in the public's interest by supporting economic and financial stability. Our district covers the states of Colorado, Kansas, Nebraska, Oklahoma, and Wyoming; 43 counties in western Missouri; and 14 counties in northern New Mexico.

The Federal Reserve Bank of Kansas City's Economic Policy Symposium in Jackson Hole, Wyo., is one of the longest-standing central banking conferences in the world. The event brings together economists, financial market participants, academics, U.S. government representatives and news media to discuss long-term policy issues of mutual concern.

Our Law Enforcement Unit (LEU) is tasked with law enforcement, executive protection, and intelligence operations for the annual symposium. Federal Reserve Law Enforcement Officers (FRLEOs) exercise federal law enforcement authority granted in accordance with section 11 (q) of the Federal Reserve Act.

We would like to request (2) private system talk groups in support of our operations.

Name of individual completing application: Albert Pisterzi

Title: Law Enforcement Manager / Assistant Vice President

Address: 1 Memorial Drive. Kansas City, Mo. 64198

Phone: 816-881-2653

E-mail address: albert.pisterzi@kc.frb.org

Signature: Albert J. Pisterzi June 15, 2023

Send completed application to:

WyoLink  
Wyoming Department of Transportation  
5300 Bishop Boulevard  
Cheyenne, WY 82009  
E-mail: wyolink@wyo.gov

Mutual Aid Channel Approval: \_\_\_\_\_  
(If Requested) Wyoming Highway Patrol

Please complete the following for Mutual Aid request

Number of Mobile Radios:

Number of Portable Radios:

Number of Dispatch Centers:  
(Control Stations)

# TETON COUNTY SHERIFF'S OFFICE

P.O. BOX 1885, JACKSON, WYOMING 83001

MATT CARR, SHERIFF  
(307) 733-4052

FAX: (307) 732-7131  
ADMINISTRATION - PATROL  
INVESTIGATIONS - CIVIL PROCESS

FAX: (307) 739-9326  
DISPATCH - WARRANTS  
DETENTION

Wednesday, July 12, 2023

Wyoming Department of Transportation – WYOLINK  
5300 Bishop Boulevard  
Cheyenne, WY 82009

RE: Sponsorship Letter

To Whom It May Concern:

Please accept this letter as proof of sponsorship from the Teton County Sheriff's Office (TCSO), a public safety agency, for Federal Reserve Bank, a non-governmental entity. Each year the Federal Reserve Bank has a symposium near Jackson (Jackson Lake Lodge) and would like to use WyoLink to be able to communicate.

If you have any questions, please feel free to contact me at (307) 733-4052 or my e-mail address provided below.

Respectfully,

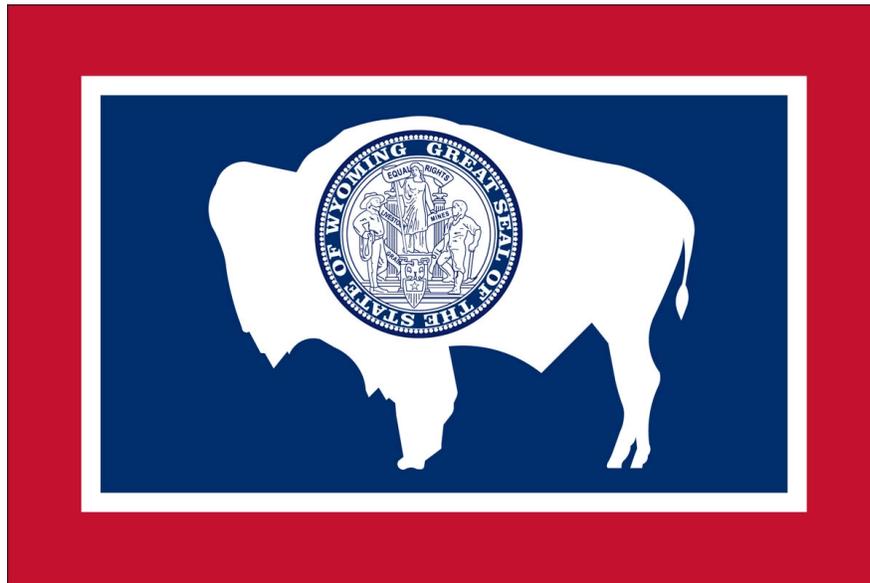


Matt Carr  
Sheriff  
Teton County Sheriff's Office  
mcarr@tetonsheriff.org

# Wyoming NG9-1-1

## GIS Data Model

*Version 1.0*



*Prepared by the GIS Committee on behalf of the Wyoming 911 Coordinating Council*



For reference and updates to NENA, Most Recent Document

NENA Standard for NG9-1-1 GIS Data Model (NENA-STA-006.2-2022)

[https://cdn.ymaws.com/www.nena.org/resource/resmgr/standards/nena-sta-006.2-2022\\_ng9-1-1\\_.pdf](https://cdn.ymaws.com/www.nena.org/resource/resmgr/standards/nena-sta-006.2-2022_ng9-1-1_.pdf)

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# 1 Introduction

In NG9-1-1, emergency call routing occurs through GIS data aggregated into regional or statewide datasets. There is no better way to ensure the accuracy of the data than through local stewardship: cities and counties maintaining the data for their area. Getting local data aggregated into a single large dataset for call routing requires some consistency in attribution and geometry. In an effort to assure the successful creation of the aggregated datasets necessary to support NG9-1-1's GIS-based call routing, the GIS Committee of the Wyoming 911 Coordinating Council has assembled this document to provide guidance for the remediation and maintenance of local GIS data in Wyoming.

The March 2014 draft of the "NENA Standard for NG9-1-1 GIS Data Model" was used as the authoritative basis for this document. While the NENA Standard focuses primarily on feature attributes, basic guidance for feature geometry was developed and included in this document to help ensure consistency across the various entities maintaining the data. These guidelines were developed with the proper functioning of an aggregated call routing dataset in mind.

## 1.1 Document Conventions and Terminology

The terms "shall", "must" and "required" are used throughout this document to indicate required parameters and to differentiate from those parameters that are recommendations. Recommendations are identified by the words "desired", "preferred" and "recommended".

The term "data steward" is used throughout this document to indicate the person or persons responsible for supervising maintenance on the GIS data for an agency.

The term "data maintainer" is used throughout this document to indicate the person or persons responsible for performing maintenance on the GIS data for an agency.

The term "data aggregator" is used throughout this document to indicate the person or persons responsible for incorporating local datasets into the aggregated state-wide dataset.

## 1.2 Authoritative Data

The Authoritative Boundary layer produced by each data steward represents the area for which all of the data submitted by that data steward is authoritative, often a city or county boundary. The features of remaining data layers shall only be accepted from the data steward within that Authoritative Boundary. All features intended for submission must be inside that boundary.

## 1.3 Data Layer and Attribute Standards and Conventions

### 1.3.1 Inclusion of Attributes

Many of the attributes listed in NENA Standard will be maintained by the data aggregator rather than the local data steward. Those attributes have not been included in this guidance. Additionally, some fields have been added to the list required by the NENA Standard. These fields are categorized in the attribute descriptions as "Fields Added for Wyoming" and are intended to both aid in the data aggregation process and enhance the effectiveness of the aggregated data.

All attributes listed in the attribute tables of this standard shall be included in the local dataset, even if they are unpopulated. It is strongly recommended that the attributes be kept in the same order presented in this document, unless the data steward has a business reason for changing the order. Data stewards may add

any other attributes they find necessary for their own business processes. The attributes in this standard represent the minimum required set, not an exclusive list.

### 1.3.2 Field Names

A field name has been assigned to each attribute in the standard. These field names were held to eight characters or less in case conversion to shapefile is ever necessary. The use of these field names is required.

### 1.3.3 Letter Case

All attribute values shall be stored in upper case characters, unless the attribute description in this document specifies otherwise. The primary exceptions to this recommendation are the [LABEL], [ADDURI], and [UPDATEBY] fields which may be in any case that fits the data steward's needs.

### 1.3.4 Unique Identifiers

The attribute table for each data layer includes a field for a unique identifier within the local dataset. The data aggregator will combine each of these unique identifier fields with the value in the [DiscrpAgID] field to create the unique identifier in the aggregated dataset required by NENA. Data stewards may use any type of unique identifier they choose: sequential numbers; unique names; creation date and time; or any other format fitting in their business processes. However, data stewards are required to ensure their chosen identifier is unique for each record in the data layer.

### 1.3.5 Effective and Expiration Dates

The Effective and Expiration dates on data layers are meant to allow data stewards who know a change is coming to have both the current and the future geometry and attribution submitted to the aggregated dataset. For example, an annexation of land to a municipality may require edits to nearly every layer the data steward is responsible for. If that annexation is scheduled to take effect on July 1, the data steward can set records showing the current geometry and attributes to expire on July 1 and records showing the new geometry and attributes to be effective July 1. There are two major benefits to this. First, the NG9-1-1 system will be immediately accurate to the legal boundary both before and after the change goes into effect. Second, the data steward can begin the data editing process as soon as they are aware of the coming change and does not have to rush a new data set to the aggregator on a specific day.

If a data steward does choose to take advantage of this method of maintenance, the Expiration Date must be populated on the retiring feature, and it must be equal to the Effective Date of the new feature.

### 1.3.6 Domains

Many attributes have a specific list of valid values (a domain) assigned in the NENA Standard or the Wyoming NG9-1-1 Data Model. Those fields shall only be populated with values from the given domain in order to facilitate data exchange in the NG911 system. If no value exists for the attribute, it may be left blank or NULL. The full listing of domains is available as a spreadsheet that can be downloaded along with the file geodatabase templates from the WY 911 Coordinating Council website.

### 1.3.7 Mandatory/Conditional/Optional

In the NENA Standard, attributes are tagged as **Mandatory (M)**, **Conditional (C)**, or **Optional (O)**. That convention has been kept throughout this document.

- **Mandatory** implies the data field must be populated
- **Conditional** implies that if an attribute value exists for a given feature, it must be populated. If no value exists for a given feature, the data field is left blank unless other guidance is given.

- **Optional** implies the data field may or may not be populated.

### 1.3.8 Attribute Types

Attribute types are listed as per the NENA standard. The types are defined as:

- **A** – Alphanumeric (any combination of upper and lower case letters from A to Z and/or any number from 0 to 9). Example: Text fields in ESRI feature classes and shapefiles. (A = P, E, U, types used in NENA)
- **D** – Date and time. The field type shall be specifically chosen for storing date and time data  
Example: Date fields in ESRI geodatabase feature classes and shapefiles. – *Note: NENA requires the ISO 8601 date/time format with time zone information. Many GIS applications cannot easily produce this particular format. Local data stewards shall store date attributes in the more common format, and the attributes will be converted in the state-wide dataset.*
- **I** - Integer (consisting of whole numbers only) Example: In ESRI geodatabase feature classes and shapefiles, these shall be Short Integer or Long Integer fields. Note that address number fields must be Long Integer fields.
- **F** – Floating (decimal) Example: In ESRI geodatabase feature classes and shapefiles, these shall be Double fields.

### 1.3.9 Data Layer Names

Data layers intended for submission shall be named according to the following guidelines. Data layers with different names will not be included in quality assurance tests or aggregated into statewide datasets. See NENA Document for updates on Required, Strongly Recommended and Recommended layers.

- Road Centerline layer: RoadCenterline; Required
- Address Point layer: AddressPoints ; Required
- PSAP Boundary layer: ESB\_PSAP; Required
- Sheriff/Police Department Boundary layer: ESB\_LAW; Required
- EMS Department boundary layer: ESB\_EMS; Required
- Fire Department boundary layer: ESB\_FIRE; Required
- Authoritative Boundary layer: AuthoritativeBoundary; Required
- County boundary layer: CountyBoundary; Required
- Emergency Service Zones: ESZ; Required
  
- Road Alias table: RoadAlias; Strongly Recommended
- Combined ESB layer: ESB; Strongly Recommended
- City limit boundary layer: MunicipalBoundary; Strongly Recommended
- Other ESB layers are named as the Data Steward wishes. Only the “ESB\_” prefix is required
  
- Fire Hydrant layer: HYDRANTS; Supplemental
- Gate layer: GATES; Supplemental
- Land parcel boundary layer: PARCELS; Supplemental
- Cell Sector Centroid point layer: CELLSECTORS; Supplemental
- Cell Tower Site point layer: CELLSITES; Supplemental
- Utility Service Areas: UT\_GAS, UT\_ELECTRIC, UT\_WATER, UT\_SEWER; Supplemental
- Bridges: BRIDGES; Supplemental

### 1.3.10 Attribute Tables and Descriptions

Each data layer is described in this document with a table listing the attributes followed by a more detailed

attribute description. The tables are formatted with the following information:

- **Attribute:** a recommendation for the attribute field name. These recommended names were selected to be eight characters or less so the full field name would be maintained if the data is ever converted to shapefile format.
- **Description:** basic description of the data field
- **Type:** the required attribute type. Types are A=Text Field; D=Date Field; N=Integer Field
- **Width:** the maximum field width.
- **M/C/O:** whether populating the attribute is mandatory, conditional or optional.

Full attribute descriptions are listed after the table. The descriptions include an explanation of the field along with any required domain of valid values.

## 1.4 Software and Storage Format Considerations

The Wyoming NG9-1-1 GIS Data Model includes some technical aspects which may impact the choices of software and the data file storage formats used by data stewards. One of these is the requirement that all data meet certain topological standards, such as no overlapping features in a given data layer. Some software vendors limit the ability to test topology to specific license levels. For example, Esri's ArcGIS for Desktop software can only create and test topology at the "Standard" or "Advanced" license levels. The "Basic" license level cannot perform these functions. Similarly, topology rules cannot be applied to shapefiles. The shapefile must be converted to another storage format for topology tests to be run.

## 1.5 Submission of Data Updates

Updates must be submitted through the Wyoming NG911 Portal in the Wyoming NG911 Template Geodatabase format. To be accepted as a submission, the geodatabase must pass a series of validation tests run inside the Portal. Identical tools to those run in the Portal are included in the Validation Toolset of the NG911 GIS Toolbox so Local Data Stewards or Local Data Maintainers can examine and test their data prior to submission. The most recent copy of the toolbox is available [here](#). The geodatabase must pass all subtests of tools #1 through #5 under the Validation Toolset (to run all checks back to back, choose tool #9). These validation tests check various aspects of the data including but not limited to geodatabase template schema, existence and validity of required field values, feature locations, feature geometries, geocoding compatibility and number of records for submission.

The Validation Tools report issues with the data in two categories: errors and notices. Even one error will prevent a geodatabase from being accepted as a submission; notices do not prevent a geodatabase from being accepted as a submission. After the Validation Tools run, the submitter will receive an email regarding the status of their submission. If any errors were found, the submitter is notified of the issues and the submission can be replaced at any point in the future.

At this point in time the NG911 Portal and toolsets are still in development.

## 1.6 Changes to the Data Model

A log of significant changes will be kept in the Appendices to allow data stewards familiar with one version of the Wyoming model to quickly locate changes that have happened in the current version.

Changes to the data model are initiated with Change Order Requests (CORs) filed through the Wyoming 911 Coordinating Council Web Portal. Any user of the portal is eligible to submit a COR about any aspect of the NG911 project, including the GIS Data Model. See the Wyoming NG911 GIS Change Management Policy document for more information on the COR process.

## 1.7 Acknowledgements

The Wyoming 911 Coordinating Council's GIS Committee would like to thank the following organizations for their assistance with the creation of this document:

- The Tennessee Office for Information Resources/GIS Services for the use of portions of the "TIPS GIS Modeling Specifications, Next Generation 9-1-1" in this document
- Alexander Open Systems
- The remediation vendors: Allied Technical Consultants, Inc.; GeoComm; GDR; Kimble Mapping, Inc.; and R&S Digital
- The PSAPs and GIS staffs of the local governments in Wyoming

## 2 Road Centerlines

Road centerlines represent the estimated centerline of a real world roadway and are used for querying and geocoding of civic addresses, map displays and storage of spatially related attributes for other applications. See NENA Table 4.2 Road Centerlines Layer for NENA Field Names and Descriptions.

### 2.1 Road Centerline Attribute Table

Road Centerlines Attribute Description M/C/O Type Width				
Field Name	Descriptive Name	M/C/O	Type	Width
DiscrpAgID	Agency that owns record/Data Steward	M	A	100
DateUpdate	Date updated	M	D	-
Effective	Effective Date	O	D	-
Expire	Expiration Date	O	D	-
NGUID	NENA Globally Unique ID	M	A	254
AdNumPre_L	Left Address Number Prefix	C	A	15
AdNumPre_R	Right Address Number Prefix	C	A	15
FromAddr_L	Left From Address	M	N	6
ToAddr_L	Left To Address	M	N	6
FromAddr_R	Right From Address	M	N	6
ToAddr_R	Right To Address	M	N	6
Parity_L	Left Address Range Parity	M	A	1
Parity_R	Right Address Range Parity	M	A	1
St_PreMod	Street Name Pre Modifier	C	A	15

St_PreDir	Street Name Pre Directional	C	A	2
St_PreTyp	Street Name Pre Type	C	A	50
St_PreSep	Street Name Pre Type Separator	C	A	20
St_Name	Street Name	M	A	254
St_PosTyp	Street Name Post Type	C	A	4
St_PosDir	Street Name Post Directional	C	A	2
St_PosMod	Street Name Post Modifier	C	A	25
ESN_L	Left ESN	C	A	5
ESN_R	Right ESN	C	A	5
MSAGComm_L	Left MSAG Community Name	C	A	30
MSAGComm_R	Right MSAG Community Name	C	A	30
State_L	State Left	M	A	2
State_R	State Right	M	A	2
County_L	County Left	M	A	100
County_R	County Right	M	A	100
IncMuni_L	Incorporated Municipality Left	M	A	100
IncMuni_R	Incorporated Municipality Right	M	A	100
UnincCom_L	Unincorporated Community Left	O	A	100
UnincCom_R	Unincorporated Community Right	O	A	100
NbrhdCom_L	Neighborhood Community Left	O	A	100
NbrhdCom_R	Neighborhood Community Right	O	A	100
PostCode_L	Left Postal Code	C	A	5
PostCode_R	Right Postal Code	C	A	5
PostComm_L	Left Postal Community Name	C	A	40
PostComm_R	Right Postal Community Name	C	A	40
RoadClass	Road Class	O	A	15
OneWay	One Way	O	A	2

SpeedLimit	Speed Limit	O	N	3
Valid_L	Validation Left	O	A	1
Valid_R	Validation Right	O	A	1

Additional Fields Added For Wyoming (Not NENA)

UPDATEBY	Person or agency that last updated the record	O	A	50
LABEL	Concatenated Street Name	O	A	121
ELEV_F	Elevation at start node (0,1,2)	O	N	2
ELEV_T	Elevation at end node (0,1,2)	O	N	2
SURFACE	Surface Type	O	A	10
STATUS	Open, Closed, Not Built	O	A	10
TRAVEL	Direction of travel on divided roadways	O	A	20
LRSKEY	Key for WYDOTs LRS	O	A	24
AUTH_L	Authoritative Data Left	O	A	1
AUTH_R	Authoritative Data Right	O	A	1
EXCEPTION	Exception	O	A	20
GEOMSAGL	Left side address range to be used in GeoMSAG	O	A	1
GEOMSAGR	Right side address range to be used in GeoMSAG	O	A	1
SUBMIT	For Submission to Master Repository	O	A	1
NOTES	Notes	O	A	255

## 2.2 Attribute Descriptions

### 2.2.1 Identifier and Update Fields

- **[DiscrpAgID]** – The GNIS/INCITS code for the agency responsible for maintenance of the data.
- **[DateUpdate]** – The date of the last update of the record
- **[Effective]** – The date the record is or was scheduled to take effect. For agencies not recording this information previously, the date of January 1, 2014 (20140101) can be used for all currently effective records
- **[Expire]** – The date the record is scheduled to expire. This field shall only be populated if the record

has a defined end date. Example: A road segment being permanently re-routed.

- **[RCL\_NGUID]** – This is an identifier used for tracking centerline segments within the local dataset (ex. 4658). NGSEGID can be utilized as a way to link to an alternate road name table.

## 2.2.2 Administrative Location Fields

- **[State\_L]** - The 2-character state abbreviation designated on the Left side of the road segment.
- **[State\_R]** - The 2-character state abbreviation designated on the Right side of the road segment.
- **[County\_L]** – The designated county area on the Left side of the road segment
- **[County\_R]** – The designated county area on the Right side of the road segment.
- **[IncMuni\_L] – (Municipality Left)** - The name of the incorporated municipality where the address is located on the Left side of the road segment. Only used if a named municipality exists, otherwise populate with “Unincorporated”
- **[IncMuni\_R] – (Municipality Right)** - The name of the incorporated municipality where the address is located on the Right side of the road segment. Only used if a named municipality exists, otherwise populate with “UNINCORPORATED.”
- **[UnincCom\_L] – (Unincorporated Community Left)** - The name of the unincorporated community where the address is located on the Left side of the road segment.
- **[UnincCom\_R] – (Unincorporated Community Right)** - The name of the unincorporated community where the address is located on the Right side of the road segment.

## 2.2.3 Address Ranges

- **[FromAddr\_L] – (Left From Address)** – The beginning value of an address range, on the Left side of the road segment.
- **[ToAddr\_L] – (Left To Address)** - The ending value of an address range, on the Left side of the road segment
- **[FromAddr\_R] – (Right From Address)** – The beginning value of an address range, on the Right side of the road segment.
- **[ToAddr\_R] – (Right To Address)** – The ending value of an address range, on the Right side of the road segment.
- **[Parity\_L] – (Left Address Range Parity)** - Parity of Address Range on the Left side of the road segment. Valid entries: E, O, B, Z for Even, Odd, Both, or Zero (if the range is 0 to 0).
- **[Parity\_R] – (Right Address Range Parity)** - Parity of Address Range on the Right side of the road segment. Valid entries: E, O, B, Z for Even, Odd, Both, or Zero (if the range is 0 to 0).

## 2.2.4 Miscellaneous Administrative Information

- **[PostComm\_L] – (Postal Community Left)** - The city name for the ZIP code of an address as given in the USPS City State file, on the Left side of the road segment.
- **[PostComm\_R] – (Postal Community Right)** - The city name for the ZIP code of an address as given in the USPS City State file, on the Right side of the road segment.
- **[PostCode\_L] – (Postal Code/ZIP Code Left)** - The 5-digit postal or ZIP code identifies the Left side of the road segment.
- **[PostCode\_R] – (Postal Code/ZIP Code Right)** - The 5-digit postal or ZIP code identifies the Right side of the road segment.
- **[ESN\_L] – (ESN Left)** - The emergency service number on the Left side of the road segment
- **[ESN\_R] – (ESN Right)** - The emergency service number on the Right side of the road segment.
  - *Note on ESN Fields: The ESN of the actual centerline may be different than either field. Example: when a city has annexed the land on both sides of the road right-of-way, but not the road itself. If that is the case, the data steward can populate the optional [ESN\_C] field to record the ESN of the actual centerline.*

- [MSAGComm\_L], - The MSAG Community name on the Left side of the road segment
- [MSAGComm\_R] – The MSAG Community name on the Right side of the road segment.

## 2.2.5 Full Street Name

- [St\_PreMod] – **(Street Name Pre Modifier Description)** – A word or phrase that precedes and modifies the Street Name element but is separated from it by a Street Name Pre Type or a Street Name Pre Directional or both. Domain: None Example: “Alternate” in “Alternate Route 8”; “Old” in “Old North Church Street”.
- [St\_PreDir] – **(Pre-Directional)** – A cardinal direction abbreviation preceding the street name key. Only N, S, E, W or NE, NW, SE, SW can be used.
- [St\_PreTyp] – **(Preceding Type)** – A Street type which precedes the street name key. This must always be spelled out fully. Example: AVENUE 3, not AVE 3
- [St\_Name] – **(Street Name)** – The name of the street as designated by the local addressing authority
- [St\_PosTyp] – **(Street Post Type)** – An abbreviated suffix following the street name. Valid values are limited to the “Common Abbreviations” listed in USPS Publication 28, Appendix C1. The NG911 Template Geodatabase will have only the Official USPS abbreviations loaded into the domain at dissemination. Data Stewards wishing to use items from the "Common Abbreviations" list should add the desired value to the Street Type domain in their local copy of the template. The value shown in the "Common Abbreviations" list shall be used as the Code, but the Data Steward may use any Description they choose.
- [St\_PosDir] – **(Post Directional)** - A cardinal direction abbreviation following the street name key.  
\*Only N, S, E, W or NE, NW, SE, SW can be used
- [St\_PosMod] – **(Post Modifier)** – An additional value sometimes found on certain roads. Valid values include but are not limited to: ACCESS, ALTERNATE, BUSINESS, BYPASS, CONNECTOR, EXTENDED, EXTENSION, LOOP, PRIVATE, PUBLIC, SCENIC, SPUR, RAMP, UNDERPASS, OLD, OVERPASS.
  - *Note on Street Name fields: Many applications have limitations on how street names can be parsed. If local applications do not have a mechanism for interpreting one or more fields in this standard (Preceding Type and Post Modifier are rarely accounted for in Computer Aided Dispatch systems, for example), then the data steward can choose not to use those fields. For example: Avenue 3 could either have “Avenue” in the Preceding Type field and “3” in the Street Name field or “Avenue 3” all in the Street Name field. At a minimum, the Pre-Directional, Street Name and Post Type should be used when applicable. While the full street name should always be represented, it can be parsed into the remaining fields or not as needed locally.*

### Example

Old North Road Church Street South Extension	
Field	Value
St_PreMod	Old
St_PreDir	North (N)
St_PreTyp	Road (Rd)
St_Name	Church
St_PosTyp	Street (St)

St_PosDir	South (S)
St_PosMod	Extension

## 2.2.6 Legal Travel Fields

- **[SpeedLimit] – (Speed Limit)** – Posted Speed Limit in mph
- **[OneWay] – (One-Way)** – One way direction of travel.
  - B or Blank – travel in both directions allowed
  - FT – One-way traveling from “FROM” node to “TO” node
  - TF – One way traveling from “TO” node to “FROM” Node
- **[RoadClass] – (Road Class)** Type of road from the following domain
  - PRIMARY
  - SECONDARY
  - LOCAL (City, Neighborhood, or Rural Road)
  - RAMP
  - SERVICE (usually along a limited access highway)
  - VEHICULAR TRAIL (4WD, snowmobile)
  - WALKWAY (Pedestrian Trail, Boardwalk)
  - ALLEY
  - PRIVATE (service vehicles, logging, oil fields, ranches, etc.)
  - PARKING LOT
  - TRAIL (Ski, Bike, Walking / Hiking Trail)
  - OTHER
- **[TRAVEL]** – Direction of travel on divided roadways. Example: WB for the westbound lane of Interstate 80.

## 2.2.7 Fields added for Wyoming

- **[LABEL]** - This value is the concatenation of the values found in the [St\_PreMod], [St\_PreDir], [St\_PreTyp], [St\_Name], [St\_PosTyp], [St\_PosDir], and [St\_PosMod] fields with the appropriate spacing interposed. Proper case shall be used. This field can be used to label the full street name in GIS application or map production.
- **[UPDATEBY]** – The person who last updated the record. The format of this can be set by the data steward, but it should be sufficient to identify the specific individual. First and last names are recommended. The purpose of this field is to allow the data aggregator to contact the specific person who made a change if there is a question about the edit.
- **[SURFACE]** – Basic road surface description. This field is important for informative map display. It is optional in the data model, but it is strongly recommended by the GIS Committee that Data Stewards consider populating this field. Values must be selected from the following domain
  - PAVED
  - GRAVEL
  - SOIL
  - PROPOSED
  - MINIMUM – For roads legally declared as minimum maintenance
- **[STATUS]** - The current status of the segment. All roads that exist in the centerline file but are not actually built on the ground shall have this attribute set to “Not Built.” Examples include “paper” roads or roads that are platted but not built. Valid values for this attribute are:
  - OPEN – Road is open to vehicle traffic

- CLOSED – Road is closed to vehicle traffic
- NOT BUILT – The road is platted or planned but no road has yet been built
- **[ELEV\_F]** – (Elevation at From Node) – Elevation of the start node of the segment with relation to other road features. Ground level roads have an elevation of “0”. Overpasses have an elevation of “1”.
- **[ELEV\_T]** – (Elevation at To Node) - Elevation of the end node of the segment with relation to other road features. Ground level roads have an elevation of “0”. Overpasses have an elevation of “1”.
- **[LRSKEY]** – (Linear Reference System Key) Unique identifier within the KDOT road network, allowing the centerline segment to be related back to the KDOT LRS.
- **[EXCEPTION]** – Status of the feature as an Exception to the standard. Valid values for this attribute are:
  - EXCEPTION DANGLES – Feature is an exception to the “Must Not Have Dangles” topology rule
  - EXCEPTION INSIDE – Feature is an exception to the “Must Be Inside Authoritative Boundary topology rule.
  - EXCEPTION BOTH– Feature is an exception to both topology rules
  - NOT EXCEPTION – Feature is not an exception to the topology rules
- **[AUTH\_L]** – Flag indicating if the Left side data is authoritative. For segments that run along county lines or other jurisdictional boundaries, the side referring to addresses within the Data Steward’s Authoritative Boundary should be flagged as “Y” and the side that referencing addresses in the neighboring jurisdiction should be flagged as “N”.
- **[AUTH\_R]** – Flag indicating if the Right side data is authoritative. For segments that run along county lines or other jurisdictional boundaries, the side referring to addresses within the Data Steward’s Authoritative Boundary should be flagged as “Y” and the side that referencing addresses in the neighboring jurisdiction should be flagged as “N”.
- **[GEOMSAGL]** – Flag indicating if the Data Steward intends the left side address range to be used in the generation and maintenance of an MSAG. Any segment left side intended for the MSAG should be flagged with “Y”, and any segment left side not intended for the MSAG (like 0-0 address range segments) should be flagged with “N”.
- **[GEOMSAGR]** – Flag indicating if the Data Steward intends the right side address range to be used in the generation and maintenance of an MSAG. Any segment right side intended for the MSAG should be flagged with “Y”, and any segment right side not intended for the MSAG (like 0-0 address range segments) should be flagged with “N”.
- **[SUBMIT]** – Flag indicating if the feature is intended for use in call routing or a “Local Only” feature that is not intended for use in call routing. Examples of features not intended for use in call routing can include features outside the Authoritative Boundary or features that are not part of the standard but still desired in the local data. Valid values for this attribute are:
  - Y – For Submission to the Master GIS Repository for call routing
  - N – Local Only, not to be used in the Master GIS Repository for call routing
- **[NOTES]** – Notes about the feature, primarily used for communication between the Local Data Maintainer and the Data Aggregator

## 2.3 Road Centerline Creation

Road centerlines represent all public and addressed private streets. Road names must conform to the legal names as assigned by the local addressing authority. All centerline attributes should be accurate, complete, and standardized to the format in this document. All abbreviations of Street Prefixes and Suffixes should be

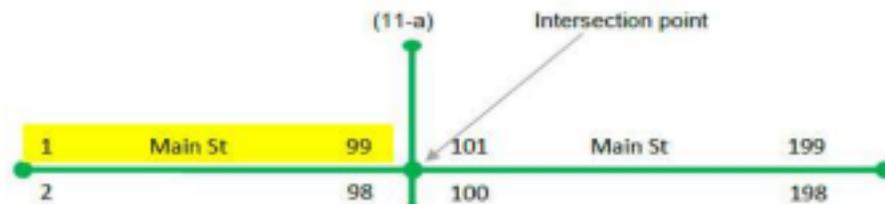
incorporated according to NENA Standards. Road centerlines must match the corrected MSAG data to a 98% or higher rate, and all related NENA standards shall be met or exceeded.

### 2.3.1 Centerline characteristics

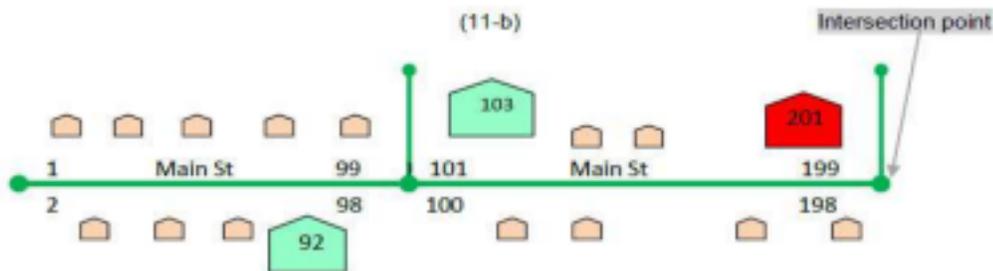
Road centerlines are drawn in segments. Segments shall be broken and snapped to the endpoint of the adjoining segments in the following circumstances:

- Not All line segment intersections, see example below about road break points.  
(Example: Overpasses and the roads they route over do not intersect)
- At State, County, Municipal, ESB and ESZ boundaries
- At any change in the primary road name
- At any change in surface type, if the data steward uses that attribute
- Data stewards may include any additional breaks in the segments that they require, as long as each segment is snapped to the endpoint of the adjoining segments and attributes are properly populated.

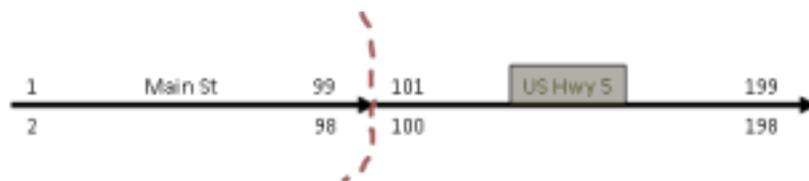
### 2.3.2 Centerlines and Range placement



(11-a) The highlighted range above represents the odd addresses between 1 and 99 for Main St. The address range should be numbered Low address to High address, following the direction of the centerline. Any necessary deviations should be documented.



(11-b) All address point addresses along a section of centerline should fall within the range of that particular centerline segment. The address point for 201 Main St. is not included in the range, the point should be verified and either centerline range or address point location should be modified.



(11-c)

(11-c) - Street names can change. Main St is located inside the city limits, but when it leaves the city, the name changes to US Hwy 5. The address range data may change with the new name, but not always.

### 2.3.3 Potential vs Actual Address Ranges

Data stewards may use potential or actual address ranges on centerline segments as local need requires. Some data stewards may elect to use both strategies, keeping some of their segments with potential ranges and others with actual ranges. This is also acceptable. If they are using potential ranges, data stewards are encouraged to keep the range to what will reasonably get built. For example, if a given city assigns addresses no higher than x50 in an area, the potential address range for a segment in that area should be 500 to 550 rather than 500 to 598.

### 2.3.4 Overlapping Address Ranges

Address ranges intended for the MSAG on segments for any given street name within the same MSAG Community may not overlap. The example below shows three common types of overlaps.

	Overlapping Range 1		Overlapping Range 2		Overlapping Range 3	
<b>From</b>	100	150	500	501	100	150
<b>To</b>	198	172	598	599	150	198
<b>Parity</b>	EVEN	EVEN	EVEN	BOTH	EVEN	EVEN
<b>Street</b>	E 1 <sup>ST</sup> ST	E 1 <sup>ST</sup> ST	RAIN RD	RAIN RD	RAIN RD	RAIN RD
<b>MSAG Community</b>	ANYTOWN	ANYTOWN	ANYTOWN	ANYTOWN	ANYTOWN	ANYTOWN

### 2.3.5 One way streets

Follow the center of the lane or lanes with a single line segment. The segment shall be drawn in the direction of low address to high address, not the direction of travel. Populate the ONEWAY field with FT or TF depending on which is appropriate.



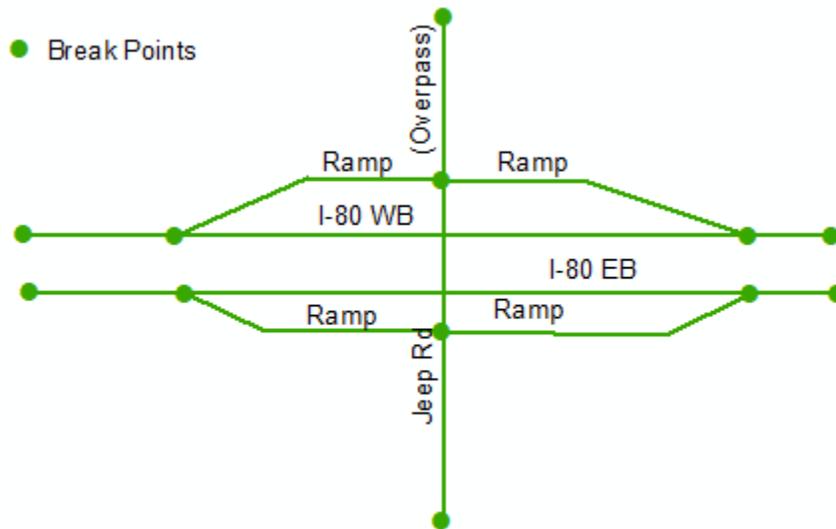
### 2.3.6 Elevation Values / Overpasses and Underpasses

All road centerline segments shall be broken at intersection with any other road centerline segment, Only if the roads intersect, such as an overpass or underpass. This allows for a topology in road centerlines that can be validated quickly and accurately. However, the actual intersection of roads must be documented. The elevation attributes [ELEV\_F] and [ELEV\_T] shall be used to show intersection. Nodes at the lowest level (usually ground level, but could be a tunneled underpass) will be given an elevation value of 0. A segment representing a road that passes over another road will have an elevation value of 1. See the diagrams below

for examples of the elevation values in use. The first diagram shows the Jeep Road overpass of 500 Ave, an undivided road. The second shows the Jeep Road overpass of Interstate 70, a divided highway.



**Overpass of an undivided road (Roads do not intersect)**



**Overpass of a divided road (Break Roads only at Intersection Points)**

### 2.3.7 Access ramps

Roads with limited access are entered using an access ramp. The address attributes for the ramp segment or segments shall be all zeroes. It is recommended the name of the access ramp reflect the roads the ramp joins.



Example: the ramp from N Main St to Westbound Interstate 80 could be “N MAIN ST TO WB I80.” Whatever naming scheme the data steward chooses, the Post-Modifier field [St\_PosMod] shall be “RAMP”

### 2.3.8 Service Drives

A Service Drive is a road or portion of a road providing access to businesses, facilities, and rest areas along a limited-access highway: this road may intersect other roads and be named. If it is unnamed and unaddressed, the address range attributes shall be zeroes and the name shall be “SERVICE DRIVE”

### 2.3.9 Road Centerline Geometry

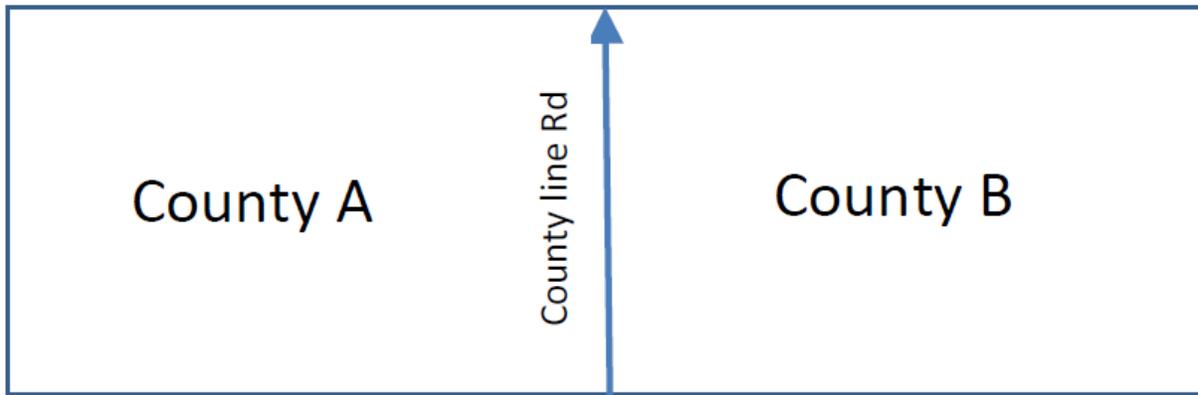
It is recommended that Road Centerline Geometry be set up and edited in a way that would allow for best practices for use in routing software.

## 2.4 Border Roads

Roads that form the border between Authoritative Boundaries such as counties will be present in the data of more than one agency. Each agency is responsible for the attributes on the side of the line segment associated with addresses in their jurisdiction. Values for attributes on the side of the line segment

associated with addresses that are not in their jurisdiction will be dropped in aggregation. In order to determine which agency’s data should be used in aggregation, the Authoritative Left (AUTH\_L) and Authoritative Right (AUTH\_R) flags will be checked. Values for any segments side with the flag set to “N” will be ignored for testing and dropped in aggregation. If the agency does not need to populate those out of agency values or does not know the correct values, they can leave those fields blank, as long as the flag is set to “N”.

In the example below, the left side attributes are the responsibility of County A and the right side attributes are the responsibility of County B. County A does not need values for any local application, but County B prefers to have them filled out.



Attribute	County A Table	County B Table
COUNTY_L	COUNTY A	COUNTY A
COUNTY_R		COUNTY B
MUNI_L	UNINCORPORATED	UNINCORPORATED
MUNI_R		UNINCORPORATED
POSTCO_L	ANYTOWN	ANYTOWN
POSTCO_R		ANYTOWN
ZIP_L	55555	55555
ZIP_R		55555
ESN_L	4567	0
ESN_R	0	9912
MSAGCO_L	ANYTOWN	NONE
MSAGCO_R	OOC	ANYTOWN

L_F_ADD	500	0
R_F_ADD	0	501
L_T_ADD	598	0
R_T_ADD	0	599
RD	COUNTY LINE	COUNTY LINE
STS	RD	RD
AUTH_L	Y	N
AUTH_R	N	Y

## 2.5 Summary of NG9-1-1 Road Centerline Requirements

Centerlines shall be continually updated.

Centerlines shall represent all public and addressed private streets

Attributes shall be accurate, complete and standardized (address ranges, ESN’s Communities, spelling abbreviations...). The abbreviations can be found in **USPS Publication 28** (Google Search: USPS Publication 28; <https://pe.usps.com/text/pub28/welcome.htm>)

Address ranges intended for use in the MSAG on centerlines within a given MSAG Community shall not overlap.

Road centerlines shall match to the corrected MSAG at a 98 percent or higher rate, per **NENA 71- 501**, Version 1.1 (Google Search: NENA Information Document for Synchronizing Geographic Information System Databases with MSAG & ALI, NENA 71-501; [https://cdn.ymaws.com/www.nena.org/resource/resmgr/Standards/NENA\\_71-501\\_GIS\\_MSAG\\_ALI\\_05-.pdf](https://cdn.ymaws.com/www.nena.org/resource/resmgr/Standards/NENA_71-501_GIS_MSAG_ALI_05-.pdf) ).

Road names shall conform to the legal names as assigned by the addressing authority. The abbreviations can be found in **USPS Publication 28**

Abbreviations of all Street Prefixes and Suffixes shall be incorporated according to NENA Standards. The abbreviations can be found in **USPS Publication 28**

Where values exist, all “Mandatory” and “Conditional” attributes shall be populated.

Centerline segments with no addressing along one or both sides, including small connector pieces shall have zeroes entered into the relevant Address Range fields.

All line segments shall be oriented in the direction of increasing address ranges

Each centerline segment shall share an exact start or end node with another centerline segment, unless it is a dead-end.

Road centerline segments shall be split at:

- Intersections with State, County, City, ESB and ESN/ESZ boundaries
- Intersection with another segment, even if it does not represent a real-world intersection
- Change in primary road name
- Change in surface type, if that attribute is used by the data steward

## 2.6 Road Alias Table

Per the NENA Standard, the road name used in the Road Centerline file must be the legal name used by the local addressing authority. Many roads are known by additional names, including highway designators, old names that are still in use colloquially or county road numbers that are known as alias names. The Road Alias Table holds those additional names. The Road Alias Table is “strongly recommended” layer in the NENA standard, but it is required in the Wyoming NG9-1-1 Data Model. Data stewards are encouraged to include as many alias names as they believe are in use for the roads in their area. However, the only entries required in the Road Alias Table are for State Highway System segments. Specific examples are listed below the attribute information.

See NENA Table 4.3 Street Name Alias Table for reference

### 2.6.1 Attribute Table

Field Name	Descriptive Name	Type	Width	M/C/O
DiscrpAgID	Data Steward	A	100	M
DateUpdate	Date updated	D	26	M
Effective	Effective Date	D	26	O
Expire	Expiration Date	D	26	O
NGUID	NENA Globally Unique ID (Primary Key)	A	254	M
RCL_NGUID	Road Centerline NENA Globally Unique ID (Foreign Key)	A	254	M
ASt_PreMod	Alias Street Name Pre Modifier	A	15	C
ASt_PreDir	Alias Street Name Pre Directional	A	2	C
ASt_PreTyp	Alias Street Name Pre Type	A	50	C
ASt_Name	Alias Street Name	A	60	M
ASt_PosTyp	Alias Street Name Post Type	A	4	C
ASt_PosDir	Alias Street Name Post Directional	A	2	C
ASt_PosMod	Alias Street Name Post Modifier	A	25	C
StFullName	Concatenated Full Street Name	A	254	O
UPDATEBY	Person or Agency that last updated the	A	50	O

	record			
SUBMIT	For Submission to Master Repository	A	1	O
NOTES	Notes	A	255	O

## 2.6.2 Attribute Descriptions

- **[DiscrpAgID]** – The GNIS/INCITS code for the agency responsible for maintenance of the data.
- **[DateUpdate]** – The date of the last update of the record
- **[Effective]** – The date the record is or was scheduled to take effect. For agencies not recording this information previously, the date of January 1, 2014 (20140101) can be used for all currently effective records
- **[Expire]** – The date the record is scheduled to expire. This field shall only be populated if there is a defined end date.
- **[NGALIASID]** – An identifier used for tracking Authoritative Boundaries in the local dataset.
- **[NGSEGID]** – The SEGID from the road centerline file for the segment the record refers to
- **[ASt\_PreDir] – (Alias Pre - Directional)** – A cardinal direction abbreviation preceding the street name key. Only N, S, E, W or NE, NW, SE, SW can be used.
- **[ASt\_PreTyp] – (Alias Preceding Type)** – A Street type which precedes the street name. This must always be spelled out fully. Example: AVENUE 3, not AVE 3
- **[ASt\_Name] – (Alias Street Name)** – The alias name for the segment
- **[ASt\_PosTyp] – (Alias Street Post Type)** – A abbreviated suffix following the street name key
- **[ASt\_PosDir] – (Alias Post Directional)** - A cardinal direction abbreviation following the street name key. \*Only N, S, E, W or NE, NW, SE, SW can be used
- **[ASt\_PosMod] – (Alias Post Modifier)** – An additional value sometimes found on certain roads. Valid values include but are not limited to: Access, Alternate, Business, Bypass, Connector, Extended, Extension, Loop, Private, Public, Scenic, Spur, Ramp, Underpass, Old, Overpass.

## 2.6.3 Fields added for Wyoming

- **[StFullName]** - This value is the concatenation of the values found in the [A\_St\_PreMod], [ASt\_PreDir], [ASt\_PreTyp], [ASt\_Name], [ASt\_PosTyp], [ASt\_PosDir], and [ASt\_PosMod] fields with the appropriate spacing and punctuation interposed. For aesthetics, proper case may be used. This field can be used to label the full street name in GIS application or map production.
- **[UPDATEBY]** – The person who last updated the record. The format of this can be set by the data steward, but it should be sufficient to identify the specific individual. First and last name are recommended. The purpose of this field is to allow the data aggregator to contact the specific person who made a change if there is a question about the edit.
- **[SUBMIT]** – Status of the feature as a “Local Only” feature that is not intended for submission to the Master GIS Repository. Examples can include features outside the Authoritative Boundary or features that are not part of the standard but still desired in the local data. Valid values for this attribute are:
  - **Y** – For Submission to the Master GIS Repository
  - **N** – Local Only, not to be used in the Master GIS Repository
- **[NOTES]** – Notes about the feature, primarily used for communication between the Local Data Maintainer and the Data Aggregator

## 2.6.4 Road Alias Entries for State Highway System

Across the state, there are a variety of names for roads on the State Highway System. Some are addressed by a local road name that makes no reference to the highway number, particularly when they pass through an incorporated municipality. Even when the roads are addressed with their highway number, local addressing authorities have chosen a variety of formats for the road name. The legal address of a building with the number 101 on K-5 might be 101 Hwy 5 or 101 K-5 Highway, depending on the county it is in. Additionally, some roads on the State Highway System join with others as “riders” for a portion of their route. For example, part of Interstate 70 is also US Highway 24 while another part is US Highway 40.

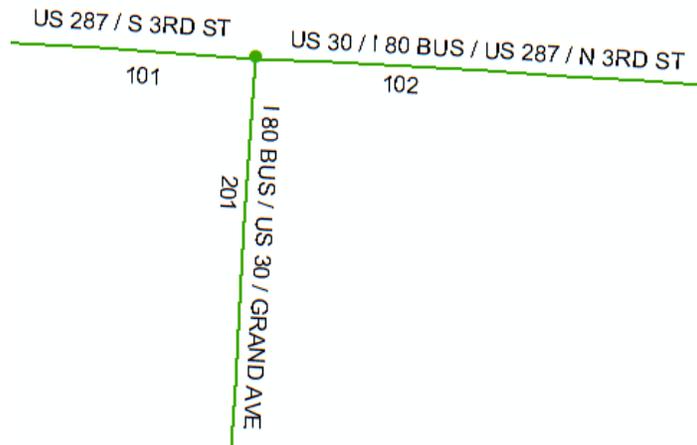
Because of these variations, all State Highway System road segments shall have entries in the Road Alias Table for each highway they represent formatted as shown in the table below, unless the data steward is already using the exact format of the Alias Road Name [ASt\_Name] field shown below as the Street Name [RD] attribute in the Road Centerline file.

*Note: the format of the Alias Road Name [ASt\_Name] field is mandatory and must follow the exact format shown; however, the format of the Label [LABEL] field is only a recommendation.*

Highway Name	Alias Road Name [ASt_Name]	Label [LABEL]
Wyoming Highway 225	WY 225	WY-225
U.S. Highway 87	US 87	US-87
Interstate 80	I80	I-80
U.S. Highway 85 Business	US85 BUS	US-85 Bus
U.S. Highway 85 Alternate	US85 ALT	US-85 Alt
Wyoming Highway 31 Spur	WY31 SPUR	WY-31 Spur

## 2.6.5 Sample Road Alias Table

In the sample table, segments 101 and 102 are locally known as Main St but are also on K-19, requiring entries in the Road Alias Table. Segments 201, 202 and 203 are shown in the graphic with their local address names. Segment 201 is both US 77 and US 56 BUS. It requires two entries in the table. US-77 follows segment 202 while US-56 BUS follows segment 203



Segment ID [SEGID]	Alias Road Name [ASt_Name]
101	S 3RD ST
101	US 287
102	N 3RD ST
102	I 80 BUS
102	US 287
102	US 30
201	GRAND AVE
201	US 30
201	I 80 BUS

### 3 Address Points

Address points represent all structures and locations with an assigned street address. The Address Points layer is “strongly recommended” in the NENA standard, but it is required in the Wyoming NG9- 1-1 Data Model. See NENA section Table 4-4 SiteStructureAddressPoint Layer for NENA Field Names and descriptions.

### 3.1 Site Structure Address Points Attribute Table

Address Points Attribute Table				
Name	Attribute Description	Type	Width	M/C/O
DiscrpAgID	Agency that updates the record/Data Steward	A	100	M
DateUpdate	Date updated	D	-	M
Effective	Effective Date	D	-	O
Expire	Expiration Date	D	-	O
Site_NGUID	Unique identifier in the local dataset (NGUID)	A	254	M
Country	Country	A	2	M
State	State	A	2	M
County	County	A	40	M
AddCode	Additional Code	A	6	C
AddDataURI	Additional Data URI	A	254	C
Inc_Muni	Incorporated Municipality	A	100	M
Uninc_Comm	Unincorporated Community	A	100	O
Nbrhd_Comm	Neighborhood Community	A	100	O
AddNum_Pre	Address Number Prefix	A	15	C
Add_Number	Address Number	N	6	M
AddNum_Suf	Address Number Suffix	A	15	C
St_PreMod	Street Name Pre Modifier	A	15	C
St_PreDir	Street Name Pre Directional	A	2	C
St_PreTyp	Street Name Pre Type	A	50	C
St_Name	Street Name	A	60	M
St_PosTyp	Street Name Post Type	A	4	C
St_PosDir	Street Name Post Directional	A	2	C
St_PosMod	Street Name Post Modifier	A	25	C
ESN	ESN of the structure	A	5	C

MSAGComm	MSAG Community	A	30	C
Post_Comm	Postal Community	A	40	C
Post_Code	Postal Code/ZIP Code, 5-digit code only	A	5	C
Post_Code4	Postal Code/ZIP plus 4 code, no dash	A	4	O
Building	Building	A	75	O
Floor	Floor	A	75	O
Unit	Unit Type and Designator	A	75	O
Room	Room	A	75	O
Seat	Seat	A	75	O
Addtl_Loc	Additional Location Information	A	255	O
LandmkName	Complete Landmark Name	A	150	C
Mile_Post	Measurement or Mile Marker number	A	150	C
Place_Type	Place Type	A	50	O
Placement	Placement Method	A	25	O
Long	Longitude in Decimal Degrees	F	-	O
Lat	Latitude in Decimal Degrees	F	-	O
Elev	Elevation in Meters above mean sea level	N	6	O

Additional Fields Added For Wyoming (Not NENA)

AddrFill	Concatenated Full Address	A	255	O
AddrBase	Concatenated Base Address (No Unit Information)	A	224	O
UPDATEBY	Person or Agency that last updated the record	A	50	O
LOCTYPE	Point location type	A	30	O
WYPID	19-character parcel identifier	A	19	O
RCLMATCH	NGSEGID of Segment the point matches to	A	38	O
RCLSIDE	Side of the Segment the point matches to	A	1	O
GEOMSAG	Point to be used in GeoMSAG	A	1	O
SUBMIT	For Submission to Master Repository	A	1	O

NOTES	Notes	A	255	O
Active	Address Status, Active, Future, Utility Box, ...	A	12	O
	Site Alias	A	255	O
	Address Alias	A	255	O

## 3.2 Attribute Descriptions

### 3.2.1 Identifier Fields

- **[DiscrpAgID]** – GNIS/INCITS code for the agency responsible for maintenance of the data.
- **[DateUpdate]** – The date of the last update of the record
- **[Effective]** – The date the record is or was scheduled to take effect. For agencies not recording this information previously, the date of January 1, 2014 (20140101) can be used for all currently effective records
- **[Expire]** – The date the record is scheduled to expire. This field shall only be populated if there is a defined end date. Ex: A building scheduled to be re-addressed.
- **[Site\_NGUID] – (Address ID)** - The Address ID is an identifier used for tracking address points within the local dataset (ex. 4658).

### 3.2.2 Administrative Location

- **[State]** – Two-character abbreviation for the state where the address point is located
- **[County]** – County name spelled out for the county where the address point is located
- **[Inc\_Muni] – (Municipality)** - The name of the incorporated municipality where the address point is located. Only used if a named municipality exists, otherwise use “Unincorporated”
- **[Uninc\_Comm] – (Unincorporated Community)** – The name of the unincorporated community where the address point is located. This could be an unincorporated town name, a subdivision name, or a plat name.

### 3.2.3 Address

- **[AddNum\_Pre]- (Address Number Prefix)** - The Street or House number prefix for the address.
- **[Add\_Number] – (Address Number)** - The street or house number for address. It does not include any secondary information like suite or apartment numbers
- **[AddNum\_Suf] – (Address Number Suffix)** - An extension of the address number that follows it and further identifies a location. Example “1/2” in 101 ½ Oak St
- **[St\_PreDir] – (Pre - Directional)** – A cardinal direction abbreviation preceding the street name key. Only N, S, E, W or NE, NW, SE, SW can be used.
- **[St\_PreTyp] – (Preceding Type)** – A street type which precedes the street name key. This must always be spelled out fully. Example: AVENUE 3, not AVE 3
- **[St\_Name] – (Street Name)** – The name of the street as designated by the local addressing authority
- **[St\_PosTyp] – (Street Post Type)** – An abbreviated suffix following the street name. Valid values are limited to the “Common Abbreviations” listed in USPS Publication 28, Appendix C1. The NG911 Template Geodatabase will have only the Official USPS abbreviations loaded into the domain at

dissemination. Data Stewards wishing to use items from the "Common Abbreviations" list should add the desired value to the Street Type domain in their local copy of the template. The value shown in the "Common Abbreviations" list shall be used as the Code, but the Data Steward may use any Description they choose.

- **[St\_PosDir] – (Post Directional)** - A cardinal direction abbreviation following the street name key. \*Only N, S, E, W or NE, NW, SE, SW can be used
- **[St\_PosMod] – (Post Modifier)** – An additional value sometimes found on certain roads. Valid values include but are not limited to: ACCESS, ALTERNATE, BUSINESS, BYPASS, CONNECTOR, EXTENDED, EXTENSION, LOOP, PRIVATE, PUBLIC, SCENIC, SPUR, RAMP, UNDERPASS, OLD, OVERPASS.
  - *Note on Street Name fields: Many applications have limitations on how street names can be parsed. If local applications do not have a mechanism for one or more fields in this standard (Preceding Type and Post Modifier are rarely accounted for in Computer Aided Dispatch systems), then the data steward can choose not to use those fields. For example, Avenue 3 could either have "Avenue" in the Preceding Type field and "3" in the Street Name field or "Avenue 3" all in the Street Name field. At a minimum, the Pre-Directional, Street Name and Post Type should be used when applicable. While the full street name should always be represented, it can be parsed into the remaining fields or not as needed locally.*

### 3.2.4 Secondary Address Information

- **[Building] – (Building)** – One among a group of buildings that have the same address number and complete street name.
- **[Floor] – (Floor)** – A floor, story or level within a building
- **[Unit] – (Unit)** – The unit type and unit number (or other designator) for a group or suite of rooms within a building that are under common ownership or tenancy, typically having a common primary entrance. Examples: Apt 2C, Lot 6, Ste 301. Unit type shall be abbreviated using the Secondary Unit Designators list from USPS Publication 28
- **[Room] – (Room)** – A single room within a building
- **[Seat] – (Seat)** – A place where a person might sit within a building
- **[Addtl\_Loc] – (Additional Location)** – Any part of a sub-address that is not a Building, Floor, Unit, Room or Seat. Example: A building that is in two different ESNs may have one address point with "WEST HALF" in this field and a second with "EAST HALF"

### 3.2.5 Miscellaneous Location Information

- **[ESN] – Emergency Service Number** for the address
- **[MSAGComm] – (MSAG Community)** – The MSAG community name for the address
- **[Post\_Comm] – (Postal Community)** – The city name for the ZIP code of an address as given in the USPS City State file
- **[Post\_Code] – (ZIP Code)** – The 5-digit postal or ZIP code
- **[Post\_Code4] – (ZIP Plus 4 Code)** – The ZIP plus 4 code without the dash
- **[LandmkName] – (Landmark)** – The name by which a prominent feature is publically known or Vanity address. Example: The White House, Harvard University
- **[Mile\_Post] – A numeric measurement** from a given beginning point used for specifying locations along interstate highways, recreational trails and other unaddressed routes as well as stretches of county, State Highway System roads where the distance measurement is posted. May be included in addition to address numbers or in place of them if the route is unaddressed. A value is required if the road is unaddressed, like most interstates, otherwise, the field is optional. Example: Mile Marker 231.5. On large Highway adjustments (example: on I-90, 16.19 AH 14.61 BK [1.58 mi back])

the first low MP and the last high MP should be used to average the distance over the adjustment. This is to eliminate duplicate MP Numbers, i.e. two 15 and two 16 MP in this example.

- **[Place\_Type] – (Place Type)** – The type of feature identified by the address. The domain for this attribute is from RFC 4589. *Although this field is listed as Conditional in the NENA Standard, it is the opinion of the GIS Committee that it should be an Optional attribute or have a different domain. Until the final NENA NG9-1-1 Data Model is published, the use of this field will be suspended in the Wyoming NG9-1-1 Data Model. It shall be included in the attribute table but not populated. See [WYPID] below.*
- **[Placement] – (Placement Method)** – The methodology used for placement of the address point  
Domain; Site; Parcel; Geocoding; PropertyAccess; Unknown
- **[Long] – (Longitude)** – In decimal degrees.
- **[Lat] – (Latitude)** – In decimal degrees.
- **[Elev] – (Elevation)** – Height above Mean Sea Level in meters. Note: WGS84 (GPS) elevation is measured as height above the ellipsoid, which varies significantly from height above the geoid (approximately Mean Sea Level).
- **[ADDURI] – (Additional Data URI)** – URI for accessing additional information about the address. Information on how to appropriately populate this attribute is not yet available. This document will be updated when that information becomes available.

### 3.2.6 Fields added for Wyoming

- **[AddrFill] – (Full Address, includes Units)** – A composite of the street number and naming information with the unit number in proper case for cartographic use. Building names, unit numbers and other secondary address elements should be preceded by the Secondary Unit Designator from the [Official USPS Abbreviations list](#) Examples: 101 E 1<sup>st</sup> St Apt B (Fields include: [AddNum\_Pre], [Add\_Number], [AddNum\_Suf], [St\_PreMod], [St\_PreDir], [St\_PreTyp], [St\_Name], [St\_PosTyp], [St\_PosDir], [St\_PosMod], [Building], [Floor], [Unit], [Room], [Seat], [Addtl\_Loc].
- **[AddrBase] – (Base Address, no units)** – A composite of the street number and naming information without the unit number in proper case for cartographic use. (Fields include: [Add\_Number],[St\_PreMod], [St\_PreDir], [St\_PreTyp], [St\_Name], [St\_PosTyp], [St\_PosDir], [St\_PosMod],
- **[UPDATEBY]** – The person who last updated the record. The format of this can be set by the data steward, but it should be sufficient to identify the specific individual. Entries may be in upper case, lower case or both. The purpose of this field is to allow the data aggregator to contact the specific person who made a change if there is a question about the edit.
- **[LOCTYPE] – (Point location type)** – The location of the point relative to the structure in question selected from the following domain: PRIMARY (on the structure or the site), SECONDARY-ACCESS (on driveway or other access point), SECONDARY-OTHER.
  - **Note:** *Only the points attributed as “Primary” will be included in the call-routing database.*
- **[WYPID]** – The 19 character parcel ID or “CAMA” number for the parcel on which the address point sits. This attribute has been included to insure the Place Type attribute can be populated as economically as possible, should it be retained as a required attribute in the final NENA NG9-1-1 Data Model.
- **[GEOMSAG]** – Flag to indicate if the Data Steward intends the point to be used in the generation and maintenance of an MSAG. Any point intended for the MSAG should be flagged with “Y”, and any point that is not intended for the MSAG (like those addresses already accommodated by the Road Centerline data) should be flagged with “N”.

- **[RCLMATCH]** – NGSEGID of the road segment the address point should match to. If the address point should not match to any segment, then the field shall be populated with “NO\_MATCH.” Examples of address points that will not match a segment include addresses using a road name not shown in the Road Centerline data, like old road names or alias road names and addresses assigned outside the range of an existing segment.
- **[RCLSIDE]** – Side of the road segment the address point should match chosen from the following domain: R (Right), L (Left), N (No Match)
- **[SUBMIT]** – Status of the feature as a “Local Only” feature that is not intended for submission to the Master GIS Repository. Examples can include features outside the Authoritative Boundary or features that are not part of the standard but still desired in the local data.. Valid values for this attribute are:
  - **Y** – For Submission to the Master GIS Repository
  - **N** – Local Only, not to be used in the Master GIS Repository
- **[NOTES]** – Notes about the feature, primarily used for communication between the Local Data Maintainer and the Data Aggregator
- **[Active]** - Address Status (Domain?) Active, Future, 911 Only, Deactivated, Tank, ....

### 3.3 Address Point Placement

Address points represent all structures and sites with an assigned street address. At a minimum, there shall be a point on every addressable single-unit building, a point on each living unit/occupancy of every multi-unit building or complex, and a point for every telephone service address in the TN listing.

A unique address is a unique combination of the following fields: [State], [County], [Inc\_Muni], [AddNum\_Pre], [Add\_Number], [AddNum\_Suf], [St\_PreMod], [St\_PreDir], [St\_PreTyp], [St\_Name], [St\_PosTyp], [St\_PosDir], [St\_PosMod], [Building], [Floor], [Unit], [Room], [Seat], [Addtl\_Loc]. Successful call routing requires no more than one point for each unique address. However, there can be several reasons data stewards may need to store more than one point for a specific address. To address this issue, the [LOCTYPE] field has been added. The point that should be used for call-routing shall have the value of “PRIMARY” in this field.

For some structures and sites, access is not obvious. Long driveways in rural areas can be an example of this. It is recommended that data stewards maintain subordinate points for those access locations. Any point representing an access point shall have the value “SECONDARY ACCESS” in the [LOCTYPE] field.

#### 3.3.1 Primary Point Placement

The primary address point shall be placed on the structure or on the site, if no structure exists. It is important to note that this is a requirement for point placement, not address assignment. It is common for rural addresses to be assigned based on the location of the driveway as it joins the road, which is appropriate. However, the actual address point shall be placed on the structure itself.

If the site or structure is within the authoritative boundary of one PSAP and the access point is within the authoritative boundary of a different PSAP, only one data steward may maintain the “PRIMARY” point. Example: A residence in one county has a driveway and its address off of a road in another county. The decision on which data steward should maintain the primary point is dictated by the nature of NG9-1-1 call-routing. The data steward for the PSAP that should receive the initial 9-1-1 call must maintain the “PRIMARY” point. If that data steward does not have the actual site or structure within their authoritative boundary, the “PRIMARY” point shall be placed along the driveway or other access, just within the border of

their authoritative boundary. The data steward for the other PSAP shall place a point on the site or structure with the [LOCTYPE] of "SECONDARY-OTHER".

### 3.3.2 Single Address Structures

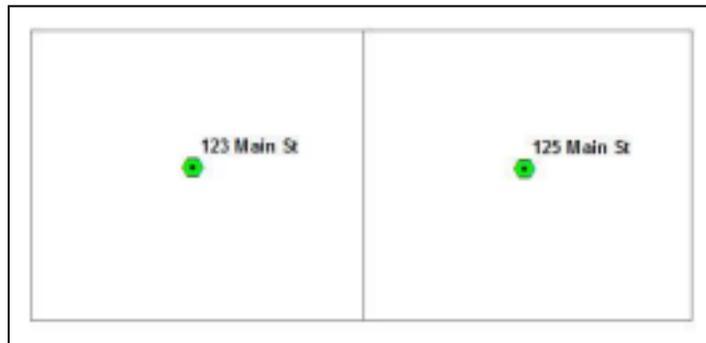
The address point shall be placed on the structure or on the site, if no structure exists.

### 3.3.3 Multiple address structures

Buildings or complexes that have a street address with individual units bearing unit identifiers (apartment numbers, room numbers, building names, etc), shall have an address point for each unit. It is recommended, but not required, that an additional address point with no unit information be placed on the structure. The purpose of this point is to represent the common areas like stairwells, hallways, lobbies and parking areas that are not a part of any specific unit. Address points for individual units shall be placed on the structure, in the approximate location of the unit within the building. When there are units in similar locations on multiple stories, it is recommended that the points for each unit shall be placed near the others but not stacked on top of them at the same coordinate.

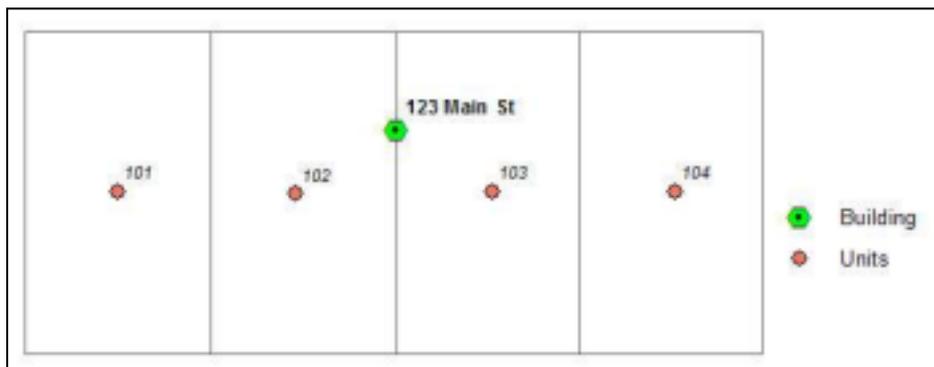
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**Point placement on Duplex**



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**Point placement on a single story with multiple units (ex. Apartment numbers 101-104) I would remove this section, Base and units, to just be units and not have a base address along with units.**



**Point placement on two or more stories with multiple units**



**Example of attributes for an individual apartment and the recommended point for the building**

Field Description	Field name	Point for Apartment 101	Point for the building
Address Number Prefix	AddNum_Pre	A	A
Address Number	Add_Number	123	123
Address Number Suffix	AddNum_Suf	1/2	1/2
Street Name Pre Modifier	St_PreMod	Old	Old
Street Name Pre Directional	St_PreDir	N	N
Street Name Pre Type	STP	Rd	Rd
Street Name	RD	Church	Church
Street Name Post Type	STS	ST	ST
Street Name Post Directional	POD	S	S
Street Name Post Modifier	POM	Extension	Extension
ESN of the structure	ESN		
Building	BLD		
Floor	FLR		
Unit	UNIT	APT 101	
Room	ROOM		
Seat	SEAT		

Part of Sub Address	LOC		
Label	LABEL	A 123 ½ Old N Rd Church ST S Extension Apt 101	A 123 ½ Old N Rd Church ST S Extension Apt 101
Point location type	LOCTYPE	PRIMARY	PRIMARY

### 3.3.4 Special Circumstances

If the data steward is using the Point Location Type field (LOCTYPE), all of the points discussed in the special circumstances below should be shown as “PRIMARY”.

**Strip centers/ retail:** Individual address points should be assigned to each occupancy. If a single street address and unit numbers are used then a point shall be placed for each suite or unit.

**Hospitals, Schools, Offices:** A single point per building is all that is needed. Individual suite numbers are difficult to maintain at best in these type occupancies. If the building has entrances on multiple sides and addresses have been assigned off of that entrance then those points should be added.

**Malls:** Show the point for the mall and all appropriate address points with suite numbers (if used).

**Recreation Facilities / Parks:** It is recommended but not required that address points are placed for these locations. In the event that the facility has individually named or numbered areas like camping spaces or boat ramps, it is recommended that an address point be assigned to each of those sites in addition to the point for the location as a whole.

## 3.4 Summary of NG9-1-1 address point requirements

Address points shall be continually updated

Each address point shall represent a unique address. *(For data stewards keeping secondary points, each address point for which the [LOCTYPE] is “PRIMARY” shall represent a unique address)* A unique address is a unique combination of the following fields: [State], [County], [Inc\_Muni], [AddNum\_Pre], [Add\_Number], [AddNum\_Suf], [St\_PreMod], [St\_PreDir], [St\_PreTyp], [St\_Name], [St\_PosTyp], [St\_PosDir], [St\_PosMod], [Building], [Floor], [Unit], [Room], [Seat], [Addtl\_Loc].

Address points shall, at a minimum, represent all public and private addressable structures, all living units/occupancies in multi-unit buildings and every telephone service address in the TN listing.

Attributes shall be accurate, complete and standardized (ESN’s, Community names, spelling and abbreviations). The abbreviations can be found in [USPS Publication 28](#)

NENA standards shall be met or exceeded

Where values exist, all “Mandatory” and “Conditional” attributes shall be populated.

## 4 Authoritative Boundaries

Authoritative Boundaries are polygons representing the boundaries for which the data layers are authoritative. For most data stewards, this will be a city or county boundary. Many data stewards will only

have one polygon in this data layer. The Authoritative Boundary layer shall have no overlaps and shall have gaps only where there is a true separation of entity boundaries. See NENA Table 4-7 PSAP Boundary. 911 call boundary.

## 4.1 Service Boundary Layers Attribute Table

Attribute				
Name	Descriptive Name	M/C/O	Type	Width
DiscrpAgID	Data Steward, Discrepancy Agency ID	M	A	100
DateUpdate	Date updated	M	D	26
Effective	Effective Date	O	D	-
Expire	Expiration Date	O	D	-
ES_NGUID	Unique identifier in the local dataset; (NGUID) Emergency Service Boundary NENA Globally Unique ID	M	A	254
State	State	M	A	2
Agency_ID	LCPA PSAP Code followed by “.wy.us”	M	A	100
ServiceURI	Service URI	M	A	254
ServiceURN	Service URN	M	A	50
ServiceNum	Service Number	O	A	15
AVcard_URI	Agency vCard URI	M	A	254
DsplayName	Display Name	M	A	60
UPDATEBY	Person or Agency that last updated the record	O	A	50
SUBMIT	For Submission to Master Repository	O	A	1
NOTES	Notes	O	A	255

## 4.2 Attribute Descriptions

- **[DiscrpAgID]** – The GNIS/INCITS code for the agency responsible for maintenance of the data.
- **[DateUpdate]** – The date of the last update of the record
- **[Effective]** – The date the record is or was scheduled to take effect. For agencies not recording this information previously, the date of January 1, 2014 (20140101) can be used for all currently effective records
- **[Expire]** – The date the record is scheduled to expire. This field shall only be populated if there is a defined end date. Ex: A city limit boundary that is scheduled to change.
- **[ES\_NGUID]** – An identifier used for tracking Authoritative Boundaries in the local dataset.
- **[State]** – Two-character abbreviation for the state where the address point is located
- **[Agency\_ID]** – Unique ID for the PSAP created by combining the LCPA PSAP Code from the [Wyoming NG911 Strategic Plan 2014-2017](#) with “.wy.us” to create an identifier that will be unique even if combined with data from other states. This field shall be stored as lower case characters. Example:

The LCPA PSAP Code for Dickinson County Emergency Communication is “dk”. The [Agency\_ID] for that PSAP is psap.dk.wy.us

- **[DisplayName] – (Display Name)** – The Display Name of the authoritative source entity. Examples: ROOKS COUNTY WY, ANDOVER WY

#### 4.2.1 Fields added for Wyoming

- **[UPDATEBY]** – The person who last updated the record. The format of this can be set by the data steward, but it should be sufficient to identify the specific individual. First and last name are recommended. The purpose of this field is to allow the data aggregator to contact the specific person who made a change if there is a question about the edit.
- **[SUBMIT]** – Status of the feature as a “Local Only” feature that is not intended for submission to the Master GIS Repository. Examples can include features outside the Authoritative Boundary or features that are not part of the standard but still desired in the local data. Valid values for this attribute are:
  - **Y** – For Submission to the Master GIS Repository
  - **N** – Local Only, not to be used in the Master GIS Repository
- **[NOTES]** – Notes about the feature, primarily used for communication between the Local Data Maintainer and the Data Aggregator.

## 5 Emergency Service Boundaries

Emergency Service Boundaries are polygons representing the service area of the PSAP and various emergency service providers. At minimum law enforcement, fire and emergency medical response must be represented. Data stewards may choose to maintain these as three or more separate polygon layers or as a single combined layer. Every ESB layer shall completely fill the Authoritative Boundary layer with no gaps and no overlaps.

Earlier versions of the WY NG911 GIS Data Standard included the PSAP boundary layer as one of the required ESB layers. Because of the need for a statewide, seamless PSAP boundary layer to support geospatial call routing, the WY 911 Coordinating Council has taken ownership of this layer. The PSAP boundaries submitted by local Data Stewards were aggregated, and any significant gaps or overlaps were discussed with the involved agencies. Any future changes to the PSAP layer shall require documentation submitted to the Council. Filed annexation ordinances and Letters of Agreement between two PSAPs are examples of the type of required documentation. Any Data Steward wishing to adjust their PSAP boundary should contact the Council for guidance on what is required. See NENA 3.4 Emergency Service Boundary for reference.

Note: The NENA Standard identifies three fields not included in this guidance: Route URI, Service URN, and Agency vCard URI. As this data is not currently in use nor fully defined in the NENA Standard, it has been left out of this guidance. Once guidelines are firmly established, they will be added to this document. Until that time, data stewards may proceed without them. See NENA 3.4 Emergency Service Boundary See NENA Table 4.3.4 Data Structure For Each Service Boundary

### 5.1 Attribute Table - Data Structure for each Service Boundary Layer

Separate Fire, LAW, EMS

Attribute
-----------

Field Name	Descriptive Name	Type	Width	M/C/O
DiscrpAgID	Data Steward; Discrepancy Agency ID	A	100	M
DateUpdate	Date updated	D	-	M
Effective	Effective Date	D	-	O
Expire	Expiration Date	D	-	O
ES_NGUID	Unique identifier in the local dataset (NGUID)	A	254	M
State	State	A	2	M
Agency_ID	LCPA PSAP Code followed by “.wy.us”	A	100	M
ServiceURI	Service URI	A	254	M
ServiceURN	Service URN	A	50	M
ServiceNum	Numbers dialed a phone to reach the agency	A	15	O
AVcard_URI	Agency vCard URI	A	254	M
DsplayName	Display Name	A	60	M
ESB_TYPE	Description of the type of boundary in the layer. COMBINED or specific boundary type.	A	20	O
	<i>If ESB_TYPE = COMBINED, the following four fields shall be populated</i>			
PSAP	Display Name of the PSAP	A	60	O
LAW	Display Name of Law Enforcement Entity	A	60	O
FIRE	Display Name of Fire Entity	A	60	O
EMS	Display Name of EMS Entity	A	60	O
UPDATEBY	Person that last updated the record	A	50	O
SUBMIT	For Submission to Master Repository	A	1	O
NOTES	Notes	A	255	O

## 5.2 Attribute Descriptions

- **[DiscrpAgID]** – The GNIS/INCITS code for the agency responsible for maintenance of the data.
- **[DateUpdate]** – The date of the last update of the record
- **[Effective]** – The date the record is or was scheduled to take effect. For agencies not recording this

information previously, the date of January 1, 2014 (20140101) can be used for all currently effective records

- **[Expire]** – The date the record is scheduled to expire. This field shall only be populated if there is a defined end date.
- **[NGESBID]** – An identifier used for tracking Emergency Services Boundaries in the local dataset.
- **[State]** – Two-character state abbreviation for the state where the ESB is located
- **[Agency\_ID]** – Unique ID for the PSAP created by combining the LCPA PSAP Code from the [Wyoming NG911 Strategic Plan 2014-2017](#) with “.wy.us” to create an identifier that will be unique even if combined with data from other states. This field shall be stored as lower case characters. Example: The LCPA PSAP Code for Dickinson County Emergency Communication is “dk”. The [Agency\_ID] for that PSAP is psap.dk.wy.us
- **[ServiceNum]** – (Service Number) – The number dialed by the public on a phone (12-digit keypad) to reach the emergency service. This will usually be 911.
- **[DisplayName]** – (**Display Name**) – The Display Name of the service. Examples: TOPEKA PD, DISTRICT 1 FIRE DEPT, COOPER EMS/COOPER 1<sup>ST</sup> RESPONDERS

### 5.2.1 Fields added for Wyoming

- **[ESB\_TYPE]** – Description of the type of service represented in the layer. Either COMBINED or the specific boundary type. Specific boundary type examples include: PSAP, LAW, FIRE, EMS, RESCUE and WRECKER
  - *The following four attributes shall be populated if the data steward uses the “combined” ESB Type. If the COMBINED layer represents more emergency service types, they shall add a display name field for each type.*
- **[PSAP]** – (**PSAP Display Name**) – The PSAP that serves the area
- **[LAW]** – (**Law Enforcement Display Name**) – Law enforcement agency for the area
- **[FIRE]** – (**Fire Department Display Name**) – The fire response agency for the feature. If the feature defines an area where there is no fire service, then this attribute shall be populated with “NO FIRE SERVICE.”
- **[EMS]** – (**EMS Display Name**) – The emergency medical response for the feature
- **[UPDATEBY]** – The person who last updated the record. The format of this can be set by the data steward, but it should be sufficient to identify the specific individual. First and last name are recommended.
- **[SUBMIT]** – Status of the feature as a “Local Only” feature that is not intended for submission to the Master GIS Repository. Examples can include features outside the Authoritative Boundary or features that are not part of the standard but still desired in the local data. Valid values for this attribute are:
  - **Y** – For Submission to the Master GIS Repository
  - **N** – Local Only, not to be used in the Master GIS Repository
- **[NOTES]** – Notes about the feature, primarily used for communication between the Local Data Maintainer and the Data Aggregator

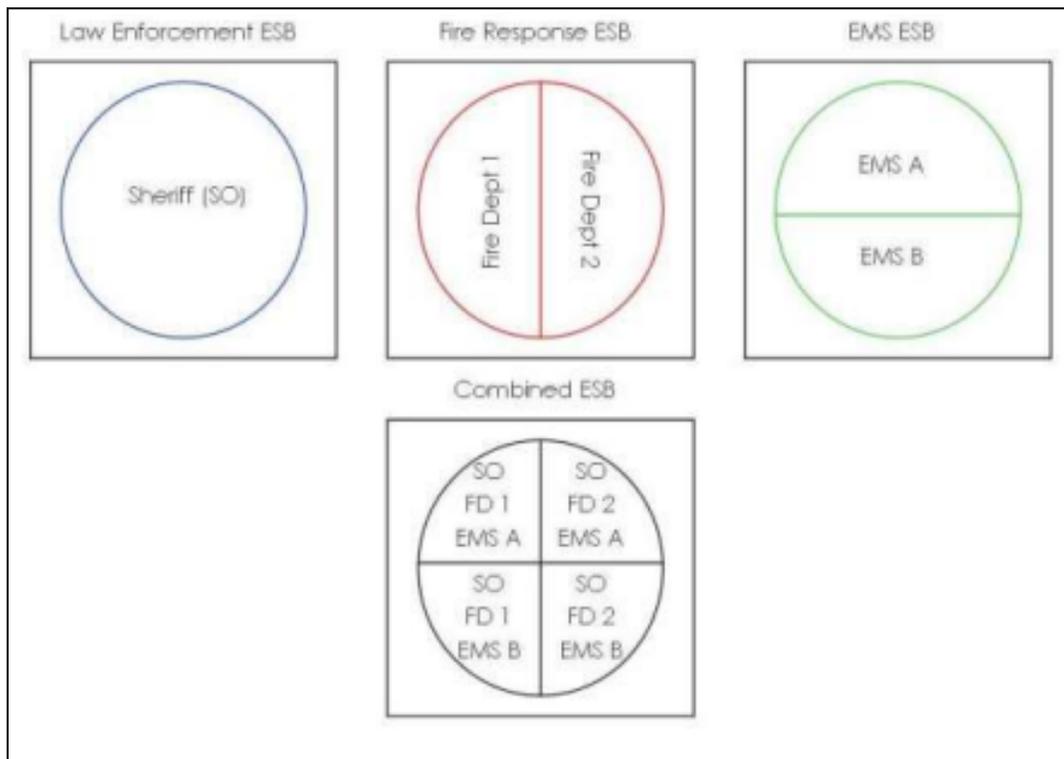
### 5.3 Layer Names

Emergency Service Boundary layers must be named as follows:

- Combined ESB layer: ESB
- Sheriff/Police Department Boundary layer: ESB\_LAW
- EMS Department boundary layer: ESB\_EMS

- Fire Department boundary layer: ESB\_FIRE
- Optional Rescue Department boundary layer: ESB\_RESCUE
- Other optional ESB layers may be named as the Data Steward wishes. Only the “ESB\_” prefix is required

## 5.4 Examples of Separate and Combined ESBs



## 6 Emergency Service Zone Boundaries

Emergency Service Zone (ESZ) Boundaries are polygons representing a unique combination of emergency service agencies (Law Enforcement, Fire and Emergency Medical Services) designated to serve a specific range of addresses. Each ESZ has a three to five digit identifier called an Emergency Service Number or ESN. The Emergency Service Zone Boundary layer shall completely fill the Authoritative Boundary layer with no gaps and no overlaps.

Is this the same as NENA Section 4 Service Boundaries?

*Note: Although ESZs are not used in NG9-1-1 call routing, the transition to full NG9-1-1 deployment will take time. The ESZ Boundaries are required in this data model to support legacy call routing for as long as it remains in use.*

### 6.1 Attribute Table

Attribute				
Field Name	Descriptive Name	Type	Width	M/C/O

DiscrpAgID	Data Steward	A	100	M
DateUpdate	Date updated	D	26	M
Effective	Effective Date	D	26	M
Expire	Expiration Date	D	26	C
NGESZID	Unique identifier in the local dataset	A	38	M
State	State	A	2	M
Agency_ID	LCPA PSAP Code followed by “.wy.us”	A	100	M
ESN	Emergency Service Number	A	5	M
UPDATEBY	Person that last updated the record	A	50	M
SUBMIT	For Submission to Master Repository	A	1	M
NOTES	Notes	A	255	O

## 6.2 Attribute Descriptions

- **[DiscrpAgID]** – The GNIS/INCITS code for the agency responsible for maintenance of the data.
- **[DateUpdate]** – The date of the last update of the record
- **[Effective]** – The date the record is or was scheduled to take effect. For agencies not recording this information previously, the date of January 1, 2014 (20140101) can be used for all currently effective records
- **[Expire]** – The date the record is scheduled to expire. This field shall only be populated if there is a defined end date.
- **[ESZID]** – An identifier used for tracking Emergency Service Boundaries in the local dataset.
- **[State]** – Two-character abbreviation for the state where the address point is located
- **[Agency\_ID]** – Unique ID for the PSAP created by combining the LCPA PSAP Code from the [Wyoming NG911 Strategic Plan 2014-2017](#) with “.wy.us” to create an identifier that will be unique even if combined with data from other states. This field shall be stored as lower case characters. Example: The LCPA PSAP Code for Dickinson County Emergency Communication is “dk”. The [Agency\_ID] for that PSAP is psap.dk.wy.us
- **[ESN]** – The Emergency Service Number assigned to the ESZ.
- **[UPDATEBY]** – The person who last updated the record. The format of this can be set by the data steward, but it should be sufficient to identify the specific individual. First and last name are recommended. The purpose of this field is to allow the data aggregator to contact the specific person who made a change if there is a question about the edit.
- **[SUBMIT]** – Status of the feature as a “Local Only” feature that is not intended for submission to the Master GIS Repository. Examples can include features outside the Authoritative Boundary or features that are not part of the standard but still desired in the local data. Valid values for this attribute are:
  - **Y** – For Submission to the Master GIS Repository
  - **N** – Local Only, not to be used in the Master GIS Repository

- **[NOTES]** – Notes about the feature, primarily used for communication between the Local Data Maintainer and the Data Aggregator

## 7 Other Data Layers

The following data layers may be included in the Wyoming NG911 Template Geodatabase at the discretion of the Data Steward. These data layers are intended primarily for map display and not for NG911 geospatial call routing. Some of the layers are recommended within the NENA NG911 GIS Data Model. Other layers are included primarily to standardize data for display in the Vesta Locate map included with the Wyoming 911 Coordinating Council’s hosted call handling solution. Those layers that will be included in the centrally managed Vesta Locate maps are marked as such.

The attributes listed for these data layers represent the minimum necessary to include the layers in the Wyoming NG911 Template Geodatabase. Data Stewards may choose to add as many additional attributes as they deem appropriate. Only the ones from the tables below will be available in centrally managed Vesta Locate maps.

### Optional Layers:

#### 7.1 Hydrants – For Use in NG9-1-1 Call Handling Map Optional

Point features representing fire hydrants. This data layer will be included in the centrally managed Vesta Locate map for the Data Steward’s PSAP and surrounding PSAPs.

Attribute Name	Description	Type	Width	M/C/O
DiscrpAgID	Data Steward	A	100	M
NGHYDID	Unique identifier in the local dataset	A	38	M
HYDTYPE	Hydrant Type	A	50	M
PROVIDER	Water Provider Name	A	100	O
HYDSTATUS	In or Out of Service	A	10	M
PRIVATE	Yes / No / Unknown	A	10	M
SUBMIT	For Submission to Master Repository	A	1	M
NOTES	Notes	A	255	O

#### 7.1.1 Descriptions of Attributes Unique to Hydrants

- **[HYDTYPE]** – Type of hydrant. Valid values are:
- **FIRE HYDRANT** – Standard pressurized fire hydrant **DRAFTING HYDRANT** – Non-pressurized hydrant, also known as a dry hydrant or standpipe.
- **[PROVIDER]** – Name of entity providing water to the hydrant
- **[HYDSTATUS]** – Indicator of the current status of the hydrant. Valid values are: IN SERVICE, OUT OF SER, and UNKNOWN.

- **[PRIVATE]** – General ownership of the hydrant. Valid values are: YES, NO, UNKNOWN.

## 7.2 Parcel Boundaries – For Use in NG9-1-1 Call Handling Map

Polygon features representing land parcels. This data layer will be included in the centrally managed Vesta Locate for the Data Steward’s PSAP and surrounding PSAPs.

Attribute Name	Description	Type	Width	M/C/O
DiscrpAgID	Data Steward	A	100	M
NGWYPID	Wyoming Parcel ID Number	A	19	M
SUBMIT	For Submission to Master Repository	A	1	M
NOTES	Notes	A	255	O

### 7.2.1 Descriptions of Attributes Unique to Parcel Boundaries

- **[WYPID]** – 19-digit parcel identification number as assigned by the County Appraiser, also known as the CAMA number, with no punctuation. Example: 0211150101018003000, not 021-115-0-10-18-003.00-0

## 7.3 Gates – For Use in NG9-1-1 Call Handling Map

Point location of a Gate/entrance to a gated facility in or along the roadway. Not for gates along the side of the road, but for gates that potentially separate public roadways from private roadways, such as found at gated communities, tolled facilities, public parks, apartment complex access roads, and public roads managed by state or federal agencies not under the authority of the Secretary of Transportation.

Attribute Name	Description	Type	Width	M/C/O
DiscrpAgID	Data Steward	A	100	M
NGGATEID	Unique identifier in the local dataset	A	38	M
GATE_TYPE	Type of gate	A	2	M
SIREN	Gate is opened by sirens	A	1	M
RF_OP	Gate is opened by radio signal	A	1	M
KNOXBOX	Gate is opened by Knox Box	A	1	M
KEYPAD	Gate is opened by keypad	A	1	M
MAN_OPEN	Gate is opened manually	A	1	M
GATEOPEN	Gate is kept open	A	1	M

G_OWNER	Administrative owner of the gate	A	50	O
SUBMIT	For Submission to Master Repository	A	1	M
NOTES	Notes	A	255	O

### 7.3.1 Descriptions of Attributes Unique to Gates

- **[GATE\_TYPE]** – Type of gate chosen from the following domain: Steel Road Gate; Bollard; Right Angle Gate; Kissing; Width Limiter; Private Community Gate, Unknown
- **[SIREN]** – Gate is automatically opened by approaching sirens: Y(es); N(o); U(nknown)
- **[RF\_OP]** – Gate is opened by radio signal: Y(es); N(o); U(nknown)
- **[KNOXBOX]** – Gate is opened by Knox Box: Y(es); N(o); U(nknown)
- **[KEYPAD]** – Gate is opened by keypad: Y(es); N(o); U(nknown)
- **[MAN\_OPEN]** – Gate is opened manually: Y(es); N(o); U(nknown)
- **[GATEOPEN]** – Gate is kept open at all times: Y(es); N(o); U(nknown)
- **[G\_OWNER]** – Administrative owner of the gate

### 7.4 Utility Service Areas – For Use in NG9-1-1 Call Handling Map

One Call (8-1-1) boundaries if available could be incorporated into GIS Layers in case of emergency. These could include any utilities that 8-1-1 locates for, Gas, Electric, Water, Wastewater, Fiber, Phone, and other related layers.

Polygon representation of the service area of utilities. Data Stewards may include any of the following layers: UT\_ELECTRIC; UT\_GAS; UT\_SEWER; UT\_WATER. These data layers will be included in the centrally managed Vesta Locate for the Data Steward’s PSAP and surrounding PSAPs.

Attribute Name	Description	Type	Width	M/C/O
DiscrpAgID	Data Steward	A	100	M
NGUSERVID	Unique identifier in the local dataset	A	38	M
UTIL_NAME	Name of the utility	A	50	M
PHONENUM	Emergency contact number for utility	A	50	M
SUBMIT	For Submission to Master Repository	A	1	M
NOTES	Notes	A	255	O

### 7.4.1 Descriptions of Attributes Unique to Utility Service Areas

- **[UTIL\_NAME]** – Common name of the utility serving the area
- **[PHONENUM]** – Emergency contact phone number for the utility, with any necessary extensions and notes.

## 7.5 Bridges – For Use in NG9-1-1 Call Handling Map

Point features representing bridges. This data layer will be included in the centrally managed Vesta Locate for the Data Steward’s PSAP and surrounding PSAPs.

Attribute Name	Description	Type	Width	M/C/O
DiscrpAgID	Data Steward	A	100	M
NGBRIDGE	Unique Identifier in the local dataset	A	38	M
LPA_NAME	Local identifier for the bridge	A	75	O
STRUCT_NO	FHWA Structure number	A	15	O
WEIGHT_L	Weight limit	I		O
OVERUNDER	Over or Under bridge	A	5	O
STATUS	Open or Closed to traffic	A	10	O
SUBMIT	For Submission to Master Repository	A	1	M
NOTES	Notes	A	255	O

### 7.5.1 Descriptions of Attributes Unique to Bridges

- **[LPA\_NAME]** – Local public agency identifier for the bridge. Examples can include assigned addresses, local index numbers, or federal identification numbers.
- **[STRUCT\_NO]** – FHWA Structure Number for the bridge
- **[WEIGHT\_L]** – Weight limit for the bridge
- **[OVERUNDER]** – Whether a bridge allows traffic to pass over or under a road, river, railway, etc.  
OVER, UNDER
- **[STATUS]** – Traffic allowed on the bridge. OPEN, CLOSED, EMERGENCY ONLY

## 7.6 Cell Sites – For Use in NG9-1-1 Call Handling Map

Point data representing cell tower sites

Attribute Name	Description	Type	Width	M/C/O
DiscrpAgID	Data Steward	A	100	M
DateUpdate	Date updated	D	26	M
NGCELLID	Unique identifier in the local dataset	A	38	M
Effective	Effective Date	D	26	M

Expire	Expiration Date	D	26	C
State	State	A	2	M
County	County	A	75	M
HEIGHT	Full height of tower and antennas	A	10	O
TWR_TYP	Antenna or tower type	A	50	O
UPDATEBY	Person that last updated the record	A	50	M
SUBMIT	For Submission to Master Repository	A	1	M
NOTES	Notes	A	255	O

### 7.6.1 Descriptions of Attributes Unique to Cell Site/Sector Centroids

- [HGT] - Full height of the tower and all antennas
- [TWR\_TYP] – Indicator of the specific tower type. TOWER-MONOPOLE, TOWER LATTICE, TOWER-GUYED, TOWER-BROADCAST, TOWER-STEALTH, TOWER ROOFTOP, TOWER-WATER TOWER, TOWER-MICRO/MINI

### 7.7 Municipal Boundaries – NENA Recommended & – For Use in NG9-1-1 Call Handling Map

Attribute Name	Description	Type	Width	M/C/O
DiscrpAgID	Data Steward	A	100	M
DateUpdate	Date updated	D	26	M
Effective	Effective Date	D	26	M
Expire	Expiration Date	D	26	C
ES_NGUID	Unique identifier in the local dataset	A	38	M
State	State	A	2	M
County	County	A	75	M
MUNI	Municipality	A	100	M
UPDATEBY	Person that last updated the record	A	50	M
SUBMIT	For Submission to Master Repository	A	1	M
NOTES	Notes	A	255	O

## 7.8 County Boundaries – NENA Recommended

Attribute Name	Description	Type	Width	M/C/O
DiscrpAgID	Data Steward	A	100	M
DateUpdate	Date updated	D	26	M
NGCOUNTYID	Unique identifier in the local dataset	A	38	M
State	State	A	2	M
County	County	A	75	M
UPDATEBY	Person that last updated the record	A	50	M
SUBMIT	For Submission to Master Repository	A	1	M
NOTES	Notes	A	255	O

## 7.9 Cell Sector Centroids – NENA Recommended

Point data representing cell sector centroids

Attribute Name	Description	Type	Width	M/C/O
DiscrpAgID	Data Steward	A	100	M
DateUpdate	Date updated	D	26	M
NGCELLID	Unique identifier in the local dataset	A	38	M
Effective	Effective Date	D	26	M
Expire	Expiration Date	D	26	C
State	State	A	2	M
County	County	A	75	M
SITEID	Identifier assigned by cell company	A	10	C
SECTORID	Cell sector face or Omni	A	4	C
SWITCHID	Mobile Switch Center ID	A	10	C
MARKETID	Market ID of Mobile Switch Center	A	10	C
C_SITEID	Name of cell site	A	10	C
ESRD	ESRD of sector or the first number in the	N	10	C

	ESRK range			
LASTESRK	Last number in the ESRK range for the PSAP	N	10	C
SECORN	Antenna orientation	A	4	C
UPDATEBY	Person that last updated the record	A	50	M
SUBMIT	For Submission to Master Repository	A	1	M
NOTES	Notes	A	255	O

### 7.9.1 Descriptions of Attributes Unique to Cell Site/Sector Centroids

- **[SITEID]** – Some carriers have cell site identifications unique for that cell site within the entire carrier network.
- **[SECOTRID]** – The cell sector ID of the cell tower sector antenna face associated with the location
- **[SWITCHID]** – The wireless switch to which the site is homed or associated with, as given in the wireless routing spreadsheet.
- **[MARKETID]** - The mobile switch ID provided on the wireless routing spreadsheet • **[C\_SITEID]** – Name provided by the wireless service provider on the wireless routing sheet, usually unique to the cell site.
- **[ESRD]** – Pseudo ALI or the beginning pseudo ALI range, for the Emergency Service Routing Digit (ESRD) or the Emergency Service Routing Key (ESRK) as provided on the wireless providers wireless routing spreadsheet.
- **[LASTESRK]** – The last 10-digit number in the Emergency Service Routing Key (ESRK) pseudo ALI range.
- **[SECORN]** - The orientation of the cell tower sector antenna face associated with the location.

## 8 Metadata

Every data layer in the Wyoming NG911 GIS Data Model shall have the FGDC mandatory fields as defined in the Content Standard for Digital Geospatial Metadata (CSDGM) Essential Metadata Elements document. When using the Wyoming NG911 Template Geodatabase in Esri ArcGIS Desktop software, many of these metadata elements are automatically populated. The following elements, described as they appear in ArcGIS Desktop software, must be populated by the Local Data Steward directly:

- Item Description Section
  - Abstract
  - Purpose
  - Tag, topic or theme keyword
- Citation Section
  - Publication Date
- Citation Contacts Section
  - Originator
- Contacts Section
  - At least one metadata contact
- Details Section

- Status Code
- Extents Section
  - Temporal Extent
- Maintenance Section
  - Maintenance Frequency Code
- Lineage Section
  - Statement

## 9 Appendix A: Reference Documents

[Wyoming NG911 Strategic Plan 2013-2017](#)

NENA Draft GIS Data Model for NG9-1-1

[NENA ADM 000.17 Master Glossary](#)

[NENA GIS Data Collection and Maintenance Standard 02-014 Version 1](#)

[NENA Informational Document on Synchronizing GIS Databases with MSAG and ALI 71-501, Version 1.1](#)

[Content Standard for Digital Geospatial Metadata \(CSDGM\) Essential Metadata Elements USPS Publication](#)

[28](#)

[RFC 4589 Location Types Registry](#)

[MAF/TIGER Feature Class Code Definitions](#)

[ANSI County and County Equivalents](#)

[NENA NG011 United States Civic Location Data Exchange Format \(CLDXF\) Standard 004.1.1- 2014](#)

Wyoming Guidelines and Best Practices for GIS Road Centerlines

## 10 Appendix B: Frequently Asked Questions

### 1. We assign addresses off of the driveway. Why should the primary address point be on the structure?

- a. Assigning the address by the driveway or access point is perfectly appropriate. However, the placement of the address point on the structure itself offers several benefits. For landline calls, it is the best geographic representation of where the call is actually coming from. In disasters, the actual structure location allows for a more accurate determination of whether a building could be affected. It is important to remember that a duplicate point may be kept on the driveway or access point, as long as it is marked as “SECONDARY – ACCESS”.

### 2. Where do I put an address point on an empty lot?

- a. There is no specific location to place a point if there is no structure involved. Remember that the address represents something. If you can place the point on that thing, you should do so. If that thing is an empty lot or a public field or something similar, then any location on the property that seems most appropriate to you is fine.

**3. I keep roads and fire districts that are in a different county in my county's 911 GIS data. Do I have to remove them?**

a. Each Local Data Steward is only allowed to submit for call routing those features (roads, fire district polygons, etc.) that are inside their Authoritative Boundary. If you are keeping features from a neighboring county in your data, you cannot submit those features for call routing. But you can keep them in your data. In Version 1.1 of this document, the SUBMIT field was added to all feature classes. If you want to keep a feature in your data that is outside your Authoritative Boundary, you can populate the SUBMIT field for that feature with an "N", which means that it is not intended for submission to the Master Repository for call routing. That way you can keep all the data you need in one database and still easily identify the features that will be submitted for call routing.

**4. We have addresses that do not relate to actual roads, do we need to add road centerline segments to match those addresses?**

a. Not for NG911. One of the reasons you have address points is to represent addresses that do not have associated road segments, and NG911 call routing will not require address points to match to a specific centerline segment. However, you may have a local application, like your Computer Aided Dispatch application perhaps, which cannot understand address points. Many systems are built to geocode only on road centerlines. If you are supporting a system like that locally, then you may need to have a segment that matches up to every valid address.

**5. Are the fire districts for taxation the same as fire districts for response?**

a. Not always. Not all fire departments levy taxes. Some get their budgets from cities or townships in their service area. And the fact that a fire department levies tax on a property doesn't necessarily mean they provide fire service to that property. It is much easier to change response areas than taxing districts. Taxing districts were often formed a long time ago, and response areas have adjusted since then to account for growth in the area or changes in the road system. A fire district map generated from taxing districts may not be applicable to emergency response. It is important to be sure that someone working directly in 911 reviews the fire district map closely.

## **11 Appendix C: Version History**

Draft Version 1.0 Formatted 05/31/2023

- Based on *Kansas NG911 GIS Data Model V2.2*
- Adapted to incorporate the input from the NG911 GIS Workgroup

## **12 Appendix D: Attribute Domains**

The current Attribute Domains are maintained in the Wyoming\_ng911\_gis\_data\_model\_domains\_v2\_1.xlsx document

Add Link, Domains need to be updated, example ESB ESZ Boundary, PSAP

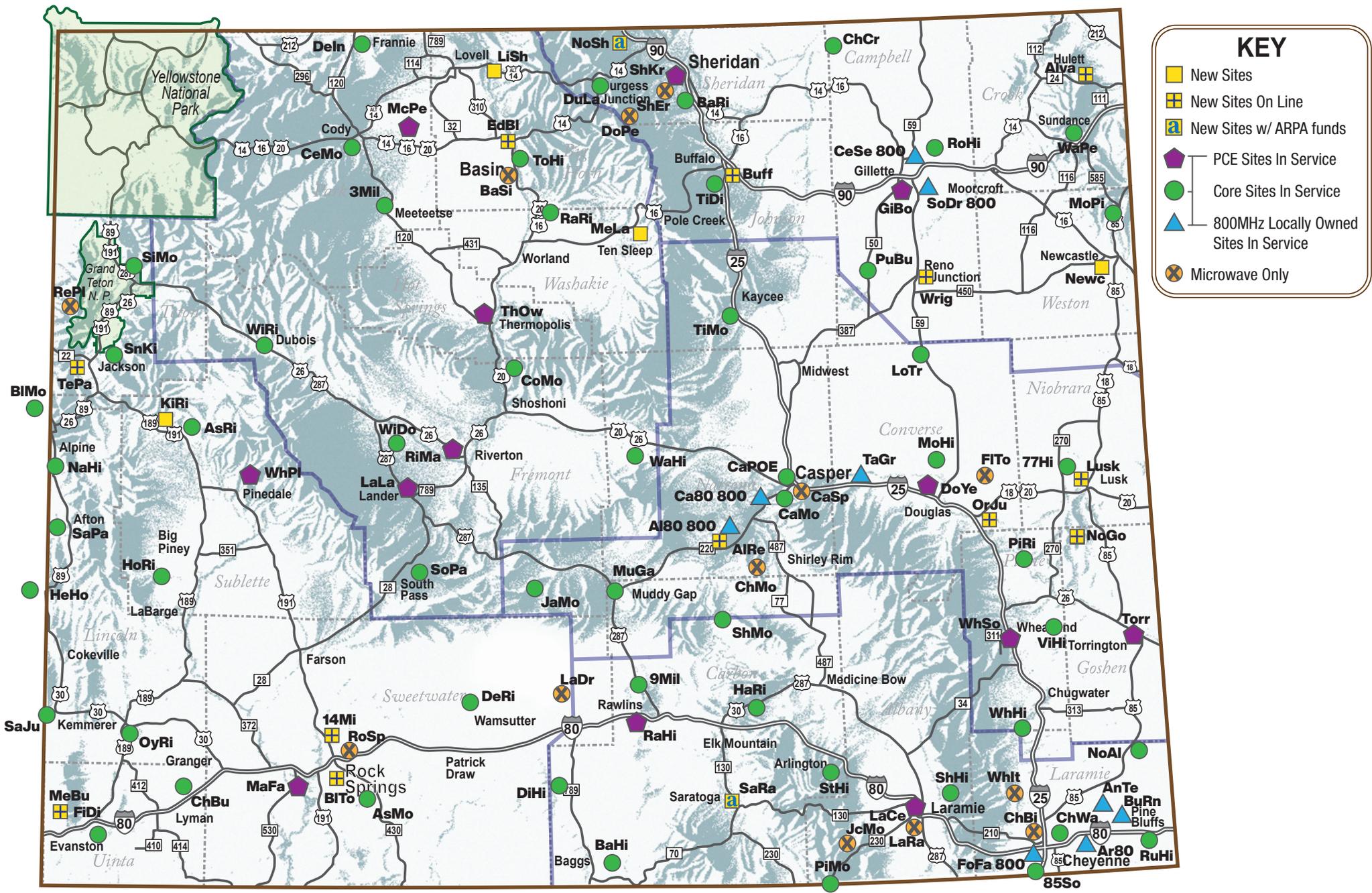
## WYOLINK 16 Site Expansion Project Status

The following represents a brief update on the status and noteworthy accomplishments for each site location into the month of July 2023.

- Buffalo
  - Site active (3/24/20) with reported coverage improvements in previous known trouble spots
  
- Orin Junction
  - Site active (4/20/20) with reported coverage improvements in previous known trouble spots
  
- Wright
  - Site active (6/26/20) with reported coverage improvements in previous known trouble spots
  
- Jackson
  - Site active (announced 1/11/21) with reported coverage improvements in previous known trouble spots
  
- Greybull
  - Site active (announced 1/11/21) with reported coverage improvements in previous known trouble spots
  
- Lusk
  - Site active (announced 4/21/21) with reported coverage improvements in previous known trouble spots
  
- Alcova
  - Site active (announced 4/21/21) with reported coverage improvements in previous known trouble spots
  
- Alva
  - Site active (announced 6/3/21) with reported coverage improvements in previous known trouble spots
  
- Rock Springs (Blairtown-Tank Hill)
  - Site active (announced 10/8/21) with reported coverage improvements in previous known trouble spots
  
- Rock Springs (14 Mile Hill)
  - Site active (announced 6/28/22) with reported coverage improvements in previous known trouble spots

- Northern Goshen County
  - Site active (announced 3/16/23) with reported coverage improvements in previous known trouble spots
  
- Evanston
  - Site active (announced 1/30/23) with reported coverage improvements in previous known trouble spots
  
- North Big Horn County (Little Sheep Mnt)
  - Site active (announced 7/11/23) with reported coverage improvements in previous known trouble spots
  
- Ten Sleep (Meadowlark)
  - Awaiting schedule and crew availability
  - Shelter modifications to resume, and FNE installation/optimization
  
- Newcastle
  - Crews on-site 7/19/2023 working on power installation, then tower work (collocate with UTC)
  
- Bondurant
  - Crews on-site week of 7/24 - beginning civil construction
  - Targeting late September/early October for site testing

# WyoLink Local Towers and Locations Site Map



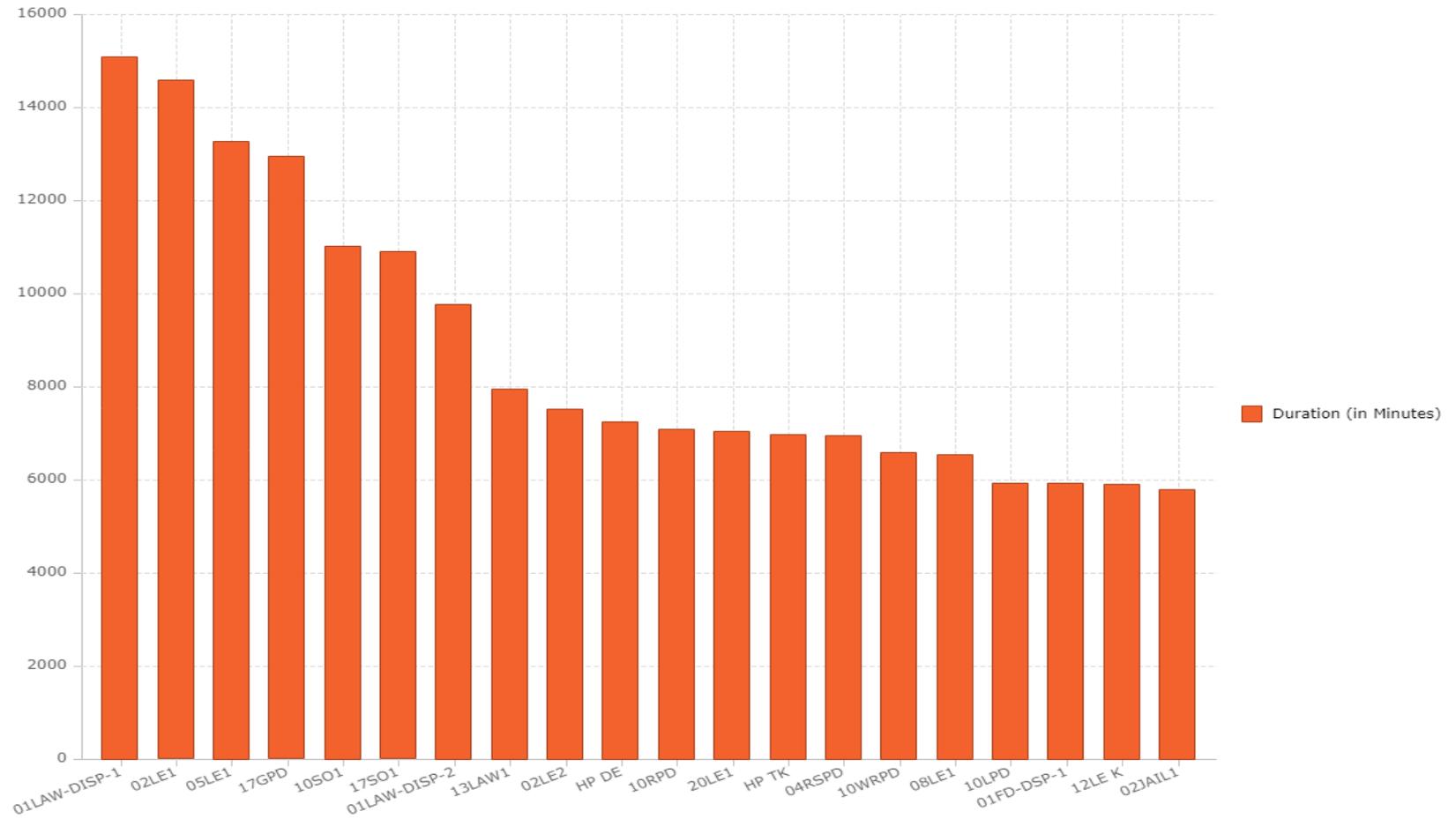
PSCC - Aug 9th 2023



# SYSTEM STATISTICS

MONTH	PTTs	AIRTIME (minutes)
April '23	1,972,427	140,987.0
May '23	2,010,537	141,258.0
June '23	1,953,265	135,806.0

# TOP 20 TALKGROUPS





**Mark Gordon**  
Governor

# Wyoming Public Safety Communications Commission

5300 Bishop Boulevard, Cheyenne, Wyoming 82009-3340  
Mark Harshman, Chairman | Telephone: 307-777-4015



**Darin J. Westby**  
Interim Director

## Terms & Acronyms Reference

<b>AAR/IP</b>	After Action Report/Improvement Plan
<b>AASHTO</b>	American Association of State Highway & Transportation Officials
<b>ANSI/TIA</b>	American National Standards Institute
<b>APCO</b>	Association of Public Safety Communication Officials
<b>APIC</b>	Association Project 25 Interface Committee
<b>APWA</b>	American Public Works Association
<b>ARRL</b>	American Radio Relay League
<b>ASK</b>	Advance System Key
<b>BIDP</b>	Border Interoperability Demonstration Project
<b>CDP</b>	Center for Domestic Preparedness
<b>CIO</b>	Chief Information Officer
<b>COML</b>	Communications Unit Leader
<b>COMU</b>	Communications Unit
<b>CTO</b>	Chief Technical Officer
<b>DHS</b>	Department of Homeland Security
<b>DUNS</b>	Data Universal Numbering System
<b>E911</b>	Enhanced 911
<b>EHP</b>	Environmental & Historic Preservation
<b>EMI</b>	Emergency Management Institute
<b>FCC</b>	Federal Communications Commission
<b>FCCA</b>	Forestry Conservation Communications Association
<b>FEMA</b>	Federal Emergency Management Agency

<b>FHWA</b>	Federal Highway Administration
<b>FIRSTNET</b>	The National Public Safety Broadband Network
<b>FPIC</b>	Federal Partnership for Interoperable Communications
<b>FRG</b>	First Responders Group
<b>GAA</b>	Grant Award Agreement
<b>GETS</b>	Government Emergency Telecommunications Service
<b>GHSAC</b>	Governors Homeland Security Advisors Council
<b>GPD</b>	Grant Programs Directorate
<b>HSGP</b>	Homeland Security Grant Program
<b>HSIN</b>	Homeland Security Information Network
<b>IAB</b>	Interagency Board
<b>IACP</b>	International Association of Chiefs of Police
<b>IAEM</b>	International Association of Emergency Managers
<b>IAFC</b>	International Association of Fire Chiefs
<b>ICMA</b>	International City/County Management Association
<b>KMF</b>	Key Management Facility
<b>LETPA</b>	Law Enforcement Terrorism Prevention Activities
<b>LMR</b>	Land Mobile Radio
<b>LTE</b>	Long Term Evolution
<b>MCC</b>	Major Cities Chiefs Association (Police)
<b>MCSA</b>	Major County Sheriffs' Association
<b>NACO</b>	National Association of Counties
<b>NASF</b>	National Association of State Foresters
<b>NASCIO</b>	National Association of State Chief Information Officers
<b>NASEMSO</b>	National Association of State EMS Officials
<b>NASNA</b>	National Association of State 911 Administrators

<b>NASPO</b>	National Association of State Procurement Officers (replaced WISCA)
<b>NASTD</b>	National Association of State Technology Directors
<b>NATOA</b>	National Association of Telecommunications Officers & Advisors
<b>NCAI</b>	National Congress of American Indians
<b>NCHRP</b>	National Cooperative Highway Research Program
<b>NCJA</b>	National Criminal Justice Association
<b>NCSL</b>	National Conference of State Legislatures
<b>NCSWIC</b>	National Council of Statewide Interoperability Coordinators
<b>NDPC</b>	National Domestic Preparedness Consortium
<b>NECP</b>	National Emergency Communications Plan
<b>NEMA</b>	National Emergency Management Association
<b>NEMSMA</b>	National EMS Management Association
<b>NENA</b>	National Emergency Number Association
<b>NEPA</b>	National Environmental Policy Act
<b>NG911</b>	Next Generation 911
<b>NGA</b>	National Governors Association
<b>NIMS</b>	National Incident Management System
<b>NLC</b>	National League of Cities
<b>NOFO</b>	Notice of Funding Opportunity
<b>NPSTC</b>	National Public Safety Telecommunication Council
<b>NSA</b>	National Sheriffs' Association
<b>NTED</b>	National Training & Education Division's
<b>OCTO</b>	Office of the Chief Tech Officer
<b>OEC</b>	Office of Emergency Communications (Dept. of Homeland Security)
<b>OPM</b>	Office of Personnel Management
<b>OTAR</b>	Over The Air Rekeying

<b>P25</b>	Project 25 Radio network
<b>P25 SOR</b>	Project 25 Statement of Requirements
<b>PEIS</b>	Programmatic Environmental Impact Statement
<b>POC</b>	Point of Contact
<b>PSAP</b>	Public Safety Answering Point
<b>PSCC</b>	Public Safety Communications Commission
<b>RDPC</b>	Rural Domestic Preparedness Consortium
<b>RECCWG</b>	Regional Emergency Communications Coordination Work Group
<b>RIC</b>	Regional Interoperability Committees (subcomponent of NCSWIC)
<b>S&amp;T</b>	Science & Technology
<b>SAA</b>	State Administrative Agency
<b>SAC</b>	Senior Advisory Committee
<b>SAFECOM</b>	Safety Communiqué (works in conjunction with NCSWIC)
<b>SAT Phones</b>	Satellite Phones
<b>SCIP</b>	Statewide Communication Interoperability Plan
<b>SEARCH</b>	National Consortium of Justice Information Statistics
<b>SHSP</b>	State Homeland Security Program
<b>SIGB</b>	Statewide Interoperability Governing Body
<b>SLIGP</b>	State & Local Implementation Grant Program
<b>SOR</b>	Statement of Requirements
<b>SPOC</b>	State Point of Contact
<b>SPR</b>	State Preparedness Report
<b>STA</b>	Science & Technology Agency
<b>STO</b>	State Training Officer
<b>SWIC</b>	Statewide Interoperability Coordinator
<b>TA</b>	Technical Assistance

<b>TIA</b>	Telecommunications Industry Association
<b>THIRA</b>	Threat & Hazard Identification & Risk Assessment
<b>TSBs</b>	Telecommunications Systems Bulletins
<b>TSP</b>	Telecommunications Service Priority
<b>UCM</b>	U.S. Conference of Mayors
<b>UNS</b>	User needs Subcommittee
<b>WOHS</b>	Wyoming Office of Homeland Security
<b>WPS</b>	Wireless Priority Service



Mark Gordon  
Governor

# Wyoming Public Safety Communications Commission

5300 Bishop Boulevard, Cheyenne, Wyoming 82009-3340  
Mark Harshman, Chairman | Telephone: 307-777-4015



Darin J. Westby  
Interim Director

## Wyoming State Statute, Title 09 Article 11 Public Safety Communications Commission

### 9-2-1101 – Commission; created; definitions.

- (a) The public safety communications commission is created.
- (b) As used in W.S. 9-2-1101 through 9-2-1104:
  - (i) "Public safety agency" means any federal, state or political subdivision entity that provides emergency and public safety services, including state agencies employing peace officers enumerated in W.S. 6-1-104(a)(vi)(C) through (F) and approved for participation by the communications commission, fire management services, correctional services, emergency management, emergency and disaster relief services and if desired, county, municipal and federal law enforcement agencies;
  - (ii) "System" means the wireless communications network providing regional and statewide radio communications capabilities to public safety agencies.

### 9-2-1102 – Commission; composition; appointment of members; removal; terms; officers; vacancies; meetings.

- (a) The commission shall consist of thirteen (13) voting members to be appointed by the governor and who may be removed by the governor as provided in W.S. 9-1-202. The voting members shall be appointed from each of the following associations and agencies from their membership:
  - (i) Wyoming police chiefs association;
  - (ii) Wyoming sheriffs association;
  - (iii) Division of criminal investigation, office of the attorney general;
  - (iv) Wyoming game and fish department;
  - (v) Wyoming department of transportation;
  - (vi) Repealed by Laws 2017, ch. 17, § 2.
  - (vii) Repealed by Laws 2017, ch. 17, § 2.
  - (viii) Wyoming fire chiefs' association;
  - (ix) Repealed by Laws 2017, ch. 17, § 2.
  - (x) Repealed by Laws 2017, ch. 17, § 2.

- (xi) The public at large;
  - (xii) An ambulance and emergency medical services organization;
  - (xiii) The Wyoming association of municipalities or another municipal government association;
  - (xiv) The Wyoming county commissioners association or another county government association;
  - (xv) Repealed by Laws 2017, ch. 17, § 2.
  - (xvi) Tribal government or a tribal government association;
  - (xvii) Repealed by Laws 2017, ch. 17, § 2.
  - (xviii) A member of the Wyoming chapter of the association of public safety communications officials or the national emergency number association;
  - (xix) The Wyoming office of homeland security.
- (b) Repealed by Laws 1991, ch. 121, § 2.
- (c) The commission shall elect from its members a chairman, a vice-chairman and a secretary. Vacancies in these offices shall be filled by the commission from its membership. The commission shall meet at least once every three (3) months. Appointments by the governor shall be made within thirty (30) days of expiration of membership terms. Nominee lists shall be furnished within ten (10) days upon expiration of any membership term. Each member shall serve a three (3) year term. A vacancy on the commission shall be filled for the unexpired term by the governor.
- (d) The person appointed to the commission pursuant to paragraph (a)(v) of this section shall be the chief technology officer of the Wyoming department of transportation or another employee of the Wyoming department of transportation who oversees information technology or telecommunications systems.

### **9-2-1103 – Commission; compensation of members.**

Members of the commission shall receive mileage and per diem provided state employees.

### **9-2-1104 – Commission; powers and duties; advisory capacity to promote system development; public meetings; clerical and administrative support.**

- (a) The commission shall:
- (i) Work with the state budget department, the department of enterprise technology services, the department of homeland security and the department of transportation in an advisory capacity to promote the development, improvement and efficiency of public safety communications systems in the state;

- (ii) Report in writing each year to the governor and the joint transportation, highways and military affairs interim committee concerning any problems related to the installation, operation and maintenance of the system and shall make any recommendations it deems appropriate as a part of the report;
  - (iii) Submit a plan for statewide system networking to the department of enterprise technology services for inclusion in the statewide telecommunications plan developed pursuant to W.S. 9-2-2906(g);
  - (iv) In cooperation with participating federal agencies, establish and assess user fees upon any federal law enforcement agency electing to use and participate in the system;
  - (v) Promulgate necessary rules and regulations governing system operation and participation and upon failure to comply with adopted rules and regulations, may suspend system use and participation by any participating and noncomplying public safety agency or private entity;
  - (vi) Determine the participation of public safety agencies and private entities in the wireless communications network;
  - (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;
  - (viii) Recommend guidelines and standards for the development, implementation and operation of next generation 911 emergency communications systems and interoperable public safety communications and data systems in the state, including strategies for improving Wyoming's current 911 system. As part of the recommendations developed under this paragraph, the commission may identify short-term and long-term technological and policy solutions that integrate existing legacy communications infrastructure into an interoperable system and may develop and submit recommendations for legislation or other state action to further develop and support next generation 911 operations in Wyoming;
  - (ix) Promulgate necessary rules and regulations governing next generation 911 system operation and participation.
- (b) The commission may hold public meetings throughout the state and may take other appropriate measures to maintain close liaison with regional, county and municipal organizations and agencies involved in the system.
- (c) Necessary clerical and administrative support for the commission shall be furnished by the Wyoming department of transportation.

**9-2-1105 – Repealed By Laws 2004, Chapter 41, § 2.**

**9-2-1106 – Repealed By Laws 2004, Chapter 41, § 2.**

