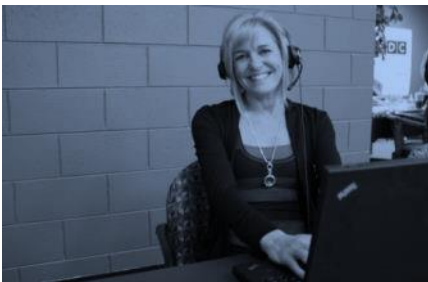


Community Technology Action Plan

South Carolina Lowcountry Promise Zone

November 2017



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Opportunity is here.

*Prepared as Part of the Connected
Community Engagement Program*



The following organizations contributed their time and expertise as part of the
Lowcountry Promise Zone Broadband Team:



EdVenture Children's Museum
Allendale County School District
Bamberg School District One
Barnwell School District 45
Blackville-Hilda Public Schools
Colleton County School District
Denmark Olar School District 2
Hampton County School District 1
Hampton County School District 2
Jasper County School District
Williston-Elko School District
Denmark Technical College
LeaderComm
University of South Carolina
Counties of Allendale, Bamberg, Barnwell, Colleton, Hampton, and Jasper
Lower Savannah Council of Governments
South Carolina Arts Commission
South Carolina Community Loan Fund
South Carolina Department of Health and Environmental Control
South Carolina Department of Commerce
South Carolina Regional Housing Authority #3
Corporation for National and Community Service
Federal Communications Commission
U.S. Economic Development Agency
U.S. Department of Housing and Urban Development
Savannah River National Laboratory
U.S. Small Business Administration

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Executive Summary

Today, technology plays a pivotal role in how businesses operate, how institutions provide services, and where consumers choose to live, work, and play. The success of a community has become dependent on how broadly and deeply the community adopts technology resources, which includes access to reliable, high-speed networks, the digital literacy of residents, and the use of online resources locally for business, government, and leisure. As noted in the National Broadband Plan (NBP), broadband internet is “a foundation for economic growth, job creation, global competitiveness, and a better way of life.”

The purpose of this document is to summarize the results of a community technology assessment for the Lowcountry Promise Zone and to provide the next steps for addressing any deficiencies or opportunities for improving the local technology ecosystem in order to advance economic, social, and educational opportunities for families, businesses, and institutions in the community.

This Community Technology Action Plan was developed following a comprehensive community assessment performed by the Lowcountry Promise Zone Broadband Team as part of **Connected Nation’s** Connected Community Engagement Program. Using the ConnectedSM assessment toolkit, the community team was able to examine the access, adoption, and use of broadband and related technologies in the community.

While the results indicate that the community has made tremendous strides and investments in technology, priority projects were identified to help catapult the community to a new level of technology access, adoption, and use.

This plan is a blueprint for leveraging technology to improve quality of life and advanced community and economic development. Below are the detailed results and recommended strategies for the Lowcountry Promise Zone.

Assessment Summary

The following table provides highlights from the community broadband and technology assessment conducted as part of this plan and detailed in the remainder of the document.

Broadband and Technology Assessment Summary

Community-Wide Infrastructure	
61%	Households with access to 25 Mbps internet
55%	Households with only one choice for fixed internet service provider
89%	Geographic area covered by mobile broadband at 10/1 Mbps
61%	Households with access to 25 Mbps internet
Households	
28,474	Households without a fixed broadband connection
63%	Households with internet access dissatisfied with current service
Groups struggling with digital equity in the community: households with school-age children, adults without a college degree, and households earning less than \$50,000, annually.	
5	Average number of internet-enabled devices in the home
70%	Residents who digitally interact with local businesses at least weekly
31%	Residents who regularly telework
2.6%	Average annual household income spent on home internet service

Priority Projects

The following is a list of the recommended projects the community team aims to prioritize to ensure robust broadband and technology access, adoption, and use.

- Perform an analysis of local policies and ordinances.
- Complete a vertical assets inventory.
- Develop public-private partnerships to deploy broadband service.
- Facilitate a community technology summit.
- Create a telework support and attraction program.

Digital Equity

The data gathered during the Connected assessment allows an analysis of digital equity in the community. Digital equity is a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy, and economy. Digital equity is necessary for civic and cultural participation, employment, lifelong learning, and access to essential services (National Digital Inclusion Alliance).

Data gathered through this process can help determine which groups in the community may be struggling with technology access, adoption, and use and thus which groups need assistance to create a truly digitally equitable community. The table below contains a summary of ten different metrics that aim to identify which groups are struggling with technology and the intersection between the challenges related to accessing broadband infrastructure and actually adopting broadband in a meaningful way. Twelve different demographic groups are included in the table and are divided by income, educational attainment, age, employment status, households with children, and military households. These metrics are designed to provide a high-level summary of issues facing specific groups in the community, and each metric is discussed in greater detail throughout this plan. These metrics are also critical in generating solutions and/or interventions that will be targeted to the appropriate group to ensure success. The dimensions include:

Access

Households with dial-up, satellite, or mobile-only connections: These households may have service, but these are not ideal connections for a number of reasons include speed, data caps, latency, reliability, etc. The higher the percent, the more households rely on these non-fixed, non-terrestrial internet connections.

Households reporting a connection speed less than 3 Mbps: These households subscribe to internet service at speeds that limit the usefulness of that connection for those in the home. The higher the percent, the more households rely on internet connections less than 3 Mbps.

Households dissatisfied with the cost of service: These households subscribe to internet service, but indicate they are dissatisfied with that service because of the cost. They desire to be connected, but the cost of service is likely a burden. The higher the percent, the more households indicating they are dissatisfied with the cost of their service.

Adoption

Fixed broadband adoption: This is the percent of households in each group that have subscribed to a fixed broadband connection internet at home. This measure does not include those connecting at home with satellite, mobile-only, or dial-up. The higher the percent, the more households there are with a fixed broadband subscription.

Monthly cost of service: This is the average monthly cost of internet service for those in each demographic group. The higher the number, the more households in the group are paying each month for their internet service.

Devices in the home: This is the average number of internet-enabled devices in the home. The lack of a device can prevent full online participation by all members of the household. A higher number indicates more devices in the home for members of the group.

Internet digital literacy: This is the average digital literacy score on a scale from one to four across 38 different hardware, software, and online applications, with one indicating the respondent has no experience and four indicating they have advanced technology skills. Digital literacy is key to using technology to improve quality of life. A higher number indicates a higher average digital literacy among members of the group.

Use

Daily internet access: This is the percent of respondents reporting that they access the internet multiple times per day. Internet use is a personal choice, but limited access and adoption can prevent more robust use of technology. The higher the percent, the more persons in each group are accessing the internet several times each day.

Teleworking: This is the percent of respondents indicating they telework in any capacity for their job. Technology is used more and more on the job and teleworking can provide new opportunities for residents to participate in a digital economy. The higher the percent, the more persons in each group are teleworking.

Section interaction: This is the average frequency at which residents in each group report digitally interacting with various sectors of the community on a scale of one to seven, with one indicating daily interaction and seven indicating no digital interaction. This metric may be used to encourage organizations to increase efforts to promote their electronic resources. A high number indicates a high average frequency of digital interaction with community institutions and sectors are reported among members of each group.

While all in the community struggle with some aspect of technology access, adoption, and use, some groups struggle more than others. Cells in the table are highlighted in red where the indicator for that particular group is negatively related to the community average. For example, cost as a barrier to home broadband adoption for households earning less than \$50,000 is highlighted in red as this group has a lower home broadband adoption rate than the region as a whole.

Also included in the table, is a column indicating the percent of the community falling into each of the demographic groups. For example, 68% of households in the community earn less than \$50,000 annually. This information is intended to provide even greater context for the technology issues facing each group.

When implementing programs and projects that are designed to improve broadband and technology access, adoption, and use (such as those recommended at the end of this plan), the community should keep these groups in mind and examine the desired outcome of the project or program relative to the struggles faced by the various demographic groups.

Lowcountry Promise Zone Digital Equity Analysis											
Group	Population Estimate	Access			Adoption				Use		
		Dial-Up, Satellite, or Mobile Only	Less Than 3 Mbps	Dis-satisfied With Cost	Home Broadband Adoption	Monthly Cost of Service	Devices in the Home	Digital Literacy	Use Internet Daily	Tele-work	Sector Inter-action
Community Average		28%	14%	63%	41%	\$68.97	4.9	2.49	93%	20%	2.61
Employed	63.0%	28%	24%	65%	48%	\$68.52	5.5	2.78	96%	29%	2.76
Unemployed	37.0%	21%	6%	62%	53%	\$60.36	4.2	2.06	90%	-	2.16
Age 18-54	61.0%	25%	26%	65%	49%	\$68.35	5.9	2.87	94%	29%	2.75
Age 55+	39.0%	25%	6%	62%	51%	\$61.88	4.0	2.04	93%	6%	2.26
No College Degree	86.3%	29%	21%	67%	43%	\$67.17	5.0	2.34	92%	13%	2.44
College Degree	13.7%	20%	13%	59%	60%	\$63.61	5.2	2.76	96%	27%	2.71
Income < \$50k	68.0%	33%	16%	70%	36%	\$63.35	4.1	2.28	92%	15%	2.46
Income >\$50k	32.0%	24%	18%	59%	68%	\$69.33	6.0	2.89	97%	32%	2.99
Active or Retired Military	9.5%	18%	16%	73%	57%	\$74.98	5.2	2.58	91%	23%	2.92
Non-Military	90.5%	28%	17%	60%	52%	\$65.64	5.2	2.57	96%	22%	2.61
School Age Kids	19.6%	32%	20%	50%	45%	\$77.15	5.9	2.63	94%	25%	2.92
No School Age Kids	80.4%	22%	10%	75%	55%	\$63.61	4.2	2.44	94%	19%	2.46

Connected Program Overview

Despite the growing dependence on technology, the United States Census reports that 27% of Americans do not have a high-speed connection at home. Connected Nation's studies also indicate that 19.1 million children do not have broadband at home, and 6.1 million of those children live in low-income households. In 2014, Connected Nation also surveyed 4,206 businesses in 7 states. Based on these data, Connected Nation estimates that at least 1.5 million businesses (20%) in the United States do not use broadband technology today.

In this environment, deploying broadband infrastructure, services, and applications, as well as supporting the universal adoption and meaningful use of broadband, are challenging— but required—to advance twenty-first century technologically empowered communities. From healthcare, agriculture, public safety, and tourism, to government, education, libraries, talent, and economic activity, every sector of a community requires the power of broadband and related applications to function at the highest capacity.

One thing is clear, broadband and related technologies have transformed nearly every facet of society. While many of these technology changes can be discussed on a global scale, local community technology advancements depend on community leadership and action. A critical first step in advancing broadband technology is identifying and understanding local assets along with opportunities and barriers to technology advancement. This plan is a roadmap to advancing technology in the Lowcountry Promise Zone.

Why Access, Adoption, and Use?

Connected Nation is dedicated to improving lives through the expansion of broadband and technology access, adoption, and use. It is often asked why we look beyond infrastructure when addressing broadband issues when many other community broadband assessments and studies are focused on the wires in the ground and the signals in the air. Access to infrastructure is only the beginning of a community's journey to fully leverage technology to improve quality of life and community and economic development. Connected Nation, through its Connected program, recognizes that in order to fully participate in a digital economy, communities need to address not only the access to broadband (supply), but also the ways in which it is adopted and used (demand). Wires and wireless signals are useless if they are not leveraged to improve civic engagement, retain families and youth, improve leadership, and develop local human capital.

Access

Broadband access refers to the infrastructure that enables a high-speed internet connection. Broadband is delivered to a user via several technology platforms including cable, digital subscriber line (DSL—through a phone line), fiber optics, fixed wireless, mobile wireless, and satellite. While these are currently the primary methods of delivery, new innovations and technologies are being developed that continue to improve the efficiency and speed of connectivity.

Broadband availability is essential infrastructure for twenty-first century communities. Broadband empowers a community to access applications ranging from healthcare and education to business and government services. Unfortunately, many communities suffer from inequities of access on several fronts: between income levels; between urban and rural areas; between traditional business areas and nontraditional ones; and in differing levels of service due to geography or infrastructure limitations.

Adoption

Broadband adoption is a different issue from broadband access. While access refers to one's physical connection to the internet, broadband adoption is the choice made by a resident, business, or institution to embrace and use broadband and its related technologies. Broadband adoption cannot occur without having access to high-speed infrastructure; however, even with access to the internet, broadband adoption may not follow.

Several studies have shown that even with access to broadband, residents, businesses, and institutions may not adopt. Barriers to adoption can often include cost (of either a device used to connect or the cost of the connection itself), lack of relevance to the user, or lack of digital literacy (knowledge and skills associated with the use of digital hardware or software). Lack of broadband infrastructure availability is also cited as a barrier.

The broadband adoption gap (the difference between the number of entities with access to broadband and the number of those same entities that use it), can increase or decrease depending on the demographics of a community. For example, low-income populations have lower adoption rates than those with higher incomes. This same disparity can be found between age cohorts, physical locations, employment status, educational levels, etc. However, regardless of socioeconomic status, demographic composition, or geographic location, every person should have the opportunity to participate in the digital economy.

Use

The access and adoption of broadband and internet technologies leads to the use of that connection and applications to improve the quality of life of a community. Technology impacts every sector of our economy, and opportunities abound for residents, businesses, and institutions to leverage technology to make improvements in their day-to-day lives and operations.

The well-being of a community involves the complex interaction of several sectors including healthcare, K-12 and higher education, public safety, government, libraries, residents, private-sector businesses, and others. These distinct, yet entwined, sectors (and their many individual parts and entities) contribute to that **community's place in the digital economy**. As broadband and related technology have developed over time, applications pertinent to each of these sectors have been developed that allow them to function, provide services, generate revenue, and generally operate more efficiently, which impacts their contribution to the community. The use of broadband and technology is critical to the impact these sectors have on the overall quality of life in a community.

While access, adoption, and use form a spectrum of sorts, (i.e., one cannot adopt broadband without having access to it, and one cannot use broadband without adopting it), all three components are equally important for every member of a community to fully realize a digitally inclusive and digitally connected community. The Connected program is designed, and this report is framed, to examine the access, adoption, and use of broadband and technology across every sector of a community.

The Connected Community Engagement Program

For more than a decade, Connected Nation has been assisting communities in the development of Community Technology Action Plans through various programs that have ultimately progressed into the ConnectedSM program.

The Connected Community Engagement Program is a facilitated broadband and technology planning program designed to address the most pressing technology challenges facing communities today. Connected engages **local leaders to evaluate their community's current state of technology access, adoption, and use**. Connected offers communities the opportunity to measure the supply, demand, and use of technology in the community **with unprecedented data gathering, analysis, and planning**. Connected's unique community technology assessment provides insight into the local technology ecosystem, identifies gaps and opportunities, and supports the development of an actionable technology plan to improve the community's standing in the digital economy.

Connected communities benefit in many ways:

Benchmarking and planning: Determine where the community stands in relation to similar places and national benchmarks. Inform a technology planning effort with unprecedented data on infrastructure, adoption, and use. Connected helps communities gather and analyze data on technology use across sectors, from agriculture to education and healthcare to public safety.

Recognition: Leverage Connected certification status and plan as a recruitment tool for residents and industry. Communities need a competitive advantage they can promote in order to thrive.

Network with other communities: Collaborate with other communities and partners—share best practices, spread policy insights, disseminate solutions, gather information, and adapt to evolving opportunities.

Create an empowered and informed community team: The Connected process educates, empowers, and unifies community leaders and cross-sectorial stakeholders to address broadband issues, develop a vision, and manage their action plan.

Process

In order to determine the state of technology in the Lowcountry Promise Zone, the community team participated in a 4-step community engagement process that consisted of:

Community Team Creation – Empowering a community team leader (local champion) and creation of a community team composed of a diverse group of local residents from various sectors of the economy including education, government, healthcare, the private sector, and libraries, among many others.

Technology Assessment – The community team uses a series of instruments to gather community technology data. These instruments include a sophisticated set of surveys distributed throughout the community to gather hyperlocal data on the access, adoption, and use of broadband and technology that is not available anywhere else. The Connected assessment framework is broken into three categories: Community-Wide Infrastructure, Households, and Community Sectors. The assessment first examines community-wide infrastructure by gathering information from various sources, including the Federal Communications Commission, broadband providers, and others. This analysis provides insight into the “supply” of broadband connectivity in the community.

The assessment then examines the current access, adoption, and use of broadband and technology among households in the community. This provides insight into the residential “demand” for technology and helps identify members of the community that have been excluded from fully participating in the digital economy.

Action Planning and Project Prioritization – This process entails the compilation of the results of the assessment, identification of best practices, and priority technology projects by the community team in collaboration with Connected Nation facilitators. Completion of the Community Technology Action Plan marks the beginning of a community’s journey to improving its broadband landscape.

Community Assessment

The following sections provide detailed findings from the Connected Assessment for the Lowcountry Promise Zone. Following the development of a broadband team, the community worked to gather data in three critical areas.

The **Community-Wide Infrastructure** section checks to see whether the broadband and technology foundation exists for a community. The criteria within this section endeavors to identify gaps that could affect a local community broadband ecosystem including issues related to last-mile connections, cost, and competition.

Household access, adoption, and use are important for consumers, institutions, and communities alike to take the next step in fully utilizing broadband appropriately. The Households component of the Connected Assessment seeks to ensure the ability of all individuals to access and use broadband and to recognize the value of a connection and its impact on quality of life.

Each section incorporates a series of metrics upon which the community is scored in order to quickly identify gaps and leverage opportunities. The table below contains the Lowcountry Promise Zone's overall Connected Assessment scorecard. The following pages dive into each of the underlying metrics for these sections to provide community stakeholders with an advanced and detailed understanding of the community's technology strengths, weaknesses, and opportunities.

Community-Wide Infrastructure

Broadband access refers to the infrastructure that enables a high-speed internet connection. There are two primary types of broadband connections: fixed and mobile.

Fixed broadband is delivered to a user via several technology platforms including cable, digital subscriber line (DSL) over a phone line, fiber optics, and fixed wireless. Fixed broadband is designed for stationary use at a fixed location such as a home, business, or institution. Within a location, however, fixed broadband service is often broadcast as a Wi-Fi network to connect nearby devices.

Mobile broadband is a wireless technology used to connect portable devices to the internet. These networks are designed to provide seamless connectivity as the user moves from one location to the next.

Fixed and mobile broadband connections are equally important, but offer different types of functionality and operate on very different network technologies.

Fixed and mobile broadband are often used in conjunction with one another and, as such, are not functional substitutes. However, many households and businesses in rural areas without access to fixed broadband, rely on mobile broadband to substitute for a fixed network connection. While these connections work for some users, mobile broadband connections are often plagued by data caps, weather, vegetation, latency, and other issues of connection reliability and restriction.

Additionally, satellite internet is often a service of last resort in many rural areas. Satellite broadband users often experience the same restrictions of those using mobile broadband as a substitute for a fixed broadband connection. For these reasons, this plan examines fixed and mobile broadband separately. In discussions of fixed broadband access or adoption, satellite and mobile connections are not included.

Broadband availability is essential infrastructure for twenty-first century communities. Broadband empowers a community to access applications ranging from healthcare and education to business and government services. Unfortunately, many communities suffer from inequities of access on several fronts: between income levels; between urban and rural areas; between traditional business areas and nontraditional ones; and differing levels of service due to geography or infrastructure limitations.

Access to broadband is not simply a yes/no scenario. There are several aspects of broadband infrastructure that comprise the quality of the network in a community. For this reason, the Community-Wide Infrastructure section is composed of six interrelated metrics that examine the quantity and quality of broadband in a community. These six areas are residential broadband availability, high-speed availability, competition, platform dependency, mobile broadband, and middle mile.

Highlights

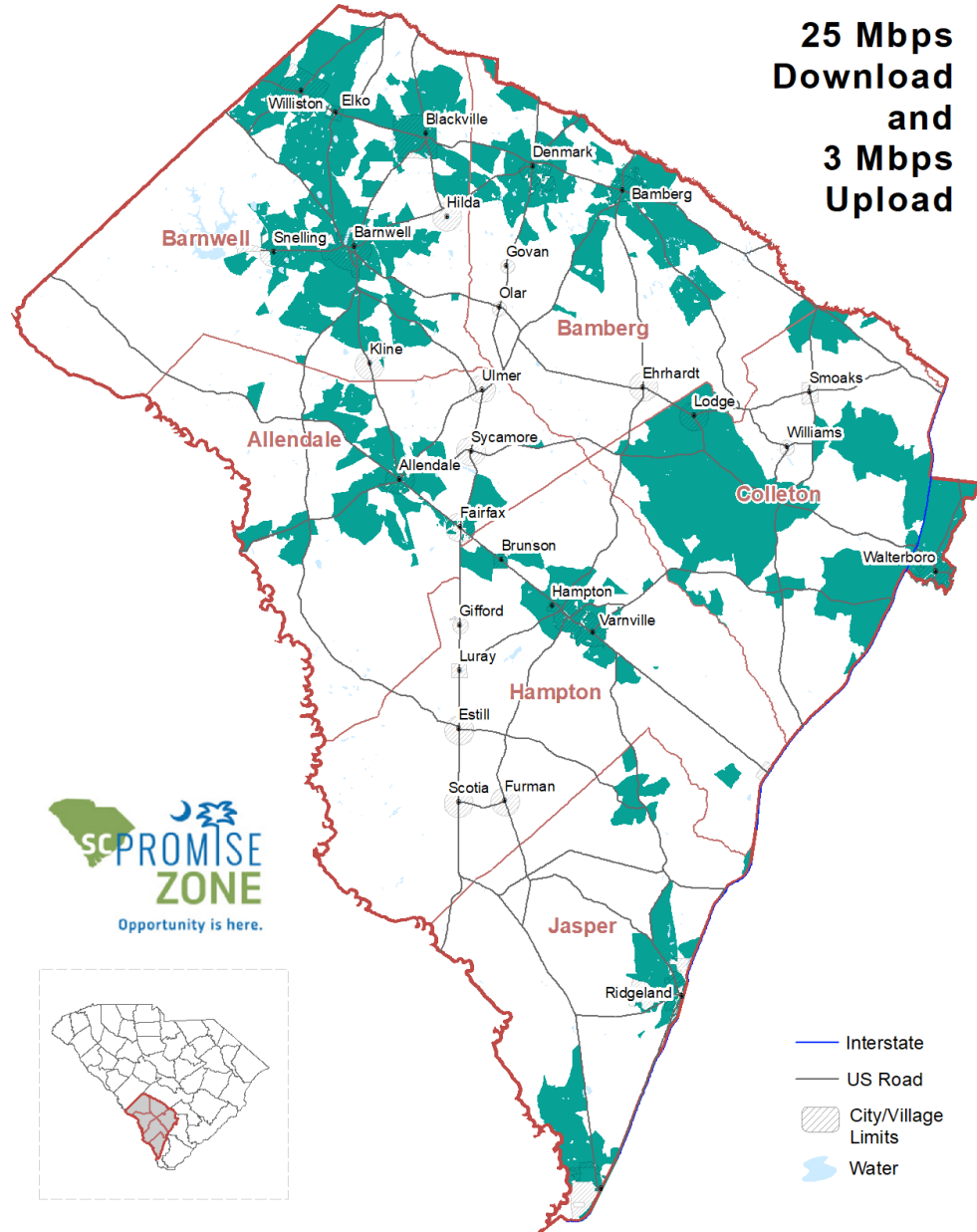
61%	Households with access to 25 Mbps internet
55%	Households with only one choice for fixed internet service provider
72%	Households with access to only one internet service provider
89%	Geographic area covered by mobile broadband

Residential Broadband Availability

A high-speed internet connection is critical for families, students, businesses, and institutions to participate in the digital economy. Without broadband access, conversations of technology adoption and use are fruitless. The Federal Communications Commission (FCC) defines “advanced broadband service” as an internet connection of 25 megabits per second (Mbps) download and 3 megabits per second (Mbps) upload. While broadband connections do exist at speeds slower than this benchmark, 25 Mbps download and 3 Mbps upload represents the current aspirational goal for connecting every home in the United States.

Residential broadband availability is measured by analyzing the percentage of homes in the community that have access to fixed broadband speeds of 25 Mbps download and 3 Mbps upload. In 2015, the Lowcountry Promise Zone had 49,010 households. As of June 2016, approximately 61% of household have access to broadband at the target speed. On average, 81.1% of households in other Connected participating communities have access to broadband at this speed.

Broadband availability often follows patterns of household density, so geographic disparities in availability do exist. The map of Residential Broadband Availability, provided, shows areas with and without broadband service at this speed (white areas are those without such service). Providers in the region and their advertised speeds can be found in the County Summary section.



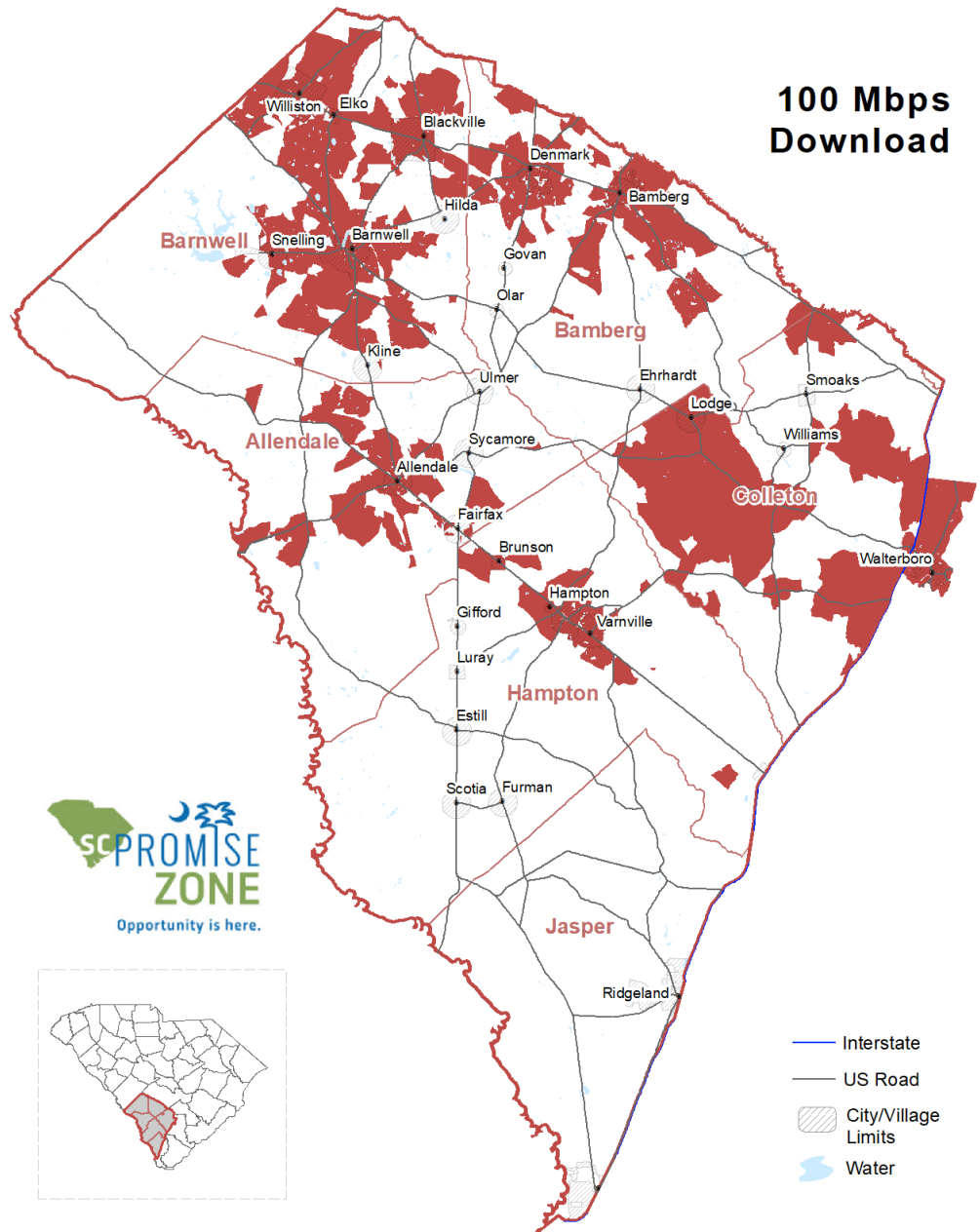
High-Speed Availability

While the internet connection speed of 25 Mbps download and 3 Mbps upload is the FCC’s current definition of “advanced broadband service,” this definition must be considered temporary. In 2009, the definition of a broadband connection was 768 Kilobits per second download and 200 Kilobits per second upload. Four years later, in 2013, the FCC revised its definition again to 4 Mbps download and 1 Mbps upload. This moving target will continue upward as residents, businesses, and institutions continue to demand more of their internet connections and new bandwidth-intensive applications are developed. Trying to future-proof the definition of broadband is impossible, but by examining the availability of higher connection speeds, areas in need of intervention can be identified early.

High-speed broadband availability is measured by analyzing the percentage of homes in the community that have access to fixed broadband speeds of at least 100 Mbps download. In 2015, the Lowcountry Promise Zone had 49,010 households. As of June 2016, approximately 55% had access to broadband of at least 100 Mbps download. On average, 42.6% of households in other Connected participating communities have access to broadband at this speed.

While the percent of households covered by this speed appears high, the map of the region shows this does not translate into equal geographic coverage. Speeds of 100 Mbps are typically available in more densely populated areas, but coverage drops off further from small towns and suburban communities.

The map of High Speed Broadband Availability provided shows areas with and without broadband service at this speed (areas in white are those without such service). Providers in the region and their advertised speeds can be found in the County Summary section.

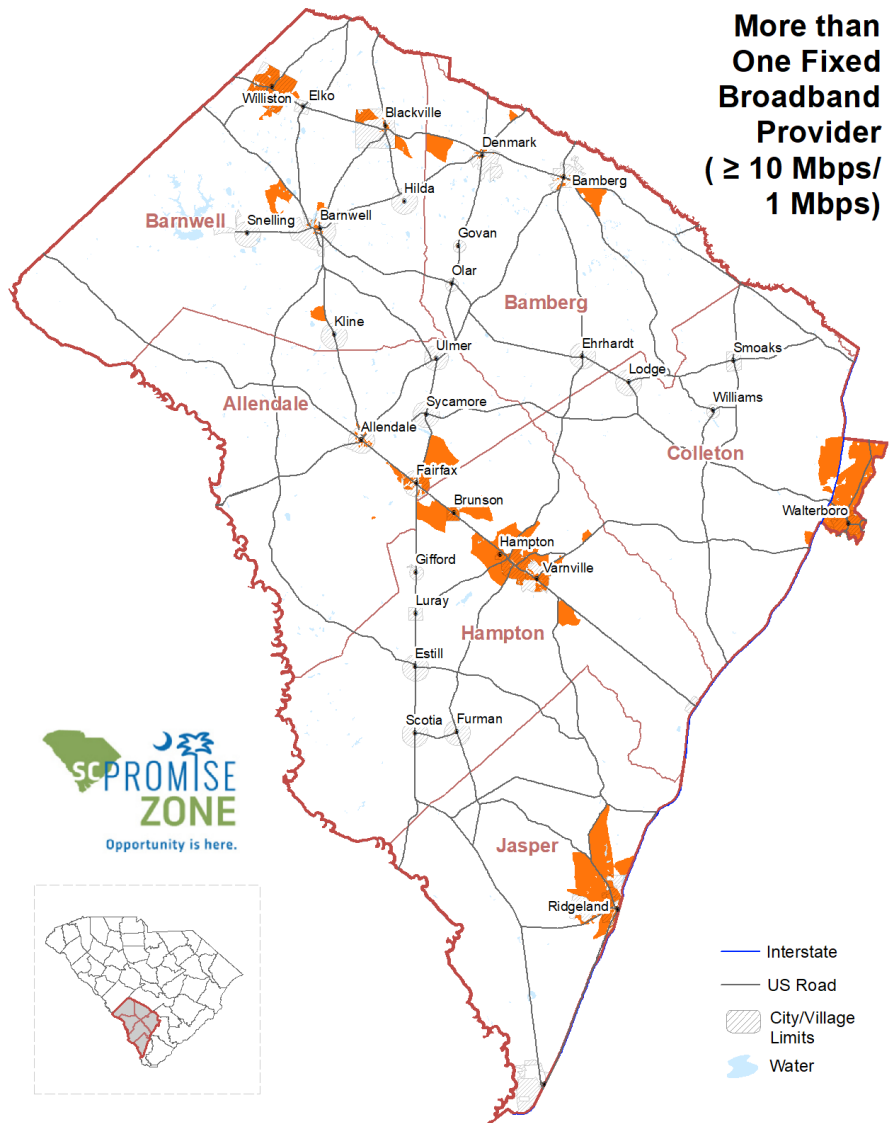


Competition

In the majority of communities, broadband service is a private-sector industry. Internet connectivity can be delivered via several technology platforms including cable, DSL, fixed wireless, mobile wireless, fiber, and satellite. Companies offering service via these platforms often compete with each other in areas with high household density, but that competition can wane as household density decreases in rural areas. Because broadband service typically responds to market forces, competition impacts the cost of broadband service. Therefore, in theory, the more ISPs available to a consumer the lower the cost of service. More information on broadband cost can be found in the *Households/Affordability* section of this plan.

Broadband competition is measured by analyzing the percentage of homes in the community that have access to two or more fixed, terrestrial broadband providers with service of at least 10 Mbps download and 1 Mbps upload (non-mobile and non-satellite). In 2015, the Lowcountry Promise Zone had 49,010 households. As of June 2016, approximately 27% had access to an internet connection from two or more providers. On average, 67.3% of households in other Connected participating communities have access to two or more broadband providers.

“Competition between broadband services enables consumer alternatives, helps to lower costs, improves services, and induces broadband providers to upgrade their networks. By encouraging competition in communities, communities will benefit directly through the expanded services and competitive prices,” said Tom Wheeler, former chair of the Federal Communications Commission. The map of Broadband Competition provided shows areas with and without access to multiple carriers (areas in white are those without access to two or more providers). A discussion of providers in each county is found in the County Summary section.

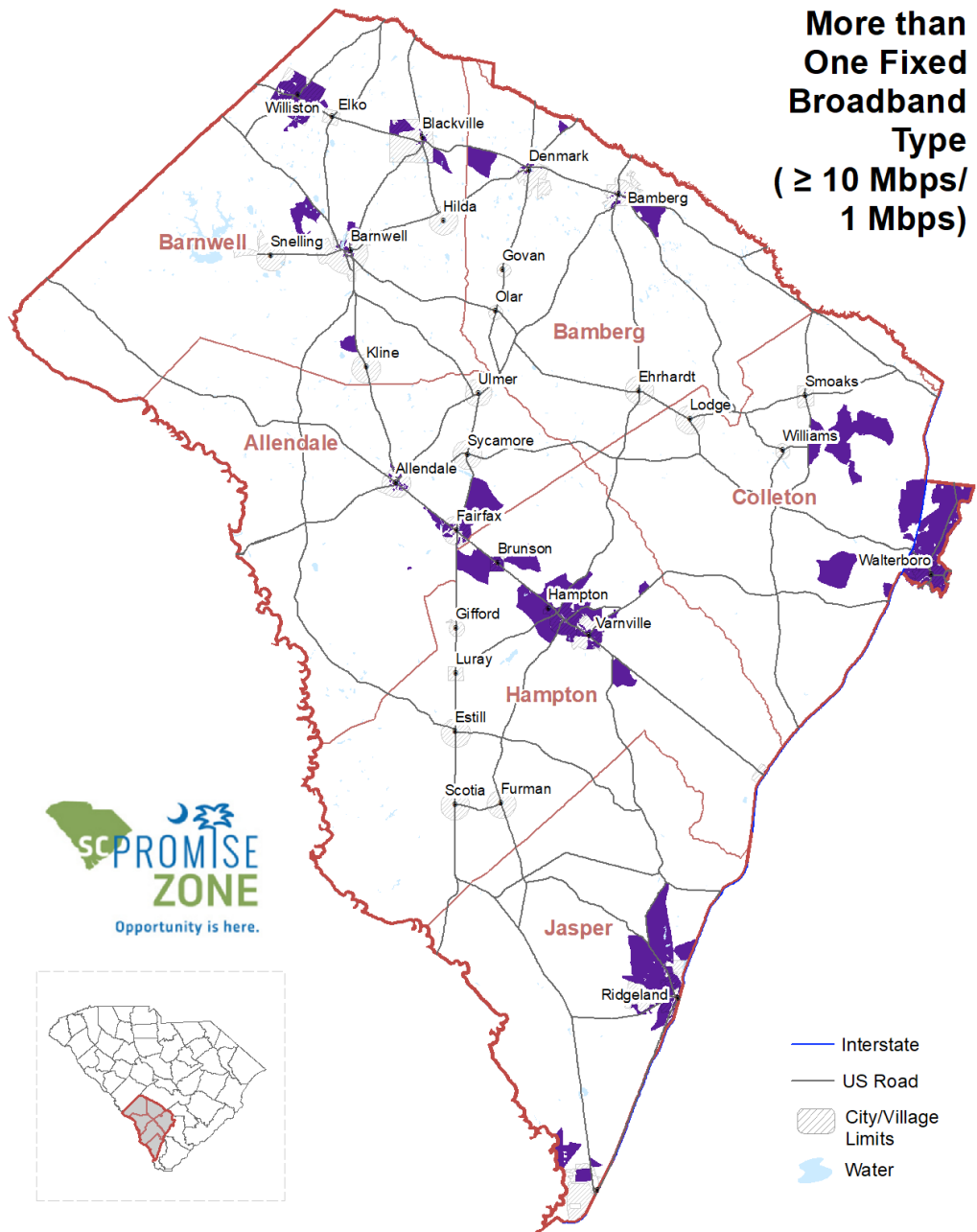


Platform Dependency

The Broadband Competition metric examines how many households have access to two or more ISPs, while the Platform Dependency metric looks at how many households have access to two or more technology types to which they can subscribe. It is important to ensure that households not only have access to multiple ISPs, but also have access to different technology types to meet their needs. Technology choice allows greater flexibility for households looking to find the right company, but also the right speed and connection reliability that meets their needs.

Broadband platform (or type) dependency is measured by analyzing the percentage of homes in the community that have access to two or more fixed broadband technology types with service of at least 10 Mbps download and 1 Mbps upload. In 2015, Lowcountry Promise Zone had 49,010 households. As of June 2016, approximately 28% had access to an internet connection from two or more technology platform types. The map of Platform Dependency provided shows areas with and without access to multiple technologies (areas in white are those without access to two or more technologies). On average, 65.2% of households in other Connected participating communities have access to two or technology platforms.

The examination of broadband technology platform dependency is similar to that of the analysis of broadband provider competition. Technology platforms included in this analysis include cable, DSL, fixed wireless, and fiber optic (all of which are fixed, terrestrial platforms). Differing technology platforms offer different features and speeds that appeal to the various needs of households. A discussion of broadband providers in the region can be found in the County Summary section.



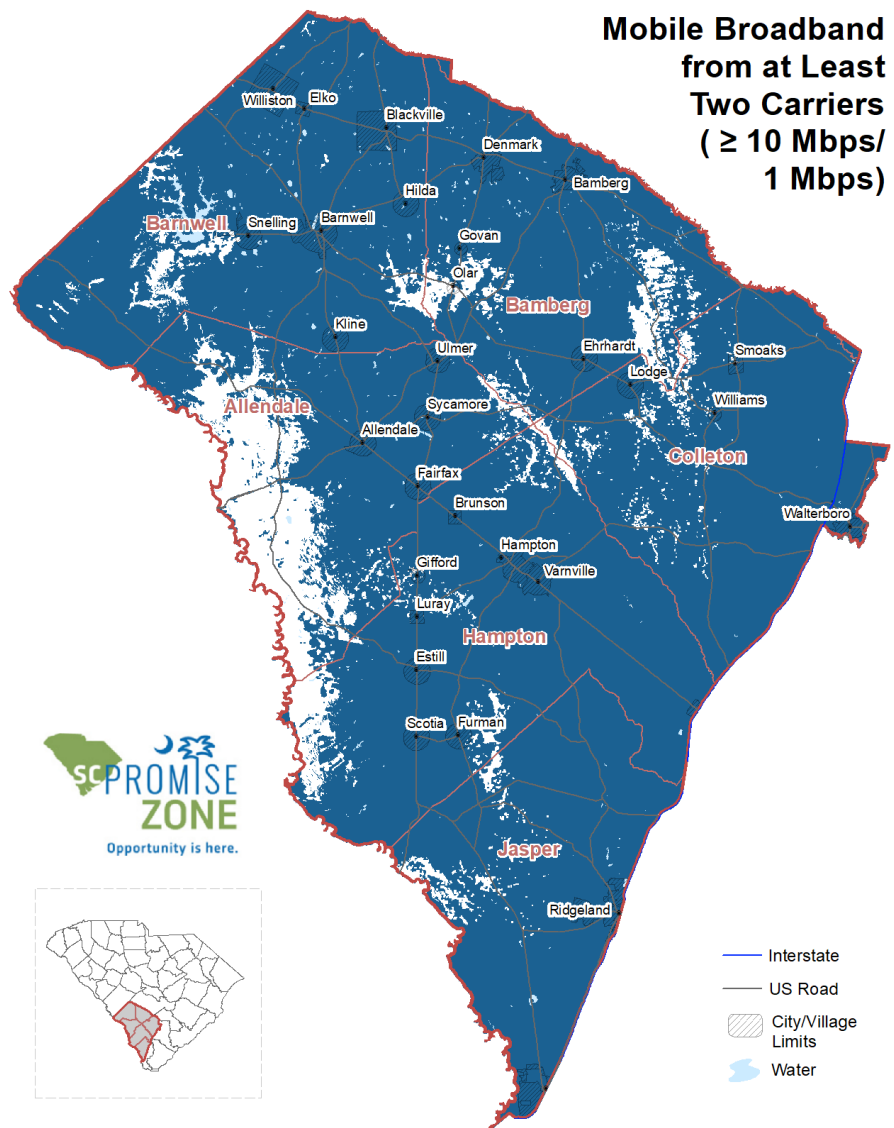
Mobile Broadband

Mobile broadband is the technology that connects mobile, or cellular, phones to the internet. Mobile technology is designed to operate seamlessly as one moves about either in a car or otherwise. Mobile broadband is not considered in any of the previous infrastructure discussions, as those metrics are concerned with fixed, stationary broadband connections for homes, while mobile is just that—mobile, flexible, and dynamic. For this reason, mobile broadband availability is measured not by percent of households with availability, but by geographic area of the community. There are several factors that can impact the quality and availability of a mobile broadband signal including terrain, elevation, vegetation, man-made structures, weather, and large bodies of water. While some of these features have been considered when mapping and analyzing mobile access, local conditions in the community can greatly impact on-the-ground results.

Mobile broadband is becoming increasingly important to local economies, government services, public safety and utility organizations, as well as local residents. Robust mobile broadband service is key to the development of infrastructural upgrades, such as smart grid and other utility efficiencies, unlocks unlimited opportunities for business development, and provides support for educational, healthcare, and government services.

Mobile broadband availability is measured by examining the percent of geographic area of the community with access to mobile broadband from at least two mobile providers at speeds of at least 10 Mbps download and 1.5 Mbps upload. The Lowcountry Promise Zone has a total land area of 3,760 square miles. As of June 2015, approximately 89% of this land area had access to two or more mobile broadband providers at the target speed. On average, 91.8% of the geographic area of other Connected participating communities has access to mobile broadband at this speed.

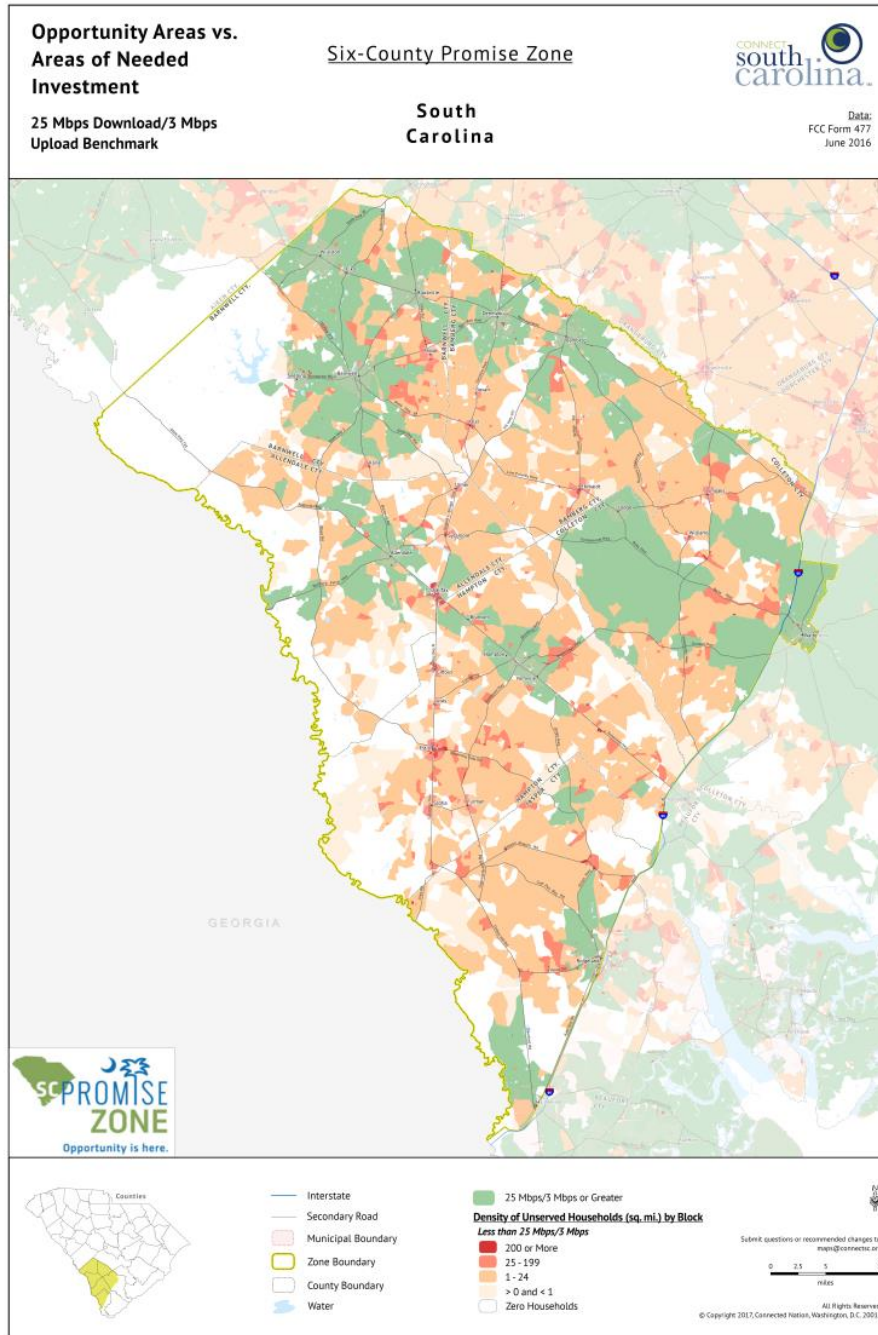
The Lowcountry Promise Zone has four mobile broadband providers that serve at least some area of the community. The map of Mobile Broadband provided shows areas with and without access to mobile broadband, (areas in white are those without access to such services). Mobile broadband providers for each county are listed in the County Summary section. Data for this metric are from June 2015, as more current information is unavailable from the Federal Communications Commission or other source.



Areas of Need

Following the analysis of the various infrastructure elements in the section above, the Areas of Needed Investment map looks to succinctly identify areas in the region that are in need of infrastructure investment and intervention.

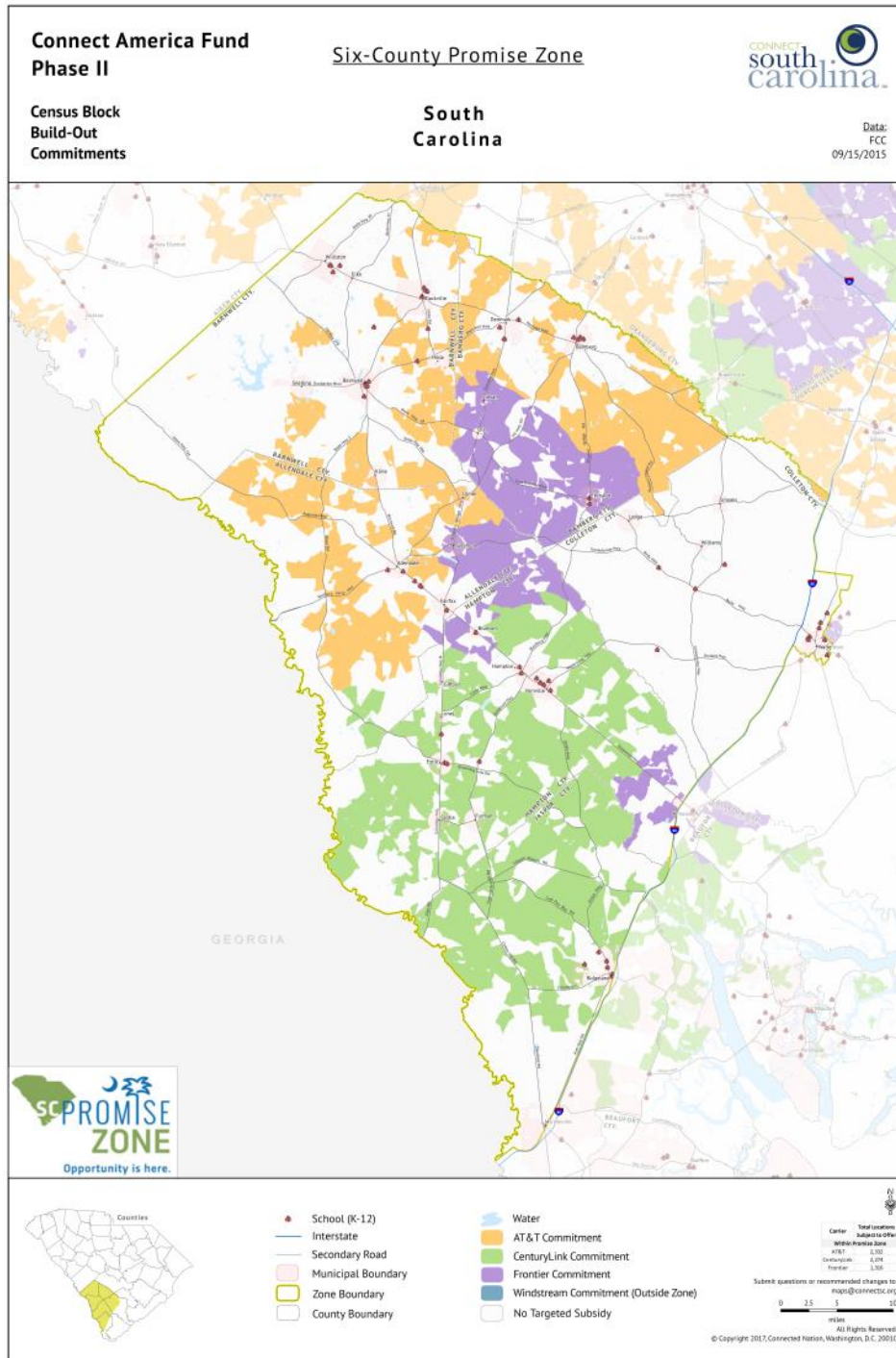
The map below highlights areas in the region that currently have access to an internet connection at 25 Mbps download and 3 Mbps upload (shaded in green). For areas that currently do not have access to broadband at this speed, the map provides the household density by Census block. The shading is darker where there are more homes in a Census block. This information can be used by internet service providers and communities to work together to find ways to quickly and efficiently expand service. Individual county maps with this same information can be found at the end of this plan.



Connect America Fund

In August of 2015, telephone companies across the country accepted more than \$9 billion in federal subsidy to expand broadband service throughout the nation. The Connect American Fund program, funded and administered by the Federal Communications Commission, aims to incent internet service providers to extend broadband service to underserved areas, primarily in rural communities.

The map below highlights Census blocks in the Promise Zone that are eligible for subsidy through Connect America Fund Phase 2. The map is color-coded by internet service provider. Participating providers have until the end of 2020 to complete the required number of connections for which they were subsidized.



County Summary

Maps of the five infrastructure metrics for each of the six individual counties are located at the end of this report. The following table, however, provides a numerical comparison for each metric between the counties.

County	Allendale	Bamberg	Barnwell	Colleton	Hampton	Jasper	Promise Zone
Households	3,346	5,921	8,344	14,774	7,530	9,095	49,010
Residential availability at 25/3 Mbps	55%	63%	77%	71%	38%	48%	61%
High speed availability at 100 Mbps	51%	63%	77%	71%	37%	0%	55%
Access to 2 or more providers at 10/1 Mbps	24%	9%	17%	53%	29%	28%	27%
Access to 2 or more technologies at 10/1 Mbps	24%	9%	17%	54.7%	29%	32%	28%
Area (Square Miles)	412	396	557	1,133	563	699	3,760
Geographic area served by 2 or more mobile providers at 10/1 Mbps	64%	91%	94%	97%	91%	98%	89%

As shown in the table, the availability of broadband varies greatly between the six counties. Barnwell and Colleton Counties are the most connected, while Hampton and Jasper Counties have the most disconnected households, proportionally. Most notably, there appear to be no homes in Jasper County with 100 Mbps internet connections available to them. Bamberg and Barnwell have the lowest percentage of homes with access to two or more providers and technology types, and Allendale County has the greater land area without access to mobile broadband service. Maps of each of these metrics for each county are located at the end of this document.

The following tables list the broadband providers in each of the counties in the region along with the technology type, website, and maximum advertised download speed offered by each provider to residential and business customers (where applicable). Some providers offer more than one type of technology and/or different residential and business services. Altogether, there are seventeen fixed broadband providers in the region and four mobile broadband providers. Some providers offer different speeds in different counties, and these differences can be seen in the table. Regarding competition, often times, DSL and cable service areas do not overlap others of the same time, but do overlap one another. Fixed wireless service is often found in more rural areas where the deployment of wired options is cost prohibitive, but does overlap wired coverage in some areas.

Allendale County Broadband Providers

Provider	Technology Platform	Website	Max. Residential Download Speed (Mbps)	Max. Business Download Speed (Mbps)
Atlantic Broadband Finance, LLC	Cable	https://atlanticbb.com	120	120
Comcast	Cable	https://www.xfinity.com	150	N/A
AT&T South Carolina	Copper/DSL	https://www.att.com	18	N/A
CenturyLink	Copper/DSL	http://www.centurylink.com	30	N/A
Frontier Communications Corporation	Copper/DSL	https://frontier.com	24	N/A
ATG Communications	Fixed Wireless	http://www.catg.com	N/A	100
AT&T Mobility	Mobile Wireless	https://www.att.com/wireless	10	N/A
T-Mobile	Mobile Wireless	https://www.t-mobile.com	10	N/A
Verizon Wireless	Mobile Wireless	https://www.verizonwireless.com	12	N/A

Bamberg County Broadband Providers

Provider	Technology Platform	Website	Max. Residential Download Speed (Mbps)	Max. Business Download Speed (Mbps)
Atlantic Broadband Finance, LLC	Cable	https://atlanticbb.com	120	120
AT&T South Carolina	Copper/DSL	https://www.att.com	75	N/A
CenturyLink	Copper/DSL	http://www.centurylink.com	20	N/A
EarthLink Business	Copper/DSL	https://www.earthlink.com	N/A	3
Frontier Communications Corporation	Copper/DSL	https://frontier.com	24	N/A
MCI	Copper/DSL	http://business.mci.com	N/A	6
PAETEC Business Services	Copper/DSL	https://www.windstream.com	N/A	10
Palmetto Rural Telephone Cooperative, Inc.	Copper/DSL	https://prtc.coop	45	45
TDS Telecom	Copper/DSL	https://tdstelecom.com	50	N/A
TDS Telecom	Copper/DSL	https://tdstelecom.com	5	5
Palmetto Rural Telephone Cooperative, Inc.	Fiber	https://prtc.coop	500	500
ATG Communications	Fixed Wireless	http://www.catg.com	N/A	100
NTInet	Fixed Wireless	http://www.ntinet.com	35	N/A
AT&T Mobility	Mobile Wireless	https://www.att.com/wireless	10	N/A
T-Mobile	Mobile Wireless	https://www.t-mobile.com	10	N/A
Verizon Wireless	Mobile Wireless	https://www.verizonwireless.com	12	N/A

Barnwell County Broadband Providers

Provider	Technology Platform	Website	Max. Residential Download Speed (Mbps)	Max. Business Download Speed (Mbps)
Atlantic Broadband Finance, LLC	Cable	https://atlanticbb.com	120	120
AT&T South Carolina	Copper/DSL	https://www.att.com	18	N/A
Frontier Communications Corporation	Copper/DSL	https://frontier.com	6	N/A
TDS Telecom	Copper/DSL	https://tdstelecom.com	50	N/A
TDS Telecom	Copper/DSL	https://tdstelecom.com	50	50
ATG Communications	Fixed Wireless	http://www.catg.com	N/A	100
NTInet	Fixed Wireless	http://www.ntinet.com	10	N/A
AT&T Mobility	Mobile Wireless	https://www.att.com/wireless	10	N/A
Sprint	Mobile Wireless	https://www.sprint.com	30	N/A
T-Mobile	Mobile Wireless	https://www.t-mobile.com	10	N/A
Verizon Wireless	Mobile Wireless	https://www.verizonwireless.com	12	N/A

Colleton County Broadband Providers

Provider	Technology Platform	Website	Max. Residential Download Speed (Mbps)	Max. Business Download Speed (Mbps)
Comcast	Cable	https://www.xfinity.com	150	N/A
WorxOne	Cable	http://worx1.com	N/A	16
CenturyLink	Copper/DSL	http://www.centurylink.com	25	N/A
EarthLink Business	Copper/DSL	https://www.earthlink.com	N/A	1.5
Frontier Communications Corporation	Copper/DSL	https://frontier.com	24	N/A
Level 3 Communications, LLC	Copper/DSL	http://www.level3.com	N/A	45
MCI	Copper/DSL	http://business.mci.com	N/A	1.5
Palmetto Rural Telephone Cooperative, Inc.	Copper/DSL	https://prtc.coop	46	46
Windstream NuVox, Inc.	Copper/DSL	https://www.windstream.com	N/A	1.5
Palmetto Rural Telephone Cooperative, Inc.	Fiber	https://prtc.coop	500	500
ATG Communications	Fixed Wireless	http://www.catg.com	N/A	100
AT&T Mobility	Mobile Wireless	https://www.att.com/wireless	10	N/A
Sprint	Mobile Wireless	https://www.sprint.com	30	N/A
T-Mobile	Mobile Wireless	https://www.t-mobile.com	10	N/A
Verizon Wireless	Mobile Wireless	https://www.verizonwireless.com	12	N/A

Hampton County Broadband Providers

Provider	Technology Platform	Website	Max. Residential Download Speed (Mbps)	Max. Business Download Speed (Mbps)
Atlantic Broadband Finance, LLC	Cable	https://atlanticbb.com	120	N/A
Comcast	Cable	https://www.xfinity.com	150	N/A
CenturyLink	Copper/DSL	http://www.centurylink.com	50	N/A
EarthLink Business	Copper/DSL	https://www.earthlink.com	N/A	1.5
Frontier Communications Corporation	Copper/DSL	https://frontier.com	24	N/A
MCI	Copper/DSL	http://business.mci.com	N/A	1.5
Palmetto Rural Telephone Cooperative, Inc.	Copper/DSL	https://prtc.coop	45	45
Palmetto Rural Telephone Cooperative, Inc.	Fiber	https://prtc.coop	500	200
ATG Communications	Fixed Wireless	http://www.catg.com	N/A	100
AT&T Mobility	Mobile Wireless	https://www.att.com/wireless	10	N/A
Sprint	Mobile Wireless	https://www.sprint.com	30	N/A
T-Mobile	Mobile Wireless	https://www.t-mobile.com	10	N/A
Verizon Wireless	Mobile Wireless	https://www.verizonwireless.com	12	N/A

Jasper County Broadband Providers

Provider	Technology Platform	Website	Max. Residential Download Speed (Mbps)	Max. Business Download Speed (Mbps)
Bluffton Tel. Co. Inc.	Cable	http://www.hargray.com	30	N/A
Hargray Tel. Co. Inc.	Cable	http://www.hargray.com	30	N/A
CenturyLink	Copper/DSL	http://www.centurylink.com	50	N/A
EarthLink Business	Copper/DSL	https://www.earthlink.com	N/A	1.5
Hargray Tel. Co. Inc.	Copper/DSL	http://www.hargray.com	10	N/A
MCI	Copper/DSL	http://business.mci.com	N/A	1.5
Hargray Tel. Co. Inc.	Fiber	http://www.hargray.com	50	N/A
NTInet	Fixed Wireless	http://www.ntinet.com	3	N/A
AT&T Mobility	Mobile Wireless	https://www.att.com/wireless	10	N/A
Sprint	Mobile Wireless	https://www.sprint.com	30	N/A
T-Mobile	Mobile Wireless	https://www.t-mobile.com	10	N/A
Verizon Wireless	Mobile Wireless	https://www.verizonwireless.com	12	N/A

Households

While the Community-Wide Infrastructure section examines broadband access available to residents, businesses, and institutions throughout the community, the Households section examines the ways in which a community's residents access, adopt, and use broadband and related technology in their everyday lives.

While infrastructure information is available and consistent from one community to the next, the detailed assessment of household access, adoption, and use is not. In order to gather this information, the Connected Residential Technology Survey was distributed throughout the region. The survey is designed to gather detailed information on the access, adoption, and use of broadband and technology among residents of the community. The survey, distributed between February and July of 2017, gathered 450 responses. This return rate provides for an analysis into local issues and barriers preventing residents from leveraging technology to improve quality of life.

The Households section of the Connected assessment examines several areas in order to form a comprehensive view of the technology access, adoption, and use among residents. While each metric has a single identifying variable for scoring, the following pages provide deep insight into each metric to help identify underlying issues that can be remedied through strategic project implementation. The following areas are measured and reported: fixed, home broadband adoption, affordability, digital literacy, digital interaction, frequency of internet use, and frequency of telework. The community's Household metrics summary is on the following page.

Highlights

28,474

Households without a fixed broadband connection

63%

Households with internet access dissatisfied with current service

- ✓ Households with school-age children
- ✓ Adults without a college degree
- ✓ Households Earning Less than \$50k

Groups struggling with digital equity in the community

4.9

Average number of internet-enabled devices in the home

70%

Residents who digitally interact with local businesses at least weekly

31%

Residents who regularly telework

2.6%

Average annual household income spent on home internet service

Household Access

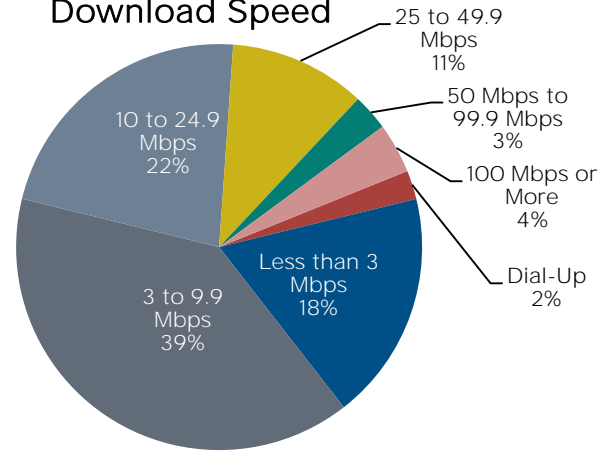
Speed and Platform

The metrics contained in the Community-Wide Infrastructure section examine the broad availability of broadband in the community across several aspects. However, just because broadband is available at certain speeds, does not mean that households and residents are adopting or subscribing to internet service at the maximum speed available. The chart shows the distribution of connection speeds as reported by households in the community.

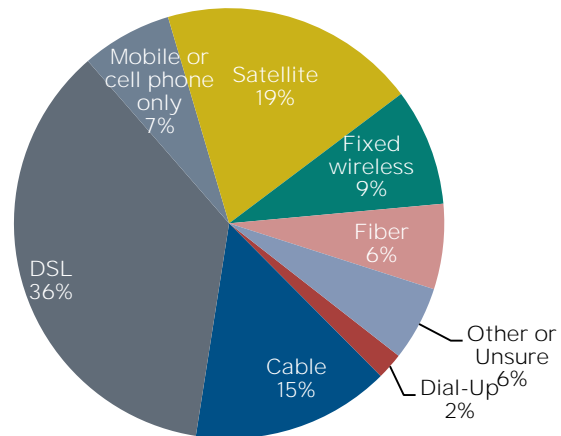
The average download speed among surveyed residents who are aware of their connection speed is 29.5 Mbps. Many community residents subscribe to slower speeds, however, as shown in the chart. Additionally, survey results shows that only 4% of residents report subscribing to 100 Mbps internet service or faster; a speed available in only some areas of the community. Across all Connected participating communities, the average reported connection speed is 41.1 Mbps.

Most respondents report connecting to the internet via a DSL network. Some residents (19%), likely those that live in rural areas, report using a satellite connection for their internet service, and 7% of residents rely only on a mobile broadband connection for their home internet service.

Household Connections by Download Speed



Household Connections by Platform



Satisfaction

Competition provides residents and businesses with choices for service, allowing them the ability to switch providers if their current service does not meet their needs. According to the Residential Survey, 63% of households with a broadband connection state that their current internet service does not meet their needs. Among residents who state that their connection does not meet their needs, 75% state that the speed is too slow, 53% report the connection is unreliable, 63% report the cost is too high, and 28% state that poor customer service is the reason for dissatisfaction. By comparison, 46.9% of residents across all Connected participating communities indicate their current service does not meet their needs.

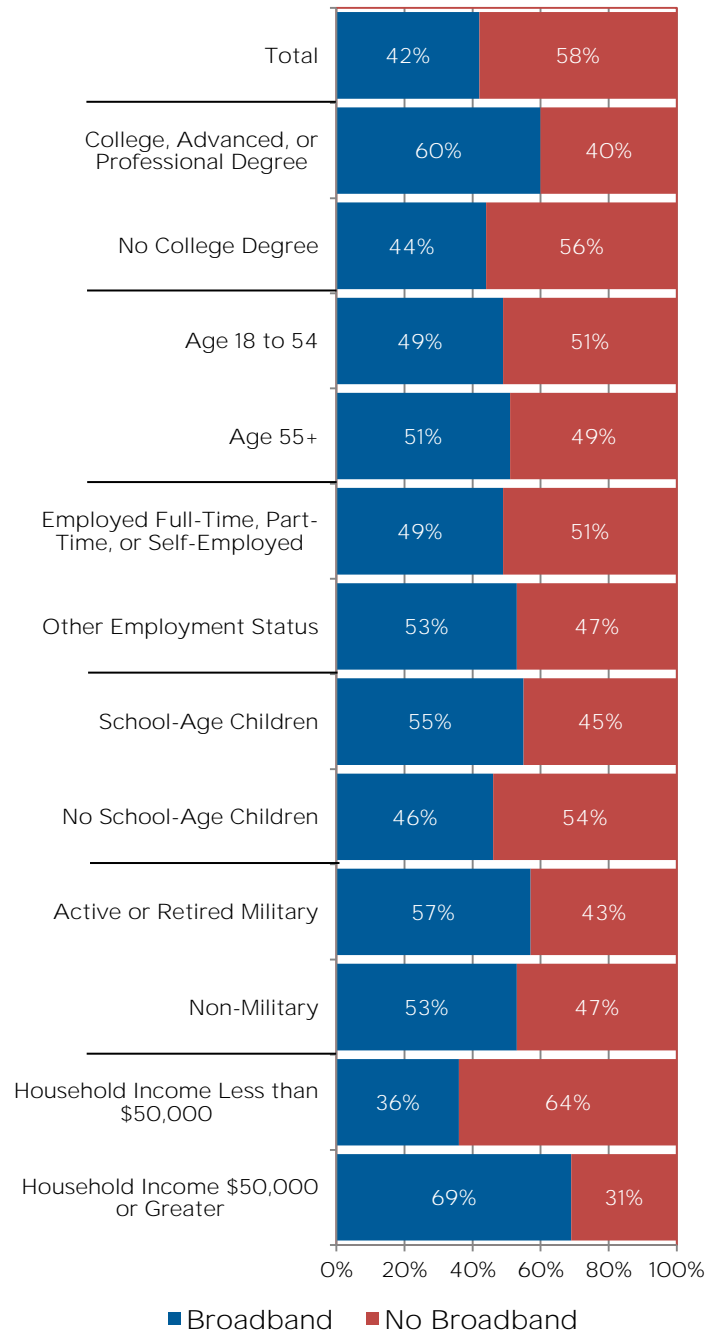
Additionally, many households are interested in having additional internet service choices at their location. Nearly all (92%) of responding households indicate that they are interested in having improved or additional internet service options. On average, 91.5% of households across all Connected participating communities indicate they are interested in additional choices for internet service.

Household Adoption

The adoption of home internet service is the single most critical step for families to experience the benefits of being connected to the digital economy. Adoption represents the choice families make to be connected or not. There are several factors that influence broadband adoption. Sometimes these factors are internal and influenced by behavior patterns and knowledge (e.g., digital literacy skill, awareness of benefits, etc.); other times these factors are external and the adopter has little or no control over them (e.g., cost and infrastructure availability). Adoption often follows broadband availability, but not always. With more and more services being conducted in an online environment and an increased desire to digitally communicate, those without a home broadband connection most often seek connections elsewhere, breaking the *access-first-adoption-second* pattern.

Home Broadband Adoption looks at the percent of the community's population that subscribes to (adopts) internet service. In 2015, the Lowcountry Promise Zone had 49,010 households. According to the Residential

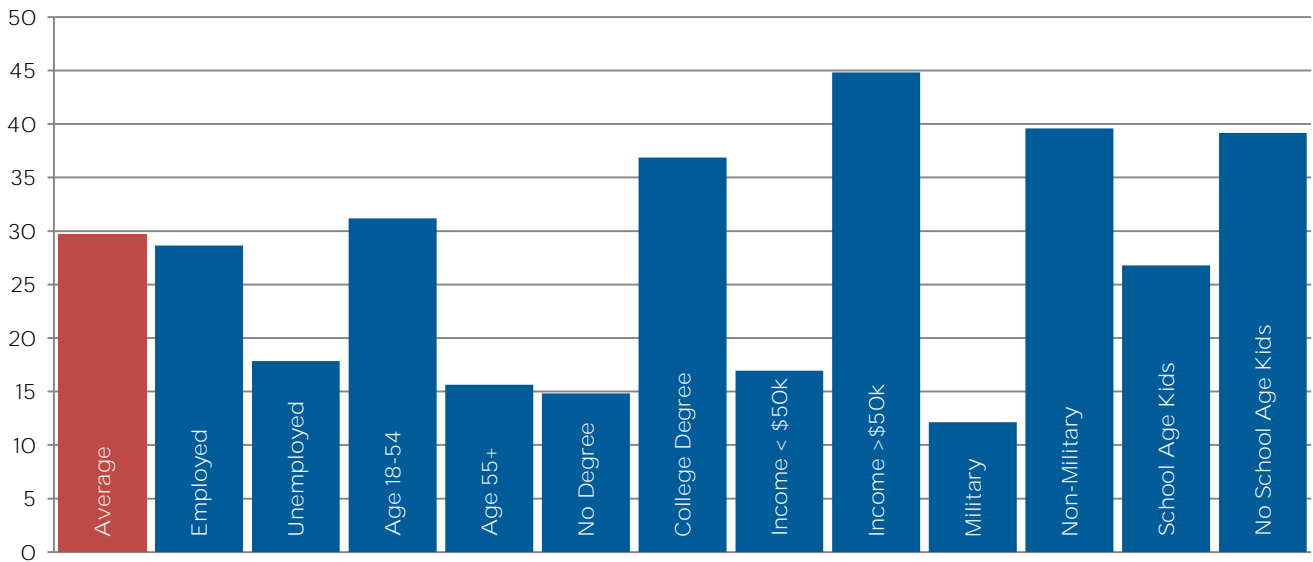
Fixed Broadband Adoption by Demographic



Technology Survey, 41.9% of households in the region subscribed to internet service with a fixed broadband connection at home, (households indicating internet connections via dial-up, satellite, or mobile-wireless only are not included in this calculation). On average, 67.3% of households across all Connected participating communities subscribe to a fixed broadband connection. While this statistic provides a macro-level look at adoption in the community, additional survey questions allow for a deeper analysis of adoption in order to find the demographic or socioeconomic groups struggling with digital inclusion.

For comparison, the United States American Community Survey estimates that 74.4% of households across the country have a fixed internet connection. Across South Carolina, this figure is lower at 61.8% of households. Adoption in the Lowcountry Promise Zone is lower than the national and state average. This is likely due to a number of issues (including a lack of infrastructure access) that will be analyzed in the following pages.

Average Reported Connection Speed by Demographic



Digital Divide

The chart provides insight into Home Broadband Adoption for various demographic groups in the community. From this data, the following observations can be made regarding those on the wrong side of the Digital Divide in the Lowcountry Promise Zone:

- Households earning less than \$50,000, annually, are significantly less likely to adopt an internet connection at home compared to households earning more. This is consistent with national and state trends;
- Adults without a college degree; and
- Households without school age children.

Once the broadband adoption rates for various socioeconomic and demographic groups have been identified, the next important step is to examine the barriers to broadband adoption among them. This analysis examines the groups of current non-adopters mentioned above and the barriers they face. The table shows the percent of households in each group that indicated their primary barrier to having a home internet connection.

Barriers to Broadband Adoption Among Various Groups						
Barrier to Adoption	Not Available	Too Expensive	No Computer	Access the Internet Elsewhere	Dissatisfied with Current Options	Other
All Households	27%	46%	8%	13%	1%	5%
Households earning less than \$50,000	18%	61%	8%	8%	3%	2%
Adults without a college degree	25%	53%	5%	13%	3%	3%
Households without school age children	24%	55%	5%	13%	2%	1%
All Households in Other Connected Participating Communities	39%	34%	6%	6%	5%	10%

Across the Lowcountry Promise Zone, the primary barrier preventing home broadband adoption is affordability. Among all households without a home

internet connection, 46% cite the cost of service as the primary barrier. This is also reflected among the groups featured in the table. Unsurprisingly, households earning less than \$50,000, annually, cite this barrier most often.

A lack of infrastructure availability is the second most common barrier to adoption. This is unsurprising given the rural nature of the region and the gaps in availability found in the Community-Wide Infrastructure section. By citing this barrier, residents are likely stating that if infrastructure were available, they would subscribe.

Additionally, some households do not own a computer. The lack of a web-enabled device is still a barrier for some.

Finally, many are dissatisfied with the current internet service options available to them. Among all households with an internet connection, 13% indicate they do not like the current options available.

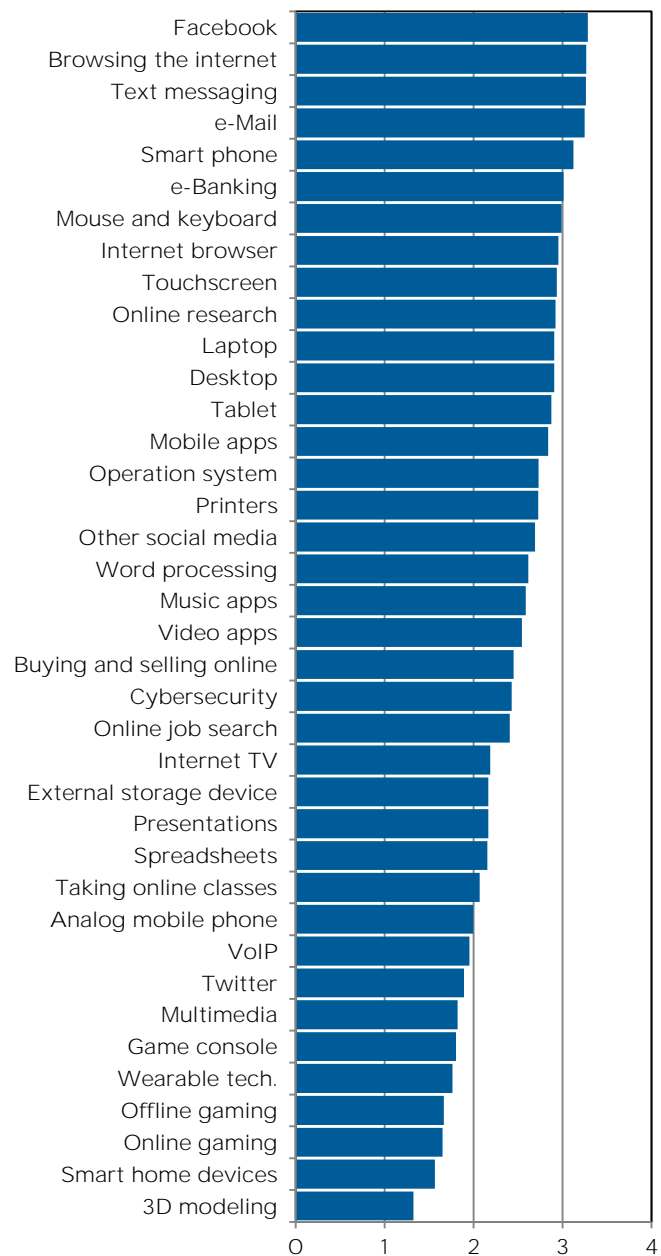
Affordability

The Affordability metric examines one of the primary barriers to broadband and technology adoption. The cost of having an internet connection can stem from several sources, including the monthly cost of service, installation and equipment costs in order to obtain service, and the cost of an internet-enabled device (e.g., computer, tablet, smart phone, etc.). These costs can be a burden for families with lower incomes and thus the choice to connect is controlled by the external cost of service for these households. This disconnection can leave families on the wrong side of the Digital Divide.

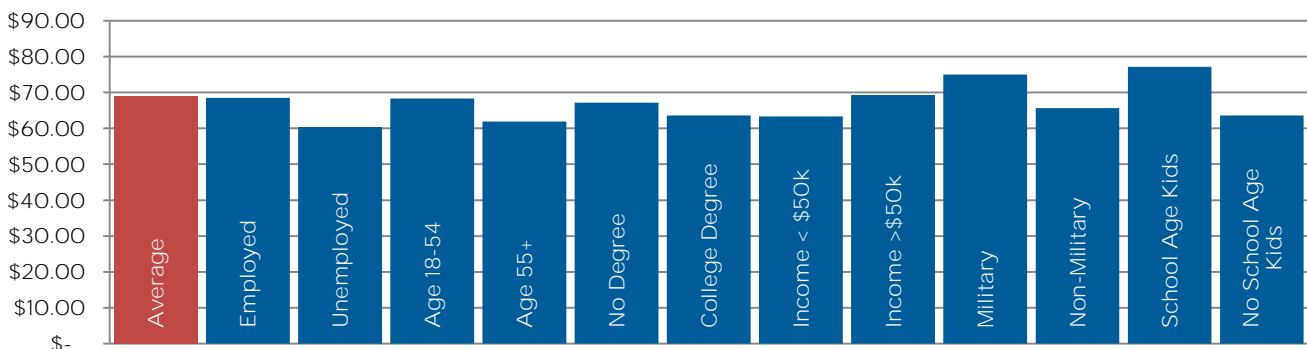
The affordability metric compares the average annual cost of internet service in the community as reported through the Residential Technology Survey and the median annual income of the community. In the Lowcountry Promise Zone, the average monthly cost of internet service reported by residents is \$68.97. Multiplying this figure by twelve, households in the community pay, on average, \$827.64 per year for internet service. The US Census reports that in 2015, the average median household income among the counties in the region was \$32,055. Therefore, on average, 2.58% of household income in the region is dedicated to internet service.

By comparison, the average monthly cost of internet service in the United States is \$67.12, (according to the FCC). With a median household income across

Average Reported Digital Literacy by Application



Average Monthly Connection Cost by Demographic



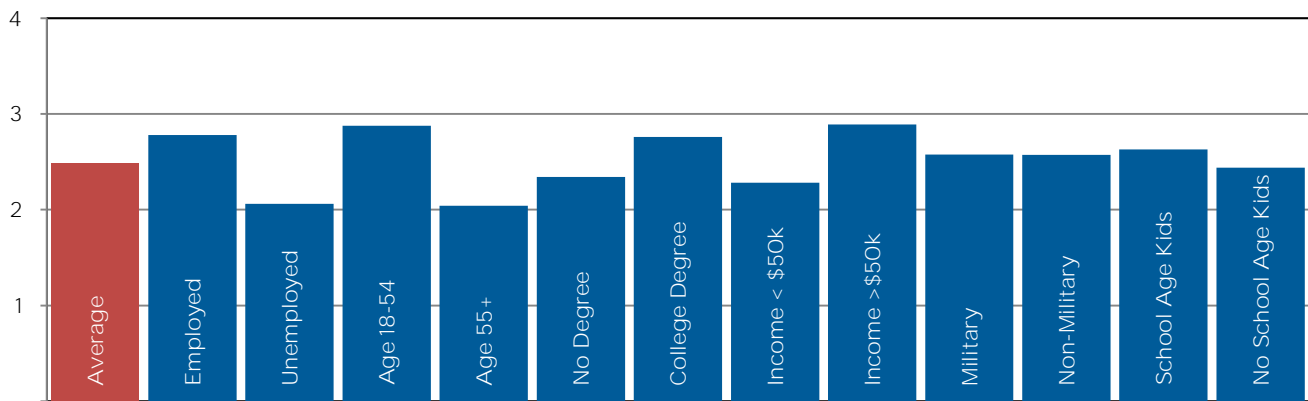
the country of \$53,889, Americans spend approximately 1.49% of their annual income on internet service. Across South Carolina, the average price is \$55.77 per month. With a median household income across the state of \$45,483, South Carolinians spend approximately 1.47% of their income on broadband. Across all Connected participating communities, households report paying \$58.75 per month, on average, for internet service. Compared to the nation and state, the percent of household income dedicated to internet connectivity is quite high. This mirrors the citation of cost as the primary barrier to a home internet connection for current non-adopting households discussed in the previous section.

Digital Literacy

Digital literacy is the “ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills.” This definition of digital literacy from the American Library Association succinctly describes the goals of measuring and improving the digital literacy in a community. Technology skills are critical for competing in the global, digital economy.

The digital literacy metric examines three areas of technology skills: those associated with hardware, software, and online activity and communications. The Digital Literacy metric is examined in the Household Adoption section, (instead of the Household Use section) because, for some, a lack of digital skills can be a barrier to adopting a home broadband connection.

Average Reported Digital Literacy by Demographic



Respondents to the Residential Technology Survey were asked to assess their own technology skills among several devices, applications, and activities within each of the three digital literacy areas on the following scale:

1 = No Experience ("I need to learn.")

2 = Basic Skill ("I know a little about this technology.")

3 = Intermediate Skill ("I'm very comfortable using this technology.")

4 = Advanced Skill ("I could teach this technology to someone else.")

N/I = Not Interested ("I'm not interested in this technology.")

Among all residents in the community, the average score for Hardware Digital Literacy was 2.45, the average score for Software was 2.25 and for Online Activity, 2.62. Across all households participating in the Connected program, the average digital literacy scores are 2.76 for Hardware, 2.59 for Software, and 2.74 for Online Activity.

The chart explores the average overall digital literacy skill for each of the hardware, software, and online activities.

Below are a few notes of interest regarding digital literacy in the community:

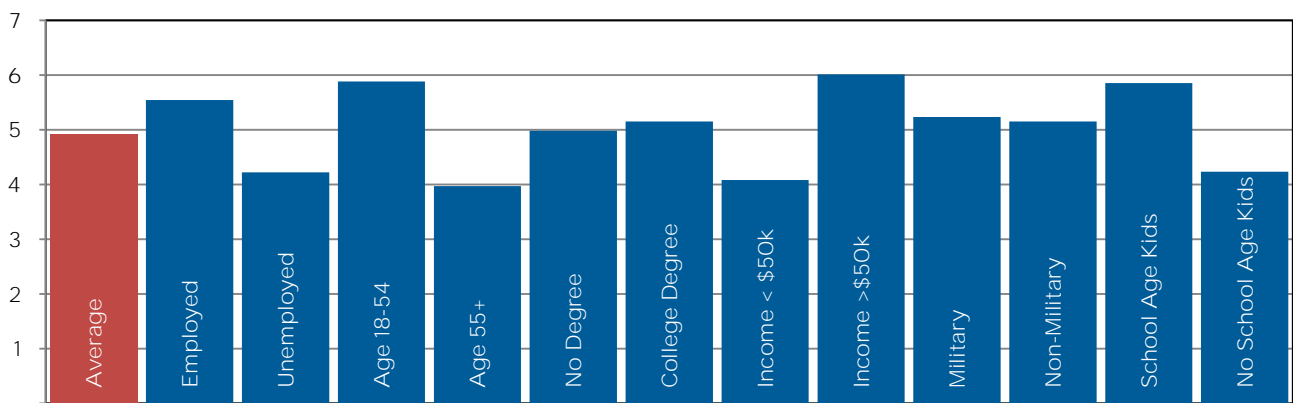
- More than 37% of residents stated that they "know a little about" or "need to learn" about staying safe online. Knowledge of cybersecurity drops significantly with age.
- Overall, residents are comfortable with the three basic types of computers (i.e., desktop, laptop, and tablet), with an average skill rating of 2.9 across all three devices.
- Knowledge of both smart mobile phones and analog mobile phones tends to decline with age.
- Residents are significantly more comfortable with Facebook than they are with Twitter or other social media platforms, (avg. rating of 3.3, 1.9, and 2.7, respectively).
- Even though a large portion of residents are not proficient with cybersecurity, they are proficient with conducting online banking and bill payment, an activity typically fraught with opportunities for identity exposure or fraud. More than three-quarters (77%) of residents say they are comfortable with e-banking or could teach it to others.

Devices in the Home

In the early days of the internet, a desktop computer was the primary, and virtually the only, way of connecting to the internet. However, with the rise of Wi-Fi, mobile broadband, Bluetooth, and many other revolutionary technologies, residents have several ways in which they can access the internet. However, as seen in the barriers to broadband adoption chart, lack of an internet-enabled device is sometimes cited as a barrier to home broadband adoption.

The Residential Survey asks residents to report the total number of internet-enabled devices they have in the home. The average number of devices per household in the Lowcountry Promise Zone is 4.9. Across all households in other communities participating in the Connected program, the average number of devices is 6.8.

Average Devices in the Home by Demographic



Households earning less than \$50,000 annually, typically have fewer internet connected devices than those earning more. Adults over age 55 also report a lower number of devices in the home. Additionally, households with school-aged children tend to have more devices than households without K-12 aged children.

Household Use

Households with access to the internet that go on to adopt a high-speed connection, are then ready to use and leverage that connection to improve their quality of life in any way they see fit. From teleworking or operating a small business from home, to accessing e-government services and accessing educational opportunities, there are a myriad of ways in which residents can use their internet connections to enrich their lives. The following examines a few of those ways to provide insight into how the Lowcountry Promise Zone residents are leveraging their connections.

Frequency of Internet Use

The internet has moved from an occasional tool to one of the principal ways we communicate, perform research, work, or participate in leisure activities. Measuring the frequency of internet use among community residents allows a glimpse into the importance of the internet in their lives. More importantly, this analysis can identify the common traits among those who use the internet less frequently and develop solutions for including them in the digital ecosystem.

The Frequency of Internet Use metric is calculated by finding the average frequency with which survey respondents state they access the internet. For the Lowcountry Promise Zone, the majority of residents (95%) access the internet either constantly throughout the day or at least several times each day. Across all communities participating in the Connected program, 94.3% of residents indicate they access the internet at least several times every day.

While it appears that the community as a whole uses the internet on a daily basis, further examination of certain groups within the community reveals disparities.

There is significant difference in the frequency with which residents with and without a home broadband connection access the internet. While 96% of those with a home internet connection say they access the internet several times each day, only 89% of households without a home connection do the same. Those without a home internet connection that state they access the internet “constantly” likely do so from a mobile device or from work or school.

While frequency of internet use is a personal choice, for those completely without or with restricted access to the internet, those who cannot afford a connection, those without the skills to use the internet, and those with limited awareness of the opportunities afforded by the internet, their opportunity to make such a personal choice is severely limited.

Digital Interaction

The Digital Interaction metric measures the frequency with which residents state they digitally interact with various sectors of the community. Respondents of the Residential Technology Survey were asked to indicate the regularity with which they access online information from or interact electronically with the following sectors/entities: Agriculture, Community Organizations, Healthcare, Higher Education, K-12 Education, Libraries, Local and Non-Local Businesses, Local, County, State, and Federal Government, Public Safety, and Tourism. While the Frequency of Internet Use metric looks at the overall use of the internet by residents, this metric explores how residents are (or are not) digitally interacting with various community institutions. This information is helpful for guiding and developing the digital strategy and online presence of these entities in the community.

The chart provides a summary of the frequency with which residents digitally interact with the various sectors of their community.

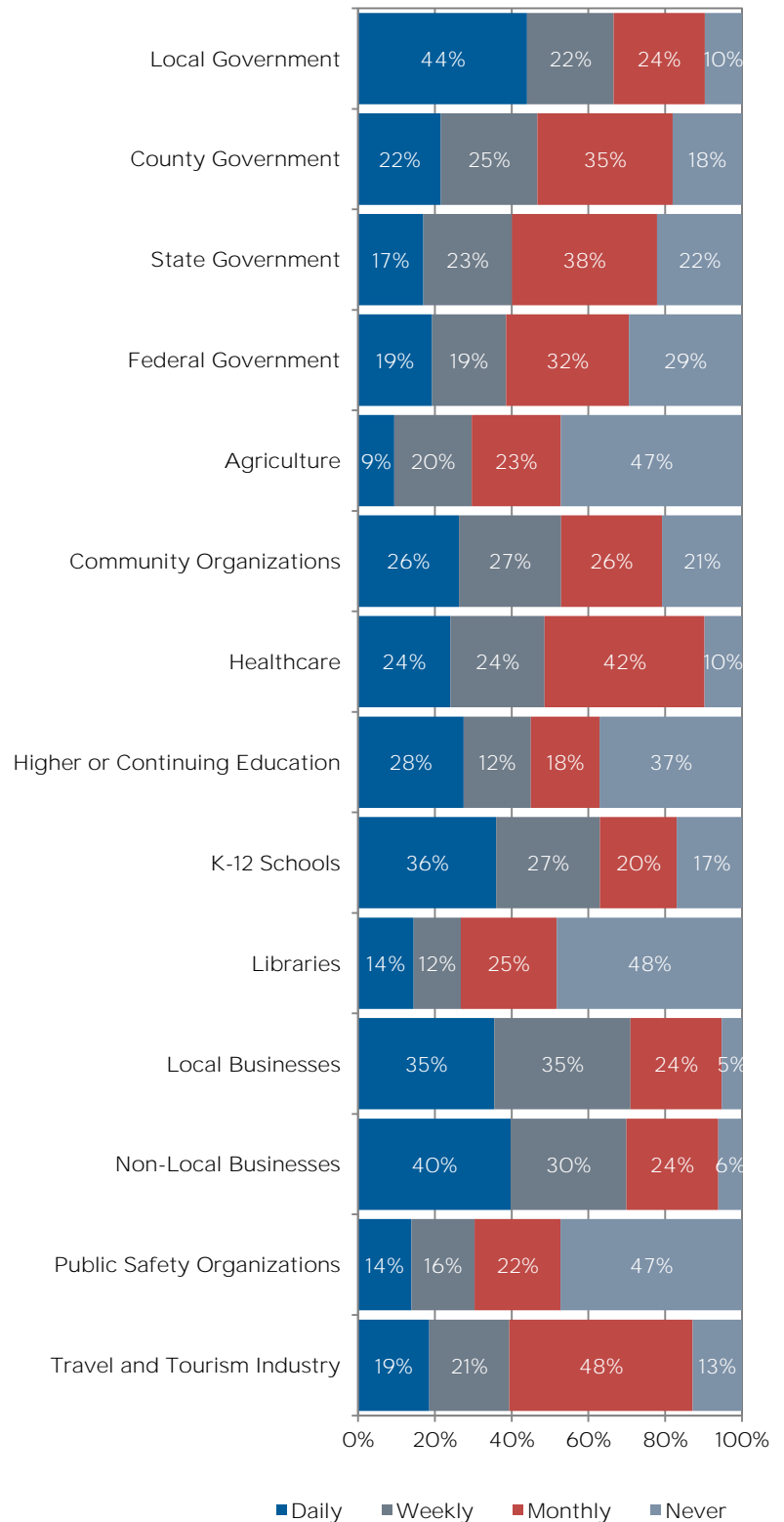
Local government enjoys more frequent digital interaction than other levels of government with 44% of residents reporting they interact with local government online at least weekly. Local and non-local businesses have approximately the same level of digital interaction from residents on a weekly basis. The K-12 schools distribution includes only households with K-12 aged children. More than half (63%) of these households digitally interact with K-12 schools at least weekly, and 36% do so daily. The agriculture, library, and public safety sectors have the lowest frequency of digital interaction with approximately 47% of residents reporting that they never interact with these sectors.

Telework

Teleworking, or telecommuting, refers to working outside of the conventional workplace and communicating with it by way of telecommunications or computer-based technology. Further, telework is a form of organizing and/or performing work, where work, which could also be performed at the employer's premises, is carried out away from those premises. Teleworking is a spatially flexible work style that typically also involves greater flexibility in one's daily routine. Teleworkers typically have higher incomes and higher rates of advanced degree attainment. While traditional teleworkers are often thought of as those in management occupations or professional service industries, recently, technology has enabled new opportunities for teleworkers across the occupational and industry sector spectrum.

Teleworkers often do not register on typical measures of economic or workforce activity.

Frequency of Digital Interaction Between Residents and Community Sectors



Traditional economic development strategies typically involve the attraction or retention of employers. While this is a critical part of growing a local economy, telework represents an opportunity to attract or retain employees even though their employer may not be located within the community itself, as long as those employees have access to advanced broadband infrastructure. Across all communities participating in the Connected program, approximately 30.9% of residents indicate that they telework with some frequency.

The Frequency of Telework metric examines the regularity with which residents in the community telework or telecommute. Respondents to the Residential Technology Survey were asked, “Do you currently telework or telecommute in any capacity for your job?”

According to survey results, 22% of residents in the community are teleworkers, a rate lower than the national average.

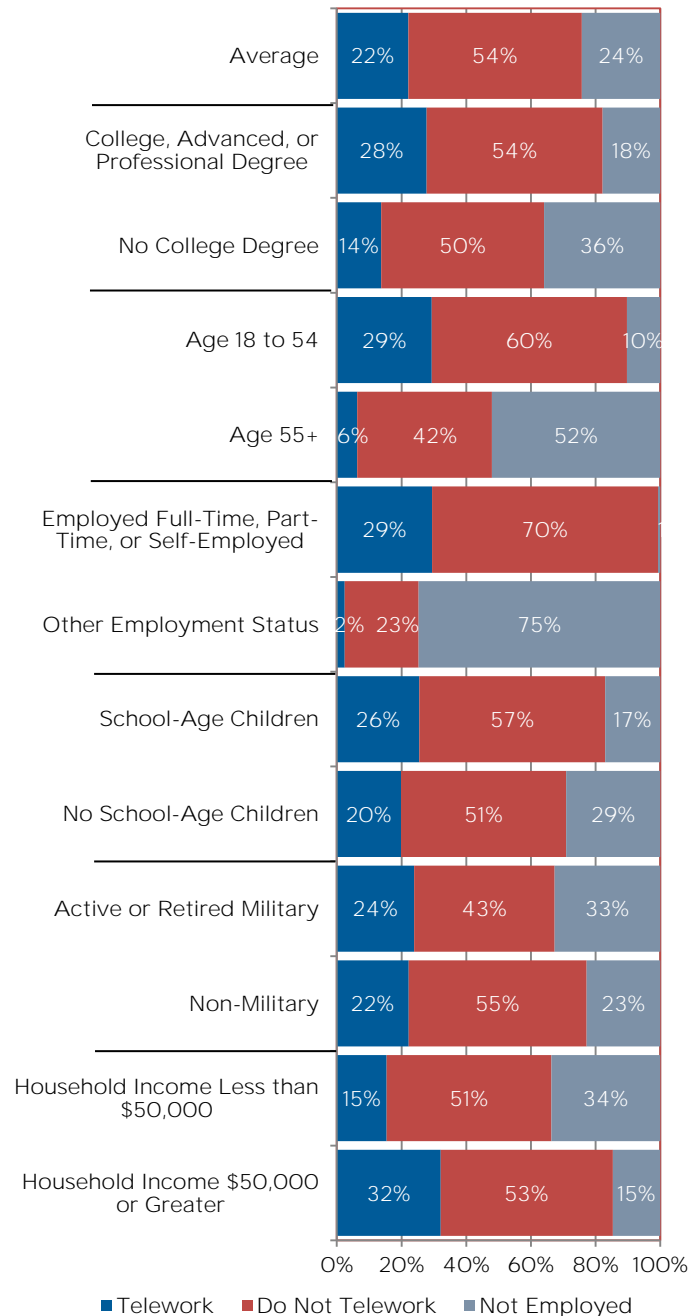
- Nearly one-third (29%) of adults aged 18 to 54 report that they telework with some frequency.
- Frequency of telework also follows a pattern of household income. Only 15% of households earning less than \$50,000 annually report that they telework, compared to 32% of those with household incomes greater than \$50,000.
- More than half (60%) of teleworkers report telework at least several days per week.
- Nearly three-quarters (70%) of current teleworkers would telework more frequently if allowed by their employer.

Shared or co-working office spaces can be an attractive use in city centers, small towns, and other similar environments. Oftentimes, teleworkers need to get out of their home office and socialize with other telecommuters or access office equipment too large or expensive for a home office (e.g., printers, plotters, mailing/postage equipment, etc.). A shared office space facility can provide these functions while bringing workers into a commercial setting to patronize restaurants or other service establishments.

The vast majority (77%) of teleworkers work from a home office, while another 19% work from a restaurant or coffee shop, 14% from a shared or co-working office space, and 12% from the library, (respondents could choose more than one option). More than one-third (37%) of teleworkers who do not currently use a shared office space say they would if it were available (47% said they would not, and 9% were unsure).

Additionally, there is a desire among non-teleworkers to take advantage of a telecommuting workstyle if allowed by their employer. More than half (58%) of non-teleworkers said they would telework if enabled as part of their job.

Teleworking by Demographic



Challenges and Recommendations

While the Lowcountry Promise Zone exhibits marked progress in broadband and technology advancement, this technology plan offers recommended actions that will help assist and enable the community to fill the technology gaps identified via the Connected assessment.

The single largest barrier preventing communities from working to solve issues of technology access, adoption, and use is leadership and focus. While many organizations and leaders in the community are doing great work in their areas of expertise and are passionate about creating a more digitally inclusive community, the advancement of broadband and technology typically does not fall under the purview of any one organization. For example, technology is critical for economic development, but it is only a small part of the important work of economic developers. Similarly, technology training is an important offering of local libraries, but is only a small part of what libraries do.

Because broadband and technology impact every facet of a community, but not one single entity is responsible for its development, the first recommendation put forth to any community is to officially create a local organization tasked for being the lead entity responsible for implementing the recommendations of this plan.

Building on the foundation set by this group, Connected Nation believes it is important to empower those who are most passionate and focused about the sustained education and growth of broadband and technology access, adoption, and use in the community. By joining a group or developing a regional Technology Access Committee (501(c)(3) or similar), immediately the group becomes empowered to take actions that they deem necessary to the sustainability of their community regarding broadband and technology.

The focus of a team like this is to take the recommended actions proposed further in the document and to create an independent entity by which funding and leadership can be developed in a sustainable way for the region.

Ideally this team would:

- Promote broadband and technology access, adoption, and use
- Serve as the defacto voice related to broadband and technology for the region.
- Seek ways to educate and empower the region regarding broadband and technology
- Unify the region on broadband and technology, in order to better understand and communicate broadband and technology opportunities.
- Take action on recommendations from this plan as well as others that they may find necessary or interesting and beneficial to the growth of the region.

Connected Nation recommends a set of steps by which a group like this might form; however, it recognizes that there may be ways to partner with an already established group who is interested in assisting the region.

1. Determine an interim board that will be able to provide the initial leadership and direction, to set bylaws, structure, and apply for nonprofit status.
2. Work with a local lawyer, at a reduced rate where possible, to finalize the organization and get non-profit status applications completed.
3. Begin regularly scheduled meetings, and recruit businesses and individuals to the TAC.
4. Go to work in the Northwest Pennsylvania Region.

These recommended actions for project implementation are subject to evolution as implementers assimilate various local organizational goals and objectives.

Priority Projects

- Perform an analysis of local policies and ordinances.
- Complete a vertical assets inventory.
- Develop public-private partnerships to deploy broadband service.
- Facilitate a community technology summit.
- Create a telework support and attraction program.

Recommendations

The following pages contain recommended projects with details on their implementation that address the identified challenges. Projects are divided into those addressing access, adoption, and use.

Perform a Broadband Build-Out Analysis and Validate Demand for Broadband Service in Underserved Areas

GOAL: Determine the reasons why some areas of the community remain unserved, determine the feasibility of deploying various Internet systems in the defined area, and generate a business case for deployment.

DESCRIPTION: Perform an analysis of unserved areas to understand local assets and any barriers to broadband deployment. The local team should solicit feedback from residents of the unserved territory on their demand.

ACTIONS:

1. Field Validation: Conduct onsite visual assessments of the defined geographic areas unserved with broadband coverage. The assessment determines the feasibility of deploying various Internet systems in a defined area. Gather site specific information required for (i) determining use of existing infrastructure, (ii) designing wired and wireless Internet system using these assets, and (iii) expanding the broadband coverage in the defined area.
2. Community Broadband Survey: Use the results of the Residential Technology Survey to identify pockets of demand in areas without service. Survey results can also provide information on currently adopted speeds and costs. Stakeholders can also elect to perform a door-to-door survey of residents who live in neighborhoods in the unserved area to determine exact need, or in communities where more residential survey data is needed.
3. Market Analysis: A market analysis should also be performed to identify potential broadband providers, understand potential service offerings, and respective rates.
4. Investment: Results of the studies should be analyzed and released to providers to inform a business case for expansion or upgrades.
5. Conversations: Community broadband team members should include broadband providers in discussions of access expansion. Providers may have expansion plans that communities may not be aware of, or may be expanding infrastructure due to federal commitments, (e.g., Connect America Fund).

RESPONSIBLE PARTIES:

- County and local units of government with high number of underserved households
- Broadband providers
- Residents and businesses

RESOURCES:

- Guide to Federal funding for broadband projects: <http://bit.ly/1QJ1asb>.
- Fiber to the Home Council toolkit for communities looking to expand broadband infrastructure: <http://bit.ly/2d18QL6>.
- Pure Broadband builds access through cooperation: <http://bit.ly/2cCgzBk>.
- Building community broadband subscribership, from the University of Wisconsin: <http://bit.ly/2dCUUsX>.

BENEFITS:

1. Determines project feasibility and provides information to develop a business case for build-out.
2. First step in providing unserved community residents with adequate broadband access.
3. Fosters good relationships with public and private sectors.

Perform an Analysis of Local Policies and Ordinances

GOAL: Ensure that local policies and ordinances are conducive to wired and wireless broadband build-out.

DESCRIPTION: High capital investment costs, including permit processing, pole attachment costs, and lack of effective planning and coordination with public authorities, negatively impact the case for deployment. For example, the FCC's National Broadband Plan concludes that, "the rates, terms, and conditions for access to rights-of-way [including pole attachments] significantly impact broadband deployment." The costs associated with obtaining permits and leasing pole attachments and rights-of-way is one of the most expensive cost functions in a service provider's plans to expand or upgrade service, especially in rural markets where the ratio of poles to households goes off the charts. Furthermore, the process is time consuming. "Make ready" work, which involves moving wires and other equipment attached to a pole to ensure proper spacing between equipment and compliance with electric and safety codes, can take months to complete.

Community and provider collaboration to problem solve around local pole attachment and other right-of-way issues is one of the most effective opportunities to encourage faster, new deployment of infrastructure.

ACTIONS:

1. Speak with providers and determine barriers they face at a local and county level.
2. Review local policies, ordinances, and other barriers to broadband deployment and consult with community leaders, providers, utilities, and other members of the community to ensure that they are supporting policies (local ordinances, pole attachments, rights-of-way) that are conducive to broadband build-out.
3. Develop an awareness campaign targeting local government leaders to inform them of the benefits of broadband to the entire community.

RESPONSIBLE PARTIES:

- Local units of government, particular planning and zoning officials
- Broadband providers
- County government, particular road commissions
- Utility companies and pole owners
- Others with right-of-way jurisdiction

RESOURCES:

- Guide to best practices for reducing local barriers to broadband expansion: <http://bit.ly/2d42Jcm>.
- Cutting red tape for tower construction: <http://bit.ly/2d71GG4>.

BENEFITS:

1. Lowers cost barriers to improve the business case for broadband deployment.
2. Encourages good public policy and provider relations.

Complete a Vertical Assets Inventory

GOAL: Develop a single repository of vertical assets, such as communications towers, water tanks, and other structures potentially useful for the support of deploying affordable, reliable wireless broadband in less populated rural areas or topographically challenged areas.

DESCRIPTION: Wireless communications equipment can be placed in a wide variety of locations, but ideally, wireless providers look for locations or structures in stable conditions, with reasonably easy access to electricity and wired telecommunications, and with a significant height relative to the surrounding area. "Vertical assets" are defined as structures on which wireless broadband equipment can be mounted and positioned to broadcast a signal over as much terrain as possible. These assets include structures such as cell towers, water tanks, grain silos, and multi-story buildings.

The lack of easily accessible and readily usable information regarding the number and location of vertical assets prevents the expansion of affordable, reliable wireless broadband service. Wireless broadband providers must determine if it is worth the effort and expense to collect and analyze this data when making investment decisions. Public sector organizations are faced with the same challenges. A centralized and comprehensive vertical assets inventory can help wireless broadband providers expedite decisions regarding the deployment of affordable, reliable broadband service in rural areas.

ACTIONS:

1. Identify or develop a vertical assets inventory toolkit to provide guidelines to identify structures or land that could serve as a site for installation of wireless communications equipment.
2. Data to collect would include vertical asset type, owner type, minimum base elevation, minimum height above ground, and location.
3. Identify and map elevated structures using your community's GIS resources. The resulting database should be open-ended; localities should be encouraged to continuously map assets as they are made available.
4. Disseminate information to wireless providers who may be interested in leveraging vertical assets.

RESPONSIBLE PARTIES:

- Local and county government
- Broadband providers, particularly wireless
- Residents, businesses, and institutions with vertical assets able to support wireless equipment

RESOURCES:

- Making rural broadband possible through agricultural assets: <http://bit.ly/2dpEUef>.
- 2pifi helps communities develop solutions to provide connections in hard to serve areas: <http://2pifi.com/>.

BENEFITS:

1. Provides data for private and public investment decisions, lowering the initial cost of efforts needed to identify potential mounting locations for infrastructure.
2. Encourages expansion of affordable, reliable wireless broadband services to underserved areas by shortening project development time.

Develop Public-Private Partnerships to Deploy Broadband Service

GOAL: Leverage existing community assets in partnership with private sector carriers to expand broadband network deployment.

DESCRIPTION: Public-private partnerships take many forms, limited only by the imagination and legal framework in which the municipality operates. Some communities issue municipal bonds to fund construction of a network, which they lease to private carriers, with the lease payments covering the debt service. Others create non-profit organizations to develop networks in collaboration with private carriers or provide seed investment to jumpstart construction of networks that the private sector is unable to cost-justify on its own.

A public-private partnership should not be simply seen as a method of financing. The strength of these partnerships is that each party brings something important to the table that the other doesn't have or can't easily acquire. The community can offer infrastructure (publicly owned building rooftops, light poles, towers, and other vertical assets for mounting infrastructure) for the deployment of a network, as well as committed anchor tenants. Private-sector partners bring network-building and operations experience.

ACTIONS:

1. Determine Priorities: Competition, enhanced service, equity and service to all, public control over infrastructure, risk avoidance, redundancy, etc.
2. Examine models of partnership:
 - a. Model 1: Private Investment, Public Facilitation: Make available public assets like fiber and conduit, share geographic information systems data, streamline permitting and inspection processes, offer economic development incentives to attract private broadband investment
 - b. Model 2: Private Execution, Public Funding: Identify revenue streams that can be directed to a private partner, issue RFP for private turnkey execution.
 - c. Model 3: Shared Investment and Risk: Evaluate using assets to attract private investment, evaluate funding new assets to attract private investment, evaluate building new fiber assets to businesses and/or homes for leasing to private ISPs.
3. Understand key legal considerations for localities looking to build a broadband partnership: Review authority issues, understand the legal tools and instruments that could shape the partnership, negotiate the agreement.

RESPONSIBLE PARTIES:

- Local units of government
- Broadband providers
- Community anchor institutions
- Residents and businesses

RESOURCES:

- Dept. of Commerce guide to effective public-private partnerships: <http://bit.ly/1B7L9YD>.
- Building rural broadband from the ground up: <http://bit.ly/2dx4MBw>.
- United States Department of Agriculture: <http://www.usda.gov/wps/portal/usda/usdahome>
 - Broadband Loan Program: http://www.rurdev.usda.gov/supportdocuments/BBLoanProgramBrochure_8-11.pdf.
 - Direct Loans: <http://www.rurdev.usda.gov/supportdocuments/Broadband%20Application%20Guide%203.14.11.pdf>
 - Community Connect: <http://www.rurdev.usda.gov/SupportDocuments/utp2013CommConnectAppGuide.pdf>
 - Distance Learning and Telemedicine: http://www.rurdev.usda.gov/UTP_DLT.html
- Broadband USA: Guide to Federal Funding of Broadband Projects: http://www2.ntia.doc.gov/files/broadband_fed_funding_guide.pdf
- Universal Service Rural Health Care Program - <http://www.universalservice.org/rhc/telecommunications/default.aspx>.

BENEFITS:

1. The public sector transfers much of the risk for private investment. (The public sector has many funding tools available, including incentivizing continued investment through tax credits, encouraging greater availability of private capital through government guaranteed loans, or use of government loans or grants as a direct source of capital.)
2. The partnership can aggregate demand and reduce barriers to deployment.
3. Concentrates investment on non-duplicative networks and aims to ensure that all residents have access to adequate broadband service.

Implement Cybersecurity Training

GOAL: Ensure that community members are aware of how to navigate the Internet safely.

DESCRIPTION: Create a program designed to help community members who are using the Internet to identify and avoid situations that could threaten their safety, threaten business or government networks, compromise confidential information, compromise the safety of children, compromise identities and financial information, or destroy reputations.

There are many risks, some more serious than others, when using the Internet. Among these dangers are viruses erasing entire systems, a hacker breaking into a system and altering files, someone using someone else's computer to attack others, someone stealing credit card information, sexual predators making advances at children, and criminals making unauthorized purchases.

Unfortunately, there's not a 100% guarantee that even with the best precautions some of these things won't happen, but there are steps that can be taken to minimize the chances.

ACTIONS:

1. Partner with a local library, community center, school, or financial institutions to offer security awareness training initiatives that include classroom style training sessions and security awareness websites and information booklets.
2. Trainers could include technology advocates, private businesses specializing in cybersecurity, web development, etc., local law enforcement, and others. Additionally, financial institutions may have cybersecurity training and curriculum for their members that could be leveraged to help the entire Promise Zone.
3. Cybersecurity should be addressed to both residents and businesses.
4. Some libraries and organizations may already have cybersecurity training established. These programs can be expanded in content and availability to the community.
5. Awareness training can also be used to alleviate anxiety for community members who are not using the Internet because of fear of cyber threats.

RESPONSIBLE PARTIES:

- Libraries and library co-ops
- Schools
- Non-profit organizations, particularly those with a technology focus
- Businesses specializing in web security and identity protection
- Local financial institutions
- Law enforcement

RESOURCES:

- Internet Safety: <http://www.gcflearnfree.org/internetsafety/>
- Cyber Safety: http://ikeepSAFE.org/educators_old/more/c3-matrix/cyber-safety/
- Digital Citizenship: <https://www.common SenseMedia.org/educators/digital-citizenship>.
- Digizen: <http://www.digizen.org/>
- Better Internet for Kids: <https://www.betterinternetforkids.eu/>.
- How School Librarians Can Assist You: <http://www.ala.org/aasl/parents/internet>.
- CyberWise: <http://www.cyberwise.org/>

BENEFITS:

1. Improved understanding of how to prevent and deal with cyber threats.
2. Better understanding of how to keep personal information safe online and what to do should it be compromised.
3. Better, community-wide, digital citizenship.

Facilitate a Community Technology Summit

GOAL: A technology summit should bring together Promise Zone stakeholders to develop a dialogue about how public and private stakeholders can collectively improve broadband access, adoption, and use.

DESCRIPTION: Develop and host a technology summit for residents and businesses to increase awareness of the value of broadband, service options, and the potential impact on quality of life.

The technology summit should facilitate community partnerships between leaders in local government and the private sector, including non-profits and private businesses in the education, healthcare, and agriculture sectors, with the goal of ensuring that residents have at least one place in the community to use powerful new broadband technologies, and that this asset will be sustained over time. This summit should showcase the technologies that the broadband provider community uses to bring their services to the community, but it should also allow for regional business, industries, schools, etc. the ability to demonstrate how broadband and the technology that it enables are utilized on a daily basis, further demonstrating the importance of services and the technologies that are enabled by it. Further, the technology summit should highlight success stories as evidence of the impact of technology.

ACTIONS:

1. Create community partnerships.
2. Identify funding sources and hosts.
3. Identify suitable speakers (broadband providers, local business who utilize broadband for their daily needs etc.).
4. Develop relevant content. (If there is more content than one day can hold, develop multiple summits, and potentially focus on access, then adoption and use).

RESPONSIBLE PARTIES:

- Community leaders/organizations
- County/City governments
- Broadband providers
- Citizens
- Schools, districts, higher education
- Libraries
- Businesses/IT professionals/technology companies

RESOURCES:

- The Texas A&M University System Technology Summit <http://techsummit.tamu.edu>
- National Telecommunications & Information Administration <https://www.ntia.doc.gov/other-publication/2015/Nesummit>
- Michigan Broadband Conference in review: <http://connectmycommunity.org/project-view/michigan-broadband-conference-in-review-the-human-impact/>.
- Iosco County Summit Showcases Business and Technology Growth: <http://connectmycommunity.org/project-view/iosco-county-summit-showcases-business-and-technology-growth/>

BENEFITS:

1. Highlights successes, opportunities, and challenges regarding community technology planning.
2. Develops ongoing dialogue around improving broadband access, adoption, and use.
3. Unifies community stakeholders under one vision.

Develop a Technology Mentorship Program

GOAL: Use student technology knowledge to implement community programs.

DESCRIPTION: Initiate a program designed to recruit local high school or college students who excel in school and exhibit advanced leadership and technology skills to assist in technology training, technical support, and outreach efforts in their communities.

Recognizing students as a powerful resource for local outreach efforts, the program will tap into the technology knowledge base that exists among students and will challenge students to extend their teaching and learning experiences beyond the classroom.

ACTIONS:

1. Develop relationships with Student organizations at the High Schools and Colleges, as many student organizations have the desire and passion to assist the community, however many have not had an outlet that would allow for them to share their digital knowledge with the community.
2. Identify the program format and offerings. Similar technology mentorship programs are organized as student-run help desks or student-led classes.
3. The program can be hosted at a local school or community anchor institution, such as a library or community center, and could be run during the school day as part of the regular curriculum, during study hall, or as an afterschool activity.
4. The curriculum could be borrowed from an existing technology mentorship program, or could be student-driven. Similar programs offer digital literacy training to seniors, provide computer refurbishing, build websites, and other forms of tech support to local residents.

RESPONSIBLE PARTIES:

- Broadband providers
- Schools (K-12, Higher Education, Community Colleges)
- Libraries
- Students
- Community and Senior Centers

RESOURCES:

- Online Mentoring Programs <http://elearnmag.acm.org/featured.cfm?aid=1620739>.

BENEFITS:

1. Improved self-confidence and technical competencies.
2. Build character and embrace responsibilities
3. Engage students in technology.
4. Expose students to potential career paths.
5. Increase digital skills among various groups.

Procure a Multipurpose Mobile Technology Center/Makerspace

GOAL: Provide unserved and underserved residents with computer and Internet access, as well as potentially providing access to new technologies such as audio and video/3d printing/robotics/coding etc.

DESCRIPTION: Develop partnerships in the region with the public libraries or school systems to acquire a bus, trailer or van with laptop computers and wireless Internet service to deliver technology access and programs to residents in remote areas in the community.

Equipped with an instructor, the mobile technology center should provide digital literacy classes, job search assistance, e-learning programs, technology exploration, information during community events, and emergency assistance when needed.

Beyond training and education, the mobile technology center should be used to target and reach unserved or underserved members of the community and provide them a medium for participating in the community's technology planning process.

Providing the additional tools and developing curriculum, may also open new opportunities for residents and students in the region to better understand how new technology is enabled or enhanced by access to quality broadband services.

ACTIONS:

1. Determine project partners and establish areas of demand for such a center.
2. Equip the vehicle with:
 - 10-20 laptops loaded with appropriate software.
 - A wireless modem that interfaces with a wireless relay station on the vehicle. Signals can be sent from any remote site in the community to partnering organization (e.g., public library) for deployment to the Web, television, or other medium.
 - Large screen TV.
 - Smart board for instruction.
 - Wheelchair accessible workstations.
 - Networked printer.
 - Full-time instructor(s).
3. Develop schedule of mobile technology center visits.

RESPONSIBLE PARTIES:

- Library
- School Districts
- Community transportation department
- Businesses
- Industry
- Financial institutions/local foundations
- Workforce development agencies

RESOURCES:

- SCDC Mobile Technology Center <https://www.scdcorp.org/technology/mobile-technology-center/>
- Makerspaces.com <https://www.makerspaces.com/resources-for-starting-and-running-a-mobile-makerspace/>
- Examples of existing mobile technology centers include: St. Louis Community College Mobile Tech Center; El Paso Public Library Tech-Mobile; State Library of Ohio Mobile Technology Training Center; and Pike County Public Library District Mobile Technology Center.

BENEFITS:

1. Improves digital literacy skills of community.
2. Provides outreach and awareness.
3. Provides opportunity for residents to participate in community's technology planning process.

Host Website and Social Media Classes for Local Businesses

GOAL: Encourage small local businesses to develop websites and to use social media, e-commerce, and other advanced uses of broadband and technology.

DESCRIPTION: For small businesses, an online presence and the use of social media are vital to stay competitive in the twenty-first century. A website and social media are not just for companies that have the experience, staff, or budget; any small business can tap into these resources. Training should be provided to small businesses regarding the use of websites and social media within that small business. Website topics should range from starting a basic website to more advanced topics such as e-commerce. Social media topics should include a variety of social media outlets including Facebook, Twitter, YouTube, Pinterest, and LinkedIn.

Broadband empowers small businesses to achieve operational scale more quickly by lowering start-up costs through faster business registration and improved access to customers, suppliers, and new markets. According to Connected Nation's *2012 Jobs and Broadband Report*, businesses that are using the Internet bring in approximately \$300,000 more in median annual revenues than their unconnected.

ACTIONS:

1. Work with the local chamber of commerce and/or the libraries to expand on existing programs that promote e-commerce, such as free websites and social media development, within the small businesses of the community including those involved in agriculture.
2. Partner with providers to sponsor workshops. (Providers may be willing to sponsor events since small business workshops will likely lead to increases broadband adoption and use).
3. Identify regional and community partners with resources and expertise to assist the community in producing "free" website and social media workshops.
4. Schedule workshops and advertise classes via local media.

RESPONSIBLE PARTIES:

- Chamber of commerce/economic development organization
- Libraries
- Community College
- Broadband providers
- IT/Technology organizations
- Local SCORE representatives

RESOURCES:

- The Creative Collection <http://www.thecreativecollective.com.au/social-media-training-course>
- On-Site Technology Training for Small, Rural Michigan Businesses: <http://reicenter.org/projects/completed-projects/digital/on-site-technology-training-for-small-rural-michigan-businesses-2012>.
- Importance of Tech for Small Businesses: <http://brightside.cedam.info/episodes/episode-11/>.
- Revenue Trends for Small Businesses: http://connectmycommunity.org/wp-content/uploads/2016/11/Small_Business_Infographic-FINAL.pdf
- Google Helps Businesses Get Online with Free Resources: <http://connectmycommunity.org/project-view/google-helps-businesses-get-online-with-free-resources/>.
- Boosting Business with an Online Presence: <http://connectmycommunity.org/project-view/boosting-business-with-an-online-presence/>.
- Building E-Commerce in Wright County, IA: <http://connectmycommunity.org/project-view/building-e-commerce-in-wright-county-iowa/>
- Harbor Springs, MI Goes Social: <http://connectmycommunity.org/project-view/harbor-springs-michigan-goes-social/>
- Resources for Small Business e-Commerce Development: http://srdc.msstate.edu/ebeat/small_business.html#.

BENEFITS:

1. Provides entrepreneurial support.
2. Eliminates knowledge gap.
3. Promotes business growth and workforce development.
4. Lowers start-up costs.
5. Assists in accelerating business development.

Establish a Community Technology Academy

GOAL: Create a partnership to underscore a community's commitment to developing a tech-savvy workforce.

DESCRIPTION: Develop partnerships between libraries, community centers, churches (places with computer labs for public use) and schools, community colleges, and universities (places with subject matter experts) to develop a "Community Technology Academy."

Providers, local businesses, and community volunteers may be included to provide financial and/or in-kind support for the program. Academy curriculum should include basic training in areas such as introduction to computers, Internet basics, social networking, using communication technologies, and the use of applications such as Microsoft Office, OpenOffice, or Google Docs.

ACTIONS:

1. Identify all organizations performing technology education and training services.
2. Identify all the organizations that have computer labs.
3. Compile a list of classes to be offered and develop content or leverage content that is currently available at minimal or no cost from organizations such as Microsoft.
4. Determine what classes are currently being offered in the community.
5. Develop a collaborative and cooperative approach for operating the "Community Technology Academy" among all organizations.

RESPONSIBLE PARTIES:

- Libraries
- Schools (K-12, Higher Education, Community Colleges)
- Community committees/organizations
- Technology companies/organizations
- Broadband providers

RESOURCES:

- Toledo Technology Academy: <http://www.toledotechnologyacademy.org/abouttta.htm>

BENEFITS:

1. Creates a more digitally literate and competent populace.
2. Develops community's human capital.

Create a Telework Support and Attraction Program

GOAL: Promote or develop flexible efficient and effective work arrangements.

DESCRIPTION: Teleworking offers significant benefits to employers, employees, self-employed individuals, and entrepreneurs. Benefits include businesses' infrastructure savings, emissions reduction, and congestion management. Further, teleworking can help businesses and government agencies reduce real estate, energy, and other overhead costs, using the savings to avoid job cuts or to hire new staff. Research has shown that teleworking programs can increase an employer's productivity and enable it to continue operating without skipping a beat in the face of a natural disaster or other emergency situation that might otherwise bring business to a halt. Teleworking allows employees to lower their commuting costs, and accommodates people with disabilities, the elderly, working mothers, and rural residents who may not be in a position to work outside the home.

It is unlikely that all employees will be able to telework. A good way to start is to identify types of positions or job types that can be performed remotely and initiate a trial period and track results. Get feedback from all involved regarding the benefits and challenges and fine-tune as needed.

ACTIONS:

1. Promote the establishment of a teleworking pilot program.
2. Establish a cross-functional project team, including, for example, information technology labor representatives and other stakeholders.
3. Establish an agency-wide telework policy.
4. Establish eligibility criteria to ensure that teleworkers are selected on an equitable basis using criteria such as suitability of tasks and employee performance.
5. Develop a telework agreement for use between teleworkers and their managers.
6. Conduct assessment of teleworker and organization technology needs.

RESPONSIBLE PARTIES:

- Businesses
- Business organizations, (e.g., chambers of commerce, economic development corporations, associations, etc.)
- Citizens and interest groups

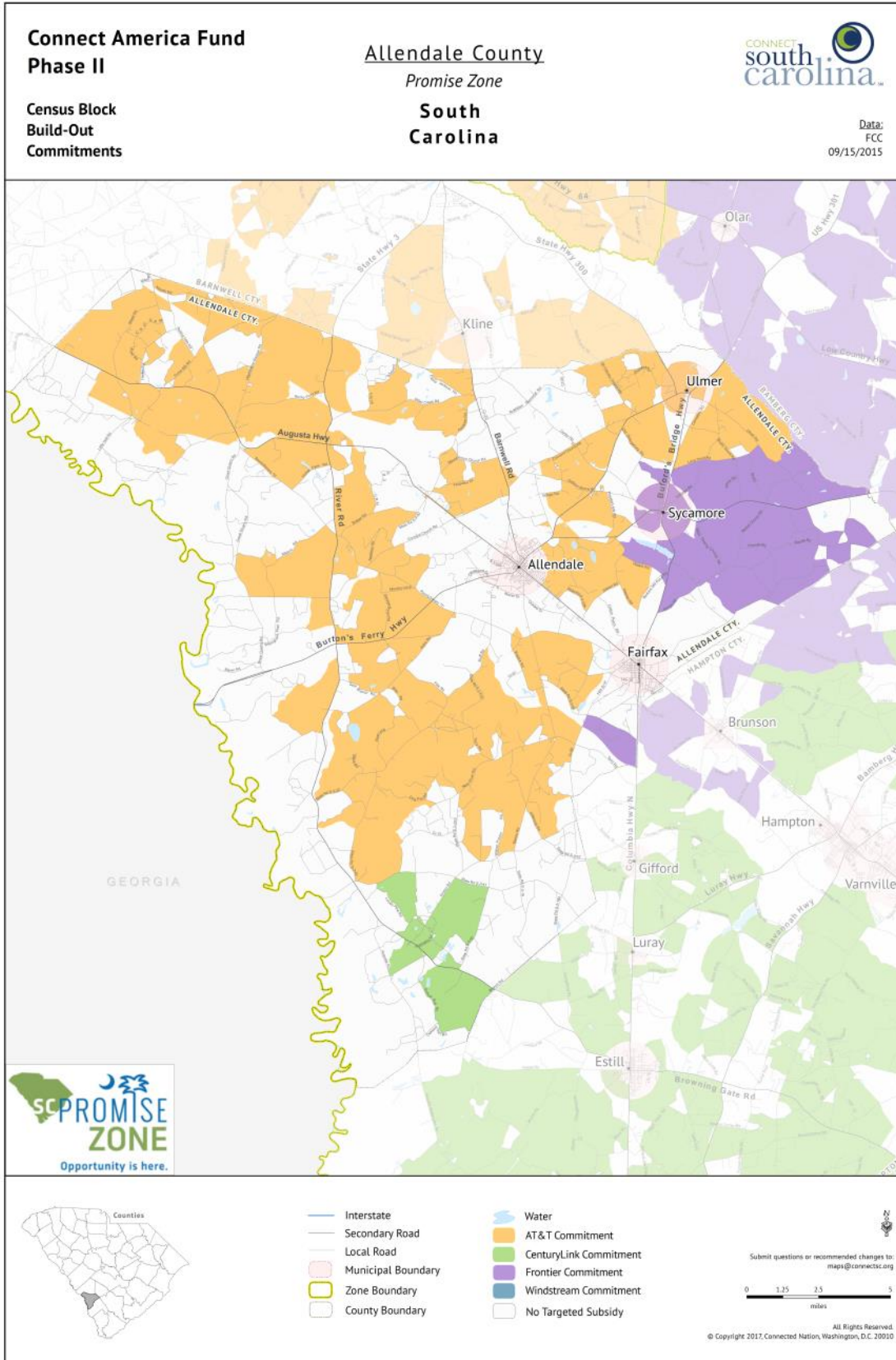
RESOURCES:

- Building a Telework Program: <https://www.telework.gov/federal-community/telework-managing-officers-coordinators/building-a-telework-program/>
- Teleworking Brings Jobs Home: <http://connectmycommunity.org/project-view/teleworking-brings-jobs-home/>
- Job Opportunities via Digital Works Come to Cheboygan, MI: <http://connectmycommunity.org/project-view/job-opportunities-via-digital-works-come-to-cheboygan-michigan/>
- Publicly-Operated Telework Facilities: An Economic Development Opportunity for Michigan's Rural and Tourism-Oriented Communities: <http://reicenter.org/projects/completed-projects/creativity-invention-and-entrepreneurship/publicly-operated-telework-facilities-an-economic-development-opportunity-for-mi>.

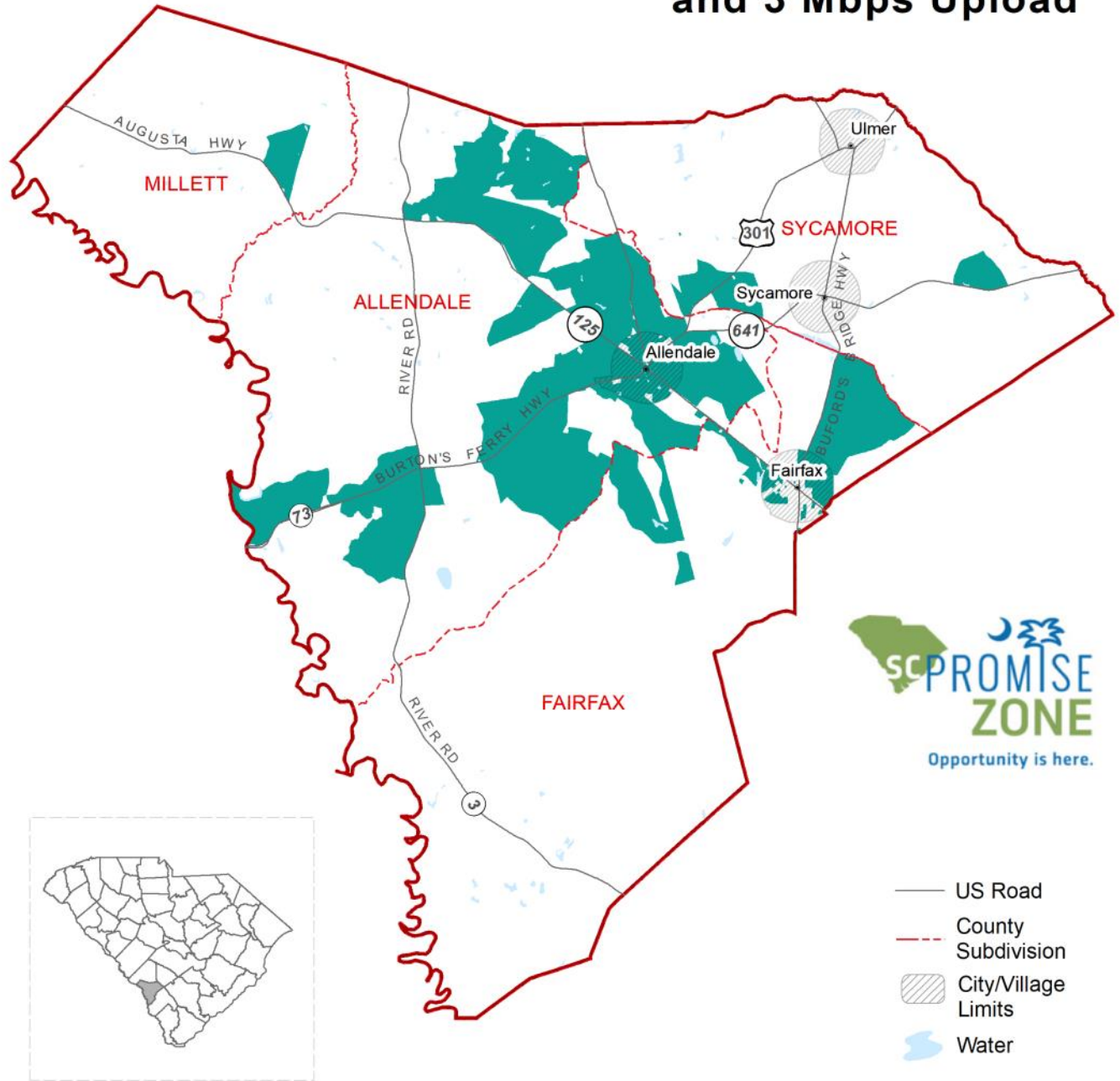
BENEFITS:

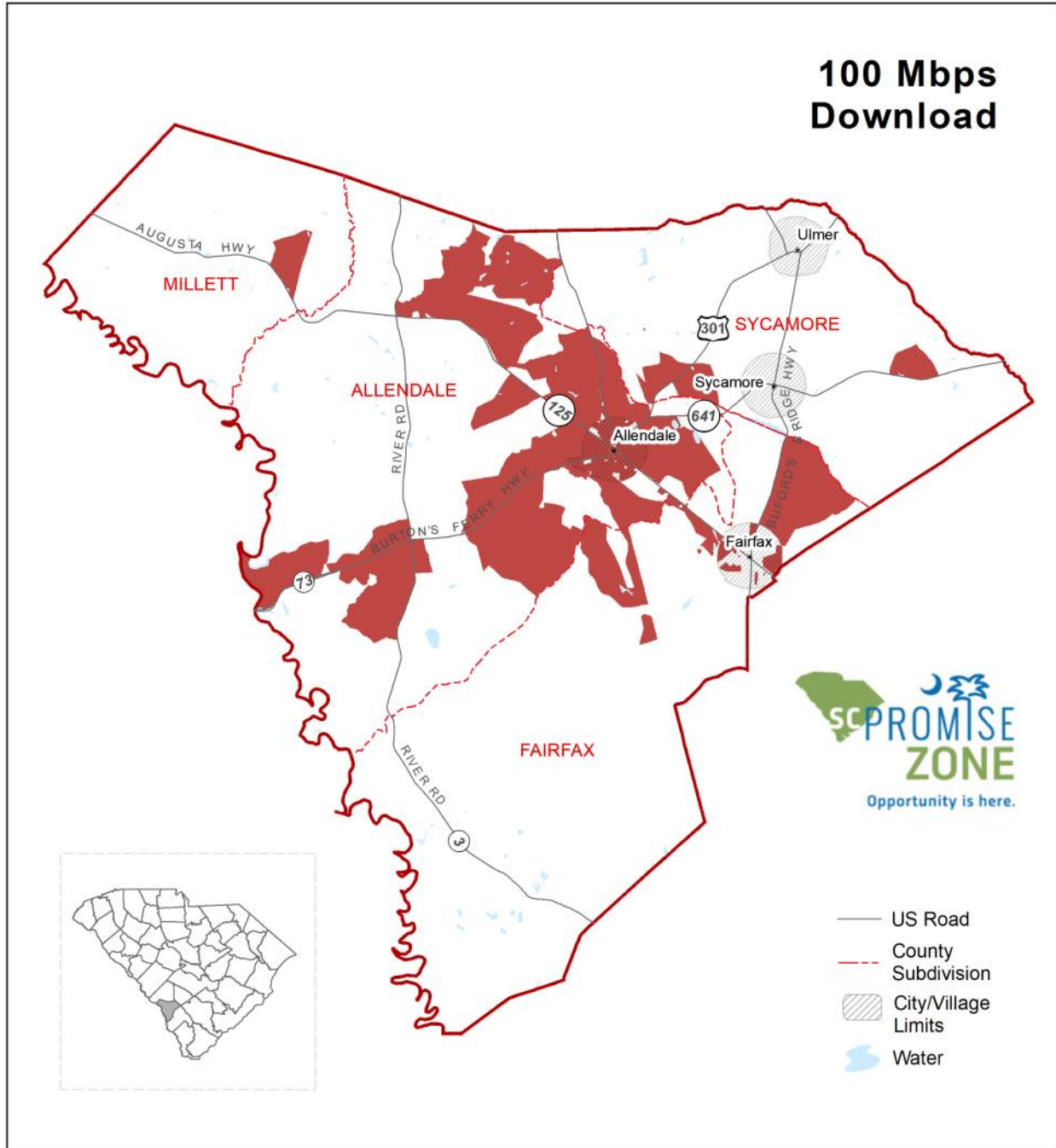
1. Provides an environmental benefit, boosts economic growth, and provides a better work-life balance for employees.
2. Taps into community's workforce potential (employable individuals with transportation limitations).
3. Makes community more attractive to knowledge workers and business expansion assist in accelerating business.

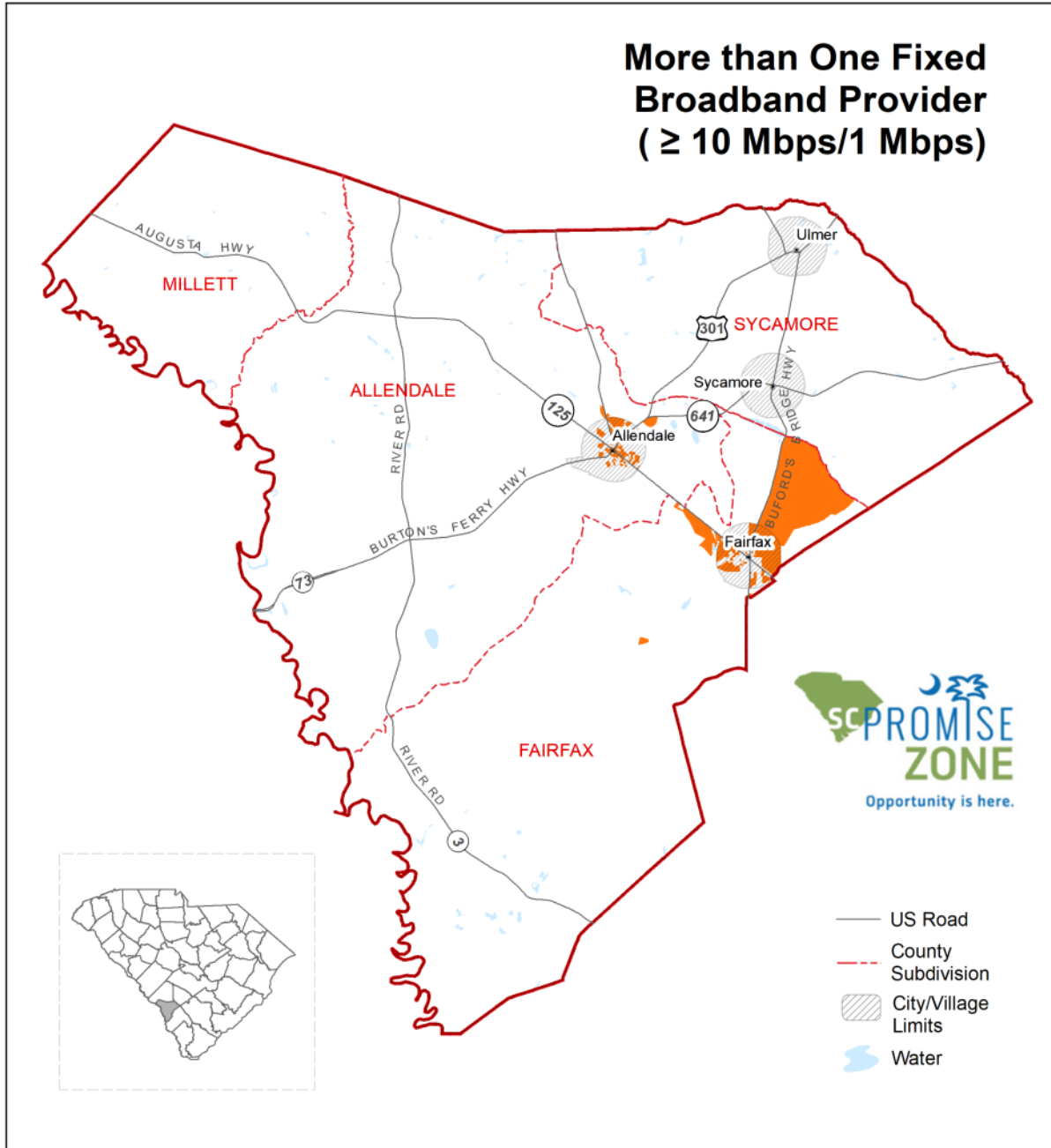
Individual County Maps

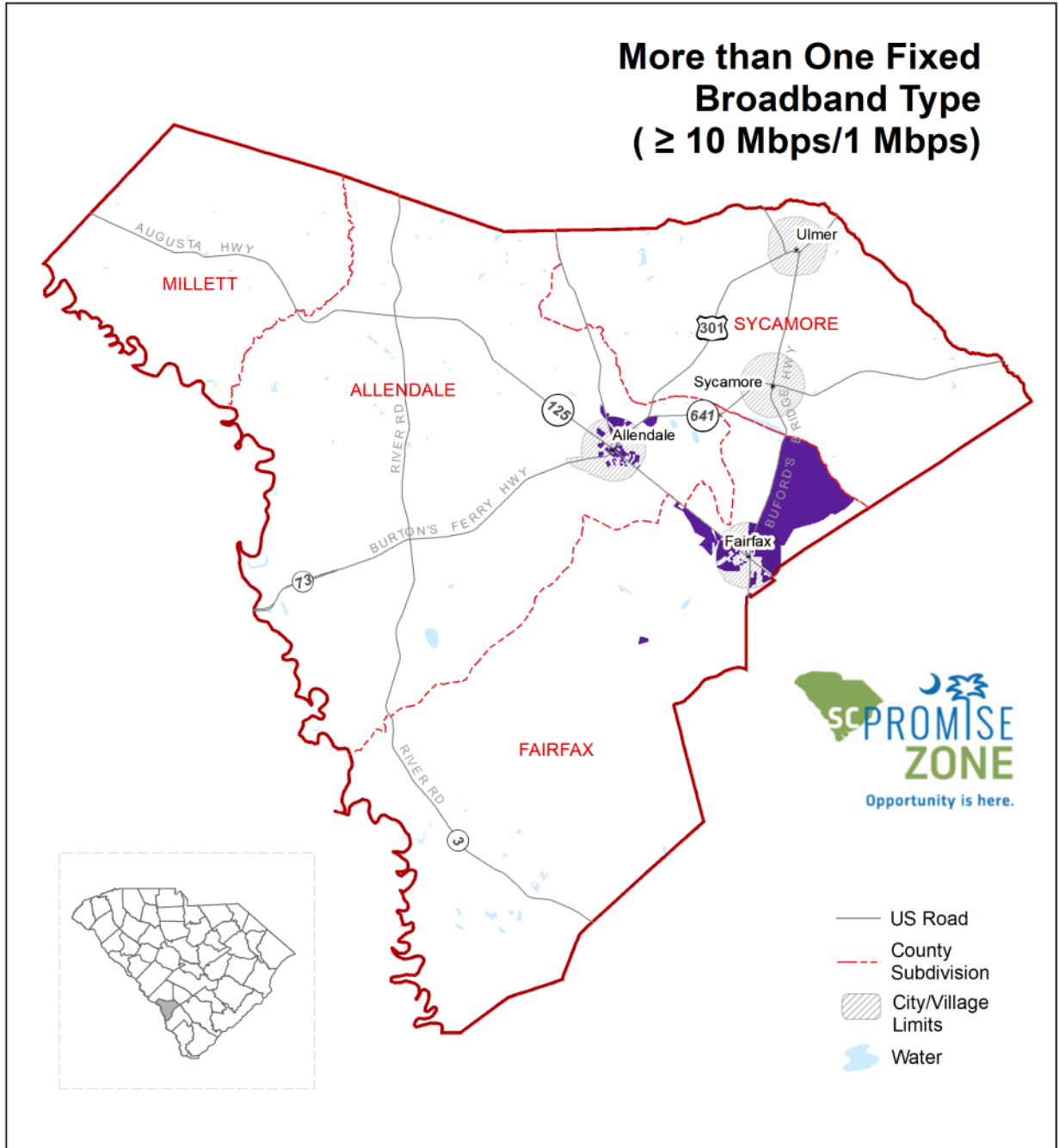


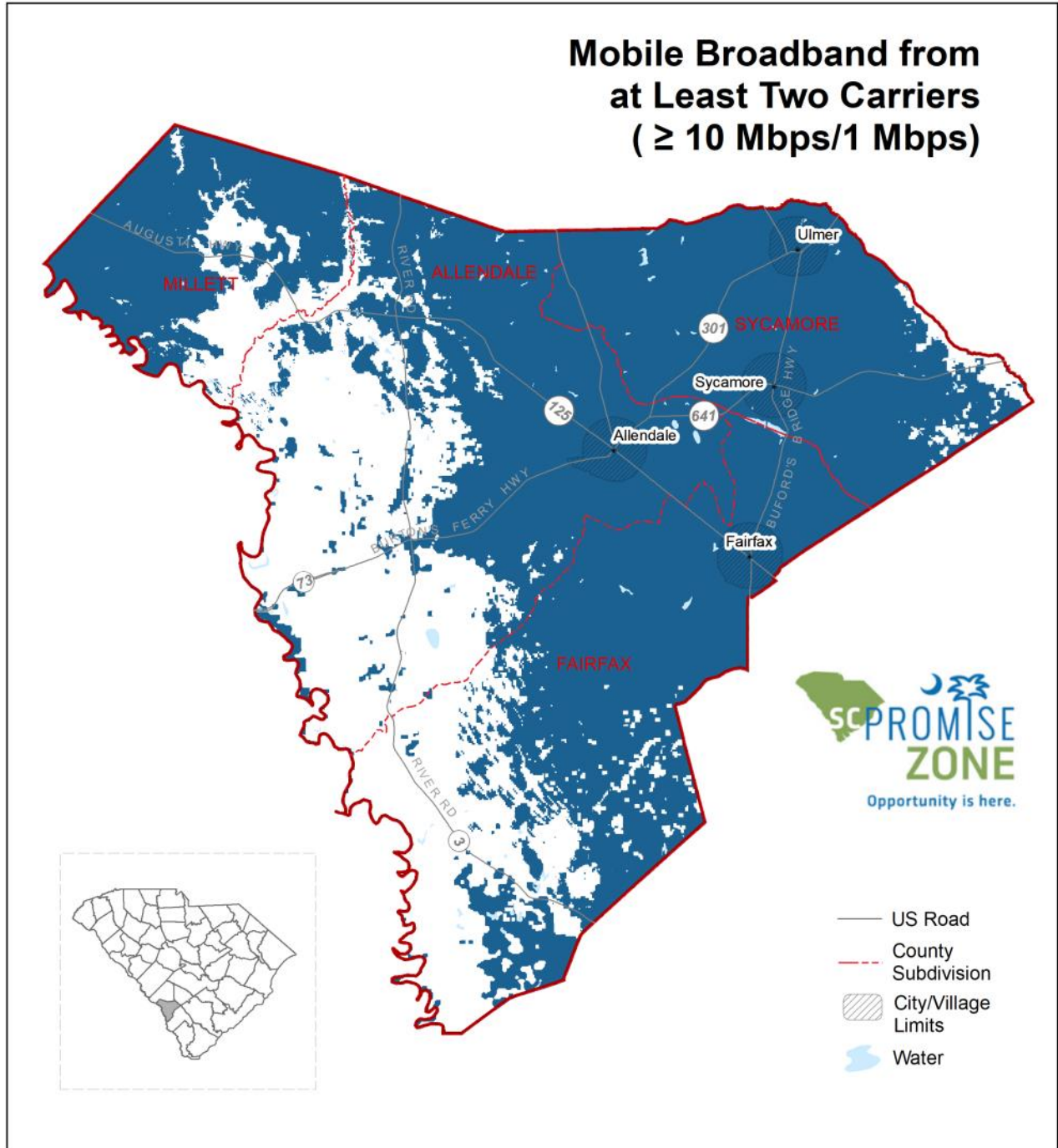
25 Mbps Download and 3 Mbps Upload

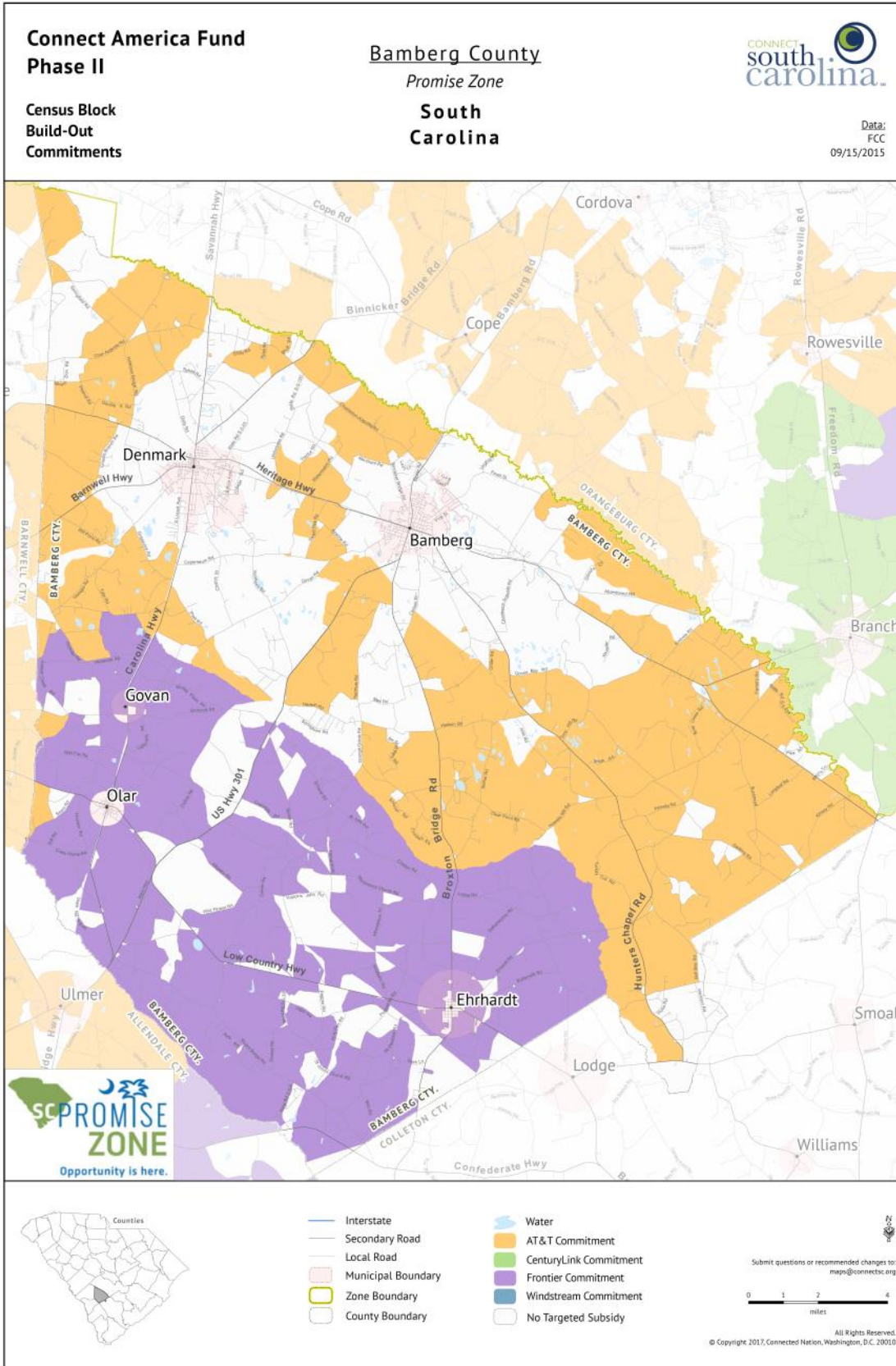


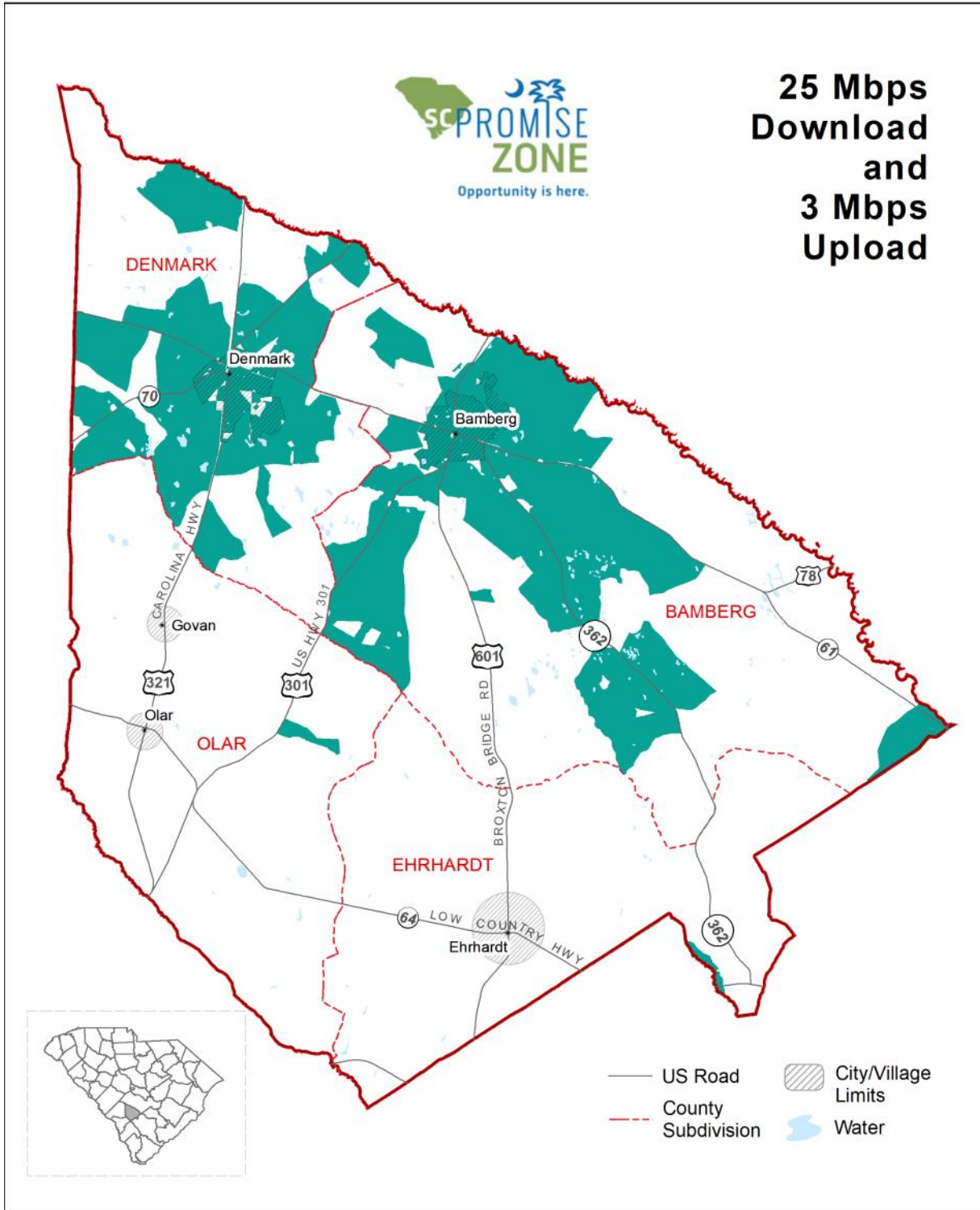


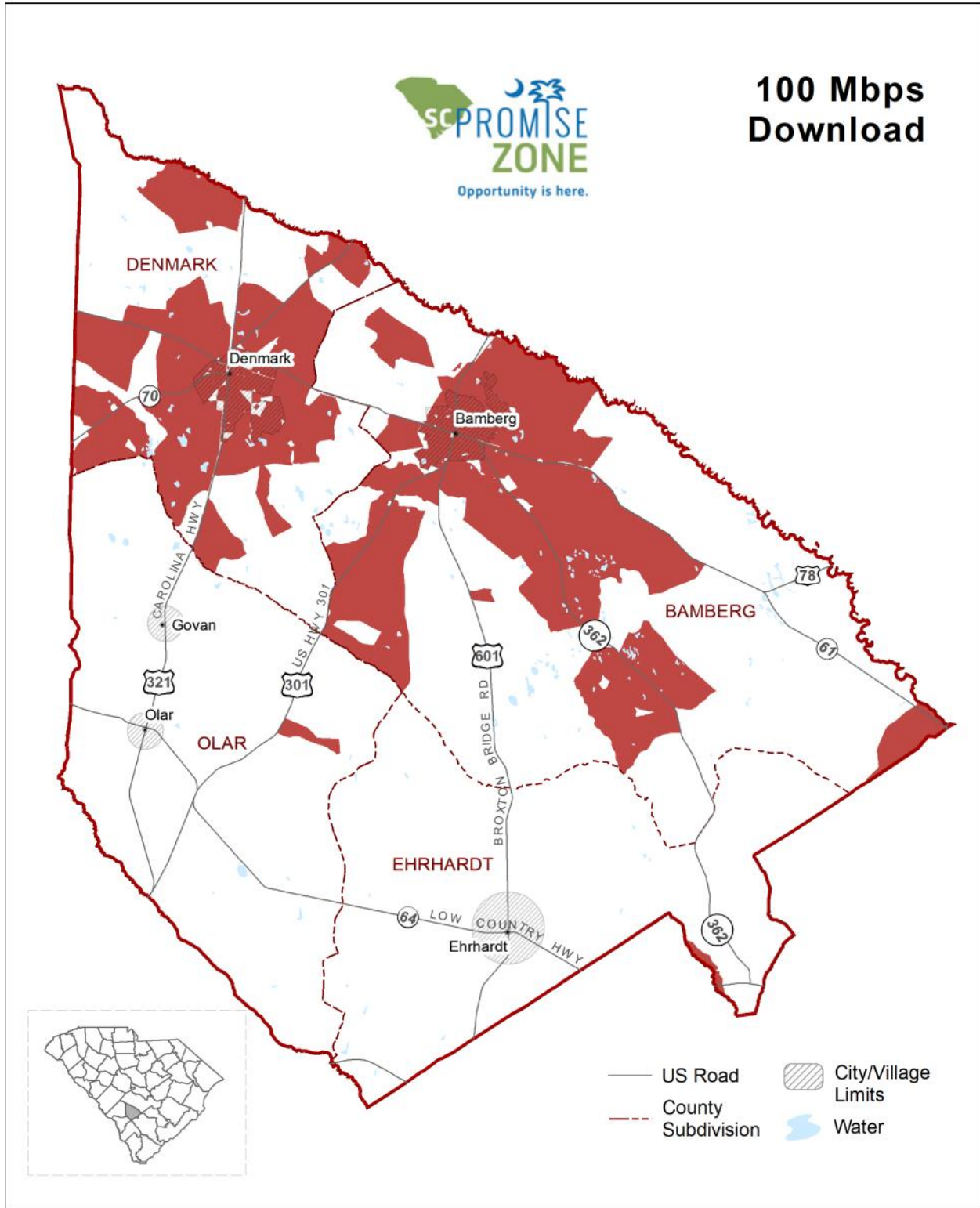


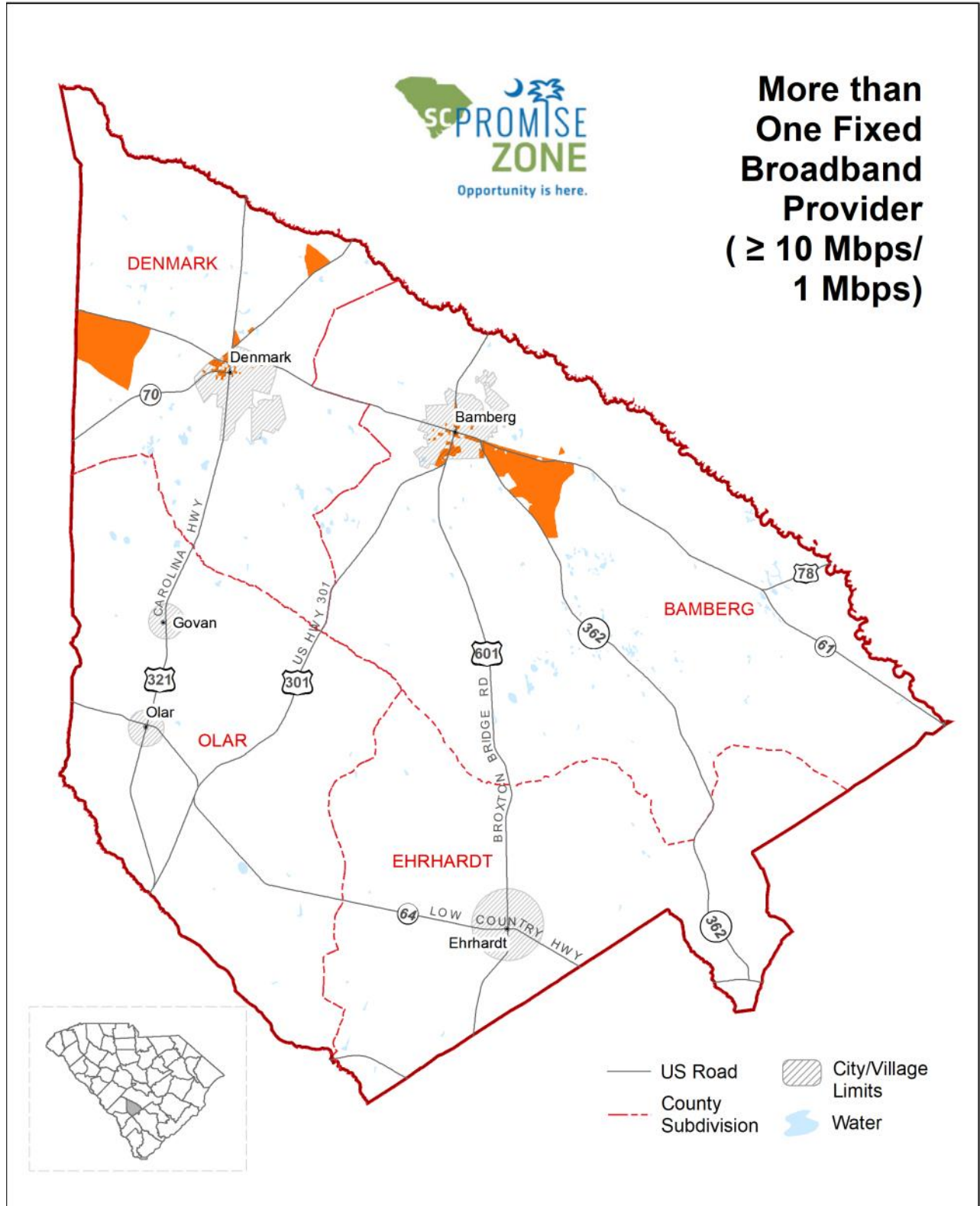


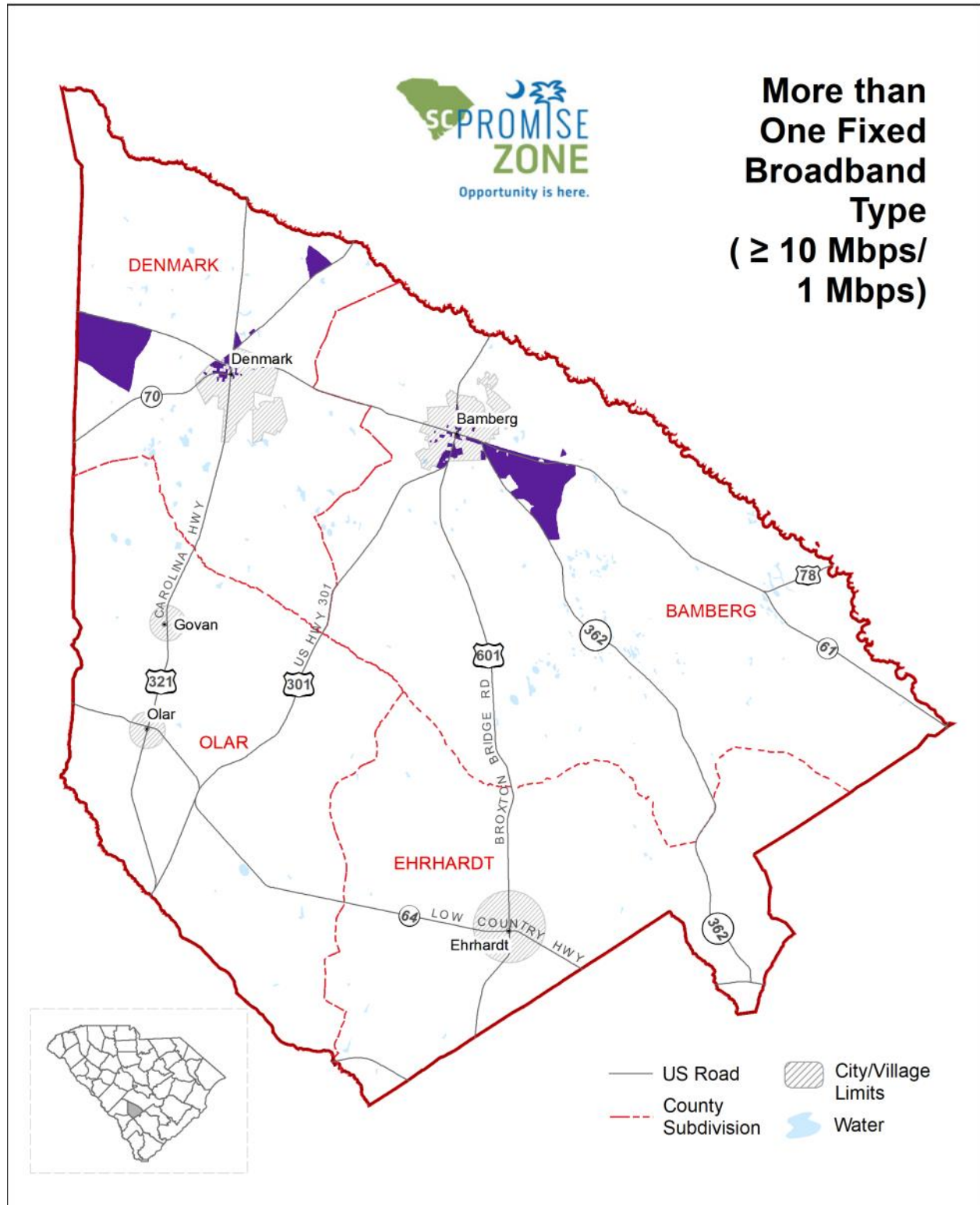


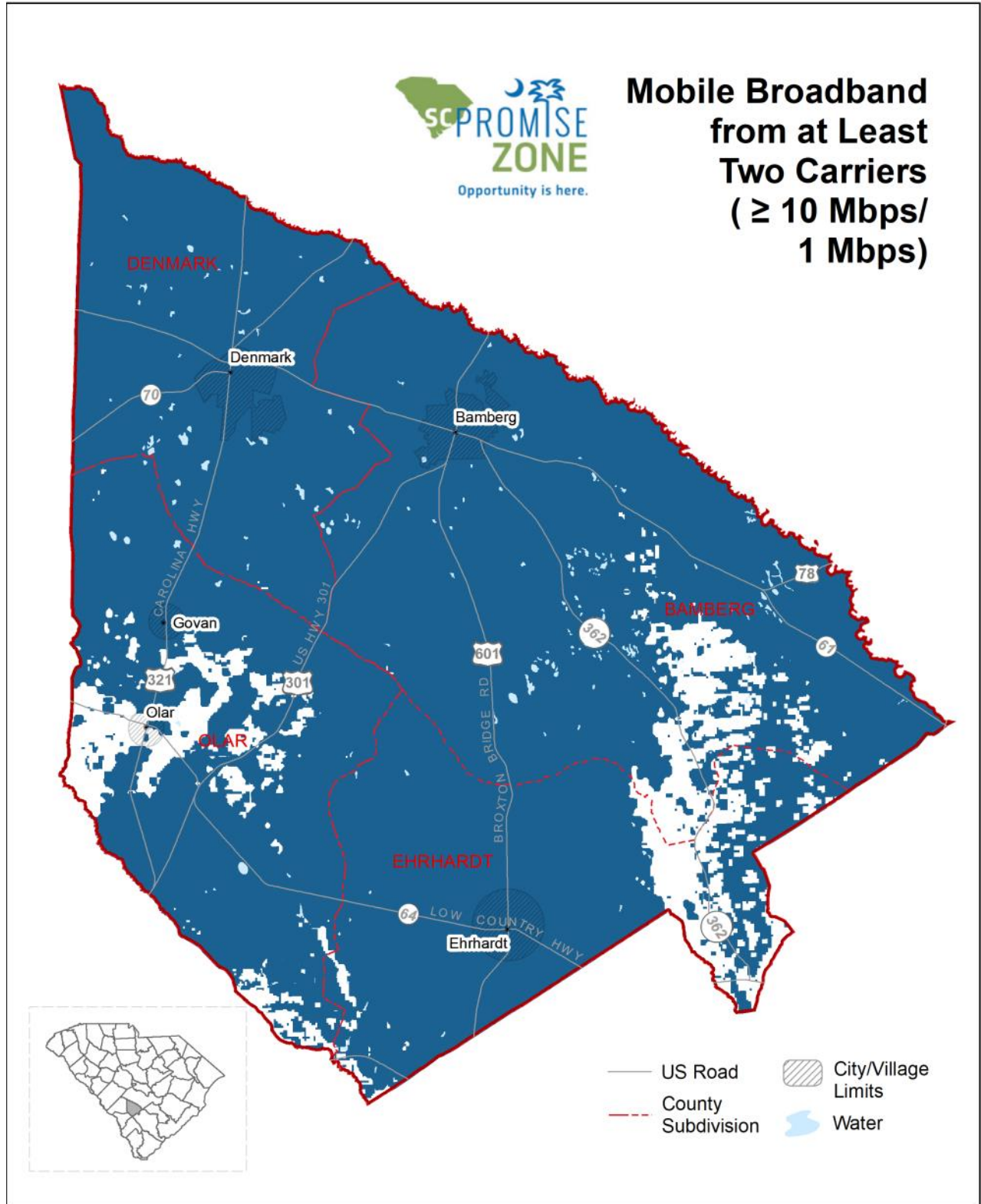


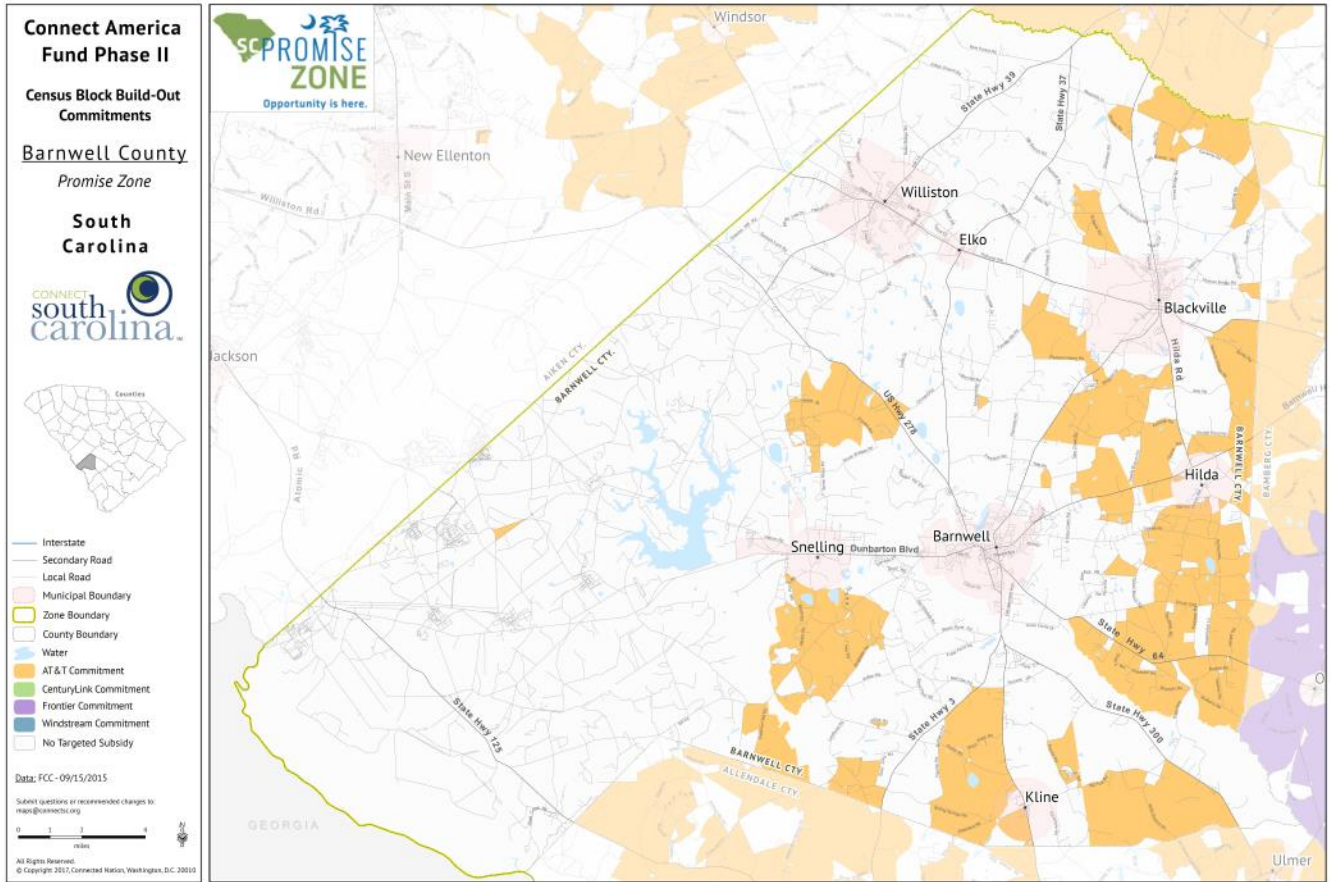






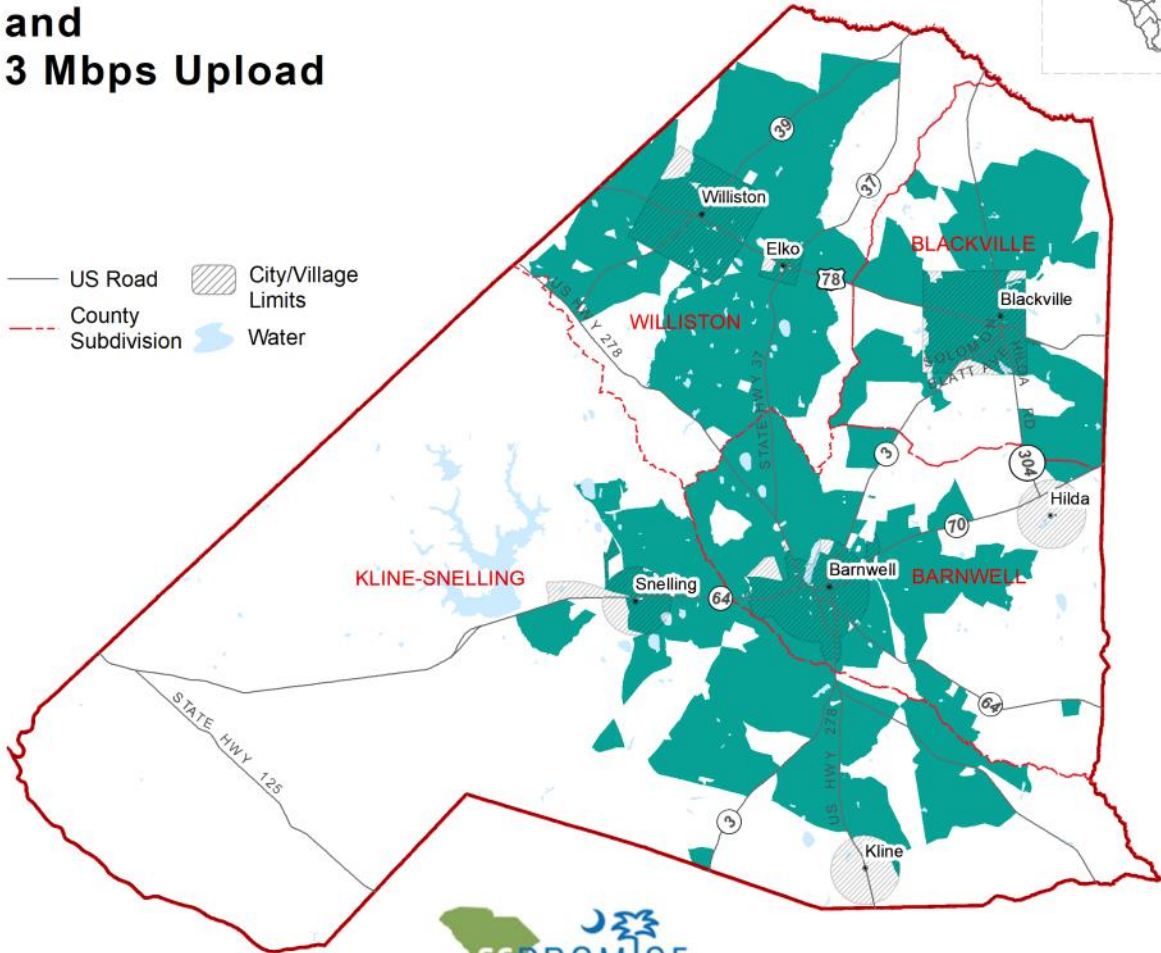




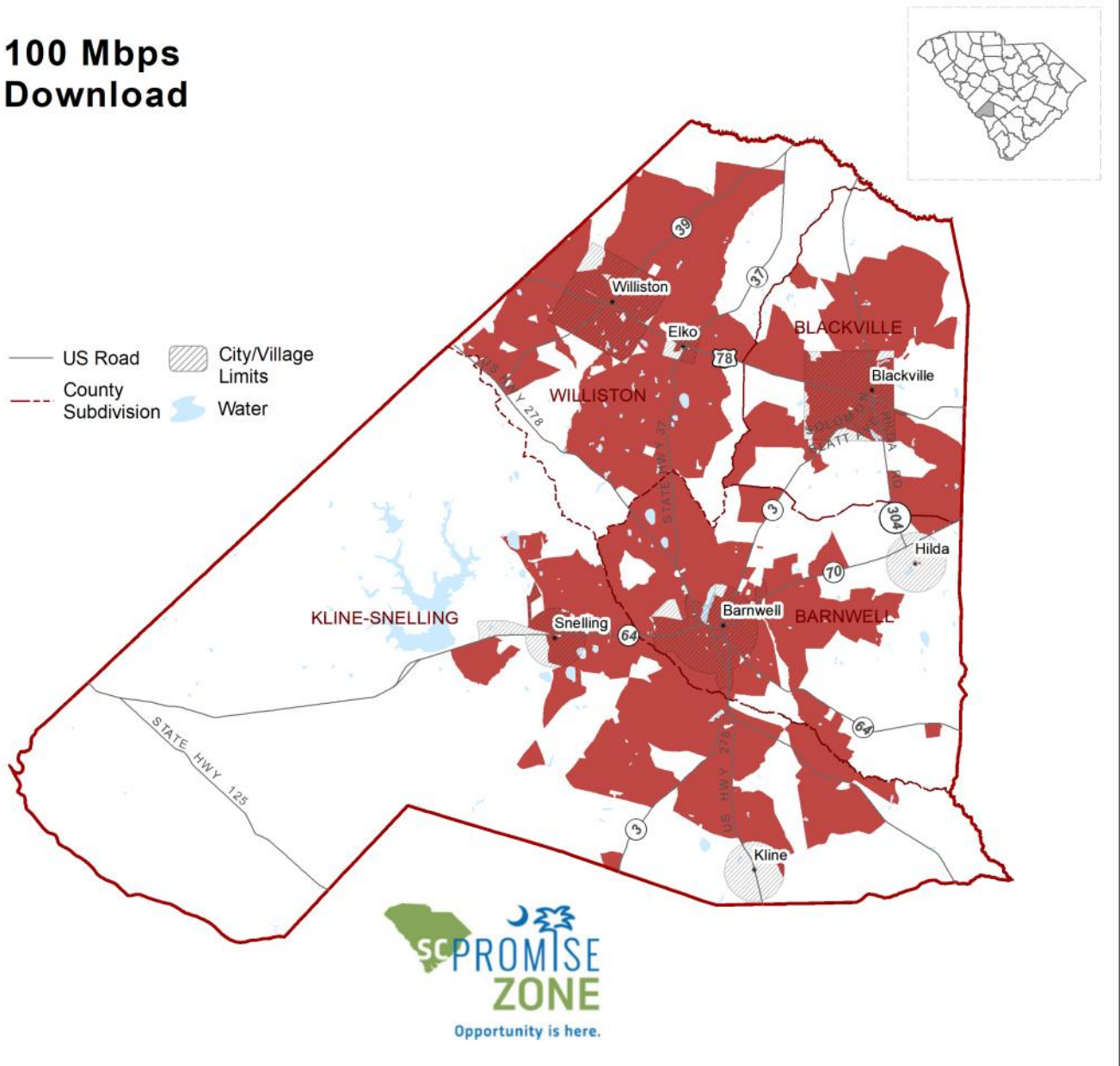


25 Mbps Download and 3 Mbps Upload

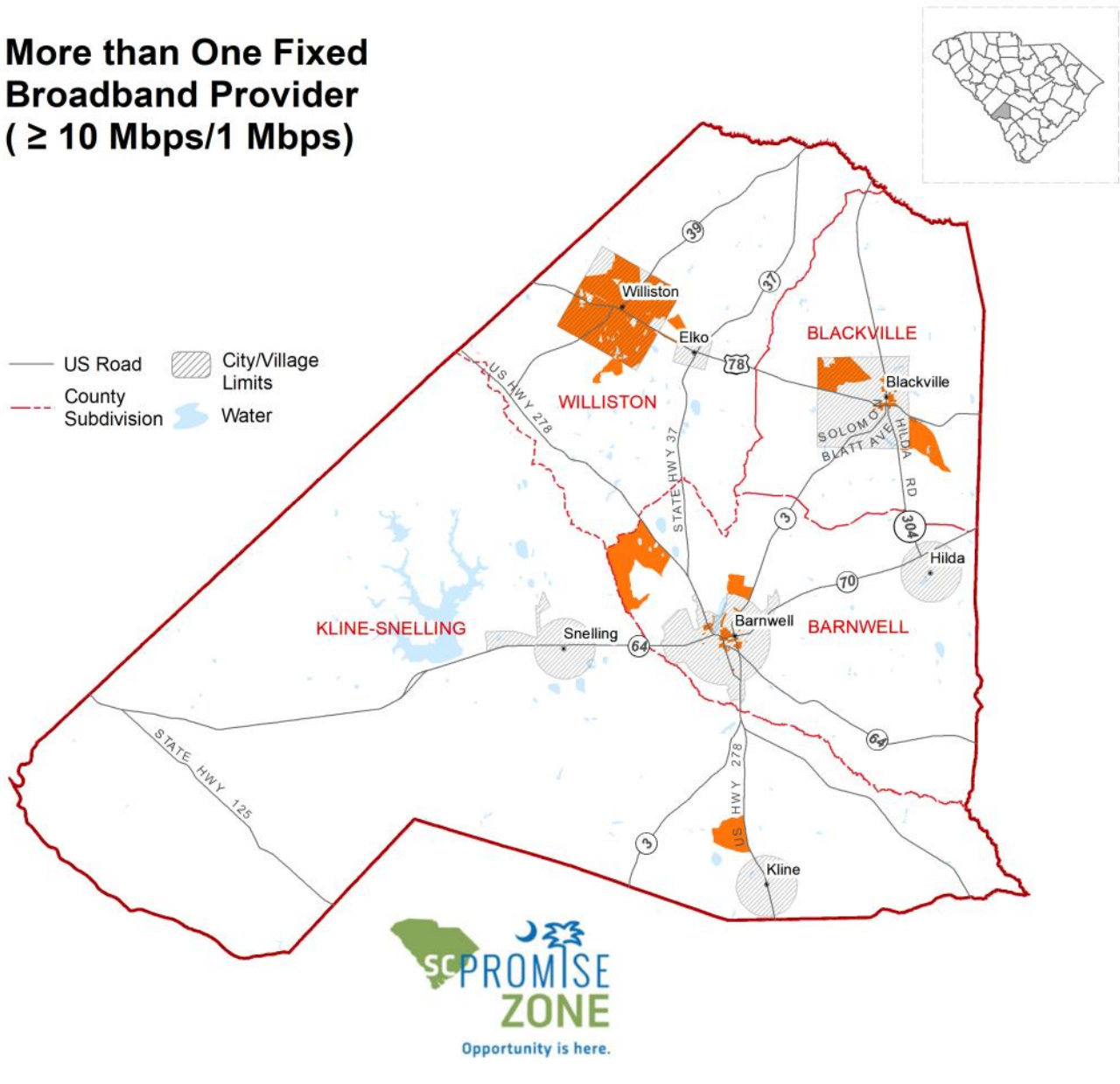
- US Road
- County Subdivision
- ▨ City/Village Limits
- Water



100 Mbps Download

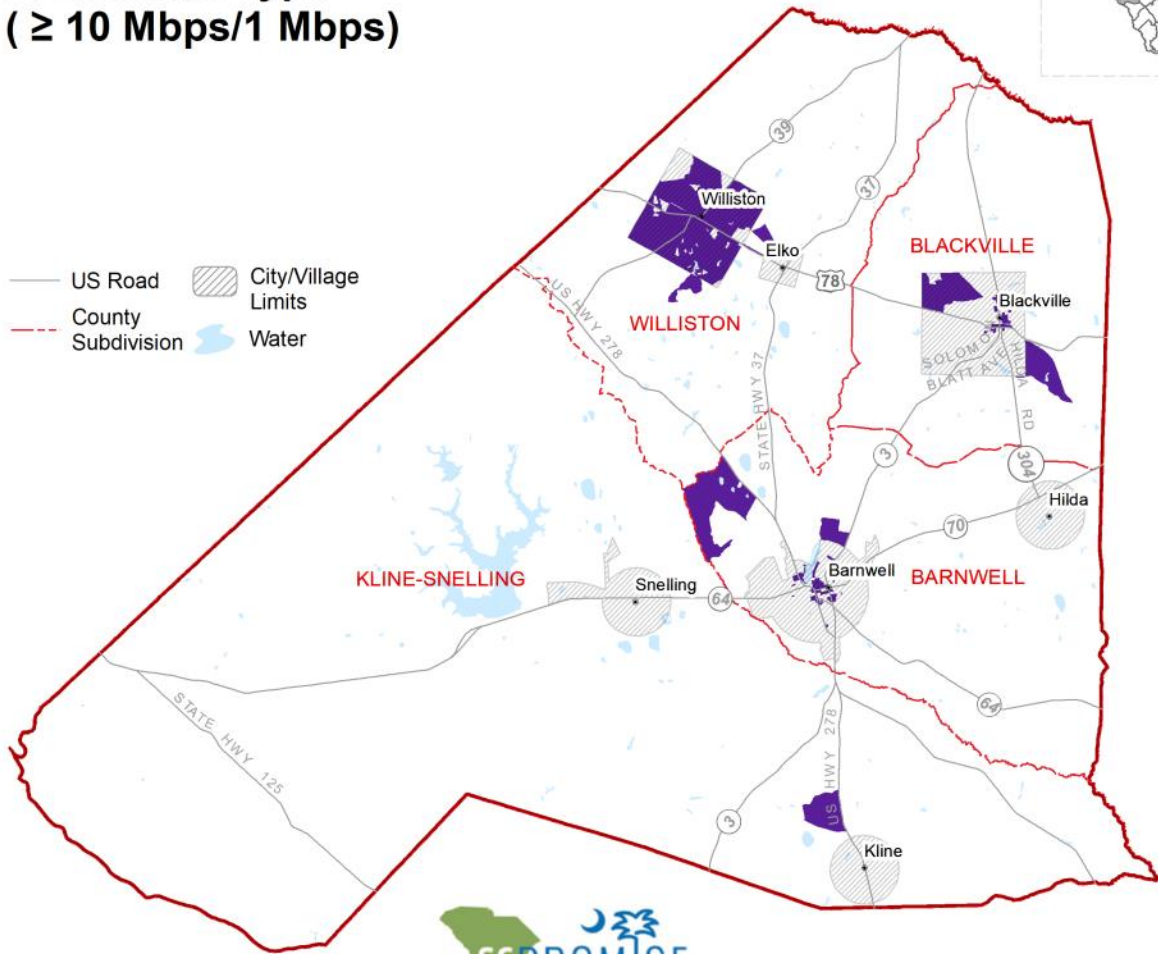


More than One Fixed Broadband Provider (≥ 10 Mbps/1 Mbps)



More than One Fixed Broadband Type (≥ 10 Mbps/1 Mbps)

- US Road
- County Subdivision
- ▨ City/Village Limits
- Water



**Connect America Fund
Phase II**

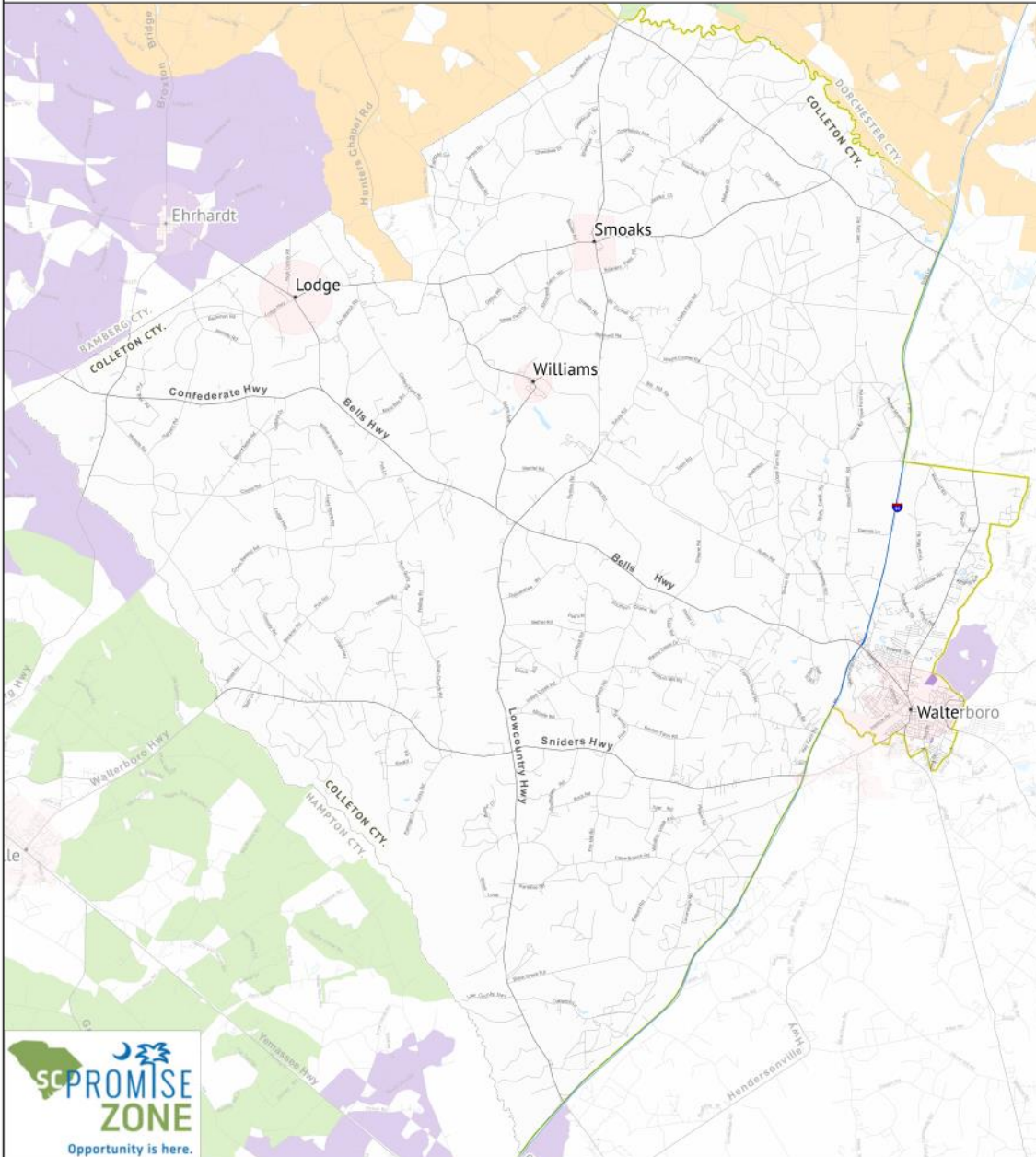
**Census Block
Build-Out
Commitments**

**Colleton County
Promise Zone**

**South
Carolina**



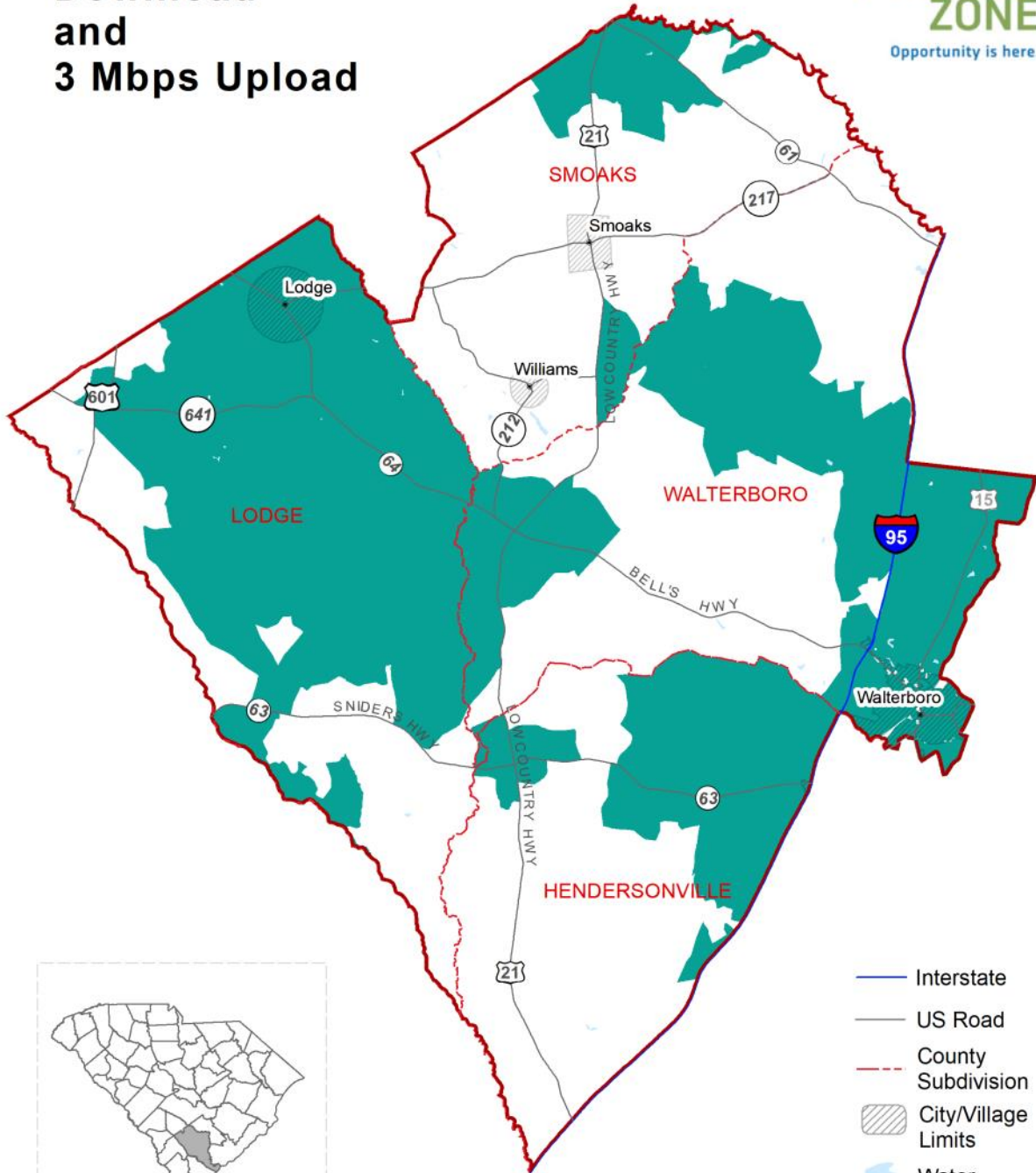
Data:
FCC
09/15/2015



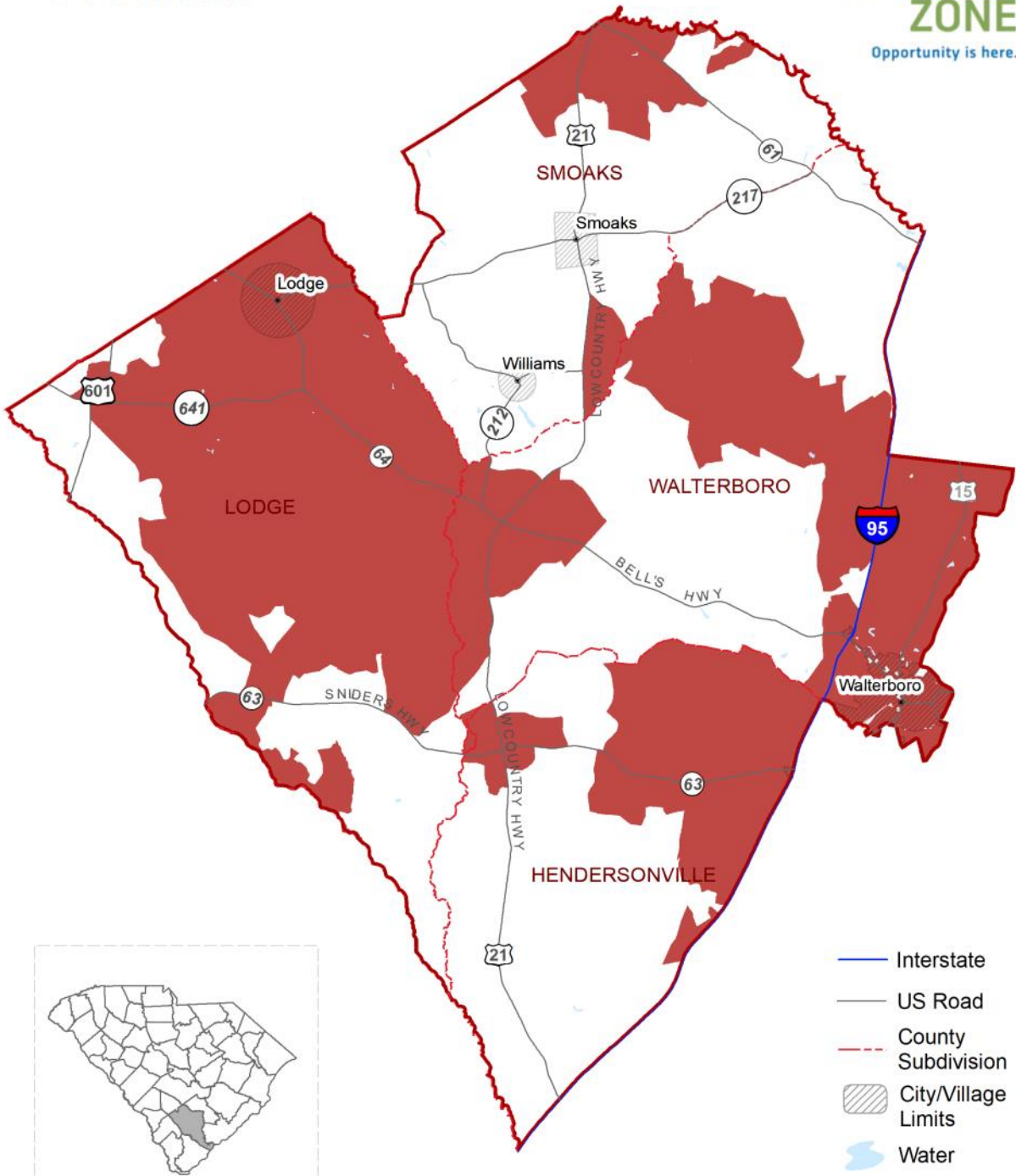
- | | |
|--------------------|------------------------|
| Interstate | Water |
| Secondary Road | AT&T Commitment |
| Local Road | CenturyLink Commitment |
| Municipal Boundary | Frontier Commitment |
| Zone Boundary | Windstream Commitment |
| County Boundary | No Targeted Subsidy |

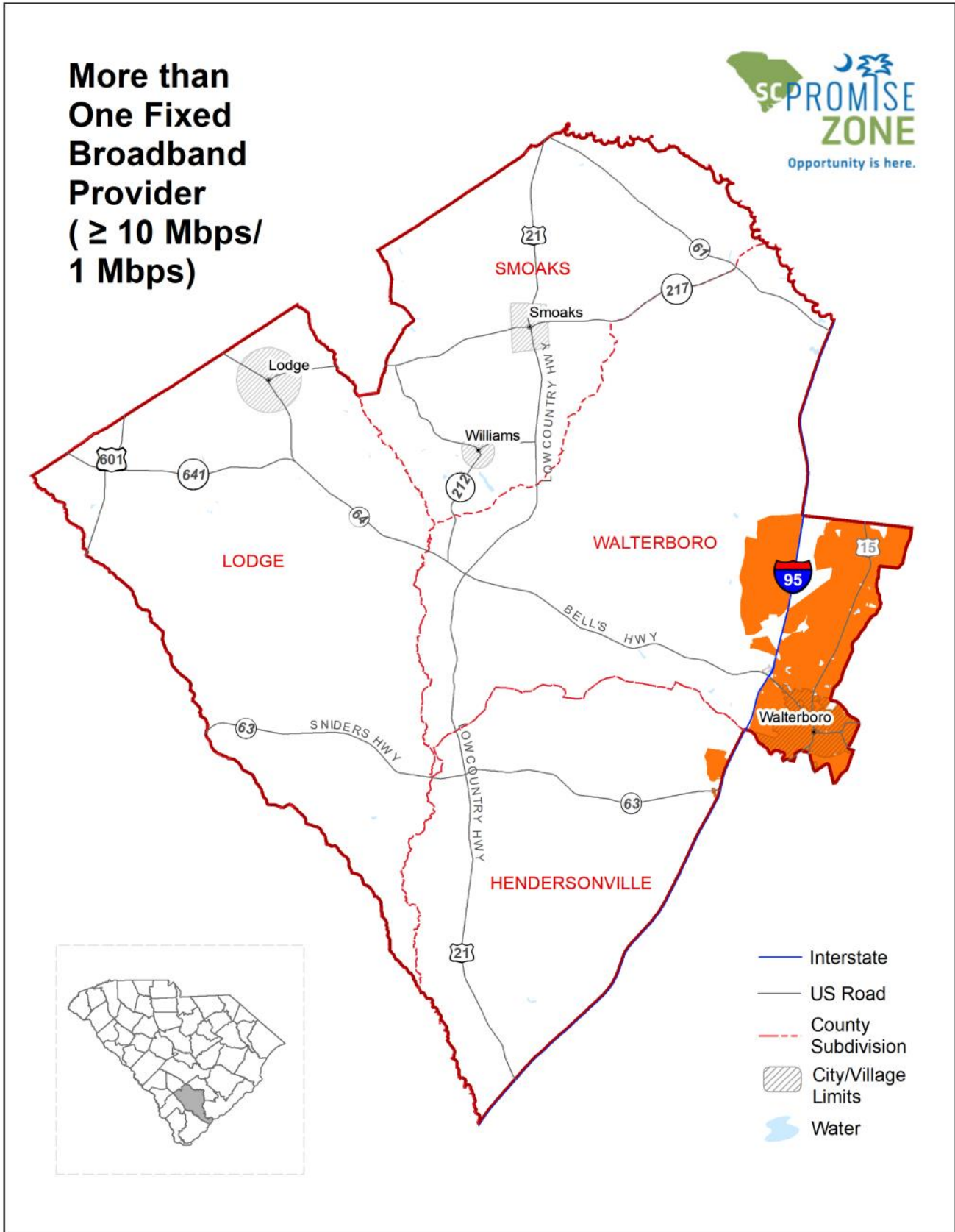
Submit questions or recommended changes to:
maps@connectsc.org

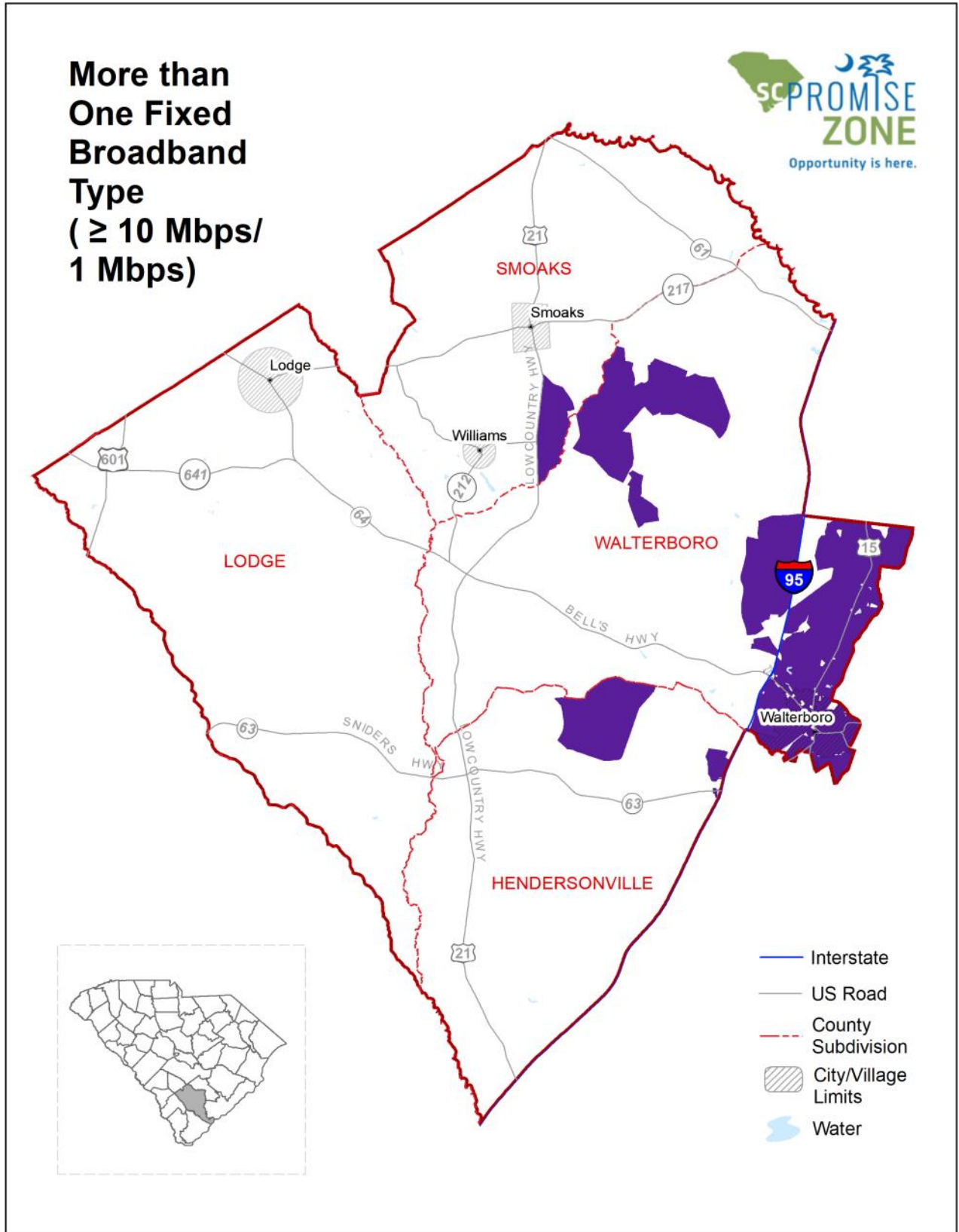
25 Mbps Download and 3 Mbps Upload



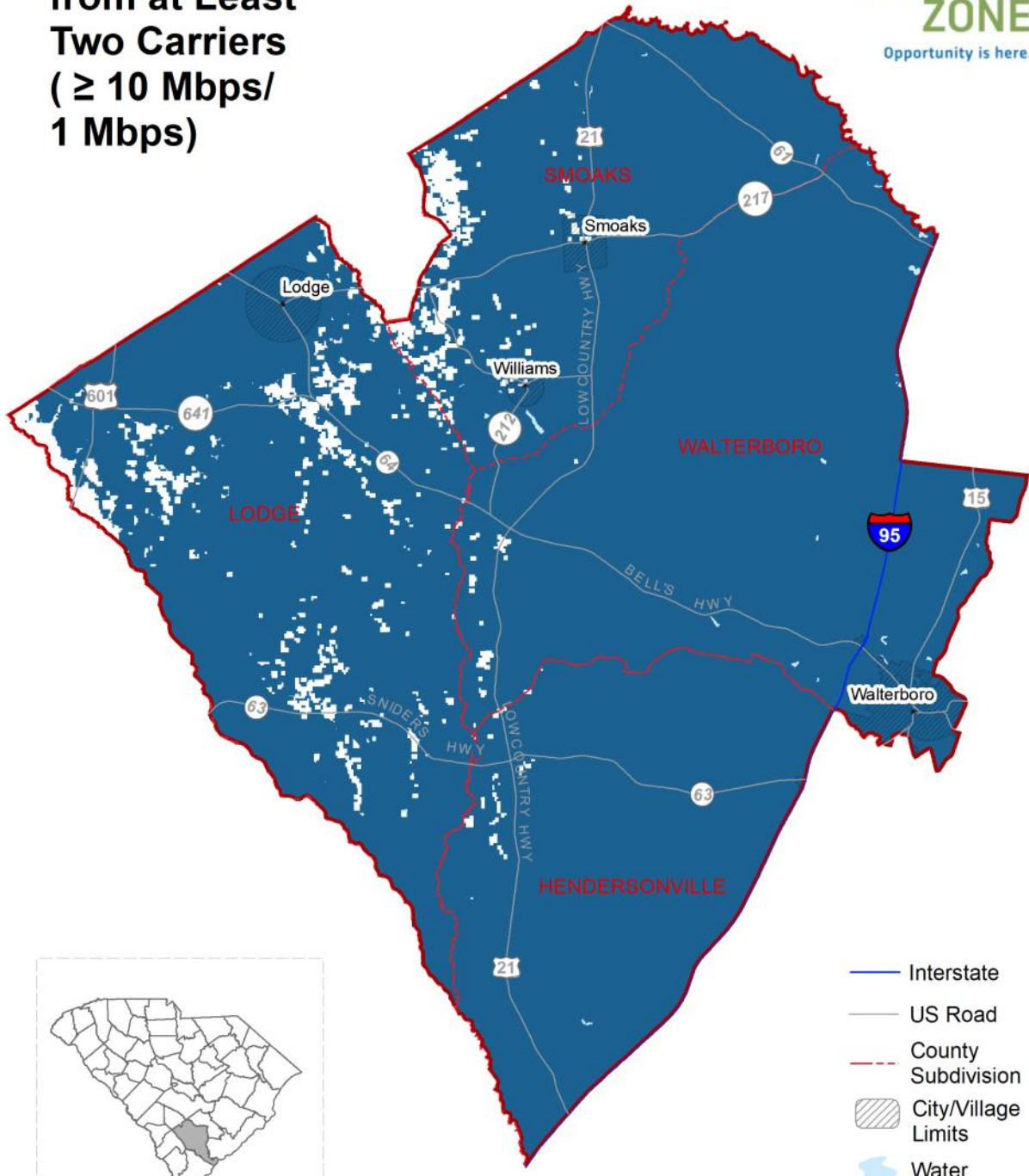
100 Mbps Download

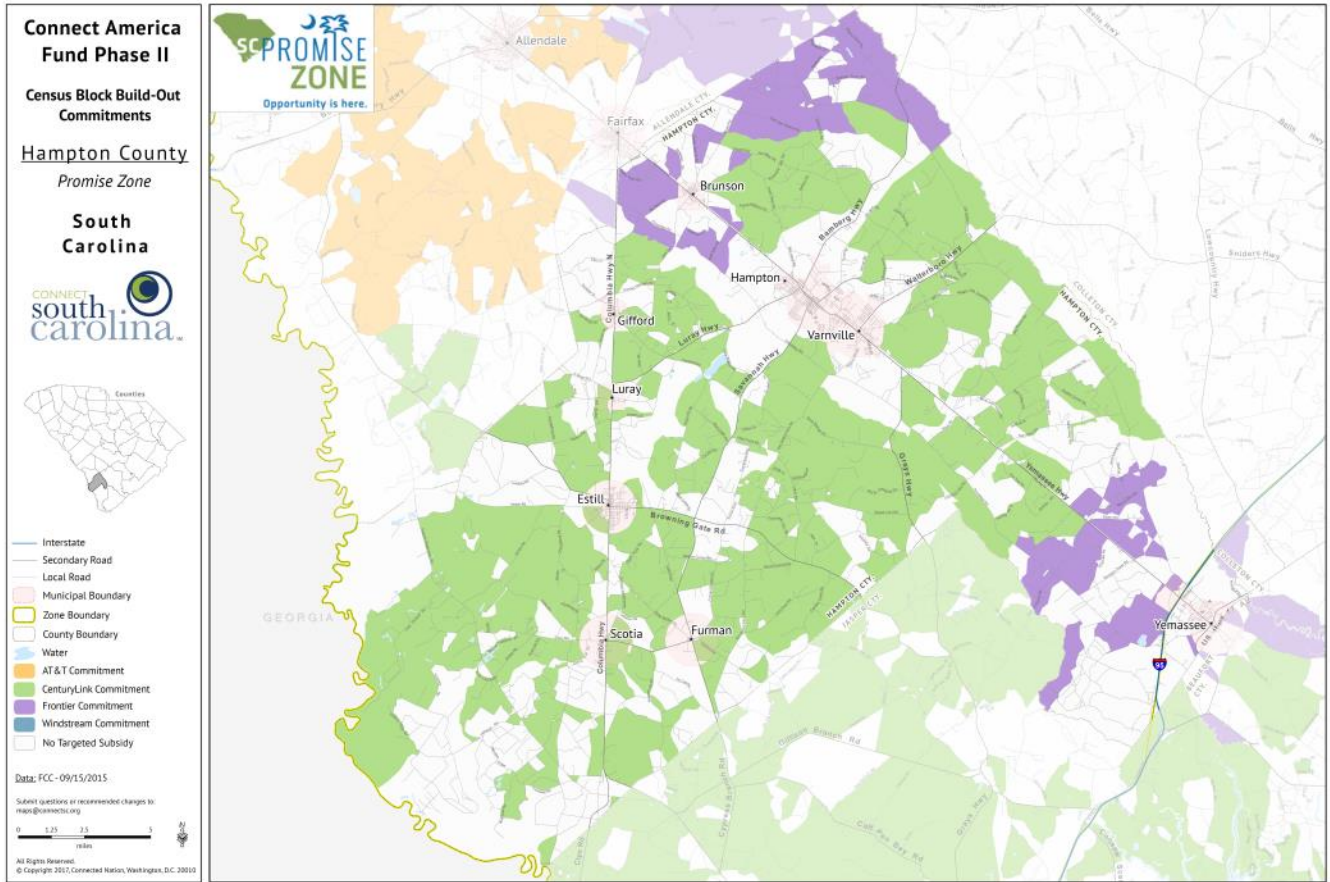






Mobile Broadband from at Least Two Carriers (≥ 10 Mbps/ 1 Mbps)

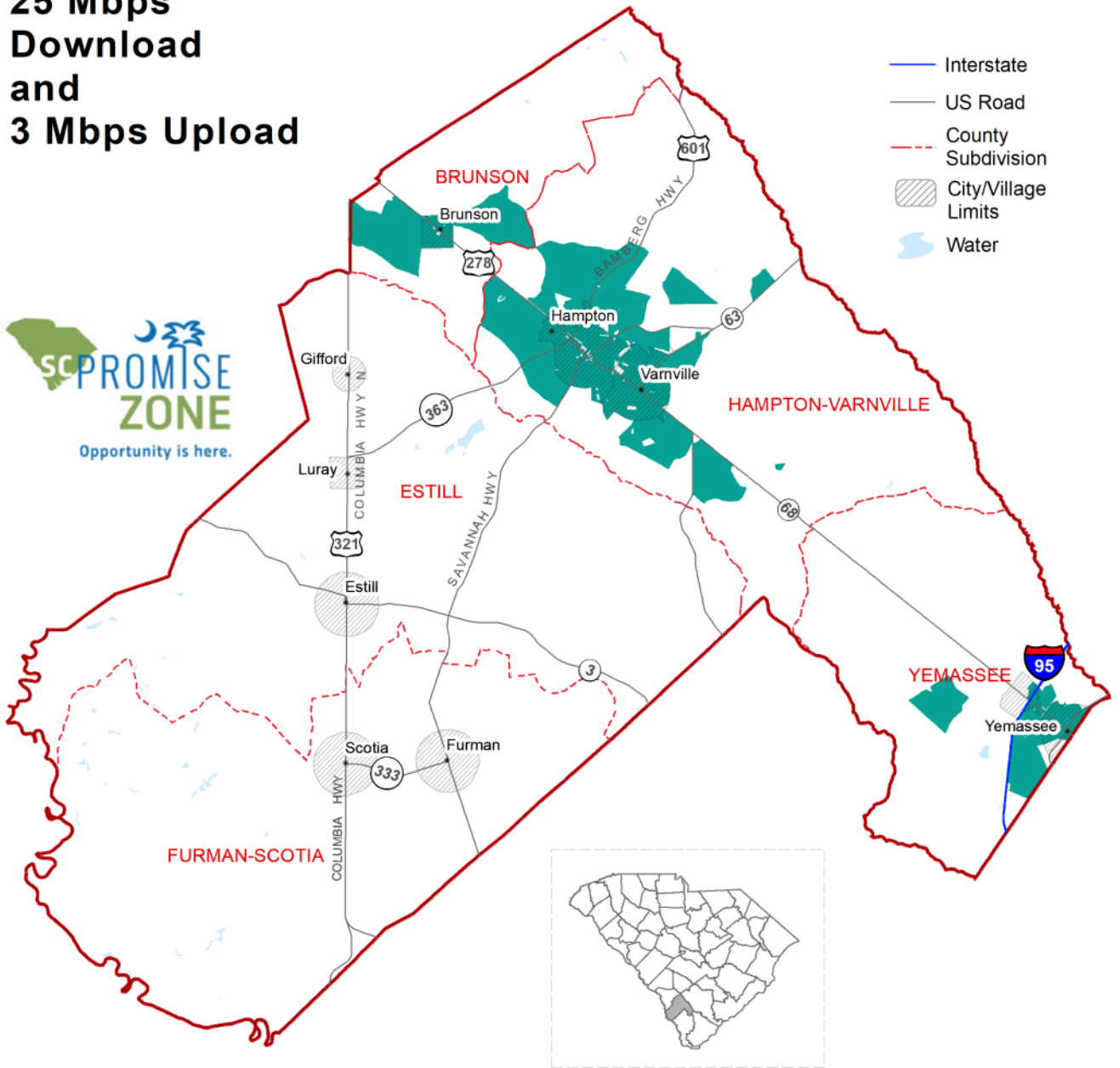


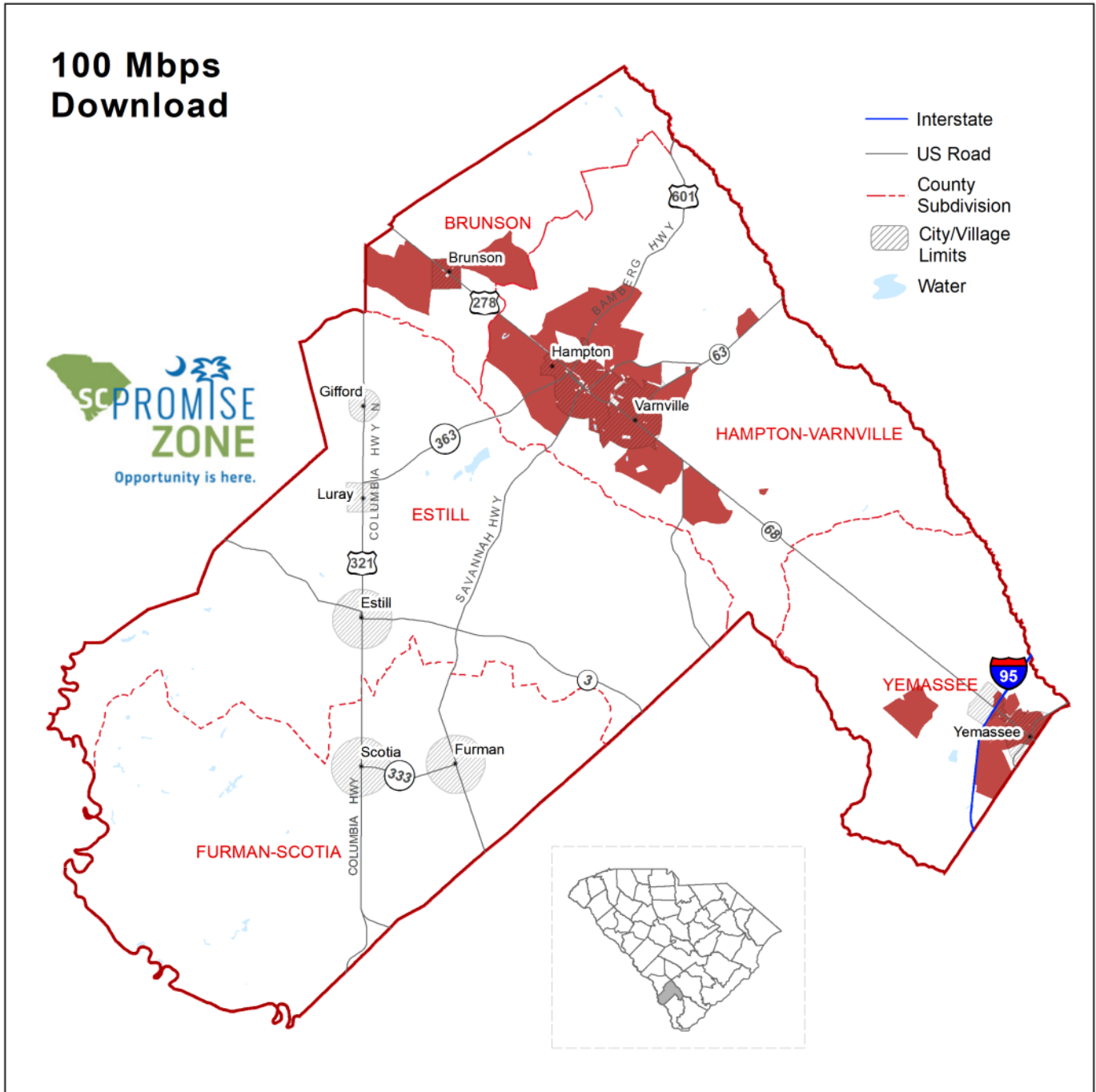


25 Mbps Download and 3 Mbps Upload



- Interstate
- US Road
- - - County Subdivision
- ▨ City/Village Limits
- ☁ Water

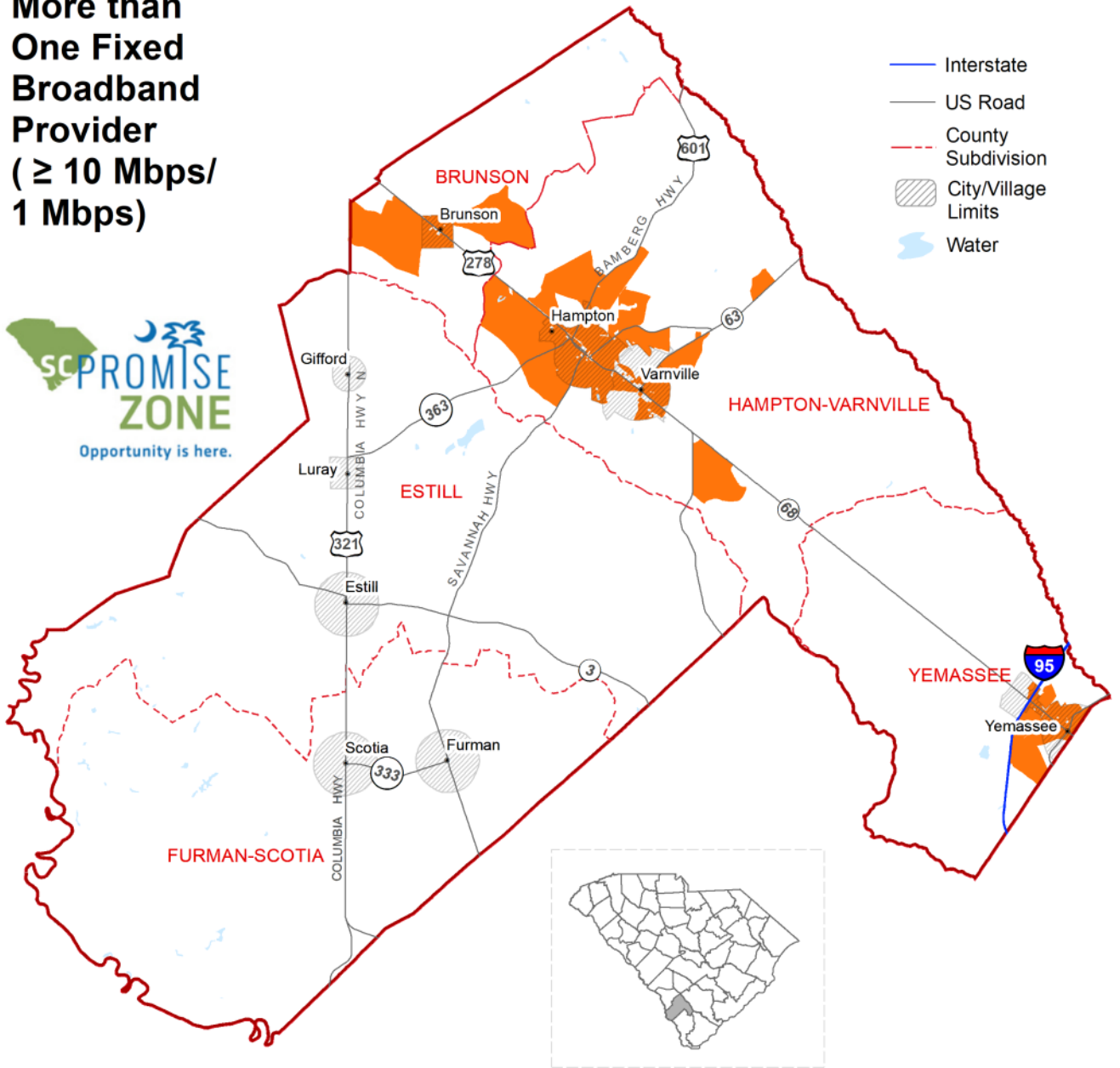




**More than
One Fixed
Broadband
Provider
(≥ 10 Mbps/
1 Mbps)**



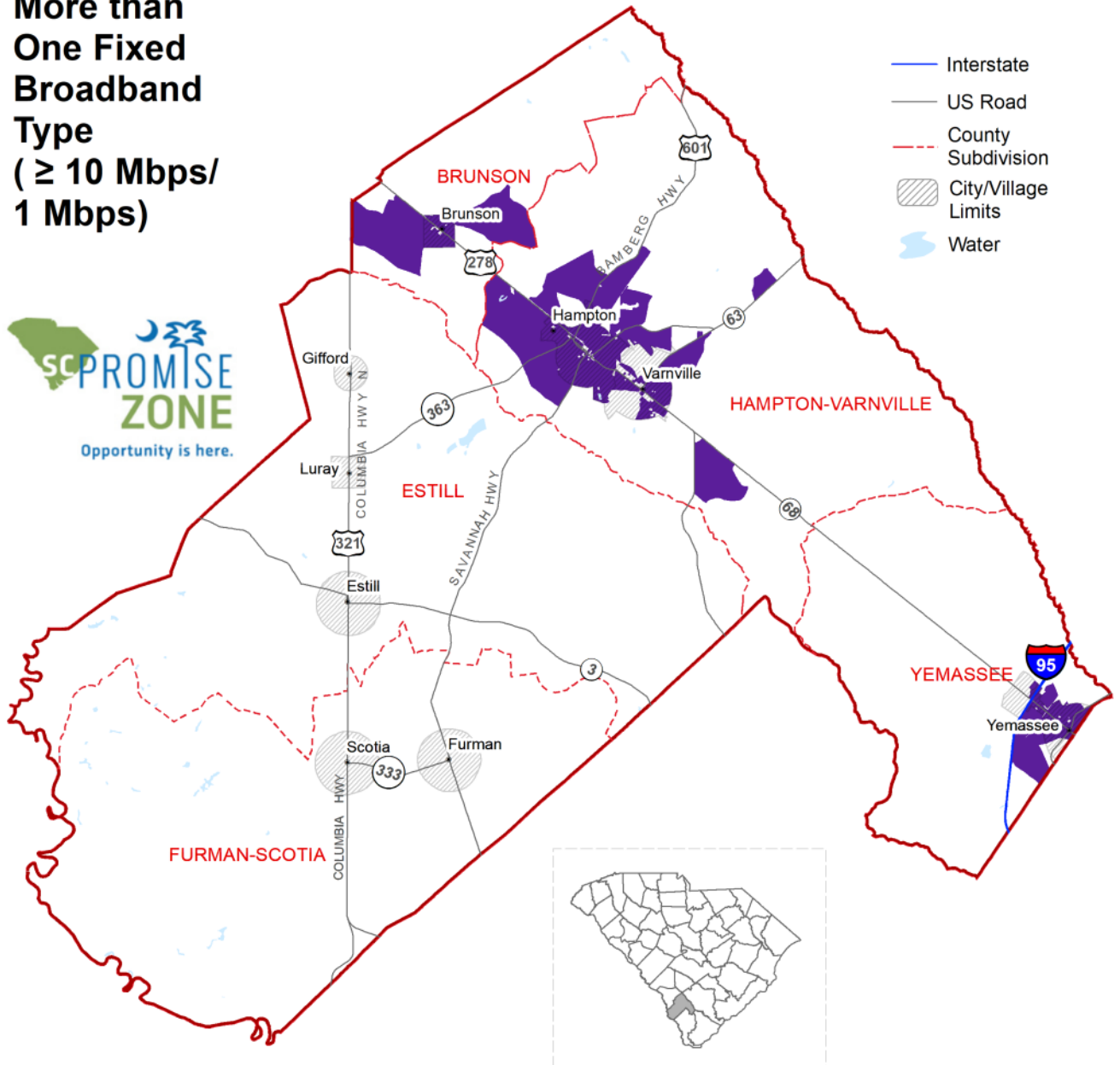
- Interstate
- US Road
- - - County Subdivision
- ▨ City/Village Limits
- Water



**More than
One Fixed
Broadband
Type
(≥ 10 Mbps/
1 Mbps)**



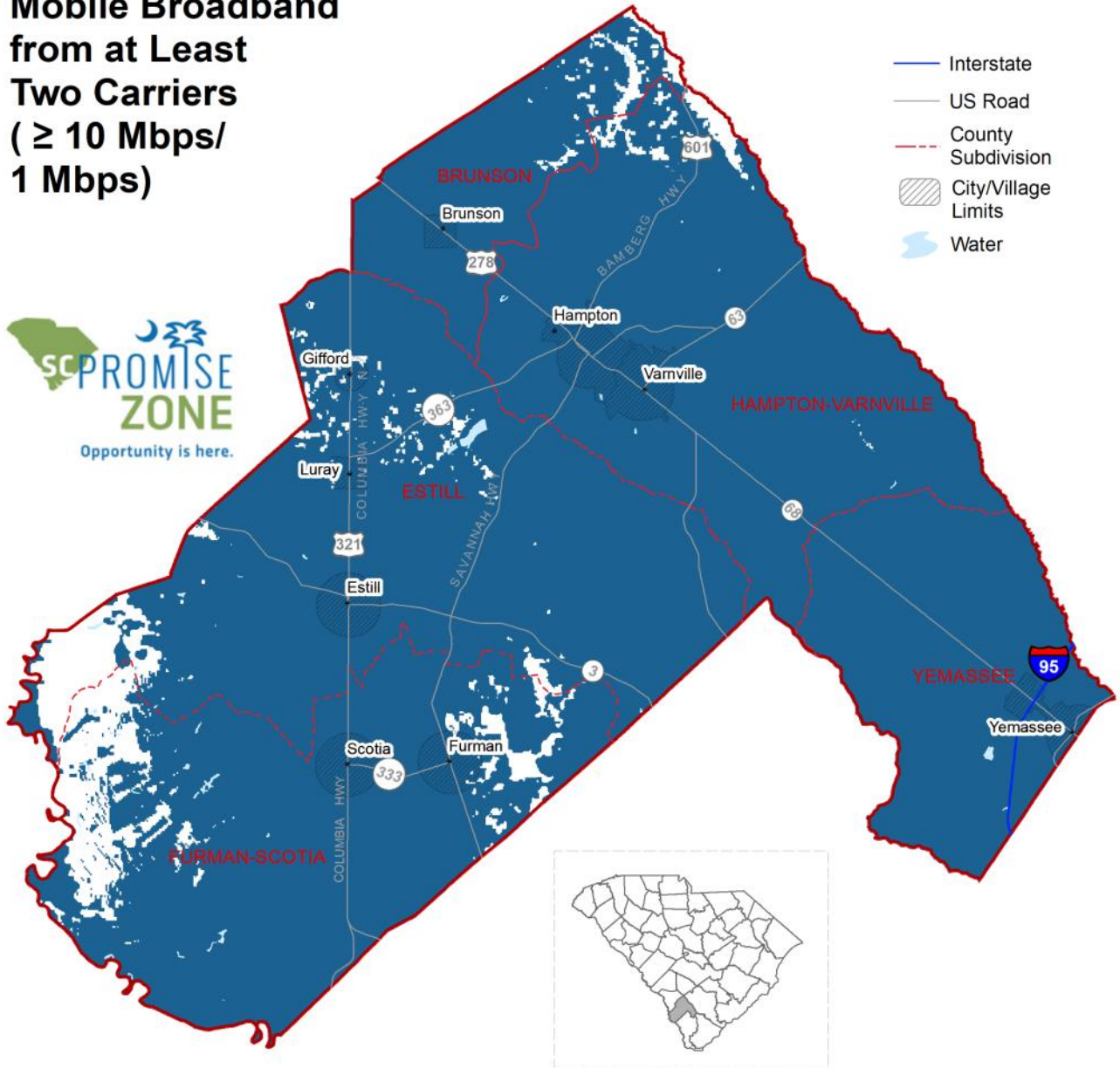
- Interstate
- US Road
- - - County Subdivision
- ▨ City/Village Limits
- Water

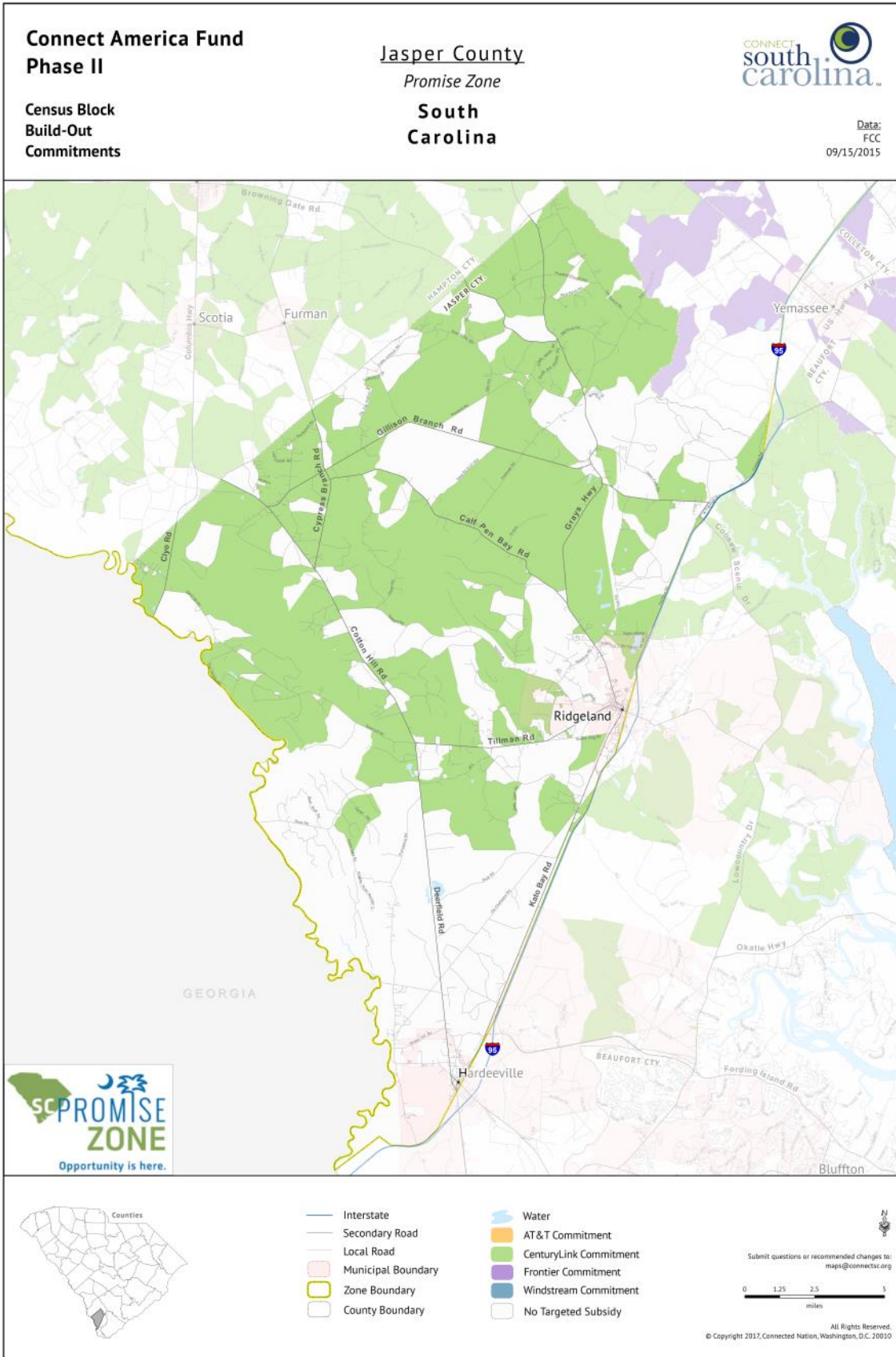


Mobile Broadband from at Least Two Carriers (≥ 10 Mbps/ 1 Mbps)

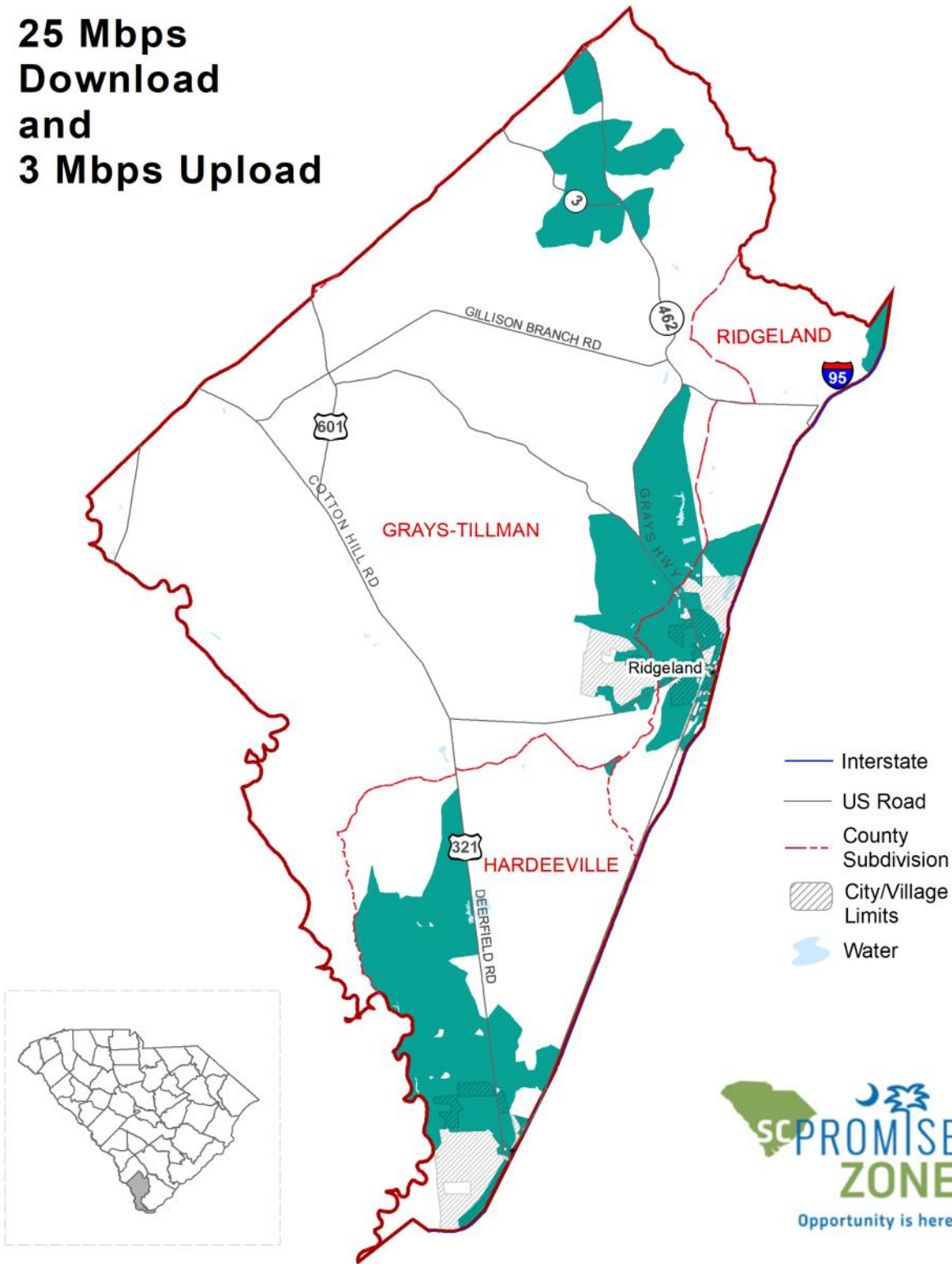


- Interstate
- US Road
- - - County Subdivision
- ▨ City/Village Limits
- Water

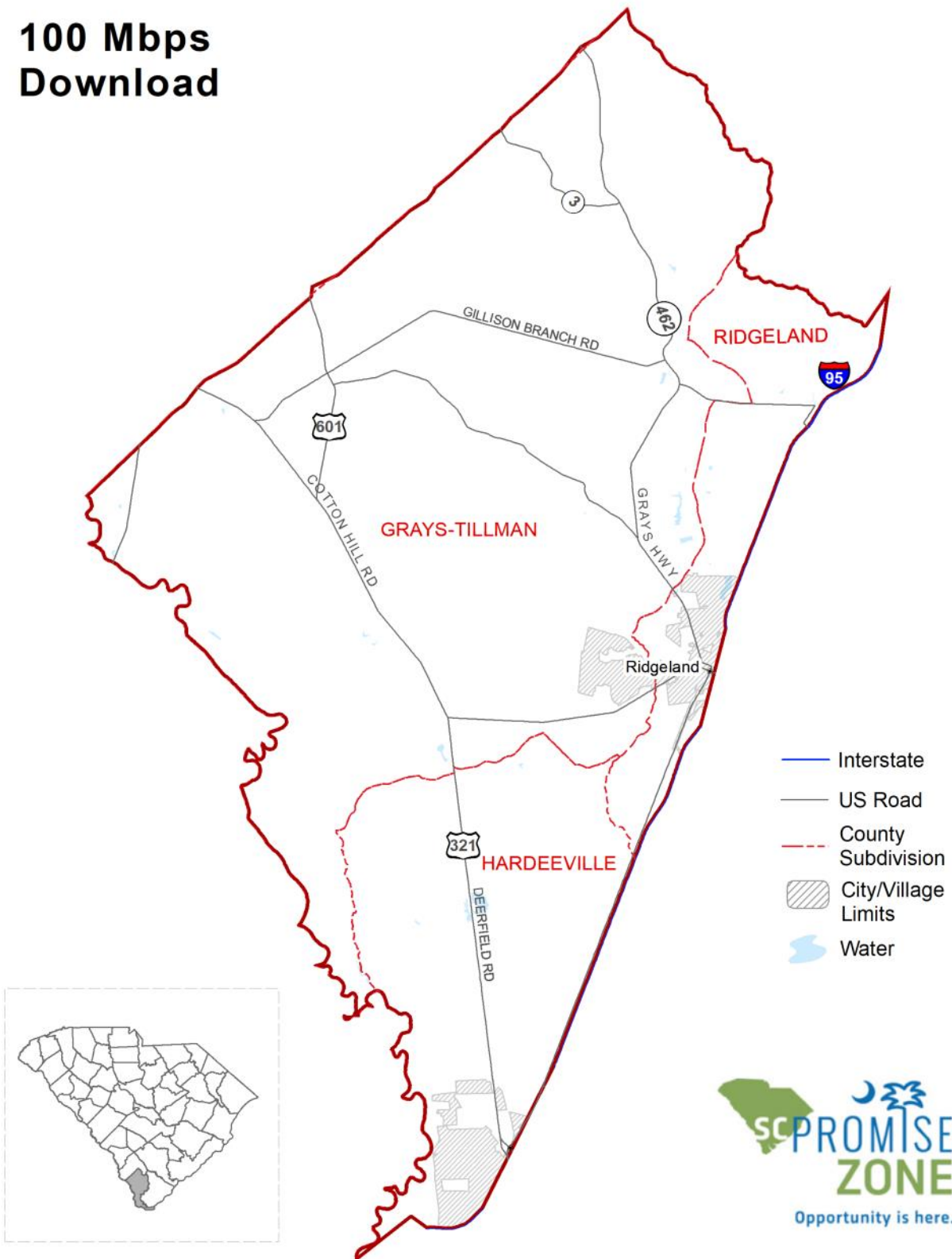




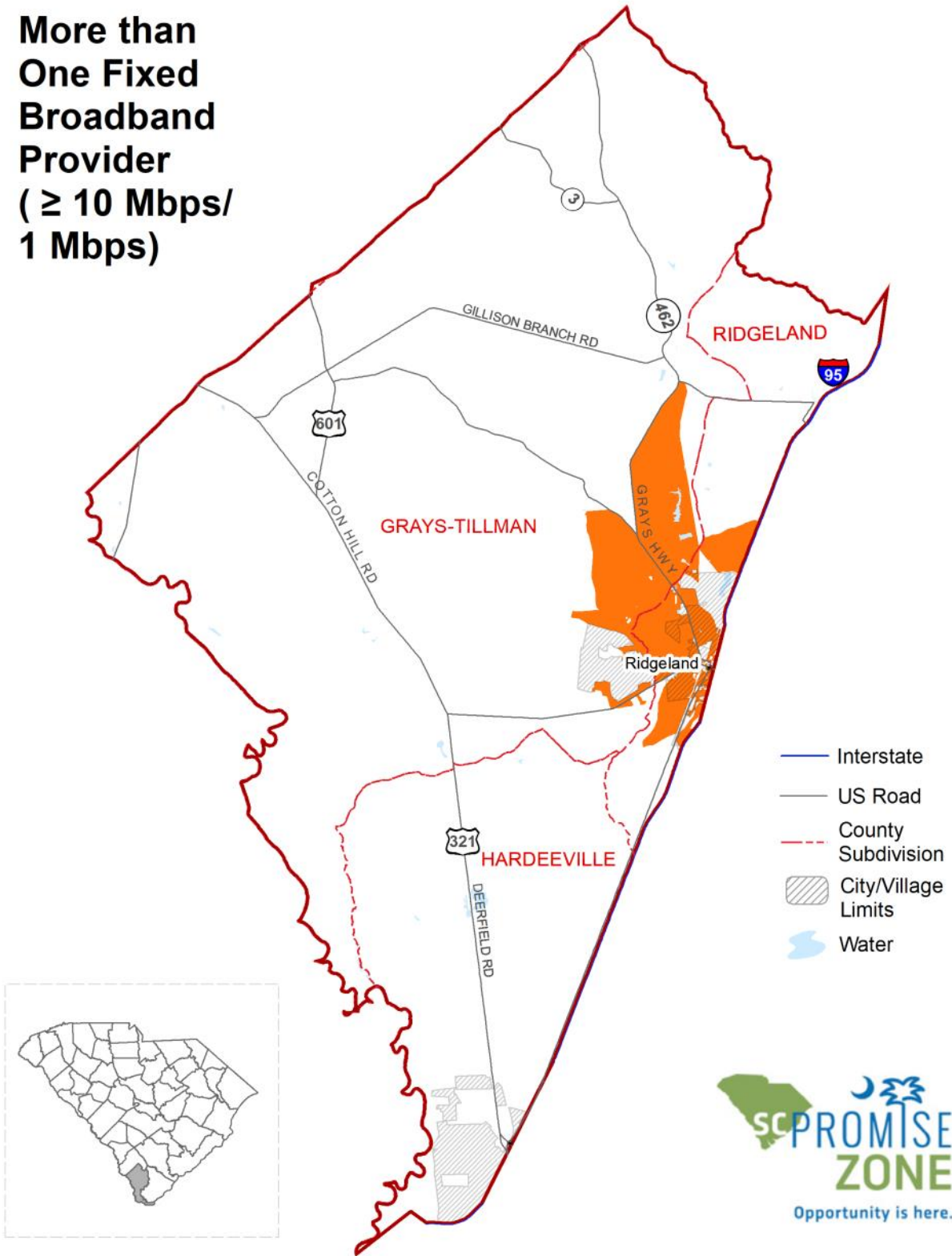
25 Mbps Download and 3 Mbps Upload



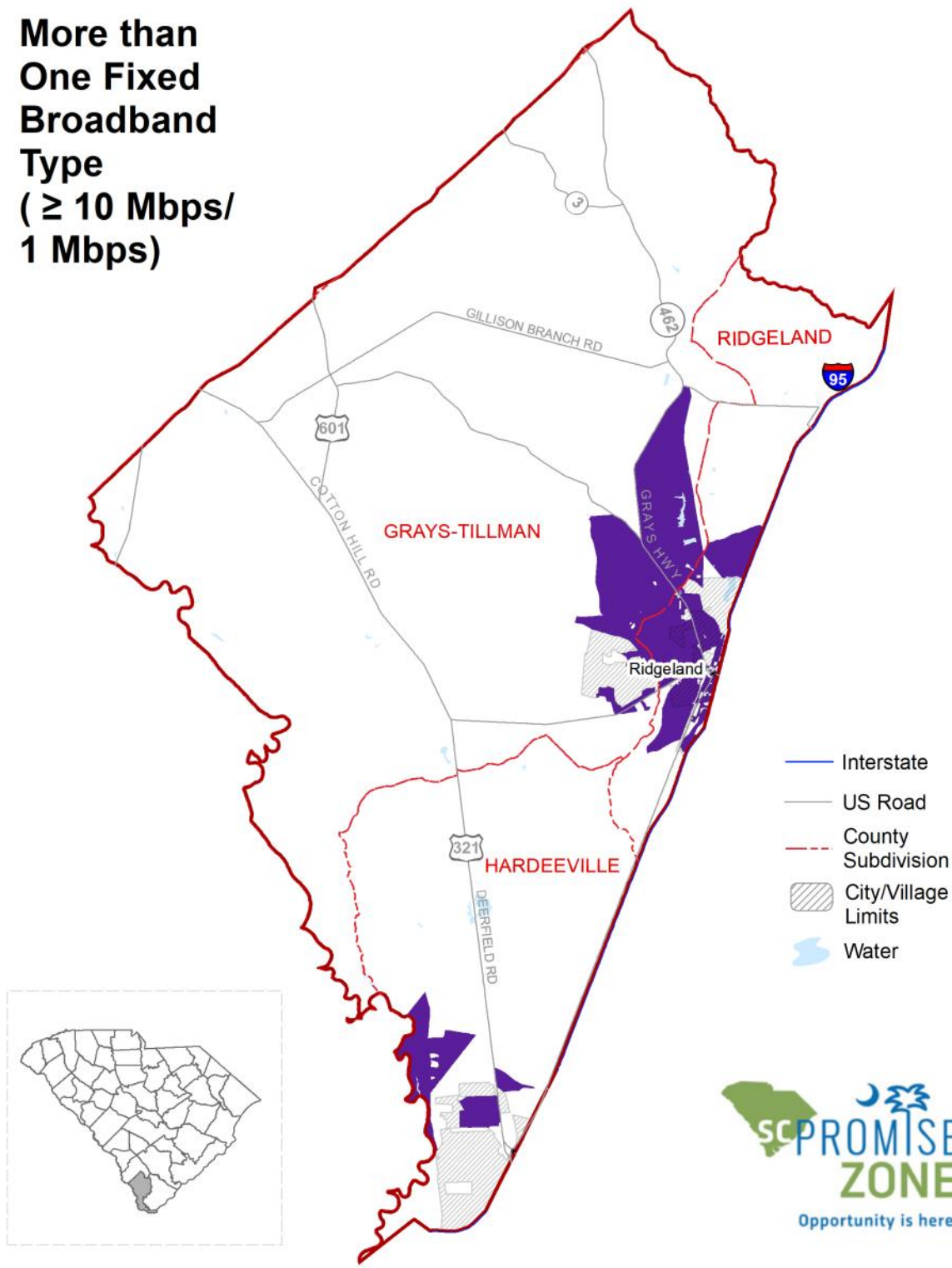
100 Mbps Download



**More than
One Fixed
Broadband
Provider
(≥ 10 Mbps/
1 Mbps)**



**More than
One Fixed
Broadband
Type
(≥ 10 Mbps/
1 Mbps)**



Mobile Broadband from at Least Two Carriers (≥ 10 Mbps/ 1 Mbps)

