

SIRN FOR ND



November 2022

WHAT IS SIRN?

STATEWIDE INTEROPERABLE RADIO NETWORK



NORTH DAKOTA
**STATEWIDE
INTEROPERABLE
RADIO NETWORK**

SIRN: Is a communication system for first responders to serve and protect citizens

SIRN: Is a statewide solution for delivering an interoperable radio system for public safety community

SIRN: Is a collaborative effort by state, county, and municipal public safety agencies



PUBLIC SAFETY COMMUNICATIONS IN ND

- 20,000 Users & Devices
- 900+ Public Safety
 - 114 Law Enforcement Agencies
 - 175 EMS Departments
 - 359 Fire Agencies
- Public Sector Entities
 - Public Works, Highway Depts, Public Health, Hospitals & School Transportation

PUBLIC SAFETY COMMUNICATIONS IN ND

256,000+ Calls to 9-1-1 each year

9-1-1 Calls are received every 2 MINUTES
24 hours a day, 365 days a year

SIRN HISTORY

CHALLENGES IDENTIFIED



**NORTH DAKOTA
STATEWIDE
INTEROPERABLE
RADIO NETWORK**

- Lack of Coverage
- “End of Support” for 40% of communications equipment in 2018-2020
- Dozens of fragmented systems
- Lack of features required by public safety community
- Cumbersome Interoperability
 - Limited communication capabilities between jurisdictions & disciplines
- Interference
- Unreliable “In-Building” Service

SIRN HISTORY

INTEROPERABILITY CHALLENGE



Example of Communication Challenge
During Crisis Response Situation:

Three Responders could see each other but were unable to communicate using the current radio network because they were from different agencies.

This jeopardizes the safety of public and first responders.

SIRN HISTORY

TIMELINE



- **2011** Exploratory Study Focused on Land Mobile Radio Interoperability
- **2015** Legislature Authorizes Feasibility Study
- **2016** Televate Study Conducted; Recommendations Provided
- **2017** Legislature Authorizes and Governor Signs into Law - Execution of SIRN 20/20
- **2017** SIRN 20/20 Program Initiated
- **2018** Requests for Proposals
- **2019** January - Contract Awarded to Motorola
- **2019** April - Legislature Authorizes and Governor Signs SIRN Project Funding into Law
- **2019** May - Project Kick Off
- **2020** December – Backhaul and 10 PSAPs cutover
- **2021** December – 7 additional PSAPs cutover
- **2022** November – 5 additional PSAPs cutover along with approx. 65 sites completed

SIRN HISTORY

TELEVATE STUDY FINDINGS



**NORTH DAKOTA
STATEWIDE
INTEROPERABLE
RADIO NETWORK**

STUDY PURPOSE:

Evaluate viability of statewide interoperable radio network (SIRN) to consolidate the myriad State and Local systems into a common network

STUDY FINDINGS:

- State & Local systems based on legacy technologies
 - Limited functionality
 - Diminishing Service Lifespans
- Systems unable to keep pace with population increase & rise in public safety incidents & activities
- New system must provide:
 - Performance
 - Reliability
 - Interoperability

STUDY SOLUTION: SIRN 20/20

Holistic evolution of State & Local communications networks into single integrated statewide solution

- Adequate & affordable replacement
- Significant State funding allocation
- Proper Governance
 - Transparency
 - Responsiveness to local partners

SIRN HISTORY

CONTRACT

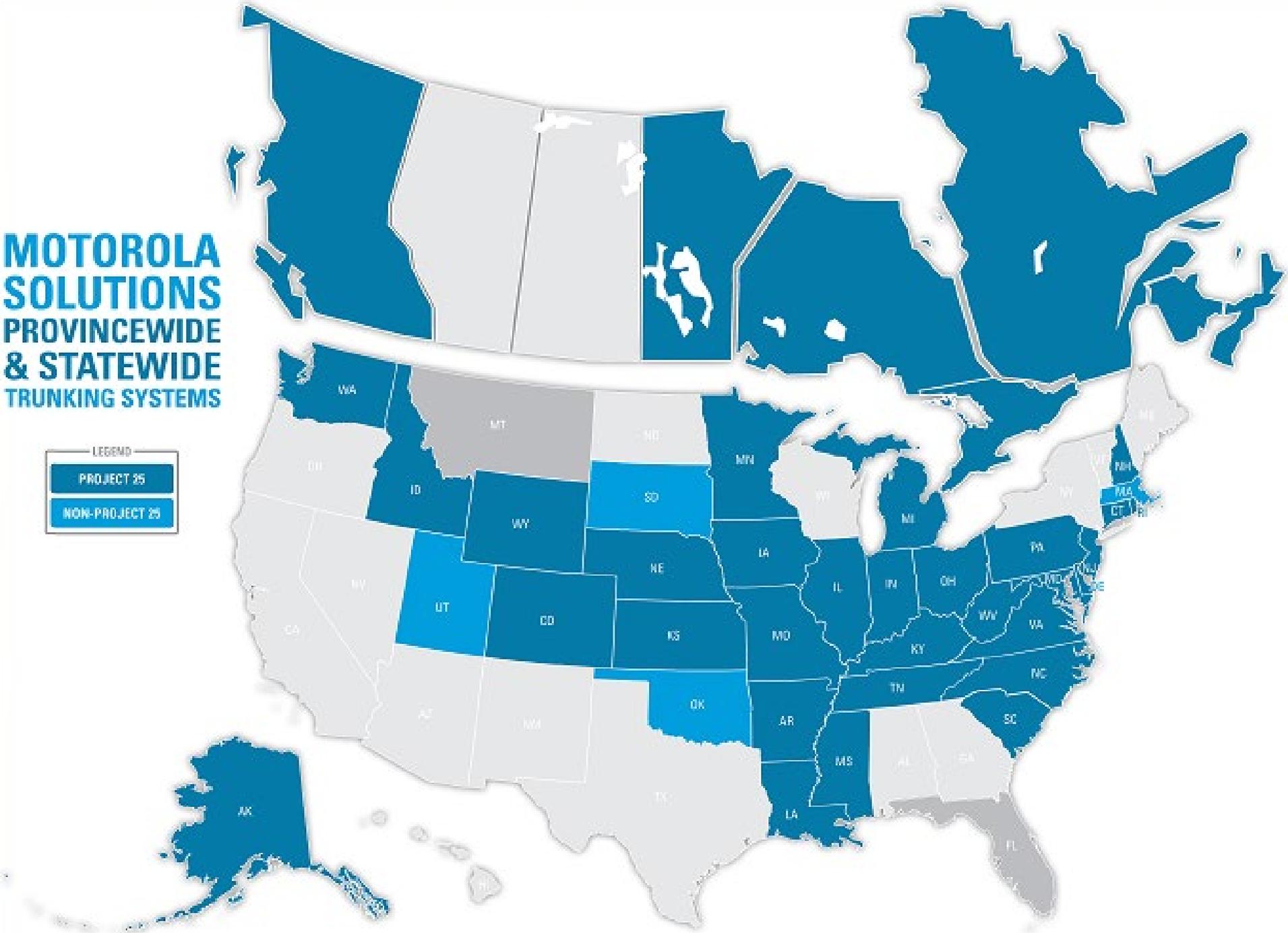
- Contract with Motorola
- Provides single, statewide solution
- Coverage challenges mitigated
- End of life challenges mitigated
- Interoperability challenges mitigated
- No frequency transfers required
- 5 Year project
- Emphasis on phased functional deliverables



**NORTH DAKOTA
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RADIO NETWORK**



MOTOROLA SOLUTIONS PROVINCEWIDE & STATEWIDE TRUNKING SYSTEMS



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SOLUTION



**NORTH DAKOTA
STATEWIDE
INTEROPERABLE
RADIO NETWORK**

- Shared Infrastructure Utilized by All Public Safety Users
- 800 MHZ Frequency Band
- Project 25 Technology
- 99.999 Reliable is the national standard for public safety communications hardware
- Hardware Meeting Standards Usable on SIRN System
- Guaranteed Coverage
 - 95% Mobile Coverage / 95% Reliability
 - 85% Portable Coverage / 95% Reliability
- Addresses End of Life & End of support of Equipment
- Future Integration with LTE & Wi-Fi Technology
- Guaranteed System Support for 25 years

SIRN HISTORY

SOLUTION – 800 MHZ SYSTEM



**NORTH DAKOTA
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RADIO NETWORK**



- 140 Tower Sites
- Better In-Building Penetration
- Reduces Congestion
- Open Spectrum – No Channel Scarcity
- Lessens Interference
- Eliminates VHF Skip
- Lower Noise Floor
- Consistent Predictable Coverage

SIRN HISTORY

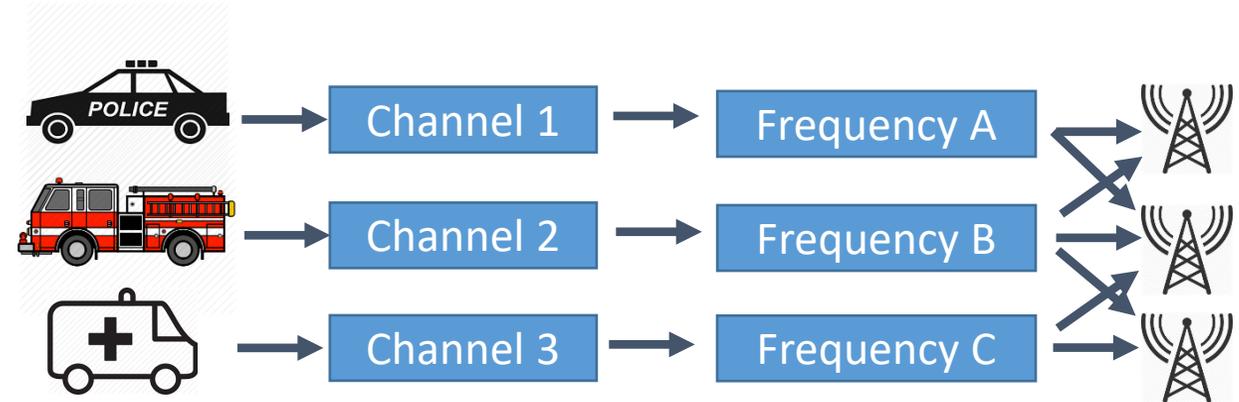
CONVENTIONAL VS TRUNKING



**NORTH DAKOTA
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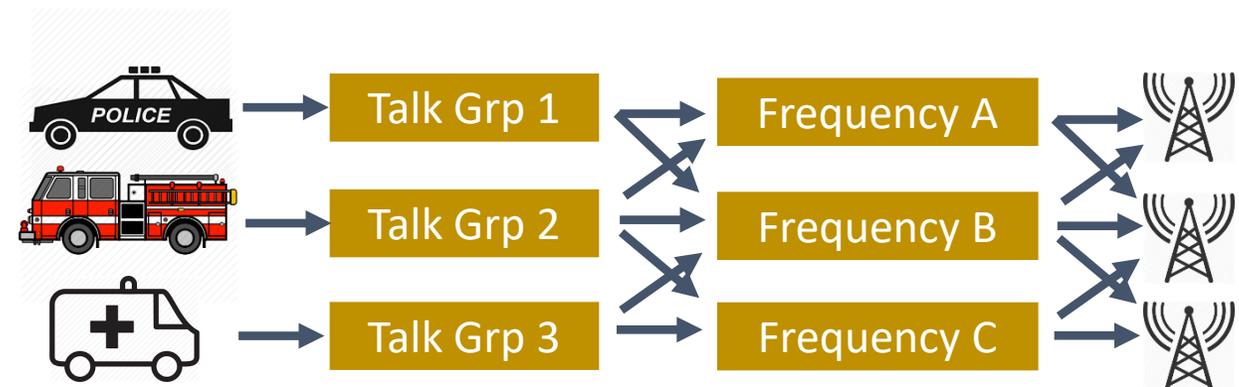
Conventional Radio System:

- User chooses a frequency
- Bound to a specific set of towers
- Assigned to a specific purpose



Trunked Radio System:

- User chooses a specific trunk group
- Assigned to a specific purpose
- Not bound to a frequency
- Not bound to a specific set of towers
 - System programmable
- Can be local, county, regional, state, federal



Citizen makes 9-1-1 Call

Dispatcher at PSAP sends message to responders

HOW SIRN WORKS



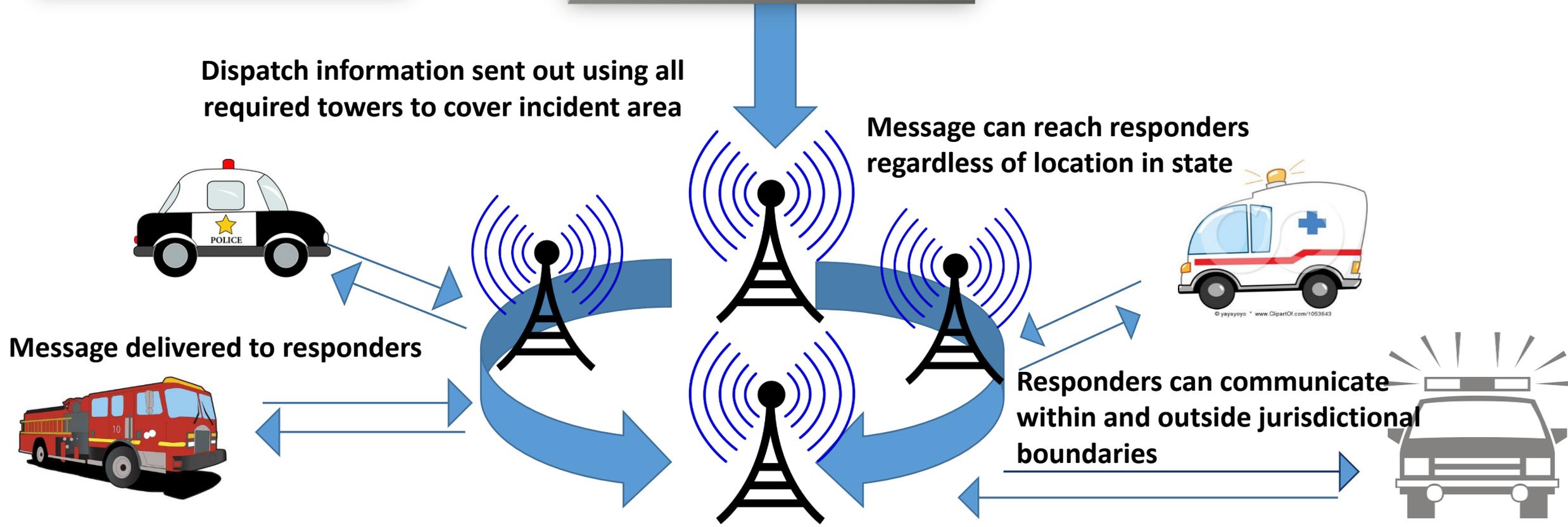
Dispatch information sent out using all required towers to cover incident area

Message can reach responders regardless of location in state



Message delivered to responders

Responders can communicate within and outside jurisdictional boundaries



SIRN FUNDING



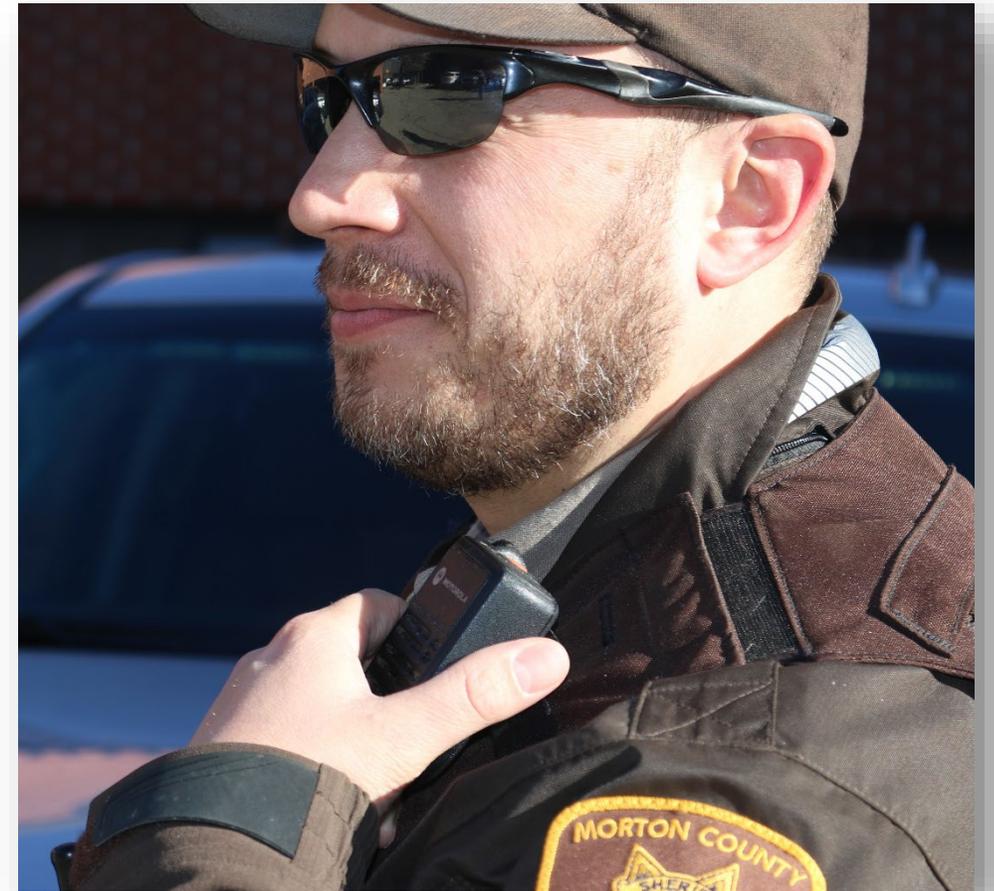
**NORTH DAKOTA
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RADIO NETWORK**

COMPONENT	SIRN FUND or STATE APPROP.	STATE AGENCY BUDGETS	LOCAL GOVERNMENT
Core Infrastructure & RF Network (Bismarck, Fargo, State Radio, & Towers)	\$90 MILLION		
PSAP Equipment (Includes Equipment & Training)			\$8.5 MILLION
Local & State Public Safety Devices	\$30 MILLION (\$1500 local cost share)	Individual Agency Responsibility	Local Responsibility Minus \$1500 cost share

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RADIO REIMBURSEMENT

- 2019 Legislature provided funding for radio's in HB 1435
- Anticipate most agencies will purchase radios in 2022-2023
- **\$1,500 cost share per radio**
 - City/County Law Enforcement, Fire, Emergency Medical Personnel
- Eligibility:
 - Agencies must complete [ITD radio survey](#)
 - Radios purchased between 4/2019-1/2024
 - Agencies purchase [approved radio](#) & submit receipts for reimbursement by tiers specified on the [SIRN Page](#)



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RADIO ENCRYPTION REQUIREMENT



**FBI Security Policy Requires
ALL Communication of
FBI Criminal Justice Information (CJI)
to be encrypted**

[ND BCI memo issued 1/3/20](#)

**Examples of CJI that could be
communicated over a radio include:**

**Warrants, Missing Persons, Wants & any
information obtained from NCIC.**

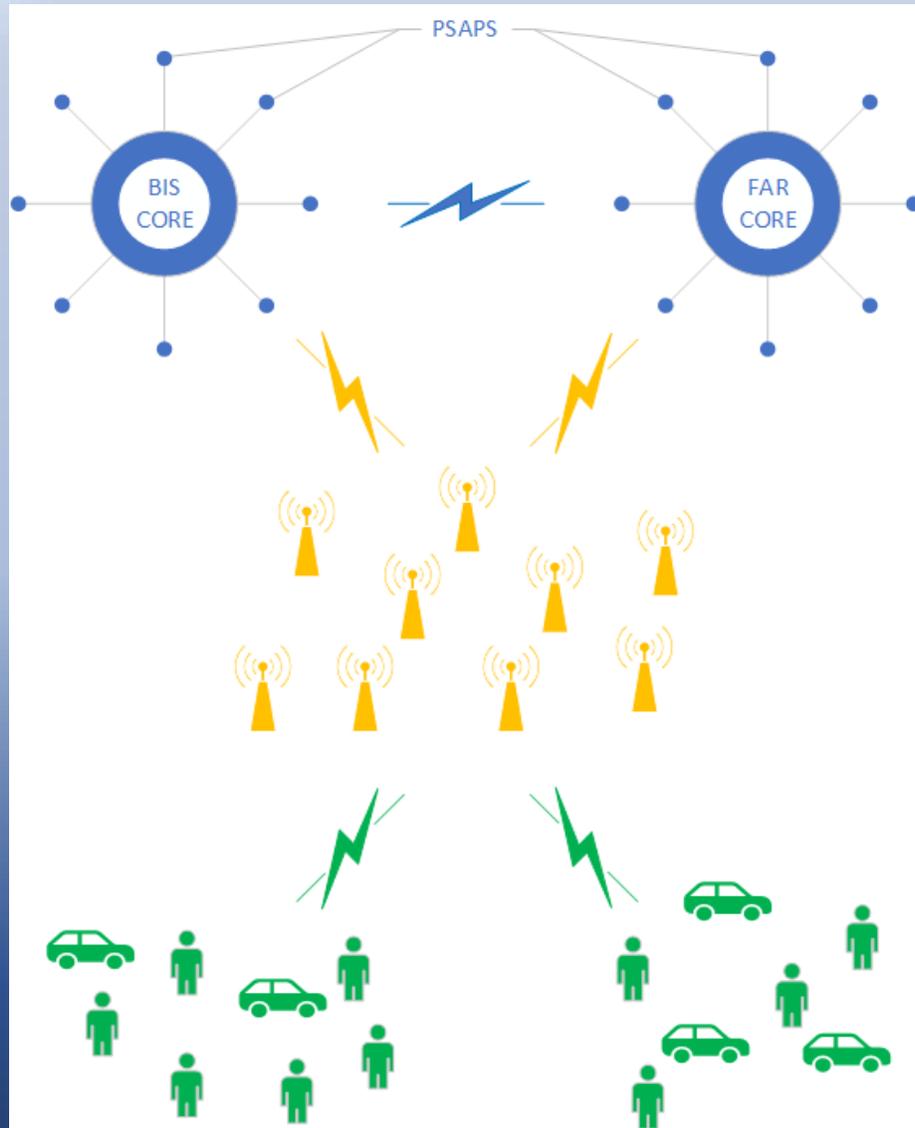
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RADIO ENCRYPTION REQUIREMENT



- Law Enforcement required to purchase encrypted radios
 - \$700 approximated increased cost for each mobile & handheld device

SIRN BUILD-OUT: BY THE NUMBERS



22 PSAPs

Public Safety Answering Points
Consoles & Core Network

140 Towers

Across North Dakota

20,000 Radios

for Emergency Responders
Law Enforcement, Fire, Ambulance,
State Agencies (HP, G&F)

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PROJECT STATUS

PHASE 1: CORE & PSAPs

- **Core and Backhaul Complete**
- **21 of 23 PSAPs cutover to new consoles**

(Grand Forks, Williston, Minot, Cavalier/ Towner, Stutsman, Bottineau/Renville, Barnes, Dickinson, Richland, CenCom, Mountrail, MHA – Three Affiliated Tribes, McKenzie, Lake Region, Walsh, McLean, Pembina, Traill/Steele, Rolette, Mercer/Oliver, & Pierce)

(Leaving only State Radio-2025, Red River Regional Dispatch Center - TBD)



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PROJECT STATUS

PHASE 2: Radio Frequency Buildout

Group 1 - Planned End Date – Pending Completion

- **40 DOT Towers**

Group 2 - COMPLETE

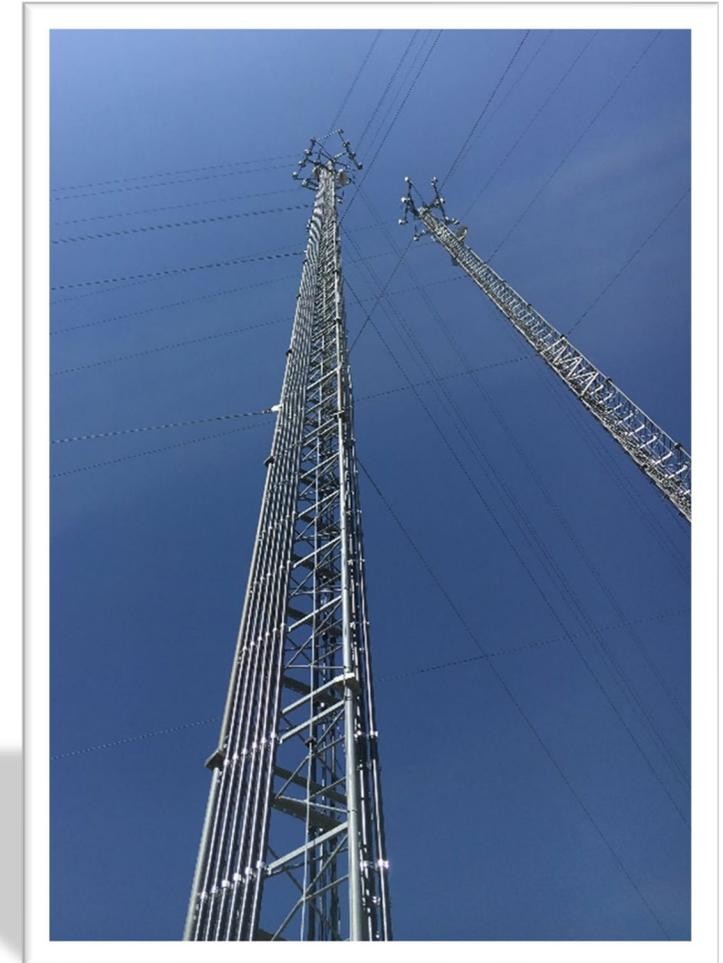
- **5 DOT Towers + 16 Leased Towers**
- **Simulcast Towers**
 - Grand Forks, Minot, Williston,
Bismarck/Mandan

Group 3 & 4 - Date TBD

- **78 Tower sites TBD**



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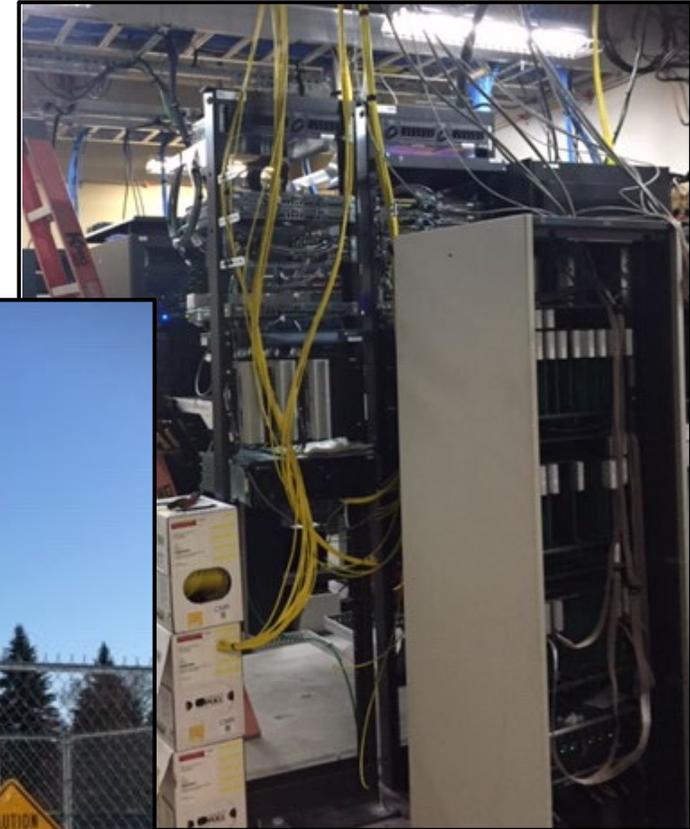
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PROJECT STATUS



NORTH DAKOTA STATEWIDE INTEROPERABLE RADIO NETWORK

- **2019** May - Project Kick Off
- **2019-2022** – 21 of 23 PSAPs cutover, approximately 65 sites complete (not all active)
- **2023** – Statewide Mobile Complete
- **2025** - Estimated Statewide Portable Complete

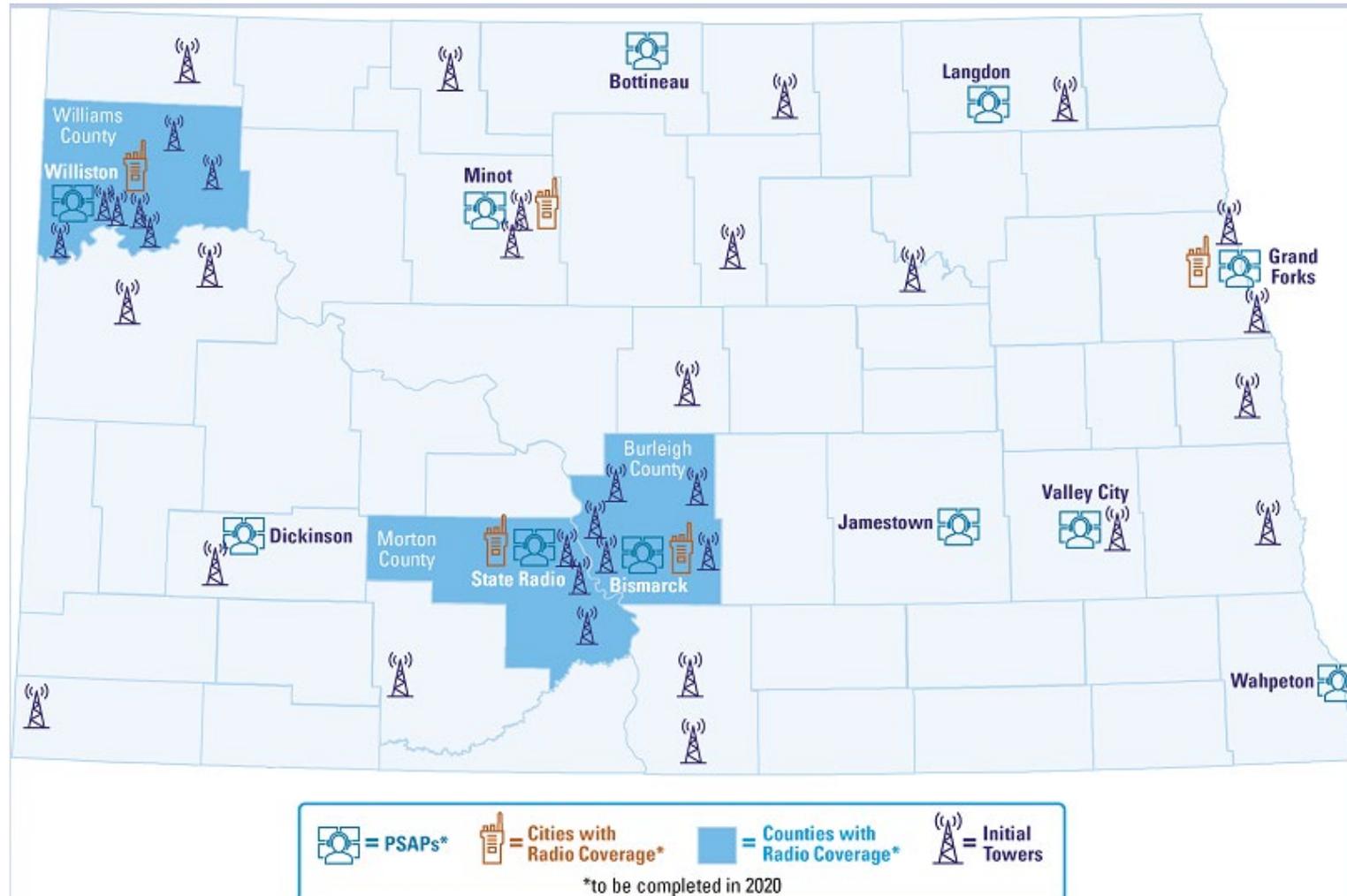


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EARLY ADOPTERS
TO BE COMPLETE IN 2020



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PROJECT TIMELINE



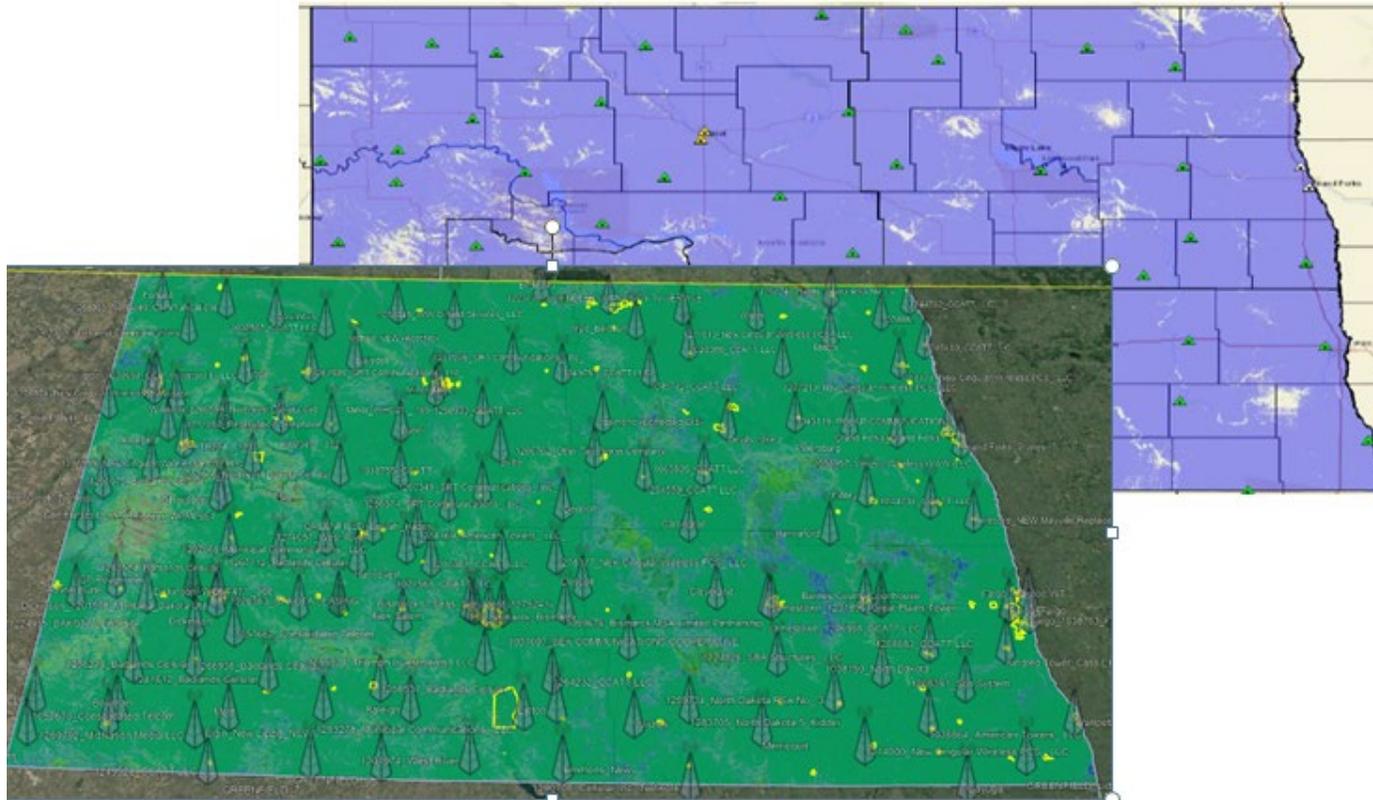
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1/19/2024
Contract Extension

ID	Task Name	2020				2021				2022				2023				2024				2025	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2												
1	Group 1 PSAPs - COMPLETE																	COMPLETE					
2	Group 1 Towers (Mobile Coverage)																	67% COMPLETE					
3	Group 2 Towers (Early Adopters)																	COMPLETE					
4	Group 2 PSAPs - COMPLETE																	COMPLETE					
5	Lease Tower Sites (estimate) Portable Coverage																						
6	Group 3 PSAPs																	COMPLETE					
7	Group 4 PSAPs																	COMPLETE					

SIRN HISTORY

SOLUTION



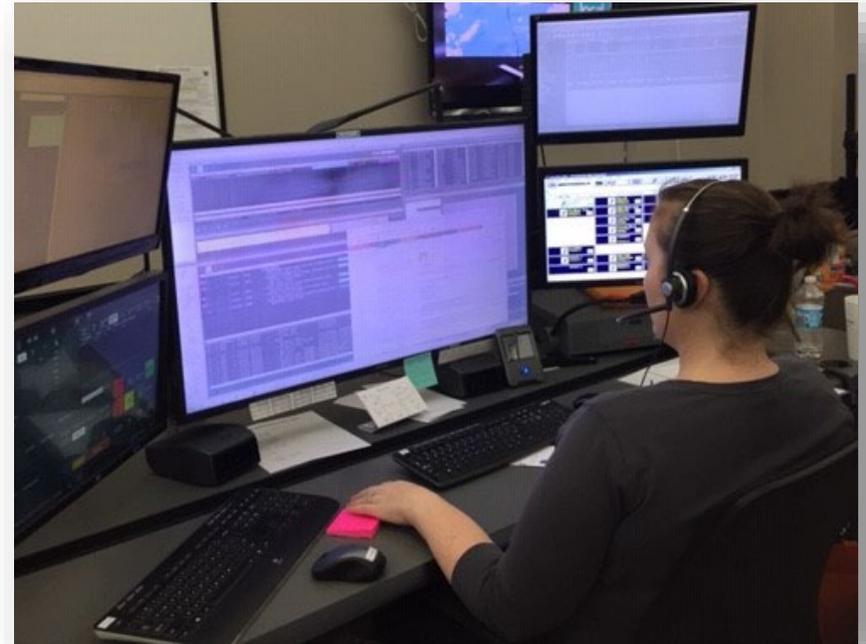
Contract Requires Coverage:

- 95% Mobile Coverage with 95% reliability
- 85% Portable Coverage with 95% reliability
- Major Highways
- 127 Largest Cities
- All County Seats
- Communities with Law Enforcement, Fire & EMS

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ADVANTAGES

- Maintain contact with dispatch center while out of jurisdiction
- PSAP Redundancy across the state
 - Capability to dispatch & maintain communicate if dispatch center is out of service
- Interoperability with surrounding states & internationally
- Guaranteed voice audio quality of 3.4 means 95% of communications will be very clear



- More efficient management of frequencies means greater availability of channels

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ADVANTAGES



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- The ability to communicate with **ANY PUBLIC SAFETY PERSONNEL, AS NEEDED, ANYWHERE** in the state
- 95% coverage for mobiles and 85% coverage for portables for each region with 95% Reliability within the state
- SIRN readily incorporates the future of technology
- Interoperability between existing VHF & 800 MHZ SIRN system during transition
 - VHF system will reach end-of-life
 - Date TBD

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ADVANTAGES

- Far superior coverage throughout ND than existing systems
 - Guaranteed coverage in all cities with populations 500+ & county seats
- Capable of over the air programming and re-keying
- Improved in-building coverage in dense areas



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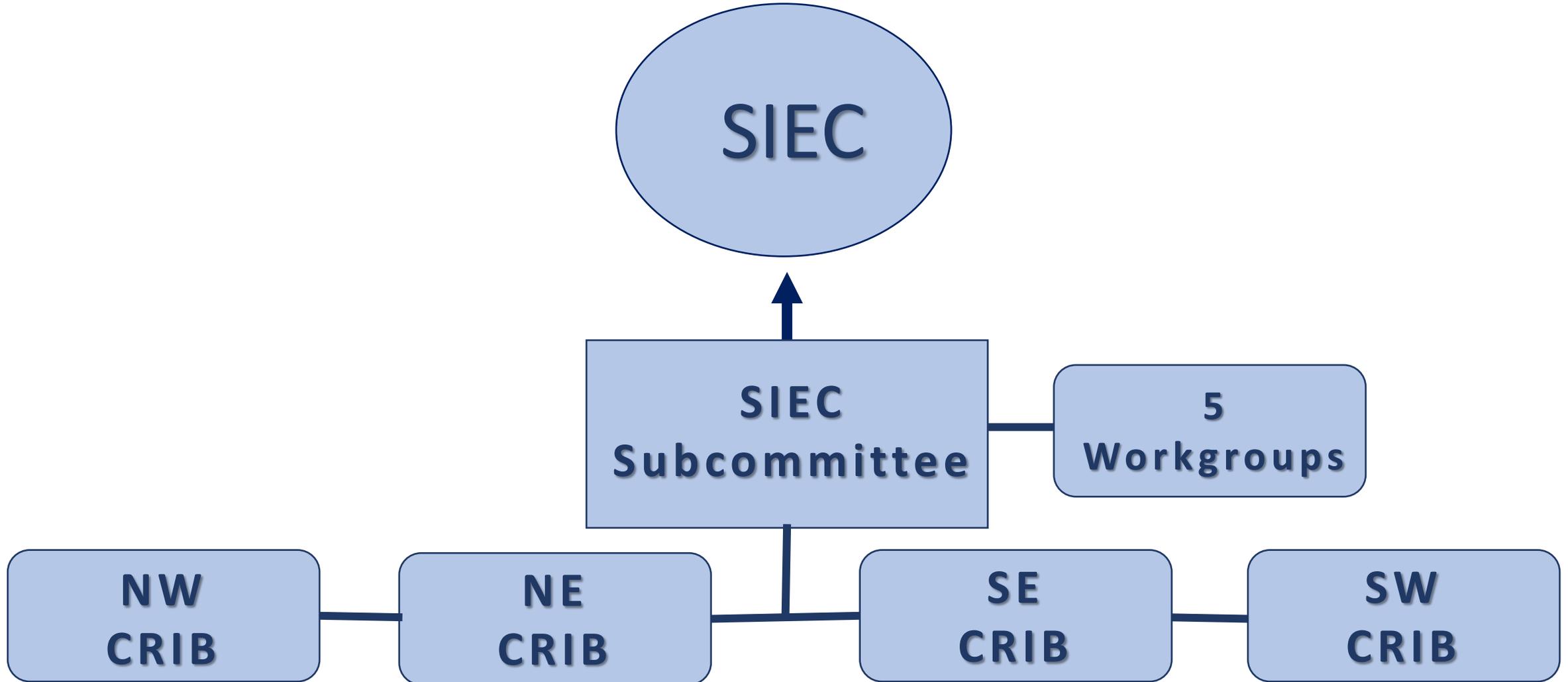


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GOVERNANCE



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GOVERNANCE



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➤ 7 Workgroups made up of 75+ volunteers - “Users” of SIRN

- Provide subject matter expertise and direction to SIEC subcommittee
- Develop standards recommendations for SIEC subcommittee



Workgroups include: Simulcast/Fire, Fleet Mapping-Talk Groups, Radio, Encryption, Public Info/ Education/Training, PSAP-Users, EMS/Hospitals

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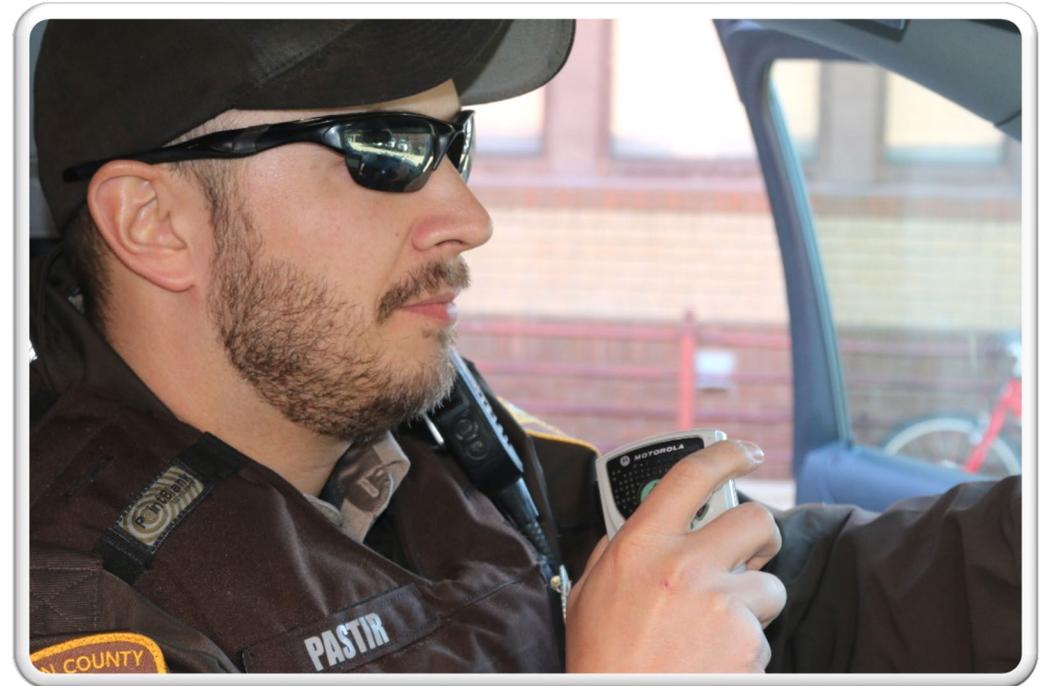
GOVERNANCE



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SIEC Governance structure
allows for INVOLVEMENT at
all levels

User involvement is critical to
successful implementation of
SIRN



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ADVANTAGES



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No single ND entity could construct, operate and maintain a statewide communications system with the **coverage, capacity, capabilities and redundancy** of SIRN



Statewide Alliances

- Enterprise Architecture
- GIS Hub
- Health Information Technology/Network
- State IT Advisory Committee (SITAC)
- Statewide Interoperability Executive Committee (SIEC)
 - Contact SIRN
 - SIRN 20/20**
 - Statewide Longitudinal Data System

[Home](#) / [Statewide Interoperability Executive Committee \(SIEC\)](#) / [SIRN 20/20](#)

SIRN 20/20

Recent news

- [SIRN Buildout & Transition](#) (January 2022)
- [SIRN 101 Presentation](#) (October 2020)
- [Project Status as of January 2022](#)
- [Project Status as of December 2021](#)
- [Project Status as of November 2021](#)
- [SIRN - Infographic](#)
- [2021 PSAP Replacement Schedules: Pending Replan](#)
- [2021 Tower / RF schedules: Pending Replan](#)
- [Telestate Landscape Survey Summary Report](#) and [SIEC Briefing](#)

2021

- 75% of Dispatch Centers Upgraded to new Consoles
- 66% of Mobile Buildout Completed
- 3 Dispatch Centers Transitioned to 800Mhz (Williston, Grand Forks, Minot)



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