

POLK & RUTHERFORD COUNTIES DIGITAL INCLUSION PLAN



PREPARED BY

FOOTHILLS REGIONAL
COMMISSION

ADOPTED BY

POLK COUNTY BOARD OF
COMMISSIONERS

RUTHERFORD COUNTY BOARD
OF COMMISSIONERS



FEBRUARY 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.

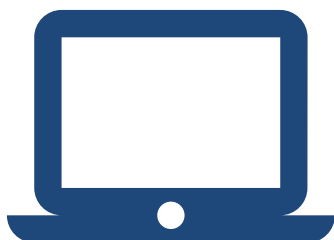
Digital inclusion refers to the activities and strategies used to ensure all individuals and communities, including the most marginalized, have access to and use of Information and Communication Technologies. The four key elements of digital inclusion include:



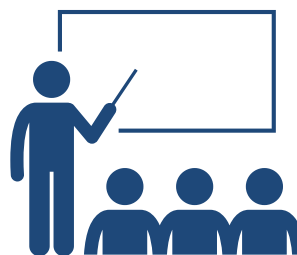
Access to high-speed, reliable broadband



Affordable internet and user devices



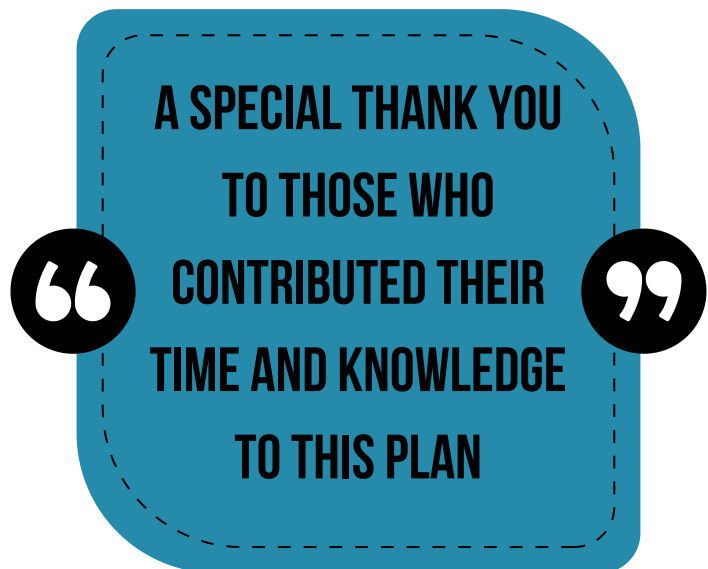
Access to internet-enabled devices that meet the needs of the user



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 digital inclusion plans for McDowell, Rutherford, and Polk Counties. The project, titled “Making Western NC the National Leader in Broadband Access and Adoption,” is funded by **Dogwood Health Trust**. Upon completion of a digital inclusion plan, \$50,000 will be awarded by Dogwood to each of the three counties in 2023. By the end of 2023, an additional award of \$25,000 will be awarded to the three counties.

As a result, Foothills Regional Commission partnered with stakeholders in Polk and Rutherford Counties to develop a digital inclusion plan that seeks to collaboratively address the issues of broadband availability, access, and adoption while increasing connectivity throughout the counties. Through a series of meetings and interviews, a group of community members and leaders from Polk and Rutherford Counties 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 contact for research, outreach, community engagement, and this plan.

Izzy Norman, Foothills Regional Commission
Katelyn Smith, Foothills Regional Commission
Alan Toney, Foothills Regional Commission
Mackenzie Wicker, Foothills Regional Commission

COMMUNITY PARTNERS FOR POLK COUNTY

The following individuals served as community outreach contacts.

Marche Pittman, Polk County Manager
Charles Wiggins, Director of Library Services at Isothermal Community College
Cathy Ruth, Polk County Planning/Economic Development Director
Marcie Dowling, Polk County Public Libraries Director
Sarah Bell, Polk County Community Foundation
Aaron Greene, Superintendent Polk County Schools
Andre Overholt, Polk County Commissioner
Steven Orr, City Manager of Saluda
Karen Marshall, Polk Center Coordinator

COMMUNITY PARTNERS FOR RUTHERFORD COUNTY

The following individuals served as community outreach contacts.

Steve Garrison, Rutherford County Manager
Doug Barrick, Rutherfordton Town Manager
Charles Wiggins, Director of Library Services at Isothermal Community College
April Young, Rutherford County Public Libraries Director
Dave Hunt, Rutherford County Commissioner
Kisha McDowell, Member of Grahamtown Team Board of Directors
Kim Carpenter, Chief Technology Officer of Rutherford County Schools
Birgit Dilgert, Executive Director of Economic Development for Rutherford County
Janet Mason, Forest City Town Manager
Scott Webber, Spindale Town Manager
Vicki Edwards, Assistant Director of Information Technology at Rutherford County Government
Leah Brisendine, Isothermal Community College
Debbie Conard, Administrative Specialist at Rutherford County Senior Center

VISION, MISSION, AND VALUES

VISION STATEMENT

Ensure all residents and businesses in Polk and Rutherford Counties needing and wanting to participate online have the knowledge and tools to do so.

MISSION STATEMENT

Our mission is to improve digital literacy and expand access to reliable, affordable, high-speed broadband in Polk and Rutherford Counties through advocacy, collaboration, and education.

VALUES

- **Accessibility:** All residents and businesses 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 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

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.

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



ABOUT POLK COUNTY

GEOGRAPHY

Polk County is located in Western North Carolina and is bounded by Henderson County to the West and Rutherford County to the East. Polk's southern edge borders the state of South Carolina. Polk is a rural, Tier-2 mountainous community in the Blue Ridge Mountains. It is comprised of three municipalities, including Saluda, Tryon, and Columbus. Additional townships include Cooper's Gap, Green Creek, and White Oak.

According to the 2021 Census estimates, Polk County had a population of 19,566. Across 238 square miles, the population density of Polk is 81.3 people per square mile. It is the fifth-smallest county in NC by total area. In rural areas with low population densities, internet service providers are less inclined to install underground infrastructure because they are not guaranteed as large of a return on their investment. This results in fewer terrestrial broadband providers and less competition amongst the private sector. For communities unable to access wireline internet, fixed wireless service providers can provide internet through radio waves. However, receivers need to be within 10 miles of the provider's tower and have a direct line of sight, which can be obscured by the topography of the Blue Ridge Mountain range.

ECONOMY

Access to the internet and user-friendly devices is a luxury that many cannot afford. To ensure digital inclusion efforts are all encompassing and address existing inequalities, the affordability component of digital inclusion must be taken into account. According to the 2021 American Community Survey (ACS) estimates, the median household income in Polk County was \$55,058. Out of the 4-county region of Cleveland, McDowell, Polk, and Rutherford Counties, Polk County has the highest median household income. Additionally, Polk is the 34th highest earning county in North Carolina. This indicates that a large portion of Polk residents has the financial capabilities to subscribe to broadband services.

However, it is important to note that in 2021, 12.3 percent of Polk's population lived in poverty. Within the Town of Columbus, which serves as the county seat, 23.4 percent of the population experiences poverty. Additionally, between 2019 and 2020 approximately 60,2 percent of students in Polk County were enrolled in free and reduced lunch. While the majority of the population experiences a certain degree of financial security and stability, there are still pockets of poverty throughout the county that need to be considered. Polk County households operating on tight budgets must prioritize basic living expenses over a high-speed internet subscription. In fact, 47.5 percent of all Polk County households with a yearly income less than \$20,000 do not have a broadband subscription or cellular plan.

DEMOGRAPHY

The demographic makeup of Polk County is an important aspect shaping the direction of digital inclusion efforts. According to data from Niche.com, Polk County was ranked the fourth best county to retire in North Carolina. As a result, there is a large population of older adults in the area. According to the 2021 ASC survey, 31.8 percent of the population is 65 and over, which is nearly double the state average of 17 percent. In regard to digital literacy, older adults tend to be less familiar with technology and possess fewer internet-related skills. In an age when technology is becoming more ubiquitous in everyday life, older adults who are unable to successfully engage in digital activities, such as telemedicine, are more likely to become disadvantaged. Retirement communities and senior gathering centers throughout Polk are in a prime position to lead digital literacy trainings for older adults.

Other factors likely to influence the utilization of broadband and technology include the percentage of people that speak a language other than English at home and the percentage of people with a disability. Within Polk, 7.6 percent of the population speaks a language that is not English at home. In order to ensure equitable access to services, it is essential for outreach materials to be provided in languages other than English. Additionally, 13.3 percent of Polk residents under 65 have a disability. People with disabilities not only have less access to modern technologies, but they are also unable to interact with devices without assistive technologies. In the future, it is important to integrate accessibility features into technology devices and digital literacy classes.

BROADBAND AVAILABILITY

BROADBAND PROVIDERS

Within Polk County, there are 11 primary internet service providers (ISPs); one provider runs cable, four providers offer fiber, four offer DSL or high-speed DSL, three offer satellite, and two provide fixed wireless.

Provider	Technology Type	Maximum Advertised Speeds
Spectrum	Cable & Fiber	1 Glg & Up to 100 Gigs
PANGAEA	Fiber-Optic	Unlimited bandwidth potential
Kinetic by Windstream	VDSL & Fiber	Up to 100 Mbps/8 Mbps & up to 1000 Mbps symmetrical
RiverStreet Networks	DSL & Fiber	Up to 50 Mbps & up to 1000 Mbps
AT&T	IPBB (DSL)	Up to 50 Mbps
Earthlink	VDSL	Up to 50 Mbps/ 10 Mbps
Hughes Net	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
Carolina West	Wireless Internet Service Provider (WISP)	25 Mbps download / 3 Mbps upload
Skyrunner	Wireless Internet Service Provider (WISP)	25 Mbps download / 3 Mbps upload

Despite 10 ISPs extending their services to residents in Polk, 17.1 percent of households in the county do not have internet access (American Community Survey, 2013-2017 5-year estimates). On top of a large unserved population, many Polk 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.

Spectrum is the second largest cable internet provider in the United States, reaching 100 million people across 42 states. Within Polk County, Spectrum extends cable broadband to the three municipalities, including Columbus, Saluda, and Tryon, as shown in Figure 1. Spectrum also extends fiber to specific parcels in those towns. One of the benefits of Spectrum is its contract-free plans without data caps and throttling.

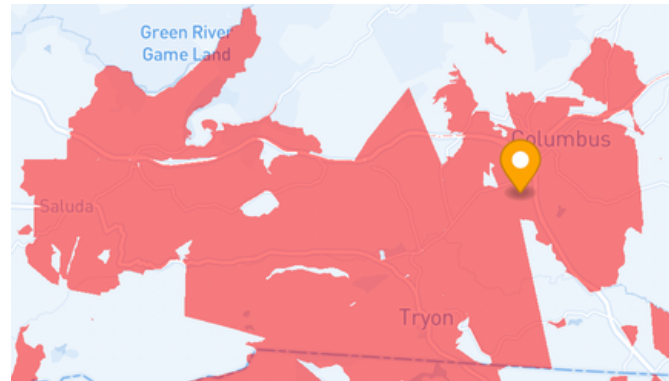


Figure 1. Map of Spectrum Cable Coverage in Polk County

PANGAEA is a non-profit internet service provider that has extended its fiber optic cable network 343 miles across Polk and Rutherford Counties. Pangaea provides internet to the following entities: education systems, health care, government, commercial, and wholesale to residential ISPs. Recently, they have expanded their services to residential addresses that are located in close proximity to a pre-existing business line. The Town of Tryon, the Town of Columbus, and Polk County government utilize PANGAEA's services.

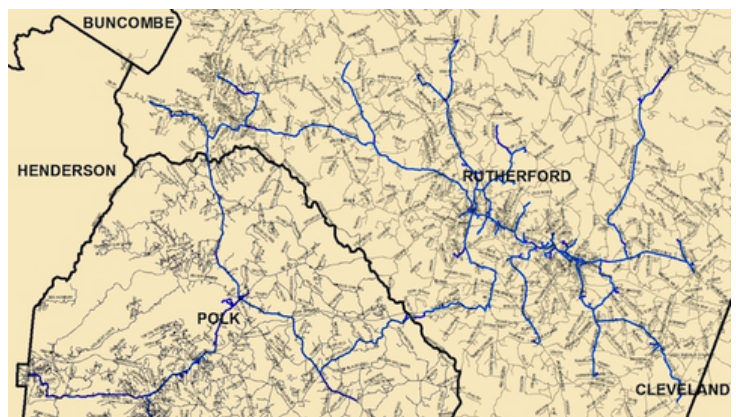


Figure 2. Map of PANGAEA Coverage in Polk County

Kinetic by Windstream is the 6th largest residential DSL provider by coverage in the U.S. Within Polk County, DSL is available to approximately 80.79 percent of the population. While DSL tends to be more widely available than fiber and cable internet, it is slower and only sufficient for a single user with basic usage. Figure 4 highlights the areas where Kinetic by Windstream Fiber is available in the county; it is available to roughly 28 percent of Polk households. There have been repeated complaints about the fiber internet service provided by Windstream.

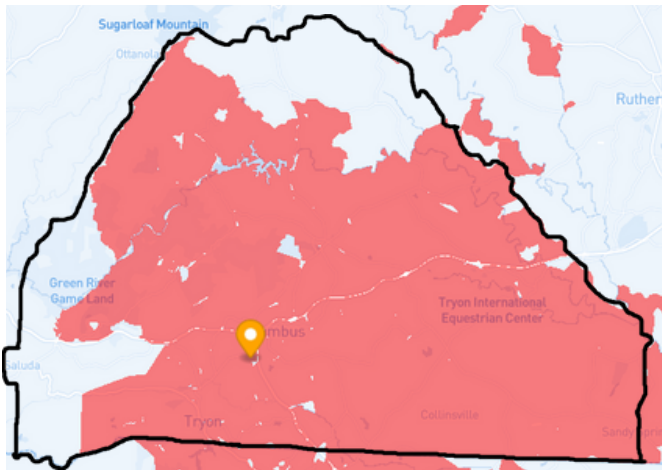


Figure 3. Map of Kinetic by Windstream DSL Coverage in Polk County

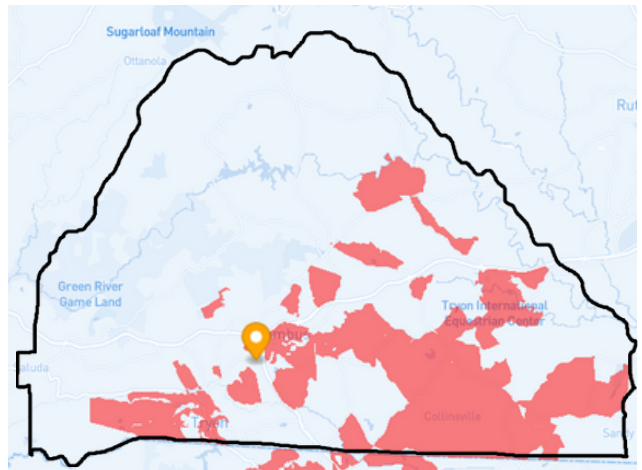


Figure 4. Map of Kinetic by Windstream Fiber Coverage in Polk County

RiverStreet Networks began as an extension of Wilkes Communications in Wilkes County, NC. They have since expanded their services to other areas in North Carolina, Virginia, and South Carolina. Today, they strive to deliver high-speed internet by building out fiber-to-the-home networks. As demonstrated by the green tract in Figure 5, RiverStreet Networks provides fiber service to certain areas of Saluda. The yellow portion adjacent to the green tract indicates areas where copper service is available. RiverStreet partners with the City of Saluda to deliver public Wi-Fi downtown. By 2024, they will have replaced the existing copper cable along Saluda's Main Street with 1 Gig symmetrical fiber.

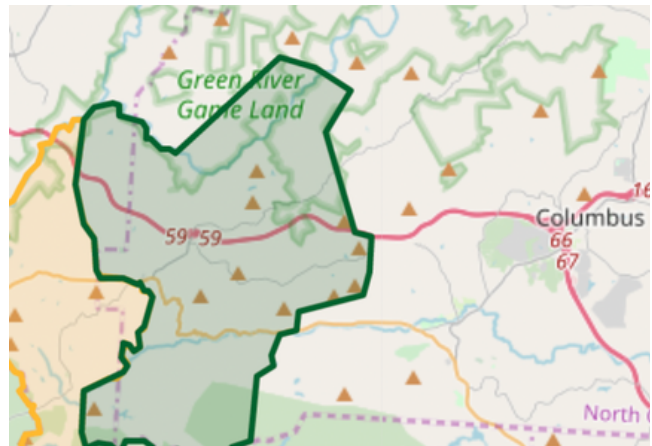


Figure 5. Map of RiverStreet Networks Coverage in Polk County

Figure 6 displays a map of **AT&T's** IPBB coverage area in the northern part of Polk 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 portions of the Lake Adger and Sunny View communities. However, numerous complaints exist about the inadequate internet quality in the county's northern portion.

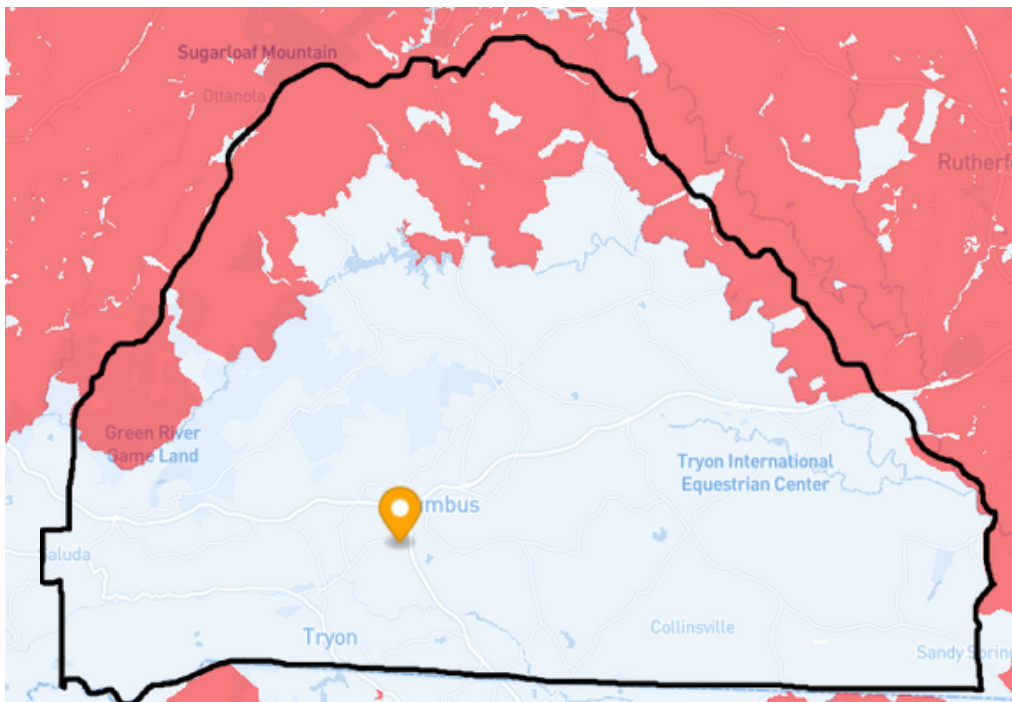


Figure 6. Map of AT&T IPBB Coverage in Polk County

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 Mbps and unlimited standard data with varying high-speed data limits. When data limits are exceeded, HughesNet reduces download speeds to 1 to 3 Mbps. 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.

Skyrunner and **Carolina West** are fixed wireless internet providers, or WISPs, that transmit the 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. This coverage does not support fast download/upload speeds and low latency, often leaving users underserved and dissatisfied. Additionally, this service requires a clear line of sight from the tower to the antenna, which is difficult to achieve in mountainous areas such as Polk County.

Starlink is a new satellite service that provides high-speed internet through its network of low earth orbit (LEO) satellites. As of now, Polk County residents can pre-order the service. Starlink expects to expand its coverage throughout Polk in 2023. One of the challenges with this service is the upfront cost of \$599, in addition to a monthly service fee of \$110.

BROADBAND SERVICE IN POLK COUNTY

Within the county, the most widely available technologies remain cable and DSL. According to the NC Broadband Survey, nearly 50 percent of Polk County residents rely on DSL and 15 percent rely on cable. The Federal Communication Commission (FCC) reports that fiber cable is available to 23.58 percent of the population, but according to the survey, only 5 percent of the population utilizes it. Additionally, the survey finds that 10 percent of Polk residents have satellite and 7 percent have fixed wireless. Out of the 804 survey respondents, 253 households, or 31.4 percent, do not have access to wireline internet, excluding cellular and satellite.

The estimated 31.4 percent of households without wireline broadband is also supported by Polk County Schools' findings. Polk County Schools sent out an online survey to households to determine the number of students with reliable access to the internet. Out of 576 respondents, 21 percent of households can not stream video content without waiting for downloads on their home internet. Based on anecdotal data and day-to-day interactions with families, Polk County staff determined that about 30 percent of the student population lacks reliable access to 25/3 broadband.

The **NC Department of Information Technology** (NCDIT) developed Figure 7 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 1 are areas where internet service providers reportedly provide broadband speeds of at least 25 megabits per second (Mbps) download and 3 Mbps upload in Polk County. According to the 2017 FCC report, 89.09 percent of the population in Polk County has access to 25/3 internet.

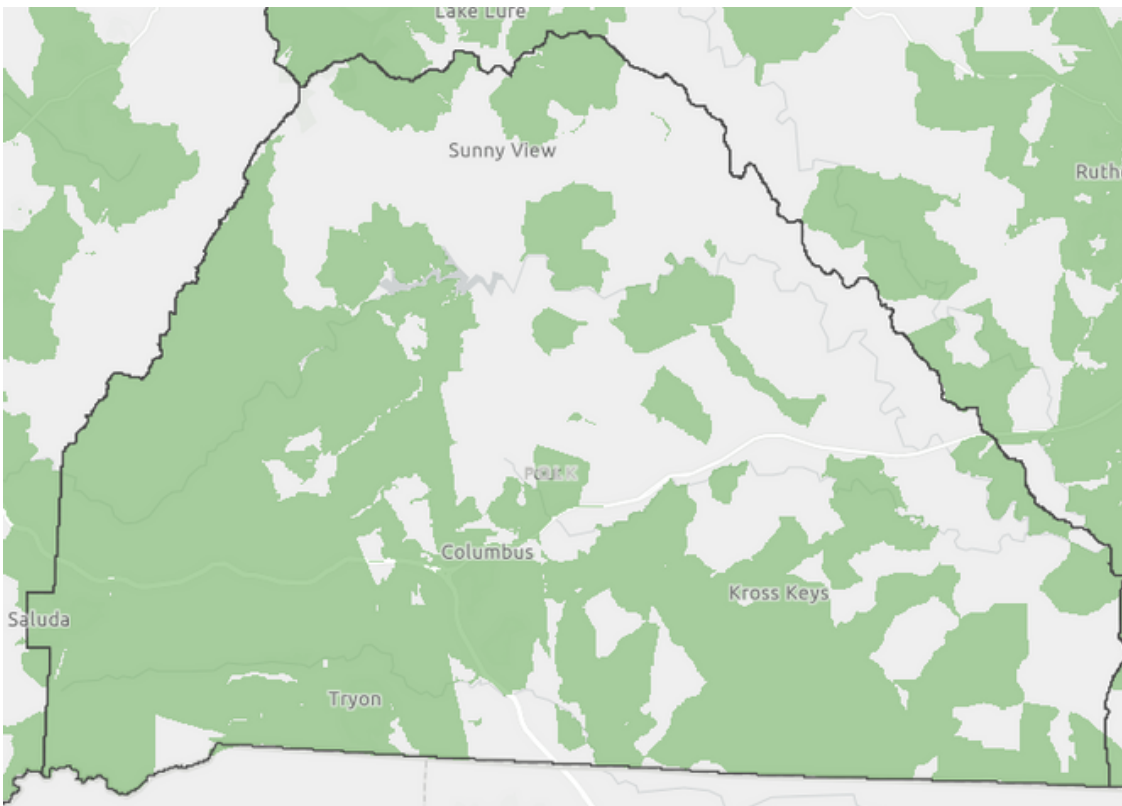


Figure 7. FCC Map of Broadband in Polk County

Based on provider coverage maps and the FCC map, areas around the Sunny View, Mill Spring, Beulah, Green River, Peniel, and Lake Adger communities lack adequate access to 25/3 broadband.

ONGOING EFFORTS TO ADDRESS BROADBAND AVAILABILITY

The Rural Digital Opportunity Fund (RDOF) is an FCC program designed to close the digital divide by investing up to \$20.4 billion in rural broadband networks. The program is divided into two phases. Phase I concluded on November 25, 2020, and awarded \$9.2 billion to 118 bidders to expand internet to census blocks that are completely unserved by any terrestrial provider. RDOF Phase II will award up to an additional \$11.2 billion for providers to service remaining areas and census blocks that are “partially serviced.” Phase II will not commence until the new National Broadband Map is completed.

In 2021, Charter Communications participated in RDOF Auction #904 under the name of CCO Holdings, LLC. Charter was awarded \$1,050,622.40 in federal funds to expand 200 Mbps broadband service to 1,350 addresses in Polk County. Additionally, Windstream (also known as Windstream Services LCC, Debtor-in-possession on Figure 8) was awarded funds to expand service in Polk County. RDOF support will be disbursed over a period of 10 years, but providers must complete deployment by the end of the eighth year to pre-selected locations and must meet interim deployment milestones along the way.

To complement RDOF deployment, NC rolled out the Growing Rural Economies with Access to Technology (GREAT) Program to fund the terrestrial deployment of broadband within unserved areas of economically distressed counties. These state grants are awarded to private sector broadband providers to deploy last-mile infrastructure.

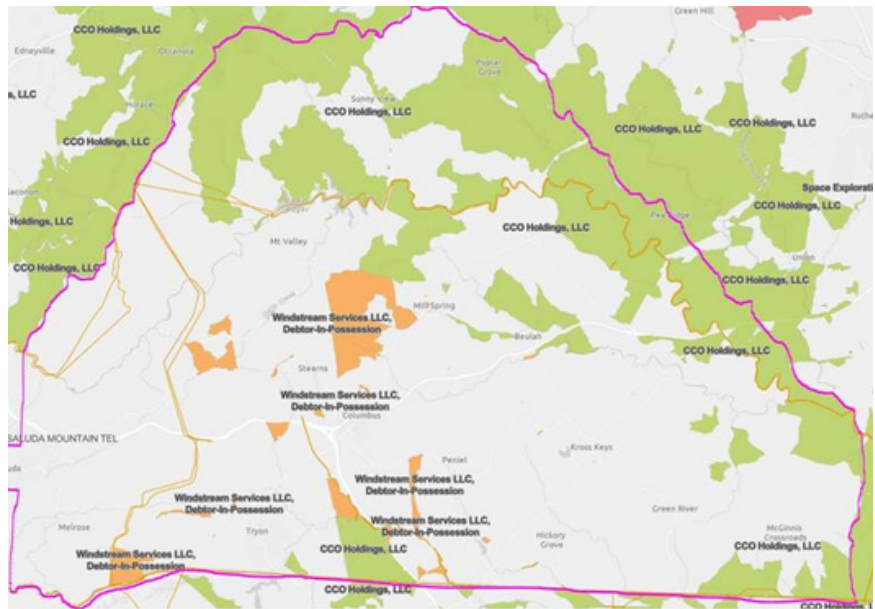


Figure 8. Map of RDOF Awards in Polk County

In August of 2022, Spectrum was awarded a \$4 million grant from North Carolina’s Growing Rural Economies with Access to Technology (GREAT) Program to bring internet to 3,500 homes and small businesses in Polk County, as demonstrated by the green dots in Figure 8. The grey dots in Figure 8 are eligible locations that were not awarded funds. Spectrum will be investing \$7.8 million in Polk County to expand internet service. This amount, combined with the \$4 million from the state and a contribution of \$250,000 from Polk County, brings the investment to a whopping \$12 million. These funds must be obligated by the end of 2024 and expended by the end of 2026.

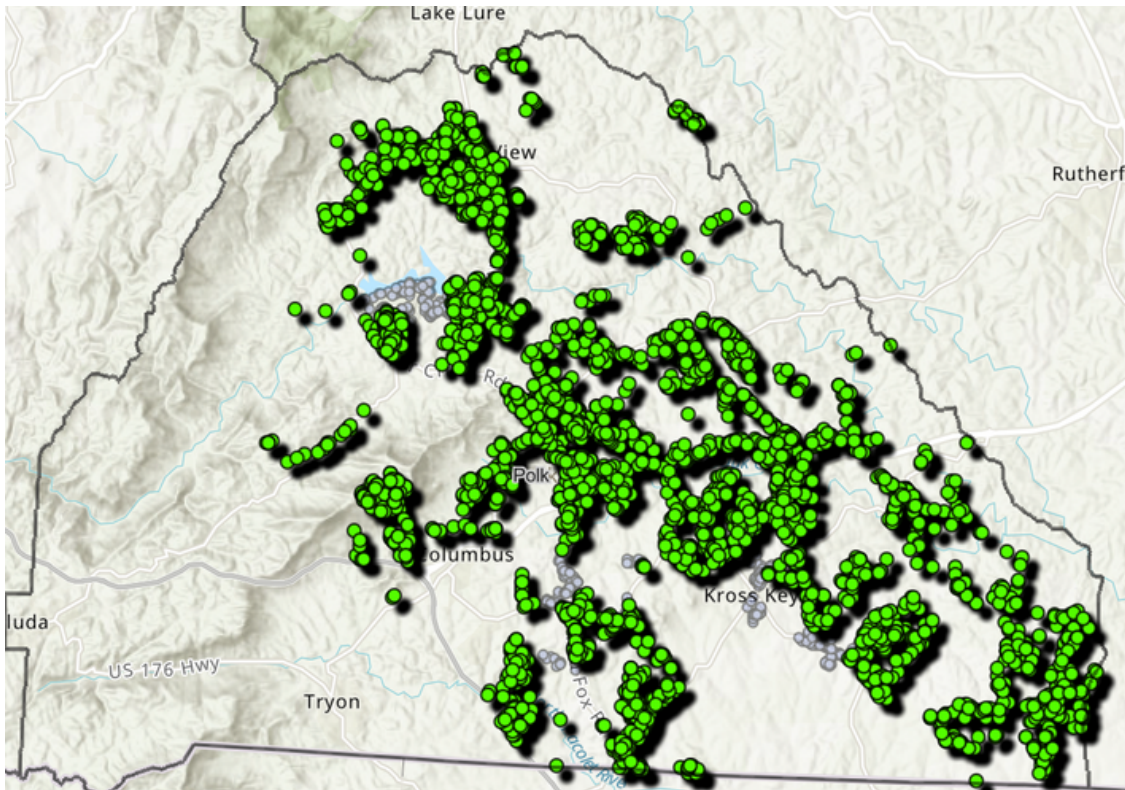


Figure 8. Map of GREAT Grant Awards in Polk County

PUBLIC WI-FI ZONES

It is evident that a significant population in Polk County is unable to access broadband at home. While waiting for future deployments to be made, Polk County residents can access Wi-Fi at the following locations.

All **three municipalities in Polk County**, including Columbus, Saluda, and Tryon offer downtown Wi-Fi free to the public at all hours. Additionally, all Polk County buildings offer strong public Wi-Fi.

Polk County Public Libraries also provides free internet to patrons at the Columbus Public Library and Saluda Public Library. During the 2022 fiscal year, 39,080 unique devices logged in to use the internet between both locations. These locations also have Access Points that operate 24/7 and can be accessed from the parking lot. The Polk County Public Libraries director reported that a number of individuals utilized the internet from the parking lot during the pandemic.

All **Polk County Schools**, including Polk Early College, Polk High School, Polk Middle School, Polk Central Elementary School, Sunny View Elementary School, Saluda Elementary School, and Tryon Elementary School provide public internet. Wi-Fi extenders were also installed at Polk County Schools to allow the public to access the internet from the parking lots.

Within Tryon, the **Carolina Foothills Chamber** has public Wi-Fi. Additionally, **Harmon Field**, a 36-acre public park provides public Wi-Fi in the riding areas, track, and baseball fields.

In Saluda, the **Don Mintz Builders** building, **McCreery Park**, and the **Triangle Stop** food store provide public Wi-Fi.

In Columbus, the **Polk Center**, which is the Polk County branch of **Isothermal Community College (ICC)**, provides Wi-Fi that can be accessed in the parking lot. Additionally, **The Meeting Place**, which houses the county Senior Center and Veterans Affairs office, provides their patrons, who are 60 years old and above, access to the internet.

In addition to public Wi-Fi, during the pandemic Polk County Public Libraries circulated hotspots using grant funds. Eventually, the school system took over this responsibility. Polk County Schools continues to offer a hotspot program through Verizon for homebound students. The schools have over 100 hotspot devices, but the funding for this initiative is derived from pandemic funds and will eventually run out. Even with the hotspots in circulation, internet connection is not guaranteed as cell service is inconsistent throughout the county.



BROADBAND AVAILABILITY

PRIORITY NEEDS

1. **Lack of consistent access to reliable, high-speed internet.**
 - As demonstrated by provider maps, there is a clear lack of access to terrestrial broadband across the county. There is a need to connect areas where no broadband exists and improve connection speeds.

2. **Difficult to maintain public Wi-Fi and sufficient internet speeds.**
 - Providing a community asset such as public Wi-Fi can be extremely beneficial to patrons, but it is often limited in its functionality. Public Wi-Fi networks fail to deliver adequate speeds and coverage for the individuals utilizing the service. For instance, in Saluda's historic downtown, they have 4 Access Points emitting Wi-Fi signals. However, the Wi-Fi signal has proven to be inconsistent, spotty, and unreliable among visitors. These four Access Points can not sustain the demand that comes from the influx of visitors and vendors during annual events. Since most vendors have transitioned to accepting credit card and debit card payments via online services that require a steady Wi-Fi connection, they have felt firsthand the burdens of inadequate public Wi-Fi. Without a reliable connection and a way to process electronic payments, vendors experience lost sales.

3. **Incomplete community knowledge of free public Wi-Fi access sites.**
 - There is an assortment of public Wi-Fi zones across Polk County. However, there is no accessible tool highlighting where public internet can be accessed within the community. This lack of information leaves residents unaware of internet opportunities that are easily accessible.

GOAL 1: IMPROVE AND INCREASE BROADBAND CONNECTIVITY THROUGHOUT POLK 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.

Since 2022, there has been a renewed interest in expanding broadband to every household in America. Moving forward, it is essential the county pursue a variety of state, federal, and private grants, 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 to expand broadband access throughout Polk. The county should work closely with grantors and local internet service providers to target unserved areas identified by the National Broadband Map as cost effectively as possible.

- 02** Support the maintenance of existing public Wi-Fi and strengthen existing Wi-Fi networks.

Residents in Polk County facing their own challenges in securing high-speed internet often rely on public Wi-Fi zones to meet their internet needs. Hence, it is of the utmost priority that these networks are maintained and strengthened. Entities looking to improve or extend their Wi-Fi networks should pursue private and public grant opportunities.

- 03** Support a public Wi-Fi wayfinding program that highlights public Wi-Fi locations.

A wayfinding program that highlights the location of public networks within the county will increase public knowledge about Wi-Fi zones. This program can take on many shapes, from a layer on the county's GIS to signage outside of facilities that offer public Wi-Fi.

BROADBAND ADOPTION

According to the 2020 ACS 5-year estimates, 79.5 percent of Polk County households have some form of an internet subscription. Within the population of those who subscribe, 0.5 percent have dial-up with no other form of internet, 59.9 percent have broadband such as cable, fiber-optic, or DSL, 11.8 percent have satellite, and 12 percent solely have a cellular data plan. Approximately 32.5 percent of households do not subscribe to wireline nor satellite broadband. Approximately 20 percent of households do not have a subscription to any form of internet, including cellular.

During the steering committee meetings, stakeholders noted that the low broadband adoption rate in Polk County stems from two primary factors: limited availability of service in tandem with unreliable speeds, and costly broadband fees. To support this hypothesis, the NC Broadband Survey depicts that 253 of 804 Polk respondents do not have wireline internet, approximately 31.4 percent. Out of the respondents without internet, 62.16 percent said that their lack of internet was a result of broadband not being available, while 10.8 percent responded by saying it was too expensive.

Based on the Broadband Availability section, a significant population in Polk is unserved by ISPs. Even then, those who are served are left dissatisfied by slow speeds and high latency. The Verge found that only 20 percent of Polk County households are using the internet at broadband speeds. The NC Broadband Survey speed test revealed the median download and median upload speeds in Polk are 12 / 1 Mbps. Weak and unreliable internet in Polk County suggests to consumers that adopting broadband is not worth the cost or the hassle.

The other factor disincentivizing broadband is its cost. Within Polk County, nearly half (47.5 %) of all households with an income less than \$20,000 do not have an internet subscription, including a cellular plan. This pales in comparison to the population with an income between \$20,000 and \$74,999; only 20.9 percent of this group is without an internet subscription.

Continuing this pattern, roughly 6.8 percent of households with an income of more than \$75,000 do not have an internet subscription.

Decent internet plans with quality download/upload speeds and data limits can range in price, yet the largest portion of Polk survey respondents, nearly 20 percent, pay between \$81 and \$100 for monthly internet. Figure 9 captures the range of internet costs for Polk residents. High internet costs, in tandem with poor connectivity, likely contribute to low broadband adoption rates for the county. Moving forward, it is important to expand the range of internet pricing options without sacrificing the quality and speed of service.

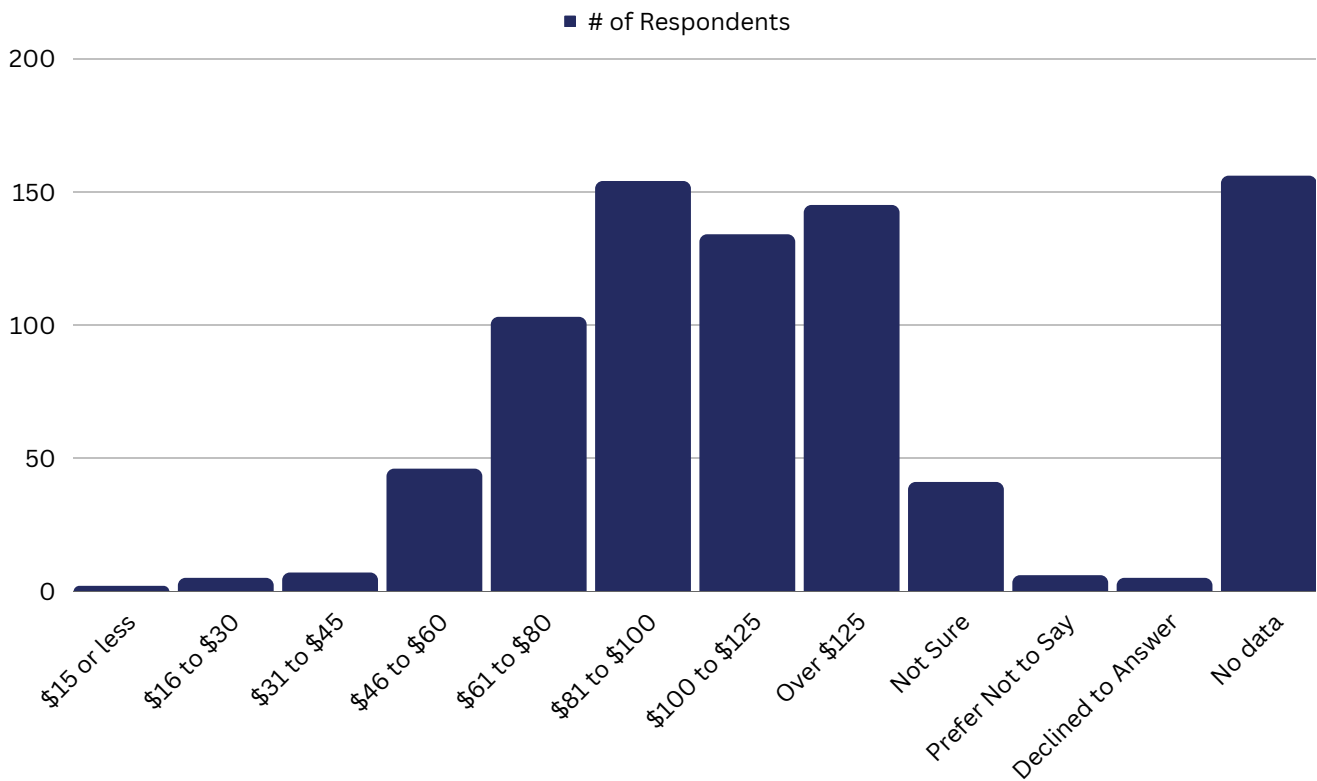


Figure 9. Total Cost of Internet per Month for Polk County Residents

As for existing low-cost or discount Wi-Fi options in the area, most providers participate in the federal FCC 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. As of November 1, 2022, Polk County had 633 households enrolled with the ACP, approximately 6.85% of all households in the county.

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 the 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.

**57% OF POLK COUNTY
RESIDENTS ARE EITHER
SOMEWHAT OR
EXTREMELY DISSATISFIED
WITH THEIR INTERNET
SERVICE
(NC BROADBAND SURVEY, JANUARY
2023)**

BROADBAND ADOPTION

PRIORITY NEEDS

1. Communicating resources for outreach about current internet subsidy programs.

- According to the NC Broadband Survey, out of the population within Polk County without internet, 10 percent of respondents do not subscribe to broadband because it is too expensive. As of November 1, 2022, only 6.8 percent of households in Polk County had enrolled in the Affordable Connectivity Program. In a county with 12.3 percent of its population in poverty, there are likely individuals eligible for ACP that are not enrolled. Ensuring residents are aware of existing internet subsidy programs is essential to increasing digital inclusion.

2. Upgrading existing broadband structures to improve reliability and speeds.

- Another explanation for low broadband adoption in the county is the reputation of broadband in Western North Carolina. It is notorious for slow speeds, high latency, and inconsistency. According to the NC Broadband Survey, nearly 75 percent of Polk County respondents that participated in the speed test had internet speeds less than 25 Mbps /3 Mbps, and 51 percent had speeds less than 10 Mbps / 1 Mbps. The existing infrastructure is unable to deliver the minimum broadband threshold speeds and must be improved in order to incentivize the public to subscribe.

GOAL 2: SUPPORT THE ABILITY OF INDIVIDUALS TO ADOPT BROADBAND SERVICES IF THEY SO DESIRE.

OBJECTIVES

- 01** Continue to increase awareness and enrollment in established programs that provide broadband stipends.

It is important that individuals who are eligible to enroll in internet subsidy programs are aware of their options. Polk County has made significant efforts to increase awareness about federal subsidy programs by publishing news articles and posting to social media. To further increase enrollment rates in these programs, Polk County Public Libraries could play a pivotal role. For instance, they could distribute educational materials on subsidy programs and incorporate classes revolving around enrollment steps into their regularly scheduled programming.

- 02** Encourage private sector firms to improve and expand broadband service in Polk County.

With an increase in reliable networks, more individuals may feel inclined to subscribe to broadband services. It is important for Polk County to continue to strengthen public-private partnerships with local and regional internet service providers in order to extend broadband to unserved locations. Additionally, forming relationships with ISP's may stimulate competition amongst the private sector, thereby lowering prices. Lastly, during the stakeholder meetings, the idea of price control measures was brought up. Capping broadband prices for certain entities, such as community organizations or municipalities, may enable them to upgrade their infrastructure to more efficient and high-speed internet options. This would ensure the public can continue to utilize public Wi-Fi to the fullest extent.

ACCESS TO DEVICES

Access to devices serves as a valuable tool in the ability to achieve digital inclusion throughout Polk County. This equipment supports the public's capability to interact with the digital world and complete daily life tasks. The importance of establishing this connection is especially prominent in Polk with many individuals lacking proper devices and a limited supply of refurbished options for purchase. In cases where citizens don't have access to a device, some organizations throughout the county offer free access to computers or tablets. These entities include: Columbus and Saluda libraries, The Meeting Place Senior Center, and the Polk Center for Isothermal Community College.

The **Polk County Library System** provides patrons access to computers at several locations throughout the county. The **Columbus Library** and **Saluda Library** both provide the public access to 9 computers (a mix of laptops and desktops) at their respective locations.

The **Meeting Place Senior Center** has 1 communal computer available for use.

The **Polk Center for the Isothermal Community College** offers facilities and resources to Isothermal students to use in completing their assignments and is open to the public as well. Library services include 6 public access computers with Microsoft Office software and Internet access connected to a printing center.

Polk County School System offers students access to Chromebooks during school hours to complete assignments. During COVID these laptops were distributed to students who needed them to complete classwork at home. Today, these laptops are only loaned out to students on a need-be basis. Polk County Early College (PCEC) also provides students with access to a desktop or laptop while at school and may be allowed to check out a PCEC laptop to take home.

For low-cost or refurbished options in Polk County, there is limited availability of companies that supply devices at a reduced price. **Carolina Computer Solutions (CCS)** is a computer repair company that offers used computers and other devices at a discounted rate. **Isothermal Community College** also sells low-cost laptops to students at the campus bookstore. The library also allows students to use financial aid to purchase these devices, of which many students take advantage of.

In order to tap into the possibilities of the digital world, access to a device is critical. The 2020 American Community Survey 5-Year Estimates reported that 19.6 percent of households in Polk County do not have a computer device, furthering the need for more publicly accessible devices and low-cost options within the county.

**19.6% OF POLK
HOUSEHOLDS ARE
WITHOUT A
COMPUTER DEVICE**

ACCESS TO DEVICES

PRIORITY NEEDS

1. No place to check out devices for personal usage.

- In Polk County, this is a missing component that would ensure all citizens have the opportunity to access a device. This missing program would enable residents to check out computers, tablets, or other devices for personal use. Although several organizations have computers available for the public, they can only be accessed during business hours. Establishing a lending program would allow people to utilize a device on their own time in order to successfully complete personal tasks.

2. Limited supply of affordable computers or tablets.

- In order to ensure the public has access to devices, the availability of refurbished or low-cost technology options needs to increase. Affordability is a core issue within digital inclusion that impacts the ability of people to purchase their own computers or tablet to use outside of school, work, or public access areas. Within Polk County there is a lack of affordable devices available for people to purchase, leaving 19.6% of households without a computer device. This shortage of low-cost options leaves many citizens without adequate technology to complete necessary tasks or access the digital world.

3. Increase the number of organizations that have the ability to supply devices to their patrons.

- While several entities offer computers for public use, most of them lack the ability to supply devices either through purchase or rental to their patrons. This shortcoming leaves a gap of individuals in each community without access to devices. In order to combat this inadequate supply of technology, support should be given to local organizations to start lending or selling devices and hotspots for citizens to utilize.

GOAL 3: ENSURE THAT ALL RESIDENTS OF POLK COUNTY HAVE ACCESS TO AN AFFORDABLE DEVICE, SUCH AS A TABLET OR COMPUTER, THAT MEETS THE NEEDS OF THE USER.

OBJECTIVES

- 01** Pursue grants to establish lending programs that serve communities needing devices.

Establishing a lending program in Polk County would be a promising initiative to expand device access to more citizens. In order to successfully establish this type of resource, the county should pursue grant opportunities that would support this initiative and the maintenance that is required.

- 02** Continue to increase awareness about existing subsidy/refurbishment programs that would provide low or no-cost devices to people who need them.

Due to affordability issues, the ability to purchase a personal device is a problem that many citizens struggle to accomplish. In response, there are several options that can assist people in obtaining a device at a reduced price. In order to effectively utilize each of the programs available for device access, awareness surrounding these initiatives should be shared and supported throughout the county.

- 03** Work with, including but not limited to, educational institutions, non-profits, and community program providers to support a device refurbishment/lending program.

As a way to increase the capacity of organizations to supply devices to their patrons, a system could be established to transfer used computer devices with hotspots to community entities. Instead of selling used devices, they could be passed along to community groups that can re-use them as rentals or low-cost purchasing options. This would enable local organizations the opportunity to distribute devices to populations that need them the most.

DIGITAL LITERACY

The following assets provide digital literacy training in some shape or form to Polk County residents.

Just as **Isothermal Community College** offers digital literacy training in Rutherford County, they also offer these services at their Polk Center campus. ICC offers various degrees and certificates in information technology and computer engineering technology. They offer a Human Resources Development (HRD) program to educate and train individuals for success in the workplace. HRD courses provide skills training and assistance for adults who are trying to find employment or get back into the workforce. All classes in the HRD program are offered at no cost to unemployed and underemployed individuals seeking employment. Through these courses, individuals learn how to utilize computers and technology to enhance their job search.

For individual support, **Polk County Libraries** offer "Book-a-Tech," which is a free one-on-one help session for technology questions. Both the **Columbus and Saluda libraries** offer this service and appointments are required to secure a time period. Help can be provided with basic computer questions; downloading e-books/audiobooks; using an iPad, Kindle, tablet or smartphone; setting up an email, Facebook, Skype or other account; and addressing specific technology-related questions. The library system currently offers a science, technology, engineering, and math (STEM) series that is sponsored by a Free Community Events Grant from Polk County Community Foundation. Through this series, children learn how to use the simple drag-and-drop coding language, Blockly, to program a robot around a course. Participants must be in grades K-5, be Polk County or Landrum residents, and register in advance.

Polk County Schools offers individualized support for students and guardians on how to utilize computers and educational programs. They will provide this training for K-12 students since a majority of learning activities are completed online and students must understand how to access their assignments. The schools will also assist with technology questions from parents/guardians if requested.

Other organizations that specialize in digital literacy training include private entities within the county. **Computer Wise Seniors** is a computer training school located in Tryon that focuses on educating individuals on the proper use of their devices. This company is open Monday and Tuesday, from 2-5 p.m., and requires appointments to be made in advance.

Even though Polk County does not have its own **NCWorks Career Center**, members from the organization meet every other week at the Columbus Library. These members offer comprehensive training and employment services to the community. This includes assistance with searching for jobs online, resume and cover letter preparation, help registering online with NCWorks, and access to a computer and the internet. Career centers provide vital one-on-one support with computer technology with an emphasis on job placement.

The Meeting Place Senior Center in Polk does not offer regularly scheduled digital literacy classes, but they do offer technology assistance on a volunteer basis.

DIGITAL LITERACY

PRIORITY NEEDS

1. Lack of understanding by parents and guardians about online education.

- During the COVID-19 pandemic schools transitioned to online learning, which left many students and parents unprepared for learning through a computer. This drastic change of learning environment provided many challenges, especially amongst guardians who were tasked with guiding their children through a digital classroom. Parents and guardians exhibited a lack of understanding on how to successfully navigate online education.

2. Young adults lack the professional computer skills necessary to enter the workforce.

- After speaking with the Polk County Library Director, Marcie Dowling, it was clear that there is a gap between young adults and necessary technology skills. Marcie shared that many young adults come into the libraries with questions on how to build a resume, apply for jobs online, and even set up bank accounts. With so many aspects of our daily lives moving online, it is crucial that these individuals understand how to properly navigate online tools to help them succeed.

3. Demand amongst the older population for tutorials on using their devices, including phones, tablets, and computers.

- Polk County has one of the oldest populations in North Carolina with 31.8% of its population aged 65 or older. This older population results in higher demand among residents for instructional classes on how to use their devices. The lack of knowledge about internet devices is a common theme found amongst older generations and results in this portion of the community lacking the necessary skills to be involved in the digital world.

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 the expansion of organizations that offer digital literacy and skill training.

Within Polk County there seems to be a lack of digital literacy and skill training available for the public to utilize. With the library providing most learning services within the county, it is important to encourage and support other organizations to offer digital literacy training as well. These trainings could also be in partnership with the libraries in order to utilize the services already offered but at a higher capacity.

- 02** Increase awareness about digital literacy training or services available throughout the county.

In order to share available classes and opportunities on a wider scale, the county should coordinate a database or calendar that displays countywide digital literacy classes. This resource could be shared via the library website or through any other entity willing to display these opportunities.

- 03** Extend digital literacy services to all populations and areas throughout the county.

Extending digital literacy services throughout Polk is an important goal due to the widespread nature of various communities across the county. This expansion could look like the Sunny View Club House becoming a hub for computers, WiFi, and technical support. Expanding services could also look like the libraries partnering with senior centers and retirement communities to offer classes to residents that may need digital assistance.

CONTINUING THE WORK

Preparing a Digital Inclusion Plan that evaluates existing digital assets and areas of need in Polk 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.

- Polk Center, Branch of Isothermal Community Center
- ISPs including but not limited to PANGAEA and Optimum
- Sunny View Club House
- The Meeting Place
- Carolina Foothills Chamber of Commerce
- Saluda Business Association
- Polk County Emergency Management
- Tryon International Equestrian Center
- NC Division of Broadband & Digital Equity
- NCWorks Career Center
- Foothills Regional Commission

ABOUT RUTHERFORD COUNTY

GEOGRAPHY

Rutherford County is located in Western North Carolina and lies southeast of Buncombe County. It is located in the foothills of the Blue Ridge Mountains and along the border of South Carolina. Rutherford is a rural community comprised of eight municipalities including: Bostic, Chimney Rock, Ellenboro, Forest City, Lake Lure, Ruth, Rutherfordton, and Spindale.

According to the 2020 census, the population density of Rutherford County is 114 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. Another barrier facing this community is the mountainous terrain. In order to bring cable internet service to rural areas, providers would need to install the necessary infrastructure in the county. This can be expensive or difficult to accomplish, which leaves rural internet options often unavailable.

ECONOMY

One of the key components to digital inclusion is affordability. Personal finances can dictate whether individuals have access to internet and devices. According to the 2021 ASC 5-Year Survey, Rutherford County's poverty rate was 18.2 percent, which was higher than the state average of 13.4 percent and the national average of 11.4 percent. The Town of Forest City also had a high poverty rate in 2021 at 37.9 percent. With high poverty rates within Rutherford 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 Rutherford County represents issues with the affordability of broadband services. In 2021, the median income in Rutherford County was \$45,500 which was lower than the state median income of \$60,516. 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

Rutherford County's demographics should be considered in future digital inclusion efforts. In regard to digital literacy, Rutherford County has a higher number of older adults living in the area. According to the 2021 ASC 5-Year survey the population of citizens 65 and over is 21.5 percent, which was higher than the state average of 17 percent. The county also has a smaller portion of citizens 18 and below, only representing 20.2 percent of the population, compared to the state average of 21.8 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.

Rutherford County also has residents that are different races and ethnicities. According to the 2020 census, 3,286 individuals identified as Hispanic, 348 identified as Asian, and 224 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, 4.8 percent of people in Rutherford County spoke a language other than English at home and 0.85 percent of the population had limited English. 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 Rutherford County, there are 10 internet service providers (ISPs); one provider offers residential fiber, one extends fiber to businesses and institutions, one offers cable, three offer satellite, three provide fixed wireless, and one provides DSL.

Provider	Technology Type	Maximum Advertised Speeds
Hughes Net	Satellite	25 Mbps download / 3 Mbps upload
Viasat	Satellite	100 Mbps download / 3 Mbps upload
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
Vyve	Cable	Up to 960 Mbps download / 50 Mbps upload
PANGAEA	Fiber-Optic Internet	Unlimited bandwidth potential
Open Broadband	Hybrid Fiber & Fixed Wireless ISP	Minimum of 50 to residential & up to 1 Gig to businesses
Starlink	Satellite	50 to 200 Mbps download/ 10 to 20 Mbps upload
Spectrum	Cable & Fiber	300 Mbps up to 1 Gig
AT&T	DSL	Up to 50 Mbps

Despite 10 ISPs extending their services to residents in Rutherford, 25.24 percent of households in the county do not have internet access, according to the American Community Survey 2013-2017 5-year estimates. In addition to a large unserved population, many Rutherford 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 some of the reported downfalls of local broadband provision.

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 10 shows the lack of coverage from Skyrunner within Rutherfordton, Spindale, and Forest City. Carolina West also fails to serve a majority of Rutherford County despite released coverage maps of the area.

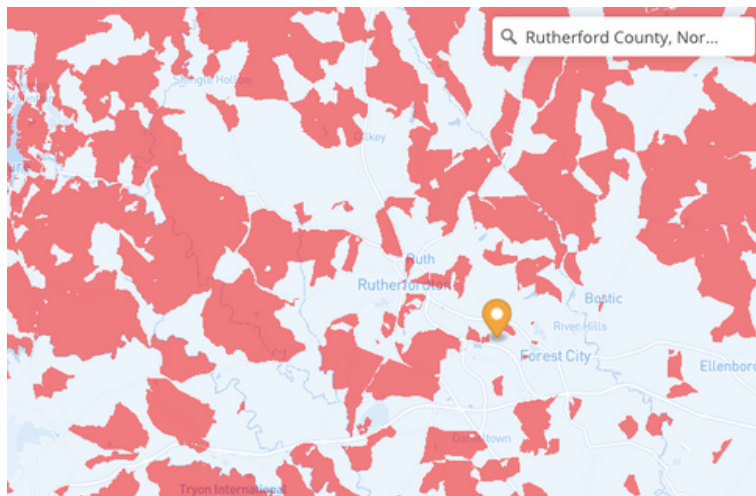


Figure 10. Coverage Map of Skyrunner in Rutherford

Vyve Broadband is the largest wireline ISP in the region by geographic coverage. However, due to inadequate speeds and overstated coverage, Vyve is far from the most used provider in the county. Many internet users within Vyve's coverage area subscribe to some kind of wireless service such as AT&T, Verizon, or T-Mobile, or Carolina West.

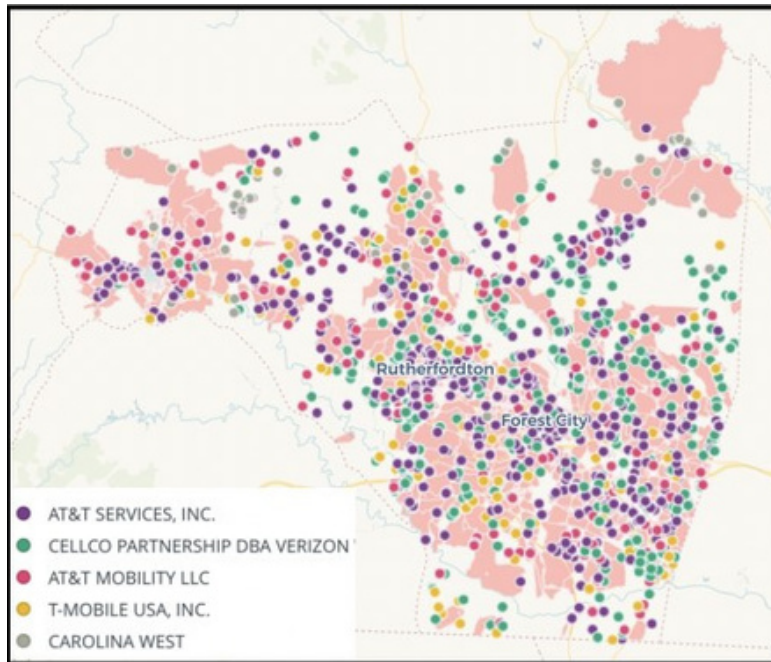


Figure 11. Wireless Service Subscribers in Vyve Footprint (CORI Report, 2023)

PANGAEA is a non-profit internet service provider that has extended its fiber optic cable network 343 miles across Polk and Rutherford Counties. PANGAEA only serves entities such as education systems, health care, government, commercial, wholesale to residential ISPs, and some residential areas close to existing business lines. Within Rutherford County PANGAEA services Rutherford County Government and the towns of Forest City, Lake Lure, Ruth, Rutherfordton, and Spindale.

A sister company of PANGAEA is **Carolina Community Broadband Alliance (CCBA)** which works to connect stakeholders in both Rutherford and Polk to close the digital divide. CCBA exists to expand educational and economic opportunity by increasing access to affordable and fast internet in rural communities.

Open Broadband provides hybrid fiber and fixed wireless ISP solutions to bring fast and reliable broadband internet to communities. Open Broadband currently serves three communities within Rutherford County, including parts of Ellenboro, Forest City, and Cleghorn. As a Hybrid Internet Service Provider (HISP) Open Broadband utilizes a variety of technologies to deliver last mile internet service to customers. Their primary methods of delivery are fiber optic, fixed wireless, and LTE. Compared to fiber or cable, fixed-wireless is much faster to deploy, and does not involve digging up streets or moving lines on poles. It is much faster than DSL, satellite, and cellular hotspots, and has very low latency.

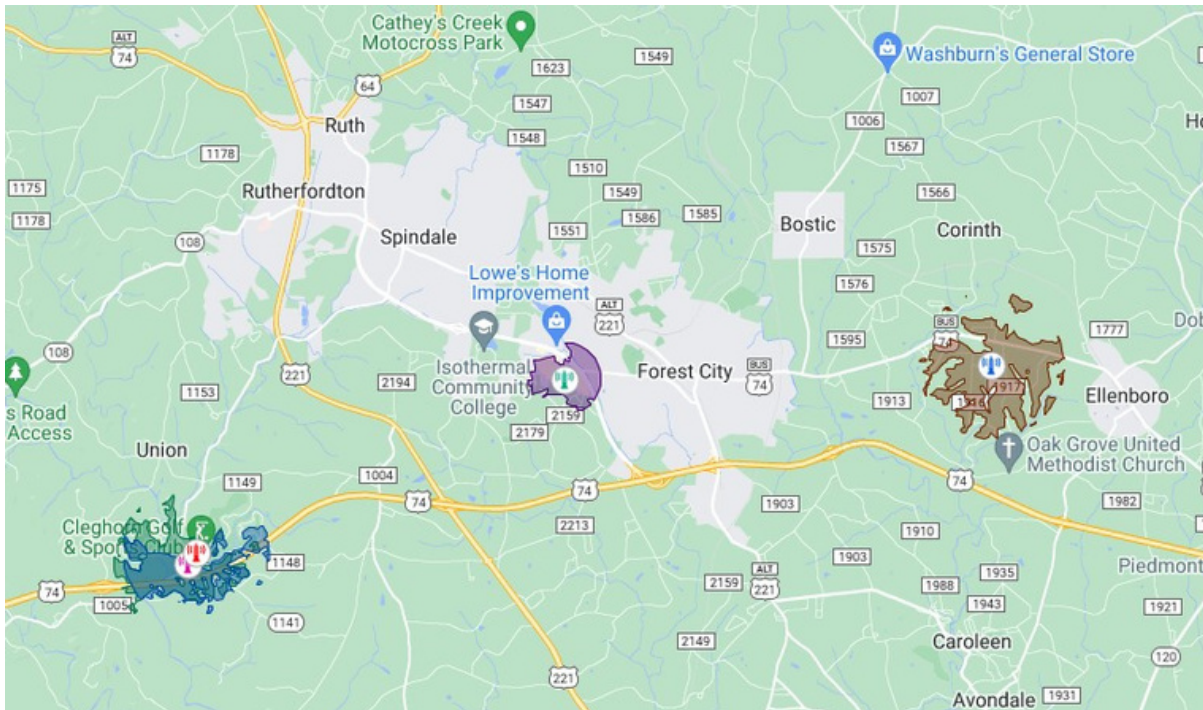


Figure 12. Coverage Map of Open Broadband in Rutherford County

Starlink is a new satellite service that provides faster internet speeds through its network of low earth orbit (LEO) satellites. An obstacle with this company is cost, for there is a one-time hardware fee of \$599 in addition to a monthly fee of \$110. As of now, Starlink is accepting customers on a waitlist in Rutherford County, but they plan on expanding consistent coverage by 2023.

Spectrum is the second largest cable internet provider in the United States, offering both mobile and internet services. All Spectrum Internet plans include a free modem, free antivirus software and no data caps. Although there is minimal coverage from Spectrum currently in Rutherford, they will be expanding due to the GREAT grant.

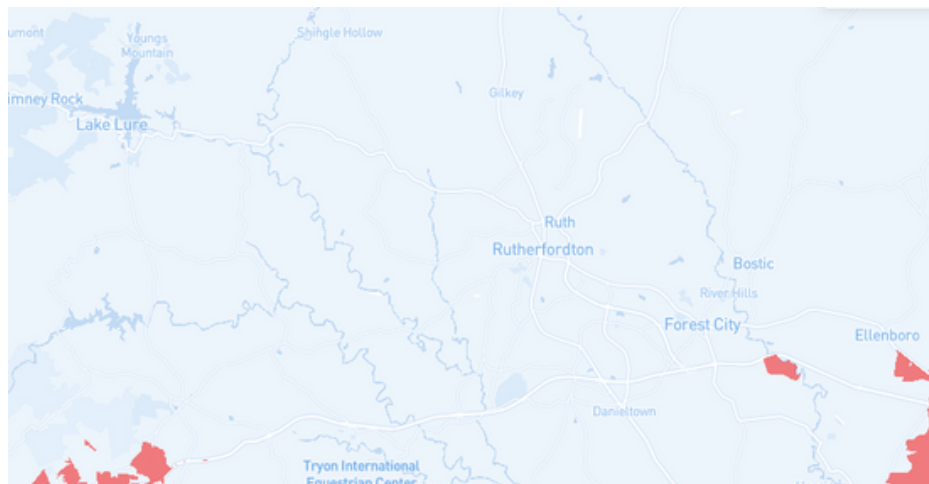


Figure 13. Coverage Map of Spectrum in Rutherford County

Another source of internet in Rutherford 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 Rutherford 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 main issue with this source of internet capacity is the lack of consistent 5G coverage throughout the county. While 5G may be available in certain populated areas, it does not always reach the most rural parts of the county. This results in unreliable speeds that vary depending on location and provider.

BROADBAND SERVICE IN RUTHERFORD COUNTY

The NC Department of Information Technology (NCDIT) developed Figure 14 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 15 are areas where internet service providers reportedly provide broadband speeds of at least 25 Mbps download and 3 Mbps upload in Rutherford County. According to the 2017 FCC report, 92.47 percent of the population in Rutherford County has access to 25/3 internet.

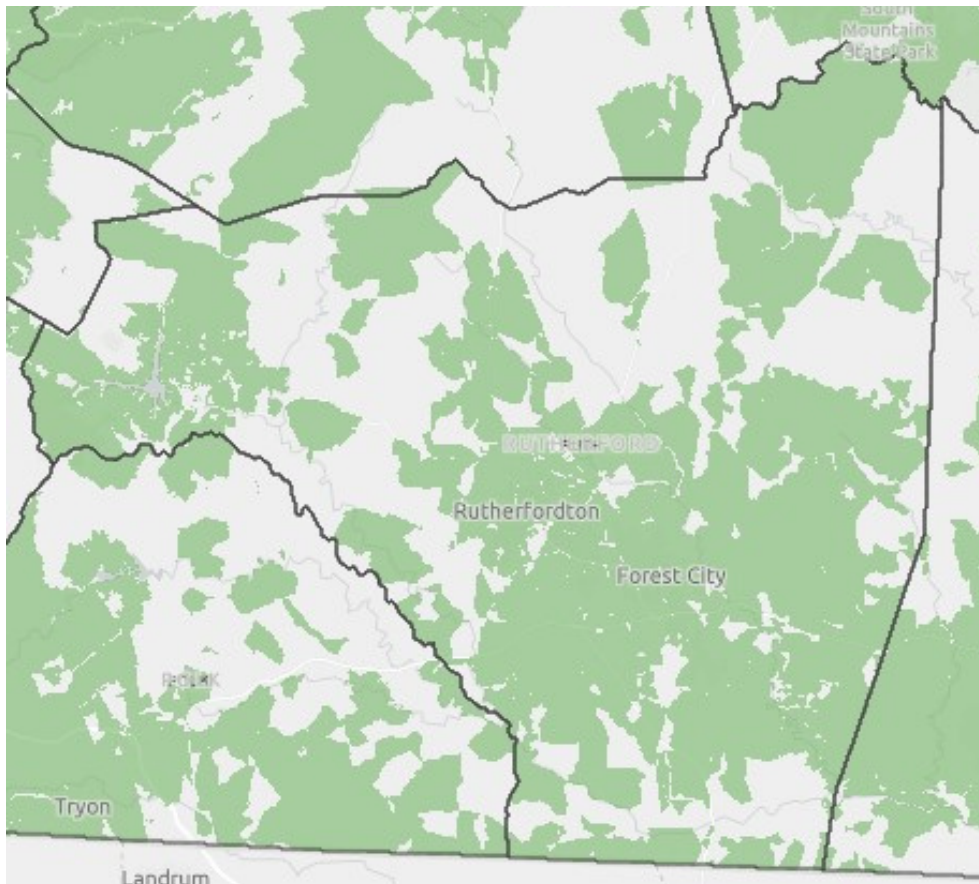


Figure 14. FCC Map of Broadband in Rutherford County

Based on these images, areas around the northern parts of the county such as the Golden Valley, Sunshine, Green Hill, Westminster and Thermal City 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
- Ratio 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 2019, Rutherford County received a 52.5 on the Broadband Availability and Quality Index scale out of 100; a higher score denotes better broadband availability and quality.

The map in Figure 15 indicates that areas around Rutherfordton, Spindale, and Forest City have increased access to quality broadband services. The areas shaded in light red indicate a lack of access to consistent, reliable, high-speed internet. Most notably, the dark red eastern portions of the county have the worst access to broadband, for only 64.79 percent of the population has access to 25/3 broadband speeds.

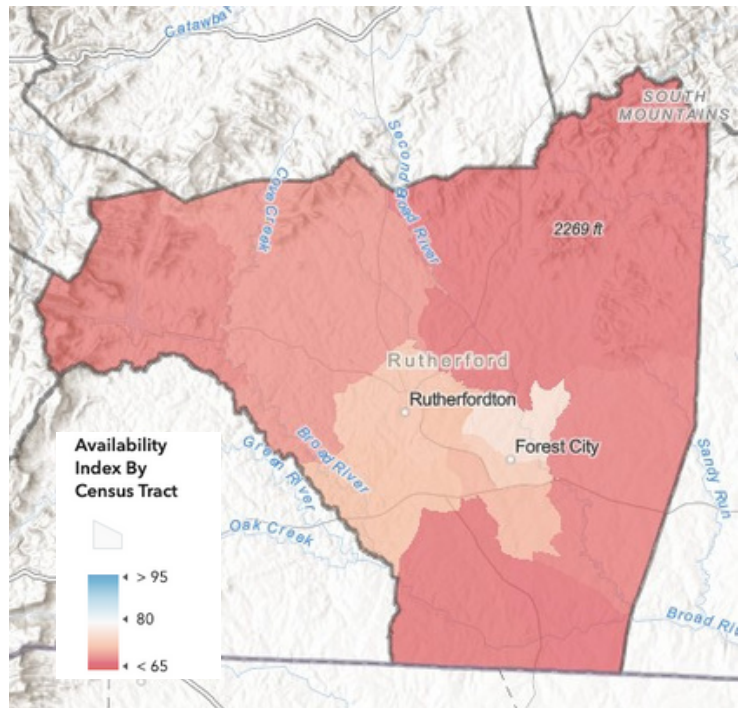


Figure 15. Broadband Availability and Quality Index Map of Rutherford County

As of January 4th, 2023, 3,269 individuals from Rutherford County responded to the NC Broadband Survey. The survey results indicate that 14 percent of the population utilize DSL, 13 percent have fiber, 15 percent use satellite, 10 percent rely on cable, 11 percent have a fixed wireless provider, and 1 percent have dial-up. Out of the approximate 3,267 survey respondents in Rutherford, 692 respondents, or 21 percent, reported having no wireline internet and 192 respondents had no cellular service at their home location. In contrast, 66 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 Rutherford County.

The survey also asks individuals to complete a speed test at their location using LibreSpeed. Out of 1,720 respondents that completed the speed test, only 20 percent of the population had download/upload speeds of 25 Mbps/3 Mbps or greater, the minimum requirement for broadband. Over half of the respondents, 57 percent to be exact, registered speeds less than 10 Mbps download/1 Mbps upload, which fails to meet the broadband threshold.

Figure 16 is a map generated from the survey with location-based results for Rutherford 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 15. This data suggests the prevalence of unreliable and inconsistent broadband service throughout the county.

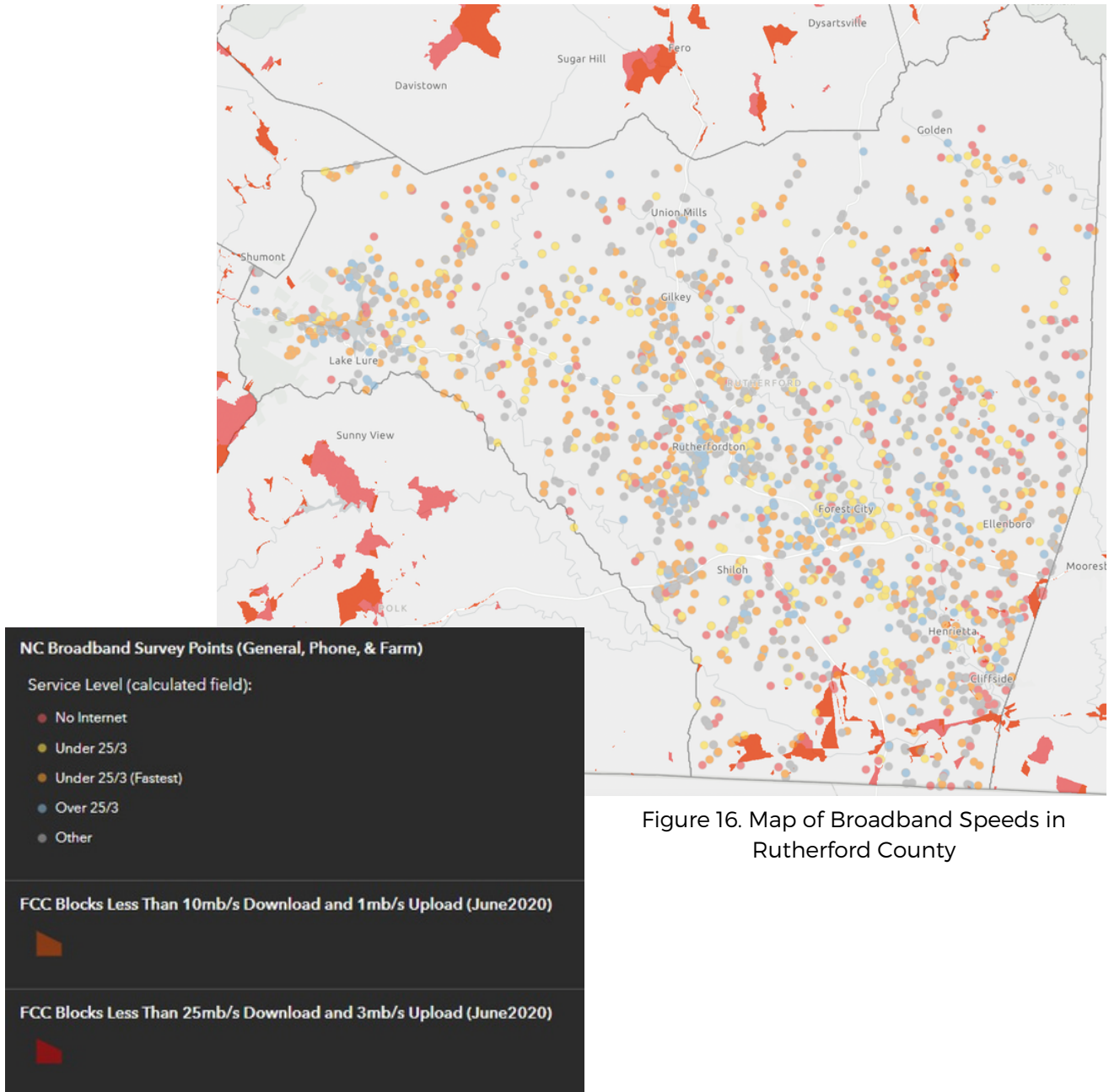


Figure 16. Map of Broadband Speeds in Rutherford County

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 megabytes per second download and 3 megabytes per second 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 3,000 homes and small businesses in Rutherford County. Combined with the state grant of \$4 million and a contribution from Rutherford County of \$1 million, total project investment, including more than \$8.5 million from Spectrum, is more than \$13.5 million.

The green dots on Figure 18 are the currently unserved premises that were funded by the GREAT grant.

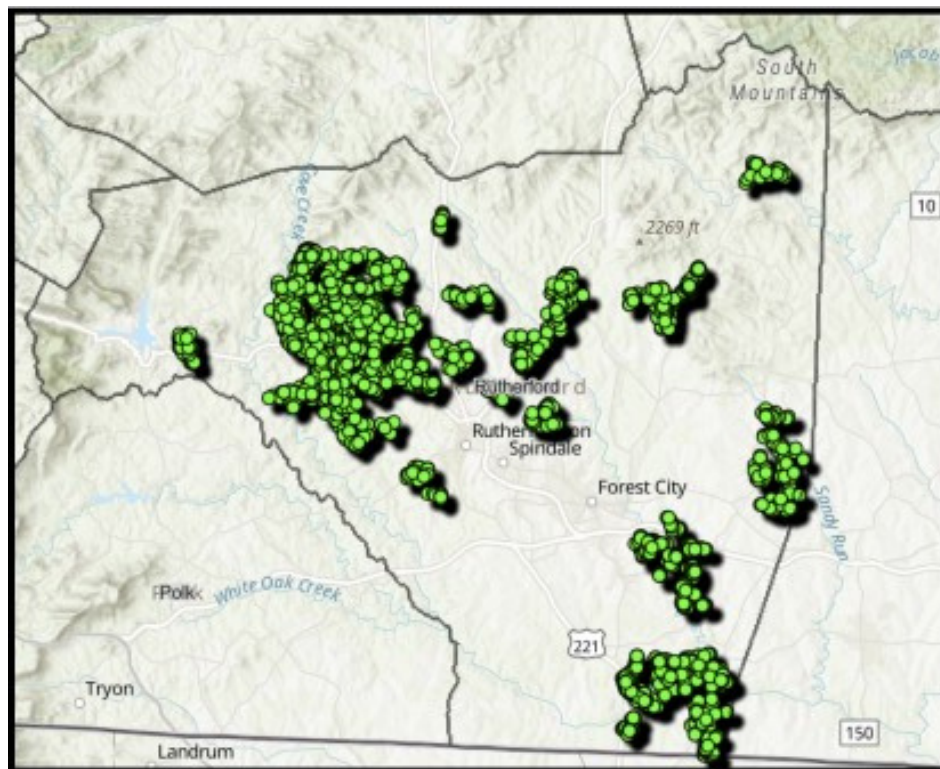


Figure 17. Map of GREAT Grant Awards in Rutherford County

In addition, Charter was the recipient of the Rural Digital Opportunity Fund (RDOF) from the FCC to serve a significant number of census blocks in the county. The company's RDOF expansion will provide broadband access to approximately 1 million customer locations as estimated by the FCC across 24 states, including more than 125,000 locations in North Carolina in the coming years. Combined, Spectrum's GREAT Program grant and RDOF buildouts in Rutherford County will connect more than 8,500 homes and small businesses.

Figure 18 shows the unserved areas that were funded through the RDOF.

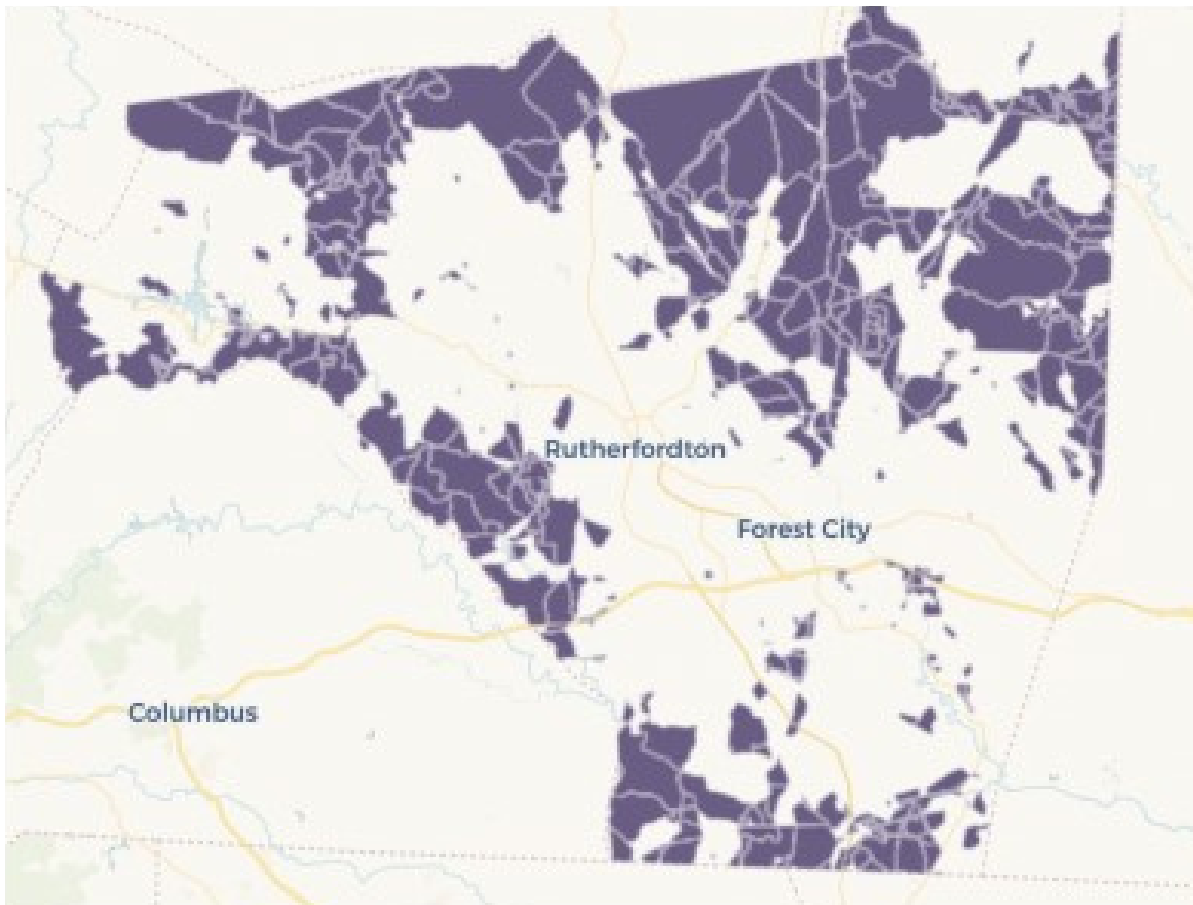


Figure 18. Map of RDOF Award Locations in Rutherford County

PUBLIC WI-FI ZONES

For Rutherford County residents without sufficient home broadband, certain locations in the area have wireless hotspots that provide internet to the public at no cost. Most of these devices can be connected to from the parking lots of the provider facility. Figure 19 is a poster highlighting the public Wi-Fi points within the county.

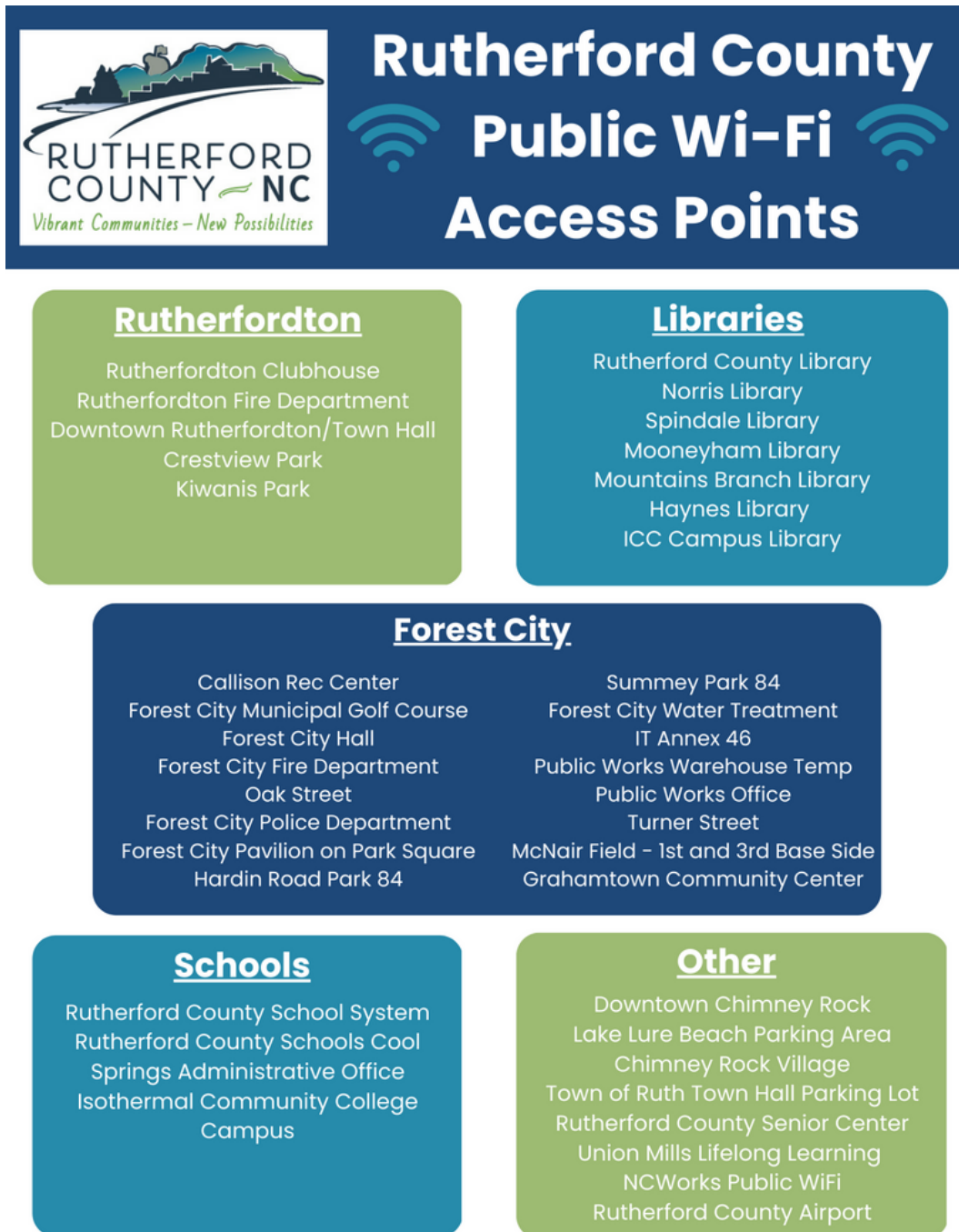
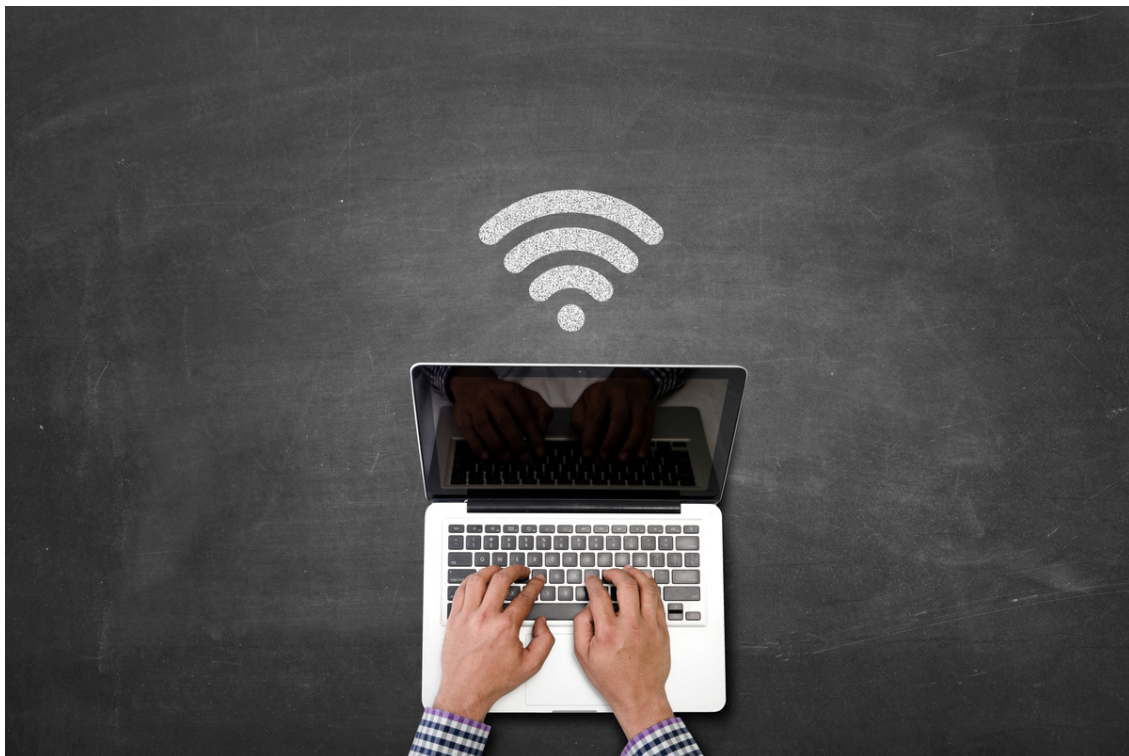


Figure 19. Public Wi-Fi Points in Rutherford

For individuals seeking to use Wi-Fi on a more consistent basis, there are opportunities among the libraries within the county that offer a mobile hotspot lending program. Both the Rutherford County Library System and the Spindale Library have four hotspots each that are available for a maximum two week check out period. These hotspots are a vital tool in supplying internet services to the public, but ultimately fall short due to a limited supply available for check out.

All library locations struggle with maintaining the hotspots since funds won't cover the upkeep of the devices. This challenge deters the libraries from acquiring more hotspots when they lack the resources to sustain the devices over a long period of time. Lastly, many individuals who seek use of the hotspots live in areas without internet or cell service. Since the hotspots only amplify signal and don't provide it, many people receive a false sense of hope when checking out the devices due to a lack of knowledge surrounding their functionality.



BROADBAND AVAILABILITY

PRIORITY NEEDS

1. Lack of consistent access to reliable, high-speed internet.

- Throughout Rutherford County, there are consistent issues with access to reliable internet services for both businesses and residents. Within our meetings with stakeholders, this challenge was brought up and identified to be the most threatening issue within the area. In Rutherford county, there are few internet companies that provide cable or fiber connections, leaving other options such as satellite or cellular providers. Other areas within the county are completely unserved by internet providers due to the areas low population density and rugged terrain.

2. Difficult to maintain public Wi-Fi and public hotspots through the county and municipal library system.

- An opportunity that exists within Rutherford county is public Wi-Fi and hotspots that can be used to offset the challenge of broadband availability. The deterrent surrounding this equipment is the maintenance involved to make sure they are up-to-date and working properly. This upkeep ultimately comes at a cost that is out of pocket for the entities supplying the service and becomes a burden to maintain.

3. Insufficient public Wi-Fi speeds and incomplete community knowledge of free public Wi-Fi access sites.

- With the lack of reliable internet access in Rutherford County, many residents depend on public Wi-Fi services to complete personal activities. Although this service is relied on by citizens, speeds are not conducive to the needs of the individuals utilizing this service. In regard to public Wi-Fi, Rutherford County doesn't have an accessible tool for residents to find access sites within the community. This lack of information can leave residents unaware of internet opportunities that are easily accessible.

GOAL 1: IMPROVE AND INCREASE BROADBAND CONNECTIVITY THROUGHOUT RUTHERFORD 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.

In addition to efforts made in this plan, there are other grant opportunities that will be used to expand broadband availability throughout Rutherford County. After these future funding opportunities have been carried out it will be easier for the county to determine the remaining unserved areas. These last mile connections will be the final pieces to complete the broadband puzzle and should be prioritized in future funding opportunities.

- 02** Support the maintenance of existing public Wi-Fi and hotspot services available to the public.

In order to support public Wi-Fi and hotspot availability, entities like the library should be supported to continue offering these services. Establishing funds to help cover maintenance costs would provide longevity of hotspots and Wi-Fi programs throughout the county. In regard to education surrounding hotspots, support should be encouraged to those that are unaware of how to properly utilize the technology, which could look like a pamphlet or guide.

- 03** Support a public Wi-Fi wayfinding program that highlights public Wi-Fi locations.

A wayfinding program that highlights the location of public networks within the county will increase public knowledge about Wi-Fi zones. This program can take on many shapes, from a layer on the county's website to signage outside of facilities that offer public Wi-Fi.

BROADBAND ADOPTION

According to the 2020 ACS 5-year estimates, 77.3 percent of Rutherford County households have some form of an internet subscription. Within the population of those who subscribe, 0.2 percent have dial-up with no other form of internet, 50 percent have broadband such as cable, fiber-optic or DSL, 12 percent have satellite, and 17.2 percent solely have a cellular data plan. Approximately 39.9 percent of households do not subscribe to terrestrial or satellite broadband. Only 22.7 percent of households do not have a subscription to any form of internet, including cellular.

Within Rutherford County, 41.6 percent of all households with an income less than \$20,000 do not have an internet subscription, including cellular plans. In comparison, only 22.7 percent of the population with an income between \$20,000 and \$74,999 is without an internet subscription. Continuing this pattern, roughly 8.2 percent of households with an income of more than \$75,000 do not have an internet subscription.

According to the NC Broadband Adoption Index, 45 percent of Rutherford residents subscribed to an internet service, yet 92.47 (FCC 2017) percent of the population reportedly has access to broadband. The NC Broadband Survey depicts that 1,823 of 3,269 respondents do not have wireline internet, which aligns with 55 percent of the population not having a subscription rate. However, it is important to note that out of the pool of individuals without internet, 74.9 percent said that their lack of internet was a result of broadband not being available, and 11.61 percent responded by saying it was too expensive.

Within Rutherford, almost half of households do not subscribe to any internet service. During the steering committee meetings, stakeholders noted that the low adoption rate can be explained by two primary factors: limited availability of service in tandem with unreliable speeds, and high costs associated with broadband. Based on the prior section, it is clear that there is a significant population unserved by ISPs. Even then, those who are served are often left dissatisfied by slow speeds and high latency.

Decent internet plans with quality download/upload speeds and data limits can range in price. From the NC Broadband Survey, the largest portion of Rutherford survey respondents, 16 percent, pay over \$125 for internet monthly. Figure 20 captures the range of internet costs for Rutherford residents. The high cost of internet, in tandem with a lack of access, likely contributes to a low broadband adoption rate for the county. Moving forward, it is important to expand the range of internet pricing options without sacrificing the quality and speed of service.

As for existing low-cost or discount Wi-Fi options in the area, most providers participate in the FCC 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. As of November 1, 2022, 2,820 households in Rutherford County were enrolled in the ACP, approximately 10.8 percent of all households.

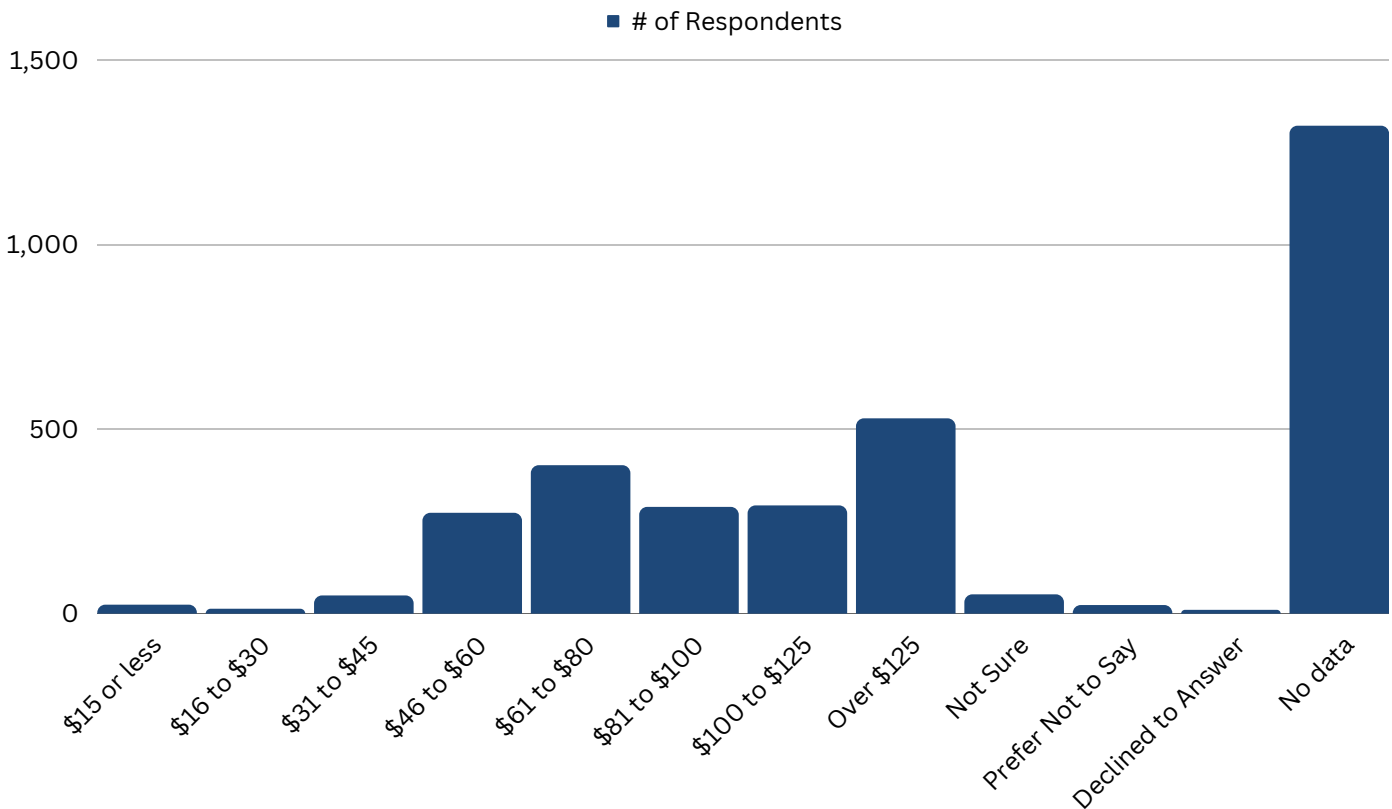


Figure 20. Total Cost of Internet per Month for Rutherford Residents

Access to broadband is only one piece of the digital inclusion puzzle. Another key facet is ensuring individuals have the financial means to subscribe to available services. To evaluate the adoption potential of technology at county and census-tract levels, NCDIT created a Broadband Adoption Index using 11 variables shown to influence an individual's likelihood of subscribing to high-speed internet. Similar to the Broadband Availability and Quality Index, these variables were weighted according to research.

Increase Variables:

- Percent households with a DSL, cable, or fiber-optic subscription
- Percent population ages 18 to 34
- Percent population age 25 or more with bachelor's or more
- Percent households with children
- Percent workers age 16 and over working from home

Decrease Variables:

- Percent populations ages 65 or over
- Percent households with no internet access
- Percent households with no computing devices
- Percent population in poverty
- Percent non-institutionalized population with a disability
- Percent households with limited English

Rutherford County scored a 32.1 out of 100 on the Broadband Adoption Index in 2019; a higher score implies a higher rate of broadband adoption. One of the main factor's influencing Rutherford's score is that nearly a quarter of households in the county do not have internet access, as determined by the American Community Survey's 5-year estimates for 2013-2017. This lack of infrastructure compounded with a poverty rate of 17.5 percent culminates in low subscription rates across the county.

Figure 21 highlights areas in dark red that scored lower on the adoption index. This primarily consists of the eastern portions and main cities of the county. The northeast tract received an adoption score of 29.06, likely due to the fact that nearly a third of the population doesn't have access to the internet. The eastern portion of the county that is situated around Ellenboro received an adoption score of 27.88, which could be caused by almost a fifth of the population being in poverty. Another area impacted by poverty is Grahamtown, which is right below Forest City on the map. This area received a 21.95 adoption score due largely to 42.5 percent of the population being in poverty, almost 2 percent having limited English, and about a fifth reported having a disability. Lastly, the southeastern portion of the county received a 24.75 adoption score likely caused by a fourth of the population not having access to the internet and 28.59 percent having a disability. These figures suggest that in addition to a lack of widely available broadband, specific demographic characteristics may impact one's likelihood of subscribing to broadband.

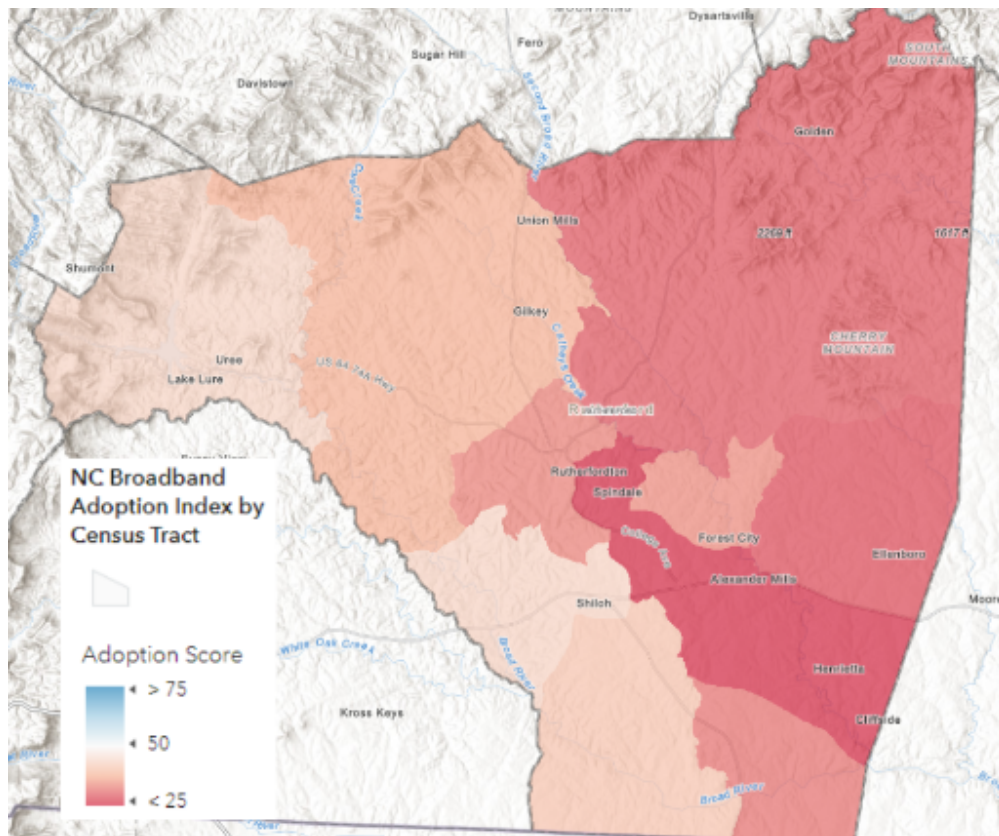


Figure 21. Broadband Adoption Index Map of Rutherford County

BROADBAND ADOPTION

PRIORITY NEEDS

1. Communicating resources for outreach about current internet subsidy programs.

- Throughout Rutherford County, there is a consistent issue among citizens regarding affordability and equity, especially in each of the three major town areas; Rutherfordton, Spindale, and Forest City. Within the county, 17.5 percent of the population experiences poverty, which supports the issue of cost regarding broadband subscriptions. This gap in affordability among internet providers results in low adoption rates seen throughout the county.

2. Upgrading existing broadband structures to improve reliability and speeds.

- Along with costs, reliability is a significant factor limiting broadband adoption in Rutherford County. Much of the existing broadband infrastructure in place seems to have varying efficacy due to signal issues or outdated technology. This issue was a consistent theme throughout our stakeholder meetings and seemed to be a challenging factor in the equation of broadband adoption. Due to unreliable speeds and service, many people refuse to pay for an internet plan that they can't trust to work when needed.

3. Transition from exclusively cellular subscriptions towards more reliable broadband options.

- Due to the unreliability of internet service providers within Rutherford, a large portion of the population has been forced to rely upon their mobile device to access the internet. This forced reliance has created low subscription rates among internet users and has led to residents transitioning away from using computer devices. This issue results in the public having subpar technology access when their needs go beyond the functionality of a mobile device.

GOAL 2: SUPPORT THE ABILITY OF INDIVIDUALS TO SUBSCRIBE TO BROADBAND SERVICES IF THEY DESIRE.

OBJECTIVES

- 01** Increase awareness and enrollment in established programs that provide broadband stipends.

In order to properly promote these types of programs, support should be offered to navigate the challenging barriers that many face during enrollment. This type of support could look like library-led classes that offer resources and guide people through the process. Outreach campaigns should also be utilized to market these subsidy programs.

- 02** Encourage private sector firms to improve and expand broadband service in Rutherford County.

Public-private partnerships can be utilized within local municipalities to help build community support, identify needs, and offer resources in order to make broadband expansion more financially appealing to ISPs. Rutherford County should continue to work closely with local and regional ISPs to attract more competition to the area.

- 03** Work with broadband providers within Rutherford County to increase awareness amongst the population about diverse broadband options.

Many Rutherford County residents find their mobile device to be more reliable than an internet subscription, which results in lower broadband rates. As a way to combat this gap, awareness surrounding cellular providers home internet plans should be increased. These types of broadband options can be more reliable for users and can reduce costs through bundling options that include both phone and internet plans.

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 Rutherford County residents that do not have the financial means to afford a suitable device, the following entities, including but not limited to, offer public access to computers or tablets: Rutherford County Library System, Mountain Branch Library, Norris Library, Haynes Branch Library, Mooneyham Library, Rutherford County Senior, Isothermal Community College (ICC) Library, and Grahamtown Community Center.

The **Rutherford County Library System** provides patrons access to computers at various locations throughout the county. The Rutherford County Library, the Haynes Branch Library, and the Mountain Branch Library each provide the public access to 8 computers (a mix of laptops and desktops) at their respective locations. The **Norris Library** in downtown Rutherfordton provides access to 2 Macbooks, 4 PC laptops, and 2 Ipads. The **Spindale Library** in downtown Spindale has 6 computers available for use. The **Mooneyham Library** in downtown Forest City offers 6 computers at one hour of use for patrons.

The **Rutherford County Senior Center** has 4 computers available for use.

Isothermal Community College Library offers facilities and resources to Isothermal students to use in completing their assignments and is open to the public as well. Library services include 11 public access computers with Microsoft Office software and Internet access connected to a printing center. ICC also sells low-cost laptops to students at the campus bookstore. Students can apply their financial aid towards purchasing these devices.

The **Grahamtown Community Center**, located in Forest City, is run by the Grahamtown Team with the purpose of providing programs and services to the individuals in the Grahamtown neighborhood and Rutherford County as a whole. The Grahamtown Community Center houses an up to date technology center with 13 computers available to the public.

Rutherford County Schools (RCS) issue devices to every student in the county through its one-to-one technology program. iPads are issued to students from kindergarten through 8th grade and Macbooks are issued to high school students. They transitioned to iPads for K-8 because of the prevalence of app-based learning. The school system also provides keyboards for the iPads. The school district issues approximately 7,500 devices.

Lake Lure Classical Academy offers students access to devices during the day, but in order to take them home after hours the student has to be in high school.

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, **City Computers** in Forest City is an IT services and computer repair shop that sells refurbished used laptops. For low-cost mobile devices, **Verizon** sells pre-owned devices with a 90-day warranty.

**25.6% OF
RUTHERFORD
HOUSEHOLDS ARE
WITHOUT A
COMPUTER DEVICE**

The 2020 ACS 5-year estimates reported that 25.6 percent of households in Rutherford do not have a computer device, furthering the need for more publicly accessible devices and low-cost options within the county.

ACCESS TO DEVICES

PRIORITY NEEDS

1. No place to check out devices for personal usage.

- Within Rutherford County, there are a number of organizations that provide individuals access to a computer or tablet, including the county libraries, the Grahamtown Community Center, and the Isothermal Community College. However, none of these entities allow patrons to check out a device to use on their own time. This prohibits individuals from accessing devices outside of work hours or on weekends.

2. Limited supply of affordable computers or tablets.

- There are a limited number of suppliers providing low-cost or refurbished devices. It was reported that a number of students at ICC have to apply their financial aid in order to afford a device for school. Increasing the supply of affordable devices is necessary to ensure users have the opportunity to engage in online activities.

3. Increase the number of organizations that have the ability to supply devices to their patrons.

- It is important that entities wanting to engage in digital literacy services, such as the Rutherford County Senior Center, have the ability to provide devices for general use and classes. Moving forward, it is necessary to support these entities by forming partnerships across sectors.

GOAL 3: ENSURE THAT ALL RESIDENTS OF RUTHERFORD COUNTY HAVE ACCESS TO AN AFFORDABLE DEVICE, SUCH AS A TABLET OR COMPUTER, THAT MEETS THE NEEDS OF THE USER.

OBJECTIVES

- 01** Establish lending programs to serve communities needing devices.

To achieve this objective, institutions such as Rutherford County Public Libraries or ICC could allow patrons to check out devices for a set period of time, thereby extending their usage outside of normal operating hours. The following examples may serve as potential lending models that could be emulated within Rutherford County. McDowell Technical Community College utilized a grant to purchase 16 Acer laptops available for students to check out on a semester-long basis. Additionally, the McDowell Public Library system has 10 Dell laptops and 10 Chromebooks available for checkout.

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

The ACP offers eligible households a one-time discount of up to \$100 for a laptop, computer, or desktop computer. This aspect of the federal program is not as well known as the monthly subsidy applied to internet costs. In addition, other businesses sell refurbished devices at significantly discounted rates. Ensuring individuals are aware of these options is vital.

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

Most government and educational entities in Rutherford use GovDeals to discard used computer devices. Instead of re-selling laptops, there is potential for a granting of gently used devices to individuals in the community. For example, entities with a surplus of devices, such as ICC or RCS, can provide refurbished devices to local non-profits, like Grahamtown, to distribute to community members in need.

DIGITAL LITERACY

Digital inclusion doesn't stop with access to devices or high-speed internet, it goes beyond this to ensure that users can meaningfully engage with the technology available and participate in essential online services. Closing the digital gap involves providing access to relevant educational experiences and learning opportunities. Digital literacy trainings can be catered to meet the needs and interests of various target populations. This can take on various formats, including but not limited to: workforce development trainings that focus on employment searches and resume development; supporting parents and guardians navigating virtual learning environments; trainings for senior citizens on accessing telehealth services; and trainings taught in various languages to reach those with limited English. The following assets provide digital literacy training in some shape or form to Rutherford County residents.

Isothermal Community College offers various degrees and certificates in information technology and computer engineering technology. They also offer Human Resources Development (HRD) courses and workshops to address a broad range of employability skill development. HRD workshops are free of charge for North Carolina residents who are unemployed, underemployed, or have received notice of a layoff. On select days they offer employment workshops on strategic job search, resume development, successful interviewing, and mock interviews. Through these courses individuals learn how to utilize computers and technology to enhance their job search.

Grahamtown Community Center offers computer classes in their technology lab when requested. They also partner with Isothermal Community College to host family friendly events revolving around science, technology, engineering, art, and math, also known as STEAM instruction. These events allow the public to engage in the field of robotics and 3D modeling through Tinkercad.

Rutherford County Schools provides opportunities for administrators, faculty, and staff to develop technology skills. These trainings ensure staff can delivery high-quality instruction on learning management systems. Students in this day and age are more adept to using technology given its prevalence in our lives. To ensure all children possess a certain degree of digital literacy, the school system provides trainings on internet safety and use for K-12. Additionally, RCS fulfills the state mandate for digital literacy competencies by partnering with learning.com to deliver digital literacy curriculum for K-8 and i-SAFE for 9-12. In addition, the schools offer middle school and high school students the opportunity to learn how to code. The school system also offers robotics programs as an extracurricular for students. For parent and guardians, the schools offers trainings during open house at the beginning of each year so they can monitor their children on Canvas.

The **NCWorks Career Center** in Rutherford 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.

The **Rutherford County Senior Center** does not offer regularly scheduled digital literacy classes, but they do offer technology assistance on a volunteer basis.

The American Association of Retired Persons, more commonly known as **AARP**, founded a Virtual Community Center that offers free interactive online events and classes designed for learning, self improvement, and fun. They offer virtual classes on an array of topics, including how to use technology for greater access, networking on LinkedIn, how to avoid scammers online, and once-a-month virtual “office hours” for support. While these classes are helpful, they are for more technologically advanced individuals that understand how to navigate email and Zoom.

The **Rutherford County Library System** offers a variety of technical assistance to patrons of Rutherford County, from group sessions to one-on-one support. They typically offer one technical support class a month across the three county locations. Classes average 6 to 8 people a session and cover a range of topics, including but not limited to how to navigate basic computer functions, setting up an email, engaging in online commerce, how to be safe online, and how to use Microsoft Office. The librarian leading the class will provide in-house devices for patrons to utilize. In addition, librarians naturally serve as de facto digital navigators. All three public county libraries offer the “Book-A-Librarian” program to provide direct assistance to individuals with basic computer skills. Appointments can range from 30 to 60 minutes. Within the last three years the attendance at group classes has dropped off, but the number of individuals requesting one-on-one help remains steady.



DIGITAL LITERACY

PRIORITY NEEDS

1. Lack of understanding by parents and guardians about online education.

- With the transition to remote learning at the onset of the pandemic, parents and guardians experienced difficulties navigating online learning management systems utilized by schools. Based on a survey sent out to parents and guardians by Rutherford County Schools in March of 2022, 7.5 percent of respondents either “strongly disagreed” or “disagreed” with the following statement: “I understood how remote learning worked at my child’s school.” Despite RCS providing trainings at open houses on online learning systems, parents and guardians still experienced challenges.

2. No consistent scheduling for computer classes at the senior center.

- The Rutherford County Senior Center does not offer regularly scheduled computer classes. Instead, they rely on volunteers to provide their patrons with technology support. This inconsistent programming does not meet the demand of the citizens visiting the center, for many have questions pertaining to phone, computer, and tablet use. The demand for assistance is particularly high in the new year when citizens have been gifted devices.

3. Lack of in-person instructors to support k-12 high-skilled computer classes such as coding, software development, etc.

- One of the biggest challenges RCS faces when tasked with offering high-skilled computer classes is finding skilled instructors. High school students can take IT courses at ICC, but they face a similar issue. As a result, RCS partners with the NC Department of Public Instruction (NCDPI) to provide skilled educators. NCDPS can virtually access teachers all over the state to provide skilled computer classes, but it is not the same educational experience that in-person instruction provides.
-

PRIORITY NEEDS CONTINUED

1. 4. Young adults lack the basic computer skills necessary to enter the workforce (resume building, online job application, banking).
 - Today, most job applications have transitioned from pen and paper to online. As a result, individuals looking to enter the workforce have to be well-versed in computer programs like Microsoft Office. There is a lack of understanding among young adults seeking work on how to build resumes, search for jobs online, and successfully apply.



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 the expansion of organizations that offer digital literacy and skill training.

Rutherford County Public Libraries and Grahamtown Community Center provide digital literacy opportunities for residents of the county. To limit duplicity, it is essential that the existing digital literacy providers are supported in their ability to offer trainings. These entities could provide a greater service if they had the capacity to increase programming opportunities.

- 02** Increase awareness about digital literacy training available throughout the county.

To improve the attendance of the trainings available, it would be valuable to convey information about digital literacy classes in one place. This information could be shared virtually on a countywide calendar or as an addition to the wayfinding program marking public Wi-Fi zones. Additionally, this information can be distributed with the schools, on Facebook, or through QR codes.

- 03** Support an in-person digital navigator position to teach computer skills in educational settings.

In order to provide high-quality, in-person technology instruction, a joint RCS and ICC position could be created. This individual could provide different levels of training to high school students and community college students. Creating this position will allow for students interested in more advanced programming to familiarize themselves with the subject in Rutherford County.

CONTINUING THE WORK

Preparing a Digital Inclusion Plan that evaluates existing digital assets and areas of need in Rutherford 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.

- Charter Schools
- Rutherford County Cooperative Extension
- ISPs including but not limited to Spectrum and PANGAEA
- Rutherford County Soil and Water Conservation District
- Mountain BizWorks
- Rutherford County Department of Social Services
- Rutherford County Health Department
- Spanish Community
- NCWorks Career Center
- Foothills Regional Commission