

# BROADBAND MAPPING ADVOCACY TO INCREASE RESIDENT ENGAGEMENT

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IMAGIN Webinar Series  
May 27, 2021

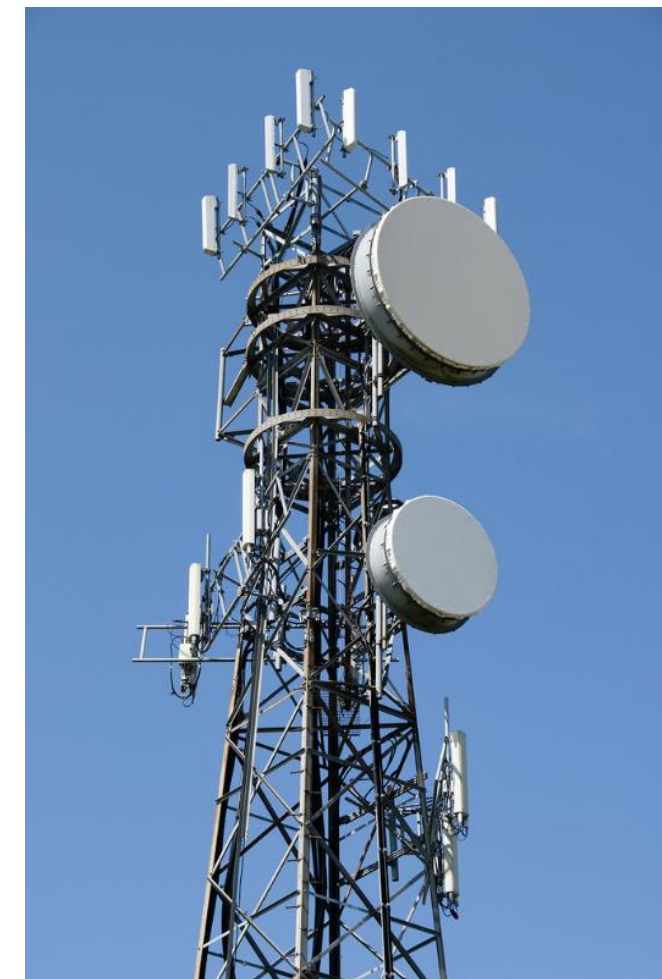
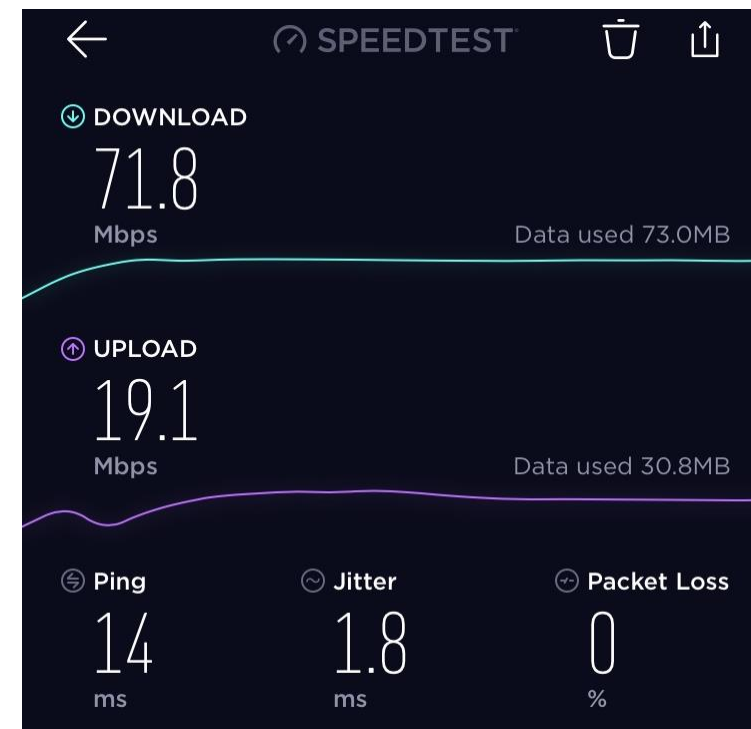
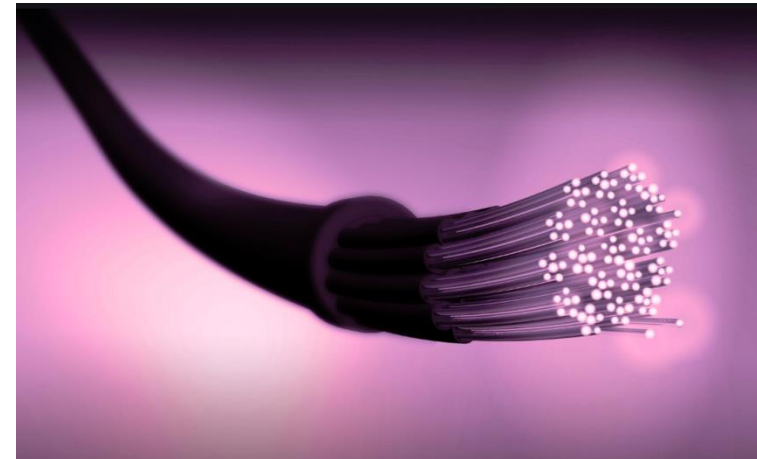
**Ashley Hitt, GISP**  
Vice President, GIS Services  
Connected Nation



# OUTLINE



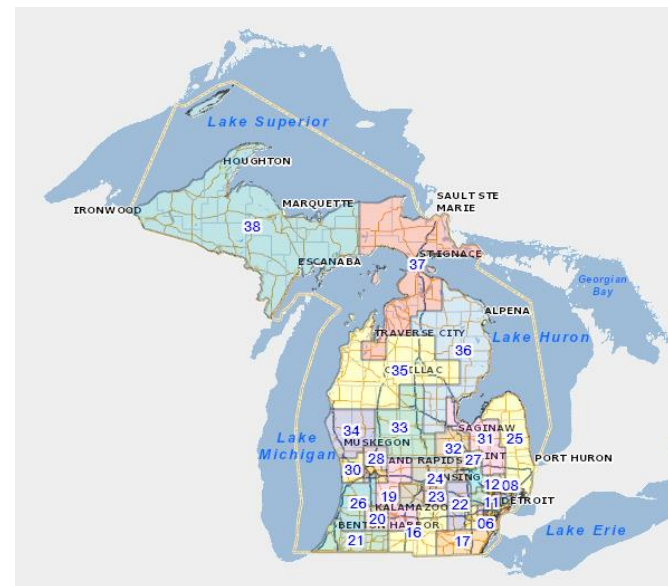
- Why Is This Important?
- Broadband Mapping
- Dataset Challenges
- Michigan Data and Analyses
- Questions



# WHY IS THIS IMPORTANT?

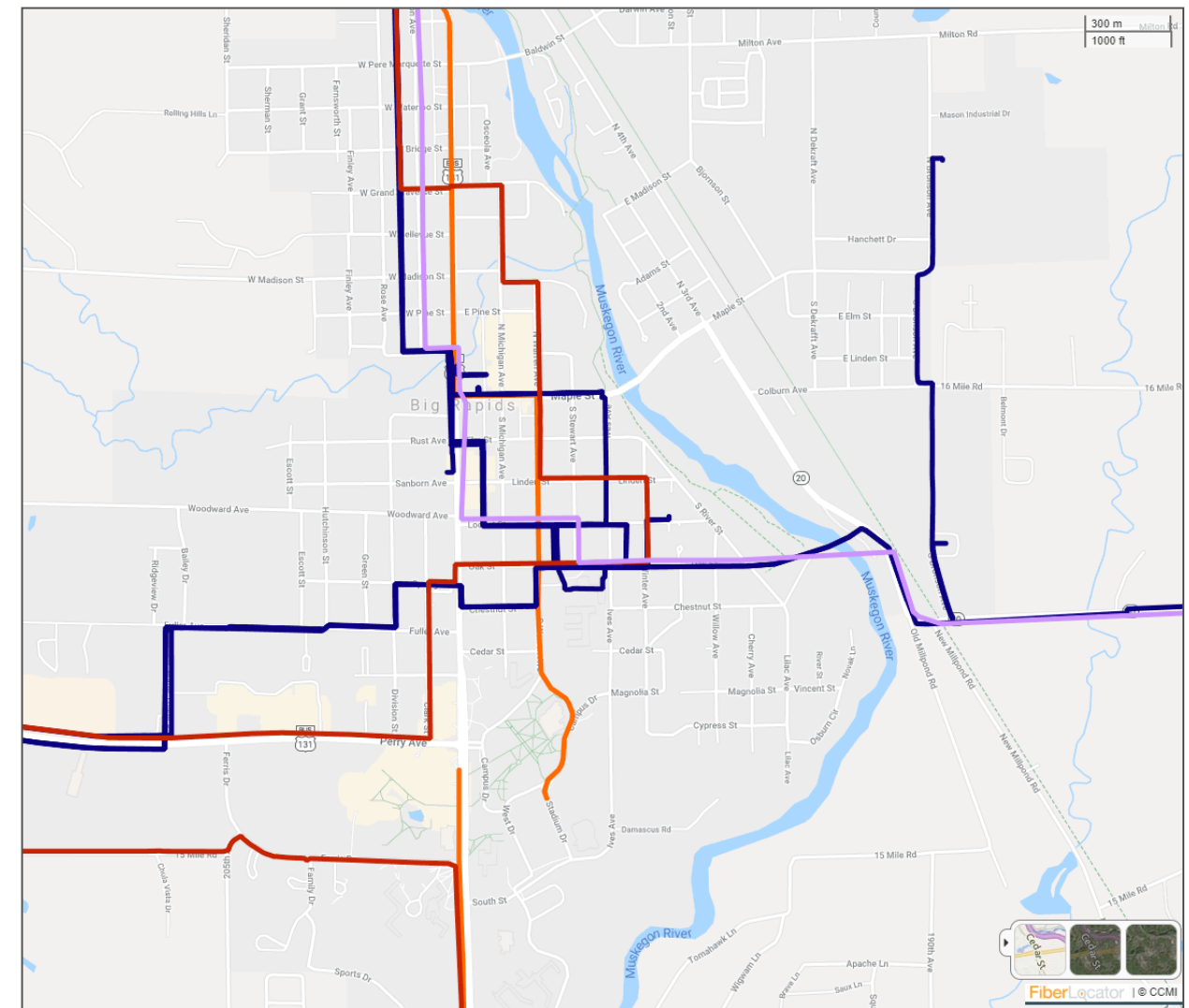
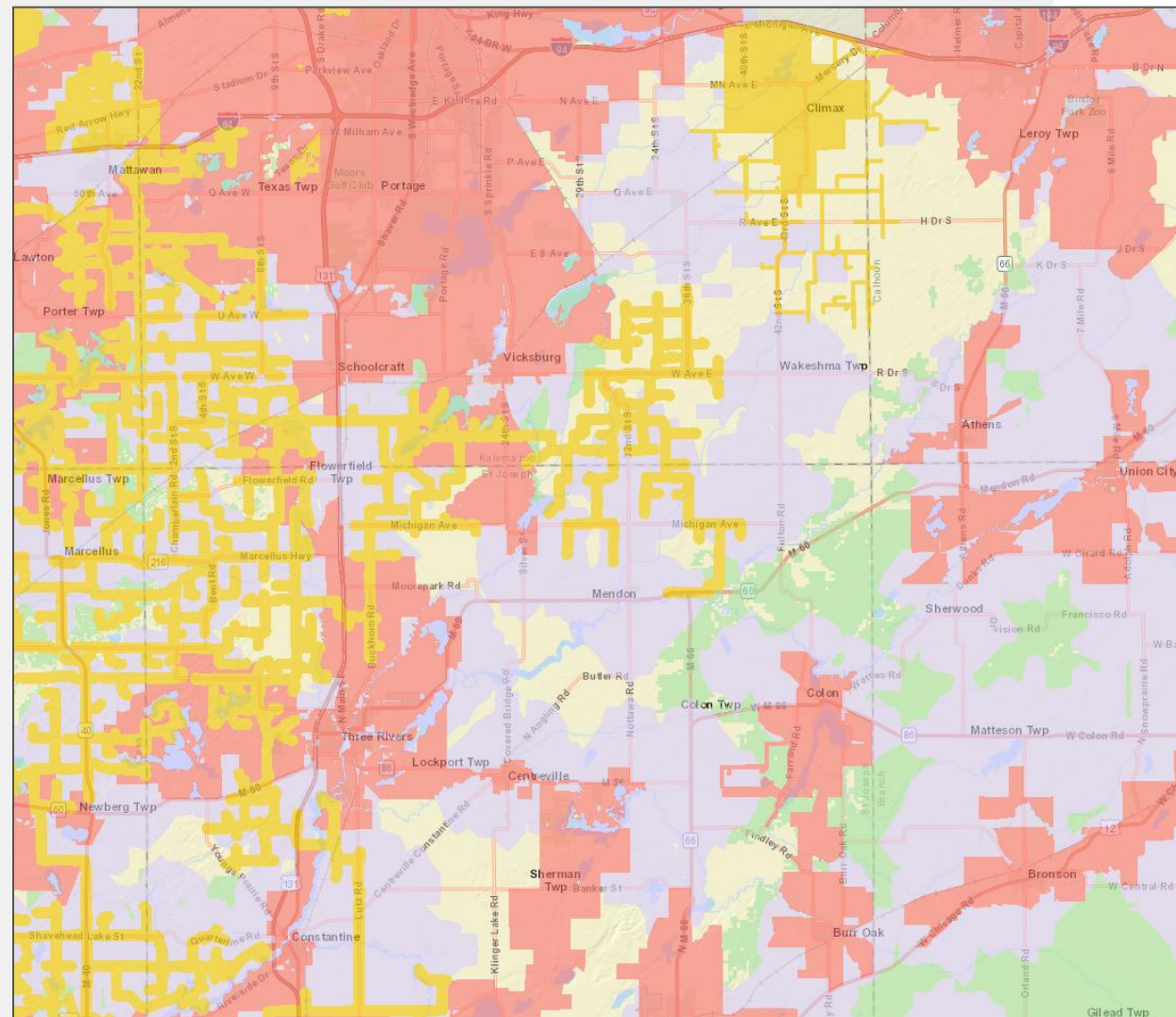


- Precision Agriculture
- Homework Gap
- Employment and Digital Literacy
- E-Government
- Economic Development
- Citizen Engagement
- Telehealth
- COVID-19 Response





## *Last-Mile Broadband vs. Middle-Mile Broadband*





- FCC Form 477 Data
- FCC Broadband Map: [broadbandmap.fcc.gov](https://broadbandmap.fcc.gov)

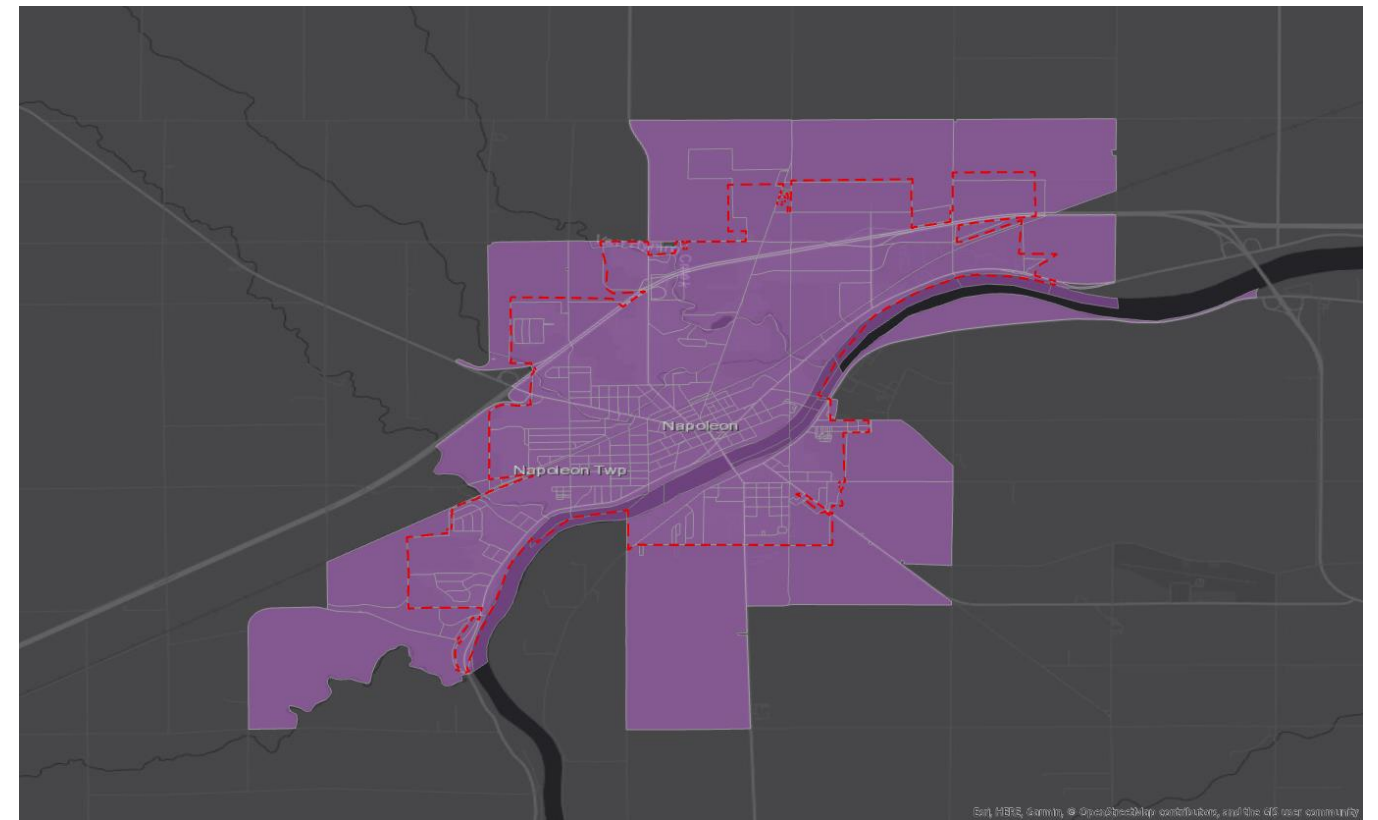
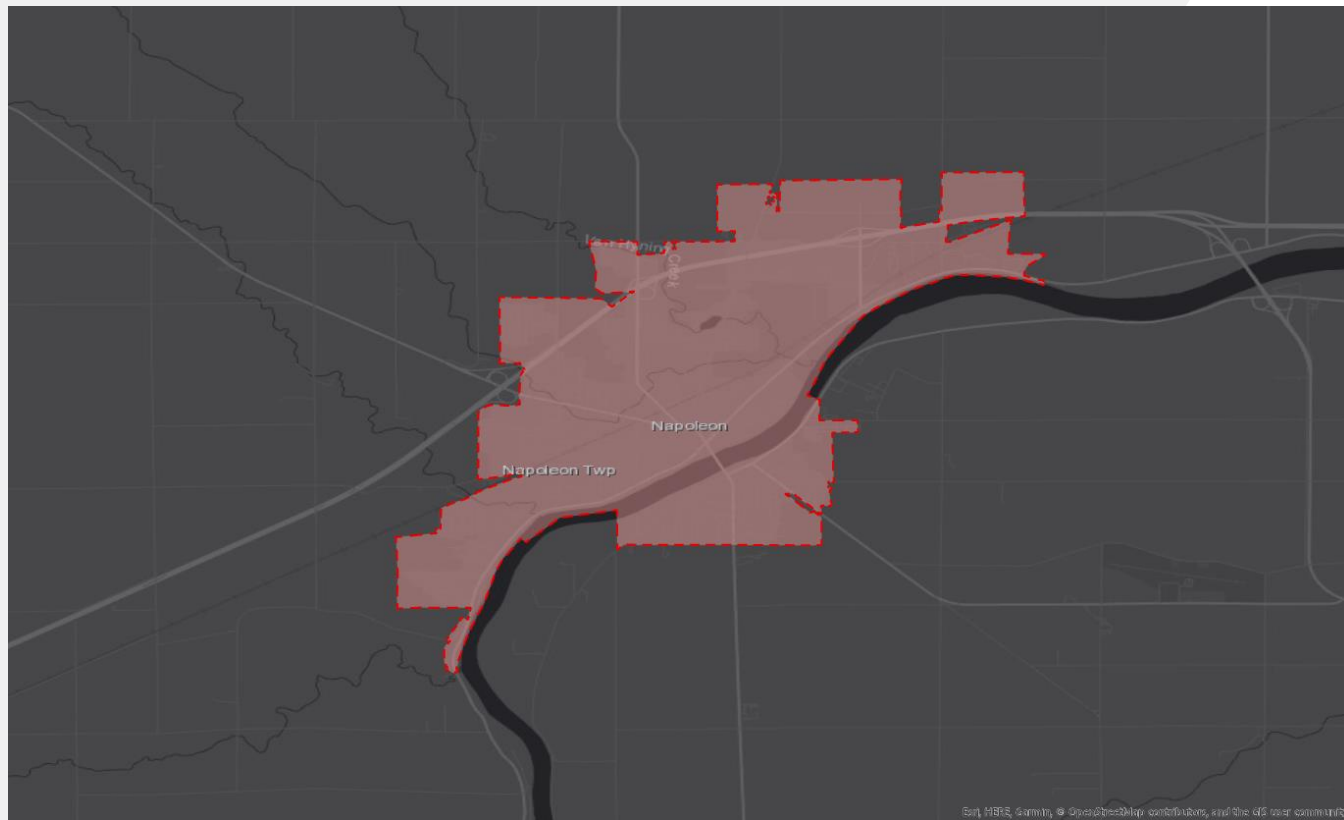
*Current federal broadband data is inadequate for local planning*

## Primary Challenges:

- Not all providers are submitting data as required
- Not all providers have GIS capabilities
- Fixed broadband data is filed as .csv only
- Fixed wireless services are filed as census block lists
- Inherent overstatement with census blocks as unit of measure
- Understatement issues because of missing provider data
- Data can be old by the time it is published
- Provider submitted data is not thoroughly validated



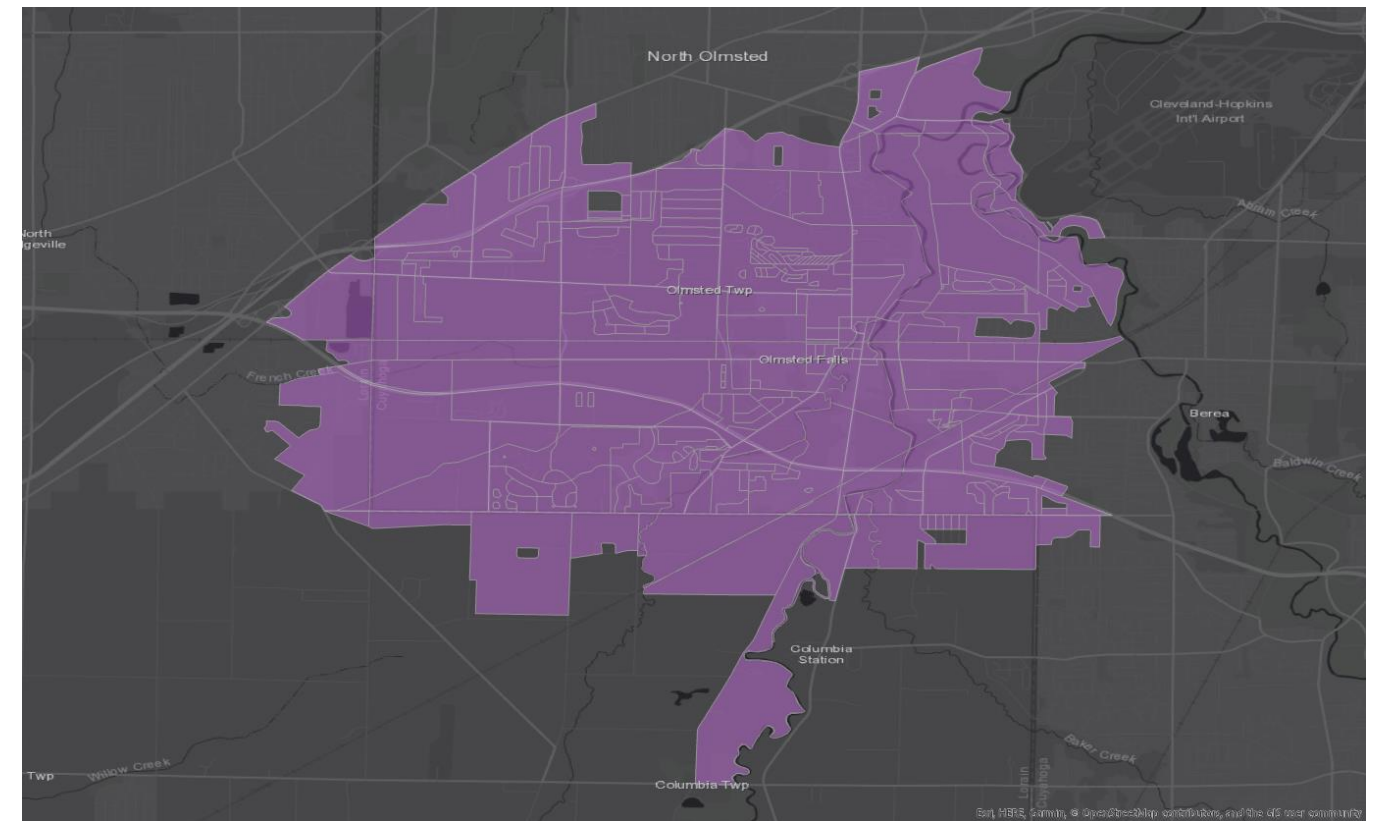
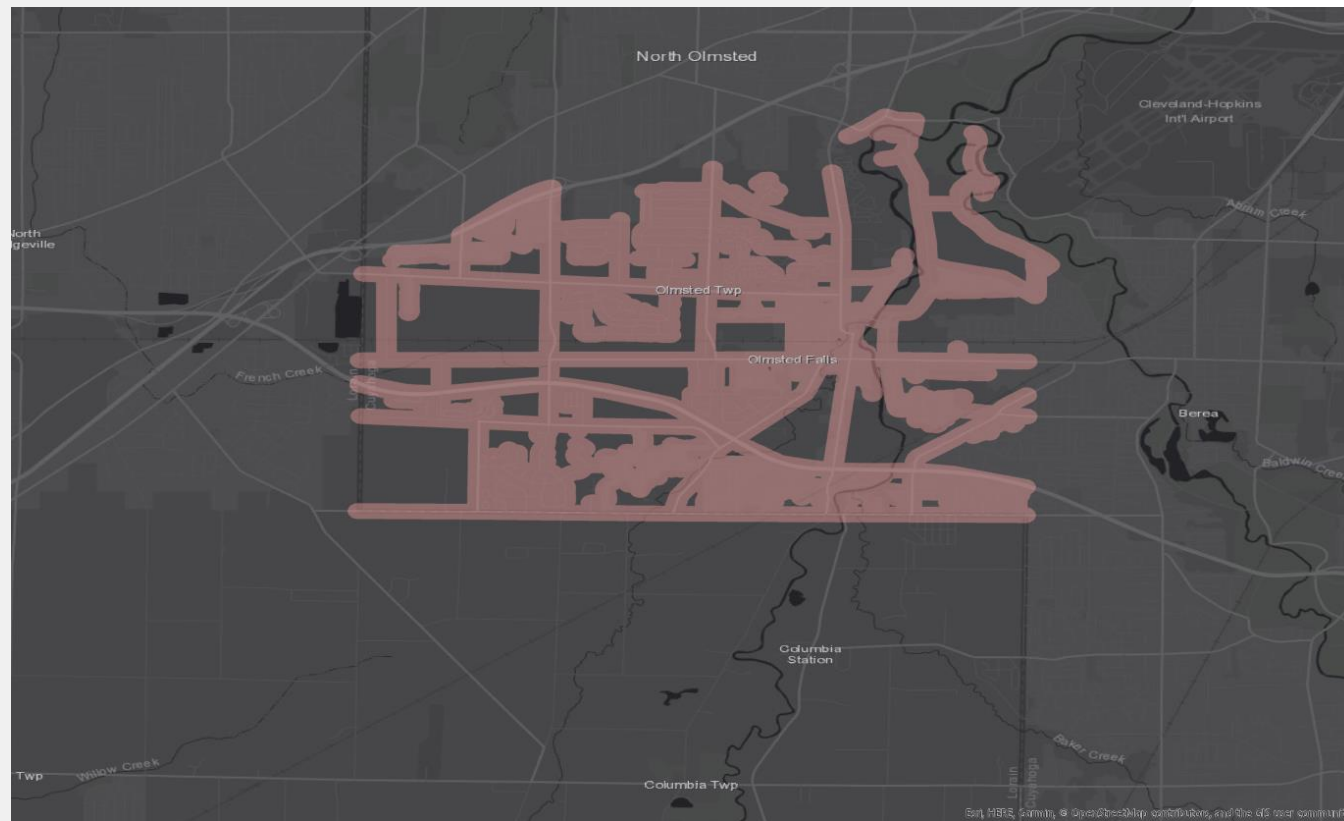
## Town Service Area vs. Census Block Level



# DATASET CHALLENGES

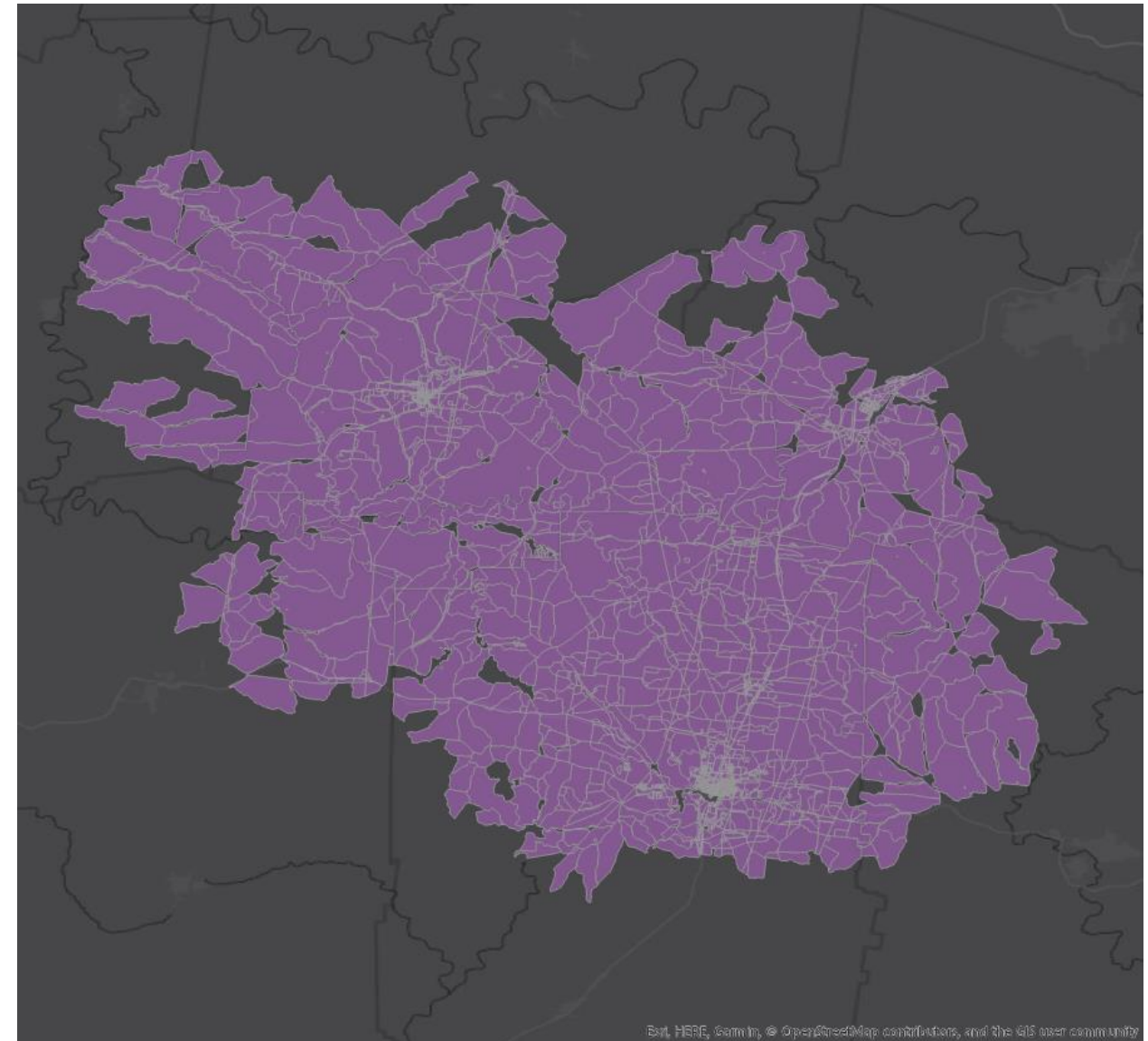
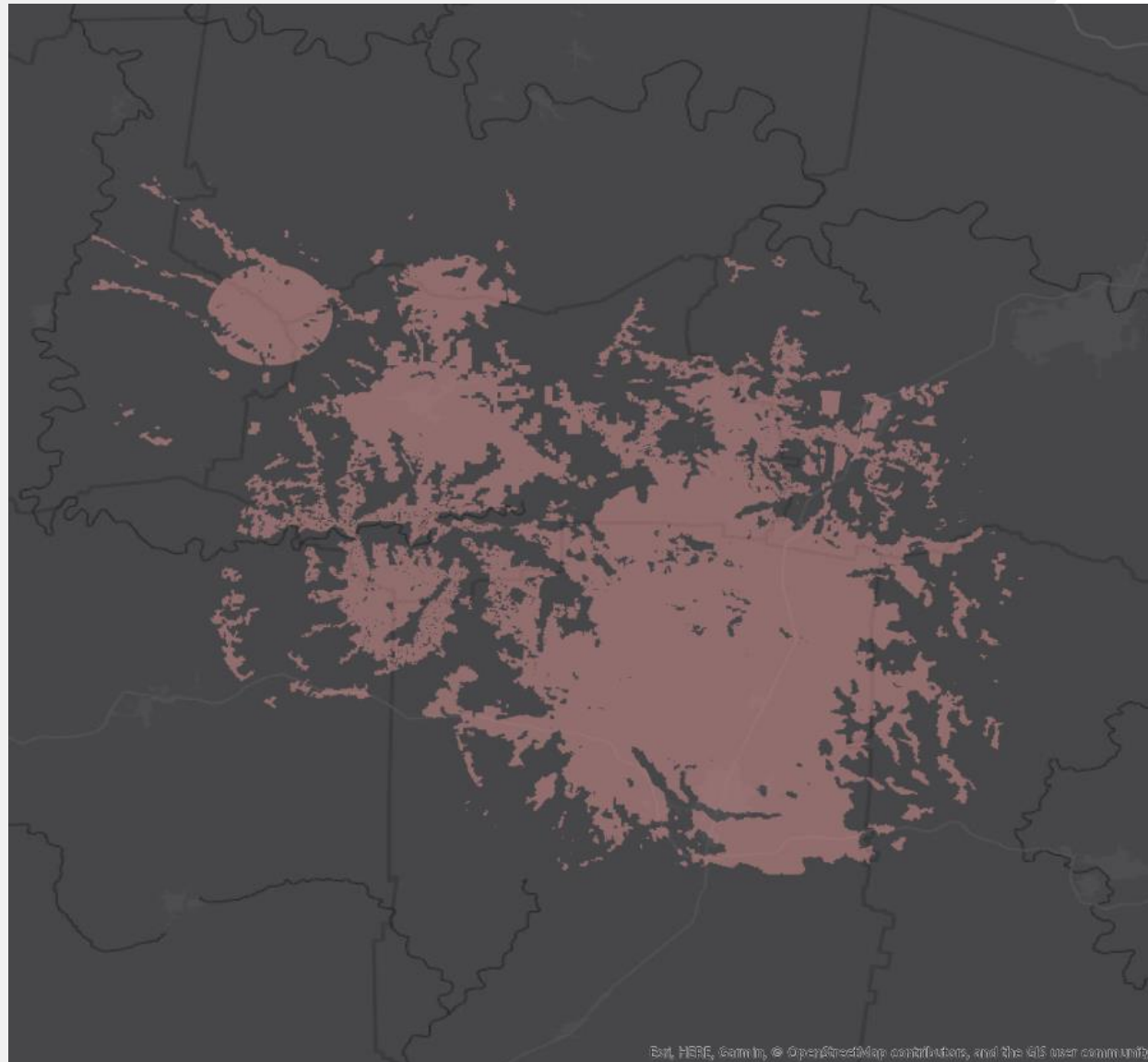


## Service by Road Segment vs. Census Block Level





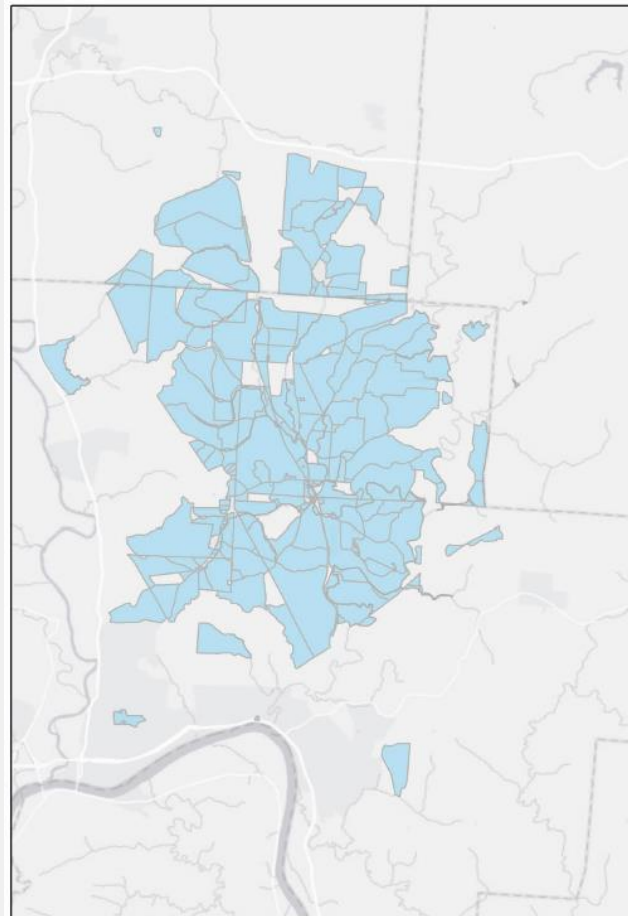
## Fixed Wireless Propagation vs. Census Block Level



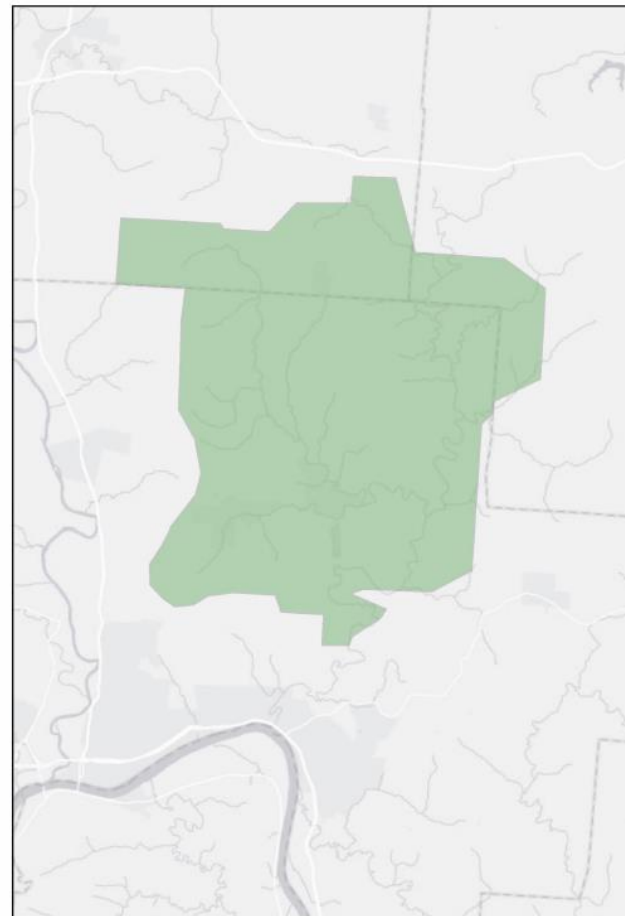




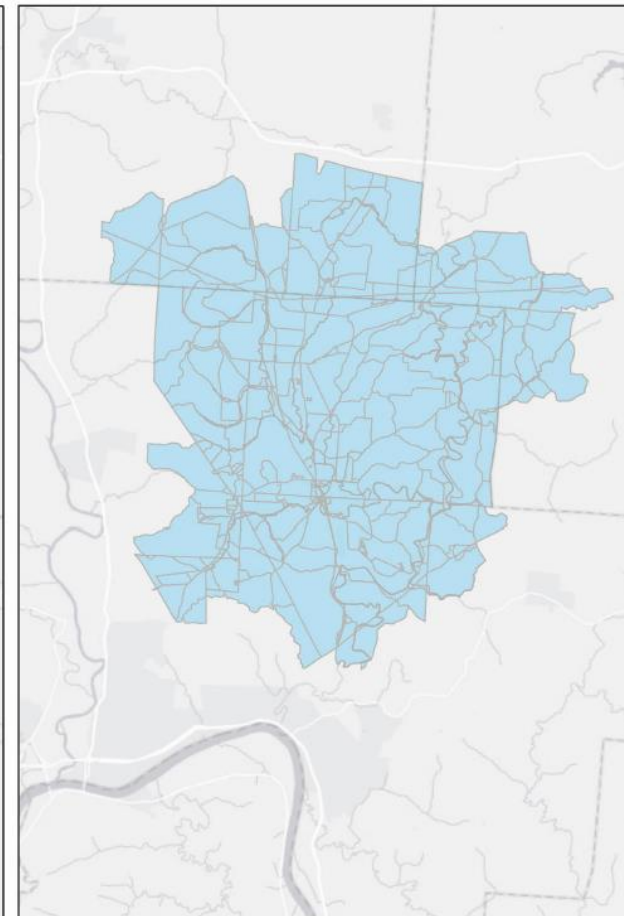
## Form 477 Comparison – Fiber Provider



Form 477 Coverage (Original)



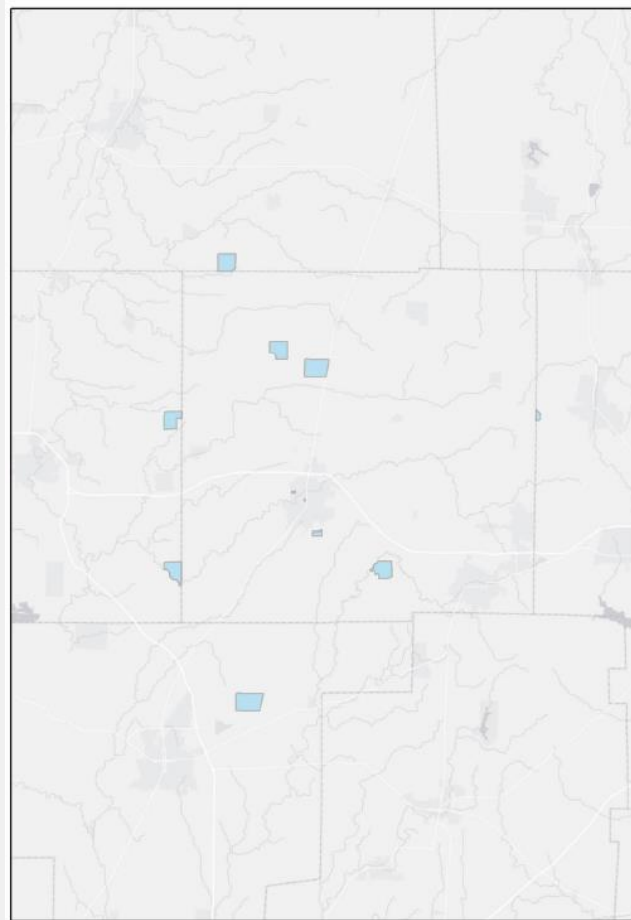
Granular Service Area



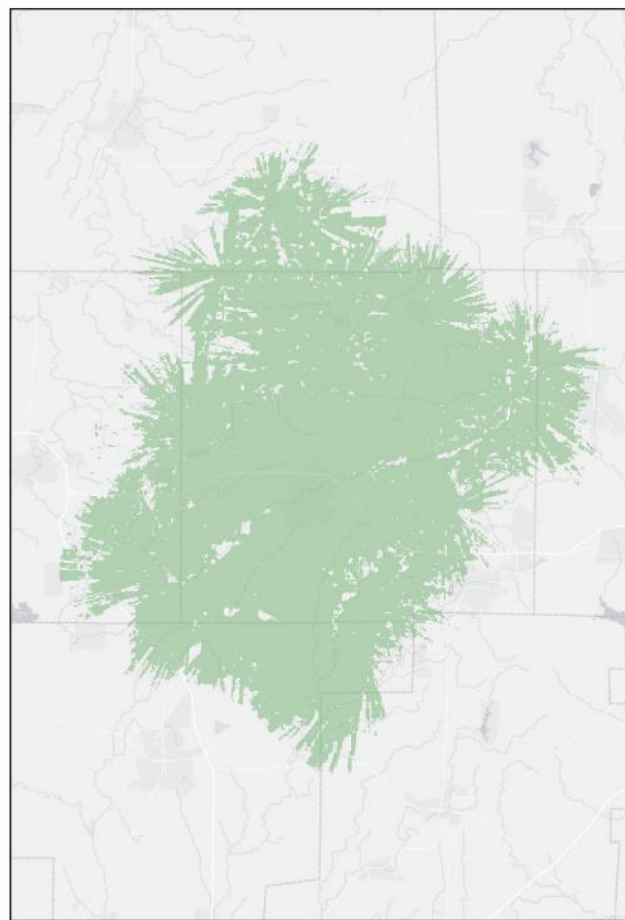
Form 477 Coverage (Revised)



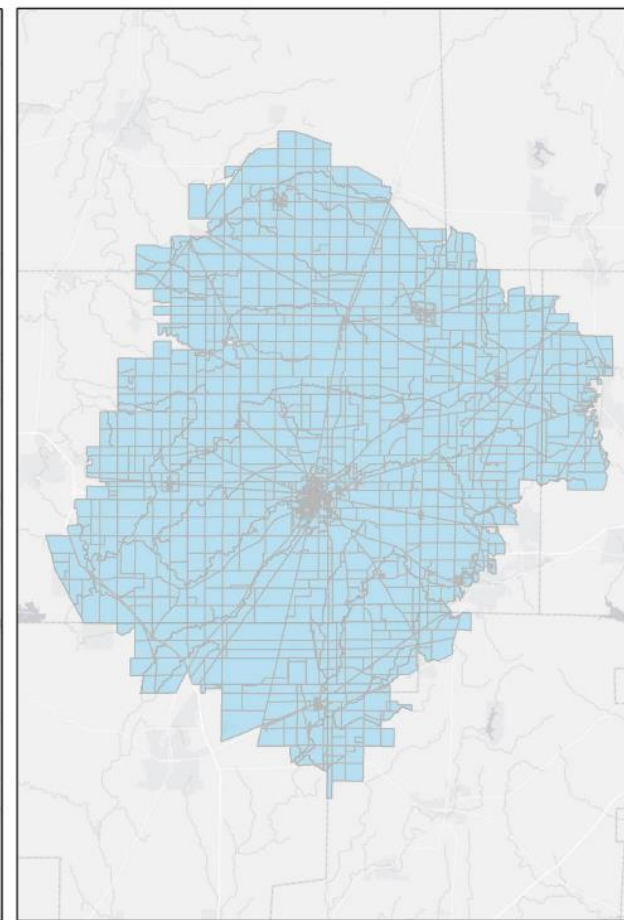
## Form 477 Comparison – Fixed Wireless Provider



Form 477 Coverage (Original)

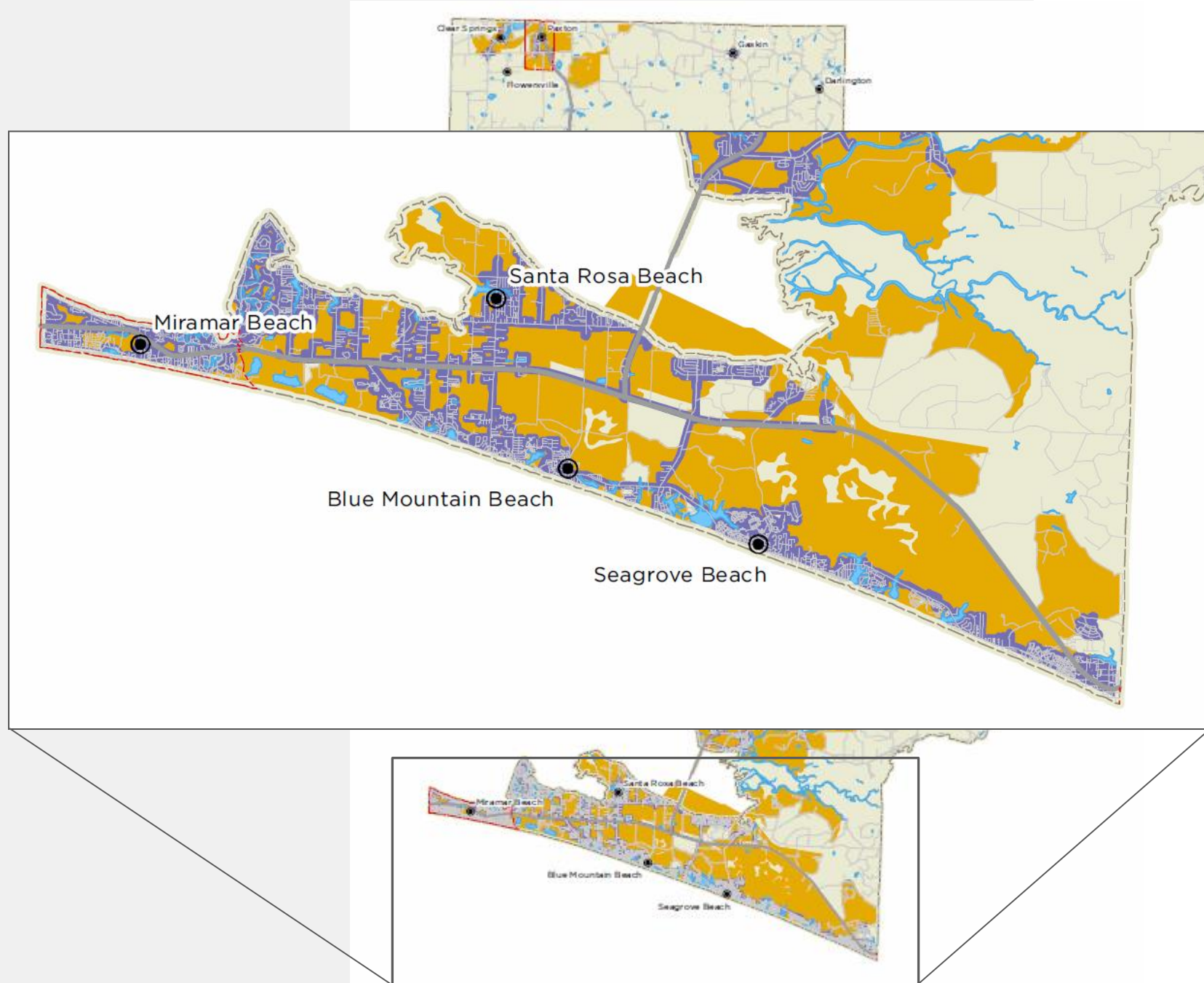


Granular Service Area



Form 477 Coverage (Revised)

# DATASET CHALLENGES



Walton County, Florida

Broadband Service Comparison to  
FCC Form 477  
25 Mbps Download / 3 Mbps Upload

### Symbology

- City
- Interstate
- US Road
- Local Road
- Municipal Boundary
- Water
- Eglin AFB
- CN Validated Broadband
- FCC Form 477 Broadband
- Unserviced Areas

CN Data Source: On the ground field data collection and online resources.

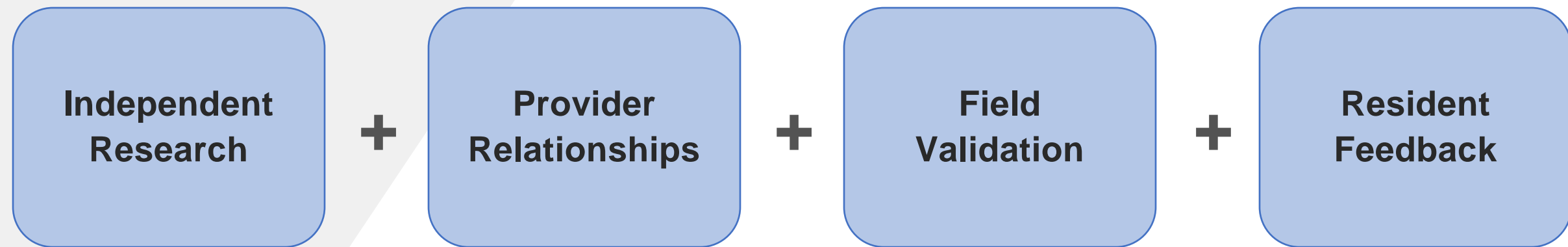
FCC Data Source: FCC Form 477 Broadband Deployment Data as of December 31, 2016, released November 16, 2017.



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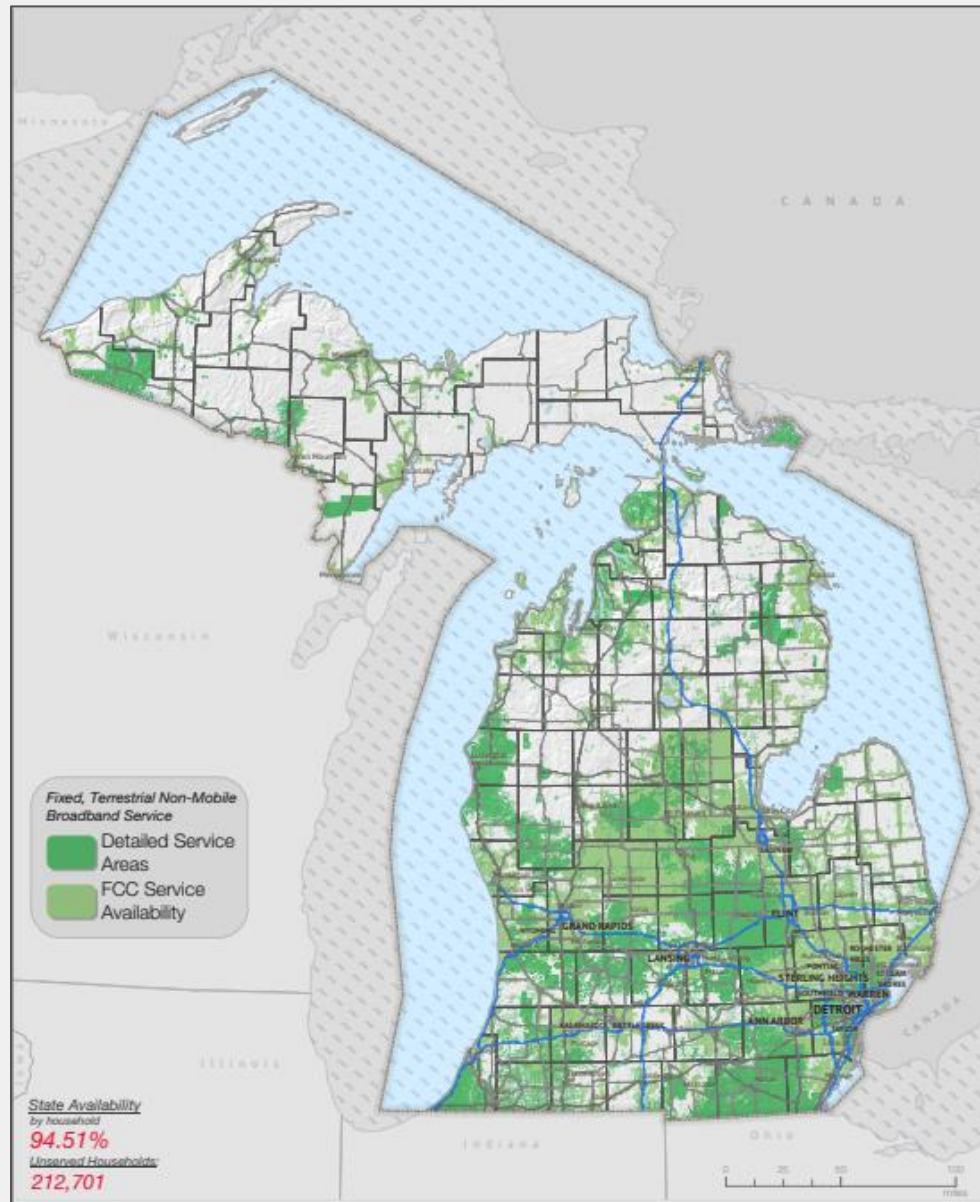


## Successful Broadband Mapping

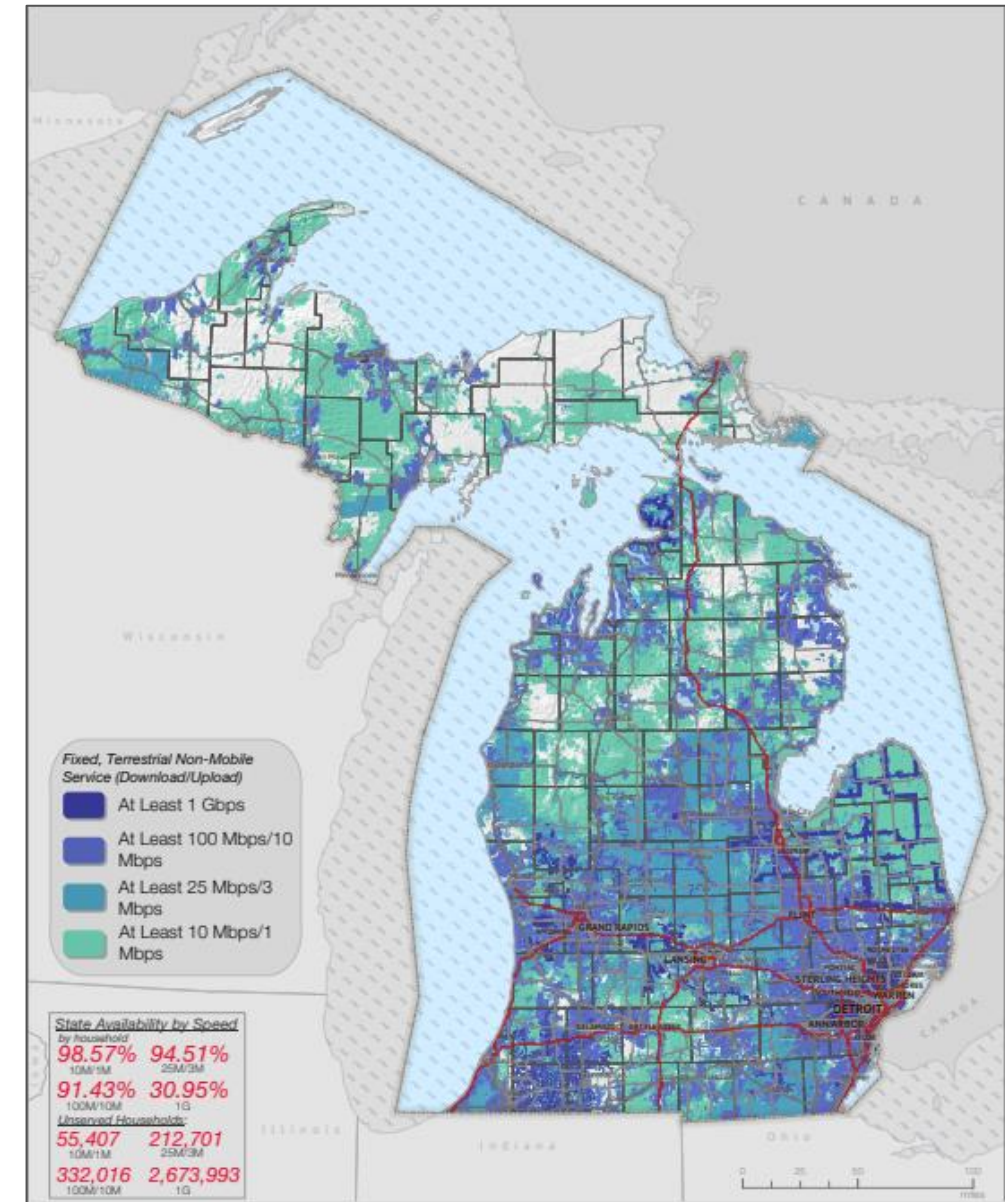




## 25x3 Mbps Broadband Availability

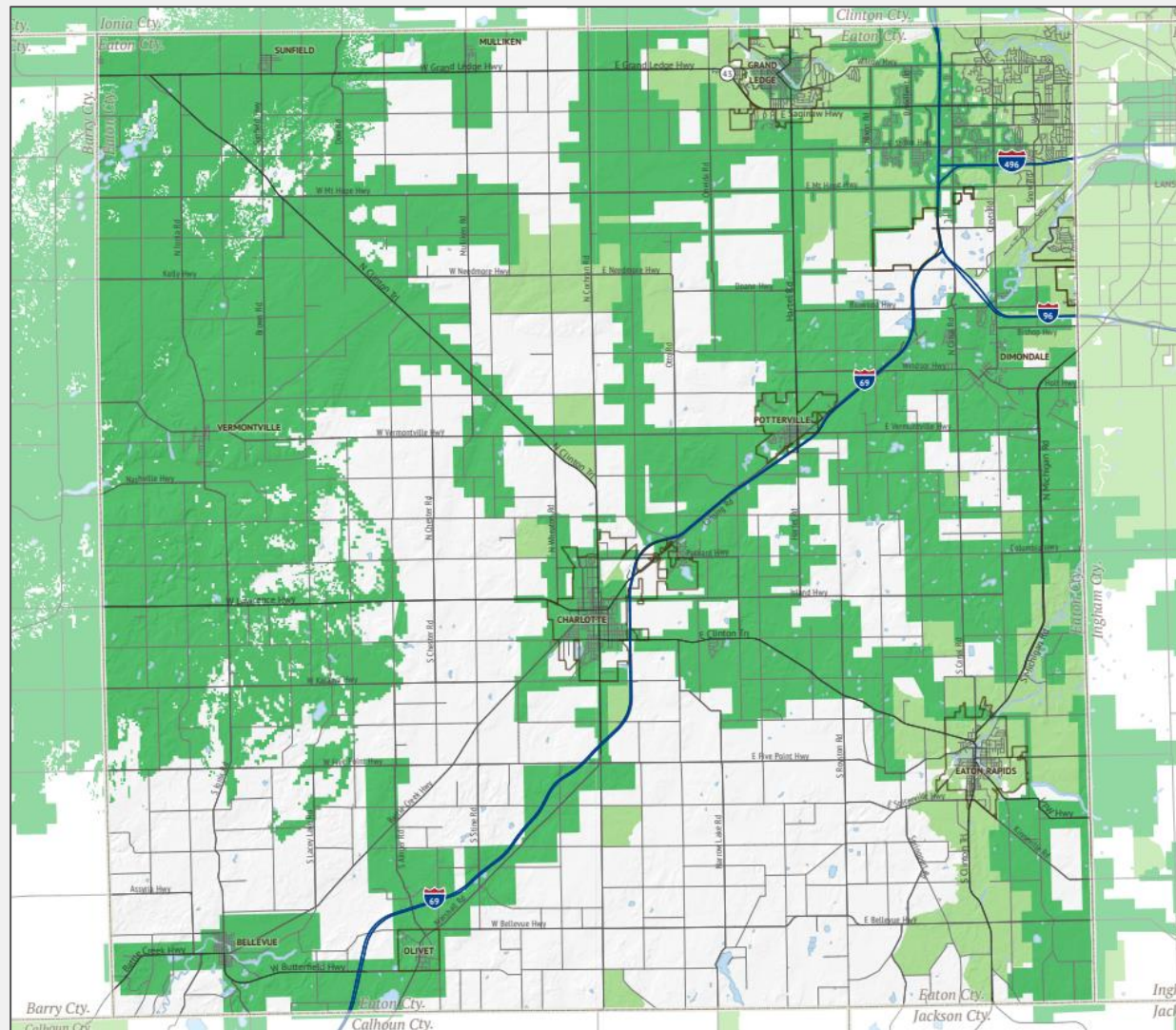


## Maximum Available Broadband Speeds

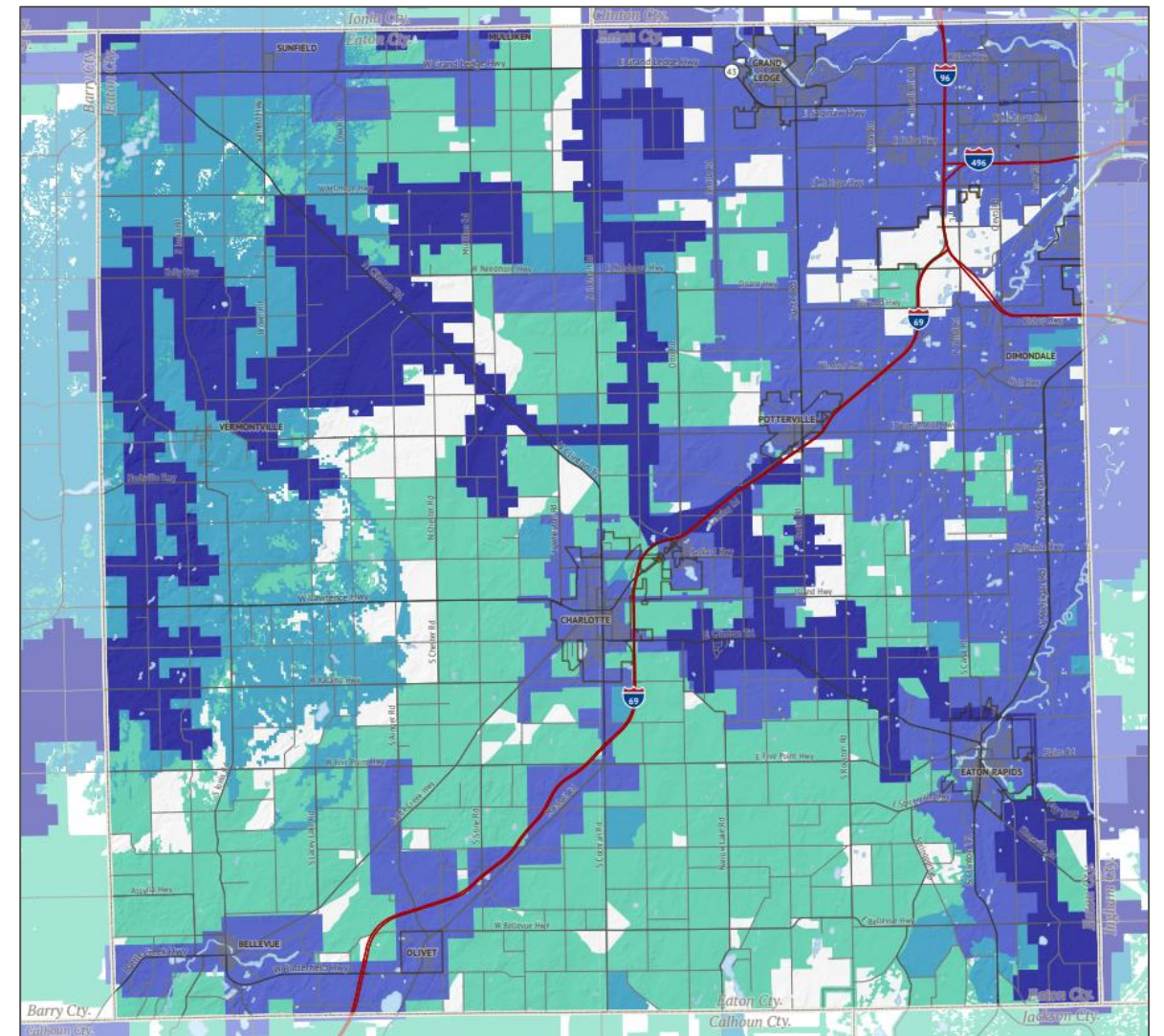




## 25x3 Mbps Broadband Availability

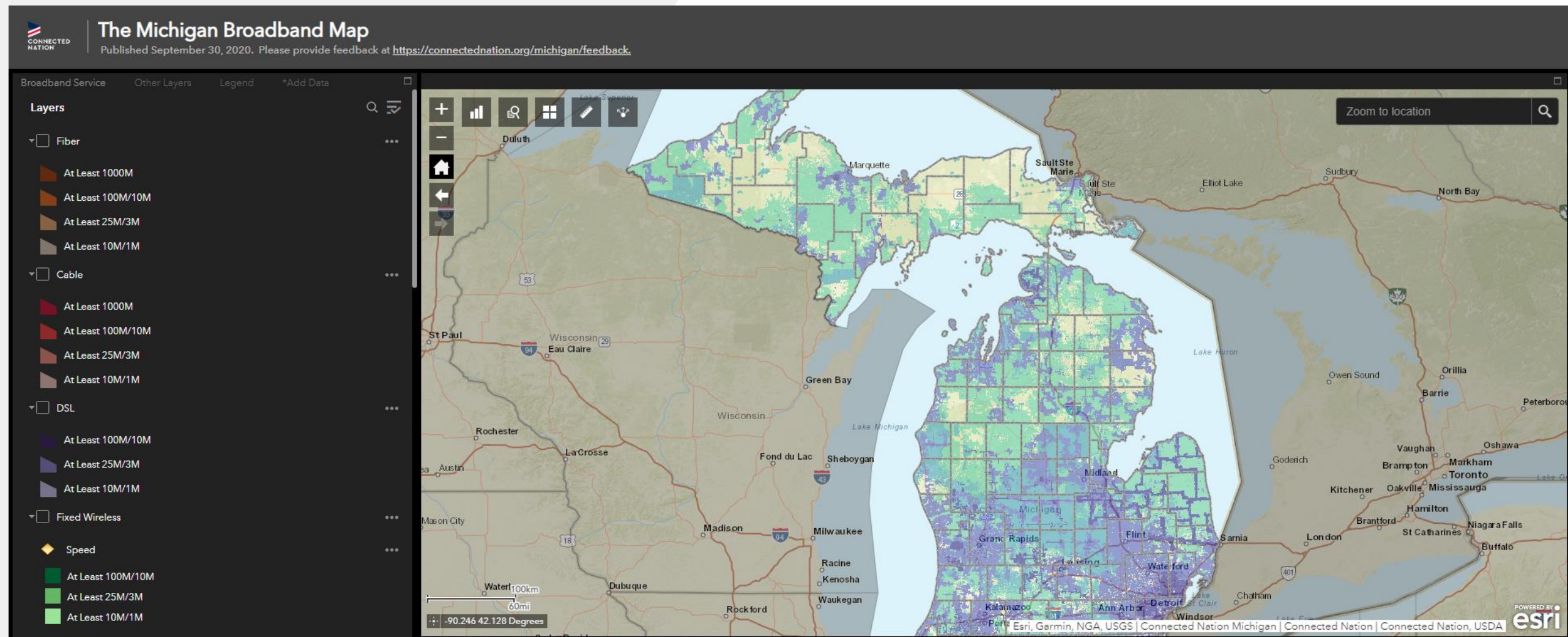


## Maximum Available Broadband Speeds





## Interactive Broadband Map



<https://connectednation.org/michigan/interactivemap>



## Interactive Broadband Map

The screenshot displays an interactive broadband map of Michigan. The map shows various towns and road networks, with a green pin indicating a specific location in Paw Paw, MI. A sidebar on the right, titled "Locate Provider(s) by Address (≥ 10M/1M)", provides details for three providers:

Provider	Platform	Max Download (Mbps)*	Max Upload (Mbps)*
AT&T Mobility	Mobile	n/a	n/a
Bloomington Communications	Fiber	500	500
Frontier	DSL	50	5

Below the table, another provider is listed:

Provider	Platform	Max Download (Mbps)*	Max Upload (Mbps)*
Frontier	Fiber	100	100

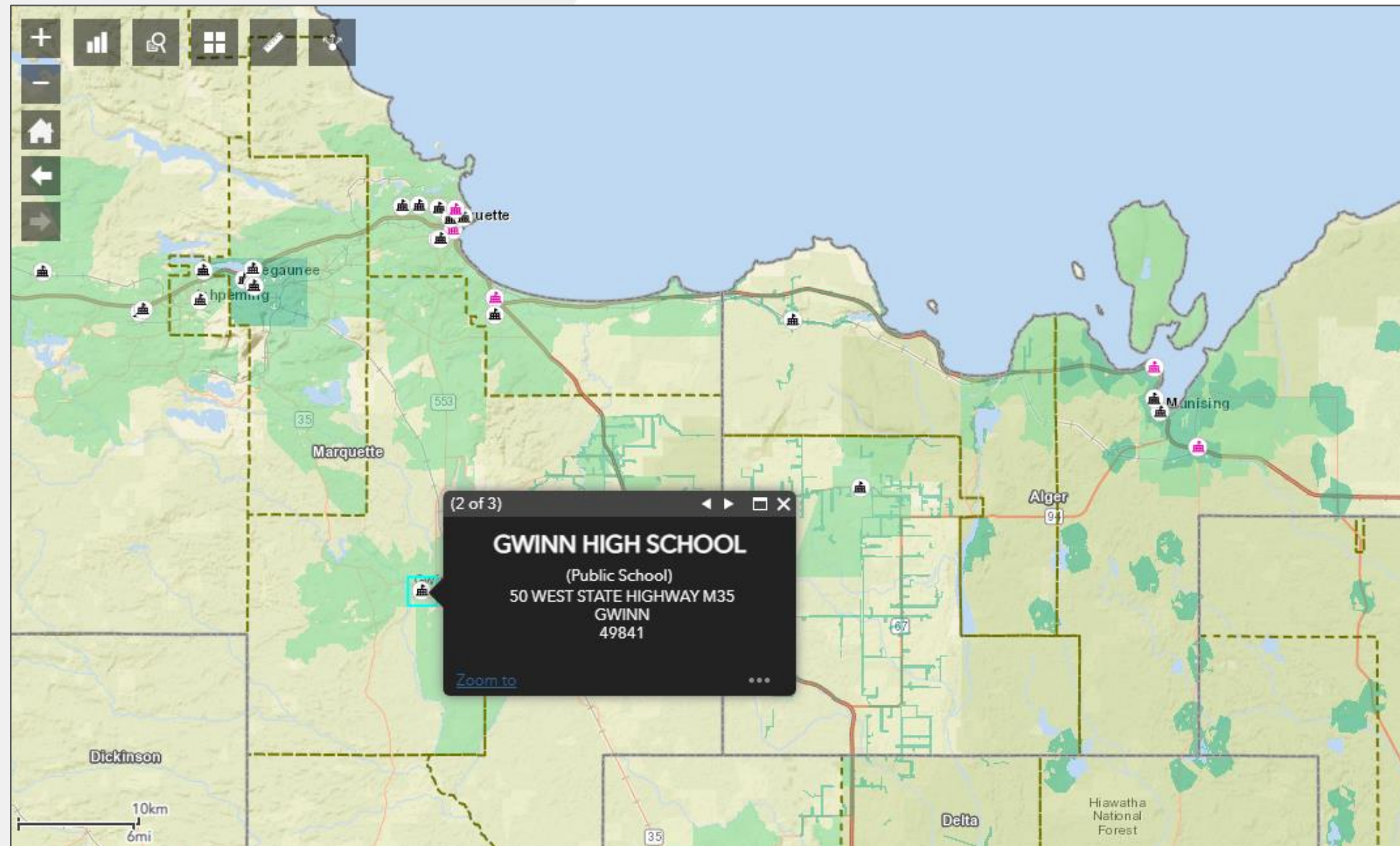
At the bottom of the sidebar, there is a link: "Incorrect information? [Let us know](#)".

The map interface includes a toolbar with icons for zooming, home, and search, and a scale bar at the bottom left showing 3km and 2mi. The coordinates at the bottom left are -86.071 42.275 Degrees. The footer text reads: "Esri, HERE, Garmin, NGA, USGS, NPS | Connected Nation | Connected Nation, USDA ESRI".



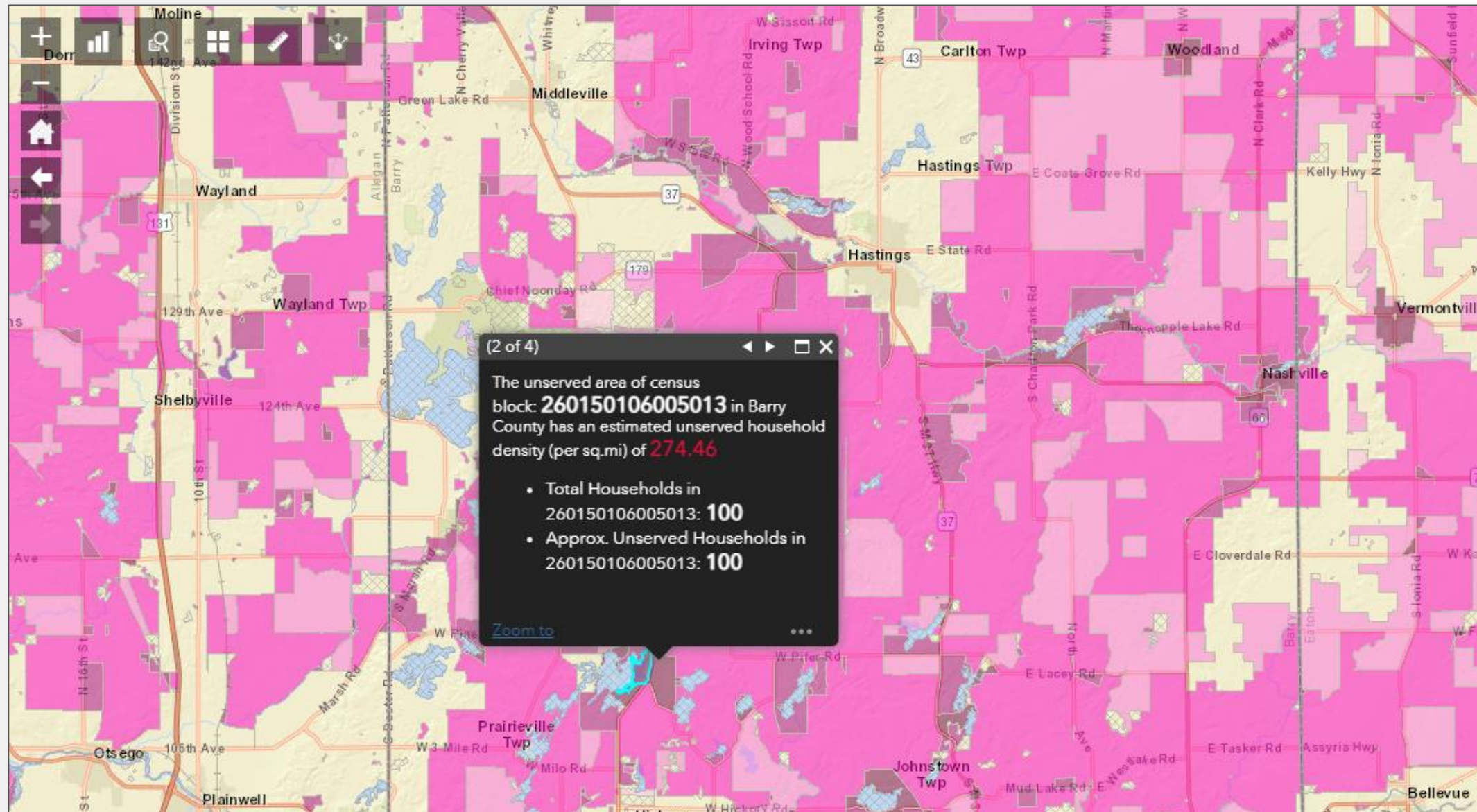


## Interactive Broadband Map





## Interactive Broadband Map





## Broadband Availability Statistics

### Michigan Statewide Broadband Availability Estimates by Speed Tier

Among Fixed Technologies: Cable, DSL, Fiber, Fixed Wireless

Speeds	Unserved Households	Served Households	Percent of Households Served
10 Mbps Download x 1 Mbps Upload	55,407	3,817,101	98.57%
25 Mbps Download x 3 Mbps Upload	212,701	3,659,807	94.51%
100 Mbps Download x 10 Mbps Upload	332,016	3,540,492	91.43%
1 Gbps Download	2,673,993	1,198,515	30.95%

The current FCC definition of broadband is a minimum speed of 25 Mbps download and 3 Mbps upload.


Help improve the maps: <https://connectednation.org/michigan/feedback>

Source: *Connected Nation Michigan, Sept 2020.*

<https://connectednation.org/michigan/planning/>



## Resident Feedback

**CONNECTED NATION<sup>SM</sup> Michigan** 

### Michigan Broadband – Resident Feedback

Please enter the following fields, search or click on the map to identify the proper location, and if necessary, move the location on the map. Complete the form by clicking the *Submit Feedback* button.

#### 1. Enter Information

**Reason For Feedback (required)**

Other issues present (please explain in description) ▼

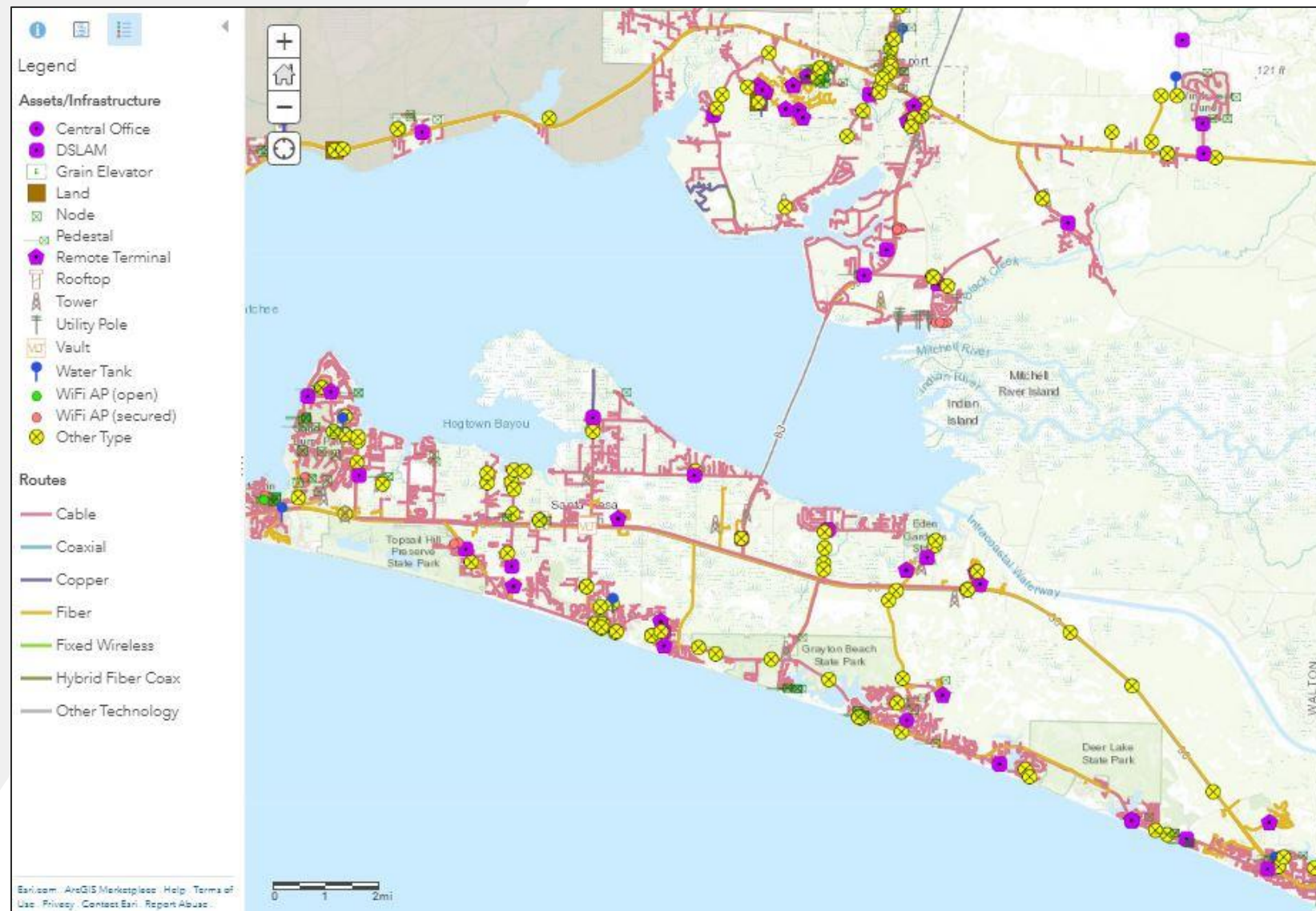
**Description**

Map shows Hitt Telecom serves my area, but I called and they are not able to connect my house.

<https://connectednation.org/michigan/feedback>

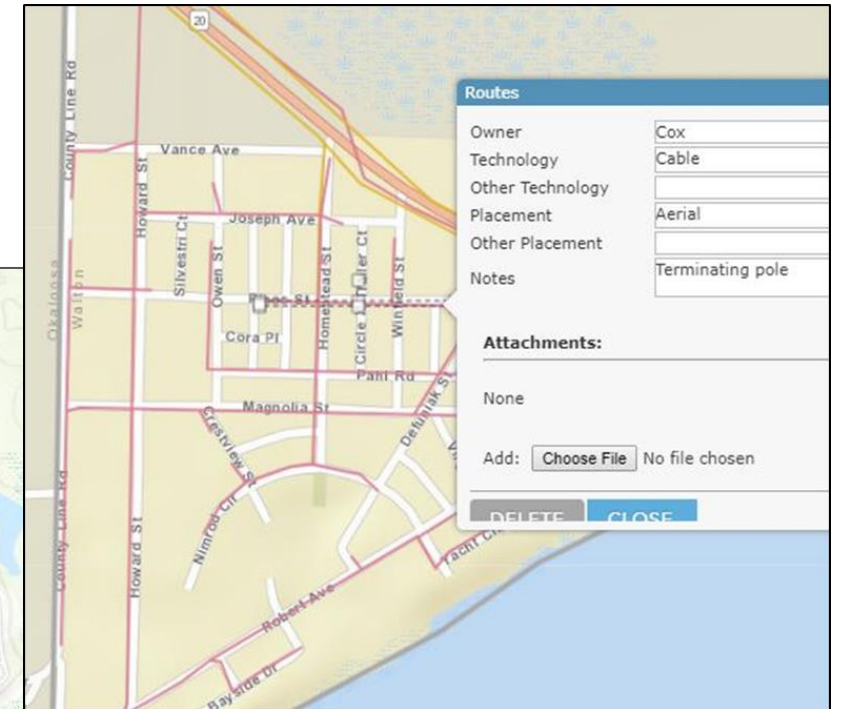
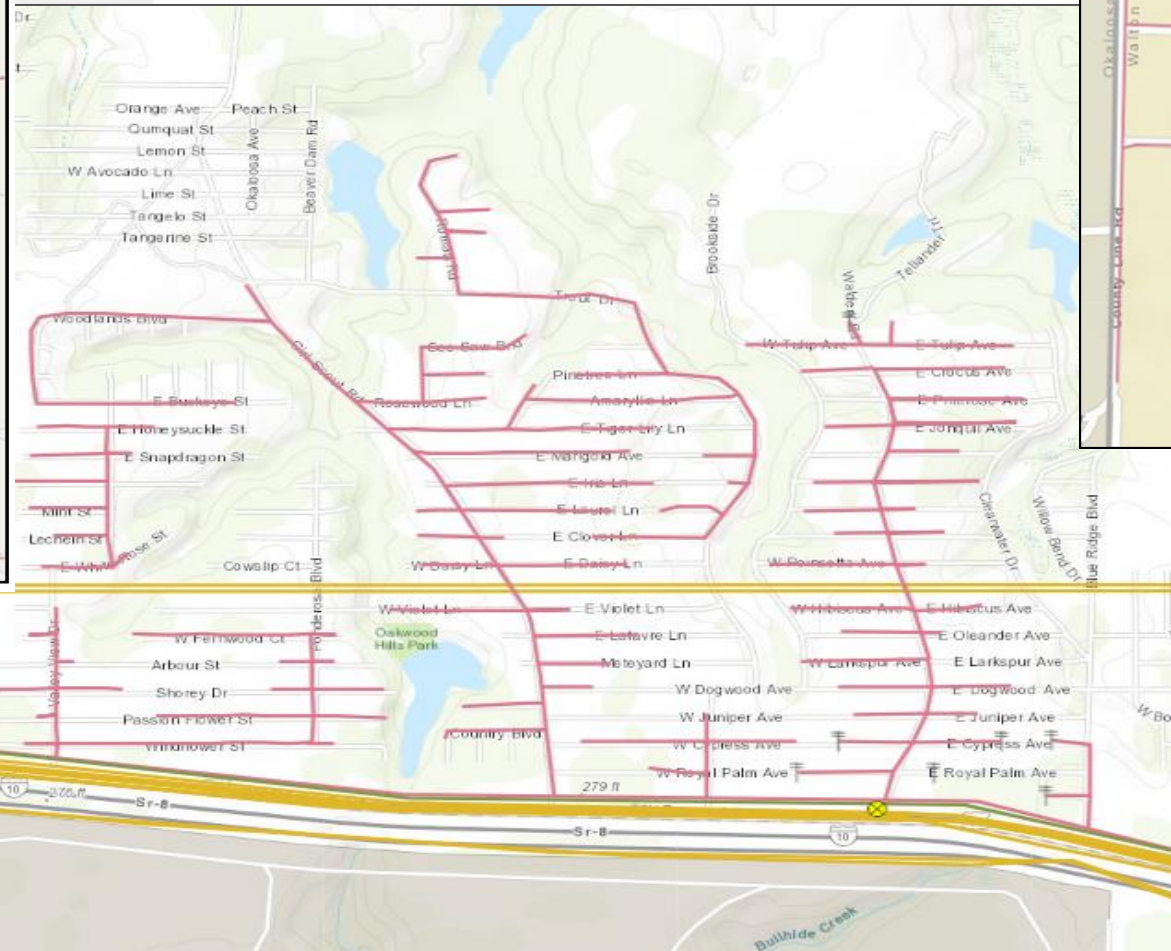
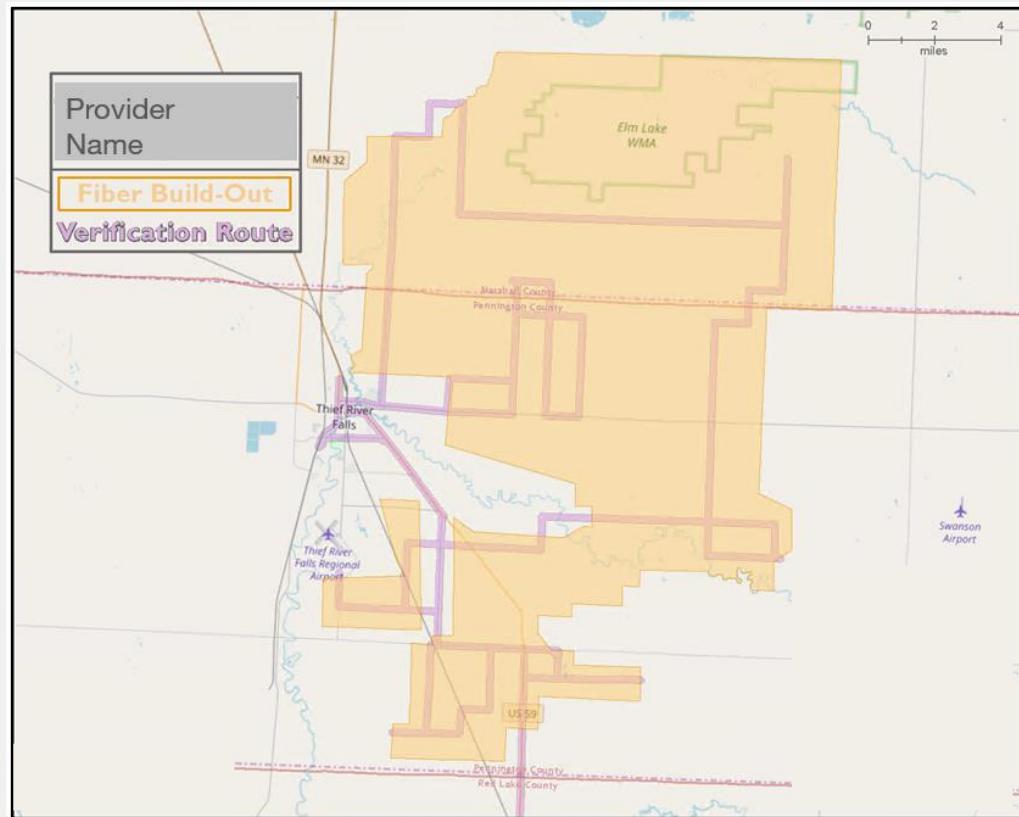


## Field Validation – Assets & Infrastructure



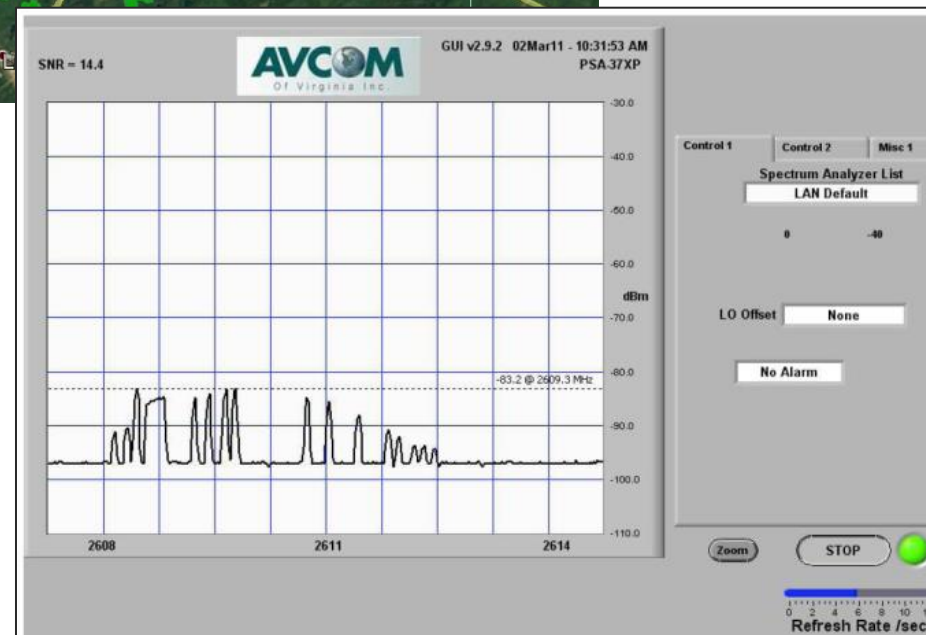
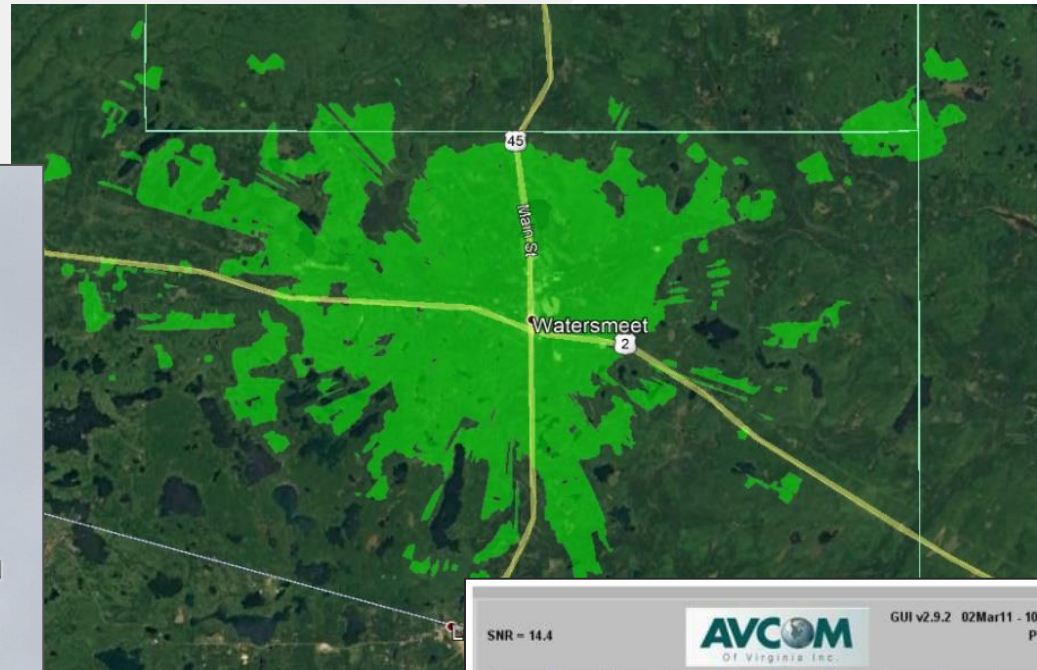


## Field Validation – Wireline Broadband



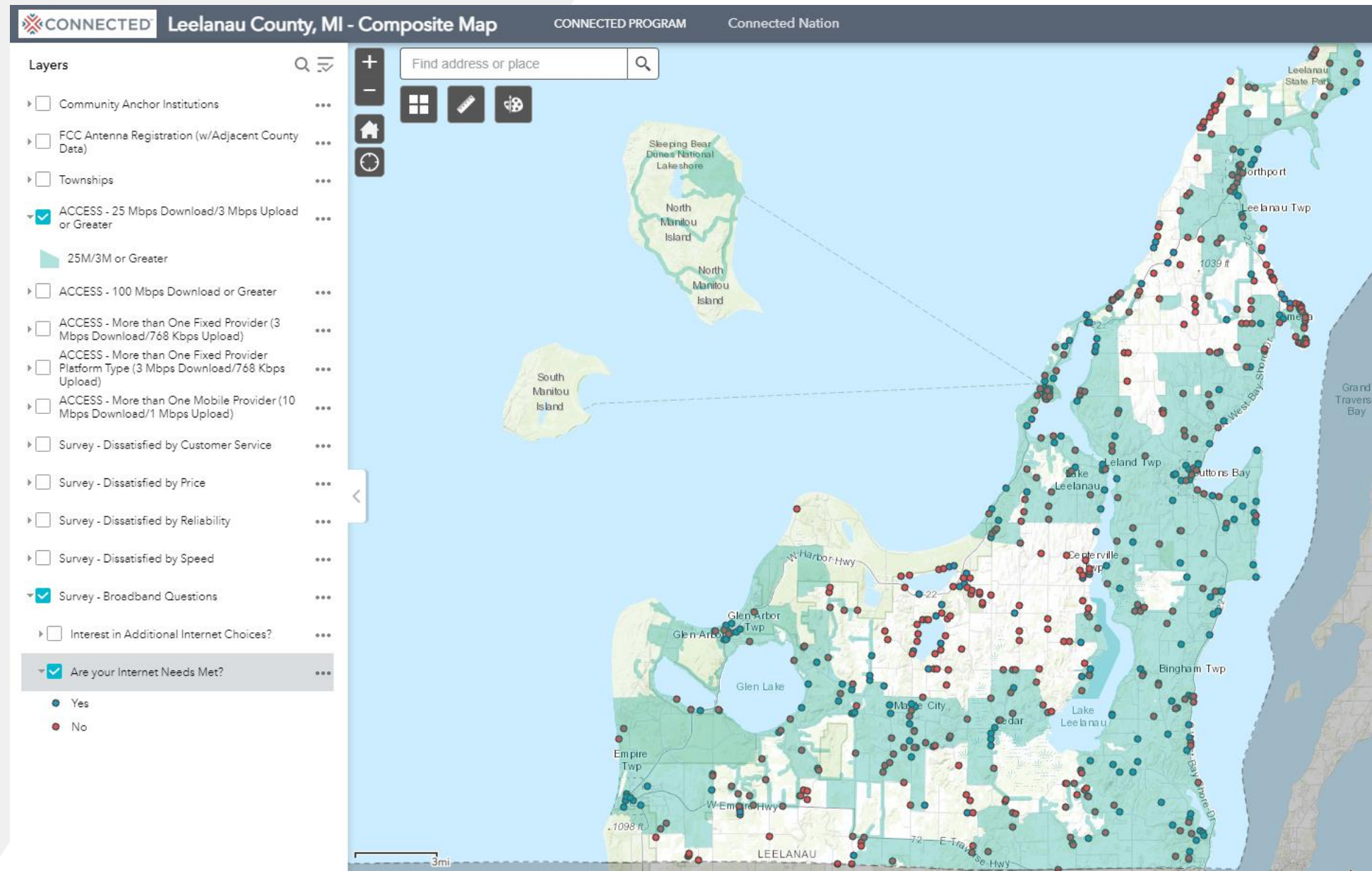


## Field Validation – Wireless Broadband





## Connected Community Engagement Program







## Vertical Asset Inventory

**Vertical Assets & Broadband in Northeast Michigan**  
by Connected Nation

Assets & Broadband

**Layers**

- Vertical Asset Inventory by Structure Type
  - Building
  - Pole
  - Silo
  - Tower
  - Utility Pole
  - Water Tower
  - Other
  - Other/Unknown
- Broadband - At Least 25M Download/3M Upload (Fixed, Terrestrial)
- Broadband - At Least 10M Download/1M Upload (Fixed, Terrestrial)

**Asset Summary**

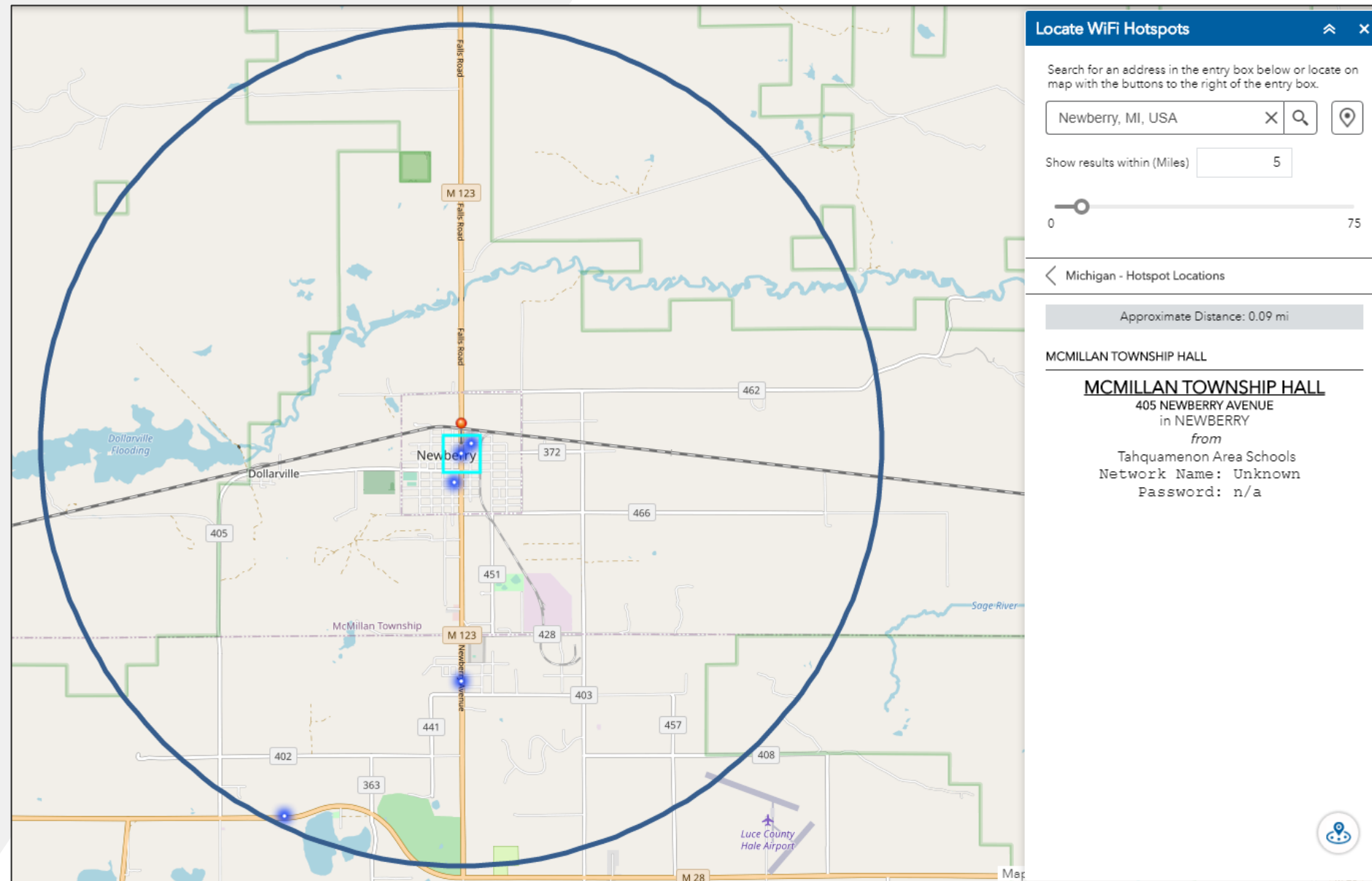
Structure Type	Count
<b>by Structure Type</b>	<b>34</b>
Building	2
Pole	2
Silo	17
Tower	11
Utility Pole	1
Water Tower	1

**Water Tower Asset**  
Height (ft): 80  
Power: yes  
Internet Nearby?: yes  
FCC Registration #: n/a  
Structure Owner: Village of Hillman  
Structure Address: 132 Maple Street, Hillman, MI 49746  
Property Owner: Village of Hillman  
Property Owner Address: 132 Maple Street, Hillman, MI 49746

**Attachments:**  
[Photo\\_3.jpg](#)  
[Photo\\_1.jpg](#)  
[Photo\\_2.jpg](#)  
[Photo\\_4.jpg](#)  
[Zoom to](#)



## WiFi Hotspot Locations



# QUESTIONS?

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**Ashley Hitt, GISP**  
**Vice President, GIS Services**  
**Connected Nation**

**ahitt@connectednation.org**  
**Twitter: @AshleyHittGIS**

**<https://connectednation.org/michigan/mapping-analysis/>**