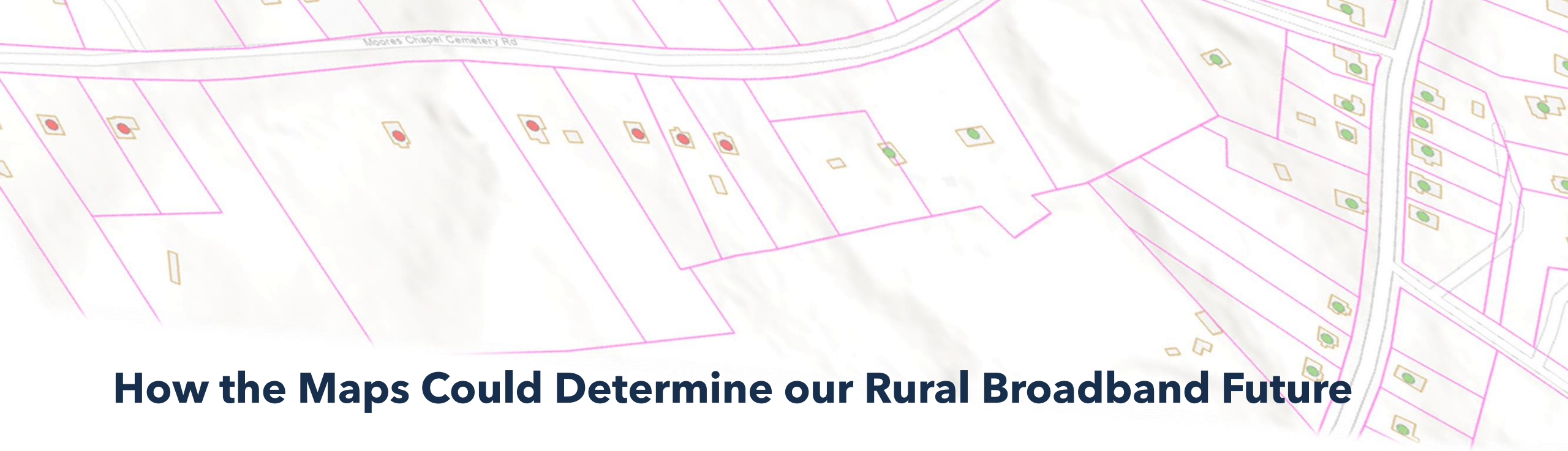


How the Maps Could Determine our Rural Broadband Future

Angie Bailey
Director
NC Broadband Infrastructure Office

Stephanie Jane Edwards
Mapping & Data Lead
NC Broadband Infrastructure Office

Ben Shelton, GISP
GIS Project Manager
NC Center for Geographic Information and Analysis

NC Hearts Gigabit
April 3, 2023

NCDIT NORTH CAROLINA DEPARTMENT OF INFORMATION TECHNOLOGY

FCC BROADBAND DATA COLLECTION - EVOLUTION

- Since 2015, broadband availability data has been collected by the FCC
- Data has been granular to the census-block level, not the household level
- Census-block-level data has been useful in showing us *fully* unserved blocks that lack service to all households, but not in gaining granular information on partially served blocks
- In 2019, the FCC created the new Digital Opportunity Data Collection to collect deployment data in a more granular form
- In 2020, Congress passed the Broadband DATA Act, ratifying the FCC's new approach

FCC BROADBAND DATA COLLECTION (BDC) PROCESS

- In January, the FCC released additional details on implementation of this new data approach – Broadband Data Collection (BDC)
- Sept. 1 was the deadline for broadband providers to submit data for the first round of this new BDC process
- On Nov. 18, the FCC released the pre-production draft of its new National Broadband Map: **https://broadbandmap.fcc.gov**
- On Jan. 13, 2023, the initial round of availability challenges was due to the FCC

FOUNDATION OF FCC MAPPING – 2 PIECES

Broadband Serviceable Location (BSL) Fabric

+

Broadband Availability Data

North Carolina's Current Investment Plan

INFRASTRUCTURE

$971M

Ensure availability of internet service at speeds of at least 100/20 Mbps for more than 98% of North Carolina households

- $380M GREAT Grant ($350M American Rescue Plan Act; $30M State CIF)
- $400M Completing Access to Broadband (CAB)
- $90M Stop-Gap Solutions
- $100M Broadband Pole Replacement Fund
- $1M Broadband Mapping

AWARENESS AND DIGITAL LITERACY

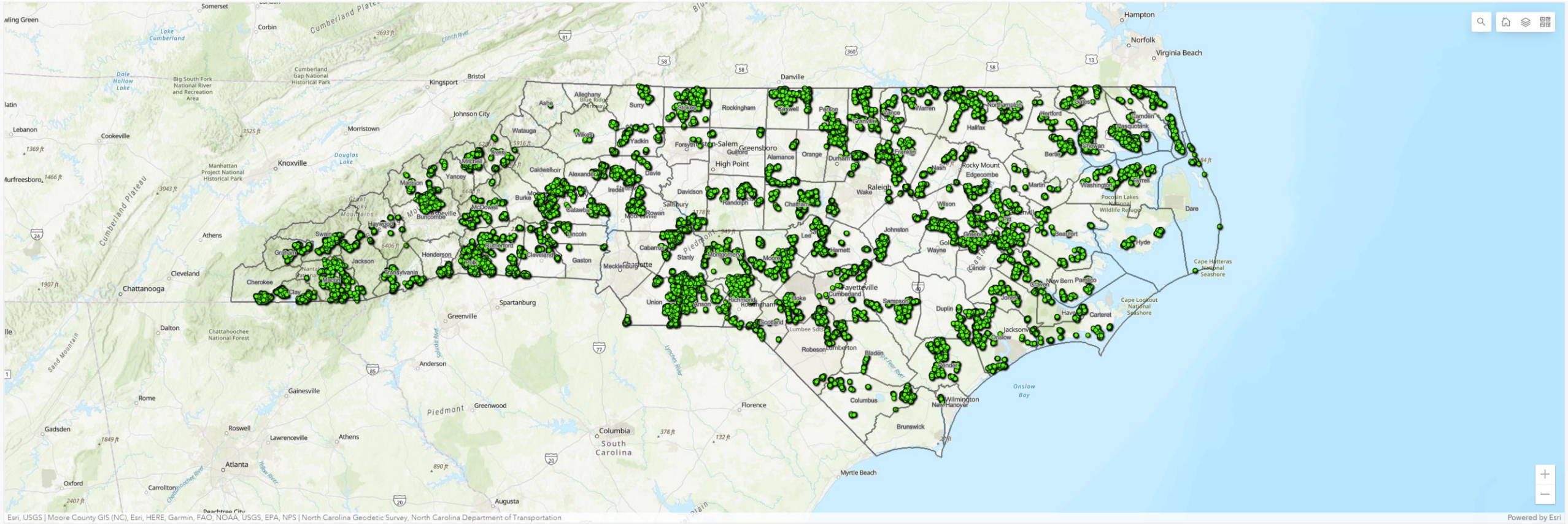
$50M

Improve awareness and enable North Carolinians to realize the benefits of high-speed internet through digital literacy and upskilling aimed at accessing the digital economy.

- Increase enrollment in the Affordable Connectivity Program
- Increase access to devices for households
- Increase access to high quality digital literacy and skills training
- Build local digital equity capacity

GREAT Grant Program

Federally Funded Contingent Awards



Contingent Award Locations

Total Project Cost
$419.8M

Total Grant Amount
$272.2M

Total Match Amount
$147.6M

Total Awarded Locations
113,613

Households Served
109,988

Businesses Served
3,626

Average Cost Per Location
$4.8k

ARPA Infrastructure Funding Opportunities – CAB

- **Completing Access to Broadband (CAB) Program**
  - The CAB Program partnership between each county and NCDIT through a competitive bidding process for broadband providers to bid on broadband infrastructure deployments to deploy last-mile broadband infrastructure to unserved and underserved households and businesses within North Carolina.

  - **CAB Guidance – Part I (Program Parameters) – available at www.ncbroadband.gov**
    - **Part II coming soon**
  - **CAB Planning Tool – on NC OneMap at www.nconemap.gov/pages/broadband**

  - Mutually identify eligible areas AND/OR
    - Fund unfunded Eligible GREAT Grant Projects
  - Develop RFP template and process

- **Check website: www.ncbroadband.gov/grants/cab-grant**

- **For questions: cabprogram@nc.gov**

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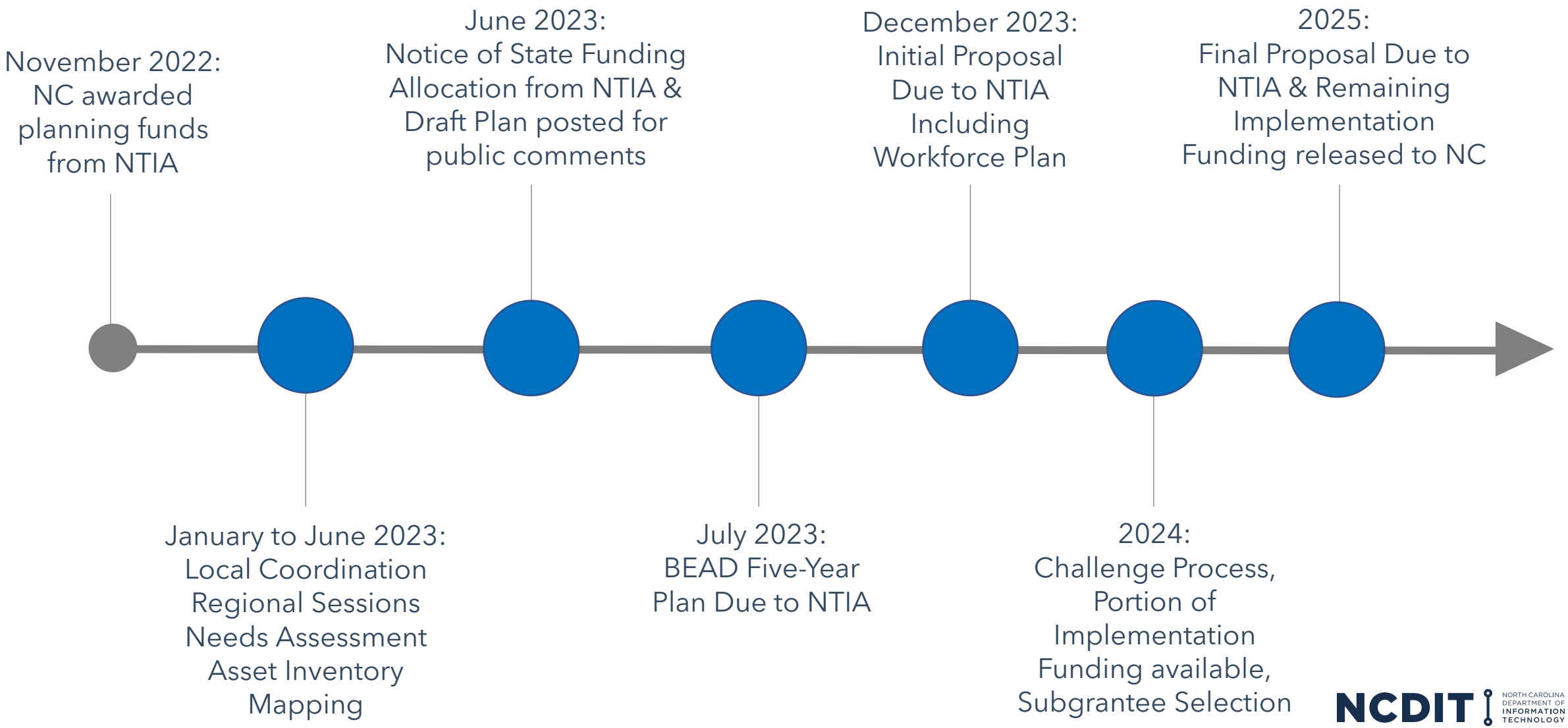
BEAD Timeline for North Carolina



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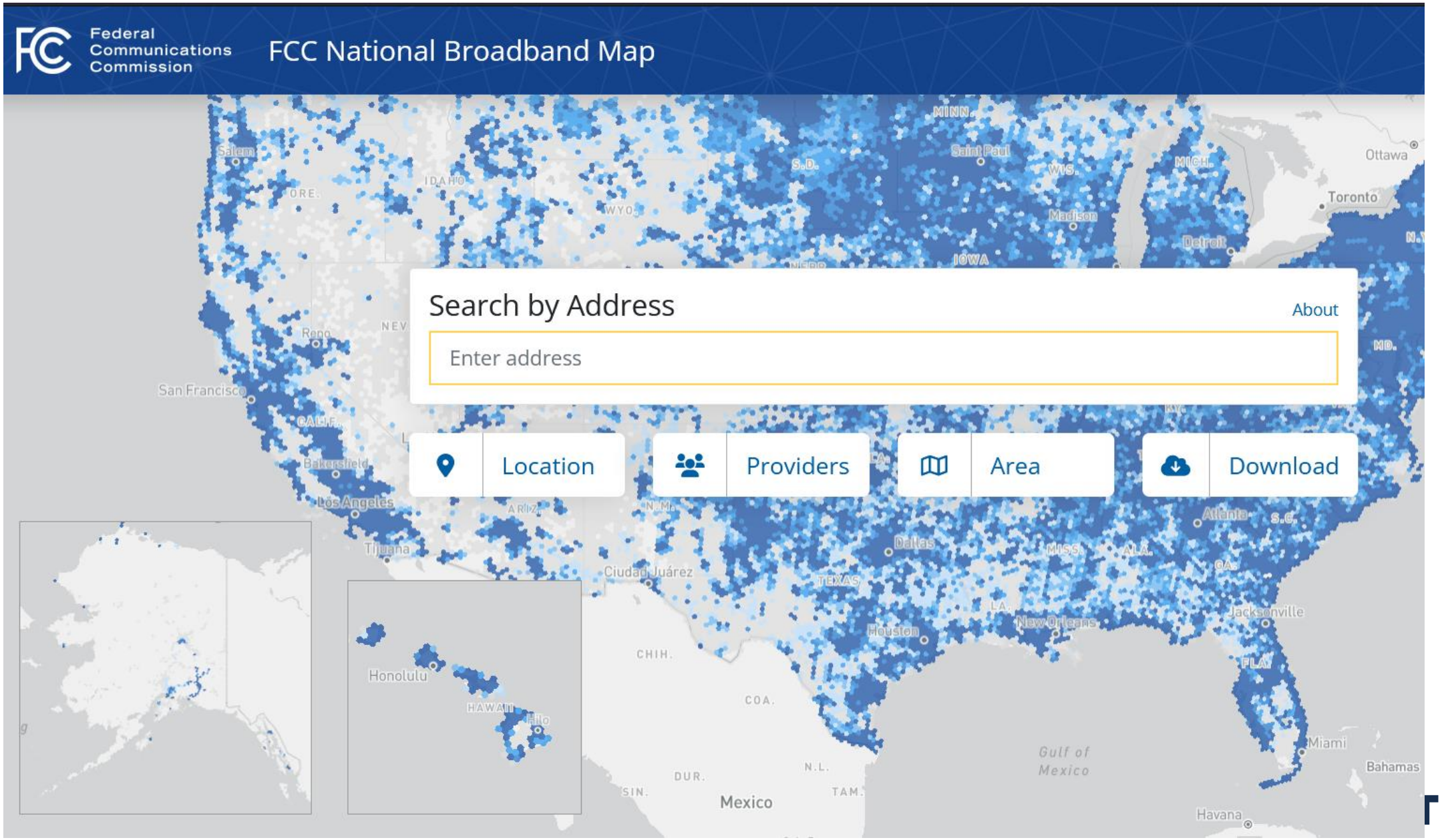
New FCC Broadband Map https://broadbandmap.fcc.gov/home

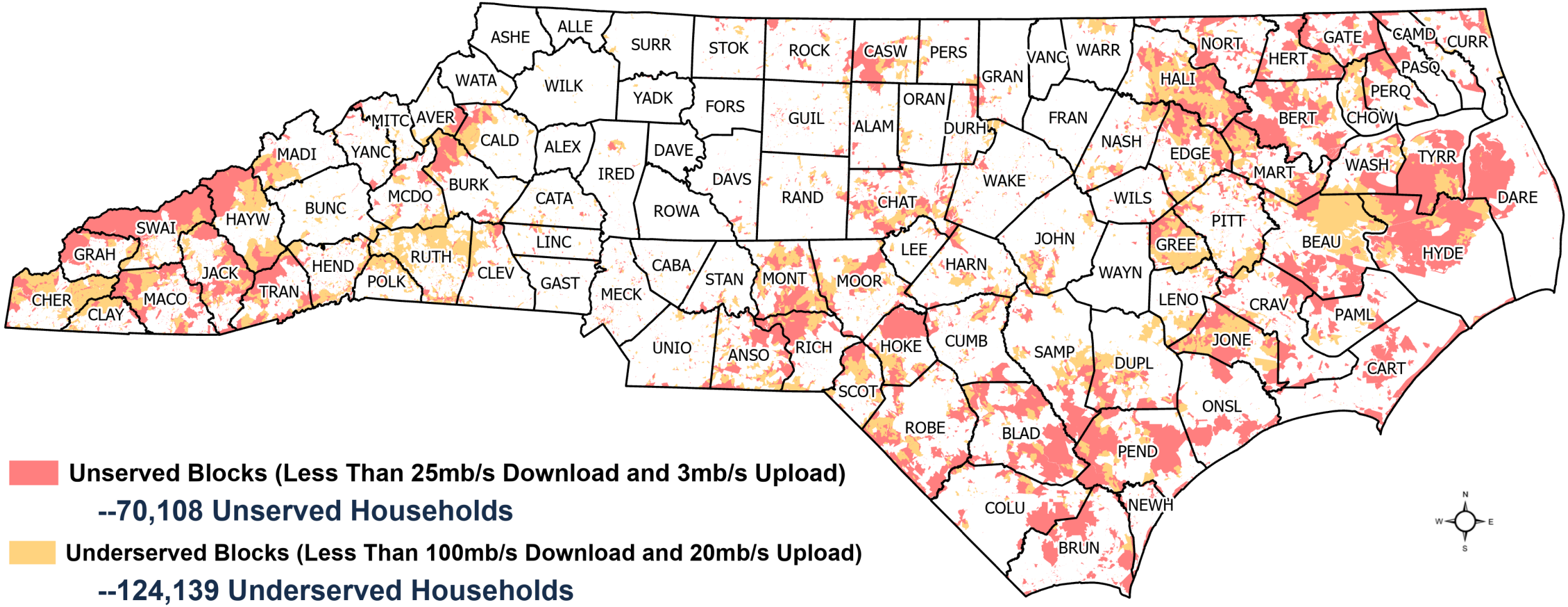


NORTH CAROLINA DEPARTMENT OF INFORMATION TECHNOLOGY

NC Broadband Profile

Evolving identification of Unserved Locations

Form 477 – Census Block Level Reporting – December 2021



Unserved Blocks (Less Than 25mb/s Download and 3mb/s Upload)

--70,108 Unserved Households

Underserved Blocks (Less Than 100mb/s Download and 20mb/s Upload)

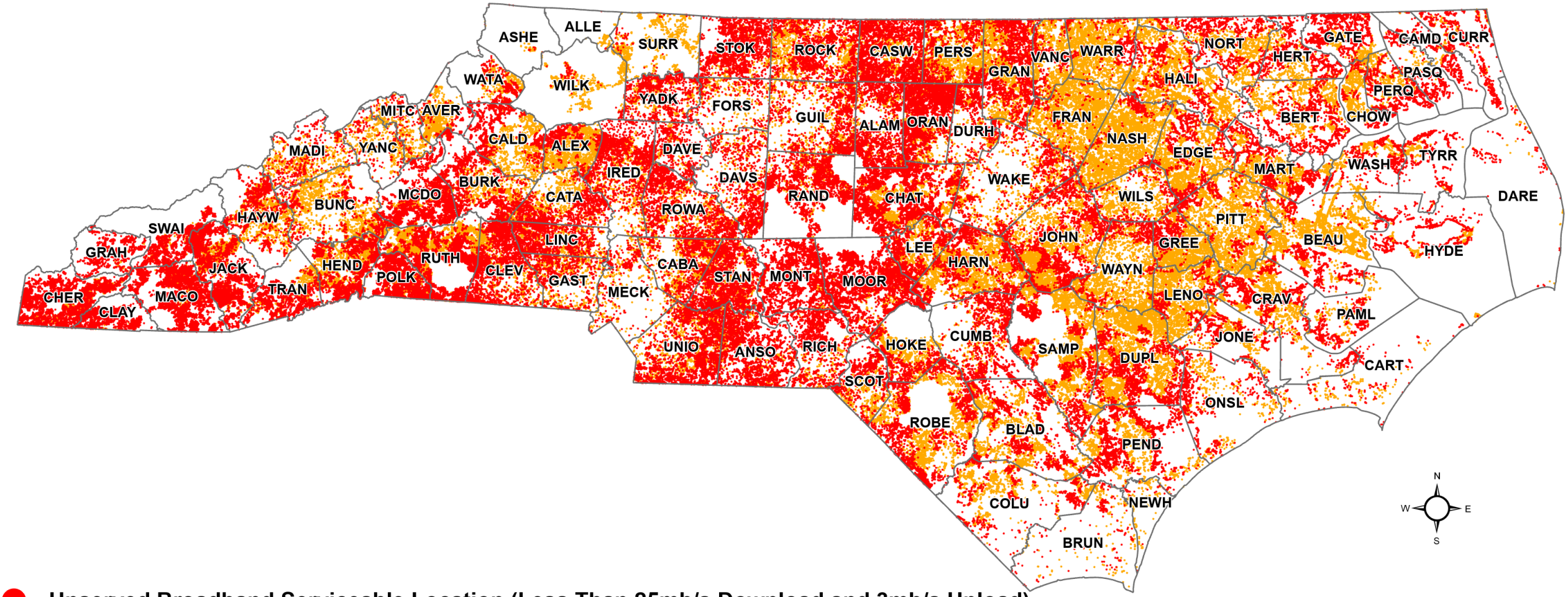
--124,139 Underserved Households

NCDIT NORTH CAROLINA DEPARTMENT OF INFORMATION TECHNOLOGY

NC Broadband Profile

Evolving identification of Unserved Locations

New FCC Broadband Data Collection Serviceable Location Fabric – June 2022



- **Unserved Broadband Serviceable Location (Less Than 25mb/s Download and 3mb/s Upload)**
  --253,409 Unserved BSLs
- **Underserved Broadband Serviceable Location (Less Than 100mb/s Download and 20mb/s Upload)**
  --266,998 Underserved BSLs

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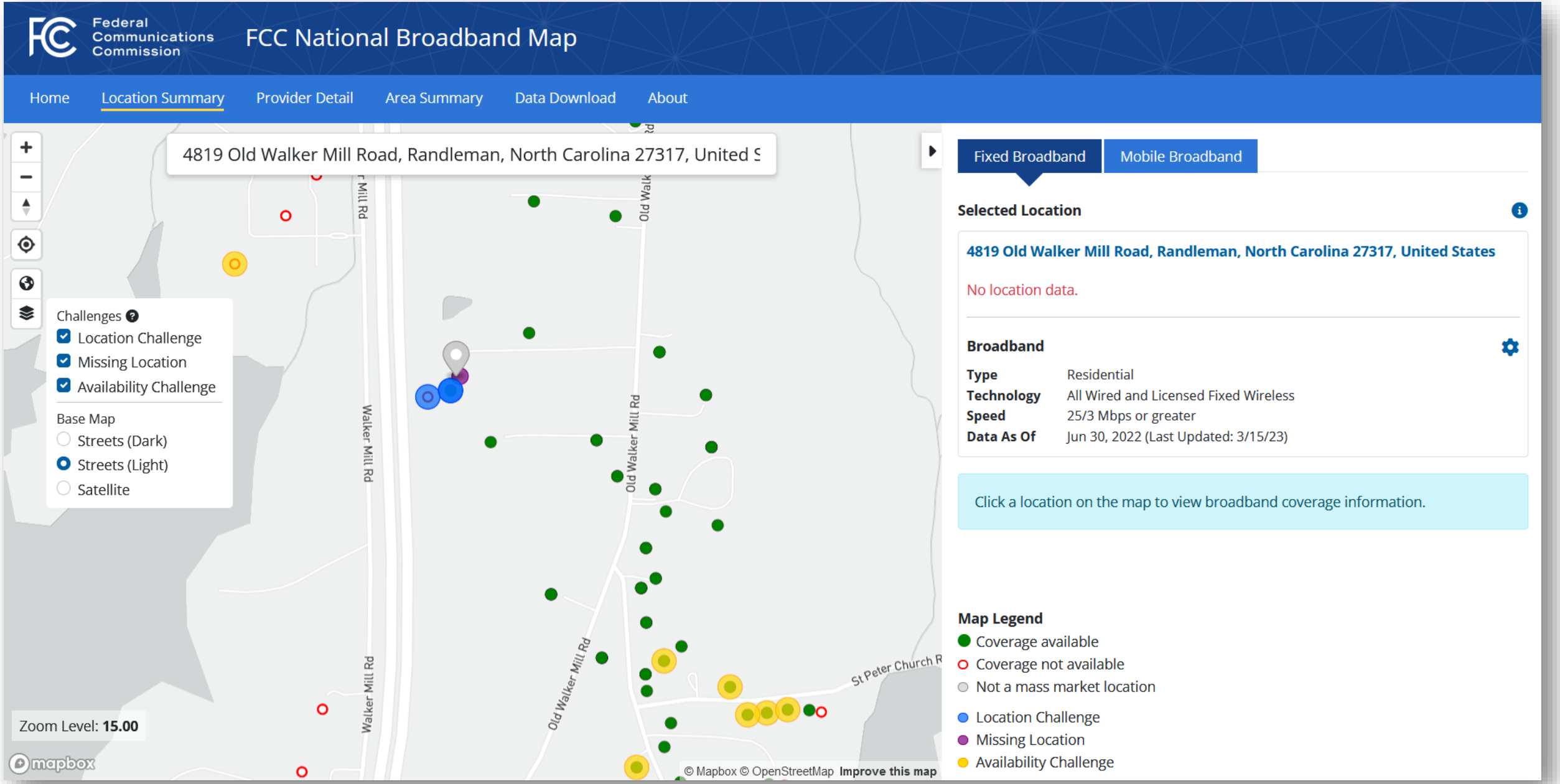
New FCC Broadband Map https://broadbandmap.fcc.gov/home



FCC Broadband Map Challenges

Availability Challenges

43,027

Bulk challenge locations submitted to the FCC
by Jan. 13 deadline
(1,919 additional crowdsource data locations)

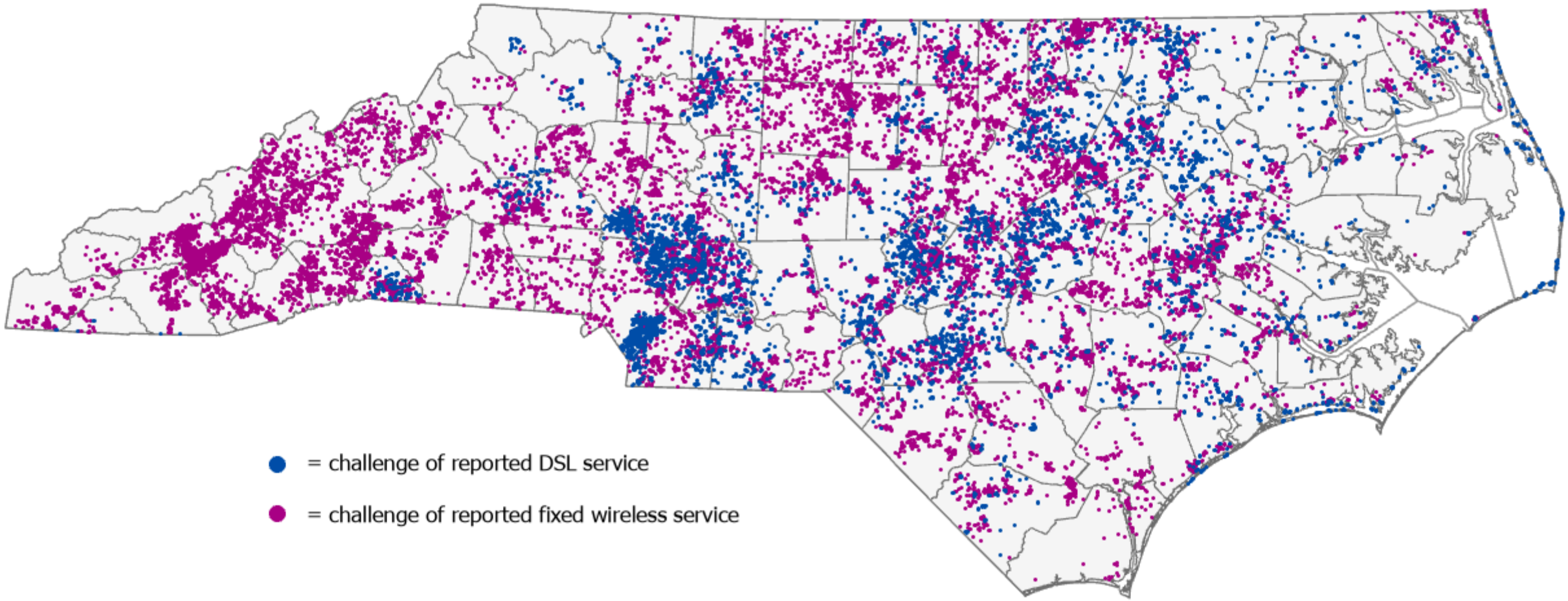
60% (25,748) upheld as of 3/28/23

https://broadbandmap.fcc.gov/location-summary/fixed

NCDIT NORTH CAROLINA DEPARTMENT OF INFORMATION TECHNOLOGY

FCC Broadband Map Challenges

Availability Challenges



Bulk challenges thus far to broadband availability data reported as of 6/30/22. More challenges forthcoming.

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Statewide GIS Datasets and the Location Fabric

Fabric Location Challenges

Addresses, parcels, building footprints, and orthoimagery

NC can challenge missing locations, misplaced locations, and multiple types of incorrect addressing.

- FCC Broadband Serviceable Location
- Potential Fabric Challenge Location

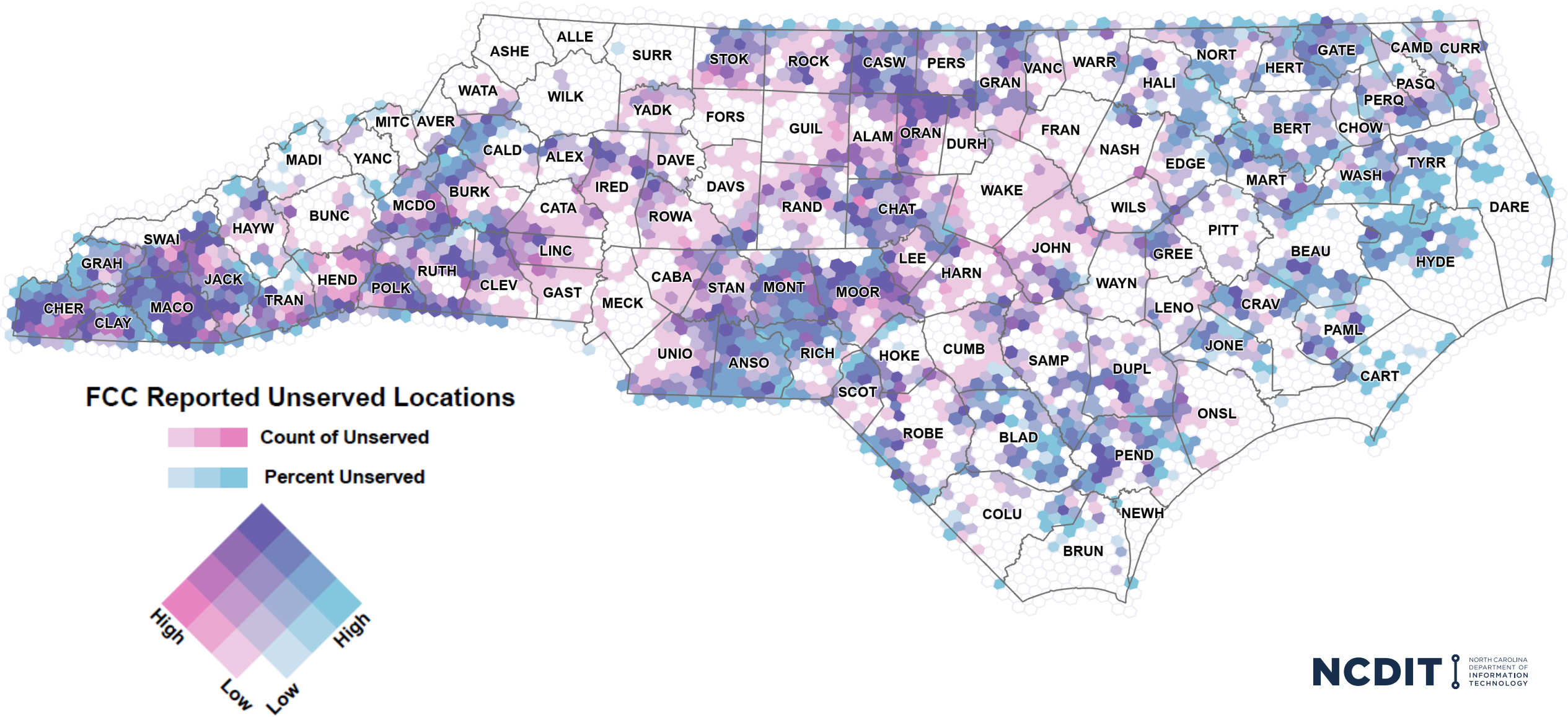
NCDIT NORTH CAROLINA DEPARTMENT OF INFORMATION TECHNOLOGY

FABRIC CHALLENGES

- 5,700 locations from previously unserved census blocks analyzed by CGIA
- **528** missing locations formally challenged, still under FCC review
    - **2,503 Units** at 528 locations challenged
- Gaining insight on the methods and review process
- Next step: scaling up to statewide analysis with 150k “category 1” (missing address) candidates

NC Broadband Profile

Defining Eligible Project Areas



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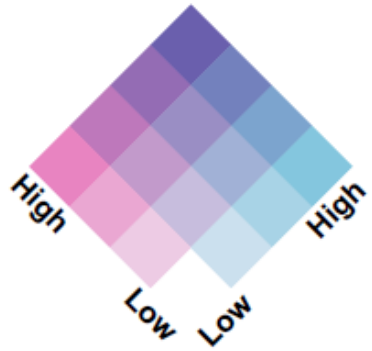
Sampson County Broadband Profile

Defining Eligible Project Areas

FCC Reported Unserved Locations

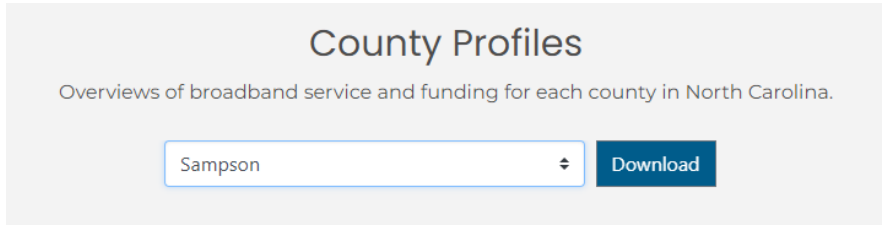
Count of Unserved

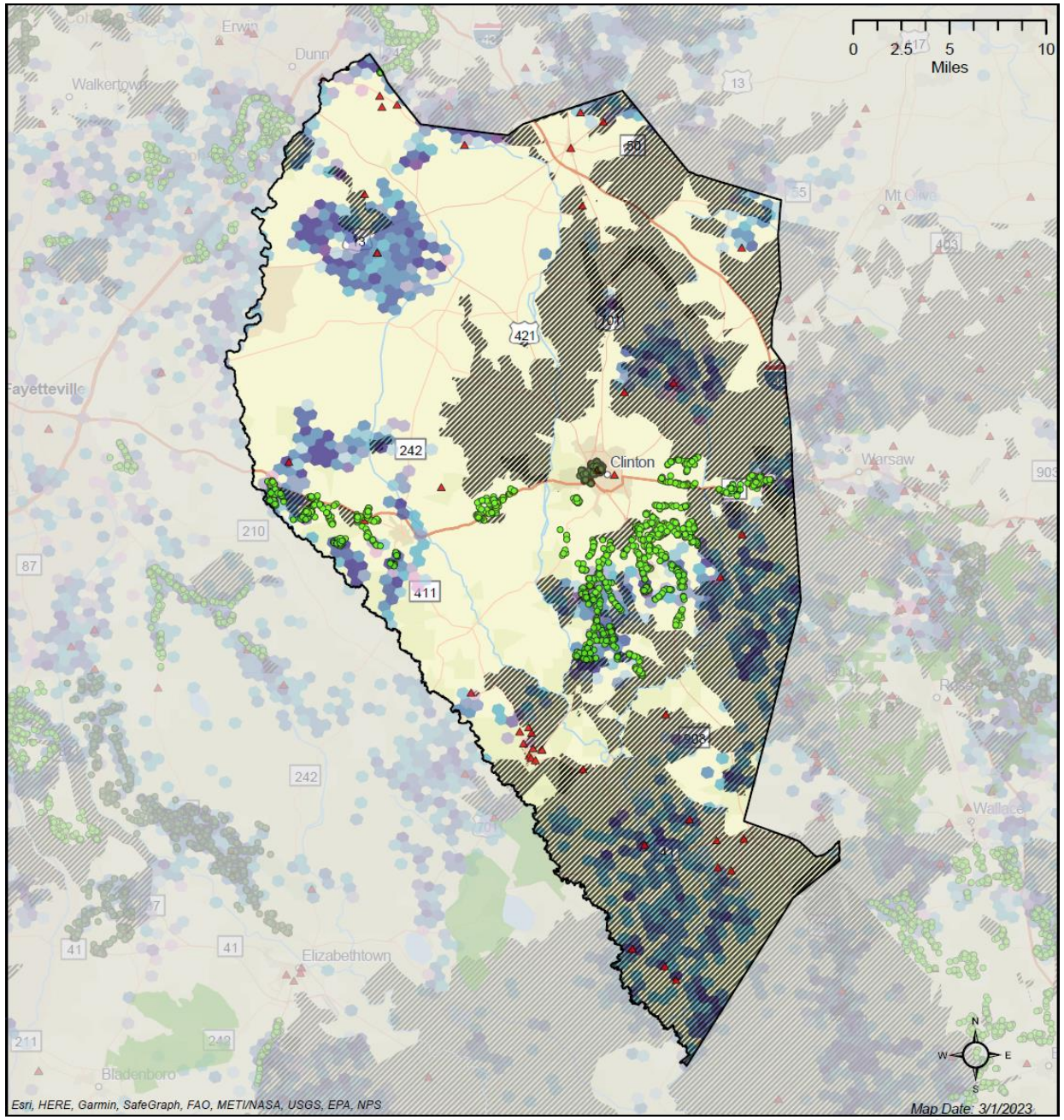
Percent Unserved



- NC Broadband Survey - Unserved Responses
- GREAT Contingent Award Locations (Federally Funded)
- GREAT Award Locations (State Funded)
- GREAT Award Areas (State Funded)
- Other Federal Grants

https://www.nconemap.gov/pages/broadband





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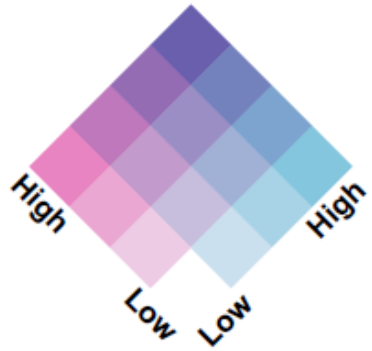
Polk County Broadband Profile

Defining Eligible Project Areas

FCC Reported Unserved Locations

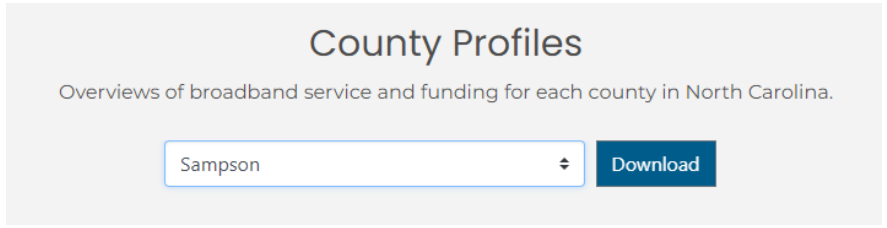
Count of Unserved

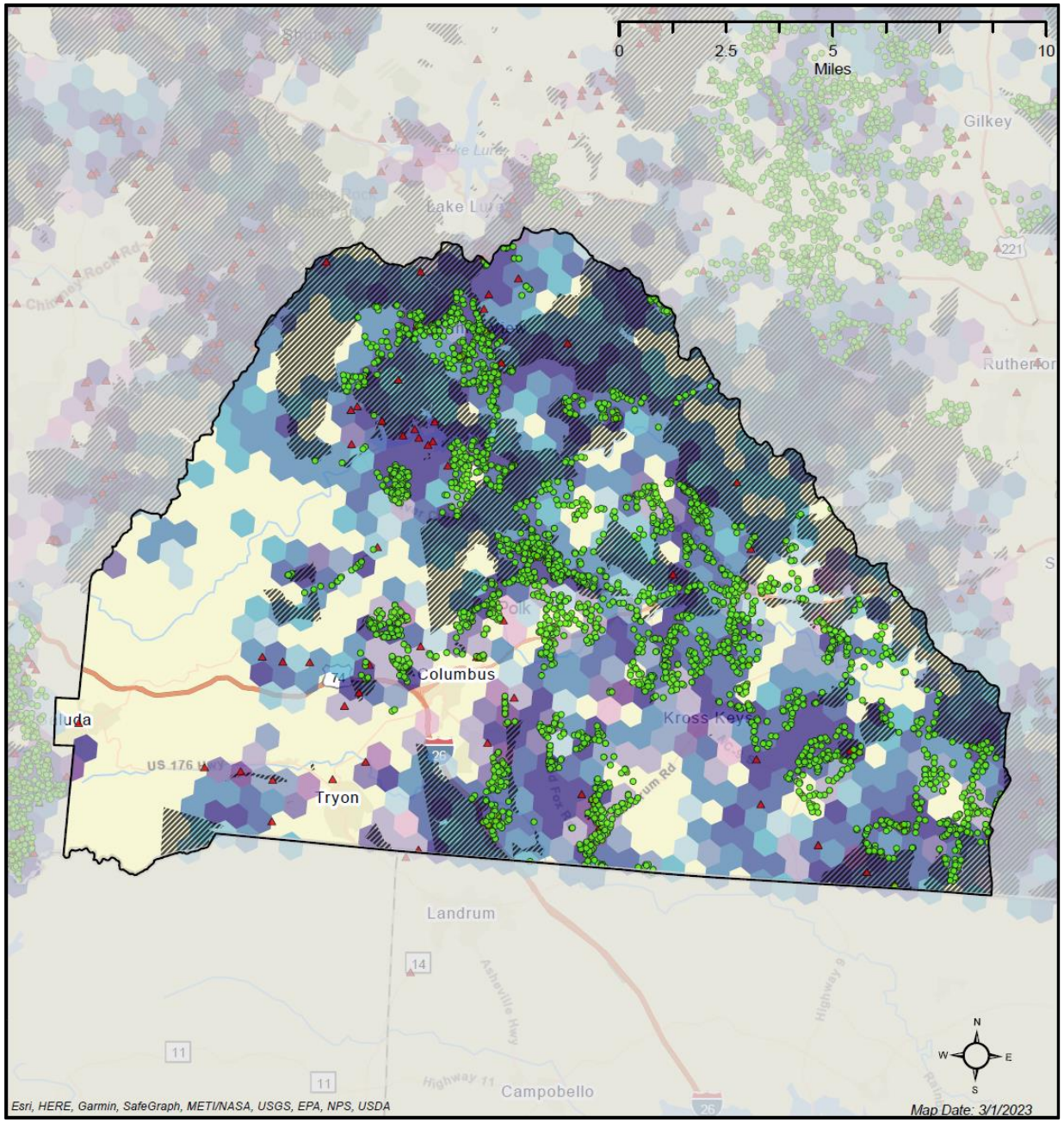
Percent Unserved



- NC Broadband Survey - Unserved Responses
- GREAT Contingent Award Locations (Federally Funded)
- GREAT Award Locations (State Funded)
- GREAT Award Areas (State Funded)
- Other Federal Grants

https://www.nconemap.gov/pages/broadband





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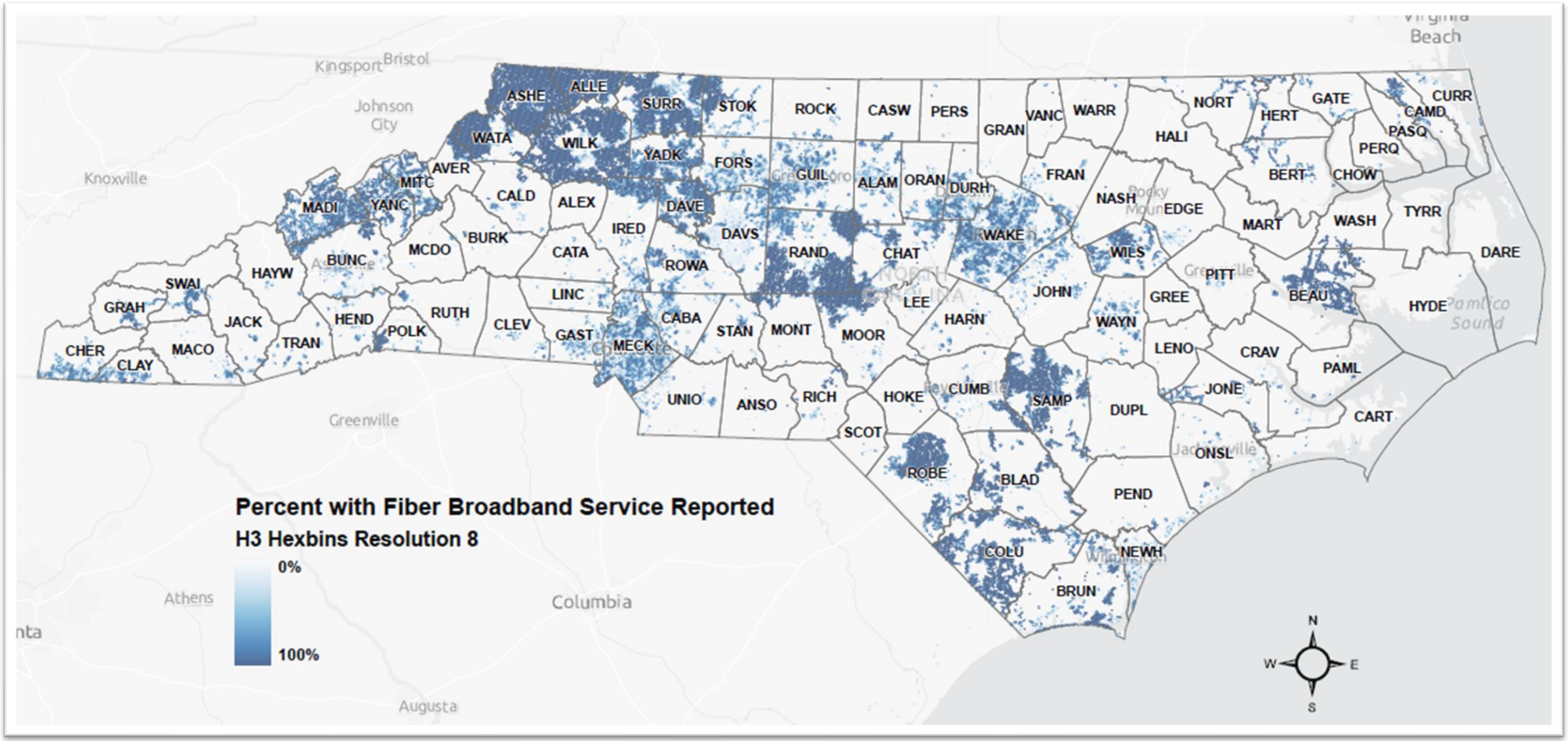
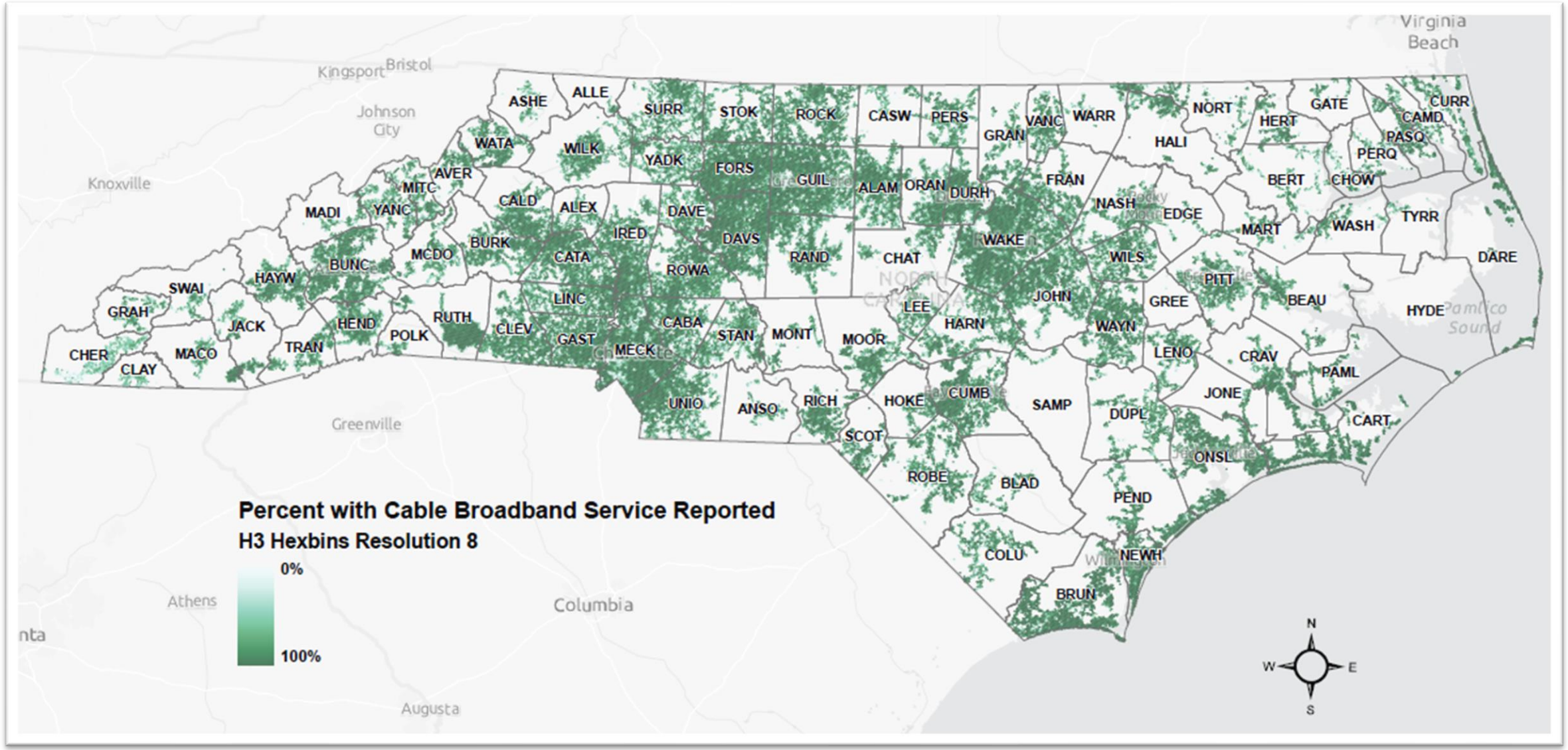
Reported Service by Technology Type: Fiber as of 6/30/22



NCDIT NORTH CAROLINA DEPARTMENT OF INFORMATION TECHNOLOGY

Reported Service by Technology Type : Cable as of 6/30/22



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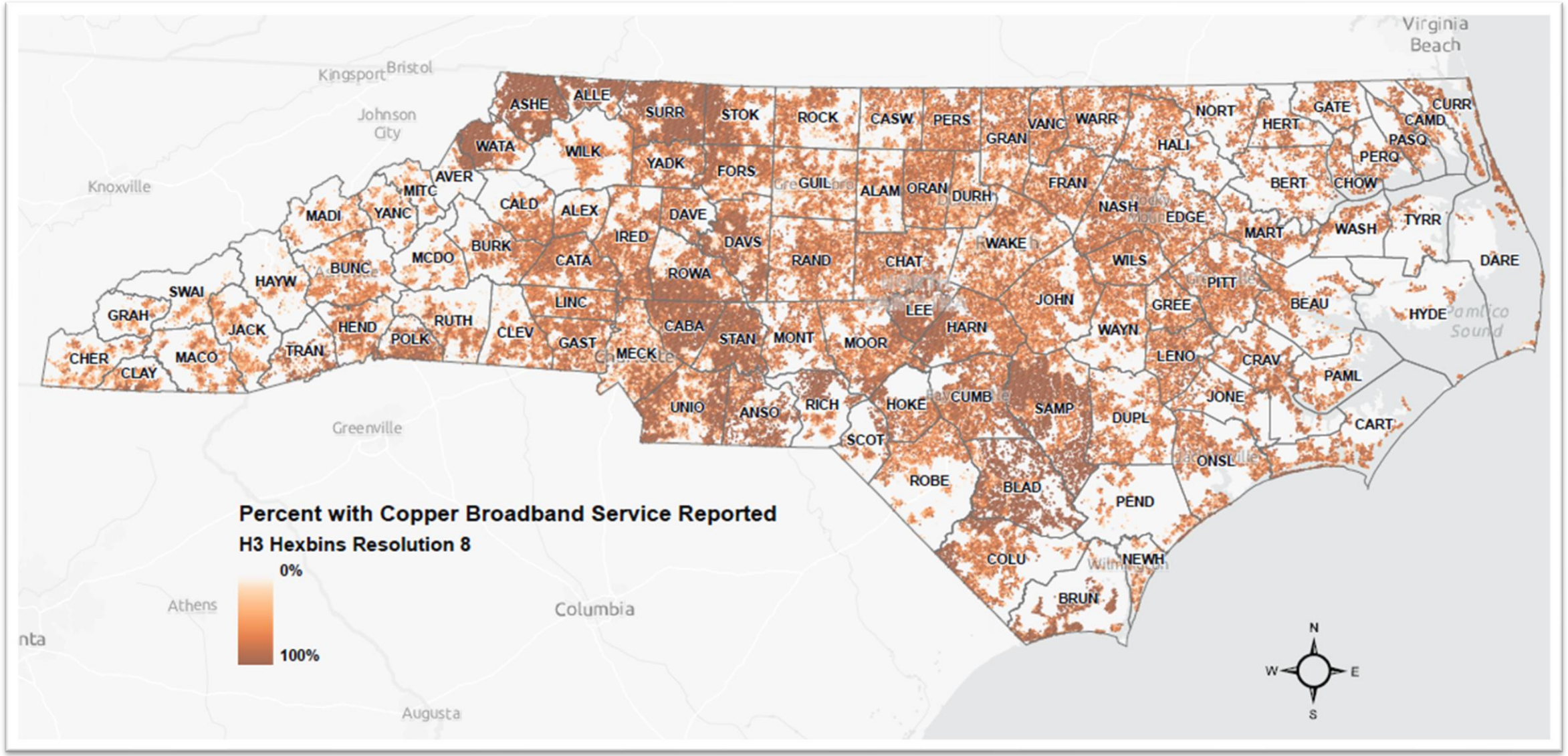
Reported Service by Technology Type : Copper as of 6/30/22



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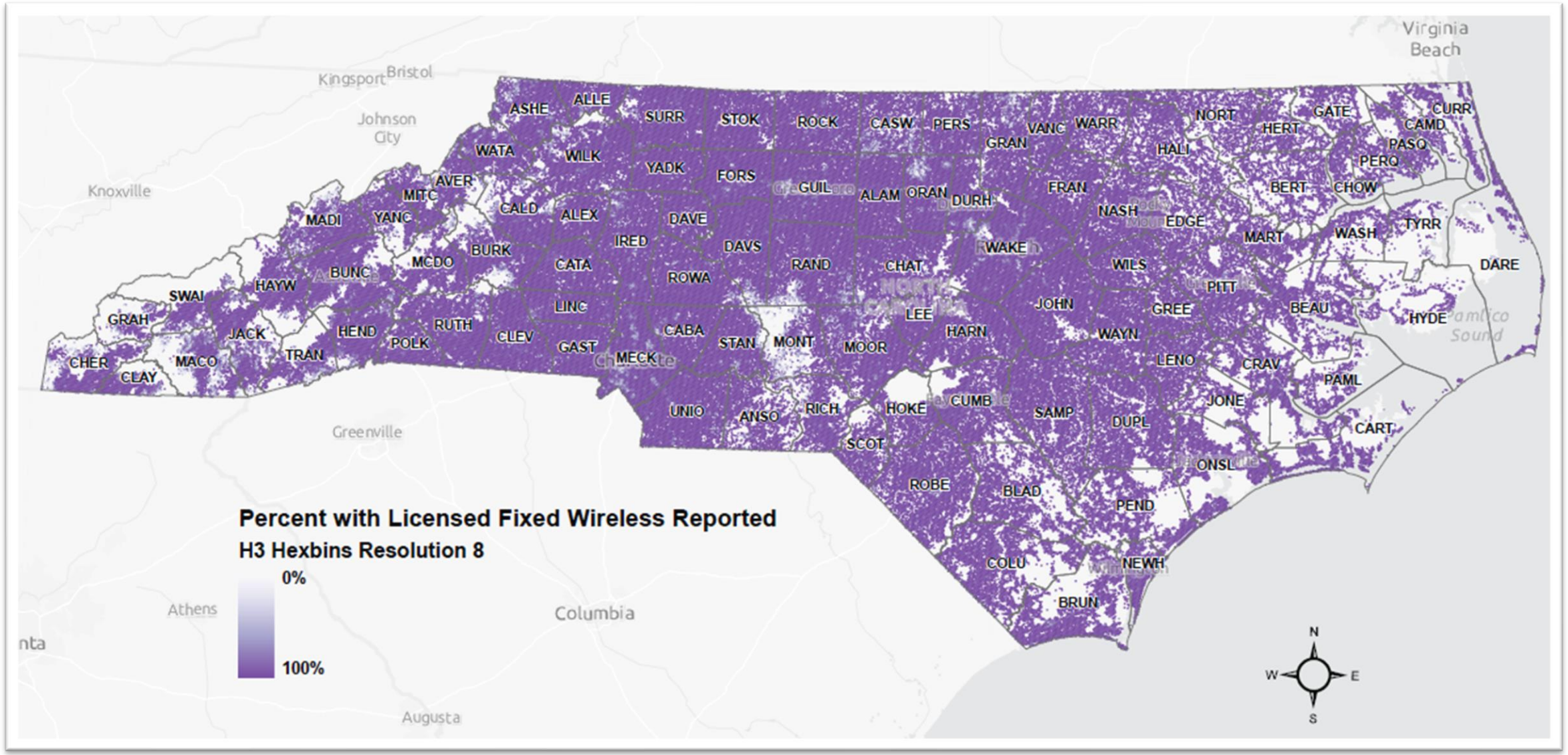
Reported Service by Technology Type : Licensed Fixed Wireless as of 6/30/22



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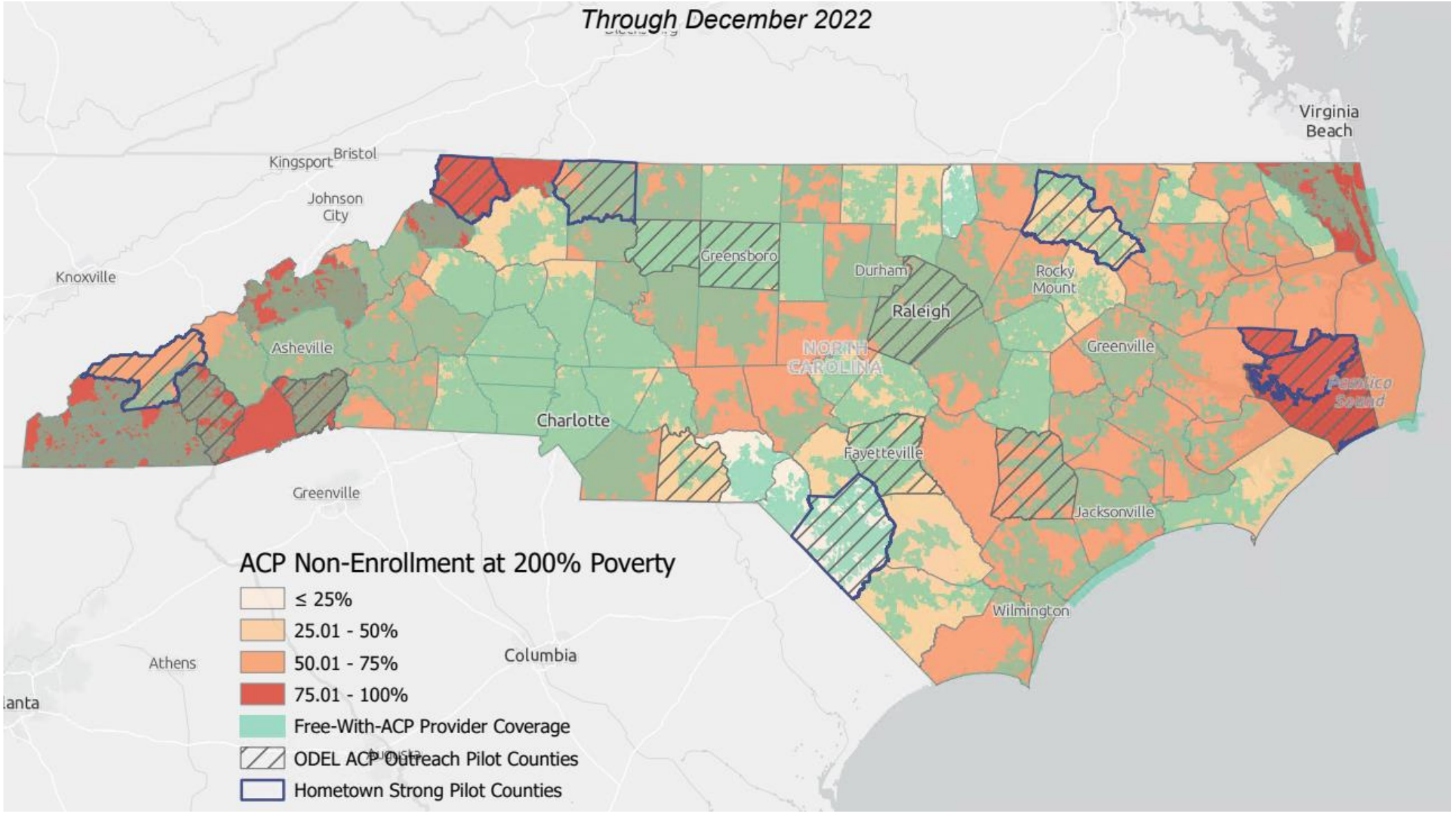
ACP NON-ENROLLMENT AMONG ELIGIBLE HOUSEHOLDS



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INTERACTIVE MAPS FOR AGRICULTURAL COMMUNITY

North Carolina Migrant Worker Housing Connectivity

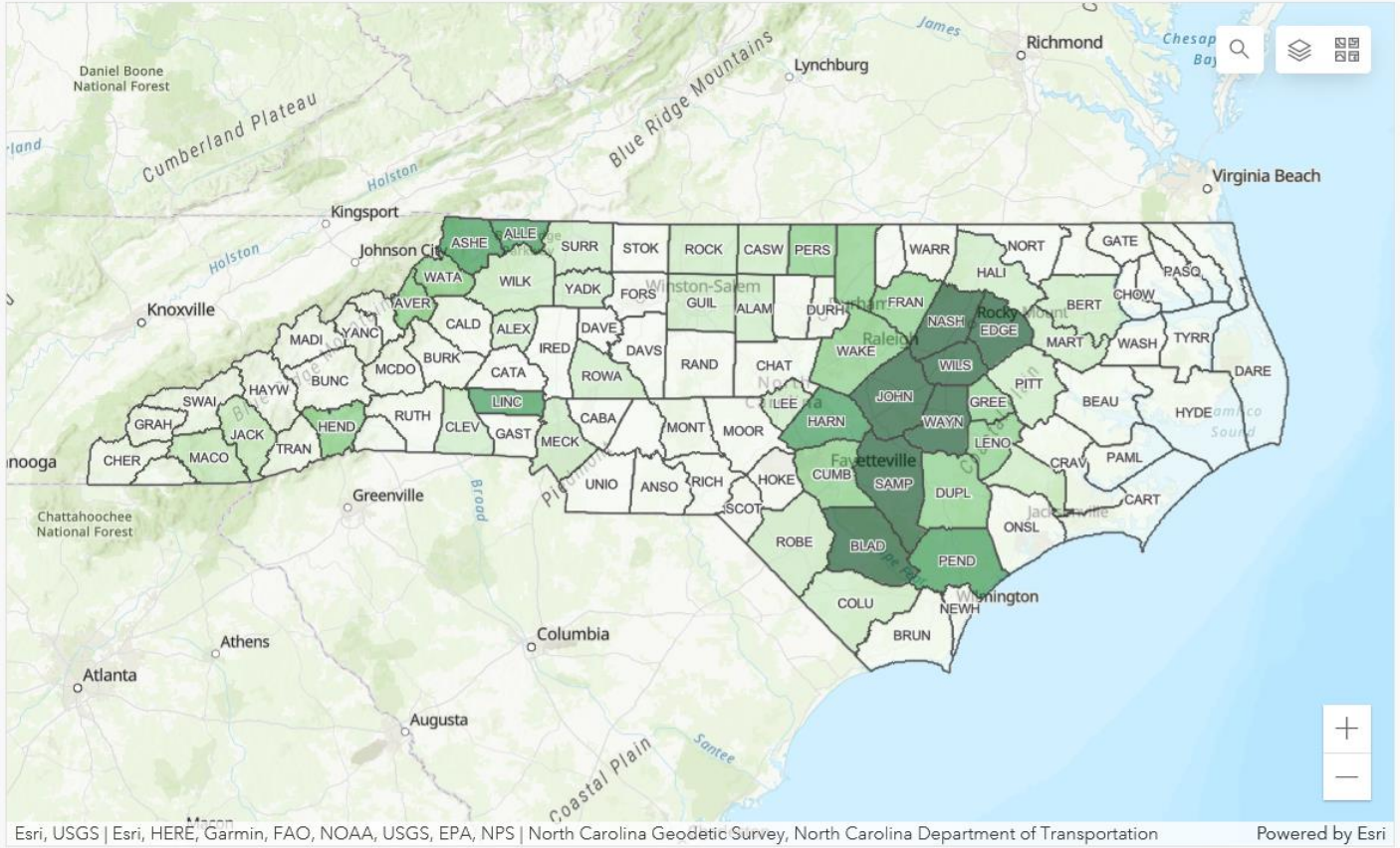
SELECT A COUNTY:
All Counties

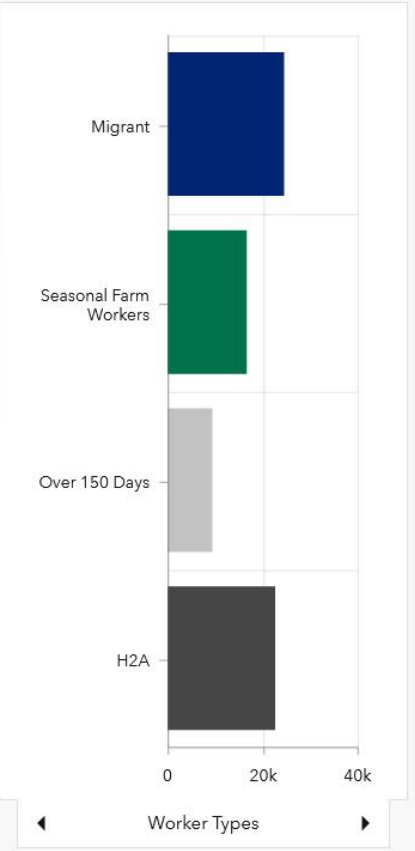
BROADBAND PROVIDER:
No data

H2A Workers Per County

H2A

- 1030 - 2683
- 517 - 1030
- 204 - 517
- 74 - 204
- 0 - 74





ABOUT

This map displays data on farms and migrant workers in relation to broadband connectivity. The data is visualized in the map as layers that will turn on or off as a user zooms in/out to display the data at different scales. Additional data can be turned on or off using the map tools ( ) in the upper-right hand corner of the map window.

This additional data includes cellular provider coverage areas, number of farms per census tract, and Federal Communications Commission (FCC) Form 477 fixed broadband data. The FCC data is derived from provider-reported lists of census blocks in which

County	Site Name	Site OC First Name	Site OC Last Name	Site OC Email	Site OC Phone	
Alamance	Piedmont Health Services: Prospect Hill	Nahu	Palacios	palacion@piedmonthealth.org	336-583-1004	322 Main St

MIGRANT HEALTH CENTER CONTACTS | COUNTY COOPERATIVE EXTENTIONS

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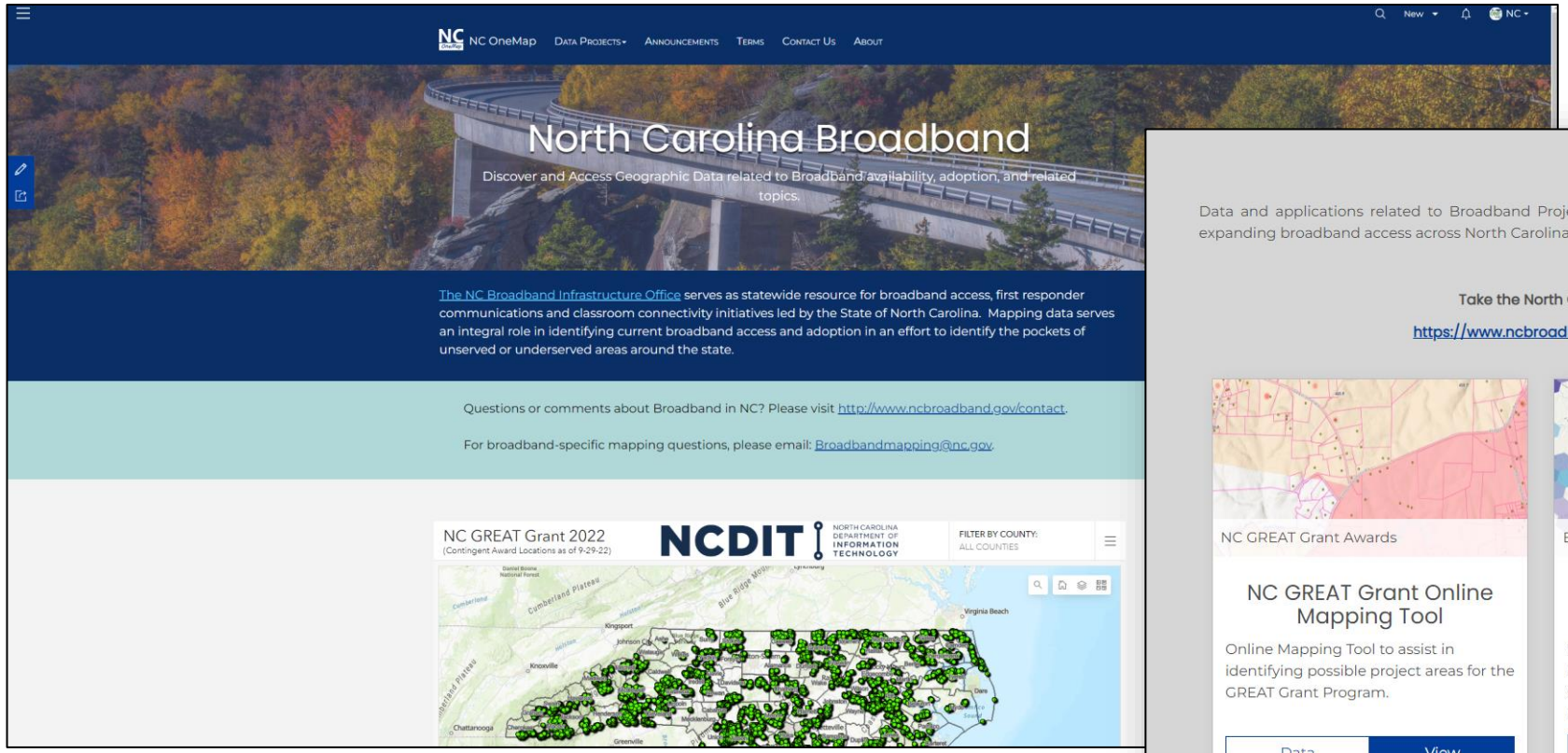
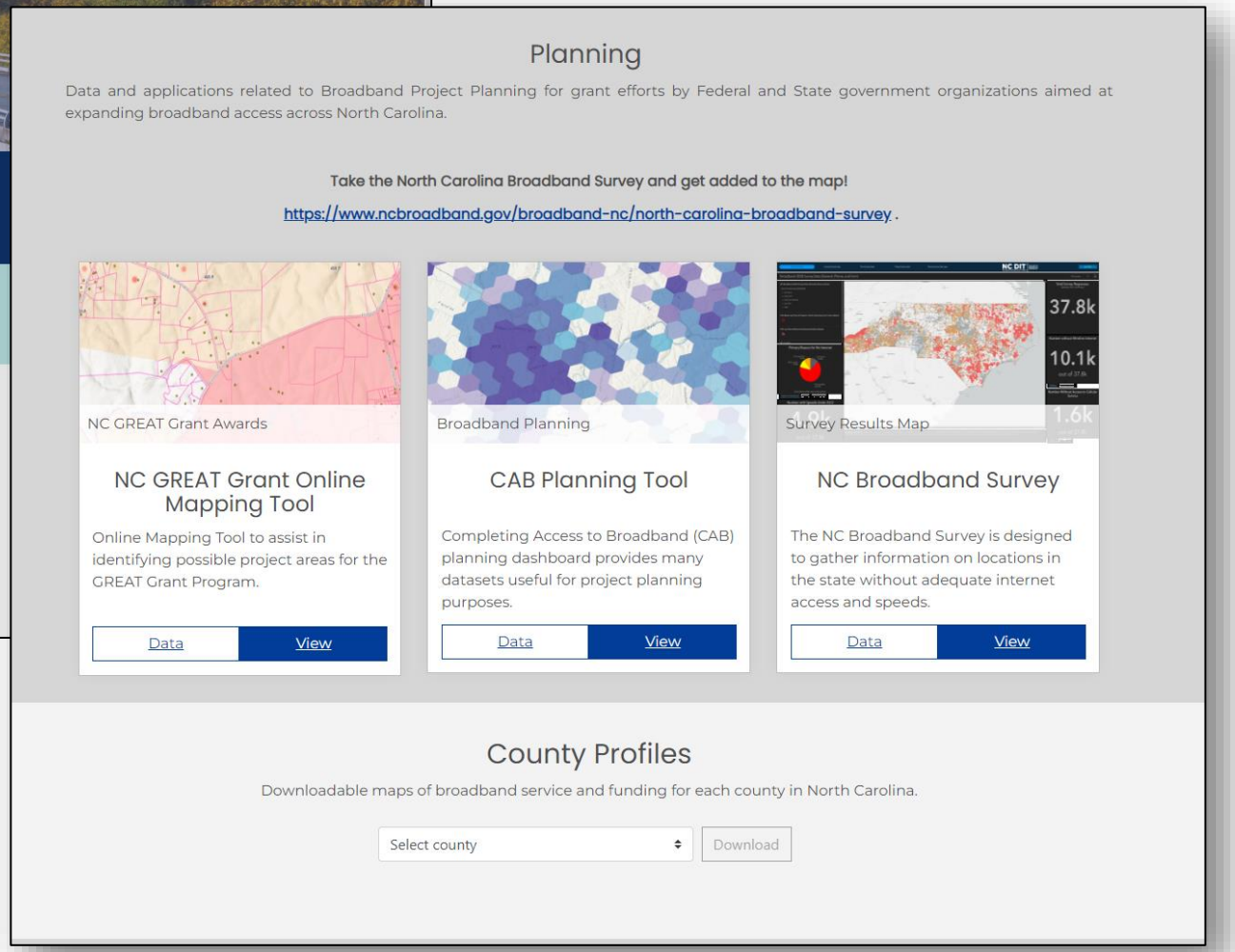
NC OneMap – Broadband Apps & Data





www.nconemap.gov/pages/broadband

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METRICS IN DEVELOPMENT

- BEAD and DE baselines on access, barriers, assets, covered populations, etc.
    - Potentially refining definition of “served” from FCC maps
- Grant/Program evaluation (GREAT, CAB, Stop Gap, Pole Replacement)
- Affordability: ACP Dashboard
- Context maps & metrics: Health, Education, Agriculture, etc.
- Groundwork for tracking access *to* and *through* CAI’s

PIECES NEEDED FROM FEDERAL PARTNERS

- Official high-cost areas map layer
- NTIA guidance on BEAD state challenge process (promised spring 2023)
- Clarification around timelines
- Official map layer of federally funded areas
- Clarification about certain allowable uses of proprietary BSL fabric
- New agreement negotiated by NTIA and CostQuest for BEAD use of fabric

Broadband Call to Action

What can broadband advocates do to improve broadband in our communities?

- **Local mapping work for Addresses & Parcels** that funnel into the statewide efforts
  - Mapping offices, check details in data for: Land Use, Improved Value, Structures
- **Help get the word out, bring feedback in:** survey responses, map challenges, ACP
- **Give input on CAB Program, advocate for participation**
  - Evaluate Eligible Areas for GREAT, CAB, and other programs
- **Use, Share, and Contribute To Data/Maps:**
  - Distribute NC OneMap maps/data
    - County Profile Maps
  - Share ideas and items to include in mapped inventories
- **Keep this Conversation Going!**
  - Broadbandmapping@nc.gov
  - Coming soon: e-newsletter signups, virtual office hours

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GIS Project Manager
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