

**OFFICIAL OCTOBER 2014 FINAL UPDATE SUBMISSION TO
THE NATIONAL TELECOMMUNICATIONS AND
INFORMATION ADMINISTRATION UNDER THE
STATE BROADBAND INITIATIVE GRANT PROGRAM
FOR THE STATE OF SOUTH CAROLINA**



October 1, 2014

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October 1, 2014

Ms. Anne W. Neville
SBI Grant Program Director
National Telecommunications and Information Administration
U.S. Department of Commerce
Room 4716
1401 Constitution Avenue, NW
Washington, DC 20230

Dear Ms. Neville:

The State Broadband Designated Entity, Connected Nation, in cooperation with South Carolina's broadband provider community, our state-based partners, and the Office of the Governor and the Division of State Information Technology, is pleased to present this final submission of the state of South Carolina's State Broadband Initiative (SBI) Grant Program, known as Connect South Carolina.

It has been an honor and privilege for our organization to have participated in this historical effort over the last five years. Because of this extraordinary program and the support of the NTIA, communities across the country, and across the state of South Carolina, have enjoyed unprecedented access to data and resources with which to engage, assess, and plan for a more connected future.

Indeed, a sturdy foundation has been set, yet there is still much to do to capture the full potential contemplated by this initial investment. Because of investments in broadband and related technologies, the future of institutions in education, healthcare, and economic development is brighter today than in any other time in our country's history; it is returns in these areas that will be the final measure of this program's impact on America. We look forward to the work ahead.

Connect South Carolina would like to recognize the faithful and energized contributions of the many state stakeholders, particularly the broadband providers, in making this and all of the program's previous submissions possible. Truly, the significance of complete and validated data through their participation has added to the many successes our program has enjoyed.

The items that comprise this submission are compliant with the October 1, 2014, deadline for the semi-annual data update and in accordance with the terms of the July 1, 2009, Notice of Funds Availability (NOFA) and all subsequent clarifications pertaining to delivery of state-level mapping of broadband service availability. This packet includes:

Inventory of Deliverables, Connect South Carolina: October 1, 2014

<u>NOFA Requirement</u>	<u>Data Transfer Model</u>	<u>Data Description</u>
Appendix A: 1(a)(i)	BB_Service_CensusBlock	Broadband Service Availability of Facilities-Based Providers in Census Blocks of No Greater Than Two Square Miles in Area
Appendix A: 1(a)(ii)	BB_Service_RoadSegment	Broadband Service Availability of Facilities-Based Providers by Road Segment in Census Blocks Larger in Area Than Two Square Miles
Appendix A: 1(b)	BB_Service_Wireless	Broadband Service Availability of Wireless Services Not Provided to a Specific Address
Appendix A: 3(b)	BB_ConnectionPoint_MiddleMile	Broadband Service Infrastructure Middle-Mile and Backbone Interconnection Points
Appendix A: 4	BB_Service_CAInstitutions	Community Anchor Institutions-Listing
Appendix A: 4	n/a	Community Anchor Institutions-Narratives
VII.A.1(a)	n/a	Accuracy and Verification Report
n/a	DataPackage.xlsx	Worksheets of Contact Information, Record Count, and Provider Summary Table
n/a	n/a	List of Changes and Corrections to the Dataset
n/a	n/a	Non-Participating Provider (NPP) Narratives
n/a	n/a	Broadband Provider Roster and Participation Status

In addition, this data update submission is compliant with the additional program requirements instituted by the National Telecommunications and Information Administration since the time of the April 2014 SBI data submission for the Connect South Carolina program. Specifically, these new requirements are:

SBI Data Transfer Model

The submission of the broadband dataset for October 1, 2014, is contained within the SBI Data Transfer Model as provided to SBI Grantees on May 29, 2014. All efforts have been made to comply with formatting, domain, and metadata requirements to include as much information on each provider as possible.

Additional Submission Guidance

In collecting broadband service area datasets for inclusion on the National Broadband Map, this October 2014 submission includes business/commercial broadband service areas in addition to the residential datasets that have been collected for the SBI program. Following guidance from the program office, the end user category appropriately delineates the differences in residential service areas, business service areas, and combination residential/business service areas. Further, all contacted providers were asked if they provide broadband services to business customers within their existing coverage areas and, if so, this information was noted.

This October 2014 final data update under the SBI Grant Program continues to demonstrate our dedication to implementing the joint purposes of the Recovery Act and the Broadband Data Improvement Act (BDIA) by gathering comprehensive and accurate state-level broadband mapping data, developing state-level broadband maps, aiding in the development and maintenance of the National Broadband Map, and undertaking statewide initiatives for broadband planning.

Broadband Service Availability — Provider Outreach and Verification

This data update submission under the SBI program includes datasets for 100 percent of the South Carolina provider community, or 45 total providers. There are 45 participating providers. Of the 45 participating providers, 20 supplied an update to their network or coverage area(s), while 23 have reported no change. The remaining 2 represent providers who previously supplied data but were non-responsive in the October 2014 update effort; therefore, their previous dataset is being put forward as part of this compilation. A complete roster by provider depicting participation status and contact history is contained herein.

This submission also includes business/commercial providers; of the 76 residential datasets represented in this submission, including providers that offer multiple technology types, 65 are broadband datasets that do not distinguish between serving primarily residential or primarily non-residential users (end user category 5). There are 5 business-only broadband datasets (end user category 2) also included in this submission.

As the aforementioned roster and attached methodology documentation will attest, it is the collective opinion of the Connect South Carolina principals that all commercially reasonable efforts have been made to account for 100 percent of the known South Carolina broadband provider community, pursuant to this final data update submission.

Connect South Carolina has also continued to perform broadband verification activities through several means. In addition to confirmation of service area(s) by each provider, Connect South Carolina has conducted field validation efforts. As of this final submission, 41 (91.11 percent) viable providers have been validated through field verification activities. Additional details on verification activities are contained within the Field Validation Methodology.

The Connect South Carolina website (www.connectsc.org) has served a prominent role in the outreach and data collection effort. This program asset has provided a way for the general public to participate in the process by offering interactive tools for users to test their connection speed, submit broadband inquiries, or contact a program representative.

As an indicator of stakeholder penetration, the Connect South Carolina website encountered 2,412 unique visits during this final reporting period (28,753 total to date for the life of the grant awarded on December 20, 2009). Additionally, this pronounced Web activity netted 8 broadband inquiries over this same reporting period (167 grant inception to date). The website also provides access to the My ConnectView™ interactive mapping application, which allows consumers and broadband providers to confirm or dispute the coverage represented on the broadband inventory map. These consumer-initiated actions have been facilitated through the Connect South Carolina website and the Connect South Carolina interactive mapping tool (My ConnectView™) that offer the stakeholders the vehicles to provide information regarding availability in their respective service area, either in affirmation or contest of the reported data represented in the Connect South Carolina mapping artifacts. Since the initial data collection and release of corresponding maps, feedback in the form of broadband inquiries has allowed Connect South Carolina to identify additional areas that are in need of field validation.

Community Anchor Institutions

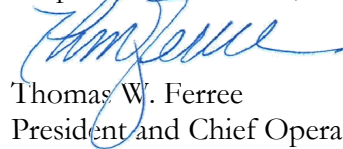
Connect South Carolina has been committed to gathering data regarding the location and broadband connectivity of Community Anchor Institutions in accordance with the data requirements of the SBI NOFA Technical Appendix. Multiple agencies and leaders have continued to support CAI data collection, reiterating the importance of a relationship-oriented approach with state-level agencies and organizations that generates more responses than local outreach.

Connect South Carolina conducted final outreach during this data update reporting period to continue identification of existing, centralized sources for CAI connectivity data. Additionally, outreach was coordinated to distribute the CAI survey to institutions throughout the state through multiple methods, including a customized online survey available on the Connect South Carolina website. Building on existing relationships with statewide associations has reinforced the importance of broadband connectivity at anchor institutions and encouraged participation in this data collection process. The value of these relationships has impacted the entire success of the Grant Program, and the CAI engagement has been a logical extension of new and existing relationships.

The Connect South Carolina program exists to improve lives through the deployment and adoption of broadband services and to assist in the extension of broadband technology across all regions of the great state of South Carolina, as well as the United States and its territories. Through the SBI

program and our contribution to the National Broadband Map, communities have been given meaningful data that has helped them plan and take informed action resulting in improved technology access, adoption, and use in unserved and underserved areas.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Tom Ferree", written over the printed name.

Thomas W. Ferree
President and Chief Operating Officer
Connected Nation, Inc.

SOUTH CAROLINA COMMUNITY ANCHOR INSTITUTIONS METHODOLOGY

Connect South Carolina has been committed to working with South Carolina to gather data on the location and broadband connectivity of Community Anchor Institutions (CAI), in accordance with the data requirements of the SBI NOFA Technical Appendix. This commitment continued based on NTIA's encouragement to improve data numbers specifically in the K-12 school and library sectors to support the ConnectED White House Initiative, launched in June 2013. The commitment has continued for the October 2014 submission. In addition to collecting new data, physical address information continues to be augmented through manual sourcing and geocoded by Connect South Carolina through Esri ArcGIS software.

Connect South Carolina has continued to utilize a customized online survey hosted through SurveyMonkey, with a landing page on the Connect South Carolina website that was developed during the first reporting period. This survey, in combination with a customized data-gathering spreadsheet, was distributed on a regular basis to a targeted list of CAI throughout the state as well as organizations and agencies that work closely with the CAI. The distributions were completed with the support of the state client.

Connect South Carolina realizes the value of key relationships, new and old, to promote the importance of broadband connectivity at Community Anchor Institutions and participation in this data collection process. It is apparent that these relationships have been beneficial to the entire success of the grant program, and the CAI engagement has been a logical extension of new and existing relationships.

Connect South Carolina has conducted significant research as part of an ongoing process to identify existing, centralized sources for CAI connectivity data. In tandem with these efforts to identify existing data, Connect South Carolina identified key CAI contacts in an effort to distribute and promote the online survey and raise awareness of the importance of CAI broadband connectivity. Also, when possible, Connect South Carolina has worked to identify existing relationships that can support CAI outreach.

Connect South Carolina has had an ongoing mission to educate CAI throughout the state on the importance of participating in the project and the value this data affords for federal decision makers. Participation by these institutions has raised awareness about the importance of broadband connectivity and the need to report the requested data for inclusion on the National Broadband Map.

The greatest challenge with collecting CAI data continues to be educating the CAI about the Connect South Carolina project as well as self-awareness of their own broadband connectivity (specifically upload and download speeds).

A CAI summary of all processed and submitted data is provided below:

CAI Type	Total	Lat/Long	Technology of Transmission	Download Speed	Upload Speed
K-12 Schools	1,857	1,725	1,376	1,259	1,255
Libraries	249	244	205	202	202
Healthcare	292	292	196	196	196
Public Safety	795	792	339	312	311
Higher Ed Institutions	237	235	146	144	144
Other Government	944	940	867	866	866
Other Non-Government	98	98	86	85	84
Total	4,472	4,326	3,215	3,064	3,058

South Carolina libraries had a slight improvement in connectivity based on data obtained from the Digital Inclusion Survey (<http://digitalinclusion.pnmi.com/>). Additionally, an FCC E-rate dataset was also provided for school connectivity.

The CAI data has proven to be an invaluable resource to all components of the Connect South Carolina effort. The data identifies potential local champions, sector trends, and opportunities for improvement as well as opportunities to educate CAI not familiar with their current connectivity.

SBI DATA SUBMISSION METHODOLOGY

The submission of the broadband dataset for October 1, 2014, is contained within the SBI Data Transfer Model and additional components as provided to SBI Grantees on May 29, 2014.

Connected Nation (CN) has reviewed all literature that relates to the release and use of this data transfer model and recognizes that it does not replace or dictate how data is stored, processed, or displayed for the state, as it is meant primarily as a means to transfer the broadband data from all states and territories and populate the National Broadband Map in a seamless fashion.

Connected Nation has complied with the following guidance documents published by NTIA:

- Technical Mapping Guide, as released on the Grantee Workspace on March 24, 2011, was followed to ensure the completeness and validity of the submission through completion steps and checklists, completing the DataPackage spreadsheet, uploading broadband datasets into the Data Transfer Model, and checking the dataset using the SBDD_CheckSubmission receipt process.
- Naming Conventions and Category of End User, as released on the Grantee Workspace on March 26, 2012, was followed to ensure the consistency of individual file and zip package naming.

- Wireless Data Processing Guidance, as sent to SBI grantees on February 8, 2013, was followed to ensure that all fixed and mobile wireless provider coverage records are submitted to NTIA as separate, closed polygons whenever there is a variation in any of the required fields.

In addition to the methodologies contained herein, the Changes and Corrections documentation, as well as the DataPackage.xls containing contact information, the data dictionary, and a provider summary table, the following feature classes are submitted within the SBI Data Transfer Model for the state of South Carolina.

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The provider data collected by CN on behalf of the state of South Carolina have been formatted per the given specifications and uploaded into the appropriate feature classes of the SBI Data Transfer Model. Wireline availability is contained within census blocks and road segments, wireless availability is contained as polygons of coverage areas, and middle-mile connections and Community Anchor Institutions are contained as point data. All speed data is contained at the census block, road segment, or wireless polygon level of availability. All efforts have been made to comply with formatting, domain, and metadata requirements to include as much information as possible.

In collecting broadband service area datasets for inclusion on the National Broadband Map, this October 2014 submission includes business/commercial broadband service areas in addition to the residential datasets that have been collected for the SBI program. Following guidance from the program office, the end user category appropriately delineates the differences in residential service area, business service areas, and combination residential/business service areas.

Connected Nation has continued outreach to satellite providers on their availability, technology, and speed information, but granular coverage, based on complex geoprocessing models that require

specific satellite details, is not currently available. Submitted within the wireless feature class are the satellite companies providing service to South Carolina as a polygon of the state boundary.

DATASETS FOR IN-KIND MATCH

Connect South Carolina received an in-kind match contribution to assist with SBI mapping goals which has been beneficial to the program in the following ways:

- **School and Library CAI Datasets:** The South Carolina Budget & Control Board-Division of State Information Technology provided the Connect South Carolina project with connectivity information related to K-12 Schools and Libraries. This dataset contains valuable address data as well as speed tier data for each of the various locations. This dataset is an accurate representation of broadband data for SC schools and libraries. The data is compiled for CAI purposes (verifying existing locations, addresses, and points of contact as well as offering relevant CAI data regarding download and upload speeds). This dataset also represents an opportunity to engage state leaders from the education, library, and information technology sectors to discuss broadband availability and opportunities for improvement.
- **Other CAI Datasets:** The South Carolina Budget & Control Board-Division of State Information Technology provided the Connect South Carolina project with connectivity information related to a variety of Community Anchor Institutions including address and connectivity data for hospitals, state and local government, public safety, and institutions of higher-education. This dataset provides valuable address data as well as speed tier data for each of the various locations. This dataset is an accurate representation of broadband data for hospitals, state and local government, public safety, and institutions of higher-education. The data is compiled for CAI purposes (verifying existing locations, addresses, points of contact, and broadband connectivity information). The datasets are used to confirm CAI locations, addresses, points of contact, and broadband connectivity information.
- **Greenwood County Address Points Dataset:** The address dataset made available for Greenwood County contains valuable geographic location and street addressing information that is essential to the South Carolina SBI project in several ways. These types of data provide the exact, geocoded location of all address points in Greenwood County. The datasets are used to confirm CAI locations, addresses, points of contact, and broadband connectivity information. This information allows the South Carolina SBI project to submit exact coordinates of existing and new Community Anchor Institutions to NTIA for use on the National Broadband Map and in other analyses.
- **Richland County CAI Datasets:** Richland County provided datasets for the following facility types: fire stations, libraries, police stations, private schools, and public schools. These datasets were provided in a GIS file format and contribute to verifying the exact location of the provided records in the CAI dataset. Since the exact geographic location and full address information is provided in the attributes of each dataset, Connect South Carolina can use this information to verify that the correct coordinates are being supplied to NTIA for those CAIs. This accurate address location information allows the South Carolina SBI project to

submit exact coordinates of existing and new Community Anchor Institutions to NTIA for use on the National Broadband Map and in other analyses.

SOUTH CAROLINA FIELD VALIDATION METHODOLOGY

CN focused a portion of its time on specific validation processes such as:

- conducting random spectrum analysis studies throughout the state using an Avcom PSA-37-XP spectrum analyzer;
- conducting mobile speed tests throughout the state using an iPhone, Android (or other smart phone) as well as provider-specific aircards (Sprint 3G/4G, Clearwire et al);
- identifying pre-selected, provider-submitted wireless transmit tower sites and cross-referencing data about that tower against the Federal Communications Commission (FCC) databases such as Antenna Structure Registration and/or the Universal Licensing System;
- cross-referencing Federal Registration Number data against available FCC Form 477 data as well as the FCC **COM**mision **RE**gistration **S**ystem (CORES);
- validating provider submitted data (for example: latitude/longitude) using a handheld Garmin eTrex Summit GPS unit or GPS enabled software such as Microsoft *Streets & Trips*;
- locating physical wire-line attributes (such as Central Offices, Remote Terminals, CATV plant, etc.) and comparing them against provider submitted data; and
- conducting on-net and off-net speed tests using the FCC portal at <http://www.broadband.gov/qualitytest/about/> or using the Ookla Net Metrics enabled speed test utility located on each of CN's program specific websites.

Additionally, CN cross-referenced numerous public documents in order to ensure that all known broadband providers were located and contacted. This included searching membership logs from trade associations (WISPA, WCAI, PCIA, etc.), the Cable Television Fact Book, Public Utility Commission records, Public Service Commission records, Chamber of Commerce, etc.

To date, Connected Nation's staff has conducted on-site validation tests in South Carolina on the following viable providers: AT&T Inc.; ATG Communications, LLC; Atlantic Broadband, LLC; CenturyLink; Charter Communications, Inc.; Chesnee Telephone Company, Inc.; Chester Telephone Company; Comcast Cable Communications, LLC; Conterra Ultra Broadband Holdings; Countrywide Wireless; DeltaCom, Inc.; DFJB, LLC; Electronics Service Company of Hamlet, LLC; Family View CableVision; Farmers Telephone Cooperative, Inc.; Frontier Communications Corporation; Hargray Communications Group, Inc.; Harron Communications LP; Home Telephone Company, Inc.; Horry Telephone Cooperative, Inc.; Hughes Network Systems, LLC; Northland Communications Corp.; NTInet, Inc.; Palmetto Rural Telephone Cooperative, Inc.; Pee Dee Online Consulting; Piedmont Rural Telephone Cooperative, Inc.; Rock Hill Telephone Company; Sandhill Telephone Coop., Inc.; Skyrunner, Inc.; Southern Coastal Cable, LLC; Sprint Nextel Corporation; TDS Telecommunications Corporation; Time Warner Cable Inc.; T-Mobile USA, Inc.; tw telecom of south carolina, llc; United States Cellular Corporation; Verizon South Inc.; ViaSat, Inc. ; West Carolina Rural Telephone Cooperative, Inc.; WideOpenWest Finance, LLC; and Windstream Communications.

Additionally Connected Nation had previously validated four providers which are now considered non-viable, due to mergers and acquisitions or because they are no longer in business: Clearwire Corporation; Fairfield Communications; Pee Dee Net; and Techcore Consultants Inc.

From program initiation through this reporting period, CN has completed in-the-field validation testing against 41 viable companies (out of a universe of (45 viable providers) totaling 91.11 percent within the state of South Carolina.

CN has also continued to review provider datasets for accurate speed information, platform listings, and other intricacies that may fall outside of the standard SBI Data Transfer Model parameters, as included with the submission materials provided to grantees on May 29, 2014. Any providers whose submitted coverage and attributes are anticipated to come into question have been further reviewed and confirmed; details on a case-by-case basis are presented below.

Comcast Cable Communications, LLC

Issue: Technology of transmission code 40 with maximum advertised download speed in tier 8, lower than expected value range for the technology.

Resolution: Confirmed use of DOCSIS 3.0 with speed tier 8; speeds are kept lower to be backwards compatible.

Horry Telephone Cooperative, Inc.

Issue: Technology of transmission code 41 with maximum advertised download speed in tier 9, higher than expected value range for the technology.

Resolution: Provider website advertises 50 Mbps service; screenshot below.

HIGH-SPEED INTERNET				
	Regular Price	Multiple Product Price	Promo Price	
Lite	\$32.95	\$24.95	\$16.95	Download speed up to 1 Mbps. Upload speed up to 1 Mbps. Promotional pricing for 1st 6 months. »More
Standard	\$49.95	\$44.95	\$28.95	Download speed up to 10 Mbps. Upload speed up to 1 Mbps. Promotional pricing for 1st 6 months. »More
Premium	\$59.95	\$54.95	\$38.95	Download speed up to 20 Mbps Upload speed up to 2 Mbps. Promotional pricing for 1st 6 months. »More
Ultra	\$79.95	\$69.95	\$48.95	Download speed up to 30 Mbps. Upload speed up to 5 Mbps. Promotional pricing for 1st 6 months. »More
Elite	\$99.95	\$89.95	\$68.95	Download speed up to 50 Mbps. Upload speed up to 5 Mbps. Promotional pricing for 1st 6 months. »More

Northland Communications Corp.

Issue: Technology of transmission code 40 with maximum advertised download speed in tier 7, lower than expected value range for the technology.

Resolution: Provider website advertises up to 24 Mbps service; screenshot below.

 Surf faster with blazing download speeds.

Speed matters.

With speeds up to 24 Mbps (that's 16 times faster than ordinary DSL) Northland's High-speed Internet provides the ultimate web experience.

1. Get the best possible experience when you surf, shop and search faster than before.
2. Spend less time downloading and more time enjoying the best movies and music.
3. Leave buffering behind with robust speeds perfect for streaming.



Pee Dee Online Consulting

Issue: Fixed wireless platform with maximum advertised download speed in tier 8, higher than the expected value range for the technology.

Resolution: Provider website advertises 30 Mbps service is available; screenshot below.



PROVIDER VALIDATION METHODOLOGY

Broadband providers maintain their service area data in many different formats, all in varying levels of complexity and granularity. In order to ensure that the data required by the NTIA is standardized across all providers and that it is as accurate as possible, CN translates and formats the data that providers are able to supply into a GIS shapefile and produces maps for the provider to review. The resulting map(s) and review process allow for providers to see their service area in a geographic format – for some providers, the SBI grant program gave them the opportunity to see maps of their broadband service area for the first time. Having the mapped service area allows providers to quickly identify any issues that appear in the data representation, whether the issue is in the data translation

into a GIS format or from the original data collection and submission. Often data was provided from various sources and through the review and revision process, local engineers who operate the networks and work in the field were able to ensure that the tabular data that has been submitted is accurate and represents the real-world network extent. Any issues in how the service area is represented on the map(s) were remedied by CN, whether they were additions, removal of service, or any other revisions. Revised maps of service area representations were sent to the provider for review and approval; CN revised data and returned maps as many times as necessary until the provider was in agreement that the map represents their service area as accurately as possible. Once the review process was completed and final approval of the data was provided, the data was deemed ready for NTIA submission. However, if approval was not received from a provider in time for the submission, but CN believed the new/updated service area to be accurate, then the coverage was submitted to NTIA without final provider approval with a note regarding the situation made in the provider log.

Once the data collection has been aggregated at a statewide level, static maps of statewide and county-level availability are produced and made publicly available. In addition, consumers can visit the interactive online tool, My ConnectView, to create customized views of broadband service areas and analyze corresponding demographic information. Leveraging broadband service data on various platforms allows for public users, providers, and other stakeholders to review, scrutinize, and provide feedback on the represented data. This feedback has been a validation method in itself, as consumers submit inquiries to CN either affirming where service is not available or identifying areas where broadband service is shown on the map, but in actuality is not available. This has allowed for a follow-up to providers regarding revisions to the data as it is represented; it also allowed CN to identify locations where on-site visits may have been necessary to complete field validation of available services. Public feedback on all forms of mapping products served as a localized validation method for provider-supplied information and allowed CN to resolve inaccuracies as they were identified to ensure that only the highest quality information is provided to stakeholders.

Estimates derived from provider-validated data indicate that approximately 3.09 percent of South Carolina households do not have terrestrial fixed broadband service available, and approximately 0.03 percent of South Carolina households have neither mobile nor fixed broadband service available.

Within rural areas of the state, results derived from provider-validated data indicate that 4 percent of rural South Carolina households do not have terrestrial fixed broadband service available, and approximately 0.02 percent of rural South Carolina households have neither mobile nor fixed broadband service available. Please note that the availability estimates presented are based on Census 2010 household information.

The estimates above, in accordance with NTIA's definition of available broadband service as specified in the SBI NOFA, include broadband service with download speeds of at least 768 Kbps and upload speeds greater than 200 Kbps.

In addition, due to the nature of the SBI data collection methodology as defined by the NTIA and based on both census block geographic units and street segment data, the estimates of broadband

availability derived from provider-validated data may include an overstatement of the actual number of households with broadband availability. Under the census block-based data collection method, a provider will typically report broadband availability for an entire census block whether its network is present across the whole or only a subset of that census block. This potential overestimation at the census block level can be amplified as the data is aggregated across the entire state.

WIRELESS METHODOLOGY

Broadband Service Availability in Provider's Service Area Wireless Services Not Provided to a Specific Address

Data solicited from a fixed wireless provider to create propagation models include, but are not limited to:

1. The name of the structure.
2. Whether the transmitting device is operational or proposed.
3. The maximum advertised downstream speed, the maximum advertised upstream speed.
4. The typical downstream speed, the typical upstream speed (peak periods for both).
5. The frequency range of spectrum being used (as prescribed by NTIA). This may include (but is not limited to) spectrum authorizations identified within the Federal Communications Commission (FCC) Universal Licensing System (ULS) database or located on the FCC's Spectrum Dashboard.
6. The primary population center(s) being served (for geopolitical boundary reference).
7. The physical address of the transmit site (in the event latitude/longitude is unavailable from the provider this allows a quick reference point for geocoding).
8. Latitude in either Degrees, Minutes, and Seconds and/or in Decimal Degrees (typically received as NAD 27 or NAD 83).
9. Longitude in either Degrees, Minutes and Seconds and/or in Decimal Degrees (typically received as NAD 27 or NAD 83).
10. Antenna pattern (e.g. omnidirectional, 180°, 120°, 90°, etc.).
11. Azimuth of antenna (e.g. 360° with magnetic declination if known).
12. Approximate transmit radius (in feet, miles, or kilometers).
13. Polarity of transmit antenna (Vertical or Horizontal).
14. Transmit antenna gain (in dBi).
15. Line loss (applicable only to providers using coax, heliax, waveguide or other forms of cabling – excludes power-over-Ethernet devices).
16. Mechanical and/or Electrical beam tilt (if applicable).
17. Equipment Manufacturer (allows easy cross-reference against manufacturer's specification sheet).
18. Power output of the transmitting device (if unknown, FCC standards or manufacturer specifications are applied).

19. AMSL at base of tower site.
20. Antenna centerline AGL (height of antenna above ground level measured at the centerline of the actual antenna).
21. Foliage factors (Evergreens/Deciduous and percent of ground cover).
22. Ground Clutter (primarily used in rural areas to account for foliage and in metropolitan areas to account for types and heights of buildings if known).
23. Average gain of receive antenna.
24. Receive antenna is estimated at height above average terrain (HAAT) of 6.2 meters/20 feet.
25. Federal Registration Numbers (if applicable) which may allow opportunities to cross-reference and/or obtain additional data from the FCC's ULS and the **CO**mmission **RE**gistration System.

Propagation modeling combines scientific data and empirical mathematical formulation for the characterization of radio wave propagation as a function of frequency, distance, and other conditions. Propagation software(s) typically use the Irregular Terrain Model (also known as Longley-Rice) of radio propagation for frequencies between 20 MHz and 20 GHz. This model is based on electromagnetic theory and statistical analyses of the combination of terrain features and radio measurements, then predicting the median attenuation of a radio signal as a function of distance and the variability of the signal in time and in space. For metropolitan areas, the software can typically be adjusted to use the Okumura-Hata model, which accounts for predicting the behavior of cellular transmissions in areas where buildings are the primary obstructions. The resulting product from either model depicts a graphical illustration of the theoretical propagation characteristics of a selected frequency range based on defined variables (receiver sensitivity of the home/mobile device, foliage factor, and digital elevation terrain input).

After converting propagation models into a geospatial format, additional processing is completed to remove the small pixels representing service present in the resulting dataset. These areas are initially created based on the parameters entered in the software from the provider equipment information, the underlying data parameters of elevation, hill shade, etc., and the limitations of the software itself to display a broadband service area as accurately as possible. Generally, these random pixel striations appear as a result of signal levels reaching the highest elevated points within the prescribed radius. Typically, while this pixilation anomaly shows legitimate areas where signals can be received, these highly elevated points may have exceedingly sparse populations or are entirely void of population. As a result, and congruent to the *Wireless Technology Methodologies and Business Logic* white paper submitted to NTIA on January 20, 2011, all independent pixels representing service that are less than 0.125 square miles in area have been removed from the geospatial representation of each wireless provider.

BROADBAND INQUIRIES METHODOLOGY

CN has collected consumer feedback in the form of broadband inquiries (BBIs). These inquiries represent any type of communication received from the public regarding broadband service. Once BBIs are received across the state, this information is overlaid with the broadband availability information which was collected through the SBI program. This allows for a real-world comparison of the broadband landscape to the information received from broadband inquiries. Consumers submitting these inbound comments and/or inquiries are able to provide information regarding five categories: 1) residents who do not have broadband but want it; 2) residents who have broadband but want a different provider; 3) residents who do not have broadband, but the broadband inventory maps indicate that they do; 4) residents who have broadband but want a faster connection speed; and 5) residents who have broadband but want a less expensive service option.

BBIs are submitted frequently by consumers via the Connect South Carolina website. Inquiries often seek help to identify local broadband provider options, or to learn when a specific provider may be able to provide service to that consumer. Consumer comments also provide information which may help modify maps with actual service area information. The primary objectives of CN regarding these inquiries has been 1) to improve the accuracy of the state maps with submitted consumer information and follow-up field research; 2) to provide broadband options to consumers through cooperation with mapped providers and by facilitating new broadband service options; and 3) to map and analyze information from consumers about areas of unmet broadband demand and alternatives to currently mapped services. A prime example of the second option is the utilization of the Rural Utility Service satellite eligibility tool. By simply entering the consumer's address, the CN engineer can quickly determine if the consumer meets the initial qualification status for BIP satellite subsidies.

New BBIs are assigned to either the GIS department or the Engineering & Technical Services (ETS) team depending on the category entered by the consumer on the website submission form. The GIS or ETS team members respond to each inquiry according to the information entered by the consumer. Many BBIs can be resolved through desktop research; however, if a BBI requires research in the field, the assigned ETS team member conducts such research when performing field validations in the area of the inquiry or at another such time as is practical and appropriate. GIS and ETS team members respond to and conclude BBIs via telephone contact and/or e-mail communication.

The broadband inquiry process has been implemented in each of the CN state programs with successful results. Altogether CN has received over 19,388 broadband inquiries since 2007, allowing the state programs to evaluate each inquiry for broadband demand and data verification. These inquiries have been continuously examined against current broadband availability, updated every six months, to determine if previously unserved households have been expanded to and can now receive broadband at their residence. This database of broadband inquiries has also allowed the CN state programs to aggregate demand in concentrated areas to show providers the exact locations where the population has made it clear that they would purchase broadband if it was made available to them. Providers in the states have responded to this process and have expanded to areas knowing that their investment will be worthwhile. Data verification methods have also proven successful, as the state programs have been able to show those inquiries that indicate the broadband service areas

are misrepresented on the map to providers, who then verify where service cannot reach in regard to that residence(s). The broadband coverage in these states has been altered to create a more accurate map based on the inquiries submitted by the public.

During this reporting period, the Connect South Carolina project has received a total of 8 inquiries (167 grant inception to date).

MY CONNECTVIEW METHODOLOGY

My ConnectView is an interactive online mapping tool for viewing, analyzing, and validating broadband data. Developed using Esri's ArcGIS for Server and Adobe's Flex Framework and hosted and maintained by Connected Nation, My ConnectView is a multi-functional, user-friendly way for local leaders, policymakers, consumers, and technology providers to devise a plan for the expansion and adoption of broadband.

First and foremost, My ConnectView allows consumers to locate their residence and identify providers that offer broadband Internet service to that location. The interactive platform allows for users to build and evaluate broadband expansion scenarios using a wealth of data, including several coverage analysis layers, speed analyses, Community Anchor Institutions, and tools to search and export household demographic information, as well as extract data in GIS, spreadsheet, and/or PDF formats.

My ConnectView also features more interactive data layers and additional tools than ever before to allow the consumer to explore the broadband data. My ConnectView provides consumers with the ability to print, e-mail, and provide feedback on the broadband data displayed on the interactive map. Through the collection of this feedback, a visual demand for broadband is presented. This visualization allows the CN state programs the ability to validate the broadband availability for accuracy. If residents within a region state they are without broadband, but the interactive map shows otherwise, this allows CN to approach the providers within that area in an effort to trim down their coverage to more accurately represent real-world availability on the ground.

The Connect South Carolina project launched My ConnectView on April 2, 2012, and has received 213 visits this reporting period; to date the interactive mapping application has received 8,552 visits.

SPEED TEST METHODOLOGY

The 240 speed tests that are represented in the Connect South Carolina Speed Test Report during this reporting period (1,206 grant inception to date) are the result of a partnership between CN and Ookla Net Metrics. Utilizing this relationship increases the level of confidence in the data being collected and provides for a far greater sample size than could be collected by a single testing site.

Ookla owns and operates Speedtest.net, as well as develops and deploys speed tests, such as the Connect South Carolina speed test website, for partners around the world. This network of sites that is developed and run on its testing technology provides Ookla with a vast dataset that, due to the variability of geographic information collected across the varying speed test sites, is geocoded utilizing Geo-IP technology. This technology allows for tests to be geocoded to points of aggregation, typically larger nodes across provider networks. While there are hundreds of thousands of tests that have been conducted, the level of aggregation is only sufficient for county-level detail due to the test results being located at these larger nodes and not at an absolute location for each speed test.

In an effort to validate broadband data from the Connect South Carolina project, speed test information is collected throughout the state. Speed tests provide speed information on the path taken through all networks (a provider's network as well as additional networks) a local machine must connect to in order to reach the host test. The benefit of this collection of speed information is two-tiered. First, it allows for a comprehensive dataset of speeds, while also providing Connect South Carolina with the information on where broadband services are available. Second, unlike theoretical speed information which may be received through the data collection process, the use of speed tests provide real-world information on the speeds that currently exist within the state of South Carolina.

PROVIDERS DEEMED NON-VIABLE

The following list of companies represents the remainder of the broadband provider universe that was originally identified as complete for outreach to begin for the State Broadband Initiative. These providers are not included in the Data Package for the October 2014 submission because they have been deemed non-eligible under the parameters and guidance of the SBI grant program. This list of companies includes, but is not limited to: providers offering service but below the current definition of broadband, those that have gone out of business, technology consulting firms, infrastructure or network construction companies, non-facilities based general resellers that have not provided sufficient mapping information, etc.

	Company Name	URL	Comments
1	Aero Networks	www.aeronetworks.net	This company does not provide Internet services in the state.
2	Aerolina Wireless Networks	www.aerolina.com	This company provides commercial services only.
3	Airespring, Inc.	www.airespring.com	This company is a non-facilities-based reseller.
4	Airimba	n/a	This provider offers service to select MDUs.

5	Atlantic Tele-Network, Inc.	n/a	This company was acquired by AT&T.
6	Beyond Communications	www.discoverbeyond.com	This provider offers service to select MDUs and HOAs, but not to public communities; non-responsive to multiple attempts.
7	Birch Communications	www.birch.com	This company does not provide residential Internet service.
8	Broadstar	www.broadstar.com	This provider offers service to select MDUs.
9	Broadview Networks Holdings, Inc.	www.broadviewnet.com	Non-facilities-based reseller to businesses.
10	Clearwire Corp.	n/a	Acquired by another company.
11	Community Connect	www.vybrent.com	This company does not provide residential Internet services.
12	Contractdata.net	n/a	This company is out of business.
13	County of Oconee	www.oconeefocus.com	BIP recipient promotes the construction of a fiber optic broadband network in the county.
14	Digital Bridge	www.bridgemaxx.com	This company does not provide Internet services in the state.
15	Genesis Telecommunications	www.genesistelcom.com	Dial-up services in Greenwood only.
16	Global Crossing Telecommunications, Inc.	http://www.globalcrossing.com	Acquired by another company.
17	Grand Strand Communications	n/a	This company is out of business.
18	Hickory Tech Corporation	www.enventis.com	B2B services.
19	Hotwire Communications	www.gethotwired.com	Offers residential service to one multi-dwelling unit.
20	LightEdge Solutions, Inc.	www.lightedge.com	Illinois provider; no service in SC.
21	Lightyear Network Solutions, LLC	www.lightyear.net	Non-facilities-based reseller.

22	Main Street Wireless	http://www.mainstreetsc.com	Provider may no longer be in business.
23	MegaPath Inc.	www.megapath.com	This company does not provide Internet services in the state.
24	Metropolitan Telecommunications Holding Company	www.mettel.net	Non-facilities-based reseller of business services.
25	Navacore Communications	www.navacore.net	This company does not provide high-speed Internet; dial-up only.
26	Net Doctors	www.netmds.com	This company does not offer high-speed Internet; dial-up only.
27	New Edge Network, Inc.	www.newedgenetworks.com	Acquired by Earthlink. Company does not offer residential service; resells backhaul.
28	NuVox, Inc.	n/a	Acquired by another company.
29	Open Range Communications, Inc.	http://www.openrangecomm.com	No longer in business.
30	PAETEC Communications, Inc.	http://www.paetec.com/	Acquired by another company.
31	Pee Dee Net	n/a	This company does not provide residential Internet services.
32	Personally Complete	www.personallycomplete.com	This company does not provide Internet access.
33	Pine Tree Cablevision	www.ptc-me.net	This company is out of business.
34	PM Broadband	www.pmccl.com	This company is out of business.
35	Qwest Communications Company, LLC	www.qwest.net	Provider acquired by CenturyLink.
36	Shentel Converged Services, Inc.	www.shentel.com	This company is a private cable provider serving a few campuses and related MDUs, but not public residences.
37	Solavei, LLC	www.solavei.com	Non-facilities-based reseller of T-Mobile services.

38	Techcore Consultants II	www.almega.com	This company is no longer in business in South Carolina.
39	TeleSouth Wireless	www.telesouth1.com	The company appears to be out of business.
40	Telovations, Inc.	www.telovations.com	This company was acquired by another company and does not provide Internet services.
41	Tri-County Electric	www.tri-countyelectric.net	This company does not provide residential Internet services.
42	University Corporation for Advanced Internet Development	www.internet2.edu	This consortium is a BIP/BTOP recipient with no Internet network.
43	WiTel Communications, LLC.	n/a	Acquired by Level 3.
44	WP Media	www.wpmedia.com	This company is a consulting firm.
45	XO Communications, LLC	www.xo.com	Not a broadband provider in this state.
46	Zayo	www.zayo.com	Not a broadband provider in this state.

APPENDIX A: BROADBAND PROVIDER LOG



Broadband Provider Log

Complete	106
Non-Responsive/Refused	0
In Progress	2
Reseller Providing Data	0
Count of Datasets by Status	108
Total Unique Providers Represented	45

Provider Name	Platform	Status	NDA Execution Date	Notes	End User Category
AT&T Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/16/2009	[AUG-14-14 Matthew Brunt] Change: Provider expanded their mobile wireless coverage area.	5 Both Residential/Business
AT&T Inc.	DSL	Data Added to Statewide Inventory	12/16/2009	[AUG-14-14 Matthew Brunt] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2014 submission.	1 Residential Only
CenturyLink	DSL	Data Added to Statewide Inventory	12/4/2009	[AUG-29-14 Matthew Brunt] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2014 submission.	5 Both Residential/Business
Charter Communications, Inc.	Cable	Data Added to Statewide Inventory	12/15/2009	[AUG-14-14 Matthew Brunt] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2014 submission.	5 Both Residential/Business
Chester Telephone Company	DSL	Data Added to Statewide Inventory	1/25/2010	[SEP-11-14 Matthew Brunt] Change: Provider expanded their DSL coverage area.	5 Both Residential/Business
Chester Telephone Company	Fiber	Data Added to Statewide Inventory	1/25/2010	[SEP-11-14 Matthew Brunt] Change: Provider expanded their fiber coverage area.	5 Both Residential/Business
Comcast Cable Communications, LLC	Cable	Data Added to Statewide Inventory	12/7/2009	[AUG-18-14 Matthew Brunt] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2014 submission.	5 Both Residential/Business
Cricket License Company, LLC	Mobile Wireless	Data Added to Statewide Inventory	4/6/2010	[AUG-08-14 Matthew Brunt] Change: Provider expanded their mobile wireless coverage area.	5 Both Residential/Business
DFJB, LLC	Fixed Wireless	Data Added to Statewide Inventory	1/12/2010	[JUN-23-14 Daryl Coffey] This provider overhauled its wireless P2P and now offers residential service to one small area, and business service throughout its expanded network. [AUG-04-14 Matthew Brunt] Correction: This is the initial submission for this provider.	1 Residential Only
DFJB, LLC	Fixed Wireless	Data Added to Statewide Inventory	1/12/2010	[JUN-23-14 Daryl Coffey] This provider overhauled its wireless P2P and now offers residential service to one small area, and business service throughout its expanded network. [AUG-04-14 Matthew Brunt] Correction: This is the initial submission for this provider.	2 Business Only
Electronics Service Company of Hamlet, LLC	Fixed Wireless	Data Added to Statewide Inventory	3/24/2010	[AUG-29-14 Matthew Brunt] Change: Provider added four new towers.	5 Both Residential/Business
Farmers Telephone Cooperative, Inc.	Fiber	Data Added to Statewide Inventory	1/22/2010	[AUG-14-14 Matthew Brunt] Change: Provider expanded fiber coverage area.	5 Both Residential/Business
Farmers Telephone Cooperative, Inc.	DSL	Data Added to Statewide Inventory	1/22/2010	[AUG-14-14 Matthew Brunt] Change: Provider converted a portion of their DSL coverage area over to fiber.	5 Both Residential/Business
Frontier Communications Corporation	DSL	Data Added to Statewide Inventory	1/22/2010	[AUG-22-14 Matthew Brunt] Change: Provider expanded their DSL coverage area.	5 Both Residential/Business
Home Telephone Company, Inc.	Cable	Data Added to Statewide Inventory	1/22/2010	[AUG-27-14 Matthew Brunt] Change: Technology of transmission code upgraded to 40.	5 Both Residential/Business
Home Telephone Company, Inc.	Cable	Data Added to Statewide Inventory	1/22/2010	[AUG-27-14 Matthew Brunt] Change: Provider expanded their cable coverage area.	5 Both Residential/Business
Home Telephone Company, Inc.	DSL	Data Added to Statewide Inventory	1/22/2010	[AUG-27-14 Matthew Brunt] Change: Provider expanded their DSL coverage area.	5 Both Residential/Business
Home Telephone Company, Inc.	Fiber	Data Added to Statewide Inventory	1/22/2010	[AUG-27-14 Matthew Brunt] Change: Provider expanded their fiber coverage area.	5 Both Residential/Business

Home Telephone Company, Inc.	Fiber	Data Added to Statewide Inventory	1/22/2010	[AUG-27-14 Matthew Brunt] Change: Provider expanded their fiber coverage area.	5 Both Residential/Business
Horry Telephone Cooperative, Inc.	Fiber	Data Added to Statewide Inventory	1/22/2010	[JUL-22-14 Matthew Brunt] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2014 submission.	5 Both Residential/Business
Horry Telephone Cooperative, Inc.	Cable	Data Added to Statewide Inventory	1/22/2010	[JUL-22-14 Matthew Brunt] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2014 submission.	5 Both Residential/Business
Horry Telephone Cooperative, Inc.	DSL	Data Added to Statewide Inventory	1/22/2010	[JUL-22-14 Matthew Brunt] Change: Provider expanded their DSL coverage.	5 Both Residential/Business
Level 3 Communications, LLC	Fiber	Data Added to Statewide Inventory	12/14/2009	[AUG-25-14 Matthew Brunt] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2014 submission.	2 Business Only
Rock Hill Telephone Company	Fiber	Data Added to Statewide Inventory	1/25/2010	[AUG-07-14 Matthew Brunt] Change: Provider expanded their fiber coverage area and upgraded their speeds to tier 10 download.	5 Both Residential/Business
Sprint Nextel Corporation	Mobile Wireless	Data Added to Statewide Inventory	1/14/2010	[AUG-11-14 Matthew Brunt] Change: Provider expanded their mobile wireless coverage area.	5 Both Residential/Business
T-Mobile USA, Inc.	Mobile Wireless	Data Added to Statewide Inventory	1/8/2010	[AUG-12-14 Matthew Brunt] Change: Provider expanded their mobile wireless coverage area.	5 Both Residential/Business
TDS Telecommunications Corporation	DSL	Data Added to Statewide Inventory	1/27/2010	[AUG-20-14 Matthew Brunt] Change: Provider expanded their DSL coverage area.	5 Both Residential/Business
Time Warner Cable Inc.	Cable	Data Added to Statewide Inventory	12/21/2009	[AUG-14-14 Matthew Brunt] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2014 submission.	5 Both Residential/Business
tw telecom of south carolina, llc	DSL	Data Added to Statewide Inventory	4/26/2010	[AUG-27-14 Matthew Brunt] Change: Provider expanded their copper wireline service area.	2 Business Only
tw telecom of south carolina, llc	Fiber	Data Added to Statewide Inventory	4/26/2010	[AUG-27-14 Matthew Brunt] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2014 submission.	2 Business Only
Verizon South Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/14/2009	[AUG-18-14 Matthew Brunt] Change: Provider expanded their mobile wireless coverage.	5 Both Residential/Business
Windstream Communications	DSL	Data Added to Statewide Inventory	1/20/2010	[AUG-20-14 Matthew Brunt] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2014 submission.	1 Residential Only
Rock Hill Telephone Company	Cable	Speed Only Update; Data Processing Complete	1/25/2010	[AUG-07-14 Matthew Brunt] Change: Provider upgraded their speeds to tier 5 upload.	5 Both Residential/Business
Rock Hill Telephone Company	Cable	Speed Only Update; Data Processing Complete	1/25/2010	[AUG-07-14 Matthew Brunt] Change: Provider upgraded their speeds to tier 5 upload.	5 Both Residential/Business
Rock Hill Telephone Company	Fiber	Speed Only Update; Data Processing Complete	1/25/2010	[AUG-07-14 Matthew Brunt] Change: Provider upgraded their speeds to tier 10 download.	5 Both Residential/Business
Rock Hill Telephone Company	Cable	Speed Only Update; Data Processing Complete	1/25/2010	[AUG-07-14 Matthew Brunt] Change: Provider upgraded their speeds to tier 5 upload.	5 Both Residential/Business
Rock Hill Telephone Company	Fiber	Speed Only Update; Data Processing Complete	1/25/2010	[AUG-07-14 Matthew Brunt] Change: Provider upgraded their speeds to tier 10 download.	5 Both Residential/Business
West Carolina Rural Telephone Cooperative, Inc.	DSL	Speed Only Update; Data Processing Complete	1/22/2010	[AUG-14-14 Matthew Brunt] Change: Provider upgraded their DSL speeds to tier 10 download and tier 7 upload.	5 Both Residential/Business
Palmetto Rural Telephone Cooperative, Inc.	Fiber	Partial Data Received	1/22/2010	[SEP-11-14 Matthew Brunt] In addition to the residential/business fiber coverage being submitted, this provider also offers additional fiber services to CAIs in different areas/speeds; speed data was received during previous submission, but no geographic locations were ever submitted by the provider.	2 Business Only
AT&T Inc.	Backhaul	No Update to Provide	12/16/2009		N/A Backhaul
ATG Communications, LLC	Backhaul	No Update to Provide	1/14/2010		N/A Backhaul
Atlantic Broadband, LLC	Cable	No Update to Provide	2/3/2010		5 Both Residential/Business
CenturyLink	Backhaul	No Update to Provide	12/4/2009		N/A Backhaul
Charter Communications, Inc.	Backhaul	No Update to Provide	12/15/2009		N/A Backhaul
Chesnee Telephone Company, Inc.	Cable	No Update to Provide	1/25/2010		5 Both Residential/Business

Chesnee Telephone Company, Inc.	DSL	No Update to Provide	1/25/2010		5 Both Residential/Business
Chester Telephone Company	Backhaul	No Update to Provide	1/25/2010		N/A Backhaul
Chester Telephone Company	Cable	No Update to Provide	1/25/2010		5 Both Residential/Business
Conterra Ultra Broadband Holdings	Backhaul	No Update to Provide	11/8/2011		N/A Backhaul
DeltaCom, Inc.	Backhaul	No Update to Provide	2/16/2010		N/A Backhaul
Family View CableVision	Cable	No Update to Provide			5 Both Residential/Business
Farmers Telephone Cooperative, Inc.	Backhaul	No Update to Provide	1/22/2010		N/A Backhaul
Farmers Telephone Cooperative, Inc.	Backhaul	No Update to Provide	1/22/2010		N/A Backhaul
Farmers Telephone Cooperative, Inc.	Mobile Wireless	No Update to Provide	1/22/2010		1 Residential Only
Farmers Telephone Cooperative, Inc.	Fiber	No Update to Provide	1/22/2010		5 Both Residential/Business
Farmers Telephone Cooperative, Inc.	DSL	No Update to Provide	1/22/2010		5 Both Residential/Business
Frontier Communications Corporation	Fiber	No Update to Provide	1/22/2010		5 Both Residential/Business
Hargray Communications Group, Inc.	Backhaul	No Update to Provide	1/25/2010		N/A Backhaul
Hargray Communications Group, Inc.	Backhaul	No Update to Provide	1/25/2010		N/A Backhaul
Hargray Communications Group, Inc.	Backhaul	No Update to Provide	1/25/2010		N/A Backhaul
Hargray Communications Group, Inc.	Cable	No Update to Provide	1/25/2010		5 Both Residential/Business
Hargray Communications Group, Inc.	DSL	No Update to Provide	1/25/2010		5 Both Residential/Business
Hargray Communications Group, Inc.	DSL	No Update to Provide	1/25/2010		5 Both Residential/Business
Hargray Communications Group, Inc.	Fiber	No Update to Provide	1/25/2010		5 Both Residential/Business
Hargray Communications Group, Inc.	Cable	No Update to Provide	1/25/2010		5 Both Residential/Business
Harron Communications LP	Cable	No Update to Provide			5 Both Residential/Business
Home Telephone Company, Inc.	Backhaul	No Update to Provide	1/22/2010		N/A Backhaul
Home Telephone Company, Inc.	Backhaul	No Update to Provide	1/22/2010		N/A Backhaul
Horry Telephone Cooperative, Inc.	Backhaul	No Update to Provide	1/22/2010		N/A Backhaul
Hughes Network Systems, LLC	Satellite	No Update to Provide	2/5/2010		1 Residential Only
Level 3 Communications, LLC	Backhaul	No Update to Provide	12/14/2009		N/A Backhaul
Northland Communications Corp.	Cable	No Update to Provide			5 Both Residential/Business
NTInet, Inc.	Fixed Wireless	No Update to Provide	2/9/2010		5 Both Residential/Business
Palmetto Rural Telephone Cooperative, Inc.	DSL	No Update to Provide	1/22/2010		5 Both Residential/Business
Palmetto Rural Telephone Cooperative, Inc.	DSL	No Update to Provide	1/22/2010		5 Both Residential/Business
Palmetto Rural Telephone Cooperative, Inc.	Fiber	No Update to Provide	1/22/2010		5 Both Residential/Business
Pee Dee Online Consulting	Fixed Wireless	No Update to Provide	2/24/2010		5 Both Residential/Business
Piedmont Rural Telephone Cooperative, Inc.	Backhaul	No Update to Provide	1/28/2010		N/A Backhaul
Piedmont Rural Telephone Cooperative, Inc.	Mobile Wireless	No Update to Provide	1/28/2010		1 Residential Only
Piedmont Rural Telephone Cooperative, Inc.	DSL	No Update to Provide	1/28/2010		5 Both Residential/Business
Rock Hill Telephone Company	Backhaul	No Update to Provide	1/25/2010		N/A Backhaul
Rock Hill Telephone Company	Backhaul	No Update to Provide	1/25/2010		N/A Backhaul
Rock Hill Telephone Company	Backhaul	No Update to Provide	1/25/2010		N/A Backhaul
Rock Hill Telephone Company	Fixed Wireless	No Update to Provide	1/25/2010		5 Both Residential/Business
Rock Hill Telephone Company	Mobile Wireless	No Update to Provide	1/25/2010		1 Residential Only
Rock Hill Telephone Company	Cable	No Update to Provide	1/25/2010		5 Both Residential/Business
Rock Hill Telephone Company	DSL	No Update to Provide	1/25/2010		5 Both Residential/Business
Rock Hill Telephone Company	DSL	No Update to Provide	1/25/2010		5 Both Residential/Business
Rock Hill Telephone Company	DSL	No Update to Provide	1/25/2010		5 Both Residential/Business
Rock Hill Telephone Company	DSL	No Update to Provide	1/25/2010		5 Both Residential/Business
Rock Hill Telephone Company	Fiber	No Update to Provide	1/25/2010		5 Both Residential/Business
Sandhill Telephone Coop., Inc.	Backhaul	No Update to Provide	1/25/2010		N/A Backhaul
Sandhill Telephone Coop., Inc.	DSL	No Update to Provide	1/25/2010		5 Both Residential/Business
Skycasters	Satellite	No Update to Provide	10/16/2012		1 Residential Only
Skycasters	Fixed Wireless	No Update to Provide			5 Both Residential/Business
Skyrunner, Inc.	Fixed Wireless	No Update to Provide			5 Both Residential/Business
Southern Coastal Cable, LLC	Cable	No Update to Provide	6/30/2010		5 Both Residential/Business
Spacenet, Inc.	Satellite	No Update to Provide			1 Residential Only
Sprint Nextel Corporation	Backhaul	No Update to Provide	1/14/2010		N/A Backhaul
TDS Telecommunications Corporation	Backhaul	No Update to Provide	1/27/2010		N/A Backhaul
tw telecom of south carolina, llc	Backhaul	No Update to Provide	4/26/2010		N/A Backhaul
United States Cellular Corporation	Mobile Wireless	No Update to Provide	2/15/2011		5 Both Residential/Business
ViaSat, Inc.	Satellite	No Update to Provide	1/8/2010		1 Residential Only
West Carolina Rural Telephone Cooperative, Inc.	Backhaul	No Update to Provide	1/22/2010		N/A Backhaul

West Carolina Rural Telephone Cooperative, Inc.	Fiber	No Update to Provide	1/22/2010		5 Both Residential/Business
Windstream Communications	Backhaul	No Update to Provide	1/20/2010		N/A Backhaul
Countrywide Wireless	Fixed Wireless	No Update Provided – Use Last Submission Data			5 Both Residential/Business
WideOpenWest Finance, LLC	Cable	No Update Provided – Use Last Submission Data			1 Residential Only
Windstream Communications	Backhaul	Solicited Initial Data	1/20/2010		N/A Backhaul