

# Nebraska Regional Interoperability Network

What is NRIN? What are the Benefits? What are the Next Steps?



# What is NRIN?

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- **Nebraska Regional Interoperability Network**
- IP Microwave network that connects 911 centers across the state through towers like grain elevators, water towers, government owned or existing communications towers.

## Why?

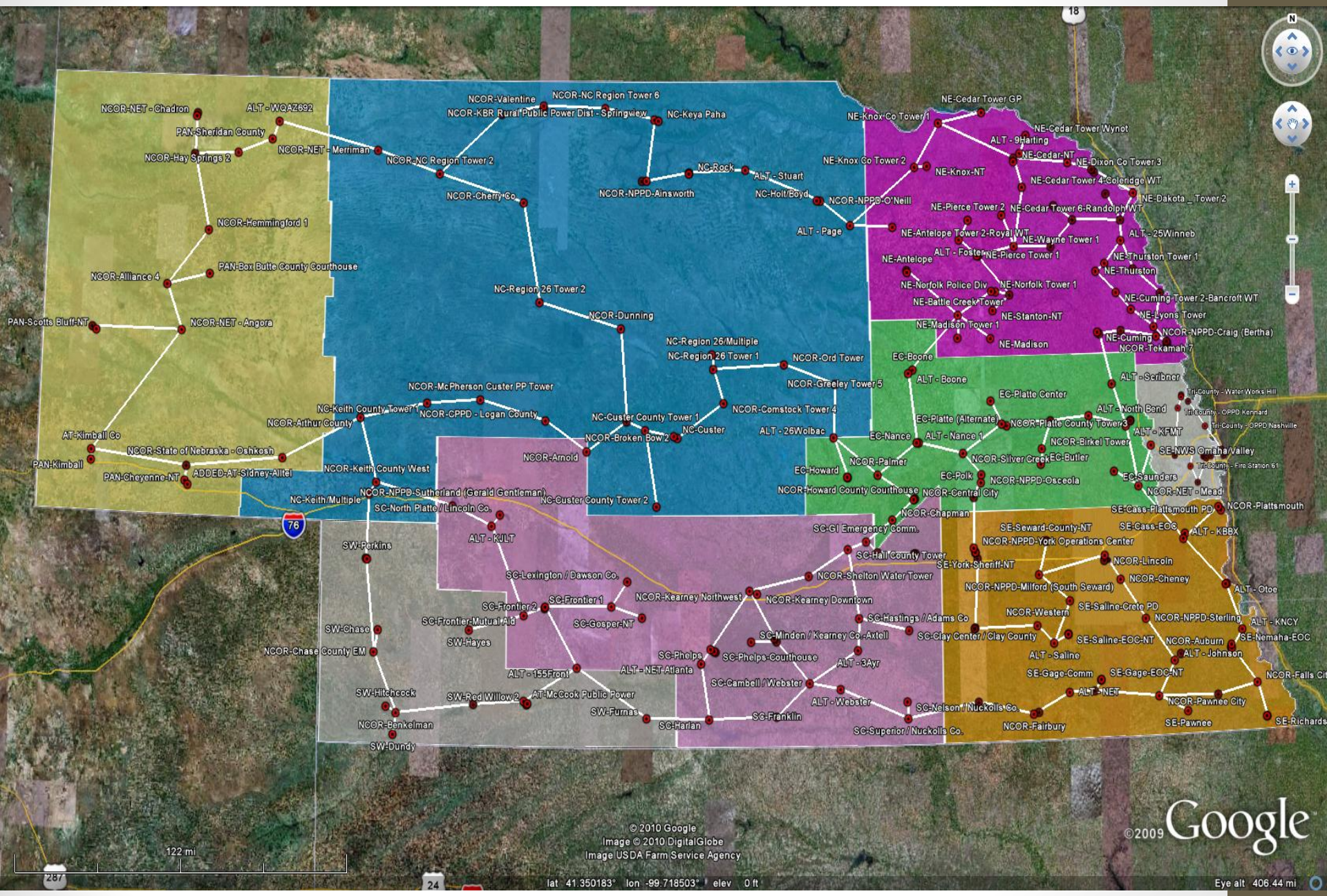
- NRIN allows public safety centers to share large amounts of data and communications with each other over long distances in a way that is the most secure and reliable.

# What has been done so far?

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- 65% completed already
- All dollars are coming from Department of Homeland Security
- Complete by August 2017
- The Nebraska Public Safety Communications Committee oversees governance and planning for this project.
- NEMA (Nebraska Emergency Management Agency) manages the build-out of NRIN with multiple vendors.





NCOAR-NET - Chadron  
ALT - WQAZ692

NCOAR-Valentine  
NCOAR-KBR Rural Public Power Dist - Springview  
NC-Keya Paha

NE-Cedar Tower GP  
NE-Cedar Tower Wynot  
ALT - 9 Harting

PAN-Sheridan County  
NCOAR-Hay Springs 2  
NCOAR-NET - Merriman

NCOAR-NC Region Tower 2  
NCOAR-Cherry Co.

NE-Knox Co Tower 1  
NE-Knox Co Tower 2  
ALT - Stuart

NCOAR-Hemmingford 1  
PAN-Box Butte County Courthouse

NCOAR-NPPD-Ainsworth  
NC-Rock  
ALT - Page

NE-Cedar Tower 4 Coleridge WT  
NE-Dixon Co Tower 3  
NE-Cedar Tower 6-Randolph WT

NCOAR-Alliance 4  
PAN-Scotts Bluff-NT  
NCOAR-NET - Angora

NC-Region 26 Tower 2  
NCOAR-Dunning

NE-Knox-NT  
NE-Pierce Tower 2  
NE-Cedar Tower 8-Randolph WT

NCOAR-McPherson Custer PP Tower  
NC-Keith County Tower 1  
NCOAR-CPPD - Logan County

NC-Region 26/Multiple  
NC-Region 26 Tower 1  
NCOAR-Ord Tower

NE-Antelope Tower 2-Royal WT  
NE-Wayne Tower 1  
NE-Thurston Tower 1

AT-Kimball Co  
NCOAR-State of Nebraska - Oshkosh  
PAN-Kimball  
PAN-Cheyenne-NT  
ADDED-AT-Sidney-AltTel

NCOAR-Arthur County  
NCOAR-Keith County West  
NCOAR-NPPD-Sutherland (Gerald Gentleman)

NCOAR-Custer County Tower 1  
NC-Custer  
ALT - 26 Wolbac

NE-Norfolk Police Div  
NE-Norfolk Tower 1  
NE-Battle Creek Tower

NCOAR-Keith Multiple  
SC-North Platte/Lincoln Co.

NCOAR-Arnold  
NCOAR-Custer County Tower 2

NCOAR-Comstock Tower 4  
NCOAR-Greeley Tower 5  
ALT - Boone

NE-Madison Tower 1  
NE-Stanton-NT  
NE-Madison

SW-Perkins  
ALT - KULT

SC-Phelps  
SC-Phelps-Courthouse  
ALT - NET Atlanta

EC-Boone  
ALT - Nance 1  
EC-Nance

NE-Cuming Tower 2-Bancroft WT  
NE-Thurston  
NE-Lyons Tower

SW-Chase  
NCOAR-Chase County EM

SC-Frontier 2  
SC-Frontier 1  
SC-Gosper-NT

EC-Howard  
NCOAR-Palmer  
NCOAR-Howard County Courthouse

NE-Cuming Tower 1  
NE-Cuming  
NCOAR-NPPD-Craig (Bertha)

SW-Hitchcock  
SW-Red Willow 2  
AT-McCook Public Power  
SW-Furnas

SC-Lexington / Dawson Co.  
NCOAR-Kearney Northwest  
NCOAR-Kearney Downtown

SC-Phelps  
SC-Phelps-Courthouse  
ALT - 3Ayr

NE-Cuming Tower 1  
NE-Cuming  
NCOAR-NPPD-Osceola

NCOAR-Bankelman  
SW-Durdy

SC-Minden / Kearney Co-Axtell  
SC-Hastings / Adams Co  
SC-Clay Center / Clay County

SC-Phelps  
SC-Phelps-Courthouse  
ALT - Webster

NE-Cuming Tower 1  
NE-Cuming  
NCOAR-NPPD-Craig (Bertha)

122 mi

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Image USDA Farm Service Agency

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lat 41.350183° lon -99.718503° elev 0 ft

Eye alt 406.44 mi

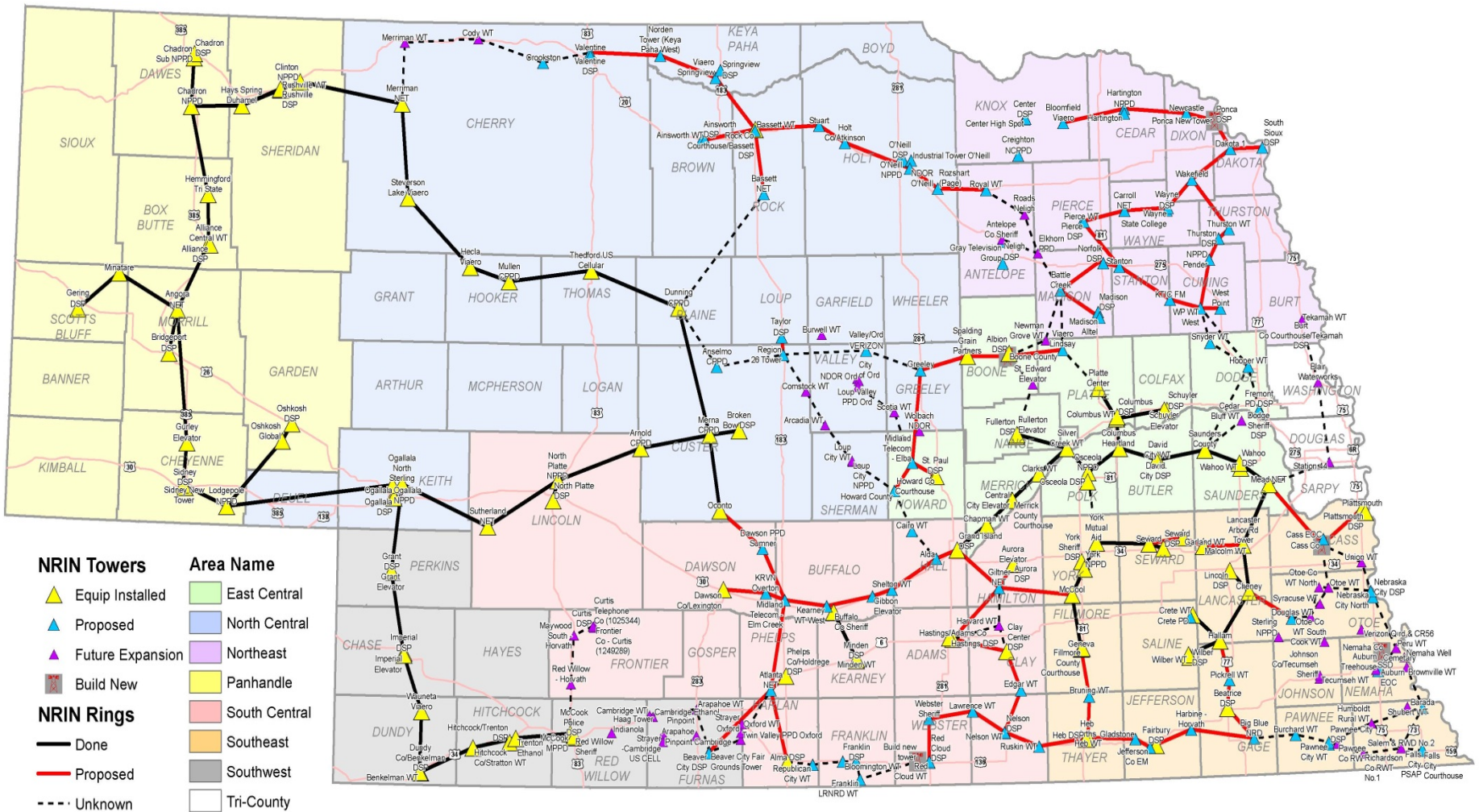


# What Does It Take?

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- Initial agreement with the site owner to access the site
- An EHP with the Federal Government – use of grant dollars
- Mapping on the structure – what’s already up there
- Is there an existing shelter ?
- Structural analysis – can it hold more dishes and coax
  - Pass – good to go
  - No Pass – find another suitable tower or remediate
- FCC licensing
- MOU with the site owner
- Installation of equipment
- County will receive an “As-Built” of the site with all parts and pieces listed as well as serial numbers for each.

# NRIN



### NRIN Towers

- ▲ Equip Installed
- ▲ Proposed
- ▲ Future Expansion
- Build New

### NRIN Rings

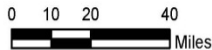
- Done
- Proposed
- - - Unknown

### Area Name

- East Central
- North Central
- Northeast
- Panhandle
- South Central
- Southeast
- Southwest
- Tri-County



Source: NEMA  
Date: March 16, 2015



No.1  
PSAP Courthouse

# How will it Improve Public Safety?

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- Improve public safety by increasing the amount and type of information that can be shared as well as the number of participating agencies such as:
  - 911 dispatch
  - Sheriff's office
  - Fire stations
  - Public power
  - Emergency Operations Center
  - National Weather Service
  - Crime information centers
  - Emergency Alert System (EAS)
  - Roads and motor vehicle agencies
  - Ham radio networks
  - Civil air patrol
  - Courthouses
  - Other public and private agencies

# For Example:

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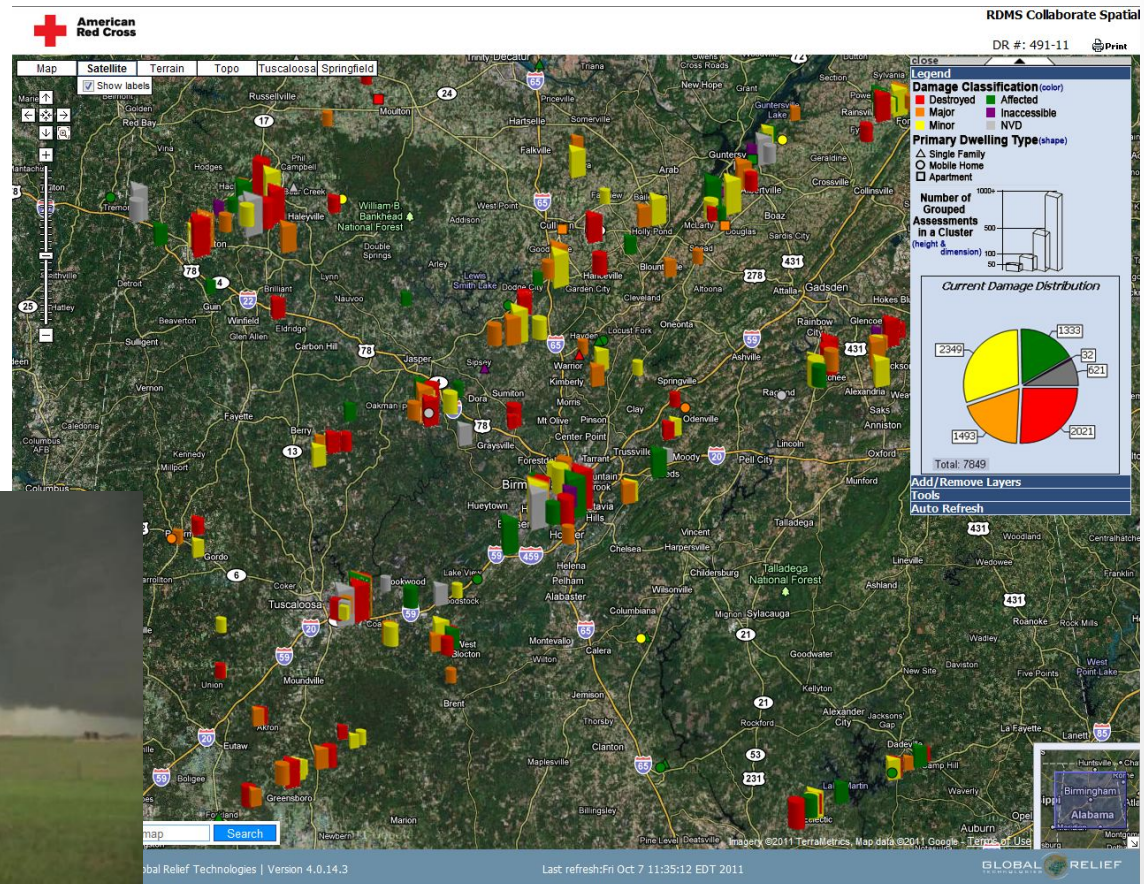
- With the help of current mobile data technology and or FirstNet, pictures and data from a chemical spill could be transmitted from a first responder at the site to state or national experts to help identify the level of threat and determine the appropriate response.





# For Example:

- An emergency operations center could receive real-time video, voice, and/or data from responders at the scene of a regional devastating natural disaster such as a tornado.



# Potential future uses:

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- 911 Equipment sharing – NRIN could provide the primary or backup communications link to allow for cost effective 911 equipment sharing across multiple counties or regions. The East Central Region is installing equipment to do this now.
- Conducting video arraignments – Multiple Courthouses and Detention centers use this technology and pay for dedicated data connections that could be eliminated.
- Expensive communications lines that connect radio repeaters and radio base stations could be moved to NRIN and costly monthly fees could be eliminated.
- Interoperable radio base stations that are currently being installed across regions could connect back to multiple dispatch centers. IE Vcall, Ucall, Vtac, Utac,

# Potential future uses:

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- Security cameras at remote locations can utilize NRIN to connect back to dispatch centers or other security centers.
- City and County Government can utilize NRIN to share data or provide off site backups as part of a COOP plan.
- Law Enforcement Agencies can connect their Records Management Systems together to share information.



# NRIN Work Team

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John	Bomar	Madison Volunteer Fire and Rescue/ Assistant Chief
Ike	Brown	McCook Police Chief
Mark	Conrey	Douglas County 911 Director
Pat	Gerdes	Southwest PET Region
Tim	Hofbauer	Platte Valley Emergency Management
Sue	Krogman	NEMA
Neil	Miller	Sheriff, Buffalo County
Pete	Peterson	Keith Co Emergency Management & Communications Director
Ray	Richards	Scottsbluff County Communications Director
Tracy	Rocole	OCIO
Jon	Rosenlund	GI/Hall County Emergency
Ray	Ryan	Lancaster County Radio Maintenance Shop
Matt	Schnell	NPPD
Jayne	Scofield	OCIO
Patrick	Seim	OCIO
Jim	Sheets	OCIO
Todd	Thalken	Columbus Police
Chip	Volcek	South Central

# What is Needed to Support NRIN?

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- **Governance**
- **Management and Monitoring**
- **Maintenance/Equipment Repair**
- **Sustainable Financing**

# Governance

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- Quality of service standards
- Priority of service guidance
- Data replication/backup
- Minimum security standards
- Minimum security & equipment standards
- Minimum maintenance standards
- Minimum grounding standards
- Minimum environmental monitoring
- Allocation of bandwidths
- Monitoring and testing policies/procedures
- Engaging & retaining expertise to carry out management function
- Contracting for administrative functions
- Policies & procedures for items & practices not allowed
- Service level agreements
- Service/performance reviews
- Financial sustainability



# Governance

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- Who should sit on board?
  - Elected officials
  - Managers/Users
  - Technical experts
- How should it be structured?
  - Interlocal Agreement – Counties, Cities, State Agencies
  - Executive Order
  - Legislation
  - Private/ non-profit

# Monitoring & Management



- Implement decisions of NRIN governance
- Problem management
- Change management
- Proactive monitoring
- Disaster recovery
- Coordinate local networks
- Preventive maintenance
- Creating Routes
- Recommendations concerning traffic engineering
- Configure and implement circuits
- Monitor network usage and failure
- Take corrective action due to failures
- Testing to determine problems
- Problem resolution
- Manage connections to customers
- Update software and firmware as needed including version control
- Implement security policies
- Documentation of the system
- Manage implementation (do it directly or direct it to be done)
- Oversight of maintenance
- Recommendations on monitoring software or devices
- Recommend standards, practices, policies to governance and provide technical advice

# Maintenance

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## What is it?

- Maintenance of towers
- Maintain spare parts
- Equipment replacement
- Environmental alarms
- Conform to NRIN Governance Decisions

## Who will do it?

- Statewide contract
- Contracts with regional entities
- People with good hearts
- Combination





# Sustainable Financing



The current estimated annual costs:

Item	Cost
Tower Leases	\$171,750
Insurance (picked up by counties)	\$0
Management/Monitoring	\$279,484
Training*	\$41,320
Maintenance/Equipment Repair	?
Fiscal Agent/Administration	?
<b>TOTAL</b>	<b>?</b>

\* First Year Only

# Sustainable Financing

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- Dishes:
  - 6' - \$2500
  - 4' - \$1500
  - 3' - \$1200
  - 2.6' - \$1000
  - 1' - \$400
  - The (ODU) (RFU) is : \$7500 © & \$8500 (hp)
- Inside a cabinet or shelter:
  - Ceragon Radio – (IDU) \$2000
  - Rectifier - \$1200
  - UPS System (including Network Card and Battery Pack) - \$1600
  - Routers:
    - MX-5 - \$12,000 – 3 or more dishes
    - SRX550 – \$7200 – pass through sites
    - SRX200 series - \$1000 – end points

# Sustainable Financing

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## Potential Funding Options

- Per County (flat rate per county, by population, etc.)
- Per PSAP (city, county, state) – by population, call volume, flat fee, etc.
- Homeland Security Funds
- User fees (e.g., modeled after the State Radio System)
- User offset (e.g., trading tower rent for NRIN usage)
- Other cost offsets (e.g., Teletype)
- State appropriation
- Partnering with Next Generation 911, FirstNet, other initiatives – cost sharing



# Proposed Interlocal Agreement

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- Create NRIN & Board
- County/Municipality Members
- Governing Board – 2 per Region
  - Policies
  - Contracting
  - Financing Plan



# Proposed Interlocal Agreement

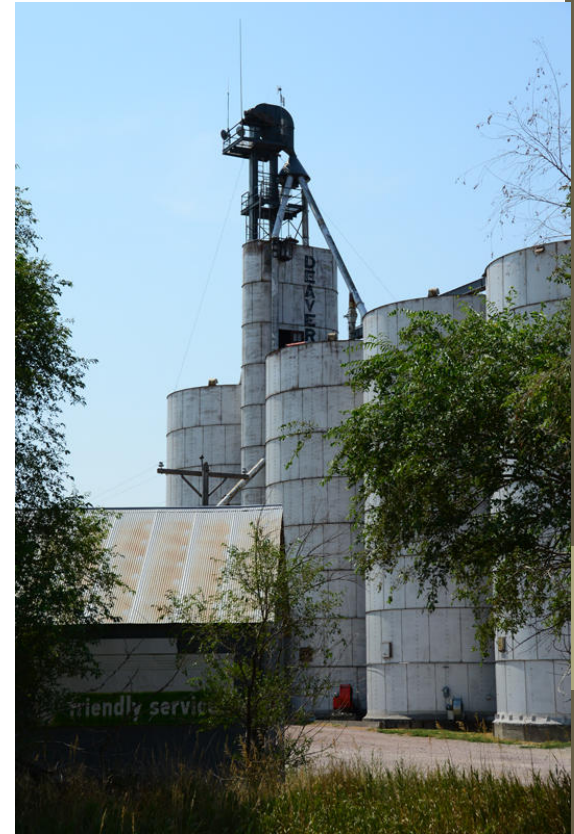
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- Feedback and Revise Interlocal Agreement – 6/15
- Membership/Signatories – 8/15
- Nominate/Select Board – 10/15
- Bylaws/Committees/Contracts – 12/15
- Governance Policies – 3/16
- Finance Plan – 6/16

# Discussion

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1. Questions about NRIN – benefits & build-out
2. Reaction to proposed Interlocal Agreement
3. Discussion about how NRIN interfaces with other initiatives
  - FirstNet
  - Next Generation 911



# Questions / Contacts

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## NRIN Committee Members:

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