



The Next, Next Greatest Thing

Rural Broadband: Closing the Digital Divide

South Carolina Office of Regulatory Staff | January 24, 2022

THE NEXT GREATEST THING



50 Years of Rural Electrification
In America

*“Brothers and sisters,
I want to tell you this.
The greatest thing on earth
is to have the love of God in your
heart, and the next greatest thing
is to have electricity
in your house.”*

Farmer giving witness in a rural
Tennessee church in the early 1940s

THE NEXT GREATEST THING



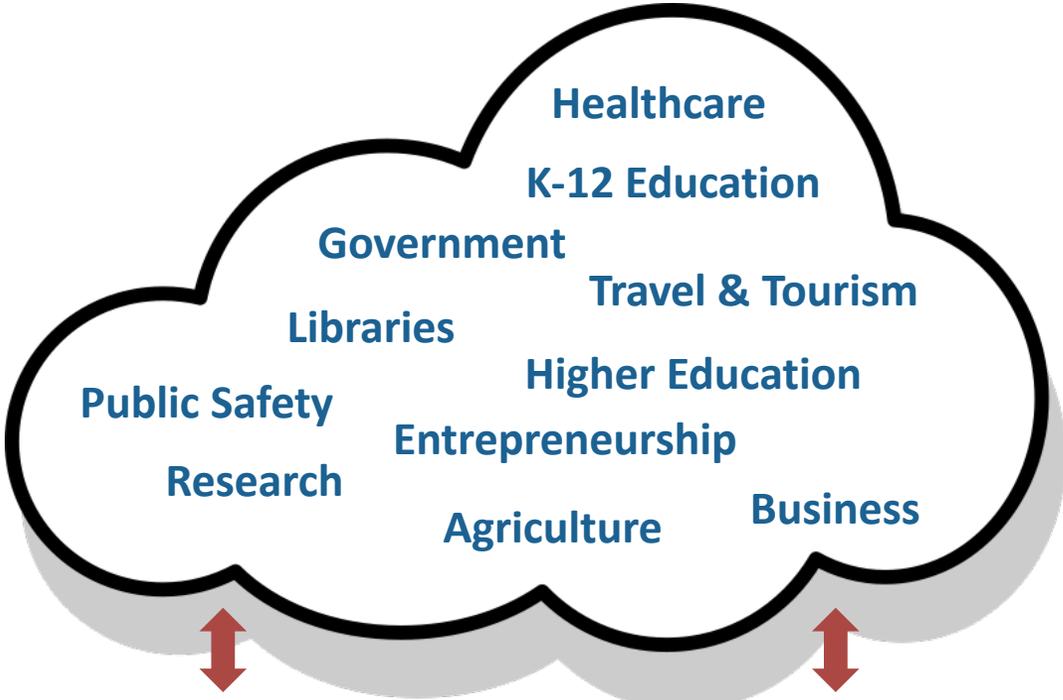
50 Years of Rural Electrification
In America

*“Brothers and sisters,
I want to tell you this.
The greatest thing on earth
is to have the love of God in your
heart, and the next, **next** greatest thing
is to have **Internet**
in your house.”*

Use:
Skills and applications to leverage technology to improve quality of life and community/economic development

Adoption:
Recognizing the value in broadband and subscribing either at home, work, or via public institutions

Access:
The physical connection to high-speed infrastructure



Digital Inclusion programs are required for motivation, especially when K-12 students are still living at home.



0%

50%

100%

FCC Internet Benchmarks

Qualifies for Federal & State Investment

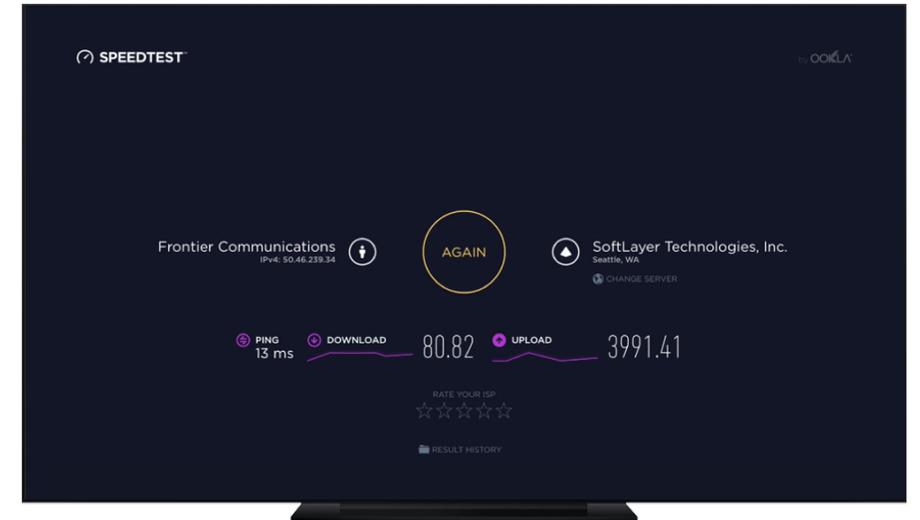
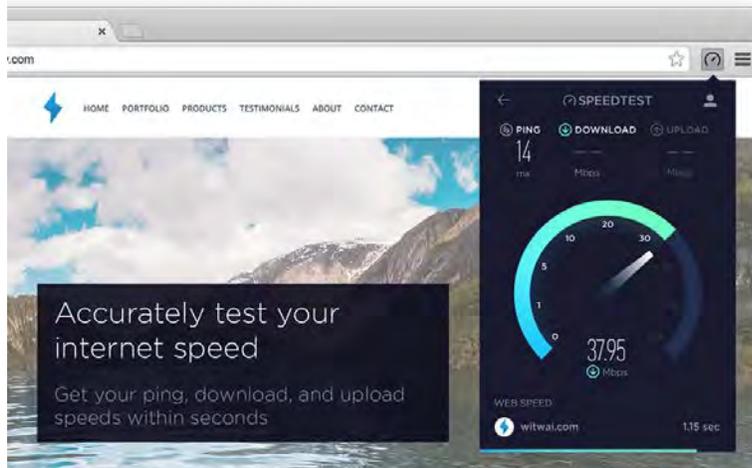
Date Adopted	Minimum Download	Minimum Upload	FCC Commissioner
2015	25 Mbps	3 Mbps	Tom Wheeler, D
2010	4 Mbps	1 Mbps	Julius Genachowski, D
1996	200 Kbps	200 Kbps	William Kennard, D

Federal Construction Requirements

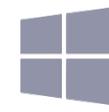
Reliable 100/20 Mbps scalable to 100/100 Mbps (symmetric)



Ookla's mission is to make the internet better, faster and more accessible for everyone



iOS



Speedtest is available for:
Web, Android, iOS, macOS, Windows, AppleTV, Chrome

Residential Broadband Technology

Best Available Technology Class

- Fiber | Speeds \geq 100 Mbps/100 Mbps (symmetric)
- Cable (DOCSIS 3.1+) | Speeds \geq 100 Mbps/100 Mbps (symmetric)
- Cable (DOCSIS 3.0) | Speeds \geq 100 Mbps/20 Mbps
- Cable (DOCSIS $<$ 2.0) | Speeds \geq 25 Mbps/3 Mbps
- VDSL (Fiber-To-The-Curb) | Speeds \geq 10 Mbps/1 Mbps
- ADSL2, ADSL2+ | Speeds \geq 6 Mbps/1 Mbps
- Fixed Wireless | Speeds \geq 10 Mbps/1 Mbps
- ADSL | Speeds \geq 3 Mbps/768 kbps
- No Internet Service Available
- Zero Households

Copper & Fixed Wireless

Copper technology (xDSL) cannot deliver reliable 25/3. End of useful life.

Fixed Wireless requires optimum conditions to exceed 25/3; however, it delivers *Speed to Access* meaning that high need areas have the potential to get coverage fast while physical connections to each house are built.

No Internet Options Exist

This has nothing to do with affordability!

Customers in these areas cannot receive service at their physical address.

“Begin With the End in Mind”

Steven R. Covey, *7 Habits of Highly Effective People*

Speed Tiers (download / upload)

	100 Mbps / 100 Mbps (symmetric)
	100 Mbps / 20 Mbps
	25 Mbps / 3 Mbps
	Zero Households

DON'T INVEST HERE

Green: Already served. Meets or exceeds FCC's 25/3 Mbps
White: Nobody lives there.

Density of Unserved Households

	200 or More (per sq. mi.)
	25 - 199
	1 - 24
	> 0 and < 1

INVEST HERE!

Find the “freckles!” and prioritize these. Freckles are high household density with poor Internet.

South Carolina

Areas of Need

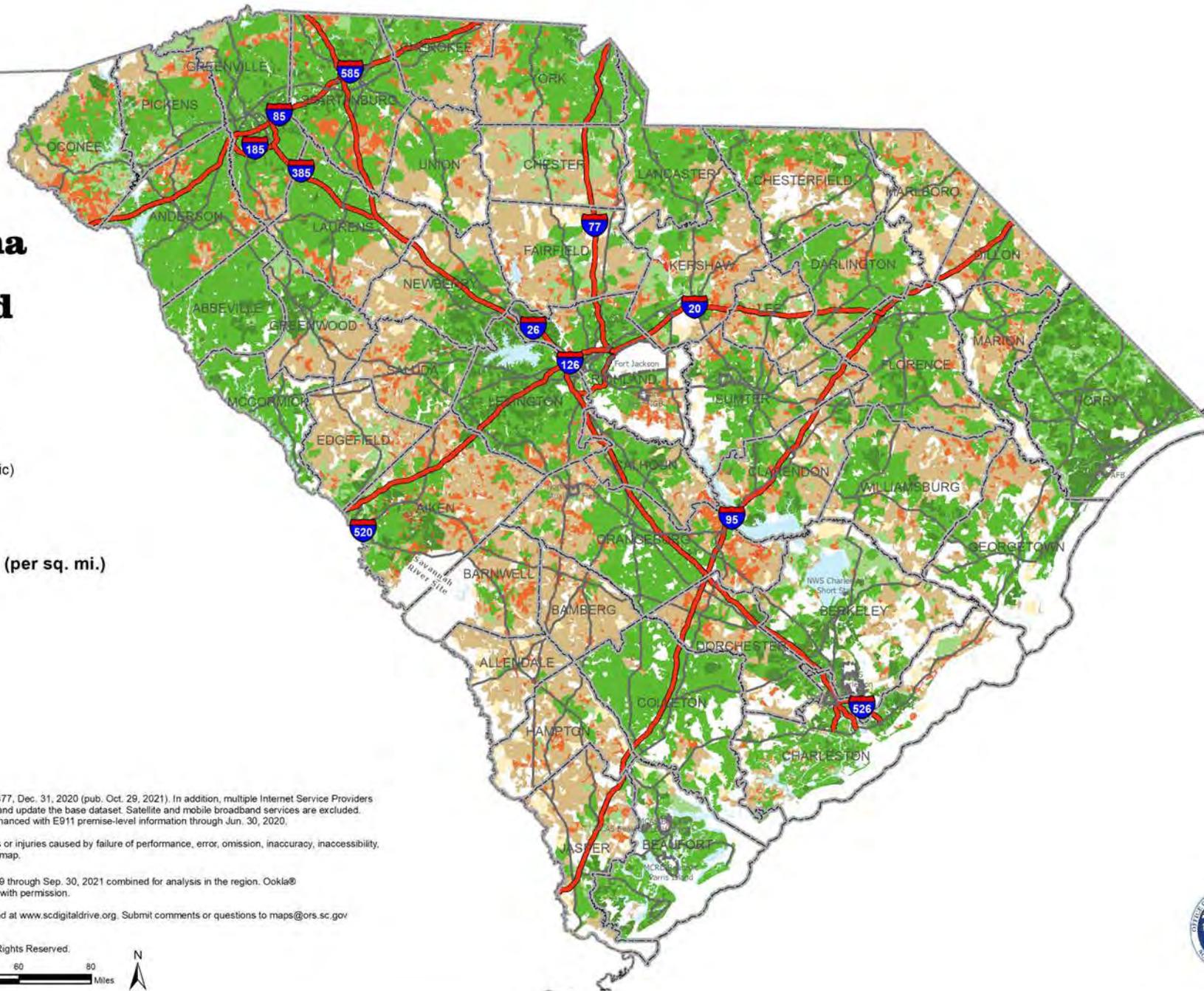
September 30, 2021

Speed Tiers (download / upload)

- >= 100 Mbps / 100 Mbps (symmetric)
- >= 100 Mbps / 20 Mbps
- >= 25 Mbps / 3 Mbps

Density of Unserved Households (per sq. mi.)

- 200 or More
- 25 - 199
- 1 - 24
- > 0 and < 1
- Zero



Data Sources: Based on SC Broadband Office analysis of FCC Form 477, Dec. 31, 2020 (pub. Oct. 29, 2021). In addition, multiple Internet Service Providers have contributed their FCC Form 477, Jun. 30, 2021 data to augment and update the base dataset. Satellite and mobile broadband services are excluded. Demographic data based on US Census 2010 information that was enhanced with E911 premise-level information through Jun. 30, 2020.

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South Carolina

Planning

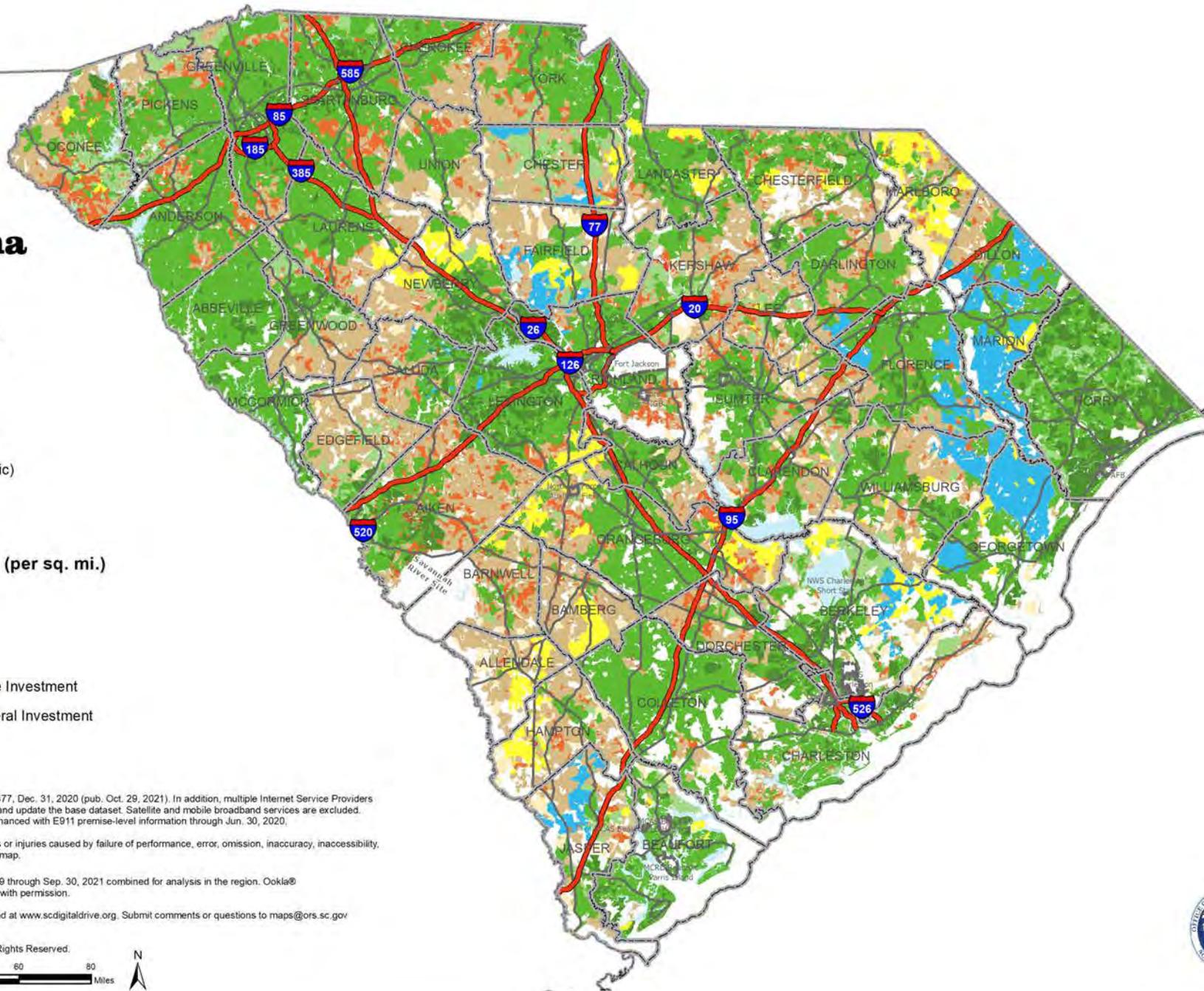
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Speed Tiers (download / upload)

-  >= 100 Mbps / 100 Mbps (symmetric)
-  >= 100 Mbps / 20 Mbps
-  >= 25 Mbps / 3 Mbps

Density of Unserved Households (per sq. mi.)

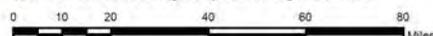
-  200 or More
-  25 - 199
-  1 - 24
-  > 0 and < 1
-  Zero
-  State Investment
-  Federal Investment



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 0 10 20 40 60 80 Miles

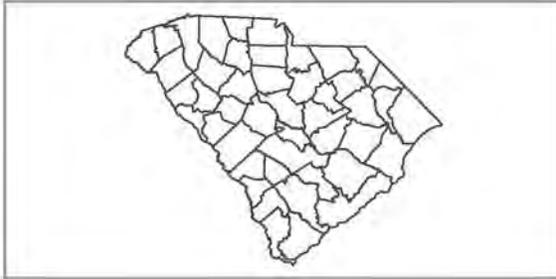


South Carolina

Statewide

Statistics

September 30, 2021



Population¹

Since official Census 2020 totals are not yet available, population estimates are calculated by multiplying housing unit data times an approximate residents per housing unit.

Public K-12

K-12 student data reflects the subset of public school students which have been geocoded as of September 30, 2021. Student data was provided by the SC Department of Education.

Housing Units¹

A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from the outside of the building or through a common hall. Since official Census 2020 totals are not yet available, housing unit data is derived from E911 information and Local Update of Census Addresses (LUCA) information.

Qualified HU

Qualified Housing Units (HU) are located within Difficult Development Areas (Qualified Census Tracts) as determined by US Housing and Urban Development.

Data Sources: Based on SC Broadband Office analysis of FCC Form 477, Dec. 31, 2020 (pub. Oct. 29, 2021). In addition, multiple Internet Service Providers have contributed their FCC Form 477, Jun. 30, 2021 data to augment and update the base dataset. Satellite and mobile broadband services are excluded. Demographic data based on US Census 2010 information that was enhanced with E911 premise-level information through Jun. 30, 2020. Geocoded K-12 student data provided by the SC Dept. of Education through Sep. 30, 2021. Difficult Development Areas are designated by US Housing and Urban Development (pub. Sep. 9, 2021).

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US Census	Population	Housing Units
2010	4,625,364	2,137,683
2020 ¹	5,118,425 15.3%	2,489,808 13.8%

CURRENT	Current Below 25↓ Mbps Download / 3↑ Mbps Upload			
	Population	Public K-12	Housing Units	Qualified HU
September 30, 2021	427,237	49,056	221,731	32,607

Current Best Available Technology					
Fiber	Cable	Copper	Fixed Wireless		
1,029,544 41.4%	1,209,656 48.6%	134,353 5.4%	23,272 0.9%		

FUNDED PROJECTS	Projected Investment Impact			
	Population	Public K-12	Housing Units	Qualified HU
Federal Funding	25,064	3,130	13,311	1,731
State Funding	37,778	4,001	20,066	3,654
Total	62,842	7,131	33,377	5,385

FUTURE	Remaining Below 25↓ Mbps Download / 3↑ Mbps Upload			
	Population	Public K-12	Housing Units	Qualified HU
December 31, 2022	364,395	41,925	188,354	27,222

Williamsburg County

South Carolina

Best Available Technology

September 30, 2021



Best Available Technology (type | capability)

-  Fiber | Speeds >= 100 Mbps/100 Mbps (symmetric)
-  Cable (DOCSIS 3.1+) | Speeds >= 100 Mbps/100 Mbps
-  Cable (DOCSIS 3.0) | Speeds >= 100 Mbps/20 Mbps
-  Cable (DOCSIS < 2.0) | Speeds >= 25 Mbps/3 Mbps
-  VDSL (Fiber-To-The-Curb) | Speeds >= 10 Mbps/1 Mbps
-  ADSL2, ADSL2+ | Speeds >= 6 Mbps/1 Mbps
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-  ADSL | Speeds >= 3 Mbps/768 kbps
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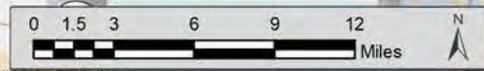
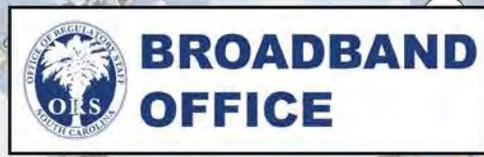
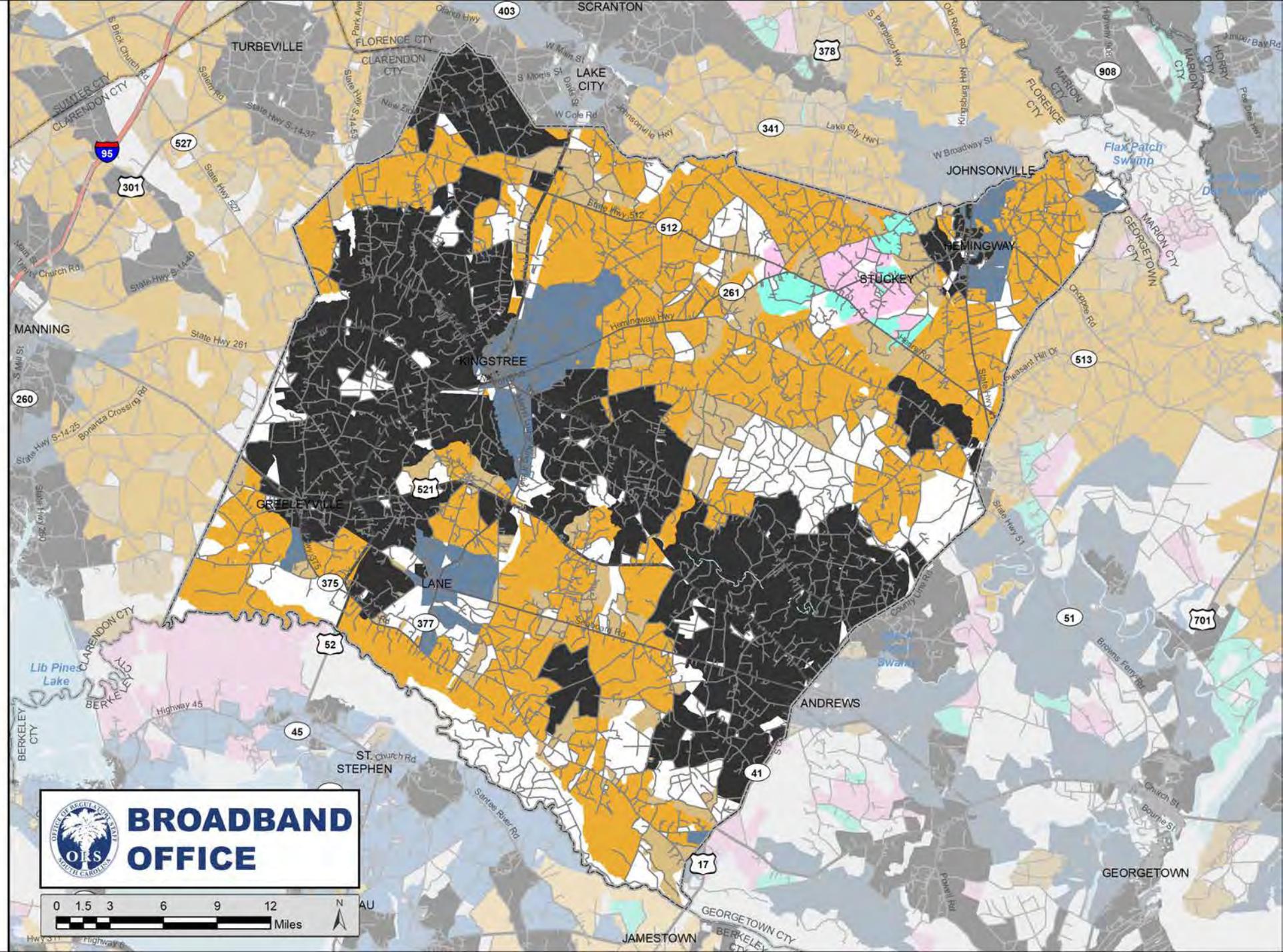
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Williamsburg County

South Carolina

Areas of Need

September 30, 2021

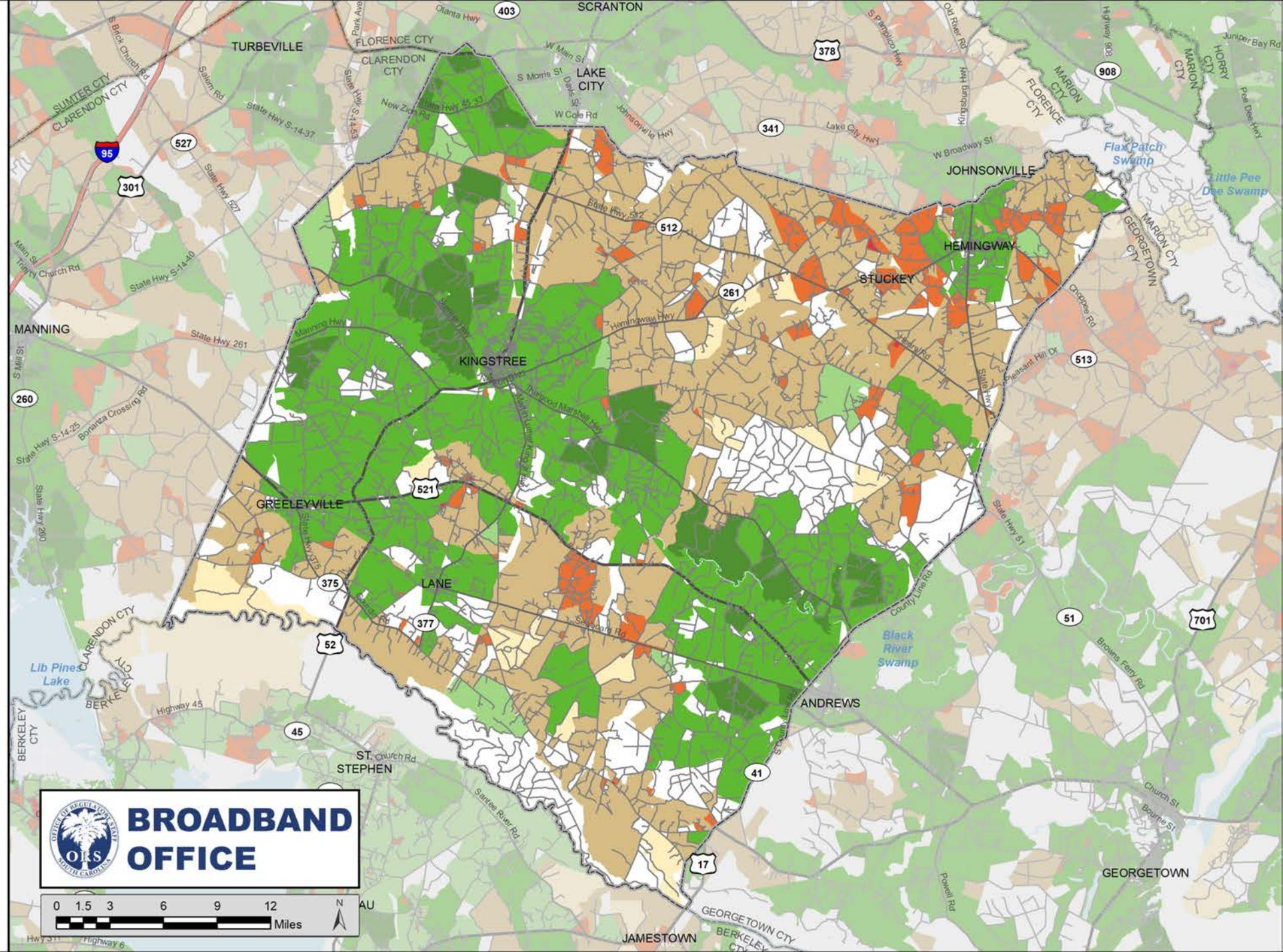


Speed Tiers (download / upload)

- >= 100 Mbps / 100 Mbps (symmetric)
- >= 100 Mbps / 20 Mbps
- >= 25 Mbps / 3 Mbps

Density of Unserved Households (per sq. mi.)

- 200 or More
- 25 - 199
- 1 - 24
- > 0 and < 1
- Zero



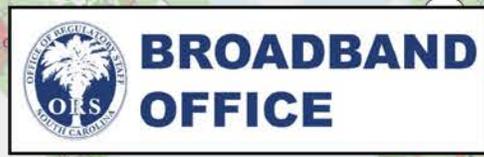
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Williamsburg County

South Carolina

Planning
December 31, 2022



Speed Tiers (download / upload)

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Density of Unserved Households (per sq. mi.)

- 200 or More
- 25 - 199
- 1 - 24
- > 0 and < 1
- Zero
- State Investment
- Federal Investment
- Difficult Development Area

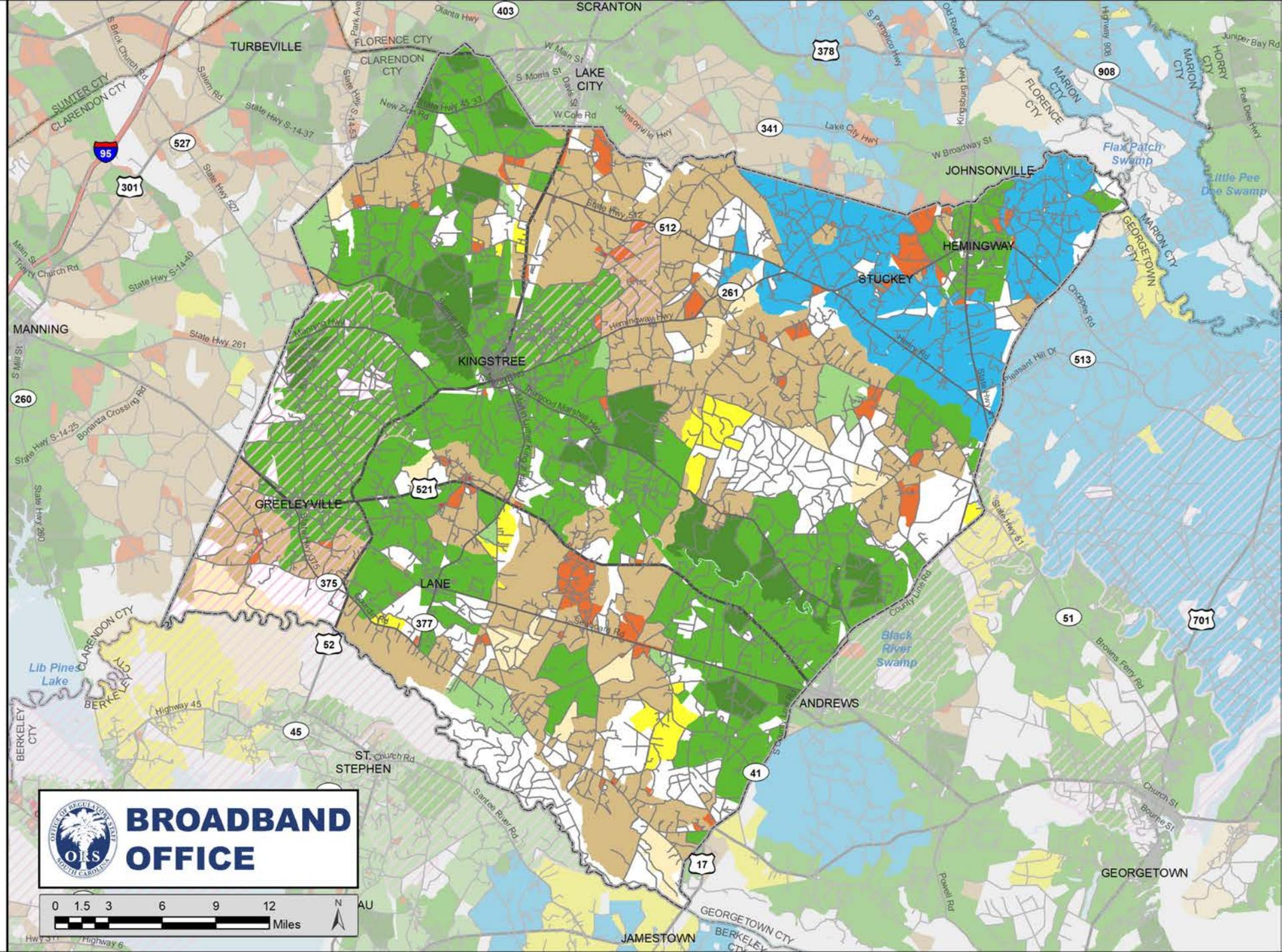
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Williamsburg County

South Carolina

Statistics

September 30, 2021



Population¹

Since official Census 2020 totals are not yet available, population estimates are calculated by multiplying housing unit data times an approximate residents per housing unit.

Public K-12

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Housing Units¹

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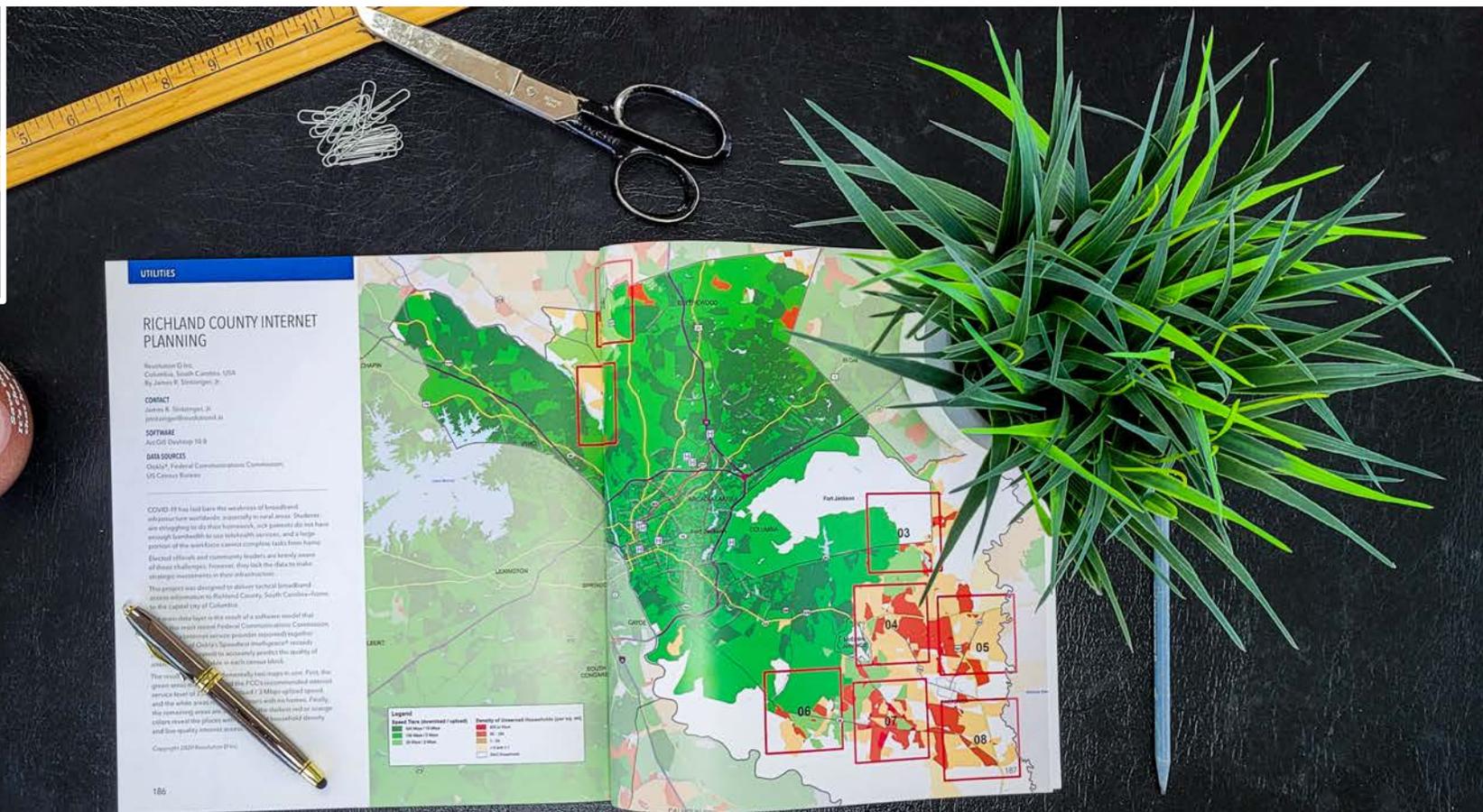
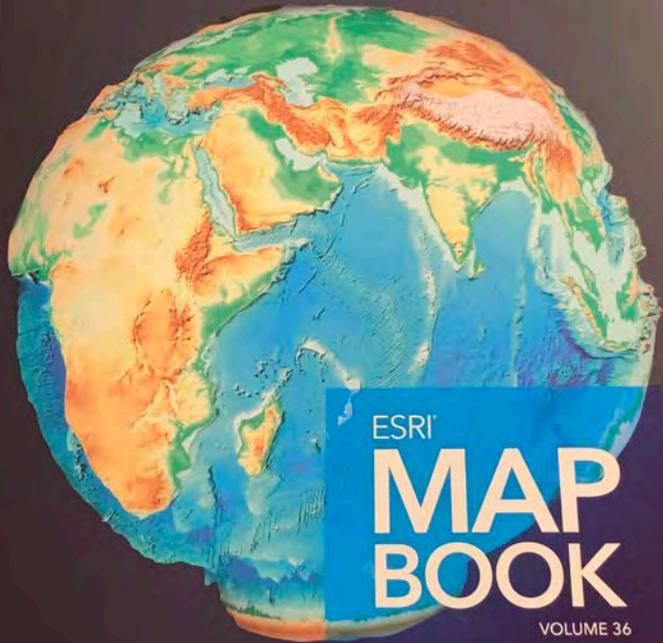
US Census	Population		Housing Units	
2010	34,423		15,359	
2020 ¹	31,026	-9.9%	16,838	9.6%

CURRENT	Current Below 25↓ Mbps Download / 3↑ Mbps Upload						
	Population		Public K-12		Housing Units		Qualified HU
September 30, 2021	9,033	29.1%	843		4,963	29.5%	358

Current Best Available Technology							
	Fiber		Cable		Copper		Fixed Wireless
	6,502	38.6%	5,100	30.3%	3,556	21.1%	33
							0.2%

FUNDED PROJECTS	Projected Investment Impact						
	Population		Public K-12		Housing Units		Qualified HU
Federal Funding	2,707		267		1,477		0
State Funding	122		10		74		0
Total	2,829		277		1,551		0

FUTURE	Remaining Below 25↓ Mbps Download / 3↑ Mbps Upload						
	Population		Public K-12		Housing Units		Qualified HU
December 31, 2022	6,204	20.0%	566		3,412	20.3%	358



UTILITIES

RICHLAND COUNTY INTERNET PLANNING

Richland County, South Carolina, USA
By James R. Stimpert, Jr.

CONTACT
James R. Stimpert, Jr.
jstimpert@richlandcountysc.gov

SOFTWARE
ArcGIS Desktop 10.8

DATA SOURCES
Dakota*, Federal Communications Commission, US Census Bureau

COVID-19 has laid bare the weakness of broadband infrastructure worldwide, especially in rural areas. Students are struggling to do their homework, and parents do not have enough bandwidth to use telehealth services, and a large portion of the work force cannot complete tasks from home. (Local officials and community leaders are barely aware of these challenges); however, they lack the data to make strategic investments in their infrastructure.

This project was designed to deliver critical broadband access information to Richland County, South Carolina—from the capital city of Columbia.

...data layer is the result of a software model that... Federal Communications Commission... identified service providers (especially to gather... of their "Serviceable" households" (usually... to accurately predict the quality of... in each census block.

The result is a color-coded map that shows the... the FCC's recommended standard... service level of... 3 Mbps up/down speed... and the white areas... with its homes. Finally, the colored areas... (dark red) or orange... household density and low-quality internet access.



Road Type (identified / unid)	Density of Internet Households (per sq. mi.)
100 ft	0-10
150 ft	10-20
200 ft	20-30
300 ft	30-40
400 ft	40-50
500 ft	50-60
600 ft	60-70
700 ft	70-80
800 ft	80-90
900 ft	90-100
1000 ft	100-110



SOUTH CAROLINA DIGITAL DRIVE

Search for broadband maps by county, region, or type.

View and download maps showing the availability and speed of broadband in the state.

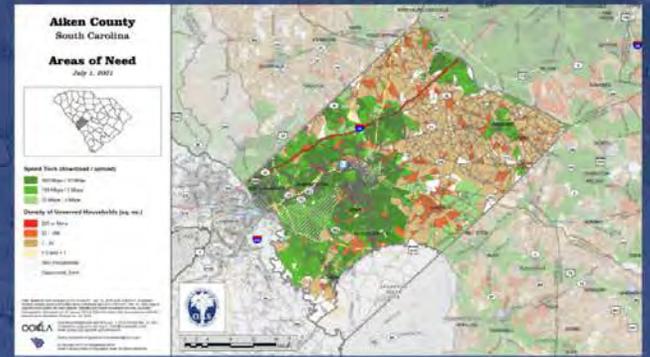
Current Total Housing Units
With At Least
25↓ Mbps / 3↑ Mbps Service
2,268,077*

Current Total Housing Units
Without
25↓ Mbps / 3↑ Mbps Service
221,731*

Current Total Housing Units
Funded
100↓ Mbps / 20↑ Mbps Service
33,377*

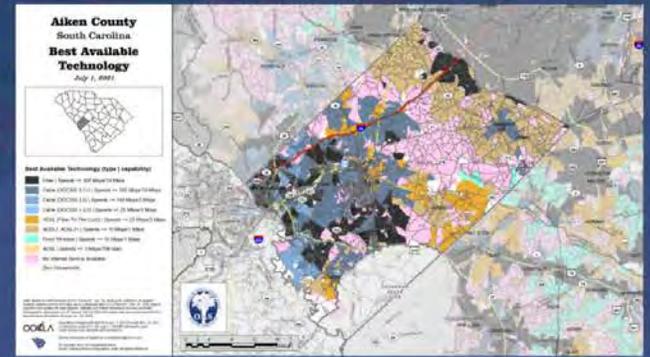
**Data current as of September 2021*

Explore
Maps



Areas of Need
The maps show the speed in an area and unserved households in areas that do not have broadband.

[View Maps](#)



Best Available Technology
The maps show the best available technology in an area and the maximum download/upload speed.

[View Maps](#)

www.scdigitaldrive.org



SC Broadband Dashboard

Private Member
Private Organization

Summary

The Dashboard allows users to view general broadband statistics at the SC county level. Much of the data reflected in the Dashboard is based on Federal Communication Commission data submissions. The Dashboard uses data from Internet Service Providers (ISPs). Dashboard data is updated periodically - At a minimum 2 times per year. For questions about the Dashboard, contact scdigitaldrive@sc.gov

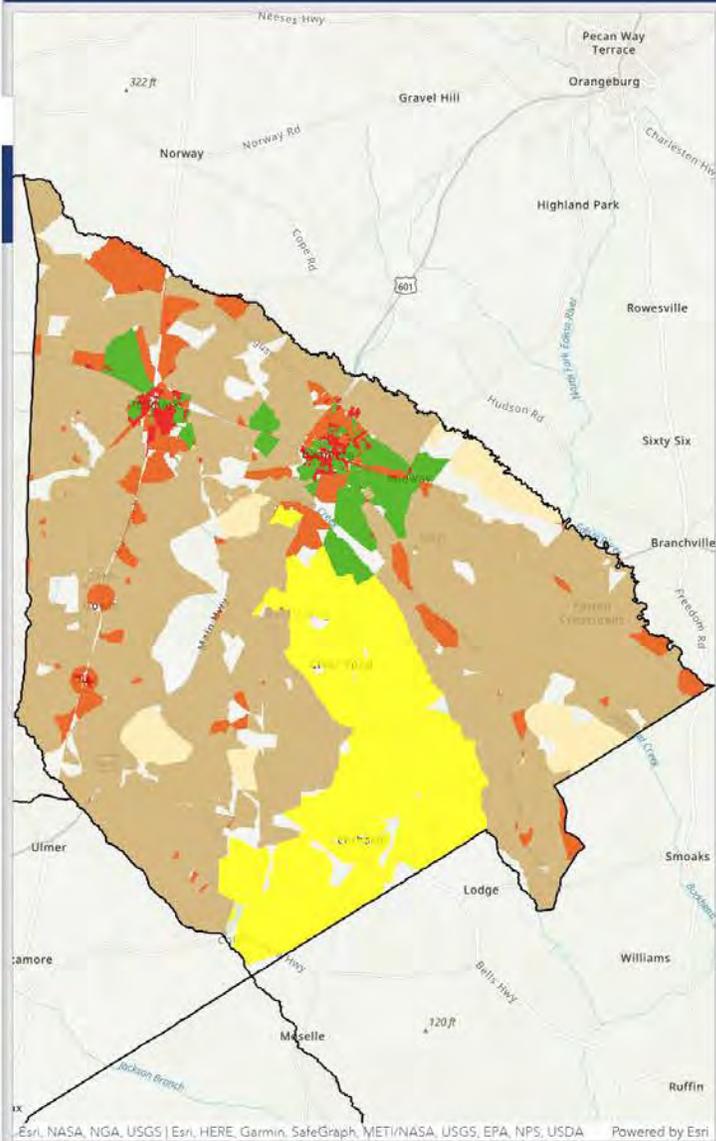
Read More

View Full Details

- Dashboard Dashboard
- January 14, 2022 Date Updated
- September 21, 2021 Published Date
- Public Anyone can see this content
- No License Provided Request permission to use

SC Broadband Dashboard

To begin click here to choose ...
Bamberg County



Areas of Need

- MAPPING
- Served 100+ Mbps / 100+ Mbps
 - Served 100+ Mbps / 20+ Mbps
 - Served 25+ Mbps / 3+ Mbps
 - Unserved Household Density 200 or More
 - Unserved Household Density 25 - 199
 - Unserved Household Density 1 - 24
 - Unserved

Estimated number K-12 Students
1,305

Total number of Funded Households
1,002

Total number of Unserved Households
6,830

Total number of Served Households
1,319

Percent of Residential Addresses Served by Fiber



Percent of Residential Addresses Served by Cable in Bamberg County



Percent of Residential Addresses Served by Copper in Bamberg County



*Note copper technology is considered Unserved

Percent of Residential Addresses Unserved in Bamberg County



www.scdigitaldrive.org



I Need Internet!

- For residents needing help:
- Visit www.scdigitaldrive.org
- **Consumer Tab**
- **Broadband ISP Lookup Application**
- **SC Citizen Survey**
- Send email to ineedinternet@ors.sc.gov

The screenshot displays the 'SC Broadband Internet Service Provider Lookup Application' interface. On the left, there is a text-based instruction section titled 'SC Broadband Internet Service Provider Lookup Application' which explains the application's purpose and provides two steps for use. The main area on the right features a search bar with the address '1401 Main St, Columbia, SC, 292' entered. Below the search bar, a map shows a red location pin and a cyan rectangular selection box around the address. A list of providers is shown below the map, indicating '1 provider found for this area': Charter Communications, Inc. with details for Cable Modem (DOCSIS 3.1) and speeds of 125.00+ Mbps. The interface includes standard mobile app navigation icons at the top and a footer with copyright information.

SC Broadband Internet Service Provider Lookup Application

Find Providers

Type your street address in the box provided below and click search or select a location of interest on the map to find Internet Service Providers that may offer broadband service in an area.

If your address is not found or if there is concern about the data please email us at: ineedinternet@ors.sc.gov

Note: Some providers offer service only to businesses and larger commercial enterprises.

1401 Main St, Columbia, SC, 292 X

Broadband Providers

1 provider found for this area

Charter Communications, Inc.
Cable Modem (DOCSIS 3.1) , 125.00+ Mbps

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Rural Broadband Grant Program 2021

- Allocation of \$30,000,000 for a competitive grant program to expand broadband availability and access in South Carolina.
- ORS and SC Department of Commerce collaboration
- **14 Eligible Counties** and **15 Contiguous Counties**
- Eligible Applicant: Internet Service Providers
- Applicants provided 1:1 match using non-public funds
- Awards announced **July 13, 2021**



Thank you!

Jim Stritzinger
Director, SC Broadband Office
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Mobile: (803) 606-6398



**BROADBAND
OFFICE**

