

**OFFICIAL APRIL 2014 UPDATE SUBMISSION TO
THE NATIONAL TELECOMMUNICATIONS AND
INFORMATION ADMINISTRATION UNDER THE
STATE BROADBAND INITIATIVE GRANT PROGRAM
FOR THE STATE OF TENNESSEE**



April 1, 2014

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April 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:

Connected Tennessee, in partnership with the Department of Finance and Administration's Office for Information Resources and the Department of Economic and Community Development and other agencies, presents this submission on behalf of the State of Tennessee's State Broadband Initiative (SBI) Grant Program, known as Connected Tennessee.

Truly, now more than ever, the significance of complete and validated data through this effort is impacting lives in communities all across our great country. The Connected Tennessee program and its collective stakeholder community continue to be faithful and energized contributors, and we are proud to play a part in forging the innovation economy of the twenty-first century.

The artifacts that comprise this submission should be found to be compliant with the April 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, Connected Tennessee: April 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 should be found to be compliant with the additional program requirements instituted by the National Telecommunications and Information Administration since the time of the October 2013 SBI data submission for the Connected Tennessee program. Specifically, these new requirements are:

SBI Data Transfer Model

The submission of the broadband dataset for April 1, 2014, is contained within the SBI Data Transfer Model as provided to SBI Grantees on January 24, 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 April 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. 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 submission also includes information regarding the data and coverage estimation of a non-participating provider. While Connected Tennessee continues outreach to all providers prior to each submission period, the need to submit broadband service data for all providers regardless of their participation is evident as the SBI program continues into this ninth round of data submissions. The submission of this estimated broadband service area for

providers that have not supplied data to Connected Tennessee is essential in being able to portray a more accurate depiction of the current broadband landscape.

This April 2014 semi-annual 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 98.84 percent of the Tennessee provider community, or 85 of 86 total providers. There are 83 participating providers and 2 additional non-participating providers whose estimated coverage areas have been submitted. Of the 83 participating providers, 39 supplied an update to their network or coverage area(s), while 16 have reported no change. The remaining 28 represent providers who previously supplied data but were non-responsive in the April 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. The 1 provider that is not represented in the attached datasets was non-responsive to multiple contact attempts.

This submission also includes business/commercial providers; of the 75 residential providers represented in the above section, 43 are providers that do not distinguish between serving primarily residential or primarily non-residential users (end user category 5). Five business-only providers (end user category 2) are also included in this submission.

As the aforementioned roster and attached methodology documentation will attest, it is the collective opinion of the Connected Tennessee principals that all commercially reasonable efforts were made to account for 100 percent of the known Tennessee broadband provider community, pursuant to this semi-annual data update submission.

Connected Tennessee has also continued to perform broadband verification activities through several means. In addition to confirmation of service area(s) by each provider, Connected Tennessee conducts field validation efforts. To date, 75 (87.21 percent) viable providers have been validated through field verification activities. Additional details on verification activities are contained within the Field Validation Methodology.

The Connected Tennessee website (www.connectedtennessee.org) continues to serve a prominent role in the outreach and data collection effort. This program asset provides 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 Connected Tennessee website encountered 4,981 unique visits during this reporting period (58,886 total to date for the life of the grant awarded on December 20, 2009). Additionally, this pronounced Web activity netted 91 broadband inquiries over this same reporting period (1,730 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 are facilitated through the Connected Tennessee website and the Connected Tennessee 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 Connected Tennessee mapping artifacts. Since the initial data collection and release of corresponding maps, feedback in the form of broadband inquiries has allowed Connected Tennessee to identify additional areas that are in need of field validation, which is scheduled as soon as possible.

Community Anchor Institutions

Connected Tennessee remains 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 taken the opportunity to recommit to CAI data collection, reiterating the importance of a relationship-oriented approach with state-level agencies and organizations that generates more responses than local outreach.

In conjunction with the Department of Finance and Administration's Office of Information Resources and the Department of Economic and Community Development and other agencies, outreach was conducted during this data update reporting period by Connected Tennessee 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 Connected Tennessee website. Building on the success of past campaigns to generate excitement about CAI outreach, research, and mapping, there has been one campaign conducted since the previous NTIA data submission: Economic Development (November 2013). The Connected Tennessee Economic Development Campaign highlighted the benefits of broadband for economic development by building awareness, engaging stakeholders, and enlisting new stakeholders through events and a coordinated release of business surveys, widgets, infographics, policy analyses, maps, and stories from around our states and partnerships. Each release included a call to action to complete a CAI Survey and allowed the opportunity to conduct outreach outside of the releases. Survey of the government sector helped to build awareness and to establish a centralized database of key connectivity data for the mapping project. This building on existing relationships with statewide associations promotes the importance of broadband connectivity at anchor institutions and encourages participation in this data collection process.

The value of these relationships continues to impact the entire success of the Grant Program, and the CAI engagement is a logical extension of new and existing relationships. Connected Tennessee will continue to expand on these relationships over the coming months and utilize its contacts throughout the state to collect data and raise awareness of this project.

From our work in Tennessee as well as other states, we recognize the great value of this data to future collaboration efforts within the state as well as its value to the National Broadband Map. We plan to continue to bring best practices to the Connected Tennessee efforts, along with an investment of both human and technical resources required to reach our goal of increasing the data that is secured and reported as part of this process.

The Connected Tennessee program exists to improve data on the deployment and adoption of broadband services and to assist in the extension of broadband technology across all regions of the great State of Tennessee, as well as the United States and its territories through contribution to the National Broadband Map. We look forward to the continuing work ahead and improving upon our data collection methods.

Respectfully submitted,



Corey Johns
Executive Director
Connected Tennessee

TENNESSEE COMMUNITY ANCHOR INSTITUTIONS METHODOLOGY

Connected Tennessee remains committed to working with Tennessee 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. This encouragement translated very well with the state client as well as K-12 school and library points of contact. The impact will be seen in this submission as well as the upcoming October 2014 submission.

In addition to the encouragement from NTIA, Connected Tennessee continues to promote sector-specific campaigns every quarter and focused on economic development in November 2013, specifically reaching out to and education local governments. Information received from these campaign outreaches is processed and compiled with all currently collected CAI data. Physical address information continues to be augmented through manual sourcing and geocoded by Connected Tennessee through Esri ArcGIS software.

Connected Tennessee continues to utilize a customized online survey hosted through SurveyMonkey, with a landing page on the Connected Tennessee 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. Connected Tennessee will continue to use these data-gathering tools for future targeted outreach efforts throughout the coming months leading up to the next reporting period. These materials are customized to fit the CAI categories as defined in the SBI NOFA.

The survey can be accessed at this link: <http://www.surveymonkey.com/s/RJK59FP>

Connected Tennessee 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 are beneficial to the entire success of the grant program, and the CAI engagement is a logical extension of new and existing relationships. Connected Tennessee will continue to build upon these relationships over the coming months and utilize its contacts throughout the state to collect data and raise awareness of this project.

In addition to fostering and building relationships with state agencies, associations, and organizations, Connected Tennessee has also developed a sector-specific calendar that supports CAI outreach as well as research and communications efforts. This focused approach allows a corporate commitment to capturing CAI data in addition to developing meaningful sector-specific content. Since the October 2013 submission, the sector-specific approach included an economic development campaign in November 2013 geared toward local governments. During these campaigns, Connected Tennessee committed to engage key stakeholders to educate them about the importance of our CAI data gathering efforts, distribute survey requests to sector representatives to gather CAI information, and provide campaign-specific education through communications and webinar resources. Continued outreach to and survey of schools, libraries, hospitals, local law

enforcement, and fire stations helps build awareness and establishes a centralized database of key connectivity data for planning.

Connected Tennessee conducts 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, Connected Tennessee continues to identify 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, Connected Tennessee works with the Department of Finance and Administration's Office of Information Resources and the Department of Economic and Community Development and other agencies to identify existing relationships that can support CAI outreach.

Connected Tennessee has an ongoing mission to educate CAI throughout the state on the importance of participating in the project. Participation by these institutions will raise 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 Connected Tennessee project as well as self-awareness of their own broadband connectivity (specifically upload and download speeds). Connected Tennessee will continue to research key CAI organizations and agency contacts in an effort to raise awareness of this project among CAI. When applicable, the Department of Finance and Administration's Office of Information Resources and the Department of Economic and Community Development will continue to be briefed on the current CAI data and provided information so it can assist with outreach and promotion within the state.

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	2296	2294	1123	1122	1120
Libraries	318	311	279	280	280
Healthcare	896	896	218	217	217
Public Safety	764	762	149	127	127
Higher Ed Institutions	403	402	172	175	119
Other Government	1281	1276	1120	1104	1104
Other Non-Government	165	164	128	126	126
Total	6123	6105	3189	3151	3093

Connected Tennessee received data from the Tennessee State Archives and Libraries.

Additionally, efforts were made to increase the number of CAI IDs, or federal ID codes, submitted for K-12 school and library records. The K-12 schools now have 83.44% of the CAI IDs accounted for in the records. Library records now have 99.04% of the CAI IDs accounted for in the records; additional work will be completed prior to the October 2014 submission to further increase the number of CAI IDs submitted.

During the coming months, CAI data collection will be supported by regular reporting to the Connected Tennessee team. The CAI data is proving an invaluable resource to all components of the Connected Tennessee 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 April 1, 2014, is contained within the SBI Data Transfer Model and additional components as provided to SBI Grantees on January 24, 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 Tennessee.

Inventory of Deliverables, Connected Tennessee: April 1, 2014

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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_CAIstitutions	Community Anchor Institutions-Listing.

The provider data collected by CN on behalf of the State of Tennessee 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 April 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 is not yet available. Submitted within the wireless feature class are the satellite companies providing service to Tennessee as a polygon of the state boundary. Efforts will continue to collect, process, or otherwise create more granular satellite data based on availability analyses and guidance received from NTIA. Process development continues as well to be able to create more granular satellite coverage based on satellite equipment positioning and geographic inputs; a pilot study has been initiated in Alaska to evaluate the analysis.

DATASETS FOR IN-KIND MATCH

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

- **Street Centerline and Address Point Datasets:** The State of Tennessee has provided GIS datasets on street centerlines and address points for use in the TN SBI project. The street centerline and address point datasets benefit the TN SBI project in compiling and processing broadband datasets, field validation work, and analyzing local citizen feedback. The street and address datasets managed by the State of Tennessee are higher accuracy and more up-to-date than other datasets that are free and publicly available.
- **Metro Nashville Aerial Imagery Dataset:** Metro Nashville has provided a dataset with 2012 aerial imagery for use in the TN SBI project. The Metro Nashville 2012 aerial imagery is useful to the TN SBI project by providing more recent, high resolution imagery than what is currently publicly available; this information assists in field validation and analysis of local citizen feedback.
- **University of Tennessee Dataset:** The University of Tennessee Municipal Technical Advisory Service has provided access to database reports from a dataset containing contact information for elected and appointed municipal officials. These reports will provide useful Community Anchor Institution information necessary to the TN SBI project.

TENNESSEE 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 **CO**mmission **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 conducted on-site validation tests in Tennessee on the following viable providers: Access Cable Television, Inc.; Ardmore Telephone Company Inc; AT&T Inc.; Athena Broadband; Aurora Cable TV; Beasley Wireless; Ben Lomand Rural Telephone Coop., Inc.; Bledsoe Telephone Cooperative Inc; BreezeAir.net; Bristol Tennessee Essential Services; Cable ONE Inc.; Capshaw Enterprises, LLC; Celina Cable Communications, Inc.; Cellular South Licenses, LLC; CenturyLink; Charter Communications, Inc.; Clarksville Department of Electricity; Columbia Power & Water Systems; Comcast Cable Communications, LLC; Conterra Ultra Broadband, LLC; CRU Enterprises, Inc.; DeKalb Telephone Cooperative, Inc.; DeltaCom, Inc.; ECSIS.NET; Electric Power Board for the City of Chattanooga; Fayetteville Public Utilities; Frontier Communications Corporation; High Country Online LLC; Highland Telephone Cooperative, Inc.; Hughes Network Systems, LLC; Info-Ed Inc; InfoStructure Inc.; Iris Networks; Jackson Energy Authority; Ken-Tenn Wireless, L.L.C.; Leap Wireless International, Inc.; Level 3 Communications, LLC; Loretto Telephone Company, Inc.; Mediacom Southeast LLC; MegaPath Corporation; Millington CATV, Inc.; Monster Broadband, Inc.; Morristown Utilities Commission; NetEase; North Central Telephone Cooperative, Inc.; Pickwick Cablevision, Inc.; Planet Connect Internet; Pulaski Electric System; QuickRelay Wireless Communications; Skyline Telephone Membership Corporation; Softek, Inc.; Spirit Broadband; Sprint Nextel Corporation; Surfmore; TDS Telecommunications Corporation; TEC of Jackson, Inc; TELE-PAGE Inc.; Time Warner Cable Inc.; T-Mobile USA, Inc.; TNWEB, LLC; Trenton TV Cable Company; Trinity Communications LLC; Tullahoma Utilities Board; tw telecom of tennessee, llc; Twin Lakes Telephone Cooperative Corporation; Ultranet High-Speed Internet; United States Cellular Corporation; United Telephone Company, Inc.; Verizon Communications, Inc.; West Kentucky and Tennessee Telecommunications Cooperative Inc; WideOpenWest Finance, LLC; Windstream Communications; Wisper, LLC; XO Communications, LLC; and Zito Midwest, LLC.

In addition to the field verification tests that have been conducted, Connected Nation has also conducted work in the field to collect information for the non-participating providers Trinity Cable, LLC and TNWeb, which, by nature of the methodology required for this collection, are also included in the above list.

Additionally Connected Nation had previously validated eight providers which are now considered non-viable, due to mergers and acquisitions or because they are no longer in business: Clearwire Corporation; EnterSource; James Cable LLC; NewWave Communications; OnWav, Inc.; OrbWireless.net; Rural Tennessee Wireless Broadband (RTWB); and Utopian Wireless Corporation.

From program initiation through this reporting period, CN has completed in-the-field validation testing against 75 viable companies (out of a universe of 86 viable providers) totaling 87.21 percent within the State of Tennessee. This percentage also considers the non-participating provider record submitted to NTIA as may be contained herein (see "Data Submission and Coverage Estimation of Non-Participating Providers" below).

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 January 24, 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.

Columbia Power & Water Systems

Issue: Technology of transmission code 41 with maximum advertised download speed in tier 8, higher than expected value range for the technology.

Resolution: Provider website advertises up to 50 Mbps service, which requires DOCSIS 3.0 modem, however, most of the system is still on DOCSIS 2.0; screenshot below.

PowerNet 50.0

\$ 60.00

*Up to 50.0 Mbps download/5.0 Mbps upload
(Requires DOCSIS 3.0 modem.)*

Comcast Cable Communications, LLC

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

Resolution: Confirmed use of DOCSIS 3.0 with speed tier 7. Speeds are kept lower currently to be backwards compatible.

Mediacom Southeast LLC

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

Resolution: Provider website advertises up to 50 Mbps service with DOCSIS 3.0 modem; screenshot below.



WideOpenWest Finance, LLC

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

Resolution: Provider website advertises 25 Mbps service; screenshot below.

25/30 Mbps

The optimal choice for multi-user households, frequent gaming, regular video streaming and file sharing. (5 Mbps upload)

DATA SUBMISSION AND COVERAGE ESTIMATION OF NON-PARTICIPATING PROVIDERS (NPP)

As part of its ongoing broadband mapping efforts, CN has developed a series of processes with the goal of submitting coverage estimation mapping data to NTIA for every known and qualifying last-mile broadband provider, regardless of platform type (cable modem, DSL, fixed wireless, etc.).

The section below provides a summary of the status of CN's outreach and findings on all non-participating provider coverage for the April 2014 SBI submission.

Trinity Cable, LLC

The coverage estimation for this provider was not updated from the prior submission in October 2013. The full white paper containing the most recent coverage estimation for this provider can be found within the October 2013 submission to NTIA.

TNWeb

The coverage estimation for this provider was not updated from the prior submission in October 2013. The full white paper containing the most recent coverage estimation for this provider can be found within the October 2012 submission to NTIA.

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, this is the first time they have seen maps of their broadband service area. 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 is provided from various sources and through the review and revision process, local engineers who operate the networks and work in the field are 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) are remedied by CN, whether they are additions, removal of service, or any other revisions. Revised maps of service area representations are sent to the provider for review and approval; CN will revise data and return maps as many times as necessary until the provider is in agreement that the map represents their service area as accurately as possible. Once the review process has been completed and final approval of the data is provided, the data is deemed ready for NTIA submission. However, if approval is not received from a provider in time for the submission, but CN believes the new/updated service area to be accurate, then the coverage will be 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 becomes 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 allows for a follow-up to providers regarding revisions to the data as it is represented; it also allows for CN to identify locations where on-site visits may be necessary to complete field validation of available services. Public feedback on all forms of mapping products serves as a localized validation method for provider-supplied information and allows CN to resolve inaccuracies as they are identified to ensure that only the highest quality information is provided to stakeholders.

Additionally, non-participating provider narratives that were submitted in previous mapping cycles are subjected to the same level of scrutiny. Occasionally, a provider may elect to voluntarily participate (thus eliminating the need for future data estimation activities in the field). However, more often than not, the NPP narrative is updated with a combination of data gleaned from the provider's website, data obtained through FCC research, and/or data collected/verified in the field by a CN staff engineer.

Estimates derived from provider-validated data indicate that approximately 3.71 percent of Tennessee households do not have terrestrial fixed broadband service available, and approximately 0.18 percent of Tennessee households have neither mobile nor fixed broadband service available.

Within rural areas of the state, results derived from provider-validated data indicate that approximately 6.44 percent of rural Tennessee households do not have terrestrial fixed broadband service available, and approximately 0.34 percent of rural Tennessee 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. This research often proves to be exceptionally effective when estimating the coverage area of an NPP.
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 **S**ystem.

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 collects 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 Connected Tennessee 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 are 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 19,196 broadband inquiries since 2007, allowing the state programs to evaluate each inquiry for broadband demand and data verification. These inquiries are 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 Connected Tennessee project has received a total of 91 inquiries (1,730 grant inception to date). As more inquiries are submitted to Connected Tennessee, a more thorough validation of the broadband landscape can be performed, while also allowing providers to see which areas have a high demand for broadband adoption.

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 Connected Tennessee project launched My ConnectView on April 2, 2012 and has received 1,235 visits this reporting period; to date the interactive mapping application has received 11,978 visits.

SPEED TEST METHODOLOGY

The 1,864 speed tests that are represented in the Connected Tennessee Speed Test Report during this reporting period (20,587 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 Connected Tennessee 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 Connected Tennessee 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 Connected Tennessee 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 Tennessee.

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 April 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	21Globe, Inc.	www.21globe.com	Does not offer broadband services; not a broadband provider. Possibly no longer in business, web URL is media reference site for news and events from Ohio.
2	A 007 Access	www.a007.com	General reseller of Quest DSL and mobile wireless; outreach, desktop and website research confirms non-viable.
3	Aaccess Network Communications	www.aaccess.net	New York hardware reseller offering network security and business IT net design. Not a broadband provider.
4	ACERX.NET	www.acerx.net	Nonfacilities-based reseller of national and regional broadband companies with cable, DSL, and mobile wireless applications.

5	Adelphia	n/a	No longer in business; assets liquidated.
6	Aeneas Communications, LLC	www.aeneas.com	Facilities-based CLEC that resells dial-up, DSL, and VoIP to consumers and business accounts.
7	Airespring, Inc.	www.airespring.com	General reseller of VOIP, long distance and data circuits (non residential).
8	Airewaves Broadband, LLC	www.airewaves.com	Airewaves website is an audio-based web service and domain is listed as for sale.
9	Airmail247.com	www.airmail247.com	Business mailing list search site; not a broadband provider.
10	Antioch Wireless Broadband	www.antiochwirelessbroadband.com	Resells DSL and cellular service in Antioch, IL only.
11	Arrowheadnet.com	www.arrowheadnet.com	Domain registration and web hosting company.
12	Atris	www.atris.biz	Offers VoIP, data, and softphone services to business accounts.
13	bargainisp.net	www.bargainisp.net	Generic web directory site, forum for third-party broadband advertising; company does not offer broadband.
14	BeaDun Communications	www.beasleywireless.net	Subsidiary of Beasley Wireless; services offered to business accounts fall below NTIA's definition of "broadband."
15	Birch Communications	www.birch.com	Reselling broadband services and providing small/medium B2B in 40 states with facilities-based wholesale telecommunications [to Competitive Local Exchange Carriers (CLECs), Internet Service Providers (ISPs), VoIP Providers, and Resellers].
16	BullsEye Telecom, Inc.	http://www.bullseyetelecom.com	A reseller of DSL services purchased from incumbents.
17	Broadband National	www.broadbandnational.com	Nonfacilities-based reseller of national and regional broadband companies offering residential/business cable and DSL services.

18	Broadcore, Inc.	www.broadcore.com	Provides business solutions such as VOIP and network integration services.
19	Broadview Networks Holdings, Inc.	www.broadviewnet.com	Wholesale reseller of partners' communication products and services; company is nonfacilities-based.
20	Broadwing Communications	www.level3.com	Acquired by Level 3.
21	Business Telecom, Inc. (DeltaComm)	www.earthlinkbusiness.com	B2B services only. Reseller.
22	Camino-Net Internet Services	www.camino-net.com	Website is redirected to http://www.mytechproservices.com / offering ancillary (not broadband) services.
23	CCIS.net	www.ccis.net	Now owned by Beacon Technologies; offers dial-up and is general reseller of DSL in Pennsylvania.
24	Cebridge Connections	suddenlink.net	Acquired by SuddenLink.
25	Celito Communications	www.celito.net	Offers dial-up and wireless in North Carolina.
26	Cinergy Communications Company	n/a	Acquired by Windstream.
27	Cleartouch.Com	www.cleartouch.com	Inactive URL; out of business.
28	Clearwire Corporation	http://www.clearwire.com	Acquired by Sprint.
29	Cognisurf	www.cognisurf.com	Offers dial-up only.
30	Crystal Clear Technologies	http://www.crystalcleartechologies.net/index.html	Reseller of VOIP, FTTH, Neighborhood Hotspots and commercial fiber in one residential housing development.
31	DataWave Wireless Solutions	http://www.dwstn.com	No longer in business; domain name for sale.
32	Deltaforce	www.deltaforce.net	Dial-up and webhosting services only.
33	deluxehost.com	deluxe-host.com	Company delivers web hosting services.

34	DGUI	www.dgui.com	No longer in business; domain name for sale.
35	Dial National	www.dialnational.com	Inactive URL; out of business.
36	Dialer.net	www.dialer.net	England-based, international pay-as-you-go mobile wireless and hot spot reseller.
37	DIECA Communications, Inc.	n/a	Acquired by Covad; then acquired by MegaPath.
38	Dixie-Net, Incorporated	www.dixie-net.com/wireless	Offers fixed wireless and DSL in Mississippi only.
39	Dresden Cable	n/a	Provider does not offer broadband; limited to CATV and satellite services only.
40	DSL @ Interlync	www.interlync.com	General reseller of DSL, wireless, VoIP, dial-up, web hosting etc.
41	DTS-NET.COM	http://www.dts-net.com/	General reseller of DSL.
42	Eagle One Wireless	www.e1w.com	Offers direct connect wireless internet services to businesses in northeast Mississippi, south central Tennessee, and northwest Alabama.
43	Endless Sphere Technology	www.endless-sphere.com	Electric Vehicle Technology Forums.
44	EnterSource	http://www.entersource.co	General Reseller of HughesNet, Athena Broadband, Charter, AT&T and DishNetwork.
45	Enventis Telecom Inc.	www.enventis.com	Doing business as Hickory Tech; general reseller in Iowa and Minnesota area; local agent claimed they do not offer broadband services.
46	ETI - Connecting Your World	www.cyberenet.net	General reseller of DSL services from infrastructure owned by Verizon, AT&T, and Covad.
47	Fast Dependable Access	www.fda.net	Not a broadband provider.
48	Gainesboro CATV	n/a	Does not offer broadband, CATV only.
49	Global Crossing Telecommunications, Inc.	http://www.globalcrossing.com	Acquired by another company.

50	Haywood Cablevision	www.cbvnol.com	Out-of-state provider; offers service in the Carolina Mountain area.
51	Highertech.Net	www.highertech.net	Appears to have been acquired by Chattanooga Net.
52	Hubwest Protected Networks LLC	www.hubwest.com	Dial-up and web hosting only recently merged with Southwest Cyberport.
53	iGiles.net (d/b/a DotSpot Wireless)	http://www.dotspot.net	Acquired by Monster Broadband.
54	IMGISP.NET	www.imgisp.net	Search engine, generic web solutions and ad forum.
55	Incredible Networks	n/a	Incredible Networks is an independent network engineering services business based in Adelaide Australia.
56	Inercom Communications Inc.	www.inercom.com	Inactive URL; out of business, url for sale.
57	Interactiveinfo.com Inc.	www.rocketbroadband.com	Offers cable television services in NY only.
58	iRadical	n/a	Could not locate any information on company.
59	ISPartner.net	n/a	Could not locate any information on company.
60	James Cable, LLC	http://www.communicom.com/	Acquired by Vyve Broadband, LLC.
61	Jenco Speed Web	www.jencospeed.net	Offers wireless service in Ohio only.
62	Knology of Tennessee, Inc.	http://www.knology.com	Acquired by Wide Open West Finance, LLC (WOW).
63	LARIAT.NET	www.lariat.net	Offers fixed wireless services in Wyoming only.
64	LCSisp.com	www.lcsisp.com	Website no longer in service.
65	Lightyear Network Solutions, LLC	www.lightyear.net	Acquired by Birch Communications.
66	LinkAmerica.Net	www.linkamerica.net	Inactive URL; out of business.
67	MacWebTown.Net Works	www.macwebtown.net	McIntosh web services and technical assistance.
68	MainBoard	www.mainboard.cc	Website no longer in service.

69	Maine Cable and Wireless	www.maineableandwireless.com	Could not locate any information on company. Redirects to a "coming soon" website for Maine Culinary Workshop.
70	Marcin Company	n/a	No longer in business; phone and website are both inactive.
71	Metropolitan Telecommunications Holding Company	www.mettel.net	MetTel provides facilities-based and resold services (certified CLEC in some states). The company provides a variety of voice, including wireless, and data services to commercial customers.
72	Millenicom Inc.	www.millenicom.com	Reseller of 3G and 4G mobile wireless services.
73	MYWEBSTAR	www.mywebstar.com	Inactive URL.
74	Nanomega.Com	www.nanomega.com	Website is listed on Go-Daddy as for sale.
75	NetAccess, Inc.	www.nas.net	Canadian based ISP; does not offer service in U.S.
76	NetFire	n/a	No longer in business.
77	NetSpeed Online	www.netspeed-online.net	Website no longer in service.
78	NetStar Communications	n/a	Offers virtual ISP services and web hosting.
79	New Edge Network, Inc.	www.newedgenetworks.com	Company has no residential service and re-sells backhaul; acquired by Earthlink.
80	NewWave Communications	http://www.newwavecom.com/	Acquired by another company.
81	Northwest ISP	www.northwestisp.com	Inactive URL; out of business.
82	NTCH, Inc.	www.clearwalkwireless.net	Acquired by Clearwalk Wireless.
83	NuVox, Inc.	www.windstream.com	Acquired by Windstream.
84	OnWav, Inc.	www.onwav.com/	Acquired by Twin Lakes Telephone Cooperative.
85	OrbWireless.net	http://www.orbwireless.net	Acquired by Tennessee Wireless.
86	Overarch Broadband	n/a	Offers services in Idaho only.
87	Pacific Internet Exchange	www.pie.us	Website is for sale.
88	PAETEC Communications, Inc.	http://www.paetec.com/	Acquired by another company.

89	Paknet Limited	www.ptcl.com.pk	Subsidiary of Pakistan Telephone Company; no services offered in the U.S.
90	Planet Online	www.planetonline.net	Offers website hosting services.
91	Point2Point	www.p2p-innovations.com	Out of business.
92	PremoWeb	www.premoweb.com	Website no longer in service.
93	Qwest Communications Company, LLC	www.centurylink.com	Provider acquired by CenturyLink.
94	Rapid Communications, LLC	n/a	Acquired by Mediacom; subsequently acquired by Comcast.
95	Renaissance Networks	www.renaissancenetworks.com	Offers IT support to small businesses in New Mexico.
96	Rural Tennessee Wireless Broadband (RTWB)	http://www.rtwb.net/	No longer in business.
97	Scott County Telephone Cooperative	www.sctc.org	CLEC offering business class services only.
98	Shentel Converged Services, Inc.	www.shentel.com	Shentel Converged Services is classified as a Private Cable Operator and offers service to MDU housing facilities.
99	Simply Dialup A Metrogeek Company	www.simplydialup.com	Dial-up services and general reseller of DSL, satellite and cable modem.
100	Sling Broadband	www.slingbroadband.com	Out-of-state provider; offers DSL and wireless services to business accounts in Florida.
101	Smartresort Co, LLC	www.baldwincountyinternet.com	General reseller of local ISP services.
102	Solavei, LLC (Solavei)	http://www.solavei.com/	Reseller exclusive to T-Mobile network.
103	Solutions IT Consulting, LLC	www.solutionsitc.com	Technology consulting firm.
104	Sparkplug Chicago, Inc.	www.airband.com	Offers point-to-point wireless and business solutions in Illinois.
105	Spring City Cable	n/a	Out-of-state provider; offers services in Utah only.
106	Surferz.Net	www.surferz.net	Website manager and developer.
107	T1 Shopper	www.t1shopper.com	Search engine for general reseller.

108	Talk America Inc.	www.cavtel.com	Acquired by Cavalier Business Communications.
109	Telovations, Inc.	www.telovations.com	IT and IP solutions consultant.
110	The Nexus Group, Inc.	www.nxs.net	General reseller of AT&T DSL.
111	Total Access Networks, Inc.	www.totalaccess.net	Website no longer in service.
112	TSISP.NET	www.tsisp.net	Website no longer in service.
113	Two Rivers Media	n/a	Inactive URL; acquired by MediaCom.
114	University Corporation for Advanced Internet Development	www2.ntia.doc.gov/grantee/university-corporation-for-advanced-internet-development	Currently ineligible under the parameters and guidance of the SBI grant program.
115	UNUM Telecommunications, Inc.	www.utinet.net	Inactive URL; out of business.
116	VOLstate, Inc.	www.volstate.net	Reseller of DSL, offers internet solutions and technical support to business accounts.
117	Waypoint Wireless	n/a	Consulting firm.
118	WilTel Communications, LLC.	www.level3.com	Acquired by Level 3.
119	Wireless Roanoke, Inc.	www.wirelessroanoke.com	Inactive URL; out of business.
120	wisbin	www.wisbin.com	Reseller of DSL Internet service in Wisconsin.
121	WorldCom Broadband	n/a	Acquired by Verizon.
122	Worldspice.net	www.worldspice.net	Offers web hosting and connectivity to business accounts.
123	www.AmericanAngel.us	www.americanangel.us	Website no longer in service.
124	Xpansion Network	n/a	No longer in business.
125	XTN	www.xtn.net	URL redirects to Jones Media.
126	YEEZOO.NET	www.yeyzoo.net	Appears to no longer be in business.
127	YLISP (Your Local ISP)	www.itsyournet.com	Redirects to https://www.securepaynet.net - website indicates for sale.
128	YourT1Wifi.com	yourt1wifi.com	Offers wireless service in Idaho only.

129	ZOOM Internet Services, LLC	n/a	Michigan-based dial-up provider and web hosting company.
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APPENDIX A: BROADBAND PROVIDER LOG



Broadband Provider Log

Complete	115
Non-Responsive/Refused	2
In Progress	2
Reseller Providing Data	0
Count of Datasets by Status	119
Represented	87

Provider Name	Platform	Status	NDA Execution Date	Notes	End User Category
AT&T Inc.	DSL	Data Added to Statewide Inventory	12/16/2009	[FEB-17-14 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	1 – Residential Only
AT&T Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/16/2009	[FEB-03-14 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	5 – Both Residential/Business
Athena Broadband	Fixed Wireless	Data Added to Statewide Inventory		[FEB-27-14 Frank Aryee] Change: Provider activated two new towers which has expanded coverage to the north-west and south of Bedford County. Provider also indicated that they service both residential and business locations.	5 – Both Residential/Business
Blue Ray Networks	Cable	Data Added to Statewide Inventory		[FEB-27-14 Frank Aryee] Change: This is a brand new broadband provider in the market.	5 – Both Residential/Business
CenturyLink	DSL	Data Added to Statewide Inventory	12/4/2009	[FEB-12-14 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	5 – Both Residential/Business
Charter Communications, Inc.	Cable	Data Added to Statewide Inventory	12/15/2009	[FEB-17-14 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	5 – Both Residential/Business
Comcast Cable Communications, LLC	Cable	Data Added to Statewide Inventory	12/7/2009	[FEB-19-14 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	5 – Both Residential/Business
Frontier Communications Corporation	DSL	Data Added to Statewide Inventory	1/22/2010	[FEB-27-14 Frank Aryee] Change: Provider activated new DSLAMs.	5 – Both Residential/Business
JTM Broadband, LLC	Fixed Wireless	Data Added to Statewide Inventory		[FEB-14-14 Frank Aryee] Change: Provider activated two new towers. Provider also indicated that they service both residential and business locations.	5 – Both Residential/Business
Level 3 Communications, LLC	Fiber	Data Added to Statewide Inventory	12/14/2009		2 – Business Only
Mediacom Southeast LLC	Cable	Data Added to Statewide Inventory	1/12/2010	[FEB-17-14 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	1 – Residential Only
MegaPath Corporation	DSL	Data Added to Statewide Inventory	2/15/2010	[MAR-14-14 Frank Aryee] Changes and/or Corrections: possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	2 – Business Only
Monster Broadband, Inc.	Fixed Wireless	Data Added to Statewide Inventory	11/6/2009	[MAR-12-14 Frank Aryee] Change: Provider activated two new towers which expanded coverage into southern Bedford County and southwest Franklin County. Provider also upgraded speeds on some existing towers to tier 5 and 6. Provider also indicated that they service both residential and business locations.	5 – Both Residential/Business
North Central Telephone Cooperative, Inc.	DSL	Data Added to Statewide Inventory	2/5/2010	[MAR-03-14 Frank Aryee] Change: Provider expanded DSL coverage south of Red Boiling Springs within Macon County. Provider also indicated that they service both residential and business locations.	5 – Both Residential/Business

North Central Telephone Cooperative, Inc.	Fiber	Data Added to Statewide Inventory	2/5/2010	[MAR-03-14 Frank Aryee] Change: Provider expanded fiber service to the west and north of existing coverage area within Sumner County. Service was also expanded around the Westmoreland area within Sumner and part of Macon Counties. Provider also indicated that they service both residential and business locations.	5 – Both Residential/Business
Skyline Telephone Membership Corporation	Fiber	Data Added to Statewide Inventory	2/2/2010	[FEB-12-14 Frank Aryee] Changes/Corrections: Provider expanded coverage to the northern and eastern parts of existing coverage within northwest of Johnson County.	5 – Both Residential/Business
Sprint Nextel Corporation	Mobile Wireless	Data Added to Statewide Inventory	1/14/2010	[FEB-03-14 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	5 – Both Residential/Business
T-Mobile USA, Inc.	Mobile Wireless	Data Added to Statewide Inventory	1/8/2010	[FEB-10-14 Frank Aryee] Changes and/or Corrections: possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	5 – Both Residential/Business
TDS Telecommunications Corporation	DSL	Data Added to Statewide Inventory	1/27/2010	[FEB-11-14 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	5 – Both Residential/Business
TDS Telecommunications Corporation	Fiber	Data Added to Statewide Inventory	1/27/2010	[FEB-11-14 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	5 – Both Residential/Business
TEC of Jackson, Inc	DSL	Data Added to Statewide Inventory	7/29/2010	[FEB-24-14 Frank Aryee] Change: Provider added two new terminals and also upgraded two existing ones to fiber fed.	5 – Both Residential/Business
TEC of Jackson, Inc	DSL	Data Added to Statewide Inventory	7/29/2010	[FEB-24-14 Frank Aryee] Change: Provider removed two existing terminals and replaced them with two new ones with upgraded download speeds of tier 5 and 7.	5 – Both Residential/Business
Tennessee Wireless, LLC	Fixed Wireless	Data Added to Statewide Inventory		[FEB-11-14 Frank Aryee] Change: Provider activated new towers which expanded coverage to the south and east of Hickman County. Provider also indicated that they service both residential and business locations.	5 – Both Residential/Business
tw telecom of tennessee, llc	DSL	Data Added to Statewide Inventory	3/31/2010	[MAR-14-14 Frank Aryee] Changes and/or Corrections: possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	2 – Business Only
tw telecom of tennessee, llc	Fiber	Data Added to Statewide Inventory	3/31/2010	[MAR-14-14 Frank Aryee] Changes and/or Corrections: possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	2 – Business Only
United States Cellular Corporation	Mobile Wireless	Data Added to Statewide Inventory	2/15/2011	[FEB-03-14 Frank Aryee] Changes and/or Corrections: possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission. Also, provider upgraded infrastructure and can now offer tier 6 download speeds.	5 – Both Residential/Business
Verizon Communications, Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/14/2009	[FEB-27-14 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for April 2014 submission.	5 – Both Residential/Business
Conterra Ultra Broadband, LLC	Backhaul	Backhaul Provider Only Processing Complete			N/A - Backhaul
Sprint Nextel Corporation	Backhaul	Backhaul Provider Only Processing Complete	1/14/2010		N/A - Backhaul
T-Mobile USA, Inc.	Backhaul	Backhaul Provider Only Processing Complete	1/8/2010		N/A - Backhaul
TDS Telecommunications Corporation	Backhaul	Backhaul Provider Only Processing Complete	1/27/2010		N/A - Backhaul
Clarksville Department of Electricity	Fiber	Speed Only Update; Data Processing Complete		[FEB-10-14 Frank Aryee] Change: Provider upgraded infrastructure and can now offer tier 11 download speeds. Provider also indicated that they service both residential and business locations.	5 – Both Residential/Business
Columbia Power & Water Systems	Cable	Speed Only Update; Data Processing Complete		[FEB-10-14 Frank Aryee] Change: Provider upgraded infrastructure and can now offer tier 9 download speeds. Provider also indicated that they service both residential and business locations.	5 – Both Residential/Business

Loretto Telephone Company, Inc.	DSL	Speed Only Update; Data Processing Complete	3/16/2010	[FEB-14-14 Frank Aryee] Change: Provider upgraded infrastructure and can now offer tier 3 upload speeds.	5 – Both Residential/Business
Morristown Utilities Commission	Fiber	Speed Only Update; Data Processing Complete	3/25/2010	[FEB-07-2014 Frank Aryee] Change: Provider upgraded infrastructure and can now offer tier 11 download speeds. Provider also indicated that they service both residential and business locations.	5 – Both Residential/Business
Pulaski Electric System	Fiber	Speed Only Update; Data Processing Complete	12/30/2009	[FEB-10-14 Frank Aryee] Change: Provider supplied higher speeds for their business service. Separate data was created for the business service using the same footprints as the residential coverage.	2 – Business Only
Tulahoma Utilities Board	Fiber	Speed Only Update; Data Processing Complete		[FEB-05-2014 Frank Aryee] Change: Provider upgraded infrastructure and can now offer tier 11 download speeds. Provider also indicated that they service both residential and business locations.	5 – Both Residential/Business
Access Cable Television, Inc.	Cable	End User Category Update Only; Data Processing Complete		[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
Ardmore Telephone Company Inc	DSL	End User Category Update Only; Data Processing Complete	2/16/2010	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
Ben Lomand Rural Telephone Coop., Inc.	Fiber	End User Category Update Only; Data Processing Complete	10/21/2009	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
Ben Lomand Rural Telephone Coop., Inc.	DSL	End User Category Update Only; Data Processing Complete	10/21/2009	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
Capshaw Enterprises, LLC	Fixed Wireless	End User Category Update Only; Data Processing Complete	10/20/2011	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
Celina Cable Communications, Inc.	Cable	End User Category Update Only; Data Processing Complete	1/15/2010	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
ECSIS.NET	Fixed Wireless	End User Category Update Only; Data Processing Complete	10/29/2009	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
ETC Communications, LLC	Cable	End User Category Update Only; Data Processing Complete	10/14/2009	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
High Country Online LLC	Fixed Wireless	End User Category Update Only; Data Processing Complete	3/4/2010	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
Jackson Energy Authority	Fiber	End User Category Update Only; Data Processing Complete	3/17/2010	[JAN-17-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
Ken-Tenn Wireless, L.L.C.	Fixed Wireless	End User Category Update Only; Data Processing Complete	1/25/2010	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
Pulaski Electric System	Fiber	End User Category Update Only; Data Processing Complete	12/30/2009	[FEB-10-14 Frank Aryee] Change: Provider acknowledged this to be a residential service and supplied different speeds for the business service.	1 – Residential Only
TEC of Jackson, Inc	Fiber	End User Category Update Only; Data Processing Complete	7/29/2010	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
TEC of Jackson, Inc	Fiber	End User Category Update Only; Data Processing Complete	7/29/2010	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
TELE-PAGE Inc.	Fixed Wireless	End User Category Update Only; Data Processing Complete	1/26/2010	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
West Kentucky and Tennessee Telecommunications Cooperative Inc	DSL	End User Category Update Only; Data Processing Complete	2/8/2013	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
Wisper, LLC	Fixed Wireless	End User Category Update Only; Data Processing Complete	2/22/2011	[MAR-13-14 Frank Aryee] Change: Provider indicated that they service both residential and business locations.	5 – Both Residential/Business
TNWEB, LLC	Fixed Wireless	No Update-Estimated Coverage Submitted for Non-Participating Provider			1 – Residential Only
Trinity Communications LLC	Cable	No Update-Estimated Coverage Submitted for Non-Participating Provider			1 – Residential Only
AT&T Inc.	Backhaul	No Update to Provide	12/16/2009		N/A - Backhaul
Athena Broadband	Backhaul	No Update to Provide			N/A - Backhaul
Bristol Tennessee Essential Services	Fiber	No Update to Provide	9/1/2010		5 – Both Residential/Business
Cable ONE Inc.	Cable	No Update to Provide	12/7/2009		5 – Both Residential/Business
Cellular South Licenses, LLC	Mobile Wireless	No Update to Provide	4/12/2010		5 – Both Residential/Business
CenturyLink	Backhaul	No Update to Provide	12/4/2009		N/A - Backhaul
DeKalb Telephone Cooperative, Inc.	DSL	No Update to Provide	2/24/2010		1 – Residential Only
DeKalb Telephone Cooperative, Inc.	Fiber	No Update to Provide	2/24/2010		1 – Residential Only
Electric Power Board for the City of Chattanooga	Fiber	No Update to Provide			5 – Both Residential/Business

Highland Telephone Cooperative, Inc.	DSL	No Update to Provide	3/14/2010		5 – Both Residential/Business
Hughes Network Systems, LLC	Satellite	No Update to Provide	2/5/2010		1 – Residential Only
Leap Wireless International, Inc.	Mobile Wireless	No Update to Provide	4/6/2010		5 – Both Residential/Business
Level 3 Communications, LLC	Backhaul	No Update to Provide	12/14/2009		N/A - Backhaul
MegaPath Corporation	Backhaul	No Update to Provide	2/15/2010		N/A - Backhaul
Skycasters	Satellite	No Update to Provide	10/16/2012		1 – Residential Only
Skyline Telephone Membership Corporation	Backhaul	No Update to Provide	2/2/2010		N/A - Backhaul
TEC of Jackson, Inc	Backhaul	No Update to Provide	7/29/2010		N/A - Backhaul
TEC of Jackson, Inc	Backhaul	No Update to Provide	7/29/2010		N/A - Backhaul
TEC of Jackson, Inc	Backhaul	No Update to Provide	7/29/2010		N/A - Backhaul
TEC of Jackson, Inc	DSL	No Update to Provide	7/29/2010		5 – Both Residential/Business
Time Warner Cable Inc.	Cable	No Update to Provide	12/21/2009		5 – Both Residential/Business
tw telecom of tennessee, llc	Backhaul	No Update to Provide	3/31/2010		N/A - Backhaul
ViaSat, Inc.	Satellite	No Update to Provide	1/8/2010		1 – Residential Only
West Kentucky and Tennessee Telecommunications Cooperative Inc	Fiber	No Update to Provide	2/8/2013		5 – Both Residential/Business
XO Communications, LLC	Backhaul	No Update to Provide	2/12/2010		N/A - Backhaul
Zito Midwest, LLC	Cable	No Update to Provide	2/17/2011		1 – Residential Only
Ardmore Telephone Company Inc	Backhaul	No Update Provided – Use Last Submission Data	2/16/2010		N/A - Backhaul
Aurora Cable TV	Cable	No Update Provided – Use Last Submission Data	3/12/2010		1 – Residential Only
Beasley Wireless	Fixed Wireless	No Update Provided – Use Last Submission Data	1/19/2010		1 – Residential Only
Bledsoe Telephone Cooperative Inc	DSL	No Update Provided – Use Last Submission Data	1/20/2010		1 – Residential Only
BreezeAir.net	Fixed Wireless	No Update Provided – Use Last Submission Data	8/17/2010		1 – Residential Only
CRU Enterprises, Inc.	Fixed Wireless	No Update Provided – Use Last Submission Data	2/4/2010		1 – Residential Only
DeltaCom, Inc.	Backhaul	No Update Provided – Use Last Submission Data	2/16/2010		N/A - Backhaul
Fayetteville Public Utilities	Cable	No Update Provided – Use Last Submission Data			1 – Residential Only
Info-Ed Inc	Fixed Wireless	No Update Provided – Use Last Submission Data	2/9/2010		1 – Residential Only
InfoStructure Inc.	Cable	No Update Provided – Use Last Submission Data	10/2/2009		1 – Residential Only
Iris Networks	Backhaul	No Update Provided – Use Last Submission Data	1/5/2010		N/A - Backhaul
Millington CATV, Inc.	DSL	No Update Provided – Use Last Submission Data	10/19/2009		1 – Residential Only
Millington CATV, Inc.	Cable	No Update Provided – Use Last Submission Data	10/19/2009		1 – Residential Only
NetEase	Fixed Wireless	No Update Provided – Use Last Submission Data	2/3/2010		1 – Residential Only
Pickwick Cablevision, Inc.	Cable	No Update Provided – Use Last Submission Data			1 – Residential Only
Planet Connect Internet	Fixed Wireless	No Update Provided – Use Last Submission Data			1 – Residential Only
QuickRelay Wireless Communications	Fixed Wireless	No Update Provided – Use Last Submission Data			1 – Residential Only
Softtek, Inc.	Fixed Wireless	No Update Provided – Use Last Submission Data	1/14/2010		1 – Residential Only
Spacenet, Inc.	Satellite	No Update Provided – Use Last Submission Data			1 – Residential Only
Spirit Broadband	Cable	No Update Provided – Use Last Submission Data	3/29/2010		1 – Residential Only
Surfmore.Net, Inc.	Fixed Wireless	No Update Provided – Use Last Submission Data	1/25/2010		1 – Residential Only
Trenton TV Cable Company	Cable	No Update Provided – Use Last Submission Data			1 – Residential Only
Twin Lakes Telephone Cooperative Corporation	DSL	No Update Provided – Use Last Submission Data	1/14/2010		1 – Residential Only
Twin Lakes Telephone Cooperative Corporation	Fiber	No Update Provided – Use Last Submission Data	1/14/2010		1 – Residential Only
Twin Lakes Telephone Cooperative Corporation	Fixed Wireless	No Update Provided – Use Last Submission Data	1/14/2010		1 – Residential Only
Ultrahnet High-Speed Internet	Fixed Wireless	No Update Provided – Use Last Submission Data	2/23/2010		1 – Residential Only
United Telephone Company, Inc.	Fiber	No Update Provided – Use Last Submission Data	2/25/2010		1 – Residential Only
United Telephone Company, Inc.	DSL	No Update Provided – Use Last Submission Data	2/25/2010		1 – Residential Only
Vyve Broadband J. LLC	Cable	No Update Provided – Use Last Submission Data	3/11/2014	[MAR-03-14 Erin Flournoy] Change: James Cable's Tennessee operations and data/assets were acquired by Vyve Broadband.	1 – Residential Only
Wave2Wave Communications Inc.	Backhaul	No Update Provided – Use Last Submission Data	4/28/2010		N/A - Backhaul
WideOpenWest Finance, LLC	Cable	No Update Provided – Use Last Submission Data			1 – Residential Only
Windstream Communications	Backhaul	No Update Provided – Use Last Submission Data			N/A - Backhaul
Zayo Group, LLC	Backhaul	No Update Provided – Use Last Submission Data			N/A - Backhaul

America Internet & Communications	Fixed Wireless	Provider Gathering Data	2/15/2010		2 – Business Only
Windstream Communications	Backhaul	Solicited Initial Data			N/A - Backhaul
Sunset Digital Communications, Inc.	Fiber	Non-Responsive to Multiple Attempts			5 – Both Residential/Business
Sunset Digital Communications, Inc.	Backhaul	Non-Responsive to Multiple Attempts			N/A - Backhaul