SC Broadband Office
Mapping Methodology

Jim Stritzinger
Director, SC Broadband Office
jstritzinger@ors.sc.gov
Office: (803) 737-0825
Mobile: (803) 606-6398

Nanette S. Edwards
Executive Director
nedwards@ors.sc.gov

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Hypothesis

Recognizing the limitations of FCC Form 477:

Possible to develop an AI model that can accurately predict the level of Internet Access in any census block in the US.

When complete, the model can be used to build accurate, beautiful, understandable maps.
Think Equifax or TransUnion
“Begin With the End in Mind”  Steven R. Covey, 7 Habits of Highly Effective People

Speed Tiers (download / upload)
- Green: 300 Mbps / 10 Mbps (Speedtest Verified)
- Green: 100 Mbps / 3 Mbps
- Green: 25 Mbps / 3 Mbps
- White: Zero Households

DON’T INVEST
Green: Already served. Meets or exceeds FCC’s 25/3 Mbps
White: Nobody lives there.

Density of Unserved Households
- Red: 200 or More (per sq. mi.)
- Orange: 25 - 199
- Brown: 1 - 24
- Yellow: > 0 and < 1

INVEST HERE!
Find the “freckles!” and prioritize these. Freckles are high household density with poor Internet.
Multi-Factor Analysis

- BEST AVAILABLE Technology
- Max Advertised Down/Up
- ADVERTISED Speed Tier
- MODEL Max Down/Up
- MODEL Speed Tier
- SpeedTest Max Down/Up
- SPEEDTEST Speed Tier
- E911 CntMet/TotalCnt
- E911 Speed Tier
- Fused Max Down/Up
- FUSED Speed Tier

- Unique Providers
- Provider Types
- Urban/Rural (RUCA)
- Population (2010)
- Population (2020 est.)
- Housing Units (2010)
- Housing Units (2020 est.)
- E911 Structures
- HH Density
- Area Land & Water

FUTURE PLANS
- Consumer Surveys
- Internet Usage
Need Current Data

SC July 1, 2021, Map Set
FCC FORM 477 Jun. 30, 2020 (public dataset, released Apr. 9, 2021)
+ FCC FORM 477 Dec. 31, 2020 (confidential, contributed by ISPs)

- Chesnee Communications
- Farmers Telephone Cooperative
- Hargray Communications
- Horry Telephone Cooperative
- Piedmont Rural Telephone Cooperative
- AT&T
- West Carolina Rural Telephone Cooperative
- Atlantic Broadband
- Aiken Electric Cooperative
- Comporium
- Frontier Communications
- Home Telecom
- Palmetto Rural Telephone Cooperative
- Sandhill Telephone Cooperative
- TruVista Communications
- Charter Communications
- Comcast
- Carolina Connect

E911 Addresses / Provider Submissions – Apr. 2021
Ookla’s mission is to make the internet better, faster and more accessible for everyone

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

- Fixed – Consumer Initiated
  - Residential / Business Service
  - Public / Private Networks

- Mobile – Consumer Initiated
- Mobile – Background Scan (RSSI)

- Location a Big Deal! (GPS)
  - Mobile App better than Speedtest.net
Residential Broadband Technology

Copper & Fixed Wireless
Only one copper technology (VDSL) technology reaches 25/3. All others are at end of life.
Fixed Wireless requires optimum conditions to reach 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.
Residential Broadband Speeds

Speed Tiers (download / upload)
- **300 Mbps / 10 Mbps**
- **100 Mbps / 3 Mbps**
- **25 Mbps / 3 Mbps**

When Internet speeds are **25/3 or better**
Green: Meets or exceeds FCC’s Broadband Internet Benchmark of 25/3 Mbps.

Density of Unserved Households
- **200 or More (per sq. mi.)**
- **25 - 199**
- **1 - 24**
- **> 0 and < 1**
- **Zero Households**

When Internet speeds are **below 25/3**
We don’t care about speed. Need to see **household info**. Reds & Tans: Indicate engineering issues that need to be resolved by an Internet Service Provider (ISP). ISP’s need to know where homes are located as well as where homes are not located. For an ISP, one home equals one customer. Therefore, the maps showcase household density in slow speed areas of the state.
South Carolina

Areas of Need
July 1, 2021

Speed Tiers (download / upload)
- 300 Mbps / 10 Mbps
- 100 Mbps / 3 Mbps
- 25 Mbps / 3 Mbps

Density of Unserved Households (sq. mi.)
- 200 or More
- 25 - 199
- 1 - 24
- > 0 and < 1
- Zero Households

Date: Based on ORS analysis of FCC Form 477, Jun. 30, 2020 (data 4/9/2021). In addition, multiple Internet Service Providers have contributed data. FCC Form 477, Dec. 31, 2020 data is unclear and update the base dataset. Satellite and mobile broadband services excluded.

Demographic data based on Census 2010 & 2020 information that was enhanced with GIS/ITF premium-level information through Jun. 30, 2020.

Speed/Inetness data from Jan 1, 2010 through May 31, 2021 combined for analysis in the region. Ookla® trademarks used under license and reprinted with permission.

Submit comments of questions to broadband@ors.sc.gov

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Session 1
Understanding Internet Infrastructure

Session 2
Eliminating Gaps in K-12 Education

Session 3
Identifying Healthcare Opportunities

Broadband Community Champion Training Program
INTERNET FOR ALL

Dedicated to ensuring that every home has access to affordable, high-speed Internet by the end of 2026.

www.scdigitaldrive.com