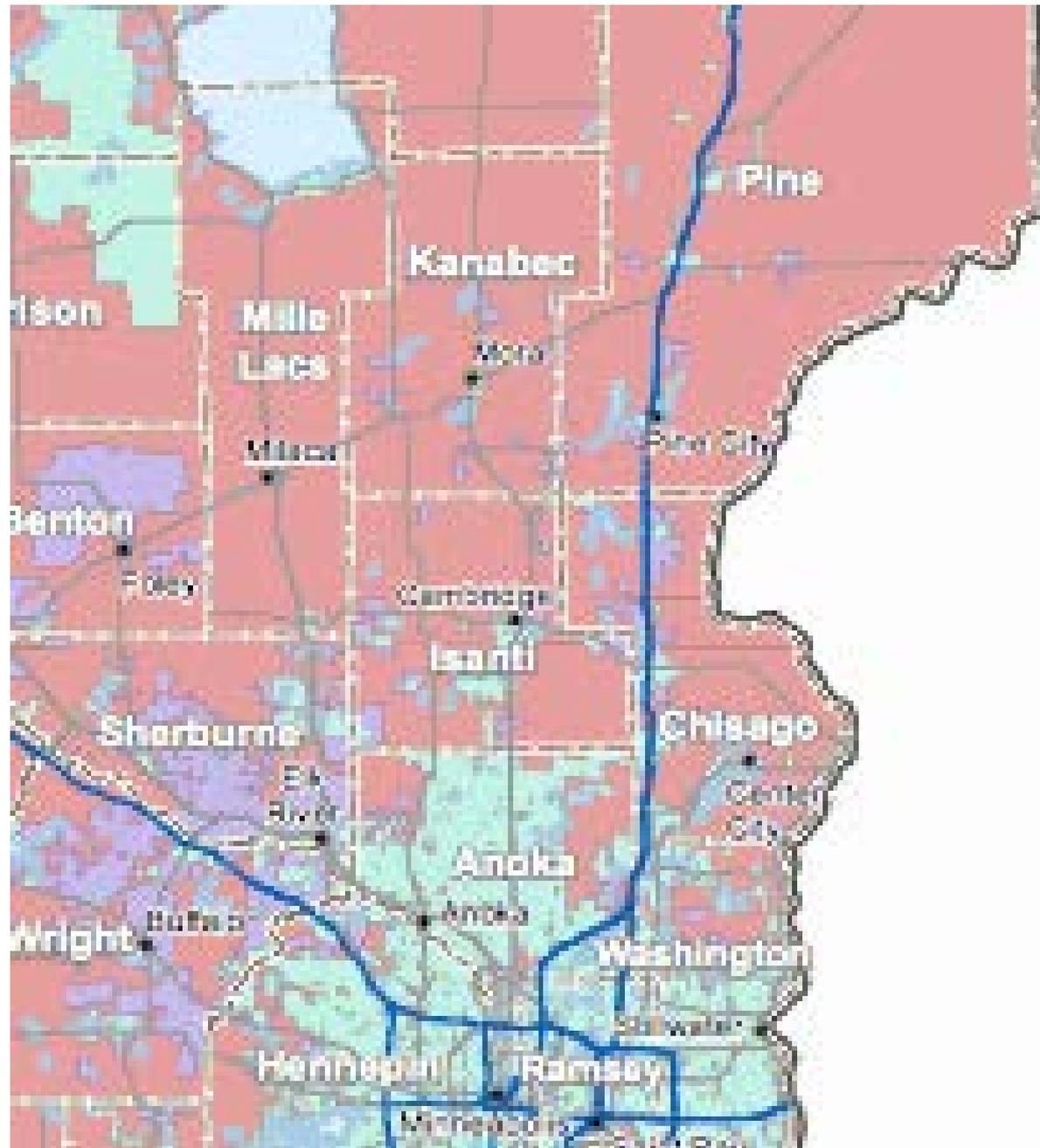


# Impact of CAF II – funded Networks

Lessons From Two Rural Minnesota  
Exchanges Left Underserved

# Why Do This Study?

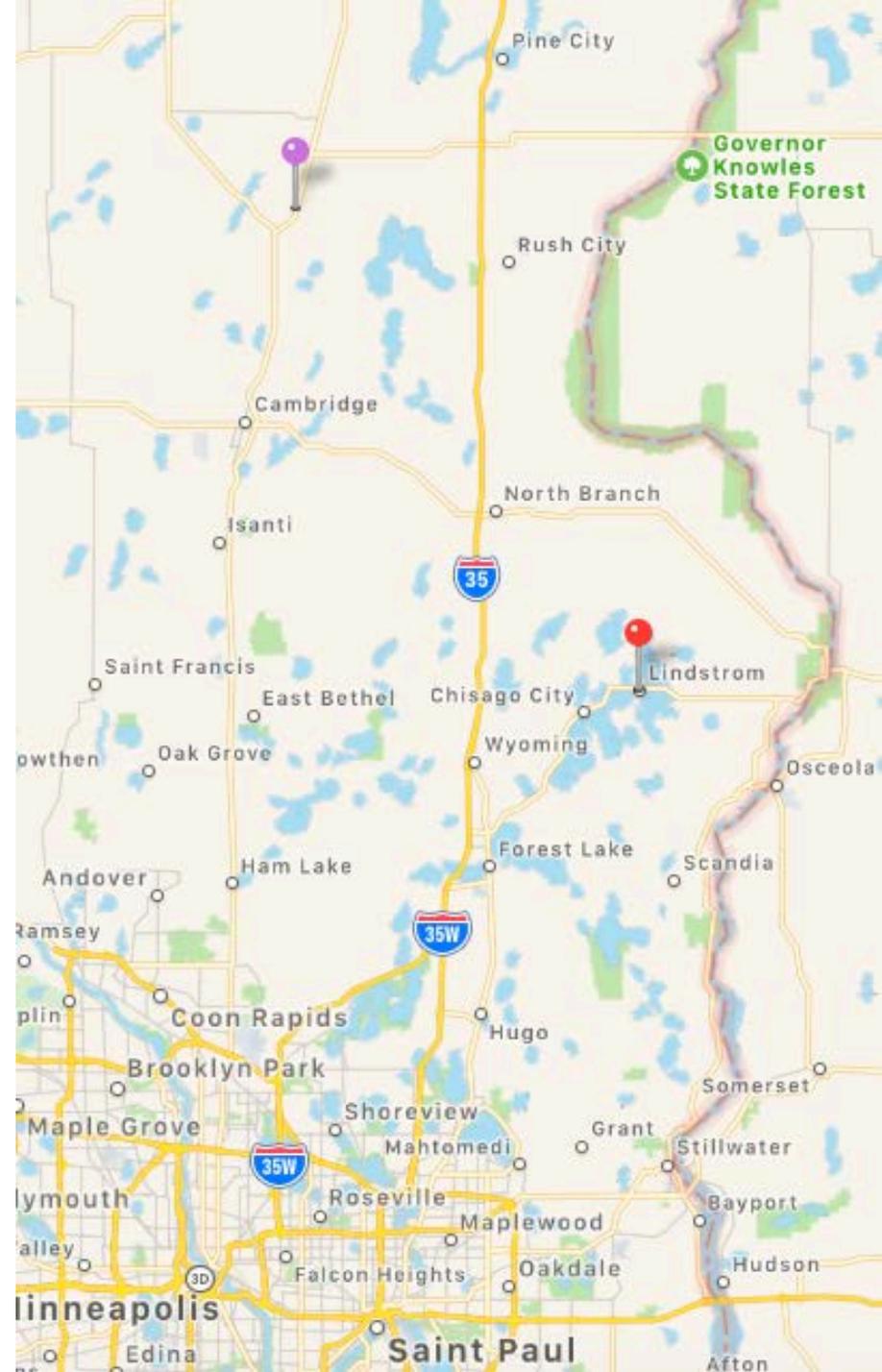
- GPS 45:93 request
- CAF II Uncertainty
  - Timing
  - Coverage
  - Capabilities
- Affecting community broadband planning
- Inhibiting prospective competitors



# Study Areas

Lindstrom  
Frontier  
(red pin)

CenturyLink  
Braham  
(purple pin)

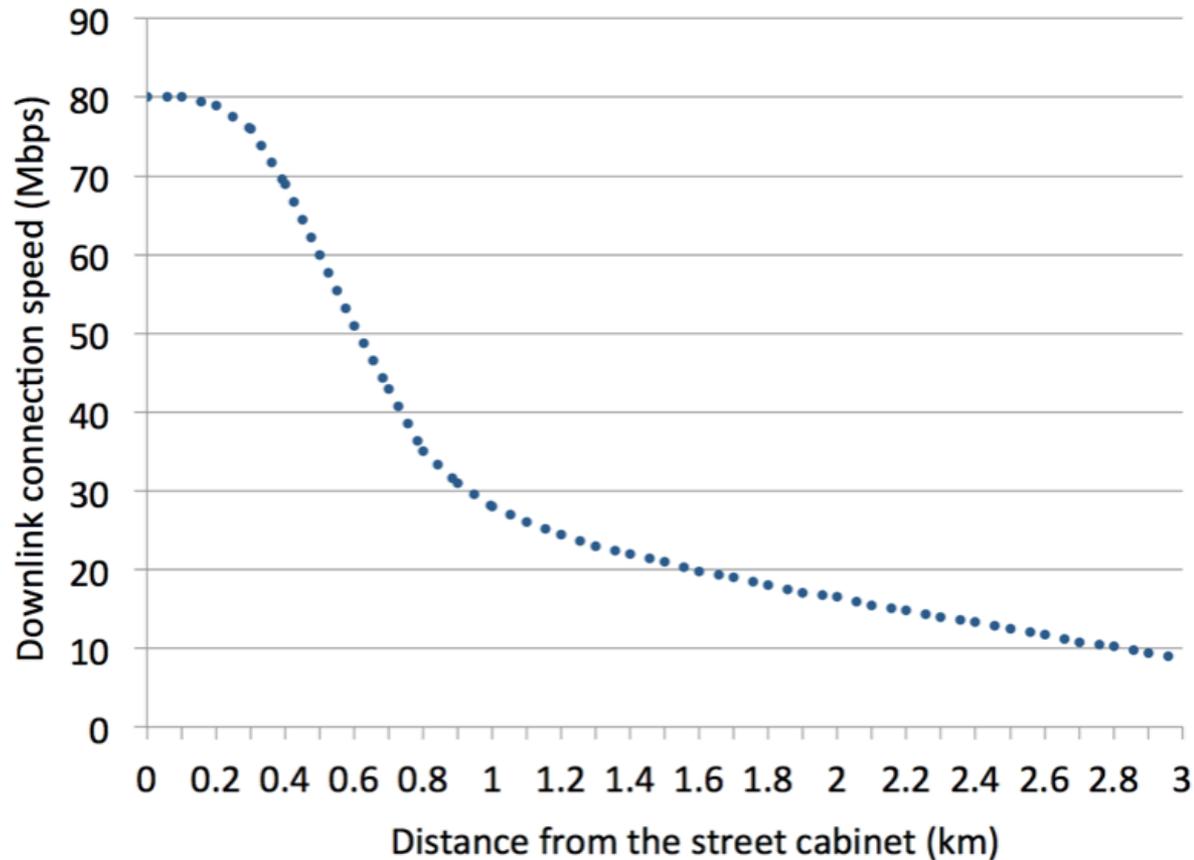


# Study Design

- Approach and draft report peer reviewed by equipment vendors, telecom engineers and other providers
- CenturyLink and Frontier declined opportunity to correct or substantially comment
- Study design likely to overstate services since zones are measured “as crow flies”
- Any unidentified utility boxes in ROW were counted as DSLAMs

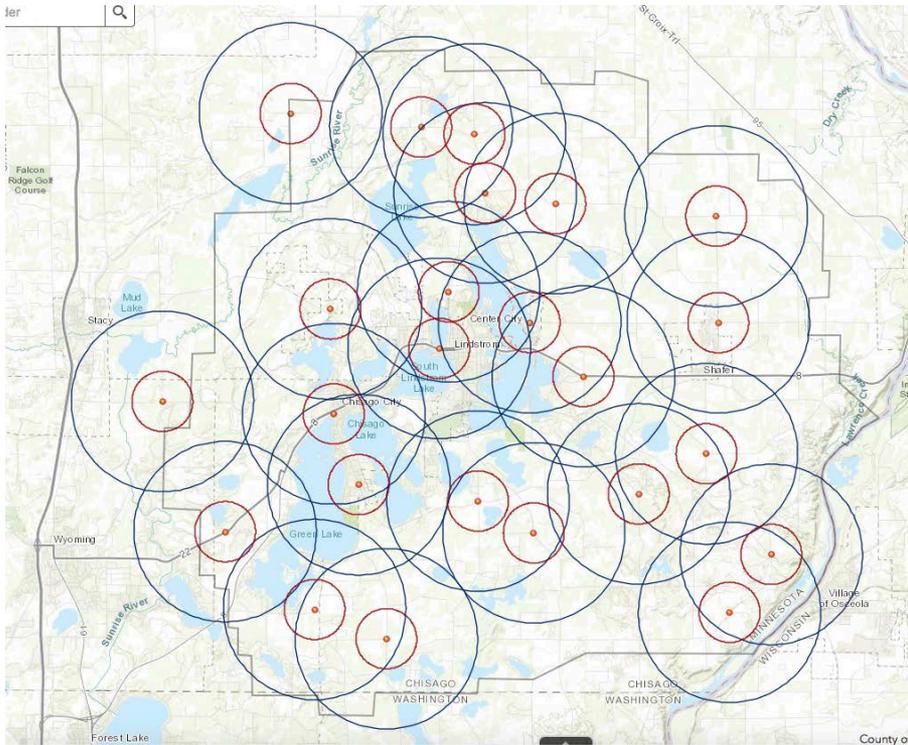
# DSL Speed over Distance

- DSL speeds decline rapidly over a relatively short distance
- Up to 80 Mb at the fiber-fed cabinet
- Approximately 25 Mb/3 Mb at 1 km or 3,280 feet
- Approximately 10 Mb/1 Mb at 3 km or 10,000 feet
- Increasing capacity
  - Vctoring within 3,000 feet
  - Pair bonding
- Decreasing capacity
  - Copper quality
  - Non-direct line routes

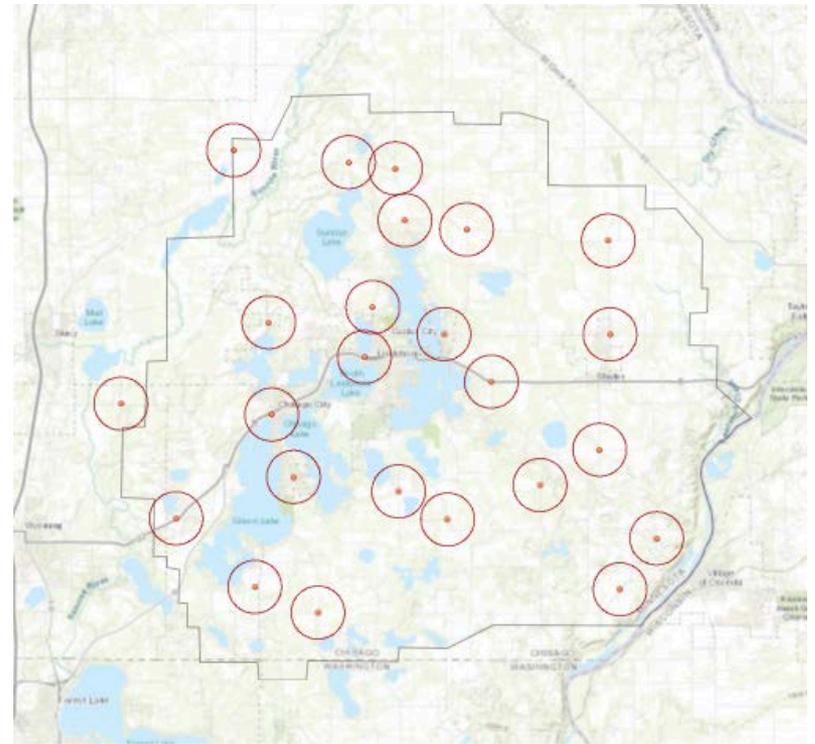


# Lindstrom Exchange

**3,000 and 9,000 foot  
radius coverage**

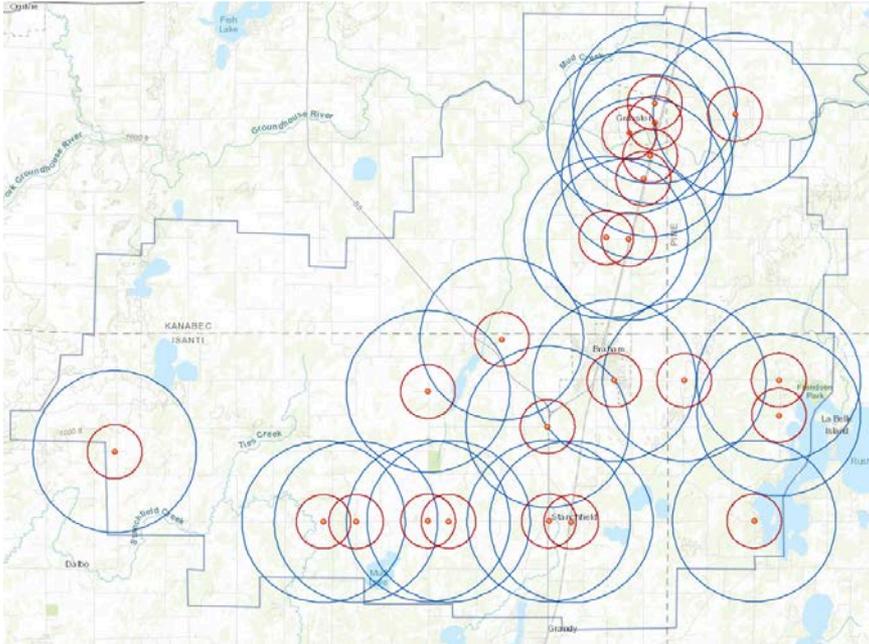


**3,000 foot radius coverage**

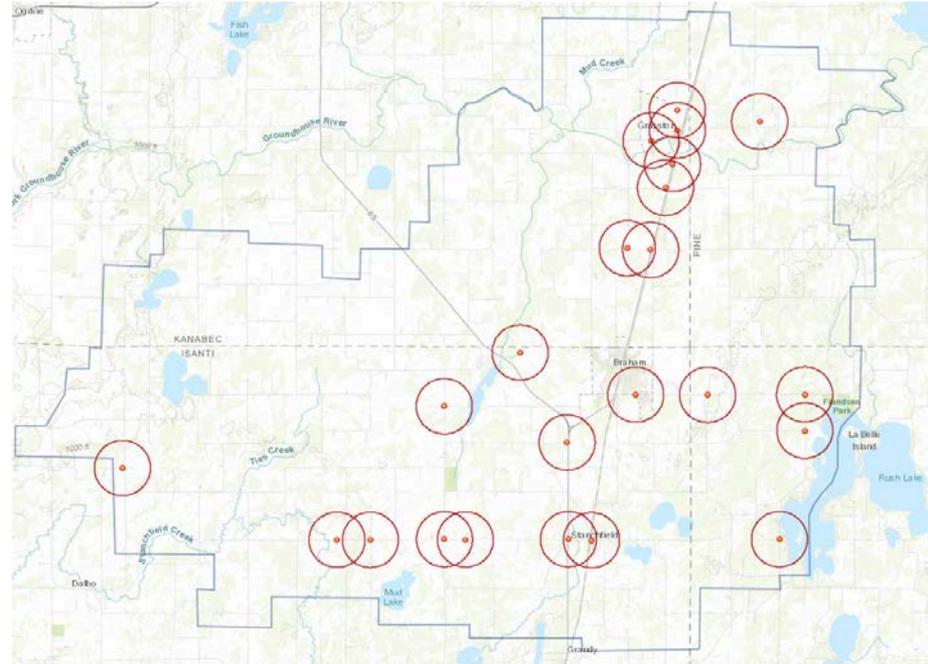


# Braham Exchange

**3,000 and 9,000 foot  
radius coverage**



**3,000 foot radius coverage**



# Findings

- Both CenturyLink and Frontier are using CAF II dollars to deploy Fiber to the Node technology in support of distance-sensitive DSL services
- Even after CAF II investment, the vast majority of the property within these two exchanges are more than 3,000 feet from a fiber-fed DSL node, generally limiting the bandwidth available to customers to something less than the 2022 state broadband goal of 25 Mb/3 Mb
- It is unlikely that any customers in the rural portions of these exchanges will be able to receive broadband services that meet the 2026 Minnesota broadband goal of 100 Mb/20 Mb without additional provider investment
- Community broadband advocates lack clear understanding of extent and timing of provider plans

Thank you!

Study available at:  
[broadband.blandinfoundation.org](http://broadband.blandinfoundation.org)

Bill Coleman  
Community Technology Advisors  
[bill@communitytechnologyadvisors.com](mailto:bill@communitytechnologyadvisors.com)  
651-491-2551