![Cleveland County North Carolina]

CONNECTING CLEVELAND COUNTY

Digital Inclusion Plan

PREPARED BY

Foothills Regional Commission

![FOOTHILLS REGIONAL COMMISSION]

ADOPTED BY

Cleveland County Commissioners 9/5/2023

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INTRODUCTION

Broadband service represents critical infrastructure necessary for the well-being of residents and businesses alike in the Foothills region. Local businesses—and the jobs they create—depend on high-speed internet access to drive their operations. Residents of all ages need broadband service as they navigate the digital world through activities like telemedicine, distance learning and, in some cases, even work. Just like roads and water, access to broadband has become a necessity of modern life, and should be treated as such moving forward.

Digital inclusion refers to the activities and strategies used to ensure all individuals and communities, including the most marginalized, have access to and use of Information and Communication Technologies. The four key elements of digital inclusion include:

Access to high-speed, reliable broadband

Affordable internet and user devices

Access to internet-enabled devices that meet the needs of the user

Access to digital literacy training
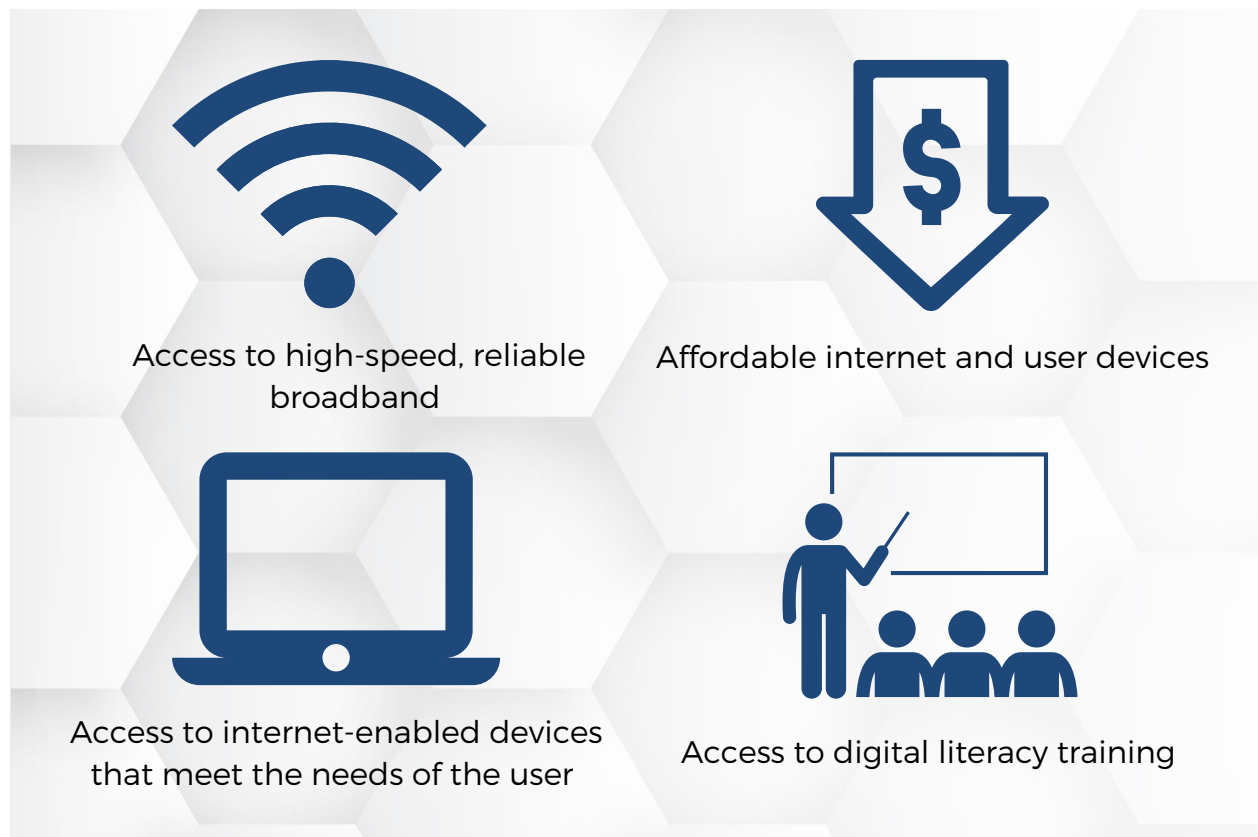
Recognizing the importance of broadband in an increasingly "remote economy," the Foothills Regional Commission Council of Governments entered a grant agreement with the Institute for Emerging Issues at NC State University to develop a digital inclusion plan for Cleveland County. In 2020, the Institute for Emerging Issues launched BAND-NC (Building a New Digital Economy) to address the challenges of broadband adoption across North Carolina and spark long-term planning efforts to bridge the digital divide. Through technical assistance, training, and mini-grants, BAND-NC seeks to make North Carolina the first state in the nation where every county has a digital inclusion plan.

As a result of their support, Foothills Regional Commission partnered with stakeholders in Cleveland County to develop a digital inclusion plan that seeks to collaboratively address the issues of broadband availability, access, and adoption while increasing connectivity throughout the county and towns. Through a series of stakeholder meetings, a group of community members and leaders from Cleveland County worked to identify technology access issues, broadband adoption and utilization gaps, and actionable steps to close the digital divide. The following statements meld various stakeholders' thoughts, frustrations, and aspirations regarding broadband and provide a roadmap to a more equitable digital future.

FACILITATION & PLANNING

The following individuals served as the primary contacts for research, outreach, community engagement, and this plan.
Isabelle Norman, Foothills Regional Commission
Katelyn Smith, Foothills Regional Commission
Alan Toney, Foothills Regional Commission

COMMUNITY PARTNERS FOR CLEVELAND COUNTY

The following individuals served as community outreach contacts and provided feedback throughout the planning process.
Kerri Melton, Cleveland County Assistant Manager
Doug Bridges, Cleveland County Commissioners
Justin Longino, Boiling Springs City Manager
Rodney Willis, Mayor of Belwood
Jack Shytle, Mayor of Polkville
Max Hopper, Former Mayor of Earl
Wright Adams, Director of Cleveland County Library System
Christina Martin, Kings Mountain Director of Cultural Enrichment
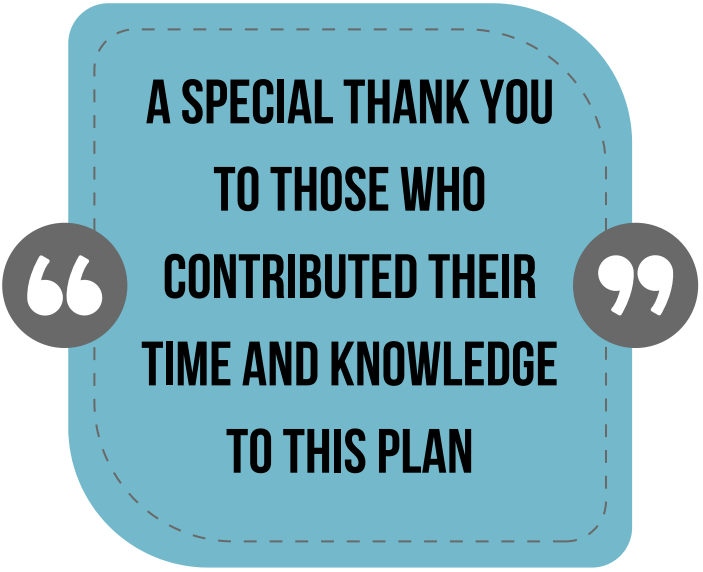Matthew Dull, Kings Mountain Director of Information Technology
Lisa Trexler, Director of Library Services at Cleveland Community College
Emily Sisk, Director of Grants at Cleveland Community College
Natalie Bishop, Dean of Gardner-Webb University Library
Ginger Jackson, Chief Technology Officer Cleveland County Schools

> " A SPECIAL THANK YOU TO THOSE WHO CONTRIBUTED THEIR TIME AND KNOWLEDGE TO THIS PLAN "

VISION, MISSION, & VALUES

VISION STATEMENT

A connected Cleveland County where broadband is considered an essential utility and all residents, businesses, and organizations needing and wanting to participate online have the knowledge and tools to do so.

MISSION STATEMENT

To improve digital literacy and expand access to reliable, affordable, high-speed broadband in Cleveland County through advocacy, collaboration, and education.

VALUES

- Accessibility: All residents, businesses, and organizations should have access to reliable, high-speed broadband to meet the needs of work, school, and civic involvement, as well as access to the hardware and knowledge needed to successfully engage in the digital world.
- Dependability: Technological solutions must be reliable, sustainable, and creative to provide consistently high-quality broadband access now and in the future.
- Equity: High-speed broadband and digital literacy should be considered an essential utility and available to all regardless of background, geographic location, economic status, or other circumstances.
- Affordability: The quality of broadband access for residents should not depend on their level of wealth.

DEFINITIONS

THE FOLLOWING TERMS ARE USED THROUGHOUT THE PLAN TO EXPLORE THE CONCEPT OF DIGITALLY INCLUSIVE COMMUNITIES.

BROADBAND
The Federal Communications Commission (FCC) defines broadband as the transmission of wide bandwidth data over a high-speed internet connection with a minimum of 25 megabits per second (Mbps) download and 3 megabits per second (Mbps) upload speeds.

DIGITAL DIVIDE
The gap between those who have access to technology, the internet, and digital literacy training and those who do not.

DIGITAL EQUITY
A condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy, and economy.

DIGITAL LITERACY
An individual's ability to use information technology (IT) and digital technology to find, evaluate, create, and communicate information.

DIGITAL NAVIGATOR
A trusted individual who provides one-on-one or small group assistance in internet adoption and the use of computing devices.

ABOUT CLEVELAND COUNTY

GEOGRAPHY

Cleveland County is located in the Piedmont region of southwestern North Carolina and along the border of South Carolina. It is conveniently located between Charlotte, Asheville, and Greenville/Spartanburg, making it a gateway between these major metropolitan areas. With 15 cities, towns, and municipalities, Cleveland County covers 469 square miles in the foothills of the Blue Ridge Mountains.

According to the 2020 census, the population density of Cleveland County is 214.4 people per square mile. The low population density in the county poses a challenge for residents who want high-speed internet connection in rural areas. Many providers will not offer service in areas with low subscription rates and do not see the value in expanding to these locations.

ECONOMY

One of the key components of digital inclusion is affordability. Personal finances can dictate whether individuals have access to the internet and devices. According to the 2021 American Community Survey (ACS) 5-Year Estimates, Cleveland County's poverty rate was 18.3 percent, which was higher than the state average of 13.4 percent and the national average of 11.4 percent. Additionally, in 2021 two of the largest municipalities within the county had high poverty rates; the City of Shelby had a poverty rate of 19 percent and the City of Kings Mountain had a rate of 20.7 percent. With high poverty rates within Cleveland County, we can infer that poverty is a likely barrier to high-speed internet subscriptions in the area.

Along with poverty rates, the median household income in Cleveland County further suggests that the affordability of broadband is a priority concern. In 2021, the median income in Cleveland County was $47,150 which was lower than the state median income of $61,972. This gap in annual income can result in families operating on tight budgets and prioritizing crucial living expenses over a high-speed internet subscription.

DEMOGRAPHY

Cleveland County's demographics should be considered in future digital inclusion efforts. In regard to digital literacy, Cleveland County has a larger number of older adults living in the area. According to the 2021 ACS 5-Year survey the population of citizens 65 and over is 18.6 percent, which was higher than the state average of 17 percent. Older adults tend to possess lower levels of digital and internet-related skills due to barriers around access, installation, knowledge, and trust. As the internet becomes more integrated into everyday life, they are at a higher risk of becoming disadvantaged and thus require additional assistance in digital inclusion efforts.

Cleveland County also has residents that are different races and ethnicities. According to the 2020 census, 4,039 individuals identified as Hispanic, 861 identified as Asian, and 277 identified as American Indian. These cultural groups suggest that there may be residents who speak various languages other than English in the county. In fact, in 2020, 4.5 percent of people in Cleveland County spoke a language other than English at home. With this in mind, digital inclusion resources will need to be provided in other languages to ensure equitable access to services.

BROADBAND AVAILABILITY

BROADBAND PROVIDERS

Within Cleveland County, there are 9 internet service providers (ISPs); 4 offer satellite, 2 offer fiber or cable, 2 provide fixed wireless, and 1 provides DSL.

Provider	Technology Type	Maximum Advertised Speeds
Hughesnet	Satellite	25 Mbps download / 3 Mbps upload
Viasat	Satellite	100 Mbps download / 3 Mbps upload
Starlink	Satellite	50 to 200 Mbps download / 10 to 20 Mbps upload
Earthlink	Wireless & Satellite	Up to 50 Mbps / 10 Mbps
Skyrunner	Wireless Internet Service Provider (WISP)	25 Mbps download / 3 Mbps upload
Carolina West	Wireless Internet Service Provider (WISP)	25 Mbps download / 3 Mbps upload
Kinetic by Windstream	VDSL & Fiber	Up to 100 Mbps
Spectrum	Cable & Fiber	1 Gig and up to 100 Gigs
AT&T	IPBB (DSL)	Up to 50 Mbps

Despite 9 ISPs extending their services to residents in Cleveland, 21.5 percent of households in the county do not have internet access (2021 American Community Survey 5-year estimates). On top of a large unserved population, many Cleveland residents report being underserved by their ISPs. It is important to note that the maximum advertised speeds are not available to all subscribers and actual speeds tend to be much slower. The following section explores the reach of the reported broadband providers and their pitfalls.

Viasat and **HughesNet** are two local providers that deliver satellite internet to rural locations in North Carolina so long as there is a clear view of the sky. These services offer various monthly plans with download speeds ranging from 12 to 30 megabytes per second (Mbps) and unlimited standard data with varying high-speed data limits. Compared to HughesNet, Viasat offers a more extensive range of speeds, high-speed data, and price options. Satellite is often the only internet option in low-density areas where other modes have not been built out, yet it has limited functionality and tends to be exceptionally expensive, has high latency, and has stringent data restrictions. Figure 1 shows the coverage area of Viasat in Cleveland County which covers Boiling Springs, Shelby, Kings Mountain, and Belwood.
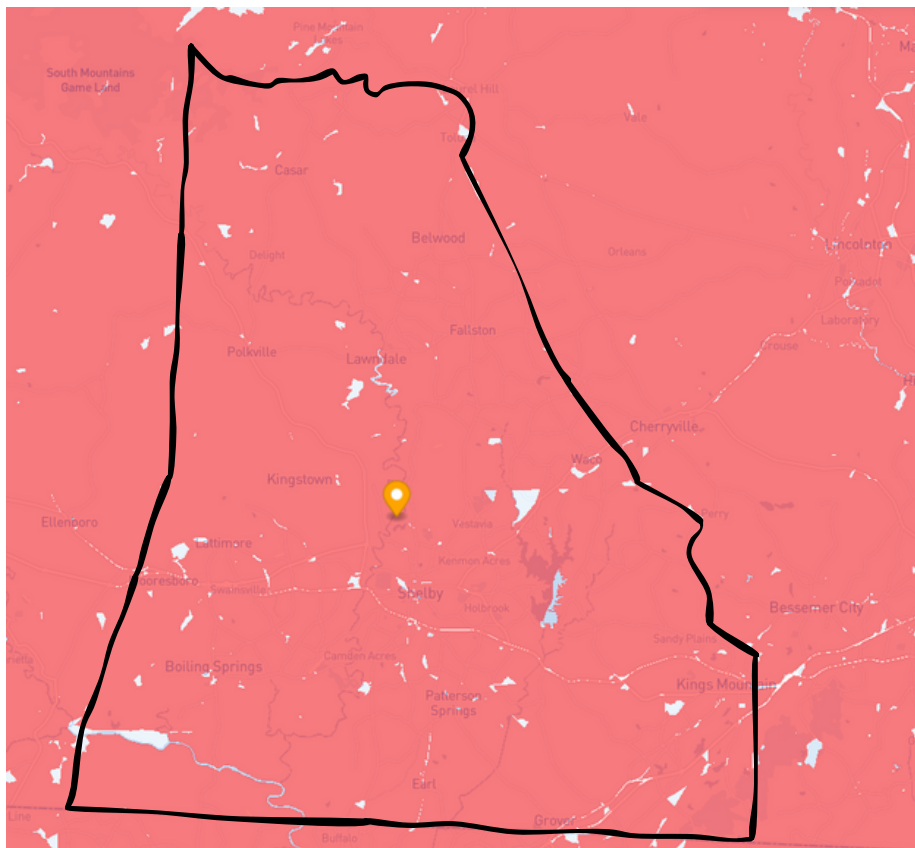

Figure 1. Coverage Map of Viasat in Cleveland

Skyrunner and **Carolina West** are fixed wireless internet providers, or WISPs, that transmit internet to users via radio waves instead of cables. This type of service involves beaming an internet signal from a land-based tower to an antenna attached to a residential or office unit. This form of internet is less expensive to install in rural areas because it does not require building out cable or DSL infrastructure from scratch. Figure 2 shows the lack of coverage from Carolina West within Boiling Springs, Shelby, Kings Mountain, and other areas of the county. Skyrunner also fails to serve a majority of Cleveland County despite released coverage maps of the area.
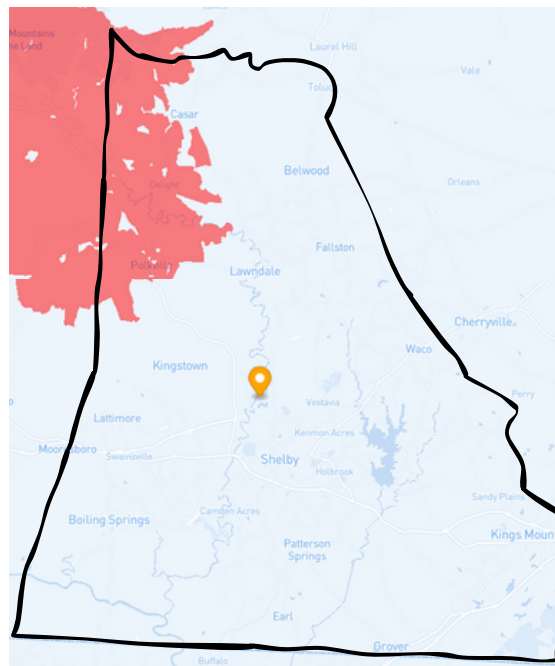

Figure 2. Coverage Map of Carolina West in Cleveland

Spectrum is the second largest cable internet provider in the United States, reaching 100 million people across 42 states. Within Cleveland County, Spectrum extends cable broadband to several municipalities including; Boiling Springs, Shelby, Kings Mountain, Belwood, Casar, Polkville, Kingstown, Mooresboro, Fallston, Waco, Lattimore, Lawndale, Patterson Springs, and Earl.
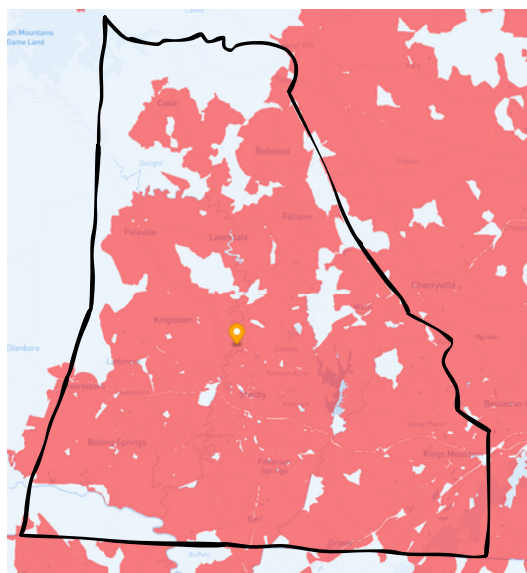

Figure 3. Coverage Map of Spectrum in Cleveland

Figure 4 displays a map of **AT&T's** IPBB coverage area within Cleveland County. IPBB internet, which stands for internet protocol broadband, is used to market AT&T's high-speed DSL plan. IPBB delivers high-speed internet over fiber optic lines before switching to existing copper DSL lines connected to customers. AT&T provides internet service to areas surrounding the major municipalities but lacks consistent service in the northern part of the county.
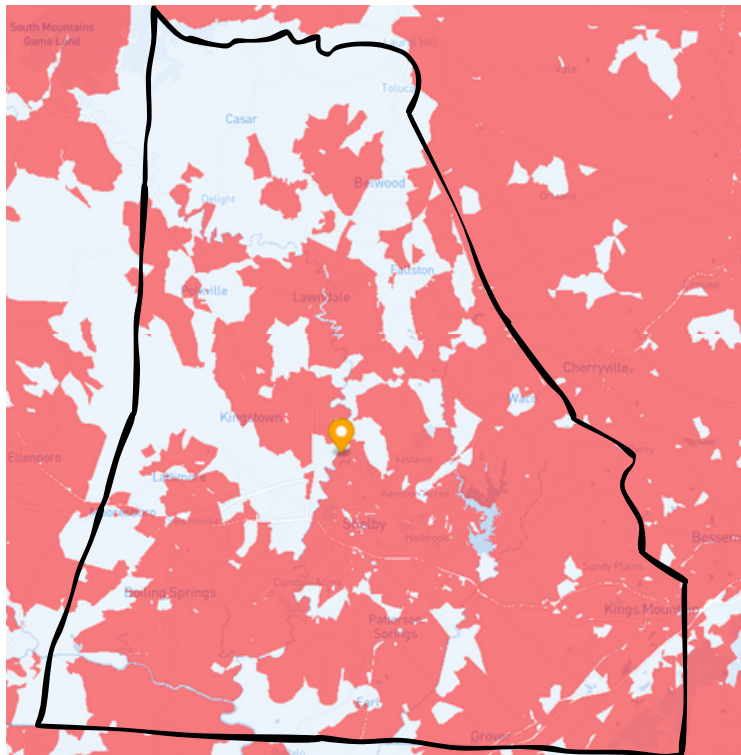

Figure 4. Coverage Map of AT&T in Cleveland

Another source of internet in Cleveland County is offered through **cellular providers**. In addition to providing cell service for cell phones, these providers are now able to deliver wireless broadband services to individual residences by connecting existing cell towers with a wireless router. The main cellular providers in Cleveland are Verizon, T-Mobile, and AT&T. Each of these companies offers a form of wireless internet that their customers can add to their new or existing plans. The cost for this type of internet service is comparable to regular cable internet and most come with no data caps. The main issue with this source of internet is the lack of consistent coverage throughout the county which leads to unreliable speeds and service. The speed that customers receive depends on how close they are to a network tower, network congestion, how many connected devices they have, and other factors. This results in a range of upload and download speeds that vary by location and provider.

BROADBAND SERVICE IN CLEVELAND COUNTY

The NC Department of Information Technology (NCDIT) developed Figure 5 using data collected through the FCC's Form 477, which requires internet service providers to report service information at the census block level. The FCC interprets data regarding internet availability such that if at least one location in a census block has high-speed internet access, then the whole census tract is served. Therefore, the FCC's estimate of broadband availability is considerably overstated. The green tracts in Figure 5 are areas where internet service providers reportedly provide broadband speeds of at least 25 Mbps download and 3 Mbps upload in Cleveland County. According to the 2021 FCC report, 99.02 percent of the population in Cleveland County has access to 25/3 internet.
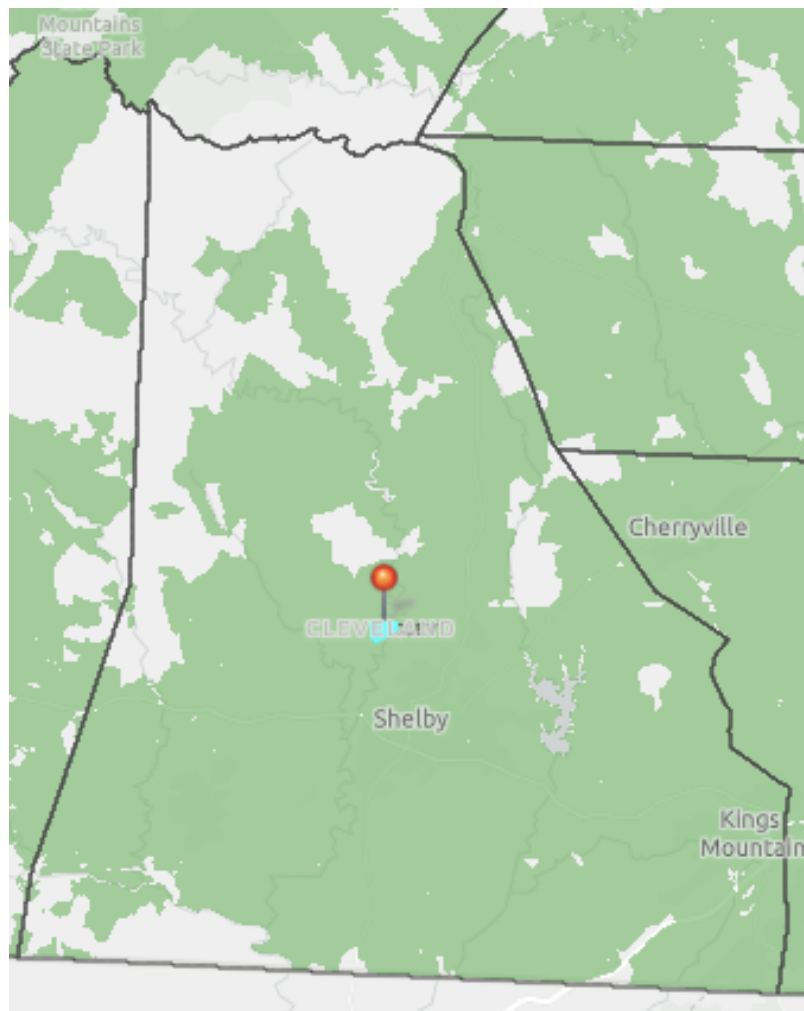

Figure 5. FCC Map of Broadband in Cleveland County

Based on these images, areas around the northern parts of the county such as Casar, Olive Grove, Belwood, Five Points, and Knob Creek communities lack adequate access to 25/3 broadband.

NCDIT created the NC Broadband Availability and Quality Index using 8 broadband-related metrics to paint a more accurate picture of internet availability in every census tract within North Carolina. The following variables were assigned different weights to reflect internal priorities.

Contributing Variables:
- Percent population with access to 25/3 broadband
- Percent population with access to 100/20 broadband
- Percent population with access to fiber
- Ration of upload to download median advertised speeds
- Households per square mile
- Percentage of housing units built in 2010 or later

Undermining Variables:
- Percent population with access to no providers
- Percent population with access to DSL only

Using these factors, in 2021, Cleveland County received a 61.7 on the Broadband Availability and Quality Index scale out of 100; a higher score denotes better broadband availability and quality.

The map in Figure 6 indicates that areas around Boiling Springs, Shelby, and Kings Mountain have increased access to quality broadband services. The areas shaded in orange and red indicate a lack of access to consistent, reliable, high-speed internet. Most notably, the dark red southern portion of the county has the worst access to broadband, for only 47.62 percent of the population has access to 25/3 broadband speeds. The other section of the county with decreased internet availability is the northern area shaded red, with only 57.27 percent of the population having access to broadband.
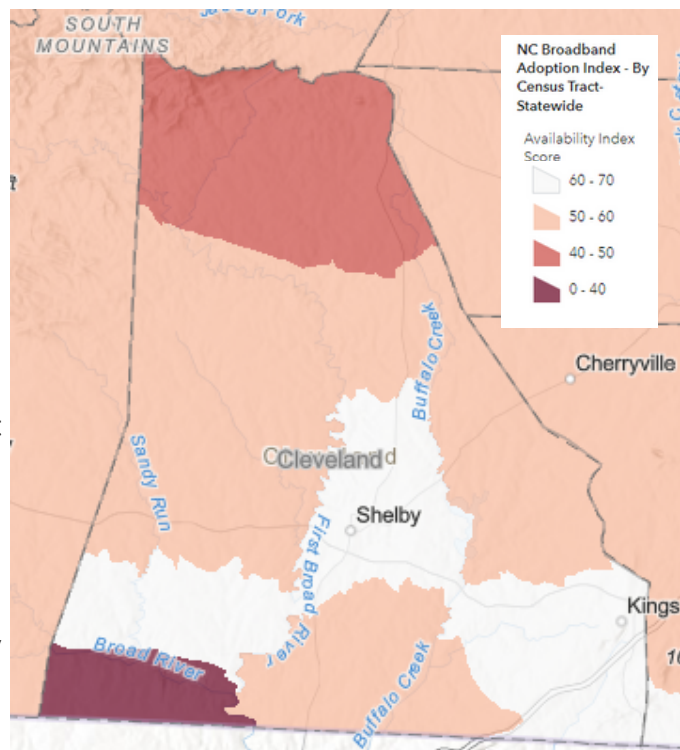

Figure 6. Broadband Availability and Quality Index Map of Cleveland County

As of April 25th, 2023, 786 individuals from Cleveland County responded to the NC Broadband Survey. In comparison to surrounding counties, this response rate is extremely low and only accounts for about 1.8% of the county's population. Despite the lower numbers seen through this survey, the data still shows a strong need for better broadband within Cleveland County.

The survey results indicate that 9 percent of the population utilize DSL, 6 percent have fiber, 15 percent use satellite, 20 percent rely on cable, and 6 percent have a fixed wireless provider. Out of the approximate 786 survey respondents in Cleveland, 480 respondents, or 61 percent, reported having no wireline internet and 25 respondents had no cellular service at their home location. In contrast, 64 percent of respondents reported having cellular service for voice and internet data at their location. This high percentage supports the increased reliance on mobile devices among citizens of Cleveland County.

The survey also asks individuals to complete a speed test at their location using LibreSpeed. Out of 363 respondents that completed the speed test, over half, 55 percent, reported having download/upload speeds less than 25 Mbps/3 Mbps, which is the minimum requirement for broadband. Out of this same group, 41 percent registered speeds less than 10 Mbps download/1 Mbps upload, which results in drastically reduced internet quality.

Figure 7 is a map generated from the survey with location-based results for Cleveland County. This data suggests that there is a significant number of respondents either completely without internet or with internet under 25/3 speeds located within the "served" census tracts identified by the FCC in Figure 5. This data suggests the prevalence of unreliable and inconsistent broadband service, especially in the northern and southern portions of the county.
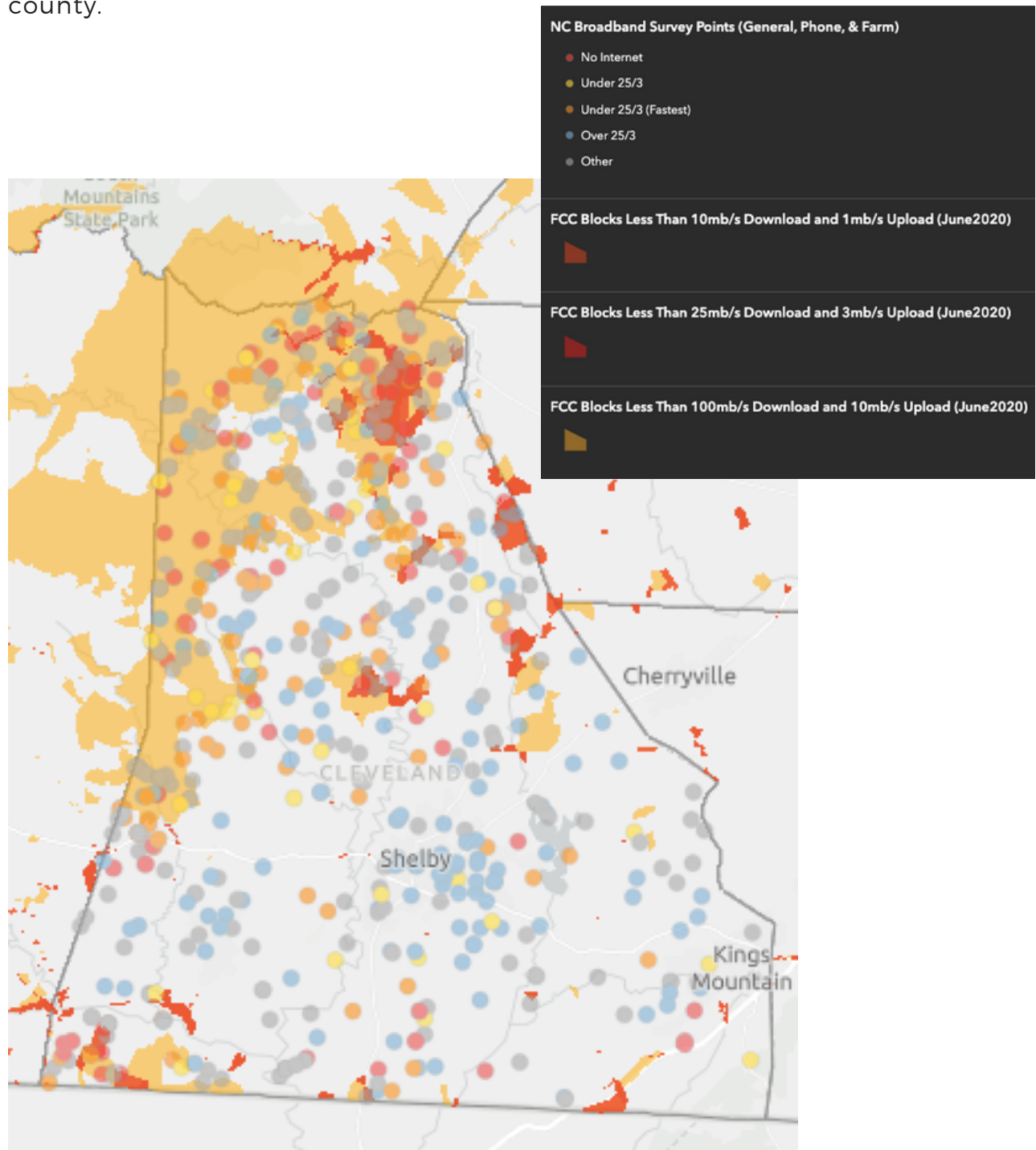

Figure 7. Map of Broadband Speeds in Cleveland County

ONGOING EFFORTS TO ADDRESS BROADBAND AVAILABILITY

The NC Growing Rural Economies with Access to Technology (GREAT) grant program funds the deployment of broadband within unserved areas across the state. This grant will help to bring high-speed internet to thousands of North Carolinians, businesses, and farms in the most rural and remote areas of the state. These areas include both Tier 1 and Tier 2 counties as well as rural census tracts located in development Tier 3 areas that are currently served by less than 25 Mbps download and 3 Mbps upload speeds.

In September of 2022, Spectrum was awarded a North Carolina GREAT grant of $4 million to bring gigabit high-speed internet access to nearly 1,120 homes and small businesses in Cleveland County. Combined with the state grant of $4 million and a contribution from Cleveland County of $700,000, the total project investment, including more than $1.5 million from Spectrum, is nearly $6.3 million.

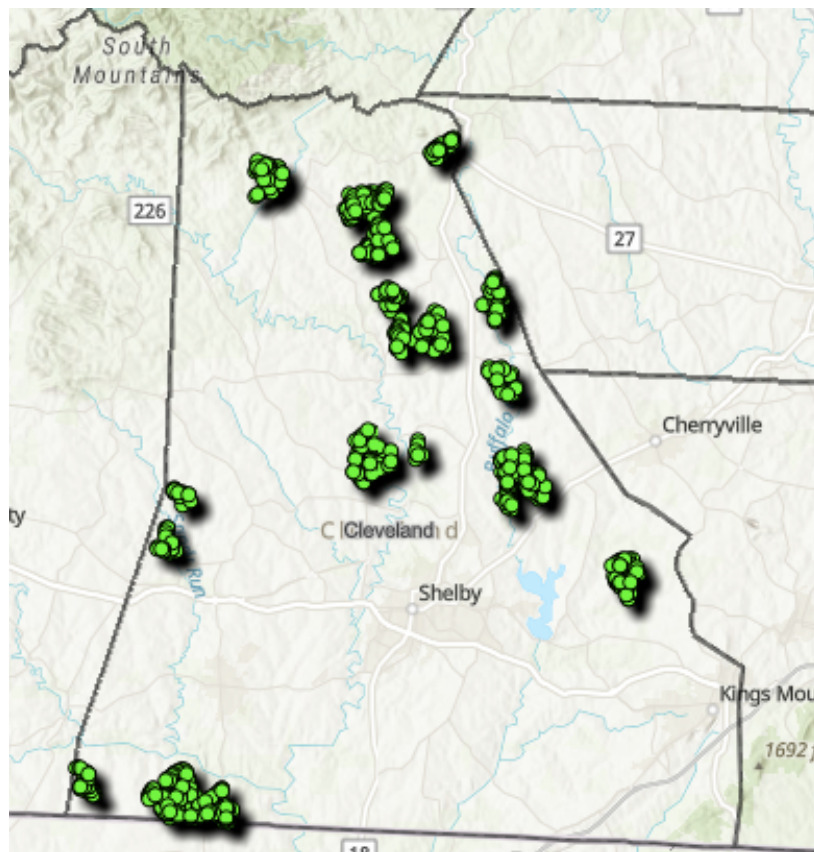The green dots in Figure 8 are the currently unserved premises that were funded by the GREAT grant.

Figure 8. Map of GREAT Grant Awards in Cleveland County

In addition to the GREAT grant awards, the Rural Digital Opportunity Fund (RDOF) from the FCC will serve a significant number of census blocks in Cleveland County. During the RDOF Auction 904, Charter Communications, SpaceX, and Windstream were awarded funds to expand services within the county. Charter Spectrum, also referred to as CCO Holdings, LLC, was awarded the largest area through RDOF. Charter is a lead ISP that provides broadband access to approximately 1 million customer locations across 24 states, including more than 125,000 locations in North Carolina in the coming years. Combined, Spectrum's GREAT Program grant and RDOF build-outs in Cleveland County will connect 3,080 homes and small businesses.

Figure 9 shows the unserved areas that were funded through RDOF.

Figure 9. Map of RDOF Award Locations in Cleveland County

PUBLIC WI-FI ZONES

Cleveland County Public Libraries provide free internet to patrons at the Eugenia H. Young Memorial Library and Spangler Branch Library. By Fall of 2023, the Cleveland County Library System will have a bookmobile on the road at least four days a week and will offer internet via Wi-Fi. The **Mauney Memorial Library** in Kings Mountain also offers many technology services to patrons including free Wi-Fi with no password required. Along with accessible Wi-Fi, they have 6 hotspots that can be reserved for up to a three-week period before the data is shut off.

All **Cleveland County Schools**, including Boiling Springs Elementary, Springmore Elementary, Crest Middle and High School, James Love Elementary, Shelby Middle and High School, Graham Elementary, Turning Point Academy, Marion Elementary, North Shelby School, Jefferson Elementary, Cleveland Early College HS, Union Elementary, Casar Elementary, Burns High and Middle School, Fallston Elementary, Grover Elementary, Bethware Elementary, Kings Mountain Middle and High School, West and East Elementary, and Kings Mountain Intermediate provide public access to the internet at varying times.

In Shelby, **Cleveland Community College** provides free Wi-Fi to students, faculty, and staff inside buildings on campus. They also offer public access to 4 internet-connected computers in the Rose Library.

Gardner Webb University offers free Wi-Fi to students and staff that can be accessed on campus. Guests that have an affiliation with the university, meaning vendors, parents of GWU students, visiting lecturers, alumni, conference attendees, and more can access the Wi-Fi for one-hour increments. There is also a guest network available at the university, but it is limited due to security reasons.

Within Kings Mountain, there are several locations that offer free public Wi-Fi to patrons. These locations include **Mauney Memorial Library**, **City Hall**, the **Downtown area**, **Patriots Park**, and the **H. Lawrence Patrick Senior Center**.

Beyond the central portion of Cleveland County, the Town of Belwood offers public Wi-Fi at the **Belwood Community Center**. The Town of Earl also has publicly accessible Wi-Fi at their **walking track near the Earl Town Hall**.

GOAL 1: IMPROVE AND INCREASE BROADBAND CONNECTIVITY THROUGHOUT CLEVELAND COUNTY TO ENSURE ALL RESIDENTS AND BUSINESSES HAVE ACCESS TO RELIABLE, HIGH-SPEED BROADBAND.

OBJECTIVES

01 **Pursue grants to make last-mile connections serving every resident in the county.**

Throughout Cleveland County, both businesses and residents face a consistent issue of obtaining access to reliable internet services. Within the stakeholder meetings, this challenge was brought up and identified to be the most threatening issue within the county. Once current grant monies from the ongoing programs are spent and new networks are constructed, it will be easier for the county and state to determine which areas are left unserved and underserved. In order to reach Governor Cooper's 2025 goal of 98% of NC households having broadband internet access, it is essential that last-mile connections are prioritized and pursued through future funding opportunities, including but not limited to the Broadband Equity, Access, and Deployment (BEAD) program, the Completing Access to Broadband (CAB) grant, and the Stop-Gap grant.

02 **Strengthen the existing Wi-Fi networks to sustain greater speeds and support a public Wi-Fi wayfinding program that involves a map of public Wi-Fi.**

Public Wi-Fi is depended on heavily within Cleveland County as a resource for individuals who lack broadband. Although this service is relied on by citizens, speeds may not always be conducive to the needs of the individuals utilizing it. In addition, Cleveland County doesn't have an accessible tool for residents to locate internet access sites within the community. To help combat these problems, support should be extended to help strengthen existing Wi-Fi networks and to develop a wayfinding system. The expansion of public Wi-Fi to sustain higher volumes and speeds would ensure a more reliable network for residents. In tandem, developing a wayfinding program that highlights the location of public networks within the county will increase public knowledge about Wi-Fi zones.

OBJECTIVES CONTINUED

03 **Increase the areas that have no-cost Wi-Fi network availability, with the aim of no-cost free public or private access points within no more than 10 miles of each Cleveland County residence.**

With the lack of reliable internet access in Cleveland County, many residents depend on public Wi-Fi services to complete personal activities. With this in mind, establishing a Wi-Fi network within close proximity to residents' homes is necessary to provide equitable access to the internet. Being able to establish more access points, especially within the northern and southern portions of the county, would help combat the insufficient broadband within these areas. Entities such as community centers, town halls, parks, businesses, churches, and other organizations could be key partners in accomplishing this goal. By establishing these partnerships, the County as a whole would experience less digital distress and instead ensure all residents are digitally connected despite geography and socioeconomic class.

04 **Maximize the efforts to create complete broadband infrastructure maps using new and existing information.**

One challenge of digital inclusion is the accuracy of broadband maps that have been assembled based on the self-reporting of internet service providers. Frequently, the data portrayed in these maps is an inaccurate depiction of the actual broadband availability in rural areas and considerably overstates broadband. One way to help provide accurate data is by ensuring that residents of Cleveland County participate in the NCDIT Broadband Survey. Currently, response numbers are low throughout the County, which leaves valuable data absent from these maps. Increasing awareness and pushing for more individuals to complete this survey will help challenge current internet projections. With an updated set of data available, maps will be more reliable and useful in identifying areas with the largest gaps in internet availability.

BROADBAND ADOPTION

According to the 2021 ACS 1-year estimates, 81.8 percent of Cleveland County households have some form of broadband subscription. Out of all Cleveland County households, 0.1 percent of households have dial-up with no other form of internet, 69.7 percent have broadband such as cable, fiber-optic or DSL, 4.7 percent have satellite, and 9.4 percent of households have a cellular data plan with no other type of internet subscription. Approximately 25.6 percent of households do not subscribe to terrestrial or satellite broadband. About 7,326 households or 18.2 percent of households do not have any form of broadband, including a cellular data plan.

Within Cleveland County, about a quarter of households do not have wireline or satellite internet. During steering committee meetings, stakeholders suggested that this adoption rate is likely a result of two primary factors: limited availability of service, coupled with unreliable speeds, and costly broadband fees. In support of this notion, the NC Broadband Survey depicts that over half of all Cleveland County respondents, 480 of 786 individuals, do not have wireline internet. Out of the 480 respondents without wireline internet, 83.3 percent reported that their lack of internet is a result of it being unavailable, while 6.4 percent reported it was too expensive to obtain.

In addition to a lack of broadband availability, as demonstrated in the prior section, the cost of decent internet plans remains a significant barrier to adoption. According to the NC Broadband Survey, most Cleveland County residents (17%) pay over $125 a month for internet. For individuals on limited incomes, this basic service remains out of reach. In fact, out of all Cleveland County households with a yearly income of less than $20,000, 36.8 percent of households do not have an internet or cellular subscription. In comparison, 20.1 percent of households with an income between $20,000 and $74,999 are without an internet subscription, while only 4.2 percent of households with an income of more than $75,000 do not have internet. This data suggests that households with higher incomes are more likely to obtain broadband service, while low to middle-income households are left disconnected.

Figure 10 captures the range of internet costs for Cleveland residents. The costliness of reliable internet, in tandem with a lack of service in certain areas, contributes to a portion of the population lacking affordable and dependable broadband service.
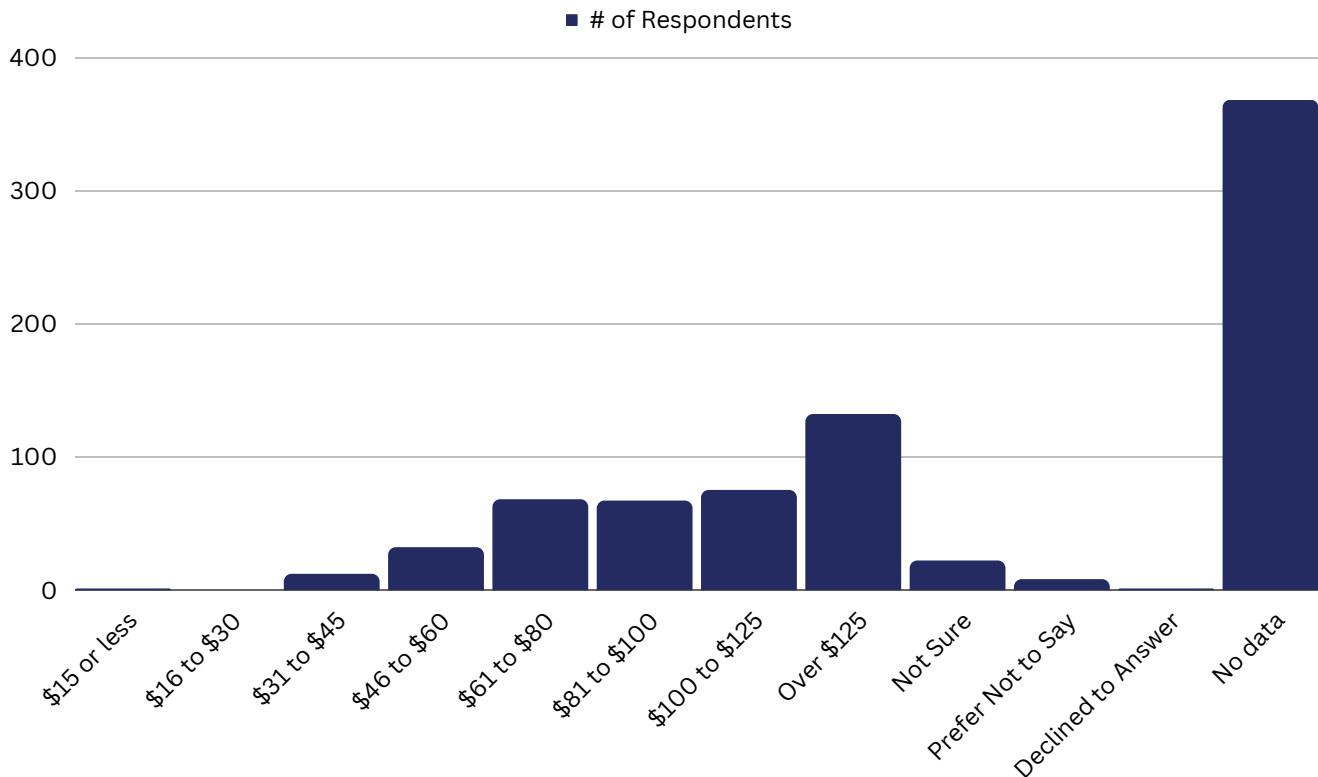

Figure 10. Total Cost of Internet per Month for Cleveland County Residents

As for existing low-cost or discount Wi-Fi options in the area, most providers participate in the Federal Communication Commission's Affordable Connectivity Program (ACP). The ACP offers eligible households a discount of up to $30 per month towards internet service and up to $75 a month for eligible households on tribal lands. Applicants may also be eligible for a one-time discount of up to $100 to purchase a user-friendly device.

Individuals are eligible for the ACP if their income is 200% or less than the Federal Poverty Guidelines, which varies depending on household size and the state. Individuals that participate in one of the following programs are also eligible for the ACP:
- Supplemental Nutrition Assistance Program (SNAP)
- Medicaid

- Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
- Supplemental Security Income (SSI)
- Federal Public Housing Assistance (FPHA) (including Housing Choice Voucher (HCV) Program (Section 8 Vouchers), Project-Based Rental Assistance (PBRA)/202/811, Public Housing, and Affordable Housing Programs for American Indians, Alaska Natives or Native Hawaiians
- Veterans Pension and Survivors Benefit
- Free and Reduced-Price School Lunch Program or School Breakfast Program, including at U.S. Department of Agriculture (USDA) Community Eligibility Provision schools
- Received a Federal Pell Grant in the current award year

As of April 1, 2023, 10,789 of 40,296 total households in Cleveland County were enrolled in the ACP, approximately 26.7 percent of all households. In the entire county, 40.6 percent of the population, or 40,140 of 98,787 individuals, have an income at or below 200 percent of the poverty guideline. If we assume that the average household size is 2.45 people (2021 ACS 1-year estimates), then roughly 16,380 households have an income at or below 200 percent of the poverty level. This suggests that about 5,600 households are eligible for the ACP by their income level but remain unenrolled.

Individuals that are approved for the federal Affordable Connectivity Program automatically qualify for Access for AT&T, which is a low-cost internet service for eligible households with plans up to $30 a month and with speeds up to 100 Mbps. Additionally, through the Spectrum Internet Assist program low-income households can access low-cost, high-speed internet for $17.99 a month. To qualify for this program, a member of the household must be a recipient of the National School Lunch Program, the Community Eligibility Provision, or Supplemental Security Income (age 65 and over only). With Spectrum Internet Assist, users can receive a free internet modem with no data caps and no contract. Both of these programs accept the ACP benefit, thereby providing free internet to low-income households as long as the internet provider services the household.

GOAL 2: ENSURE ALL INDIVIDUALS AND BUSINESSES IN CLEVELAND COUNTY CAN ACCESS BROADBAND SERVICES AT AN AFFORDABLE RATE.

OBJECTIVES

01 Regionalize the effort to increase enrollment in established programs (i.e., Affordable Connectivity Program, provider plans) that give broadband stipends, scholarships or subsidies.

Generally, ACP enrollment is a multi-step process that requires eligible households to first apply for the program to establish their eligibility and then contact a participating ISP to select a plan and have the discount applied to the bill. As a result, this process can be challenging for individuals to navigate on their own. While librarians throughout Cleveland County have attempted to assist vulnerable populations, such as seniors, with enrollment, they have reached their capacity. Based on the current enrollment numbers, it can be inferred that a substantial number of households are eligible for the ACP based on their income or enrollment in other federal programs, yet many remain unenrolled likely due to a lack of awareness or assistance navigating the process. To further streamline the enrollment process and reach eligible communities, a coordinated regional effort should be undertaken. This includes but is not limited to enrollment events, train-the-trainer programs, and outreach campaigns.

02 Work with broadband providers and community-based organizations within Cleveland County to increase awareness amongst the population about diverse broadband options.

Recently, mobile carriers like Verizon and T-Mobile have expanded their services to include cellular home internet, which delivers wireless broadband services to individual residences by connecting existing cell towers with a wireless router. Depending on the location in the county, stakeholders reported experiencing decent internet speeds using mobile broadband. In addition, the cost of wireless broadband is significantly reduced since cables and cumbersome equipment do not need to be installed. Home broadband plans can also be bundled with mobile data plans, thereby further lowering the barrier to broadband adoption by reducing its monthly cost. Given the nascent nature of this service, providers have limited availability and network capacity. However, they continue to roll out 5G internet in rural areas of the country, so it poses a viable option for traditionally unserved areas. With this in mind, users should be made aware of the various internet options available to them and the new developments in broadband.

ACCESS TO DEVICES

A core tenet of digital inclusion includes having access to a device that meets all of your online needs, typically a computer or tablet. While cellular devices have become ubiquitous in daily life, they are limited in their functionality and impractical for intensive tasks like remote work and online learning. For Cleveland County residents that do not have the financial means to afford a user-friendly device, the following entities, including but not limited to, offer public access to computers or tablets: Eugenia H. Young Memorial Library, Mauney Memorial Library, Boiling Springs Library, Cleveland Community College, Gardner-Webb University Library, and Spangler Branch Library.

The **Eugenia H. Young Memorial Library** is one of two Cleveland County libraries. They offer access to 27 public computers with a built-in webcam and access to the internet and a print station; 23 computers are arranged in carrels of four computers each and 4 computers are in four private, individual computer rooms. Users have access to computers for up to three hours each day.

The **Spangler Branch Library**, located in Lawndale, is the smaller of the two public county libraries. This branch offers access to 4 computers connected to the internet and access to a black and white or color printer.

Mauney Memorial Library, located in the City of Kings Mountain, provides library card holders and guests free access to 6 desktops and 6 laptops with webcams and printing services. Additionally, the library offers wireless printing from personal devices and phones. The library also has 6 Chromebooks that can be loaned to the public; however, the lending program has faced its own share of challenges, including the return of devices in a timely manner.

The **Boiling Springs Library** is an independent community library located inside the Ruby C. Hunt YMCA in Boiling Springs. The library provides public access to 8 computers connected to the internet and printing. Visitors are not required to have a library card or be a member, but first-time users have to fill out a waiver.

Cleveland Community College (CCC) has four computers that can be accessed by persons who are neither students nor employees of the college. These devices can be used to connect to the print station.

Users can access these computers for up to two hours, but the library reserves the right to limit the time during periods of high demand. The college also has 30 computers with internet access available for students, faculty, and staff. Additionally, CCC houses the TRIO Student Support Services program which is designed to provide first-generation college students, students from low-income backgrounds, and/or students with disabilities access to resources, including devices, that they may need to succeed in their academic careers.

The **Gardner-Webb University** Library has 14 Windows computers available on the main floor. Two of the Windows PCs are designated for public access, the remaining 12 are for student use. In recent years there has been a decrease in the public use of desktops.

The **H. Lawrence Patrick Senior Life and Conference Center** is a non-profit public organization located in Kings Mountain that provides services to persons 55 years of age and older. The center has a computer room with approximately 25 computers equipped with the internet. They also offer printing services.

The **Leona Smith Neal Memorial Senior Center** in Shelby used to have a computer lab available to their patrons but has since stopped offering this service due to a transition towards mobile devices. If patrons request a device, they have 3 internet-connected laptops available for use. They also provide printing services if patrons request them.

Cleveland County Schools issues devices to every student enrolled in the county, approximately 14,000 children, through its one-to-one technology program. Students in kindergarten through fifth grade utilize iPads or laptops, but only fourth or fifth grade students take devices home. Students in sixth through twelfth grade are issued laptops, whether students take them home depends on the grade level. Students pay a user fee of $20 per year to cover damages. The school system works with families to ensure they can afford this.
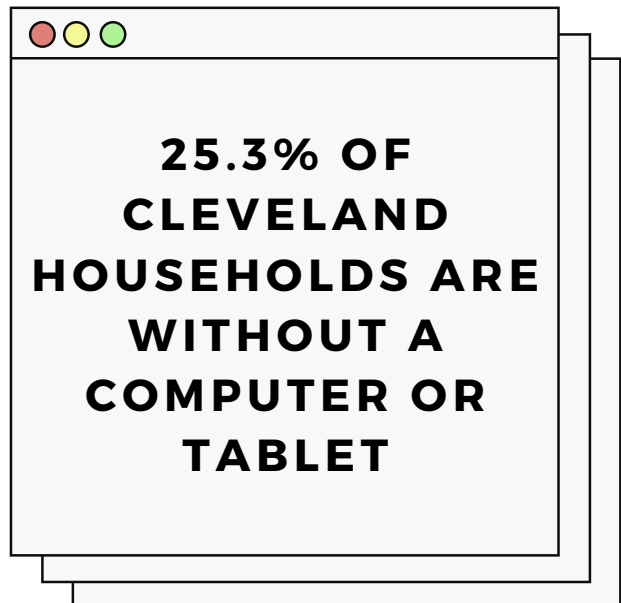
For those who wish to purchase a low-cost or refurbished computer device, Walmart launched a refurbished product program, dubbed **Walmart Restored**, in July 2022. Walmart Restored professionally inspects, tests, and cleans quality appliances, including computers, cell phones, and tablets, and sells them online at a low cost.

Additionally, the **Cleveland Community College Official Bookstore** sells computers and computer accessories (not discounted) online. Students can apply their financial aid to purchase devices.

The **Kramden Institute, Inc**. is a nonprofit in Durham, NC dedicated to providing low-income children and adults with refurbished devices. They gift refurbished desktop computers to K-12 students and sell refurbished desktops for $30 and laptops for $70 to eligible applicants.

According to the 2021 American Community Survey 1-year estimates, 25.3 percent of Cleveland County households, or 10,184 households, do not have a desktop, laptop, tablet, or portable wireless computer. Of the total population, 9.8 percent of residents have no computing device and 15.5 percent have a smartphone with no other computing device.

25.3% OF CLEVELAND HOUSEHOLDS ARE WITHOUT A COMPUTER OR TABLET
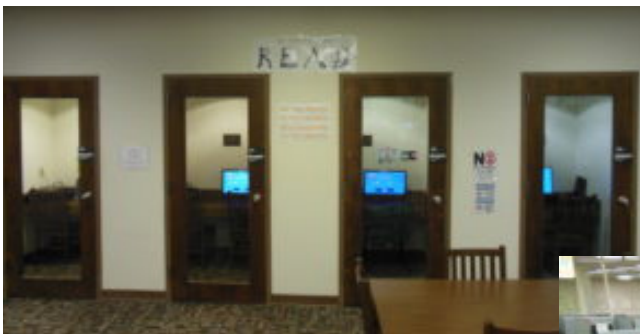
Image Source: Eugenia H. Young Memorial Library

GOAL 3: ENSURE THAT ALL RESIDENTS OF CLEVELAND COUNTY HAVE ACCESS TO A TECHNOLOGY DEVICE WITH CONNECTIVITY, SUCH AS A TABLET OR COMPUTER, THAT MEETS THE USER'S NEEDS IF THEY SO DESIRE.

OBJECTIVES

01 Work with, including but not limited to, educational institutions, non-profits, and community program providers to support a device refurbishment/ lending or gifting program where available.

Within Cleveland County, Mauney Memorial Library is the only entity that loans out computer devices to the public and students. Individuals that do not own personal devices are left to rely on organizations that offer access to public computers, which confines computer usage to standard business hours and time limits. Instead of re-selling devices through GovDeals or discarding used devices, there is potential for governmental and educational entities to partner with local community organizations to loan out or grant refurbished devices to community members in need.

02 Increase awareness about device subsidy programs that would provide low or no-cost devices to people who need them.

The Affordable Connectivity Program offers eligible households a one-time discount of up to $100 for a laptop, computer, or desktop computer. This benefit is less known in the community compared to the monthly internet subsidy. In addition, certain entities sell refurbished devices at significantly discounted rates. Ensuring community members are aware of these options is vital to increasing device ownership and access.

03 Establish a wayfinding program that highlights where public devices are located throughout the county.

There are at least 91 computers or tablets available for public use in Cleveland County. A wayfinding program that highlights the location of public devices, as well as details about their printing capabilities, hours available for use, and the setting of the device, within the county will increase public knowledge about the number of user-friendly devices available. This program can take on many shapes, from a layer on the county's GIS to uniform signage outside of facilities that offer access to devices.

DIGITAL LITERACY

Digital inclusion seeks to ensure that users possess a degree of digital literacy that enables them to effectively find, evaluate, create, and communicate information online. Closing the digital gap involves providing access to relevant learning opportunities focusing on computer and software use. Digital literacy training can be catered to meet the needs and interests of various target populations. This can take on multiple formats, including but not limited to workforce development training that focuses on employment searches and resumes development; supporting parents and guardians navigating virtual learning environments; training for senior citizens on accessing telehealth services; and training taught in various languages to reach those with limited English. The following assets offer digital literacy training in Cleveland County.

Since 2021, the library staff at **Eugenia H. Young Memorial Library** have offered individual technology help classes at least once a week. Around the same time, the library partnered with Shelby City Park to offer STEAM programs for summer camp participants. They continue to provide STEM and STEAM (science, technology, engineering, art, and mathematics) programming in after-school centers. Additionally, the library partners with workforce development agencies, such as NCWorks, to provide skills training to individuals seeking employment. Once every two months the county library also offers group technology lessons for 5 to 7 individuals at the **Leona Neal Senior Center** in Shelby; this is supplemental to the weekly classes on smartphone usage provided by the center. The library also highlights an array of virtual platforms on its website that provide free lessons on basic computer skills, graphic design, digital security, and coding lessons.

In 2022, **Mauney Memorial Library** was awarded an American Rescue Plan Act grant to increase digital inclusion in the community. Using these funds, the library hired a technology assistant to provide citizens with one-to-one computer assistance. They offer one-hour sessions and participants can request instruction on various devices, including PCs, Androids, Apple products, Kindles, and Nooks. The instructor has since helped provide patrons with varying tasks, including using Microsoft Office, depositing checks electronically, filling out job applications, using different search engines, preparing and sending emails, crafting resumes, and more!

The library also has a drop-in computer lab session every Thursday from 12 to 4 for patrons to get personalized help. In regard to programming, the library offers STEM activities, including coding classes, for children.

Cleveland Community College (CCC) offers an assortment of technology teachings ranging from courses to one-on-one instruction. Under the realm of informational technology (IT), they offer 13 certificates, 4 associate degrees, and 3 diplomas. For example, some of these offerings focus on systems security, web development, computer science, and social media. The college also offers Continuing Education classes that develop basic and advanced computer skills under the career services umbrella. Through these courses, individuals learn how to utilize computers and technology to increase their employability and enhance their job search. The CCC library also offers access to a free Computer Basics Guide on its website. This includes a tutorial series with videos and resources related to various computer skills like keyboarding, Microsoft Word, and converting Google documents to Word documents. Students enrolled at CCC can access one-on-one computer skills support in the Academic Center for Excellence (ACE) Lab located in the Jim and Patsy Rose Library. ACE tutors work with students on computer skills needed for any course, including computer basics, file management, and formatting.

To ensure all children possess a certain degree of digital literacy, North Carolina mandates that students meet digital literacy competencies revolving around internet safety and use. To meet these standards, **Cleveland County Schools** implemented a district-wide digital citizenship program using Neptune Navigate. This is an interactive platform that delivers online lessons catered to various age groups on topics such as cyberbullying, digital footprint, media literacy, privacy and cyber awareness, tech law and age appropriateness, and social media. Additionally, during the COVID-19 pandemic, the school system provided parents and guardians, students, and staff with an IT support hotline to assist with any technical challenges they encountered as they navigated remote learning. They continue to provide technical support to staff and parents.

The **H. Lawrence Patrick Senior Life and Conference Center** in Kings Mountain offers classes twice a week on technology skills and computer basics.

These classes are taught by an instructor from Cleveland Community College and are at no cost to center patrons. Additionally, staff from Mauney Memorial Library visit the senior center once a month to provide additional clinics that focus on smartphone use.

The **NCWorks Career Center** in Cleveland County offers comprehensive training and employment services to the community. This includes assistance with online job searches, resume and cover letter preparation, and access to a computer and the internet. Career centers provide vital one-on-one computer support with the intention of increasing job placement.

GOAL 4: DEVELOP TECHNOLOGY SUPPORT AND EDUCATIONAL PROGRAMMING THAT EMPOWERS ALL COMMUNITY MEMBERS TO GAIN THE NECESSARY SKILLS TO PARTICIPATE IN THE DIGITAL WORLD.

OBJECTIVES

01 Support a public Wi-Fi wayfinding program that highlights where digital literacy classes and telehealth resources can be accessed.

There are various trainings available throughout the county that focus on different technical skills and devices. As a way to improve community awareness about these opportunities, all of the educational opportunities should be aggregated into one place. This information could be shared virtually on various web pages or calendars. Additionally, now more than ever there is a push towards using online platforms and user-friendly devices to access health care services remotely. Telehealth services can be extremely beneficial to those without transportation, including children, low-income individuals, and the elderly. Ensuring these individuals are able to and know how to use telehealth is crucial in the effort towards reducing health care disparities. Any training focusing on telehealth should be included in this wayfinding system.

02 Connect digital literacy training with relevant content, services, and platforms.

Amongst varying age groups, Cleveland County residents tend to possess a greater degree of social media skills than computer and digital literacy skills, likely due to social media's popularity and accessibility via smartphone. As a result, individuals lack an understanding of certain online platforms and services like the Cloud. In addition, users face operational challenges when it comes to navigating devices such as Chromebooks and Macbooks. More specifically, non-traditional students pursuing a college degree face greater difficulties navigating computer applications necessary for their education. To alleviate this barrier, greater support and instruction should be offered to students as they navigate an array of software, like Google and Microsoft, and different devices.

OBJECTIVES CONTINUED

03 **Continue to support digital literacy and awareness of security risks for the senior population.**

Older adults tend to possess lower levels of digital and internet-related skills due to barriers around access, installation, knowledge, and trust. As the internet becomes more integrated into everyday life, they are at a higher risk of becoming disadvantaged and thus require additional assistance in digital inclusion efforts. Taking into consideration the rise of online scams and fraudulent activity, it is essential that digital literacy classes continually broaden their scope to address new security risks targeting vulnerable populations.

04 **Ensure the long-term support of existing digital navigator positions and classes by pursuing additional funding opportunities.**

Some of the digital literacy classes and positions in Cleveland County are grant funded, which leaves the long-term sustainability of these services hanging in the balance. In order to ensure this valuable work continues, it is essential that other funding opportunities and grants are pursued. This may include pursuing new streams of funding or partnering with local non-profits that support this line of work.

TIMELINE FOR IMPLEMENTATION

The table below provides a suggested time frame for the goals and objectives recommended in this plan.

OBJECTIVE	SHORT-TERM	NEAR-TERM	LONG-TERM
GOAL 1 PURSUE GRANTS TO MAKE LAST-MILE CONNECTIONS SERVING EVERY RESIDENT IN THE COUNTY.		✅	
GOAL 1 STRENGTHEN THE EXISTING WI-FI NETWORKS TO SUSTAIN GREATER SPEEDS AND SUPPORT A PUBLIC WI-FI WAYFINDING PROGRAM THAT INVOLVES A MAP OF PUBLIC WI-FI.		✅	
GOAL 1 INCREASE THE AREAS THAT HAVE NO-COST WI-FI NETWORK AVAILABILITY, WITH THE AIM OF NO-COST FREE PUBLIC OR PRIVATE ACCESS POINTS WITHIN NO MORE THAN 10 MILES OF EACH CLEVELAND COUNTY RESIDENCE.			✅
GOAL 1 MAXIMIZE THE EFFORTS TO CREATE COMPLETE BROADBAND INFRASTRUCTURE MAPS USING NEW AND EXISTING INFORMATION.	✅		
GOAL 2 REGIONALIZE THE EFFORT TO INCREASE ENROLLMENT IN ESTABLISHED PROGRAMS (I.E., AFFORDABLE CONNECTIVITY PROGRAM, PROVIDER PLANS) THAT GIVE BROADBAND STIPENDS, SCHOLARSHIPS OR SUBSIDIES.	✅		
GOAL 2 WORK WITH BROADBAND PROVIDERS AND COMMUNITY-BASED ORGANIZATIONS WITHIN CLEVELAND COUNTY TO INCREASE AWARENESS AMONGST THE POPULATION ABOUT DIVERSE BROADBAND OPTIONS.	✅		
GOAL 3 WORK WITH, INCLUDING BUT NOT LIMITED TO, EDUCATIONAL INSTITUTIONS, NON-PROFITS, AND COMMUNITY PROGRAM PROVIDERS TO SUPPORT A DEVICE REFURBISHMENT/ LENDING OR GIFTING PROGRAM WHERE AVAILABLE.			✅

OBJECTIVE	SHORT TERM	NEAR TERM	LONG TERM
GOAL 3 INCREASE AWARENESS ABOUT DEVICE SUBSIDY PROGRAMS THAT WOULD PROVIDE LOW OR NO-COST DEVICES TO PEOPLE WHO NEED THEM.	✅		
GOAL 3 ESTABLISH A WAYFINDING PROGRAM THAT HIGHLIGHTS WHERE PUBLIC DEVICES ARE LOCATED THROUGHOUT THE COUNTY.	✅		
GOAL 4 SUPPORT A PUBLIC WI-FI WAYFINDING PROGRAM THAT HIGHLIGHTS WHERE DIGITAL LITERACY CLASSES AND TELEHEALTH RESOURCES CAN BE ACCESSED.	✅		
GOAL 4 CONNECT DIGITAL LITERACY TRAINING WITH RELEVANT CONTENT, SERVICES, AND PLATFORMS.		✅	
GOAL 4 CONTINUE TO SUPPORT DIGITAL LITERACY AND AWARENESS OF SECURITY RISKS FOR THE SENIOR POPULATION.	✅		
GOAL 4 ENSURE THE LONG-TERM SUPPORT OF EXISTING DIGITAL NAVIGATOR POSITIONS AND CLASSES BY PURSUING ADDITIONAL FUNDING OPPORTUNITIES.			✅

CONTINUING THE WORK

Preparing a Digital Inclusion Plan that evaluates existing digital assets and areas of need in Cleveland County is necessary to raise awareness around digital inclusion and will open the door to various funding opportunities. This plan serves as an in-depth evaluation of the state of broadband availability, adoption, and utilization within the county. Moving forward, this document serves to provide government officials and involved stakeholders with guidance regarding the needs of the community in matters of digital inclusion and equity.

To achieve the initiatives laid out in this plan, it is necessary to involve stakeholders from the public, private, and nonprofit sectors. Individuals from across these realms have a vested interest in solving digital inequities that prohibit the county from achieving broadly-shared growth and prosperity. The stakeholders involved in the creation of this plan should continue engaging in conversations about community needs and strategies to improve broadband service, adoption, access to devices, and training opportunities.

In addition to those involved in the creation of this plan, the following entities have been identified as partners essential to advancing the established goals. This is not an exhaustive list of partners, but an initial cohort of key players.

- All municipalities in Cleveland County
- Cleveland County Cooperative Extension
- Cleveland Association of Government Officials
- Internet Service Providers
- Davidson Association
- Boys & Girls Club
- NC Rural Center
- NCDIT Division of Broadband and Digital Equity
- NCWorks Career Center
- Duke Electric
- Rutherford Electric Membership Corporation