

Current Broadband Programs

Iredell County

North Carolina Broadband Infrastructure Office

February 05, 2024



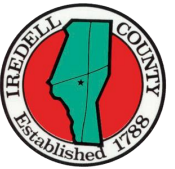
DIVISION OF BROADBAND AND DIGITAL EQUITY

It's Time to Close the Digital Divide in North Carolina

At least 1.1 million North Carolina households lack access to high-speed internet, cannot afford it or do not have the skills needed to take advantage of the digital economy. Gov. Roy Cooper has a plan to close the digital divide to achieve digital equity for all North Carolinians.



AGENDA



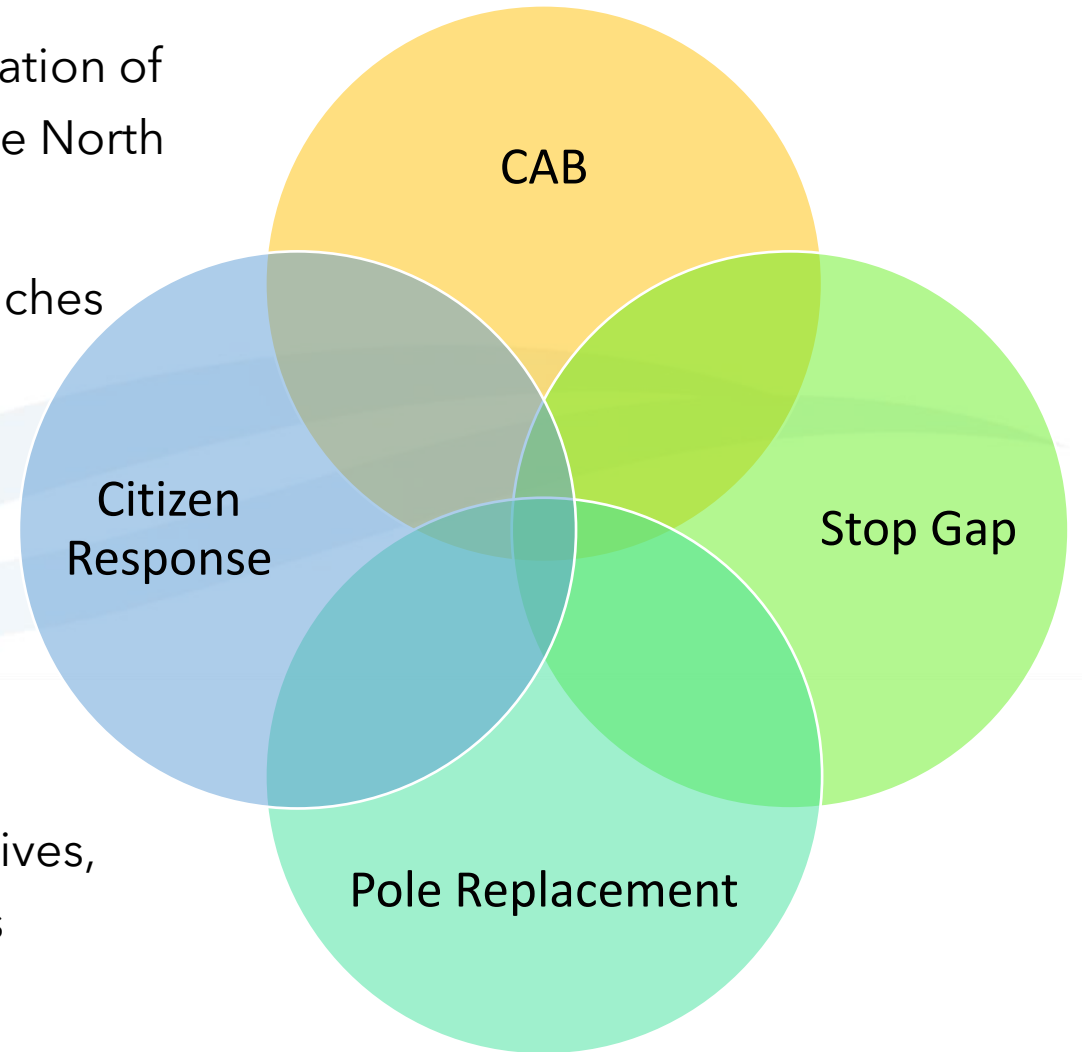
- Introduction
- Digital Equity & Inclusion
- Grant Programs
- Summary
- Questions
- Contact Information



OUR ROLE

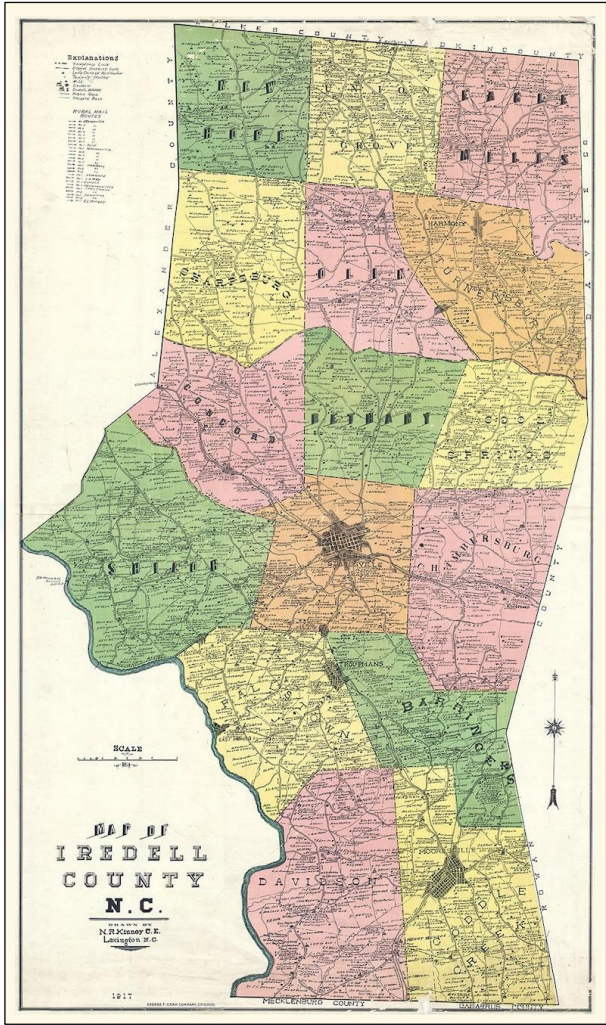


- Our team is responsible for the development and initialization of the CAB, Stop Gap and Pole Replacement programs in the North Carolina Broadband Office
- We provide support to the Legislative and Executive branches in responding to citizen and other inquiries
- We actively promote the work of the GREAT Grant and Office of Literacy & Digital Equity teams
- Our team represents a resource in North Carolina with a singular focus on direct engagement with and support of all 100 counties.
- We are engaged with Councils of Government, Cooperatives, Service Providers, Manufacturers and Community Groups





WHERE WE ARE – IREDELL COUNTY



- COGS
 - Centralina Council of Governments
- Electric Utilities
 - EnergyUnited
 - Duke Energy
 - Electricities
- Communications
 - AT&T
 - Spectrum
 - Zirrus [Yadtel]

State Broadband Survey Results - 18 mos

County	Households	Responses	Pct.
Iredell	72,296	709	> 1%
Catawba	64,442	1903	2.9%
Rowan	56,618	573	1.1%

Iredell County Summary Data

County	Locations
Unserved	2,422
DSL Only	4,303
No Internet Devices	6.49% of all h/h

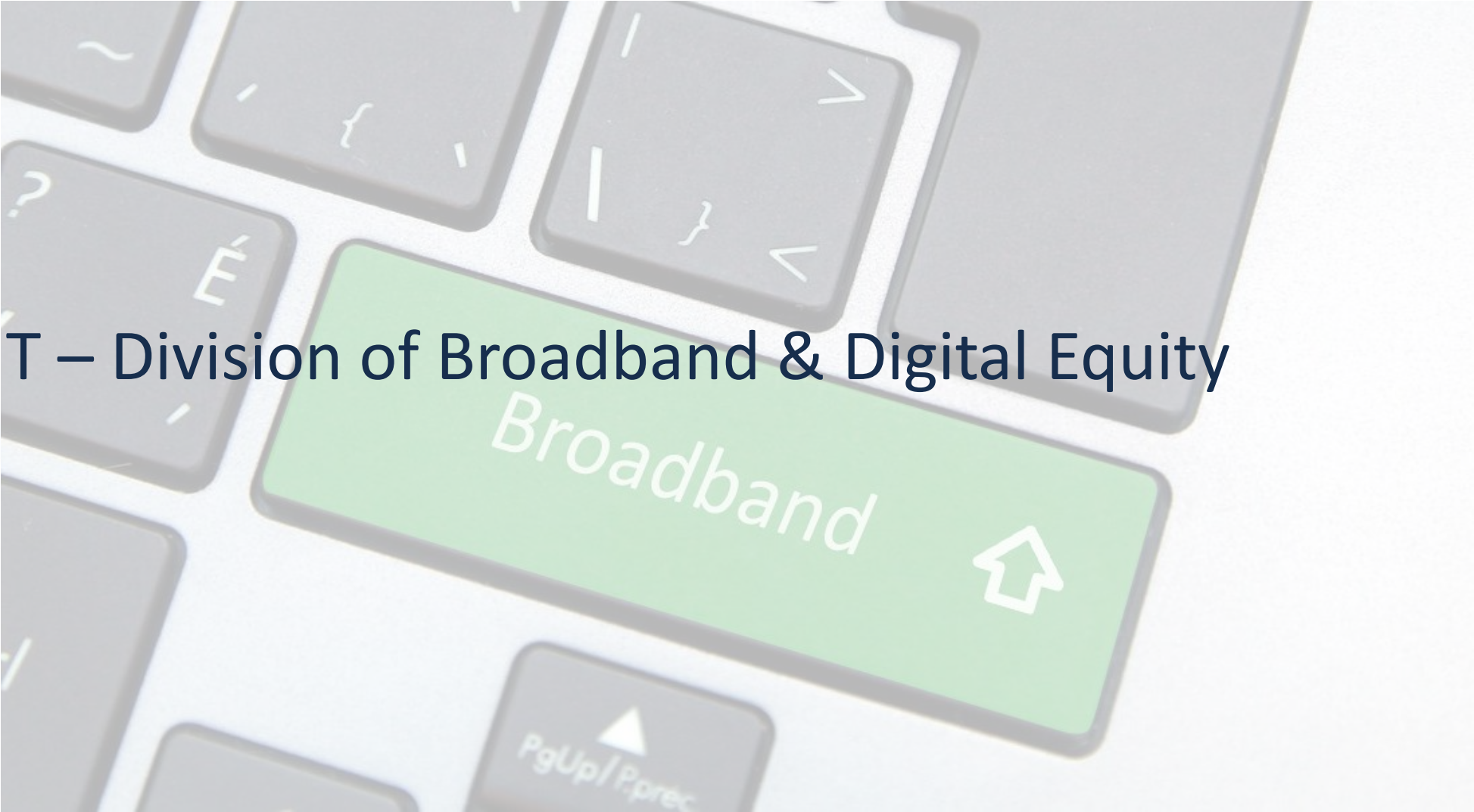
N.R. Kenney – Lexington, NC 1917

2022 – 2023 GREAT GRANT APPLICATIONS



Iredell County	Award Zitel LLC
Project Cost	\$6,692,987
Locations Passed	1913
Cost Per Location	\$3,499
Topology	FTTH





NCDIT – Division of Broadband & Digital Equity

NORTH CAROLINA BROADBAND OVERVIEW

- Mission of North Carolina Division of Broadband & Digital Equity is to promote the expansion of access to broadband for citizens and businesses within the State.
- Grant programs are appropriated by the North Carolina General Assembly with certain requirements set in State legislation.
 - Programs which utilize federal funding have additional program requirements defined by federal rules.

Many of us take for granted the basic tasks that can be performed online. Not having Internet access at home means people must travel to libraries, community centers or even fast-food restaurants to perform tasks such as:



Find health, medical or government services info



Find legal or consumer rights info



Look for a job or job training



Find info on local schools



Purchase products or services



Do homework online



Attend online class, meeting or webinar

LEVERAGING OPPORTUNITY



Infrastructure (Availability)

Many North Carolina households currently do not have access to high-speed internet of 100/20+ due to lack of infrastructure.

Does infrastructure pass my home, farm, or business?



Affordability (Adoption)

Approximately 1.3 million households would have to pay more than 2% of their annual income to afford a broadband cost of \$60/month.

Can I pay the bill each month?

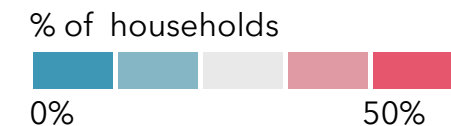
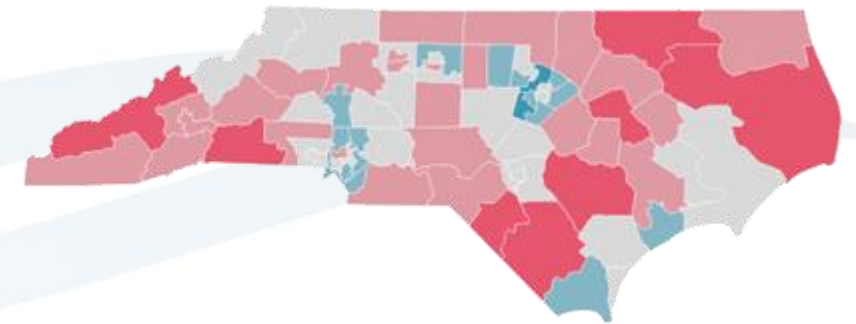


Digital Literacy and Enablement (Adoption)

More than 350,000 households are without a home laptop or desktop computer. As many as 1.2 million adults may lack the digital literacy required to take advantage of online services.

*Can you use the internet personally for education, health care, etc.?
Can your business use it to retain and service customers?*

Percent of Households Without a High-Speed Internet Subscription (2019)¹



1. U.S. Census Bureau, 2019 American Community Survey (ACS) Microdata, for respondents who don't have an internet subscription or that only have cellular data or only have dial-up, satellite or other.



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; \$30 State CIF)

\$400M

- Completing Access to Broadband (CAB)

\$90M

- Stop Gap Solutions

\$100M

- Broadband Make Ready Accelerator (Broadband Pole Replacement Fund)

\$1M

- Broadband Mapping



AWARENESS AND DIGITAL LITERACY

\$50M

Improve awareness and enable all North Carolina citizens to realize the benefits of high-speed internet through digital literacy allowing access to the digital economy.



ADMINISTRATIVE

\$15M

Supplement North Carolina's capacity to support broadband expansion efforts.



FUTURE BEAD FUNDING 2025-28

\$1.57B

Closing the digital divide to ensure 99.5% + of North Carolinas have access to broadband services. Provides additional support for adoption across the state including education, hardware support and continued outreach in partnership with local governments to senior citizens, minorities, low-income households and more.



FEDERAL "INTERNET FOR ALL" PROGRAMS

Program	Funding
FCC's Affordable Connectivity Program (ACP) * <ul style="list-style-type: none">• Provides \$30 per month subsidy for qualifying households; Up to \$75 subsidy for households on Tribal lands• 1X discount of up to \$100 for laptop, tablet or desktop (with a co-payment between \$10 and \$50)• 20 internet providers now offering \$30 high-speed internet monthly plan; details at getinternet.gov	\$14.2B
Broadband Equity, Access, and Deployment (BEAD) Program <ul style="list-style-type: none">• High-cost areas (\$4.245B), Formula grants (\$37.356B)• Must include affordability component; prohibits exclusion of municipal networks• North Carolina's estimated award \$1.57B	\$42.45B
Enabling Middle Mile Broadband Infrastructure Program <ul style="list-style-type: none">• Single award in central North Carolina	\$1B
Tribal Broadband Connectivity Program	\$2B
State Digital Equity Planning Grant Program	\$60M
State Digital Equity Capacity Grant Program	\$1.44B
Digital Equity Competitive Grant Program	\$1.25B

* Program is expected to run out of funding in the spring of 2024

Digital Equity, Literacy & Inclusion in North Carolina



BROADBAND ADOPTION | VOICES



Date Submitted	address	Are there any other comments you wish to share with Scotland County regarding broadband service or Internet access?
6/7/2021	28351	Consistency is what we lack now. When a storm or cloudy day comes, our service becomes spotty, and sometimes we lose it completely.
6/2/2021	28351	ESC has been fit our needs.
7/8/2021	28351	Fair and uner communicati varied opinio
6/3/2021	28352	From search f mile of the cit
6/2/2021	28363	Glad to see th get what they
7/6/2021	28352	I feel the cour
7/15/2021	28352	I know that th used to provi and therefore have the high speeds in the can't do their the same.
6/3/2021	28352	I think the pro
7/15/2021	28352	I'm an educat Internet servi
6/27/2021	28396	Improving broadband access is critical to our quality of life in the 21st Century. I would like to see in Scotland County a service similar to Fibrant Communications in Salisbury and Greenlight in Wilson.
6/29/2021	28351	It would be nice to have more internet options for those out of the city limits
7/13/2021	28345	Just would really wanna get some decent internet services in my area.. thank you
7/6/2021	28352	Our AT&T DSL is very poor and we cannot upgrade it. They say no space available. If we didn't have a hot spot on our phone we would be in big trouble.
6/3/2021	28352	Please provide a high speed internet in our area. ESC is the only thing available and its not good.
6/4/2021	28351	Safe, uninterrupted access to high speed internet is critical for education, information and staying connected with family and friends. Slow and unreliable internet is the antithesis to the above.
7/14/2021	28396	Seniors who can't get out much it helps them n many ways...social community, family, paying bills and keeping up with banking, shopping on line, getting it delivered..just browsing
6/4/2021	28352	Spectrum would not offer us internet service without paying them 1500 to connect. They said they didn't offer service to our area despite being so close in proximity to the Hospital. We could only find access to the internet through ESC and Hughes Net was ridiculous expensive. In the 21st century internet access is as important as water and electricity so I am hard pressed to understand why Laurinburg does not have the capacity to connect homes to a valuable service. With ESC streaming is difficult by connection speeds are slow and multiple users cannot connect at the same time. Additionally when it rains we lose service regularly. There has to be a solution for our county!
6/23/2021	28352	That it be available to everyone who want it.
7/8/2021	28352	The current internet service at our location is awful.
7/13/2021	28351	We bought our first home here in Laurel Hill about two years ago, however we regret it because of the poor Internet service that we didn't know about. My husbands in the military and the deploys often, it's hard to stay in touch with him on his deployment with little Internet service. We've been on a waitlist for two years through ESC. Because of the bad Internet service we have through Hughes net, 2020 was very hard on my children doing virtual school.

2021 Survey Lumber River COG
Broadband Assessment – total
4,907 responses across 90 days.

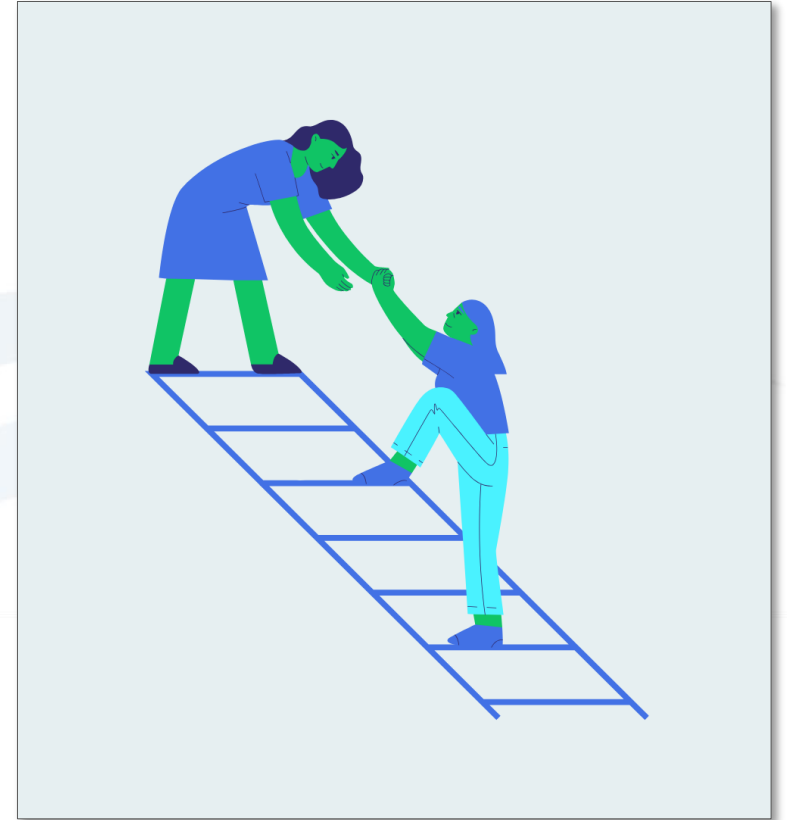
BROADBAND ADOPTION | DEFINITIONS



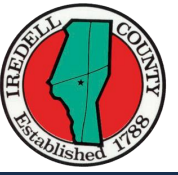
- **Digital Equity.** "... all individuals and communities have the information and technology capacity needed for full participation in our society, democracy, and economy. Digital equity is necessary for civic and cultural participation, employment, lifelong learning, and access to essential services."
- **Digital Literacy.** "...the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills."
- **Digital Inclusion.** "...activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of Information and Communication Technologies (ICTs)."



- Office of Digital Literacy and Equity | local focus
 - ODEL team works with counties, municipalities, school districts, service providers and community groups.
- Information solicited by ODEL regarding proven programs, ideas and outreach activities.
- ODEL shares feedback to help NC communities create programs supporting access to broadband.
- A key objective is to ensure all eligible citizens are informed about the FCC's Affordable Connectivity Program.



DIGITAL CHAMPIONS GRANT 2024 | ODEL



- Maximum grant of \$1.5M per project / \$400,000 per county.
- Focused on projects which address digital inclusion such as:
 - Affordability
 - Internet enabled devices
 - Access to digital literacy and skills training
 - Programs and online content to enable/encourage self-sufficiency, participation and collaboration

Applicants listing Iredell County as a service area:

Centralina Regional Council ODEL	App-000051	Iredell
Sanford School of Public Policy	App-000280	Iredell
E2D, Inc.	App-000066	Iredell
North Carolina Cyber Academy	App-000111	Iredell
Camino Community Development Corporation, Inc.	App-000138	Iredell
Students in Training	App-000168	Iredell
Mitchell Community College	App-000231	Iredell
The Boys & Girls Club of the Piedmont	App-000286	Iredell
Southern Conference UCC	App-000289	Iredell
Iredell Council on Aging	App-000337	Iredell
North Carolina Coalition Against Domestic Violence	App-000340	Iredell

Application window opened November 2023 and closed January 8, 2024. A total of 325 applications were received with projects indicated in all 100 counties in NC.

Infrastructure in North Carolina



FEDERAL PROGRAMS



Programs solely administered by federal agencies with limited to no State engagement.

- Prior Programs
 - BTOP, CAF, CAF II, Community Connect, NTIA Broadband.
- Current Programs
 - USDA ReConnect Program. Avg. \$1.2 B per year grants and loans
 - FCC Regional Digital Opportunity Fund (RDOF) Program. \$20.0B one-time reverse auction
- Future Program - B.E.A.D. \$42.5 B North Carolina expects \$1.57B
 - Significant State engagement in BEAD program management and funding.



NORTH CAROLINA MAJOR PROGRAMS

- GREAT (Initiated in 2018 - First statewide broadband program in the U.S.)
 - In 2022, - total of 305 applications received - total of 211 disputes / protests reviewed
 - Requested \$1.77B in total project costs - total of \$380M awarded
 - Additional 25 applications processed for the CAB > GREAT program with 15 awards.
 - \$198.5M in matching funds and 149,268 awarded locations
- Completing Access to Broadband (CAB)
 - Active engagement with county management and elected leadership locally and in person
 - \$400M available - maximum award \$8M
- Stop Gap Solutions
 - Guidance under development
 - \$90M available

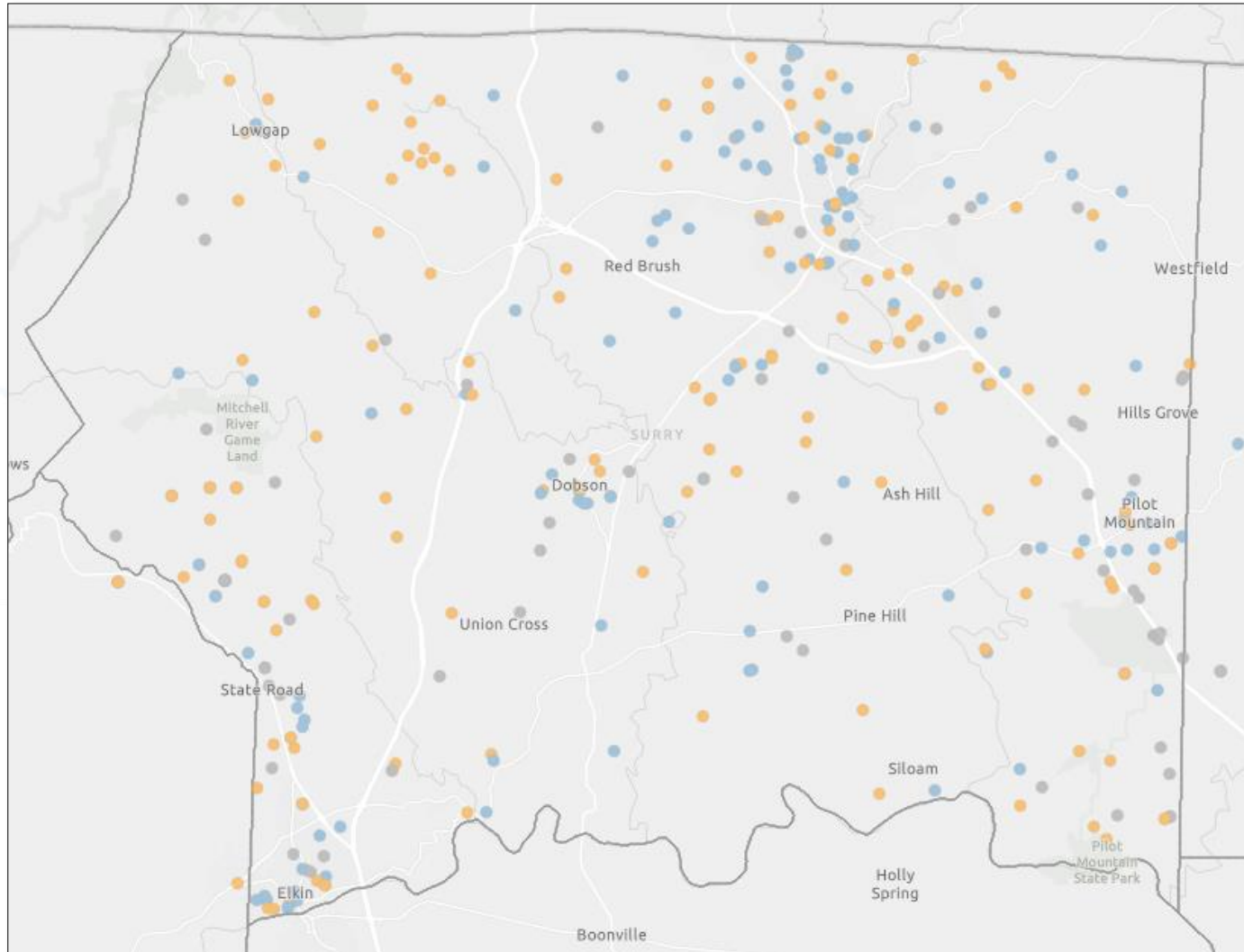


CAB PROJECT FUNDING & ELIGIBILITY

- **County Eligibility:** A county is considered ineligible to participate in either the GREAT or CAB programs:
 - If a county has entered into a contract with an ISP on or after May 1 2021, and
 - has used federal funds for a broadband infrastructure project unsupported by a State program
- CAB Components
 - Provider Prequalification Process
 - Mapping Requirements
 - Financial Requirements



CAB PROJECT | BROADBAND SURVEY



Households	28,990
Survey Responses	431
Participation Rate	1.5%

NC Broadband Survey Points (General, Phone, & Farm)

- No Internet
- Under 25/3
- Over 25/3
- Other

Primary Reason for No Internet

Too expensive
9.09%

No answer
9.09%

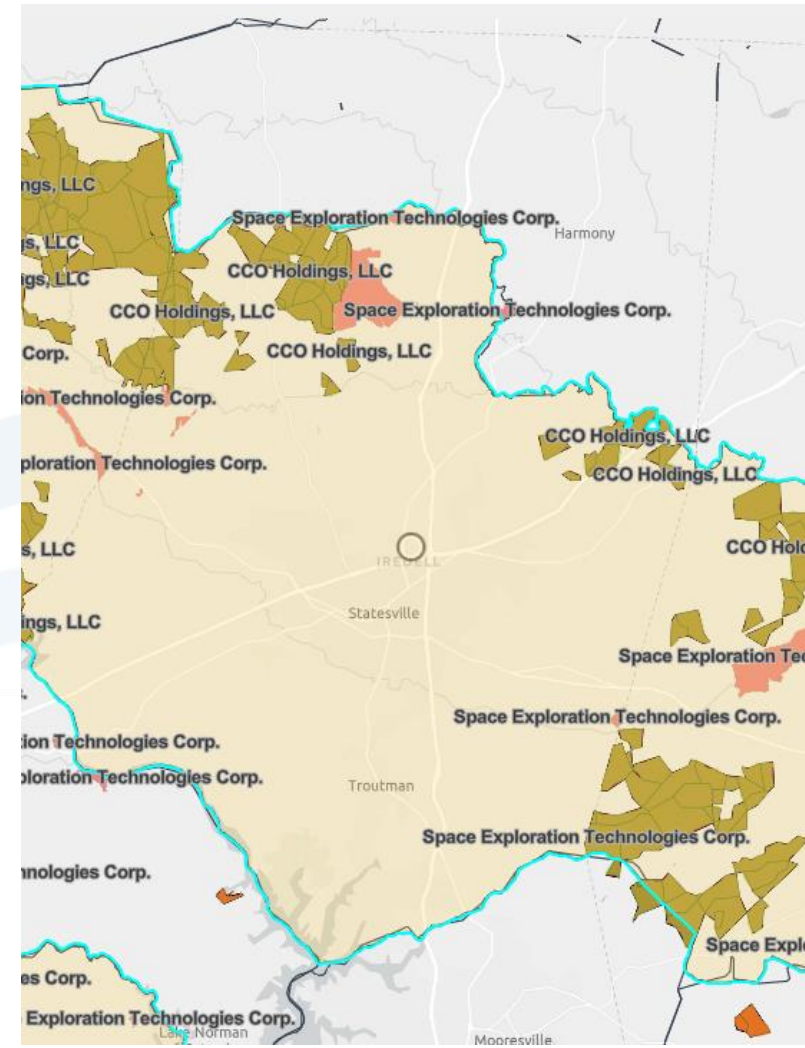
Other reason
12.12%

Not available
69.7%



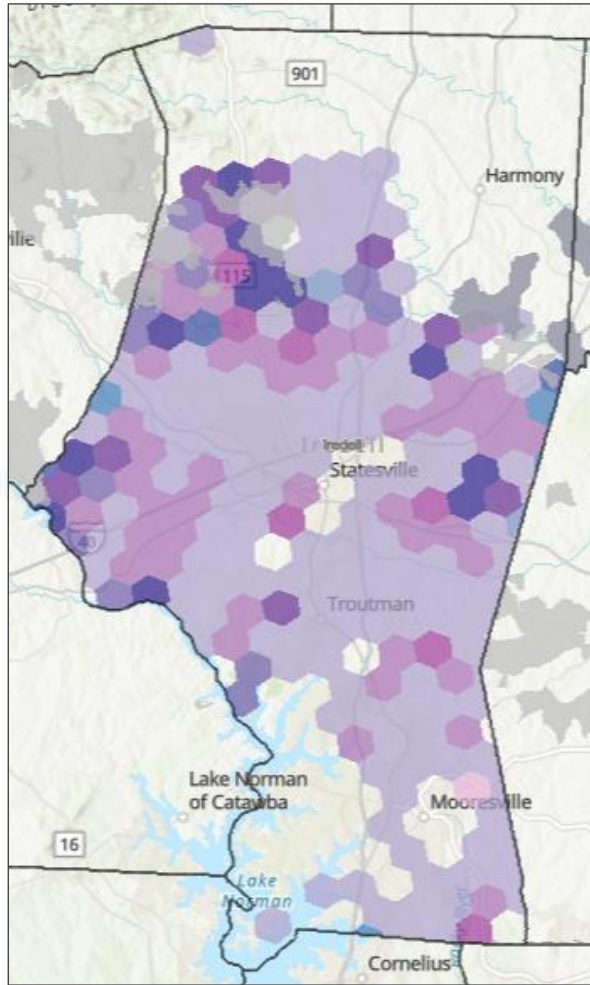
FEDERAL AWARDS IN IREDELL COUNTY

- **FCC RDOF Program.** Competitive, one time, FCC reverse auction program initiating in 2020 and awarding \$20B in funding across US
- Timelines:
 - 6 years total from contract to construction completion
 - 10 years for subsidy payout
- **USDA ReConnect Program.** Continuing USDA program awarding about \$1.2B annually in grants and low interest loans across the US.
- Timeline: 3-4 years construction
- <https://experience.arcgis.com/experience/c46fb30bdfb7465fb204a1748b023a38>

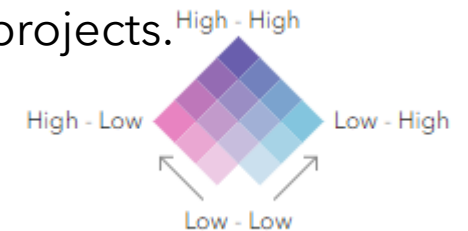


* National RDOF Awards Map

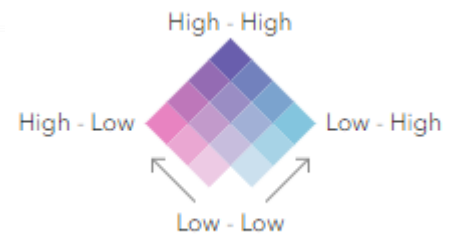
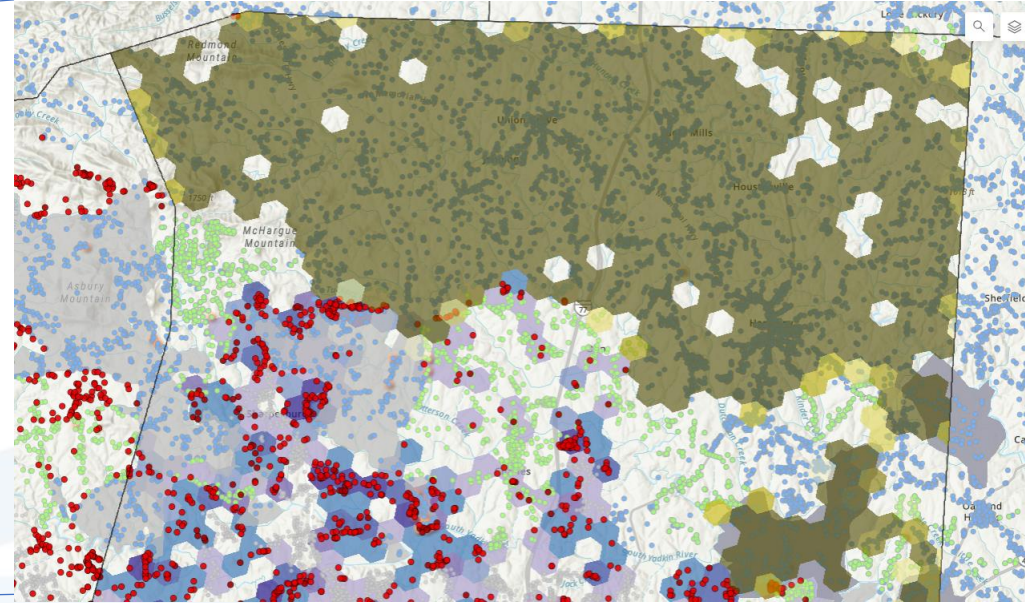
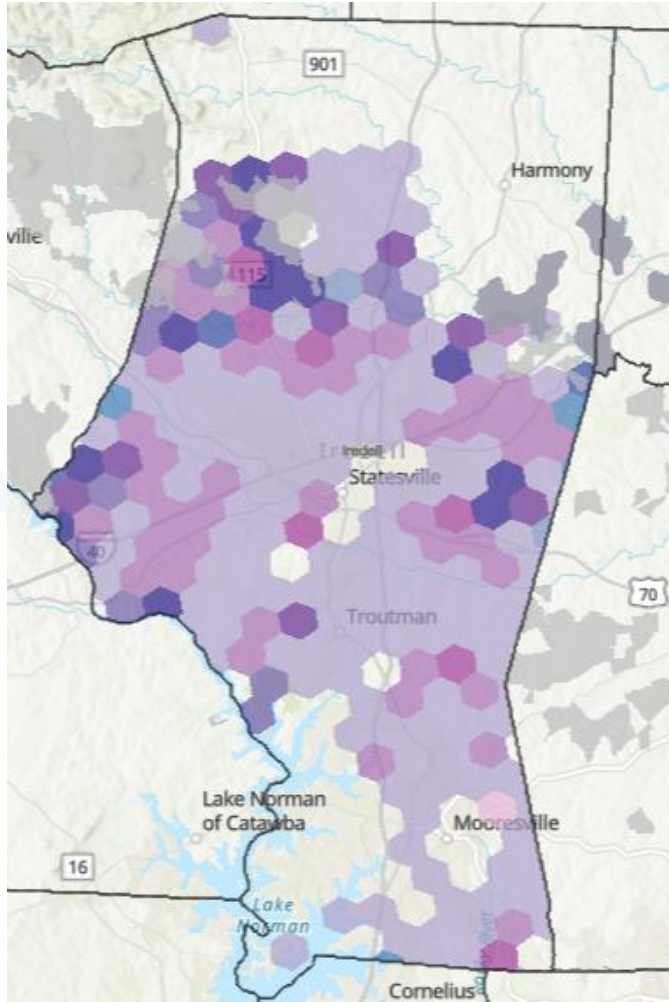
CAB PROJECT FUNDING & ELIGIBILITY



- Counties are divided into artificial units termed as Hexbins.
- Value of the tool for planning is shown via the example in the inset.
 - Shaded hexbins indicate a potential “natural” path for a network route.
- Hexbins are also used to support “geocoding” of locations that are prioritized / identified for CAB and Stop Gap projects.



CAB PROJECT | CAB PLANNING TOOL



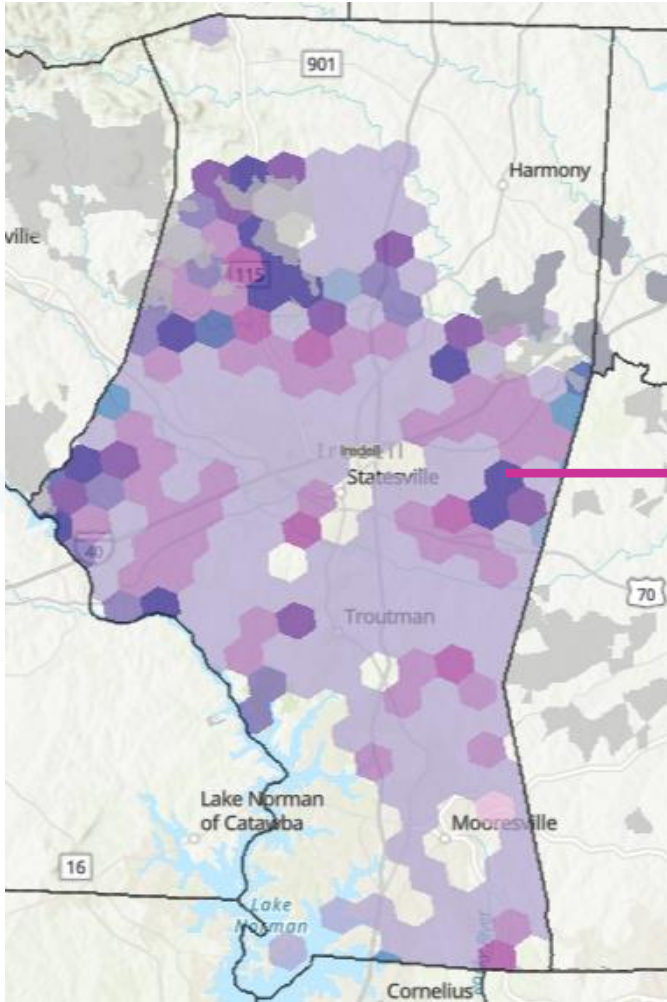
Legend:

- Pink shades represent higher counts
- Blue shades represent higher percentages

• CAB Planning Tool site is available online at:

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

CAB PROJECT | CAB PLANNING TOOL



< > 1 of 2

Hexbin: 8744dbce3ffffff ^ x

Zoom to Pan

62 CAB Eligible Locations

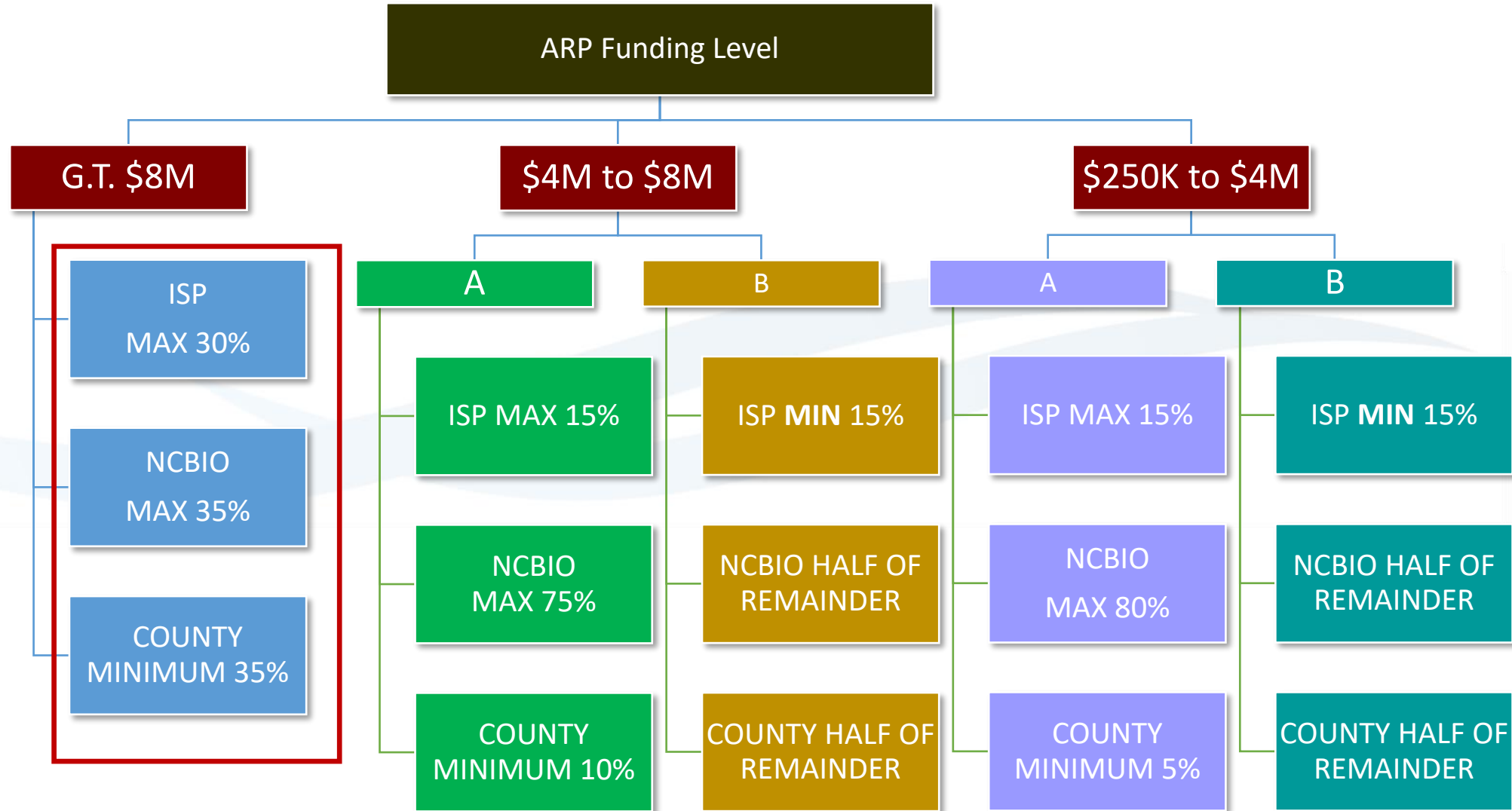
77.50% Eligible

County	IREDELL
Total Broadband Serviceable Locations	80
Unserved Locations	61
Percent Unserved	76.25
Underserved Locations (Less Than 100/20)	0
Pct_Underserved	0.00
UnservedNoServiceLocations	1
Percent_Unserved_No_Service	1.25
FundedLocations	0
PercentEligible	77.50
EligibleLocations	62



2023 – 2024 CAB PROJECT FUNDING

- NC Maximum is \$8M per county
- County contributions can be ARP SLFRF, Revenue Replacement or non-ARPA from the county's General Fund

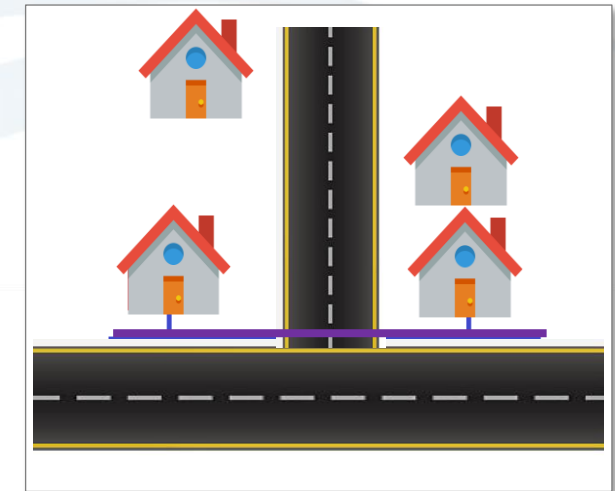
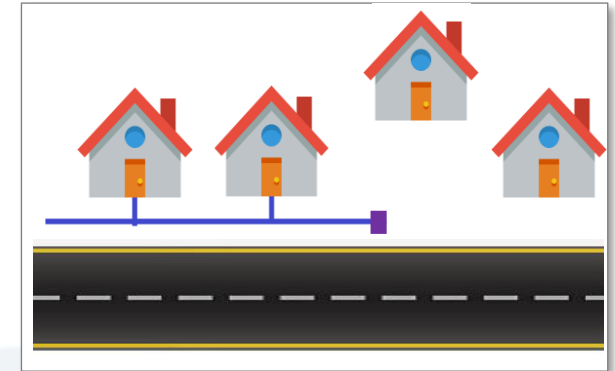


STOP GAP PROGRAM



- Stop Gap designed for niche issues.
- Competitively bid proposals.
 - Prioritization for unserved addresses in the County.
 - Will work with counties to ensure unique needs are addressed.
 - Often small pockets not well served by larger projects.
 - Also State parks, Welcome Centers, county facilities
- \$90M in funding to support projects across the State.
- Expected summer 2024.

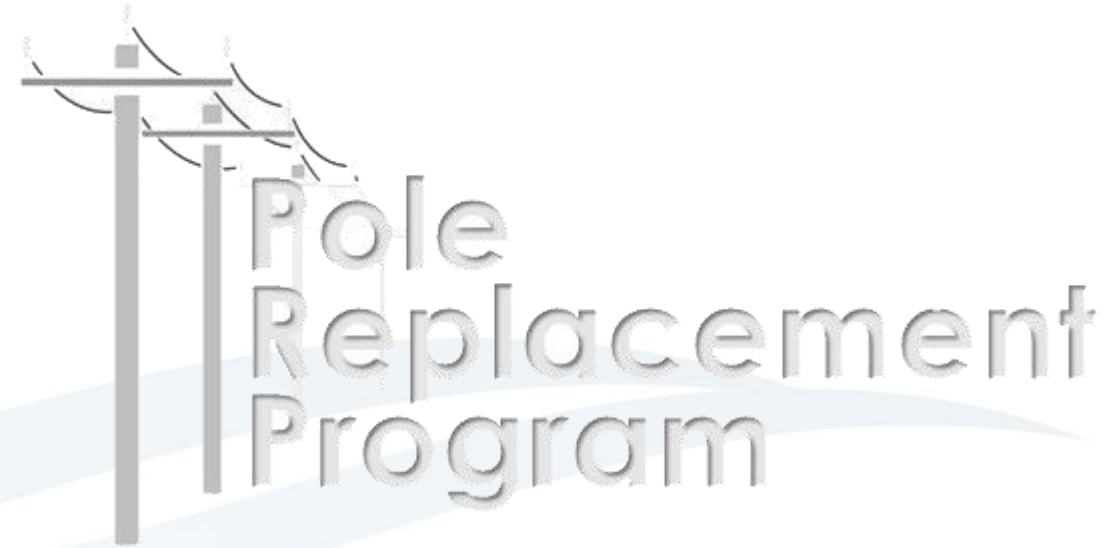
**STOP
GAP**





BROADBAND POLE REPLACEMENT PROGRAM

- Oriented towards pole owners & ISP's
- Aerial Installation
 - IOU's and cooperatives typically install 17 to 28 poles per mile
 - Telcos generally install 15 poles per mile
- On average, 1-2 poles per mile are replaced
- Pole Issues
 - Decay / deterioration
 - Relocation
 - Loading
 - Ownership
 - Height
- Generally identified during engineering, outside plant work, pruning or make ready

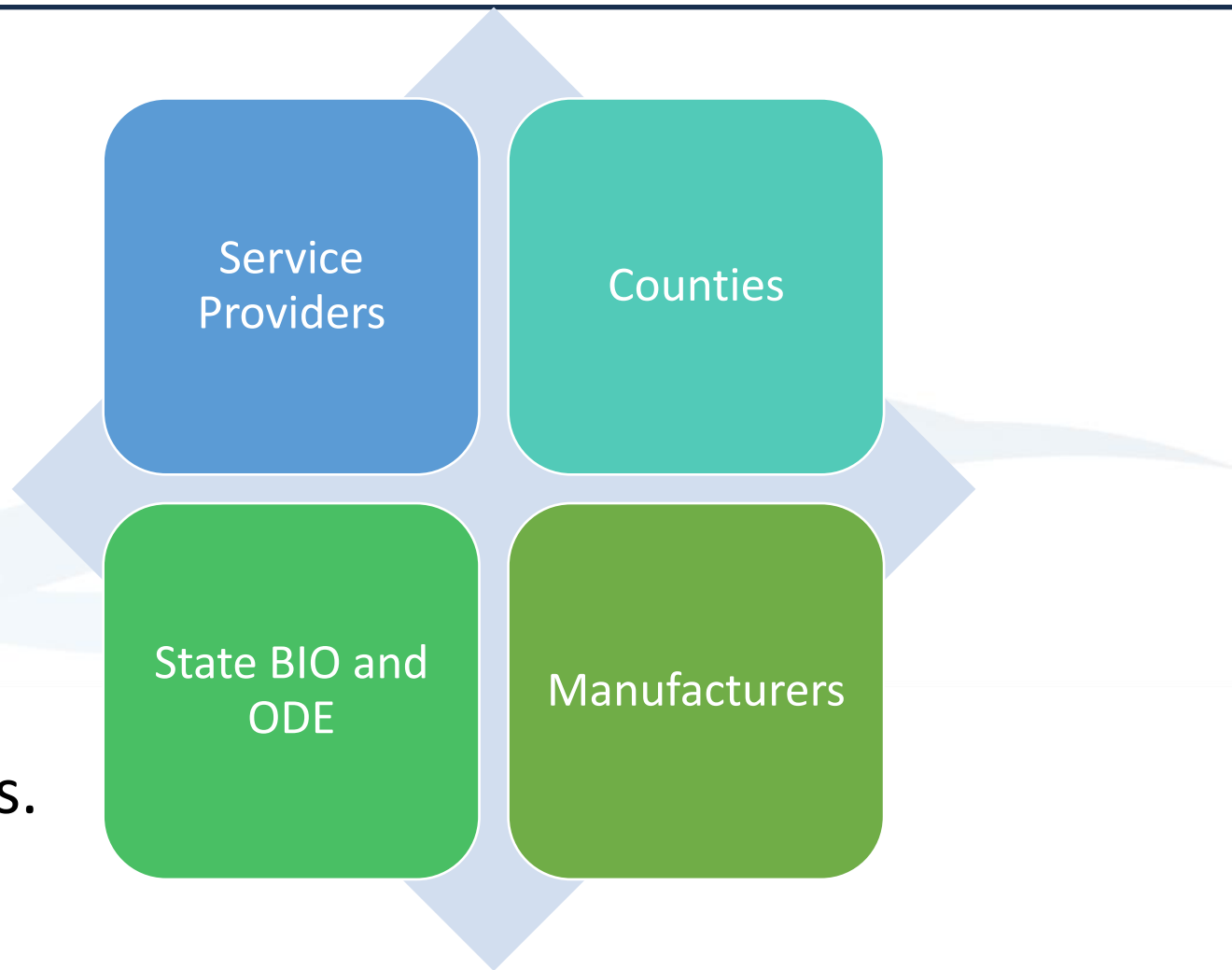


Summary



CRITICAL INTERRELATIONSHIPS

- Overview of NC Division of Broadband & Digital Equity.
- The Digital Divide.
- Adoption and Availability.
- Locations (Who).
- Buildout (How).
- Budget (Cost).
- NCDIT Support for County needs.



IMPORTANCE OF BROADBAND PROGRAMS

- Counties face challenges in 2024
 - Access to quality education is critical to the future of every county in North Carolina
 - Many rural counties have declining populations and declining tax bases
 - Both rural and urban counties have increased costs to deliver services
 - Many in our population are at risk for health related issues
 - The development of new or expanded local businesses are critical for employment and county tax revenues
- All counties should place new emphasis on the North Carolina Survey



STAYING IN TOUCH



- Infrastructure team is continuing outreach via email, outbound calls and direct meetings with:
 - County Managers (Primary "client")
 - County elected Leadership
 - County Attorneys, Directors of Finance and County Economic Development Director
 - COG Directors
 - Service Providers
 - Manufacturers
- Direct visits to 87 county seats in NC including 41 board presentations.
- Please reach out to us at cabprogram@nc.gov or via our direct email (next slide).





RESOURCES

Internet Links:

[NC Broadband Home Page](#)

[GREAT Grant Applications by County](#)

[Take the NC Broadband Survey](#)

[NC Broadband Map Data](#)

Infrastructure Contacts

Jeffrey M Brooks

Infrastructure | CAB | Last Mile

jeffrey.brooks@nc.gov

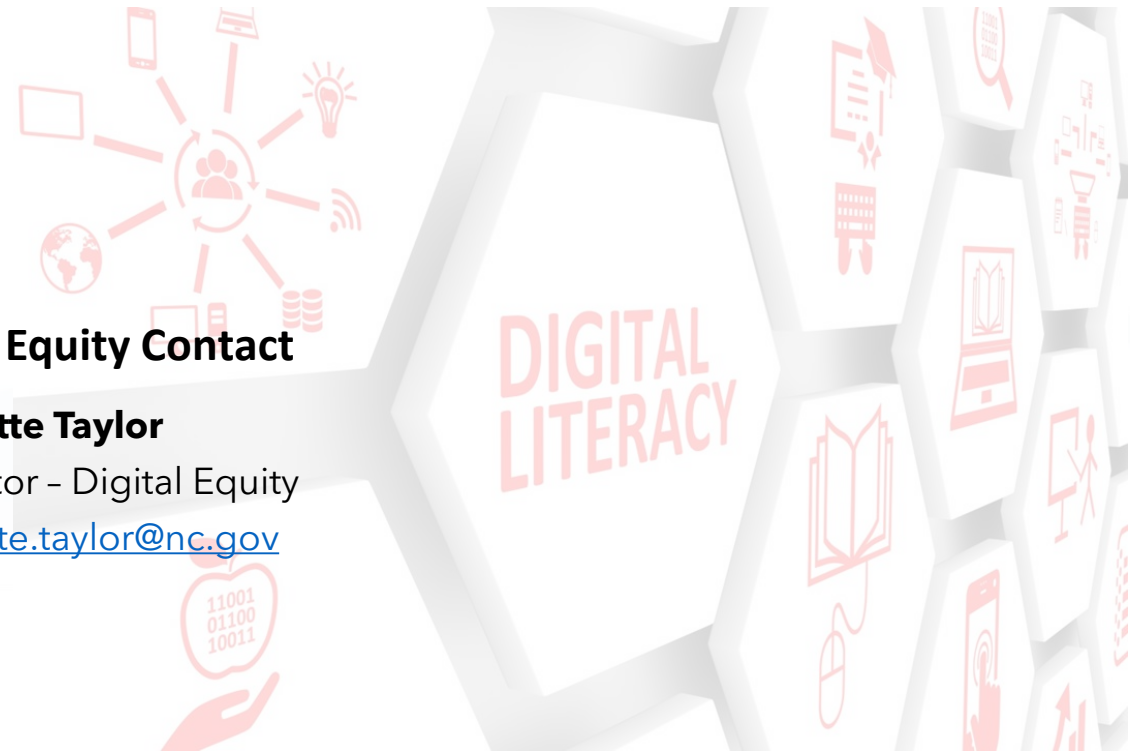
919.602.8080

Digital Equity Contact

Annette Taylor

Director - Digital Equity

annette.taylor@nc.gov



QUESTIONS



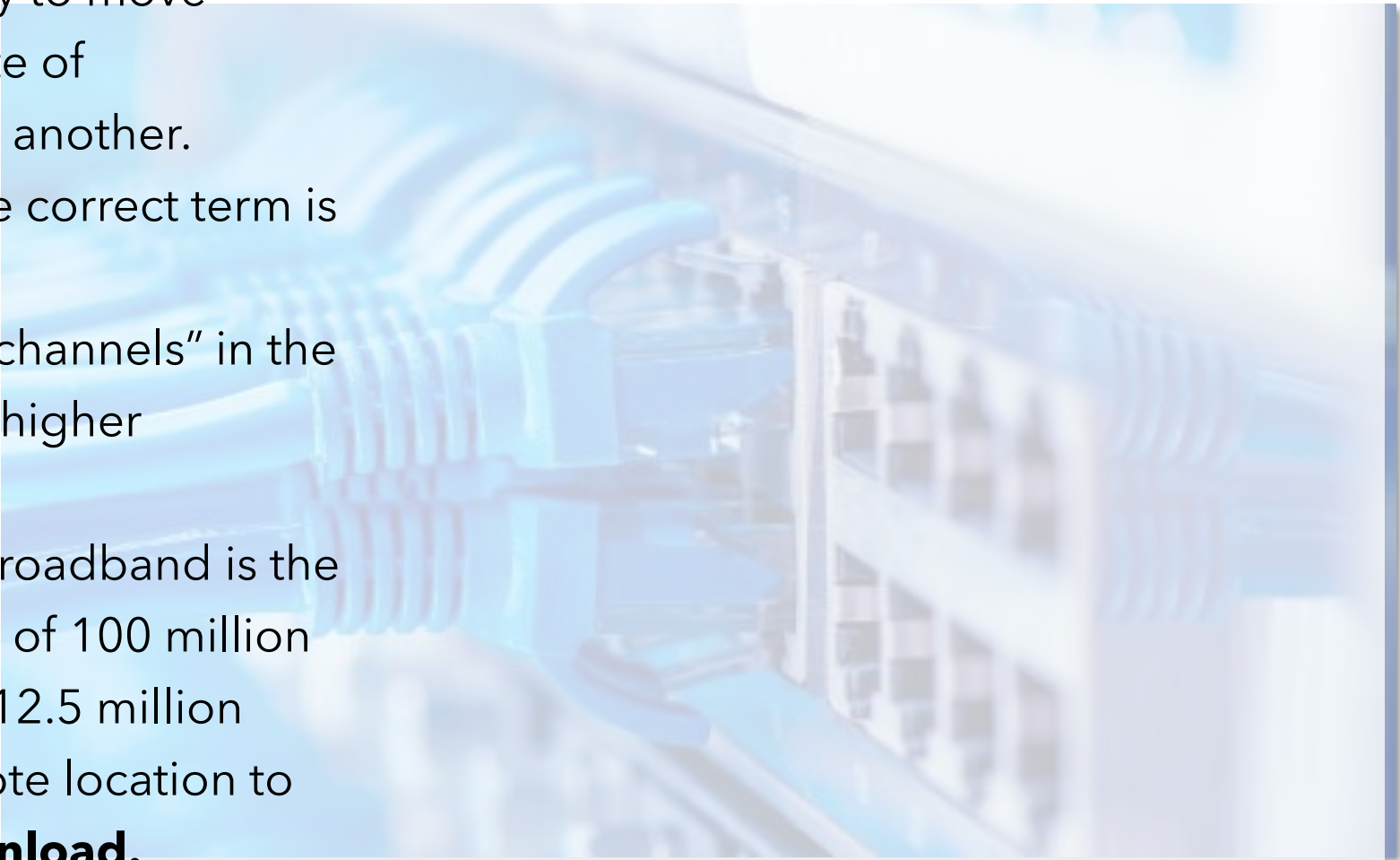


Broadband Basics [Optional]

BROADBAND BASICS



- Broadband represents the ability to move information or data, at a high rate of transmission from one source to another.
- Often referred to as “speed;” the correct term is throughput.
- Broadband leverages multiple “channels” in the transmission medium to deliver higher throughput.
- The “new” official definition of broadband is the ability to maintain a transfer rate of 100 million bits of information per second (12.5 million bytes or characters) from a remote location to an end user; this is termed **download**.



BROADBAND BASICS

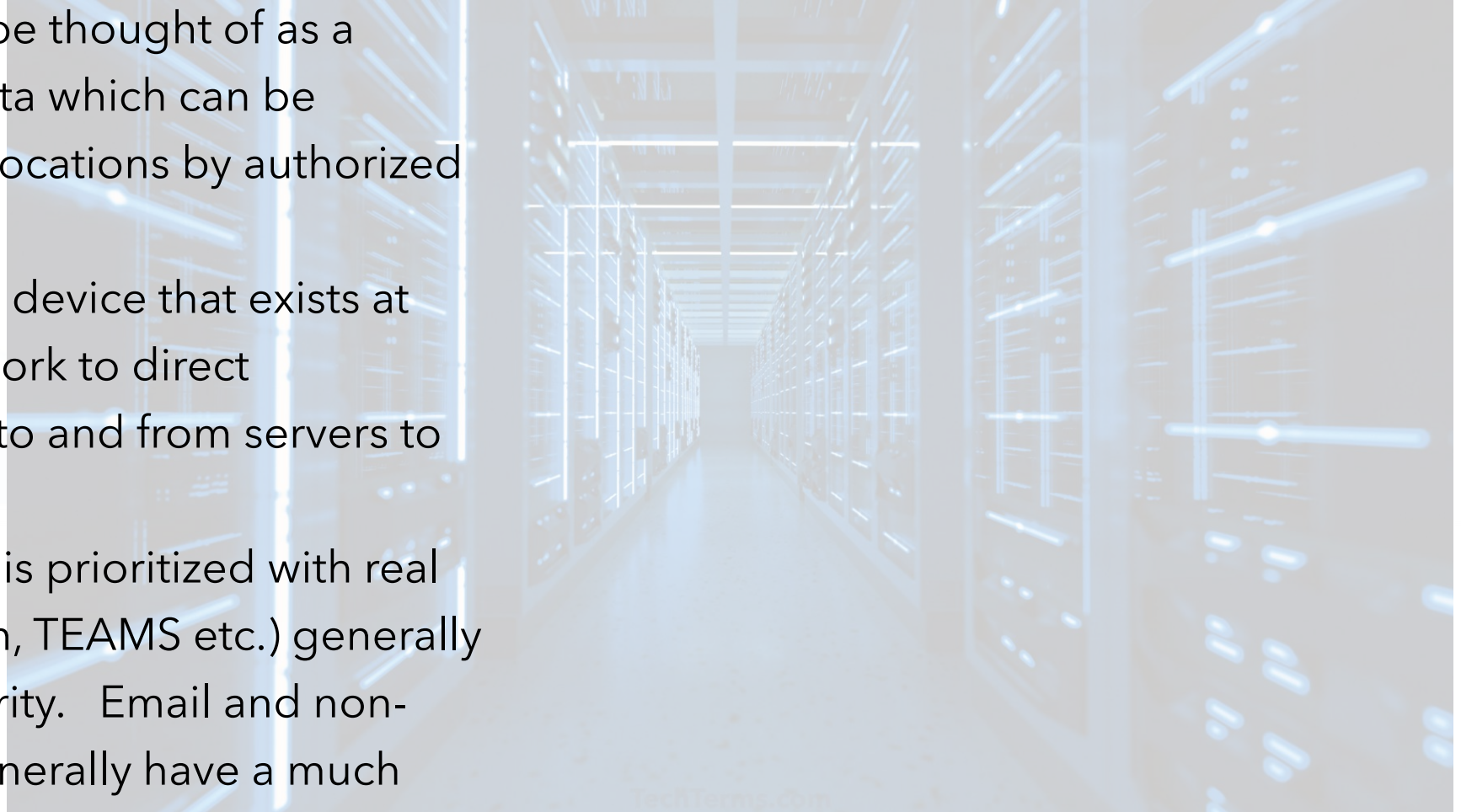


- The definition further includes the movement of information from an end user to another location; this is termed **upload**, and the new standard is 20 million bits of information/second.
 - The network has to be able to migrate to 100 million bits per second in the near term.
- Bits are an electrical way to designate information - 8 bits equal to a unit of data termed a "Byte."
- A byte is approximately equal to one character in the alphabet - i.e. , a letter - a number - or a symbol.

BROADBAND BASICS



- A server can generally be thought of as a computer that holds data which can be accessed from remote locations by authorized individuals.
- A router is a computing device that exists at various points in a network to direct communications traffic to and from servers to individual end users.
- Communications traffic is prioritized with real time 2-way video (Zoom, TEAMS etc.) generally having the highest priority. Email and non-dynamic web pages generally have a much lower priority.



BROADBAND BASICS



Your **Devices** connect to your **Router** which connects to the **ONT** that is connected by **Cables** plus *Splitters & Pedastals* to your **Internet Service Provider** plus *Routers & Name Servers* who is connected to by more cables to **The Internet** Servers i.e. *web,mail, content*