



## North Dakota – FirstNet Consultation FSP Summary

North Dakota Information Technology Department  
Network Services Division



## Agenda

- Usage Cases
  - Capacity
  - Lack of Coverage
  - HAZMAT
  - Border Coverage
- Project Summary
- Key Findings to Date

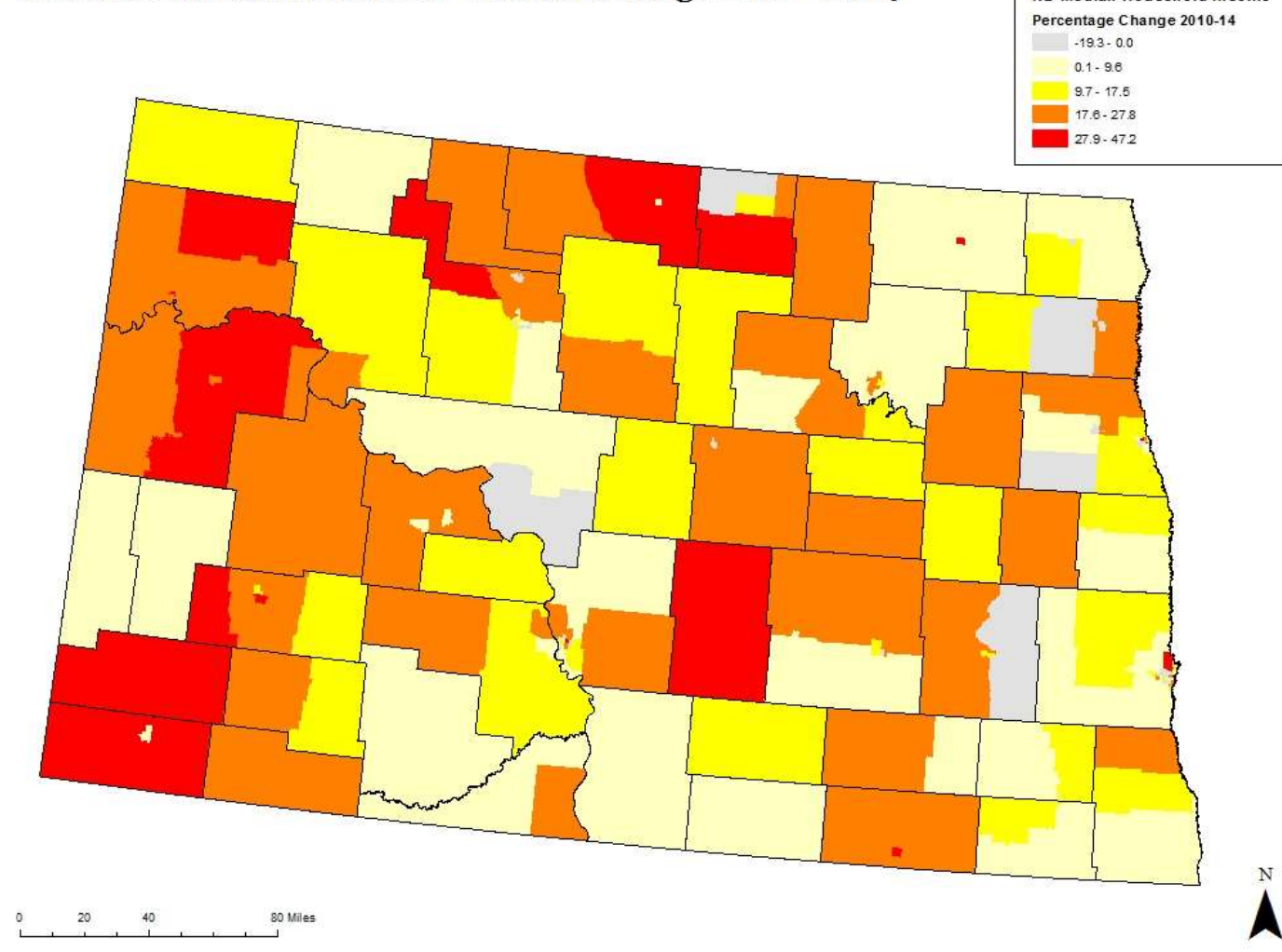


# Capacity

## Median Household Income

- Increased economic activity has resulted in rapidly increase in Median Household Income
- Most all of the counties across the state have been affected

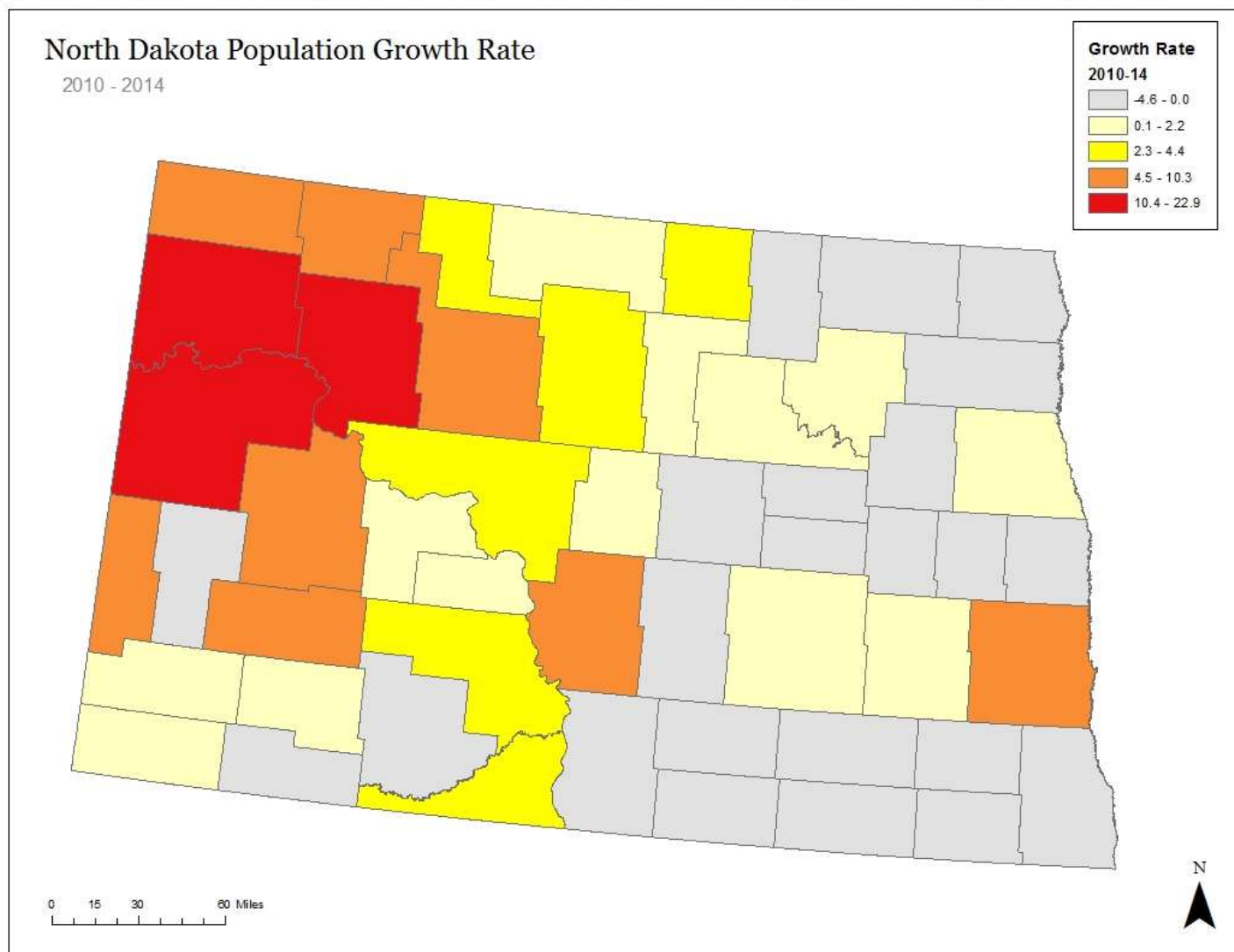
Median Household Income - Rate of Change 2010 - 2014





## Population Growth Rate

- Population is pronounced in the western counties
- Population and Income growth are a leading indicator of network performance





## NetMotion Data - Northwest Region

- Summary of the NetMotion Data

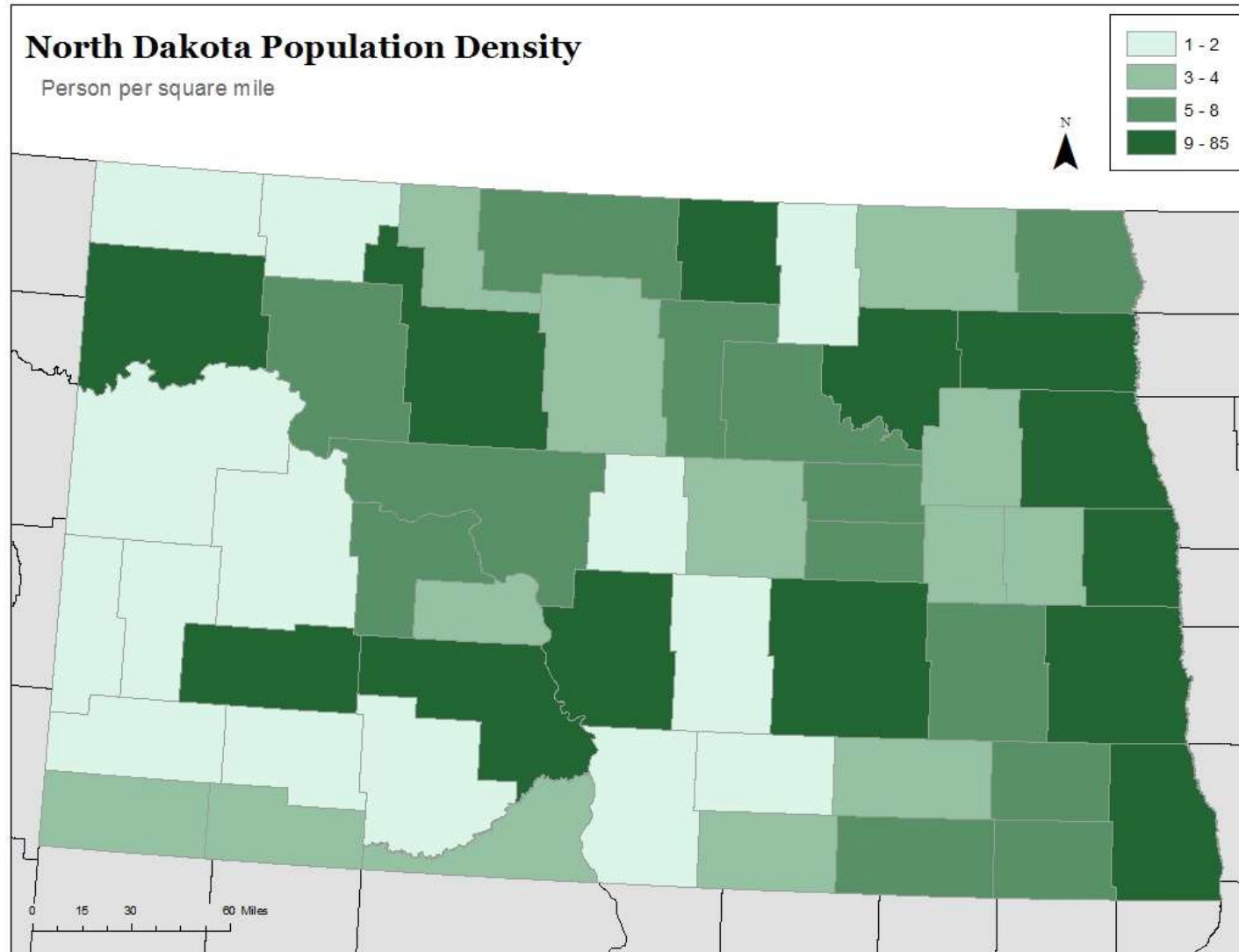
MAP HERE



# Lack of Coverage



## Population Density

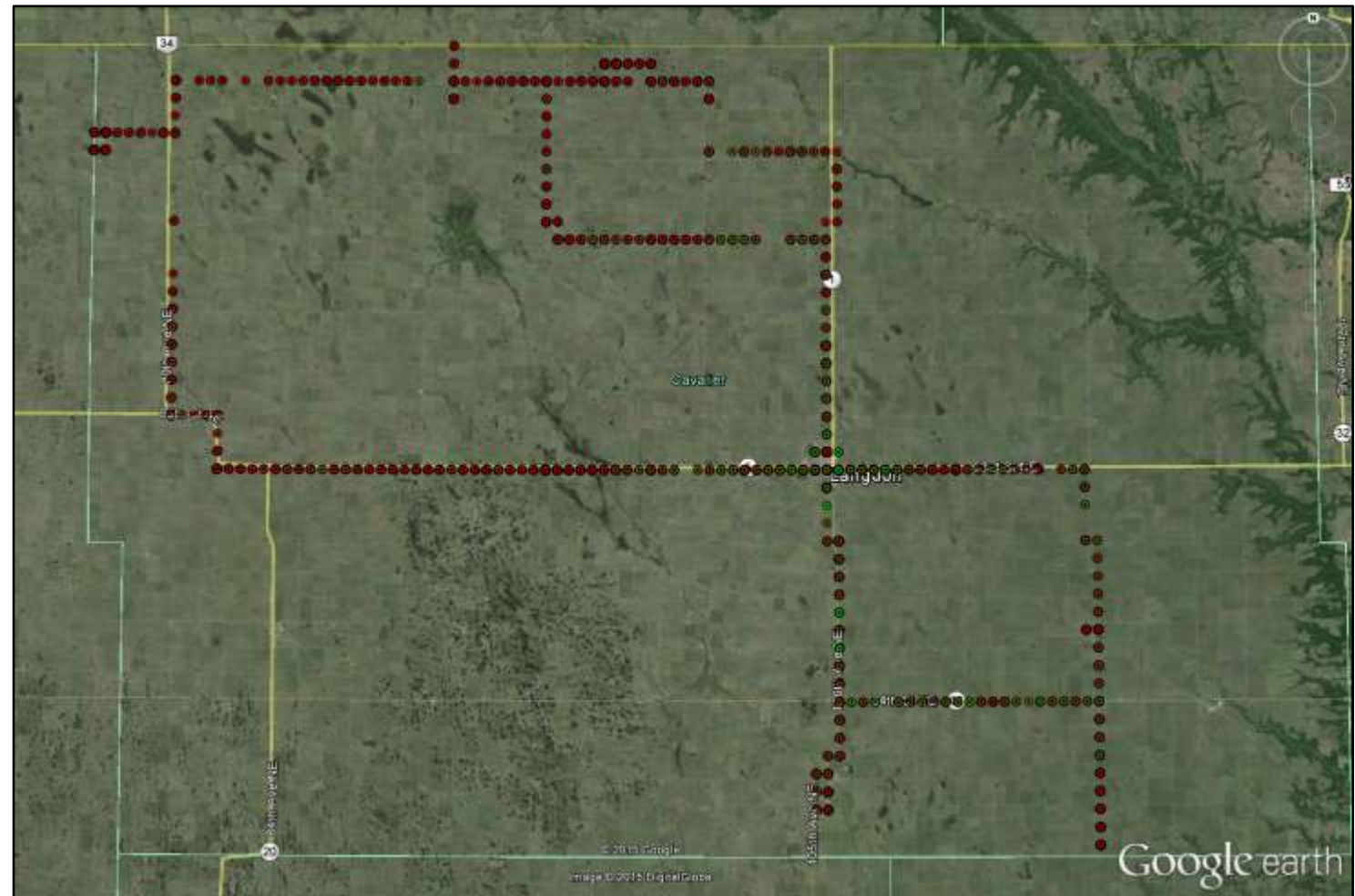






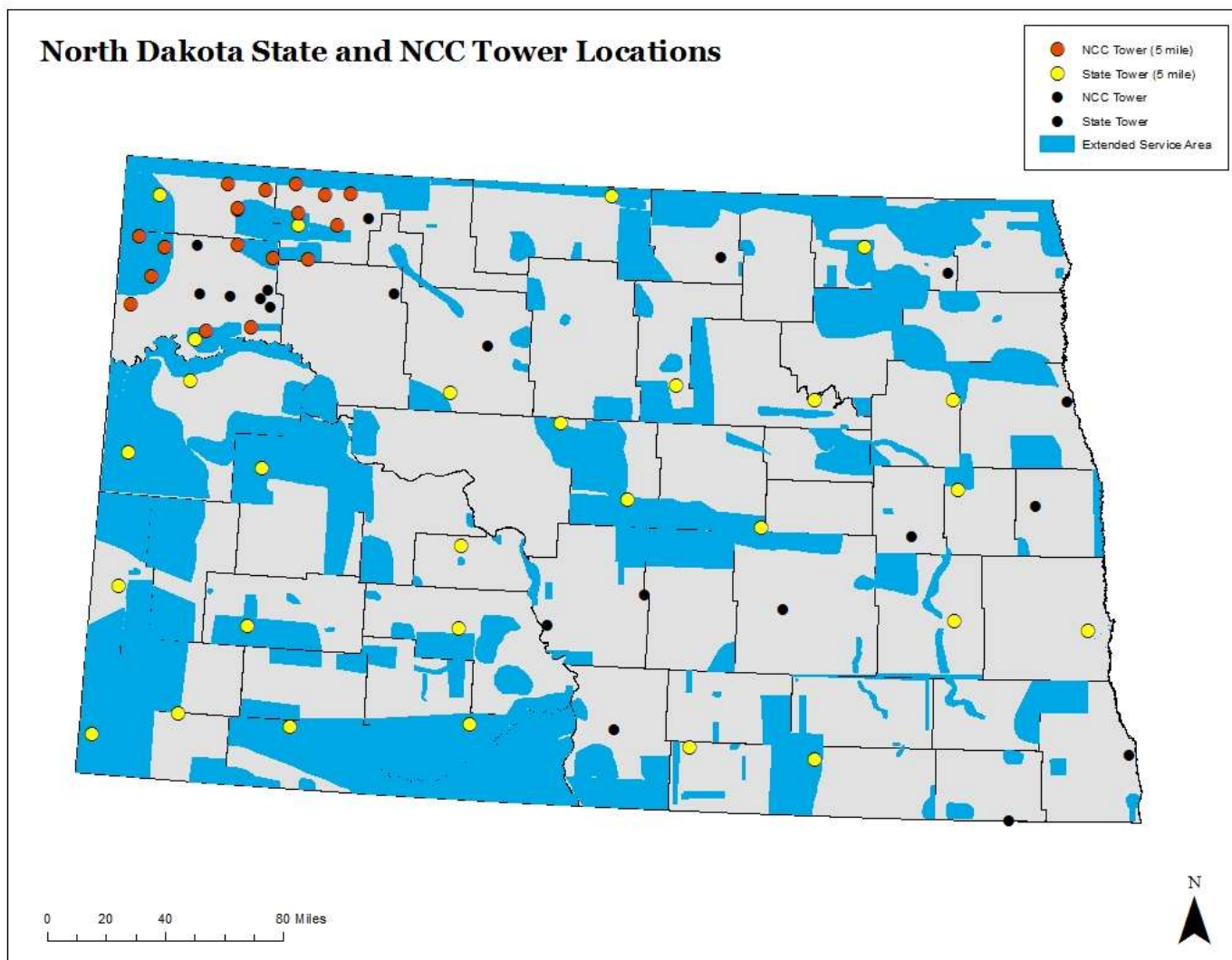
## Net Motion Locality Data

- Performance Issues Identified; example (Cavalier County):
  - Dropped Calls
    - "x" number
  - Poor Service
    - "x%" of area
  - Insufficient Throughput
    - Average: "x" bps



## Potential Assets

- Coverage Reviews identified areas where commercial service was “insufficient”
- State and Partner Assets exist in the affected area

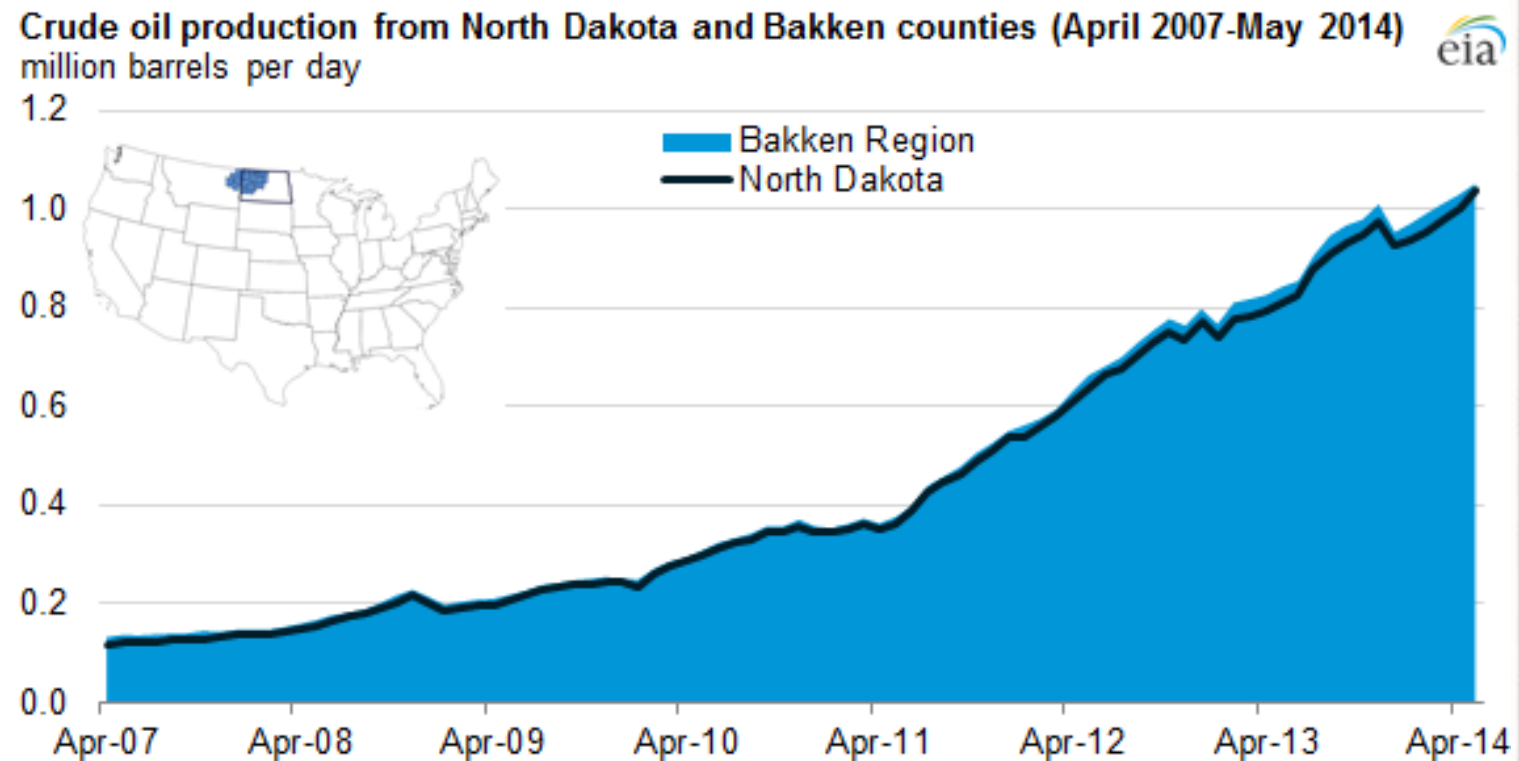




# HAZMAT

## Hazardous Material Transport

- A more than 10 fold increase in North Dakota oil production (Bakken Region)
- ~60% of Bakken Oil transported by RAIL
- Nearly every rail line passes through major population centers.





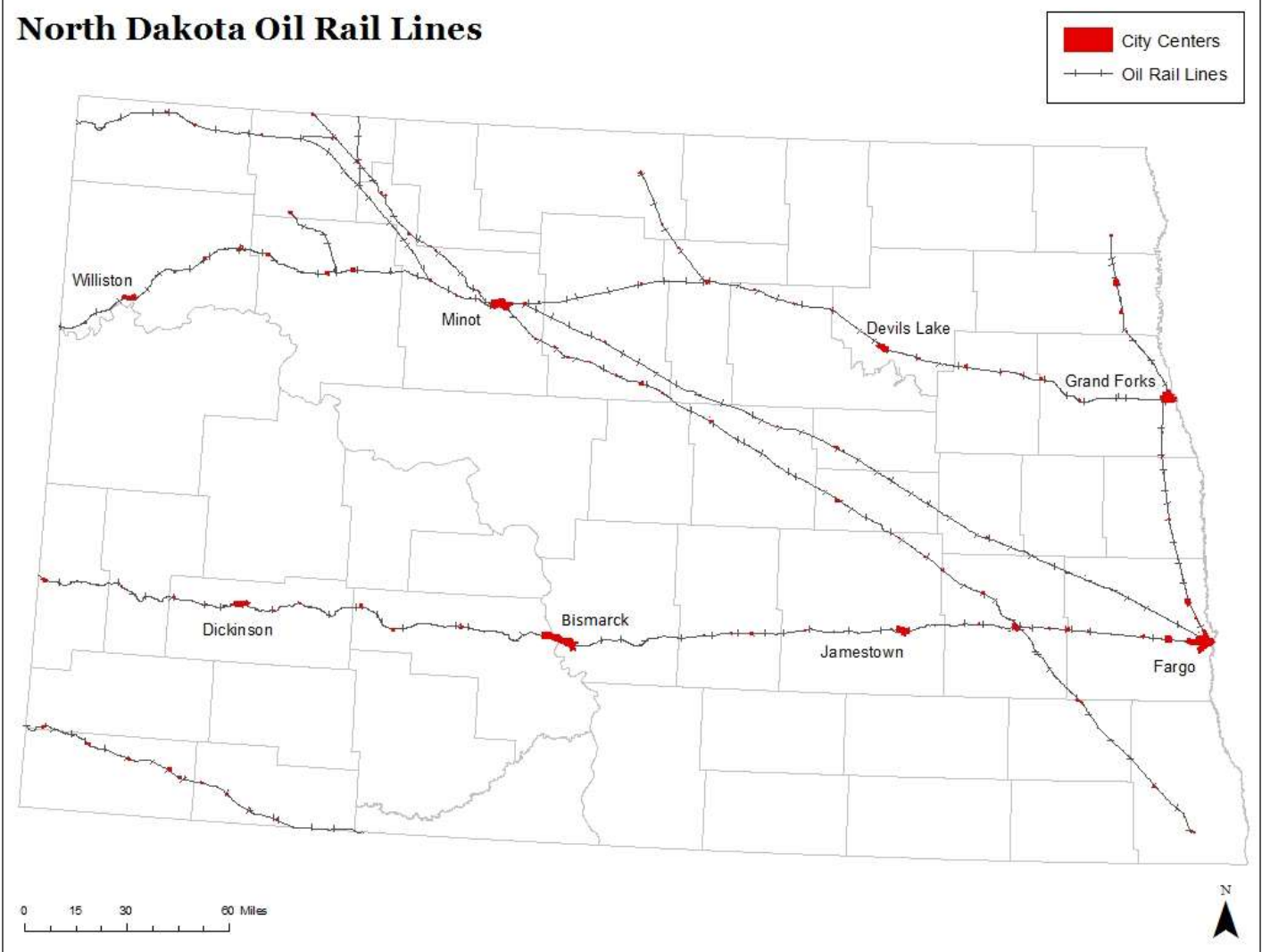


## Oil Transportation Rail Lines

- Affected Population Centers:

	Population
<b>Bismarck</b>	28,601
<b>Devils Lake</b>	7,313
<b>Dickinson</b>	12,938
<b>Fargo</b>	49,119
<b>Grand Forks</b>	33,036
<b>Jamestown</b>	13,190
<b>Williston</b>	7,816

North Dakota Oil Rail Lines







## Recent Rail Accidents

- Casselton Derailment:
- 13 cars from a westbound soybean train derailed; one of the derailed cars ended up on the adjacent track.
- An oncoming train hauling crude oil struck the derailed train, causing the two lead locomotives of the oil train and its first 21 cars to derail.

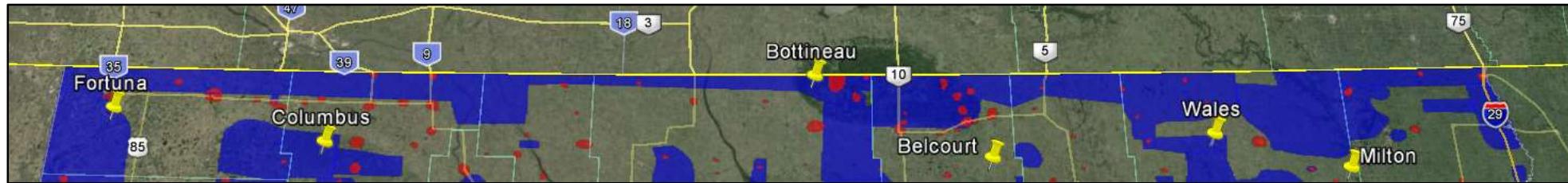




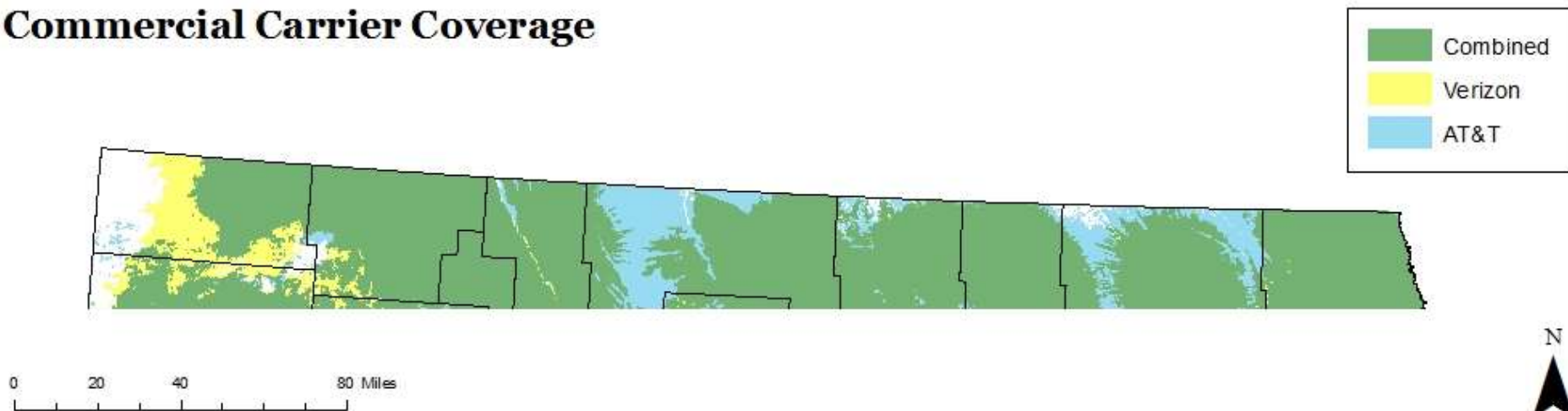
# Border Coverage

## Coverage

- Despite the carrier-reported footprints, all counties identified a lack of coverage along most of all of the Canadian border.



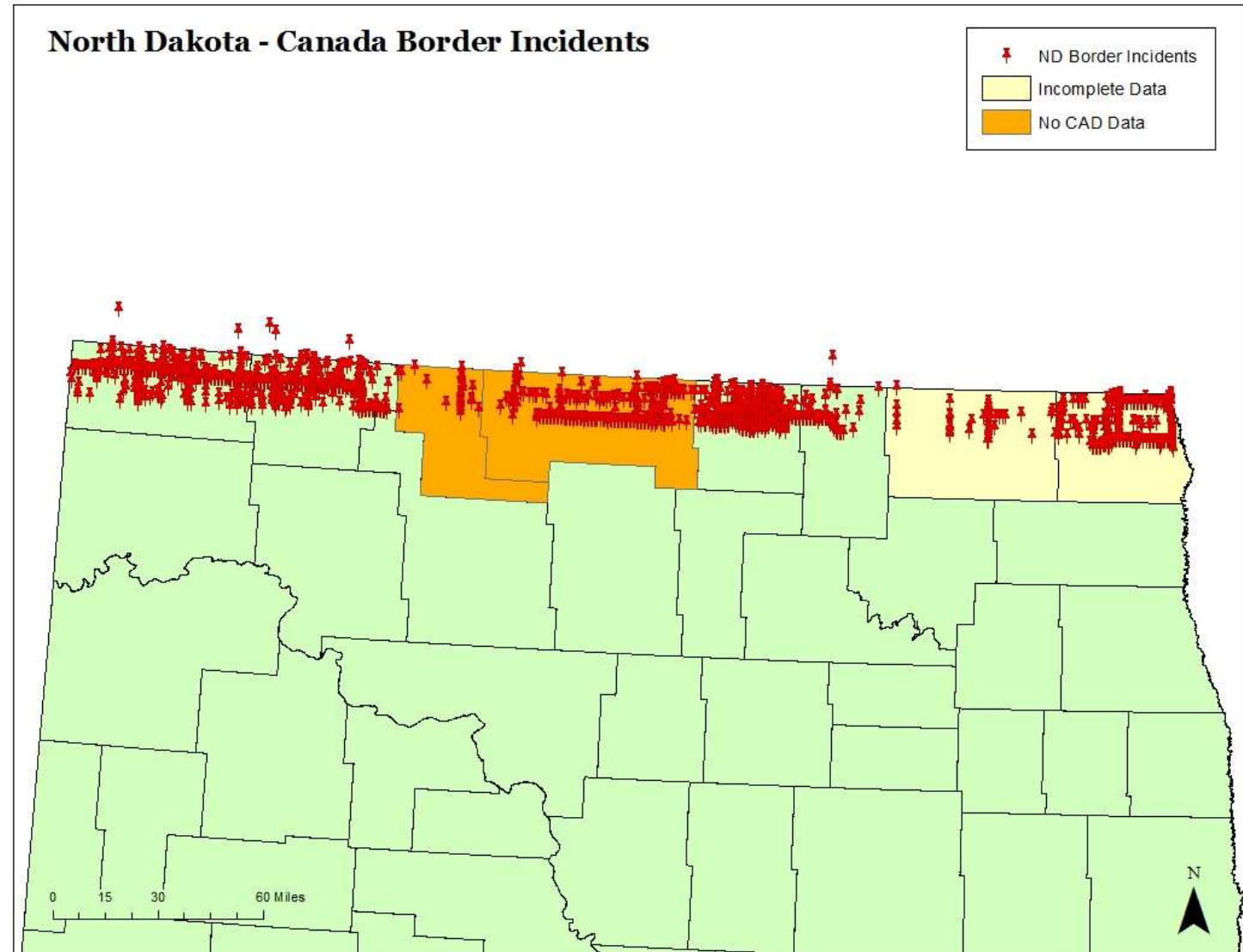
### Commercial Carrier Coverage





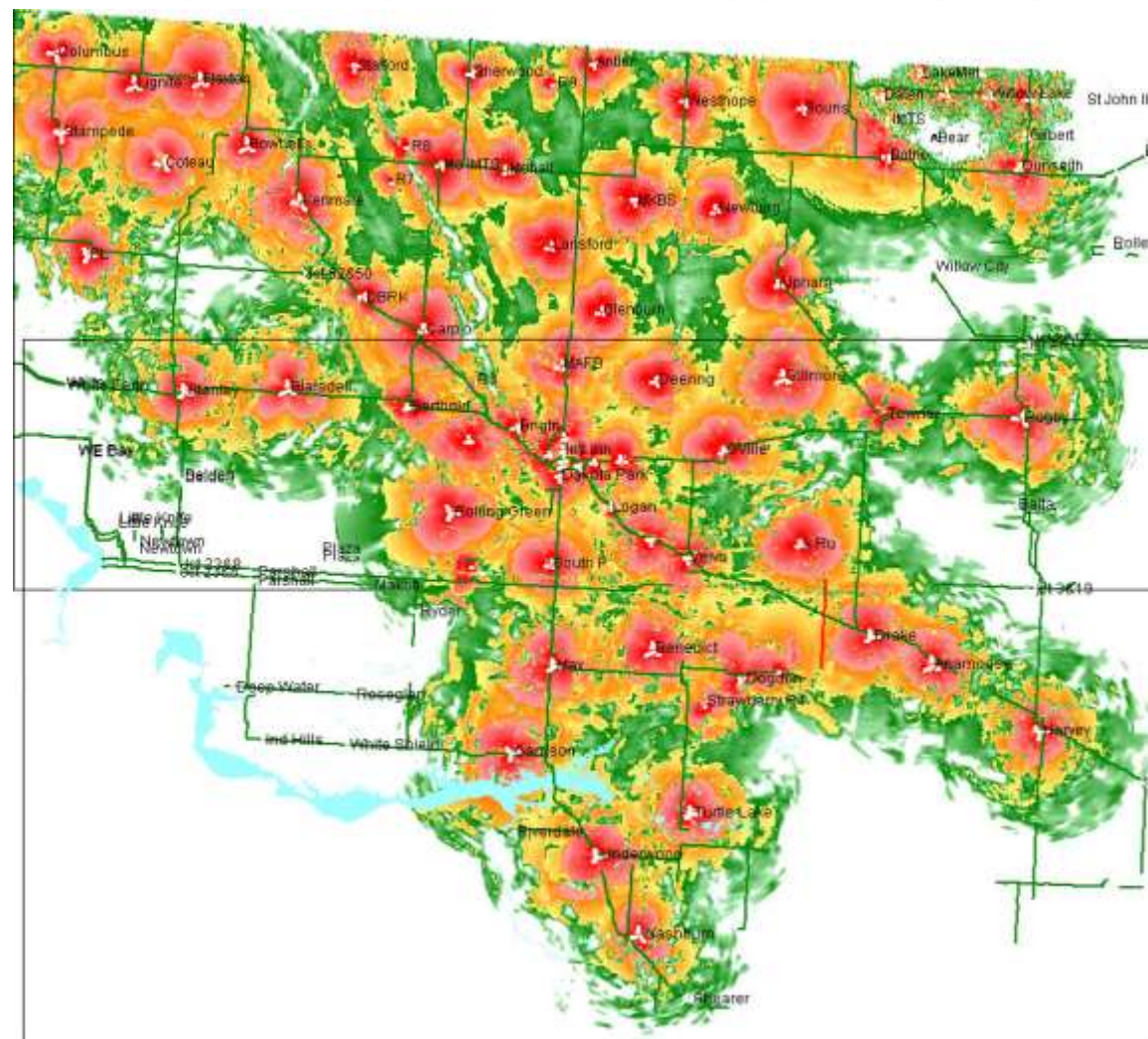
## Incidents

- Affected Area:
  - ~9,356 sq.mi.
- Based on the CAD records
  - 43,356 Incidents
  - > 1100 Incidents/month
- Note:
  - Cavalier & Pembina Counties (incomplete data)
  - Bottineau & Renville Counties (no CAD data)



## Regional Carriers

- Some regional carriers have better coverage along the border. Example:
- SRT (Souris River Telecom)
- Serves:
- Local Verizon Partner
- However, currently limited to 3G services



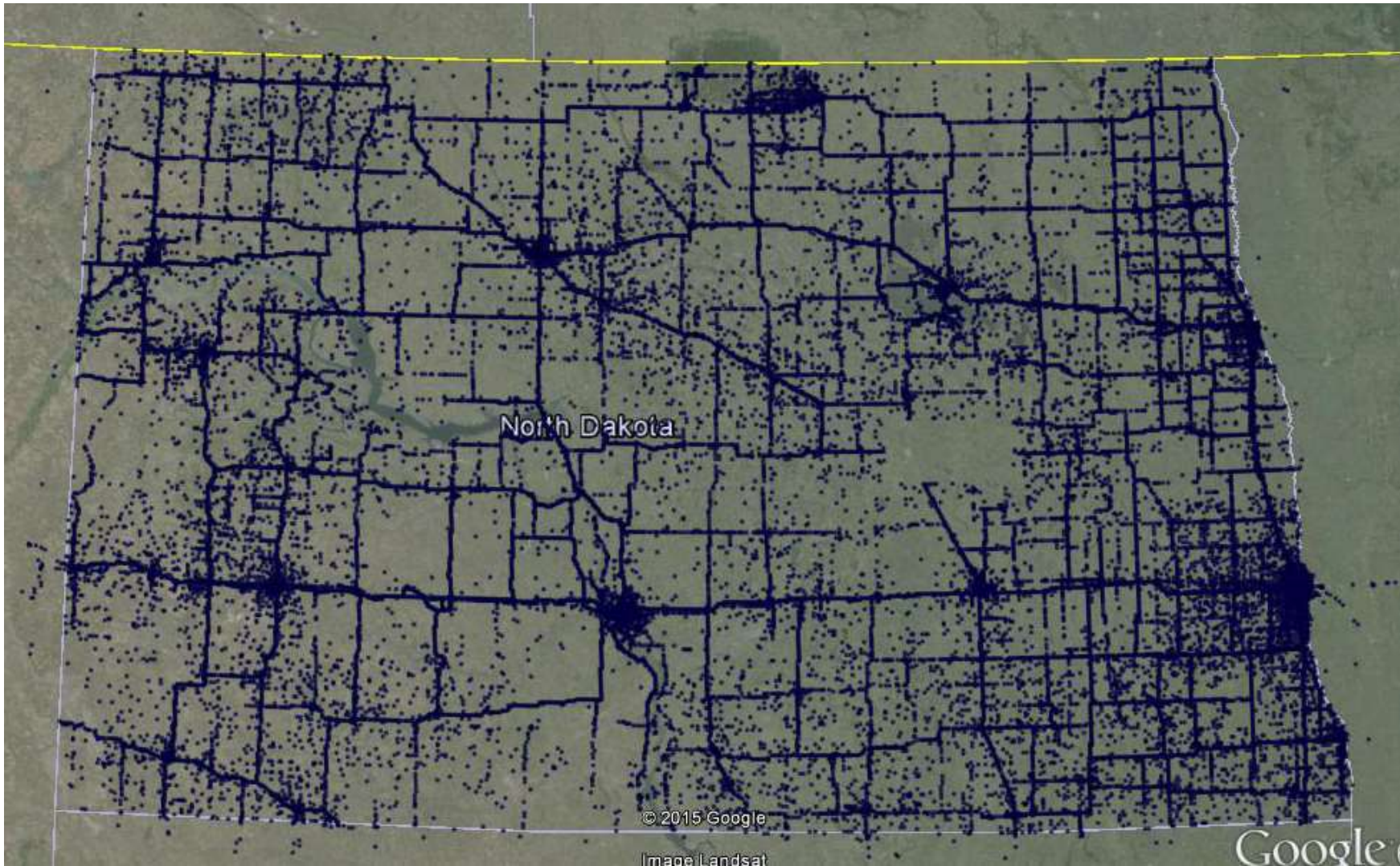




# FirstNet Services Project



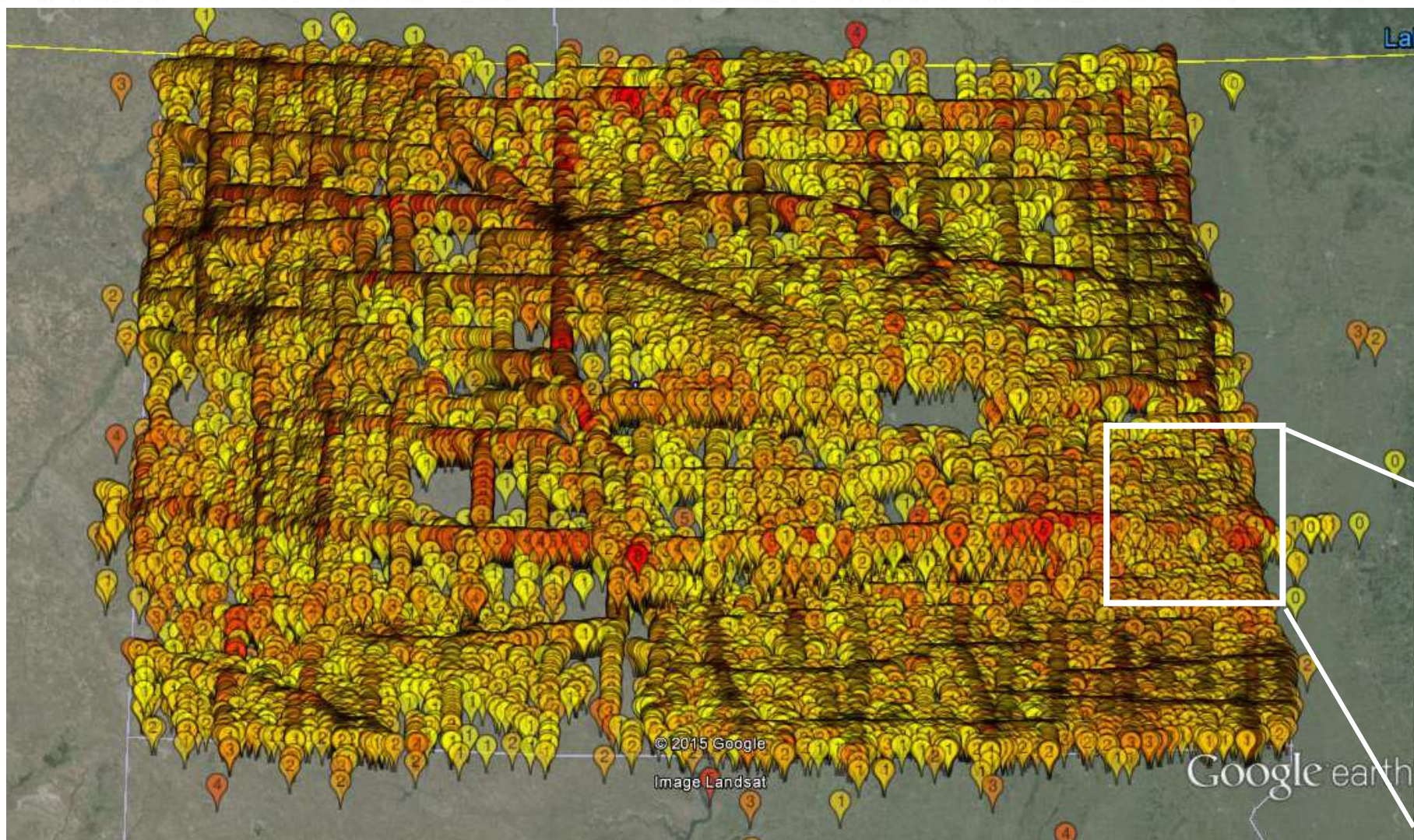
## Incidents



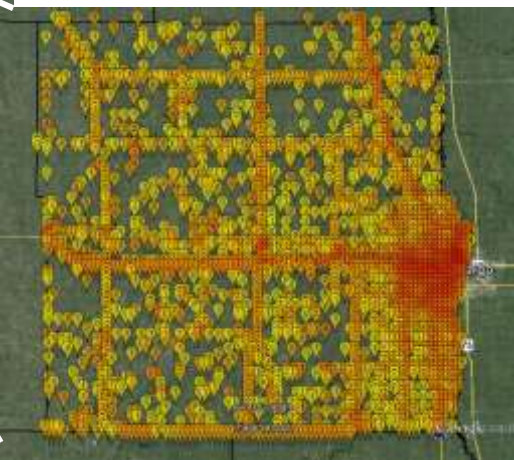




## Incident Heat Map



- Aggregated data across all CAD sources
  - State & Local

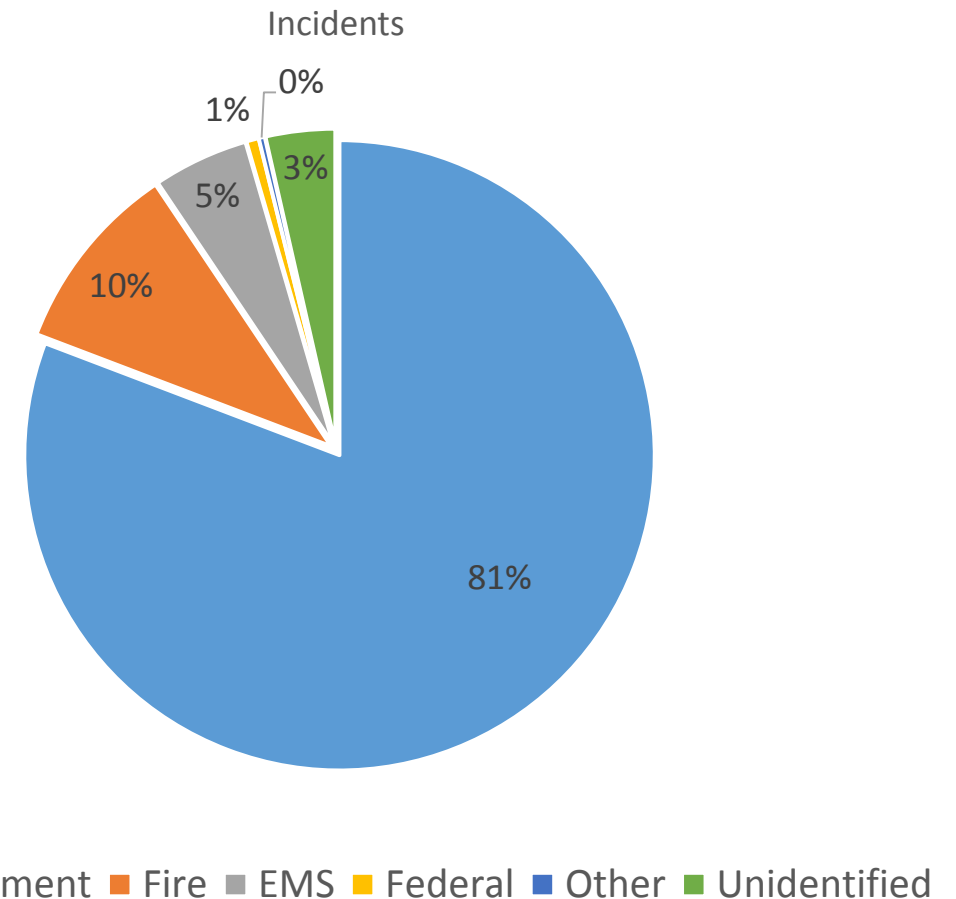






## Incidents by PSE

- Based on Statewide CAD aggregation
- 81% - Law Enforcement
  - Total does not include all officer initiated service calls
- 10% - Fire Department
- 5% - Emergency Medical - EMS





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