OFFICIAL OCTOBER 2012 UPDATE SUBMISSION TO THE NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION UNDER THE STATE BROADBAND INITIATIVE GRANT PROGRAM FOR THE STATE OF TENNESSEE

October 1, 2012

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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:

As the State Broadband Designated Entity, Connected Tennessee, in partnership with the Department of Finance and Administration's Office of Information Resources and the Department of Economic and Community Development and other agencies, please accept this submission from Connected Tennessee on behalf of the State of Tennessee's State Broadband Initiative (SBI) Grant Program.

The Connected Tennessee program and its collective stakeholder community continue to be faithful and energized contributors to the National Telecommunications and Information Administration's (NTIA) SBI program. Now more than ever, the significance of complete and validated data as compiled through the Federal Communications Commission's (FCC) National Broadband Map is instrumental in forging the innovation economy of the 21st century. As the Commission relies upon this unique resource to distribute monies under the Connect America Fund, through the Universal Service Fund reform, the Connected Tennessee program equally values this data in informing meaningful program interventions relating to broadband access, adoption, and use initiatives. Truly, this coordination embodies the spirit of the SBI and demonstrates the joint effort of the NTIA, FCC, state governments, industry, and non-profits like Connected Nation as it continues to serve as a key tool for the American public and policymakers. We are proud of the role that Connected Tennessee has played in creating and maintaining such a powerful tool that has benefitted and surely will continue to benefit broadband providers, consumers, and businesses nationwide.

The artifacts that comprise this submission should be found to be compliant with the October 1, 2012, 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: October 1, 2012

NOFA Requirement	Data Transfer Model	Data Description
Appendix A: 1(a)(i)	BB_Service_CensusBlock	Broadband Service Availability of Facilities-Based Providers in

Appendix A:	1(a)(ii)	BB_Service_RoadSegment	Census Blocks of No Greater Than Two Square Miles in Area 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 April 2012 SBI data submission for the Connected Tennessee program. Specifically, these new requirements are:

SBI Data Transfer Model

The submission of the broadband dataset for October 1, 2012, is contained within the SBI Data Transfer Model as released on the Grantee Workspace on August 9, 2012. 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

New to the semi-annual submission for October 2012 is a more robust version of the ReadMe text file. As per the template released on the Grantee Workspace on May 18, 2012, this file contains a high-level summary of the items contained within the submission, including the exact file deliverables, a description of the errors and warnings from the Check Submission report, and extraneous information of which the NTIA and other users of the dataset should be made aware.

This submission continues to follow the speed technology guidance released by the Program Office on August 9, 2012, to review speed tier codes in correspondence with technology of transmission codes. In the April 2012 submission, descriptions were provided in the methodology paper that offered an explanation for any submitted technology of transmission and speed combinations that were outside of the expected value range. That practice continues in this submission as technology and speed combinations are reviewed and scrutinized; any questionable information supplied by providers is reviewed more in depth with the provider to ensure the information is accurately captured or a proper explanation is provided as to why the speed information should be submitted as supplied even if it falls outside the expected value range.

Also in this submission are narratives describing the data and coverage estimation of non-participating providers. 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 sixth 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.

In addition to the requirements mentioned above, please find this methodology paper to be inclusive of the ongoing section pertaining to industry mergers and acquisitions – specifically this section details any and all mergers or acquisitions that have taken place in Tennessee since the April 2012 submission. The intent of this updated section is to provide a better understanding of how the broadband provider landscape has changed since the last submission cycle.

This October 2012 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 approximately 96.55 percent of the Tennessee provider community, or 84 of 87 total providers. There are 82 participating providers and 2 additional non-participating providers whose estimated coverage areas have been submitted. Of the 82 participating providers, 27 supplied an update to their network or coverage area(s), while 34 have reported no change. The remaining 21 represent providers who previously supplied data but were non-responsive in the October 2012 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 record is contained herein. The 3 providers that are not represented in the attached datasets have refused to participate in the voluntary program or were non-responsive to multiple contact attempts.

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, 63 (72.41percent) 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.connectedtn.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 4,635 unique visits during this reporting period (44,291 total to date for the life of the grant awarded on December 20, 2009). Additionally, this pronounced Web activity netted 81 broadband inquiries over this same reporting period (1,528 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 has established an ongoing mechanism for gathering data on the location and broadband connectivity of Community Anchor Institutions (CAI), in accordance with the data requirements of the SBI NOFA Technical Appendix. Since the April 2012 data submission, the CAI outreach process method has been modified to improve data collection. Specifically, the outreach process is a more focused sector-specific and relationship-oriented approach that generates more responses than general contact.

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. During this reporting period Connected Tennessee has continued working with a number of statewide entities such as NetTN to promote the importance of broadband connectivity at anchor institutions and participation in this data collection process. It became 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 new 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.

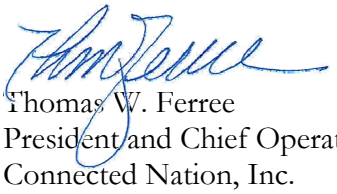
Connected Tennessee is also working hard to clarify CAI information associated with wireless broadband. NTIA has requested in-depth questioning of CAI listing a wireless broadband service as their sole form of connectivity. This follow-up allows us to better understand the reason for adopting the wireless broadband service.

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 R. Johns
Executive Director
Connected Tennessee



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

DATA ACQUISITION: TENNESSEE COMMUNITY ANCHOR INSTITUTIONS METHODOLOGY

In this sixth reporting period of the SBI, Connected Tennessee, working in close coordination with the State of Tennessee, has established an ongoing mechanism for gathering data on the location and broadband connectivity of Community Anchor Institutions (CAI), in accordance with the data requirements of the SBI NOFA Technical Appendix. Since the April 2012 data submission, the CAI outreach process method has been modified to improve data collection. Specifically, the outreach process is a more focused sector-specific and relationship-oriented approach that generates more responses than general contact.

Connected Tennessee has continued to identify and process CAI data obtained through an ongoing statewide outreach campaign. 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

In addition to the survey, Connected Tennessee has continued working with a number of statewide associations such as NetTN 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 new 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.

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 CAI 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 and other agencies 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	Physical Address	Lat/Long	Technology of Transmission	Download Speed	Upload Speed
K-12 Schools	2,364	2,364	2,358	1,166	1,166	1,163
Libraries	317	317	317	225	225	225
Healthcare	821	821	816	120	119	119
Public Safety	748	748	744	266	113	113
Higher Ed Institutions	387	387	386	153	156	101
Other Government	1,289	1,289	1,281	1,220	1,183	1,183
Other Non-Government	164	164	163	73	69	69
Total	6,090	6,090	6,065	3,223	3,031	2,973

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 October 1, 2012, is contained within the SBI Data Transfer Model and additional components as released on the Grantee Workspace on August 9,

2012. 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.

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: October 1, 2012

NOFA Requirement	Data Transfer Model	Data Description
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.

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.

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 is underway at CN as well to be able to create more granular satellite coverage based on satellite equipment positioning and geographic inputs.

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 and 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 providers: Ardmore Telephone Company Inc.; AT&T; Aurora Cable TV; Beasley Wireless; Ben Lomand Rural Telephone Cooperative Inc.; BreezeAir.Net; Bristol Tennessee Essential Services; Cable ONE; Cellular South Inc.; CenturyLink; Charter Communications; Clarksville Department of Electricity (d.b.a. CDE Lightband); Clearwire Corporation; Columbia Power & Water Systems; Comcast; CRU Enterprises; DeKalb Telephone Cooperative Inc.; DotSpot Wireless; ECSIS.Net; FiberNet; Frontier Communications Corporation; High Country Online; InfoEd Wireless; Infostructure Cable; Jackson Energy Authority; James Cable; Ken-Tenn Wireless LLC;; Leap

Wireless International Inc.; Level 3 Communications; Loretto Telephone Company Inc.; Mediacom Southeast LLC. (d.b.a. Mediacom Communications Corporation; Rapid Communications LLC and Mediacom); MidSouth Satellite; Millington Telephone Company (also d.b.a. Big River); Morristown Utilities; NetEase; North Central Telephone; OrbWireless.net; Planet Connect Internet; QuickRelay Wireless Communications; Skyline Telephone Membership Cooperative; Softek; Spirit Broadband; Sprint Nextel Corporation; Surfmore; TDS Telecom; TEC of Jackson Inc.; Tele-Page; Inc.; Tennessee Wireless; Time Warner Cable (formerly under New Wave Communications); T-Mobile USA Inc.; TNWeb; Trenton Cable TV Company; Twin Lakes Telephone; U.S. Cellular; Ultra High Speed Internet; UltraNet; United Telephone Company; Verizon Communications Inc.; West Kentucky Rural Telephone; Wide Open West (formerly d.b.a. Knology of Tennessee Wisper LLC; Xpansion Network; and Zito Media.

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

From program initiation through this reporting period, CN has completed in-the-field validation testing against 63 companies (out of a universe of 87 viable providers) totaling 72.41 percent within the State of Tennessee. This percentage also considers the non-participating provider (NPP) records 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 published on the NTIA Grantee Workspace on August 9, 2012. 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.

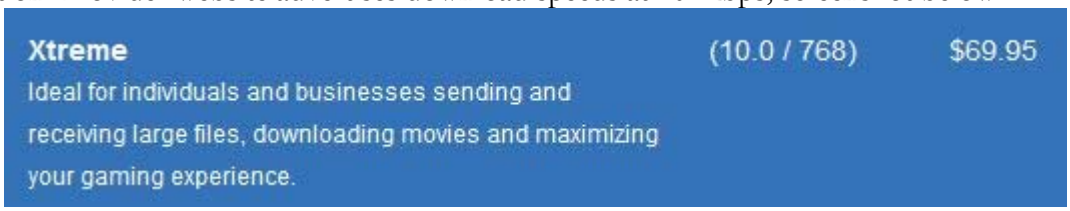
AT&T Inc.
Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.
Resolution: Provider website advertises download speeds up to 24 Mbps; screenshot below.

Compare Internet Packages

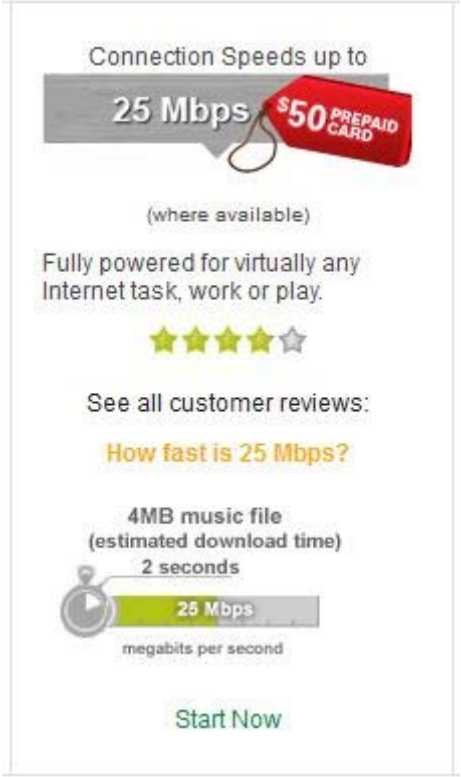
	Pro	Elite	Max	Max Plus	Max Turbo
Standard Monthly Rate	$38*	$43*	$48*	$53*	$63*
Downstream Speed	Up to 3 Mbps	Up to 6 Mbps	Up to 12 Mbps	Up to 18 Mbps	Up to 24 Mbps

AT&T Inc.
Issue: Mobile wireless platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.
Resolution: Provider confirmed that tier 7 service is available.

Ben Lomand Rural Telephone Coop., Inc.
Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.
Resolution: Provider website advertises download speeds at 10 Mbps; screenshot below.



CenturyLink
Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.
Resolution: Provider website advertises download speeds packages at 25 Mbps; screenshot 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.

Residential Service Packages for Cable TV Subscribers

PowerNet Basic	$ 24.95
Up to 3.0 Mbps download/384 kbps upload	
PowerNet 5.0	$ 29.95
Up to 5.0 Mbps download/512 kbps upload	
PowerNet 8.0	$ 34.95
Up to 8.0 Mbps download/896 kbps upload	
PowerNet 12.0	$ 42.50
Up to 12.0 Mbps download/1.2 Mbps upload	
PowerNet 18.0	$ 52.95
Up to 18.0 Mbps download/1.8 Mbps upload	
PowerNet 50.0	$ 60.00
Up to 50.0 Mbps download/5.0 Mbps upload (Requires DOCSIS 3.0 modem.)	

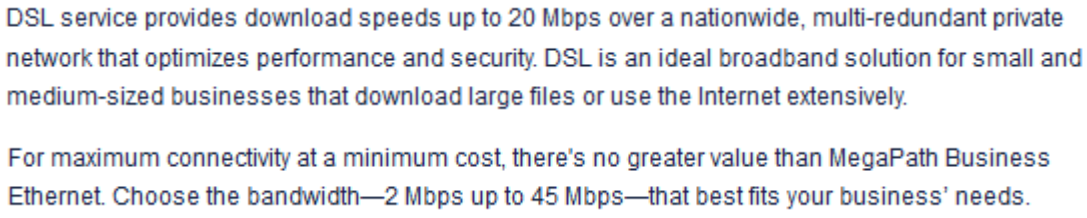
Comcast Cable Communications, LLC
Issue: Technology of transmission code 40 with maximum advertised download speed in tiers 6 and 7, lower than expected value range for the technology.
Resolution: Confirmed use of DOCSIS 3.0 with speed tier 7. Speeds are kept lower currently to be backwards compatible.

DeKalb Telephone Cooperative, Inc.
Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.
Resolution: Provider website advertises 12 Mbps; screenshot below.

(Max Download / Max Upload)
1M down / 512k up
3M down / 512k up
6M down / 512k up
12M down / 512k up

Knology of Tennessee, Inc.
Issue: Cable platform with maximum advertised download speed in tier 8.
Resolution: Provider website advertises 30 Mbps for Knoxville area; screenshot below.

MegaPath Inc.
Issue: DSL platform with maximum advertised download speed in tiers 7 and 8, higher than expected value range for the technology.
Resolution: Provider website advertises 20 Mbps and 45 Mbps service; screenshots below.



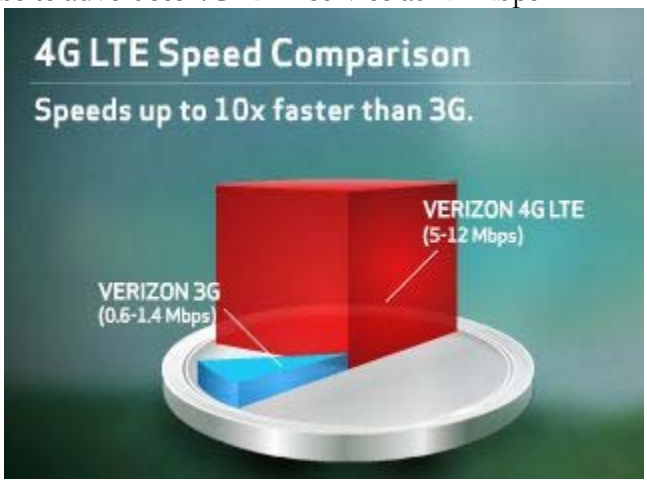
T-Mobile USA, Inc.
Issue: Mobile wireless platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.
Resolution: Provider website advertises 4G services with speeds greater than speed tier 6.

> T-Mobile customers with 4G phones are already experiencing data speeds that are comparable to or faster than the speed of a home broadband network. And with recent improvements to our 4G network-doubling our theoretical download speeds-we're giving our customers enhanced 4G data speeds. We've seen average download speeds on our HSPA+ 42 Mbps-capable data stick approaching 10 Mbps with peak speeds of 27 Mbps, and download speeds approaching 8 Mbps with peak speeds of 20 Mbps on our upcoming HSPA+ 42 Mbps-capable smartphones.

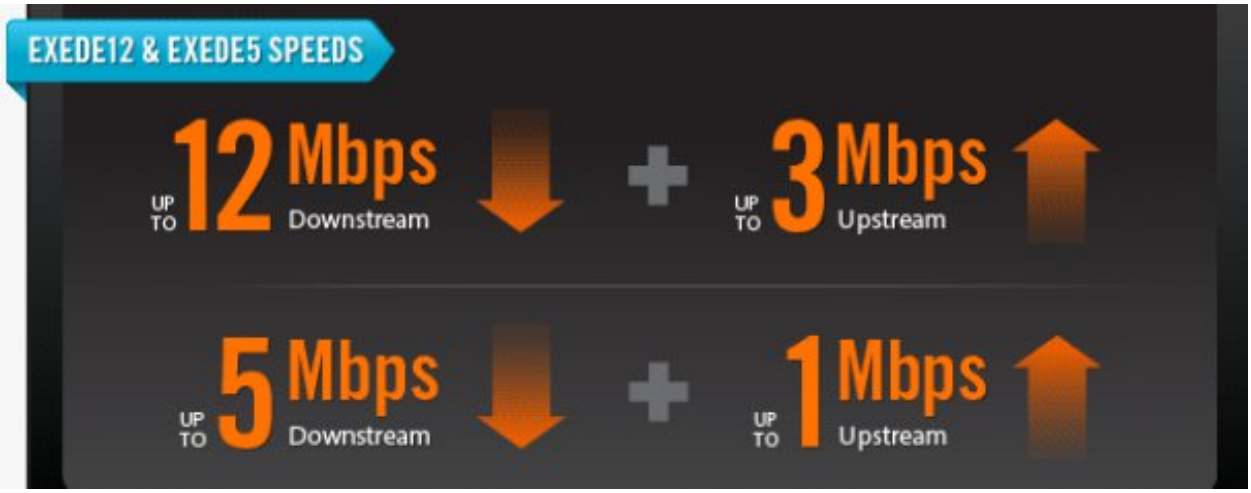
TDS Telecommunications Corporation
Issue: DSL platform with maximum advertised download speed in tiers 7 and 8, higher than expected value range for the technology.
Resolution: Provider website advertises speeds at 15 and 25 Mbps; screenshot below.

Twin Lakes Telephone Cooperative Corporation
Issue: Fixed wireless platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.
Resolution: Provider representative confirmed that 10 Mbps download and upload speeds are available to residential customers, but it is not readily advertised.

Verizon Communications, Inc.
Issue: Mobile wireless platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.
Resolution: Provider website advertises 4G LTE service at 12 Mbps.



ViaSat, Inc.
Issue: Satellite platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.
Resolution: Provider website advertises 12 Mbps service; screenshot below.



Data Submission and Coverage Estimation of Non-Participating Providers

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.). This state specific collection of coverage estimation methodology papers (see Appendix A) demonstrates the estimated broadband service territory for the providers in this state that have either been non-responsive or that have refused to participate in the SBI mapping initiative.

Accuracy and Verification: 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.

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 3.99 percent of Tennessee households do not have terrestrial fixed broadband service available, and approximately 0.23 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 7.41 percent of rural Tennessee households do not have terrestrial fixed broadband service available, and approximately 0.44 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. omni-directional, 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, hillshade, 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 requested 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 other 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 18,600 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 81 inquiries (1,528 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 online, interactive 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 received 1,100 visits this reporting period; to date, the interactive mapping applications have received 8,639 visits.

SPEED TEST METHODOLOGY

The 1,761 speed tests that are represented in the Connected Tennessee Speed Test Report during this reporting period (14,532 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 was 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 October 2012 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, etc.

	Company Name	URL	Comments
1	21Globe, Inc.	www.21globe.com	General reseller of DSL and backhaul.
2	A 007 Access	www.a007.com	General reseller of Quest DSL and mobile wireless; DSL does not qualify as the max advertised speed is 768 kbps x 128 kbps.
3	Aaccess Network Communications	www.aaccess.net	Not a broadband provider; installs and maintains WiFi systems.
4	Access123.net	www.access123.net	URL no longer in service.
5	ACERX.NET	www.acerx.net	General reseller but no contact information listed on website; requests for information were never returned.
6	Adelphia	n/a	No longer in business; assets liquidated.
7	Aeneas Communications, LLC	www.aeneas.com	Facilities-based CLEC that resells dial-up, DSL, and VoIP to consumers and business accounts.
8	Airespring, Inc.	www.airespring.com	General reseller of VOIP, long distance and data circuits (non-residential).
9	Airewaves Broadband, LLC	www.airewaves.com	URL no longer in service.
10	Airmail247.com	www.airmail247.com	Business mailing list search site; not a broadband provider.
11	America Internet & Communications	www.americainter.net	Offers high-speed business DSL and wireless point-to-point wireless services to business accounts.

12	Antioch Wireless Broadband	www.antiochwirelessbroadband.com	Resells DSL and cellular service in Antioch, IL only.
13	Arrowheadnet.com	www.arrowheadnet.com	Domain registration and web hosting company.
14	Atris	www.atris.biz	Offers VoIP, data, and softphone services to business accounts.
15	bargainisp.net	www.bargainisp.net	Generic web directory site; company does not offer broadband.
16	BeaDun Communications	www.beasleywireless.net	Subsidiary of Beasley Wireless; services offered to business accounts fall below NTIA's definition of "broadband."
17	Broadband National	www.broadbandnational.com	Nonfacilities-based general reseller of DSL and satellite for 36 companies (e.g., ACC Business, HughesNet, et al.).
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	BullsEye Telecom, Inc.	www.bullseyetelecom.com	Integrated suite of telecommunications services for businesses and general reseller of backhaul.
22	Business Telecom, Inc.	www.earthlinkbusiness.com	B2B services only.
23	Camino-Net Internet Services	www.camino-net.com	No longer in business; was dial-up only.
24	CCIS.net	www.ccis.net	Now owned by Beacon Technologies; offers dial-up and is general reseller of DSL in Pennsylvania.
25	Cebridge Connections	suddenlink.net	Acquired by SuddenLink.
26	Celito Communications	www.celito.net	Offers dial-up and wireless in North Carolina.

27	Cinergy Communications Company	n/a	Acquired by Windstream.
28	Cleartouch.Com	www.cleartouch.com	Inactive URL; out of business.
29	Cognisurf	www.cognisurf.com	Offers dial-up only.
30	Deltaforce	www.deltaforce.net	Dial-up and webhosting services only.
31	deluxehost.com	deluxe-host.com	Offers web hosting only.
32	DGUI	www.dgui.com	No longer in business; domain name for sale.
33	Dial National	www.dialnational.com	Inactive URL; out of business.
34	Dialer.net	www.dialer.net	Offers international dial-up services.
35	DIECA Communications, Inc.	n/a	Acquired by Covad; then acquired by MegaPath.
36	Dixie-Net, Incorporated	www.dixie-net.com/wireless	Offers fixed wireless and DSL in Mississippi only.
37	Dresden Cable	n/a	Provider does not offer broadband; limited to CATV and satellite services only.
38	DSL @ Interlync	www.interlync.com	General reseller of DSL, wireless, VoIP, dial-up, web hosting etc.
39	DTS-NET.COM	www.dts-net.com	Provider of wholesale and retail telecommunications services.
40	Eagle One Wireless	www.e1w.com	Offers direct connect wireless internet services to businesses in northeast Mississippi, south central Tennessee, and northwest Alabama.
41	Endless Sphere Technology	www.endless-sphere.com	Electric Vehicle Technology Forums.
42	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."
43	ETI - Connecting Your World	www.cyberenet.net	General reseller of DSL services from infrastructure owned by Verizon, AT&T, and Covad.
44	Fast Dependable Access	www.fda.net	Not a broadband provider.
45	Gainesboro CATV	n/a	Does not offer broadband, CATV

			only.
46	Global Crossing Telecommunications, Inc.	http://www.globalcrossing.com	Acquired by another company.
47	Haywood Cablevision	www.cbvnol.com	Out-of-state provider; offers service in the Carolina Mountain area.
48	Highertech.Net	www.highertech.net	Appears to have been acquired by Chattanooga Net.
49	Hubwest Protected Networks LLC	www.hubwest.com	Dial-up and web hosting only recently merged with Southwest Cyberport.
50	Imbris, Inc.	www.imbris.com	Provides fixed wireless in Idaho only.
51	IMGISP.NET	www.imgisp.net	Search engine, generic web page.
52	Incredible Networks	n/a	Inactive URL; out of business.
53	Inercom Communications Inc.	www.inercom.com	Inactive URL; out of business, url for sale.
54	Interactiveinfo.com Inc.	www.rocketbroadband.com	Offers cable television services in NY only.
55	iRadical	n/a	Inactive URL; out of business.
56	ISPartner.net	n/a	Inactive URL; out of business.
57	Jenco Speed Web	www.jencospeed.net	Offers wireless service in Ohio only.
58	LARIAT.NET	www.lariat.net	Offers fixed wireless services in Wyoming only.
59	LCSisp.com	www.lcsisp.com	Offers national dial-up services only.
60	Lightyear Network Solutions, LLC	www.lightyear.net	Nonfacilities-based general reseller.
61	LinkAmerica.Net	www.linkamerica.net	Inactive URL; out of business.
62	MacWebTown.Net Works	www.macwebtown.net	McIntosh web services and technical assistance.
63	MainBoard	www.mainboard.cc	General reseller in Virginia.
64	Maine Cable and Wireless	www.mainecableandwireless.com	Inactive URL; out of business.
65	Marcin Company	n/a	Inactive URL; out of business.

66	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.
67	Millenicom Inc.	www.millenicom.com	General reseller of dial-up and mobile broadband (Sprint network).
68	MYWEBSTAR	www.mywebstar.com	Inactive URL.
69	Nanomega.Com	www.nanomega.com	Inactive URL; out of business.
70	NetAccess, Inc.	www.nas.net	Offers wireless B2B services only.
71	NetFire	n/a	No longer in business.
72	NetSpeed Online	www.netspeed-online.net	Inactive URL; out of business.
73	NetStar Communications	n/a	Offers virtual ISP services and web hosting.
74	New Edge Network, Inc.	www.newedgenetworks.com	Company has no residential service and re-sells backhaul; acquired by Earthlink.
75	NewWave Communications	http://www.newwavecom.com/	Acquired by another company.
76	Northwest ISP	www.northwestisp.com	Inactive URL; out of business.
77	NTCH, Inc.	www.cleartalkwireless.net	Acquired by Cleartalk Wireless.
78	NuVox, Inc.	www.windstream.com	Acquired by Windstream.
79	OnWav, Inc.	www.onwav.com/	Acquired by Twin Lakes Telephone Cooperative.
80	Overarch Broadband	n/a	Offers services in Idaho only.
81	Pacific Internet Exchange	www.pie.us	Inactive URL; company appears to have gone out of business.
82	PAETEC Communications, Inc.	http://www.paetec.com/	Acquired by another company.
83	Paknet Limited	www.ptcl.com.pk	Subsidiary of Pakistan Telephone Company; no services offered in the U.S.
84	Planet Online	www.planetonline.net	Offers website hosting services.
85	Point2Point	www.p2p-innovations.com	Out of business.
86	PremoWeb	www.premoweb.com	Offers national dial-up services only.

87	Qwest Communications Company, LLC	www.centurylink.com	Acquired by CenturyLink.
88	Rapid Communications, LLC	n/a	Acquired by Mediacom; subsequently acquired by Comcast.
89	Renaissance Networks	www.renaissancenetworks.com	Offers IT support to small businesses in New Mexico.
90	Rural Tennessee Wireless Broadband (RTWB)	http://www.rtwb.net/	No longer in business.
91	Scott County Telephone Cooperative	www.sctc.org	CLEC offering business class services only.
92	Shentel Converged Services, Inc.	www.shentel.com	Shentel Converged Services is classified as a Private Cable Operator and offers service to MDU housing facilities.
93	SI Wireless	www.siwirelessco.com	Resells Sprint 3G services.
94	Simply Dialup A Metrogeek Company	www.simplydialup.com	Offers dial-up only.
95	Sling Broadband	www.slingbroadband.com	Out-of-state provider; offers DSL and wireless services to business accounts in Florida.
96	Smartresort Co, LLC	www.baldwincountyinternet.com	General reseller of local ISP services.
97	Solutions IT Consulting, LLC	www.solutionsitc.com	Technology consulting firm.
98	Sparkplug Chicago, Inc.	www.airband.com	Offers point-to-point wireless and business solutions in Illinois.
99	Spring City Cable	n/a	Out-of-state provider; offers services in Utah only.
100	Surferz.Net	www.surferz.net	Offers dial-up in upstate NY only.
101	T1 Shopper	www.t1shopper.com	Search engine for general reseller.
102	Talk America Inc.	www.cavtel.com	Acquired by Cavalier Business Communications.
103	Telovations, Inc.	www.telovations.com	IT and IP solutions consultant.
104	The Nexus Group, Inc.	www.nxs.net	General reseller of AT&T DSL.
105	Total Access Networks, Inc.	www.totalaccess.net	Inactive URL.
106	TSISP.NET	www.tsisp.net	Inactive URL; out of business.

107	Two Rivers Media	n/a	Inactive URL; acquired by MediaCom.
108	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.
109	UNUM Telecommunications, Inc.	www.utinet.net	Inactive URL; out of business.
110	VOLstate, Inc.	www.volstate.net	Offers Internet solutions and technical support to business accounts.
111	Waypoint Wireless	n/a	Consulting firm.
112	WilTel Communications, LLC.	www.level3.com	Acquired by Level 3.
113	Wireless Roanoke, Inc.	www.wirelessroanoke.com	Inactive URL; out of business.
114	wisbin	www.wisbin.com	Wisconsin broadband provider.
115	WorldCom Broadband	n/a	Acquired by Verizon.
116	Worldspice.net	www.worldspice.net	Offers web hosting and connectivity to business accounts.
117	www.AmericanAngel.us	www.americanangel.us	Inactive URL; out of business.
118	XTN	www.xtn.net	URL redirects to Jones Media.
119	YEYZOO.NET	www.yeyzoo.net	Inactive URL; out of business.
120	YLISP (Your Local ISP)	www.itsyournet.com	Resells DSL and dial-up.
121	YourT1Wifi.com	yourt1wifi.com	Offers wireless service in Idaho only.
122	ZOOM Internet Services, LLC	n/a	Michigan-based dial-up provider and web hosting company.

APPENDIX A: ESTIMATION OF NON-PARTICIPATING PROVIDERS

Tennessee Wireless

TNWeb

TENNESSEE WIRELESS LLC

As part of its ongoing broadband mapping efforts, Connected Nation (CN) has developed a series of processes with the goal of submitting mapping data to NTIA for every known and qualifying last-mile broadband provider, regardless of whether the provider has chosen to support and participate in the State Broadband Initiative (SBI) mapping project.

The following narrative provides detail regarding the recent, and ongoing, data collection and coverage estimation activities related to Tennessee Wireless, LLC, a wireless Internet service provider (WISP), located in Centerville, Tennessee, with a service area around Centerville and Grinder's Switch. The narrative will include information regarding how and where CN obtained publicly available data and the on-the-ground validation and site verification techniques that support the underlying data.

Background

CN staff members have continued trying to obtain the participation of the provider with 12 instances of communication via telephone and e-mail sessions since October 24, 2011, through August 30, 2012. Only one communication reply was received from a company representative on January 31, 2012, with a response of wanting to participate. Additionally, CN staff members visited the Tennessee Wireless office on July 24, 2012, to discuss the broadband mapping project in person with Tennessee Wireless staff, but the office was closed.

The Issue

Tennessee Wireless, by its lack of responsiveness since January 31, 2012, has predicated its unwillingness and/or inability to participate in the Tennessee broadband mapping initiative.

Identification of Provider's Service Plans, Service Area, Legal Name, d.b.a., FRN, and Licensing

CN began building a file based on research information and, as time progressed, enriched the file with information obtained through the public domain and from on-the-ground data collection and site identification. For example, CN reviewed the provider's website (www.tennwireless.com) to determine the residential service plans **(Exhibit A)** and the service area **(Exhibit B)** of the provider's wireless network. A search for a Federal Registration Number (FRN) on the FCC **CO**mmission **RE**gistration **S**ystem (CORES) system, using multiple company name searches, did not yield an FRN **(Exhibit C).** Also, to support field validation of access points, the company name was referenced against the FCC Universal Licensing System (ULS) to identify any spectrum authorizations the provider might hold which could possibly enhance locating active wireless transmit and/or access points for the service area. This process yielded no attributes of any license issued to Tennessee Wireless, LLC **(Exhibit D).**

Exhibit A: Service Plans

Tennessee Wireless Packages & Services

Packages & Services

Tennessee Wireless Internet Service Packages

Tennessee Wireless is proud to offer the following services in Hickman county.

1. In select areas we are offering full scale high-speed internet service packages for home and business. Our residential speeds range from 1 to 5 megabytes per second. There are no long term contracts and no monthly download limits. Custom business packages are also available.
2. Around the town square and at Homestead restaurant we are offering WiFi HotSpot service.
3. In addition, our experienced wireless engineering team can offer wireless design consultation or build a custom wireless network solution to meet your business need.

Exhibit B: Service Area

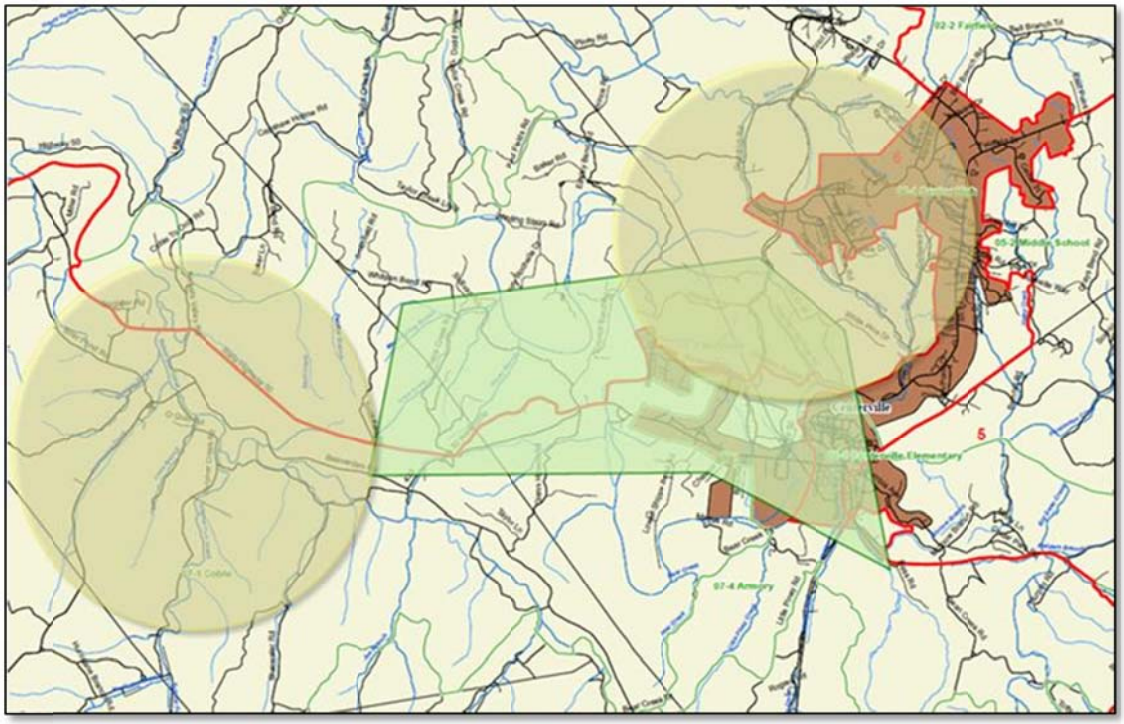


Exhibit C: Federal Registration Number Search Results

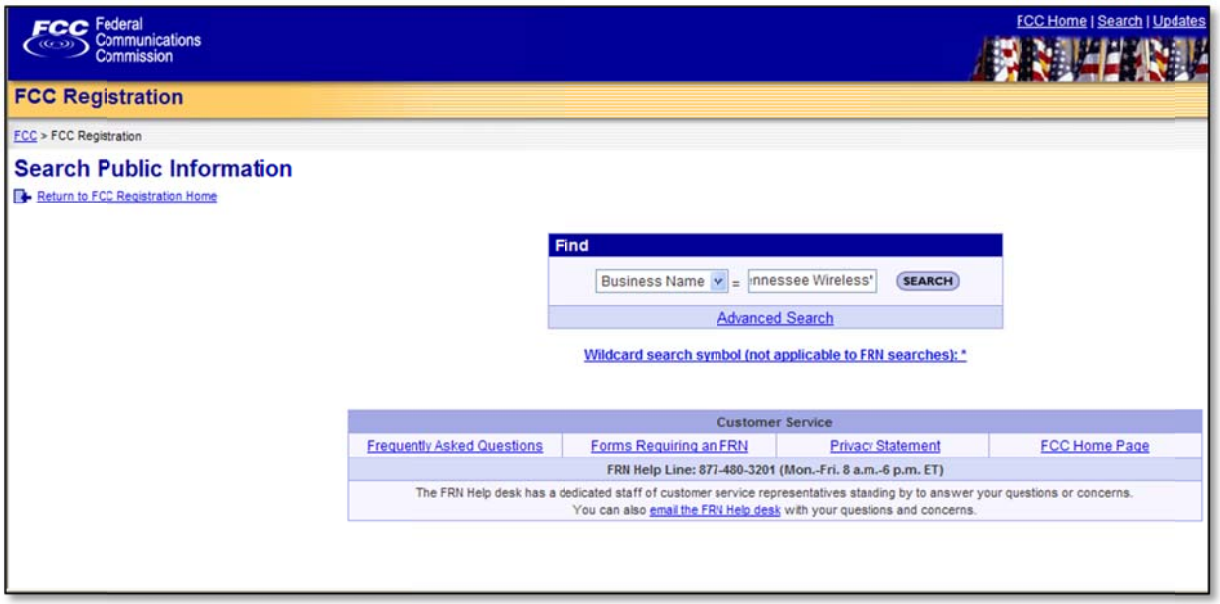
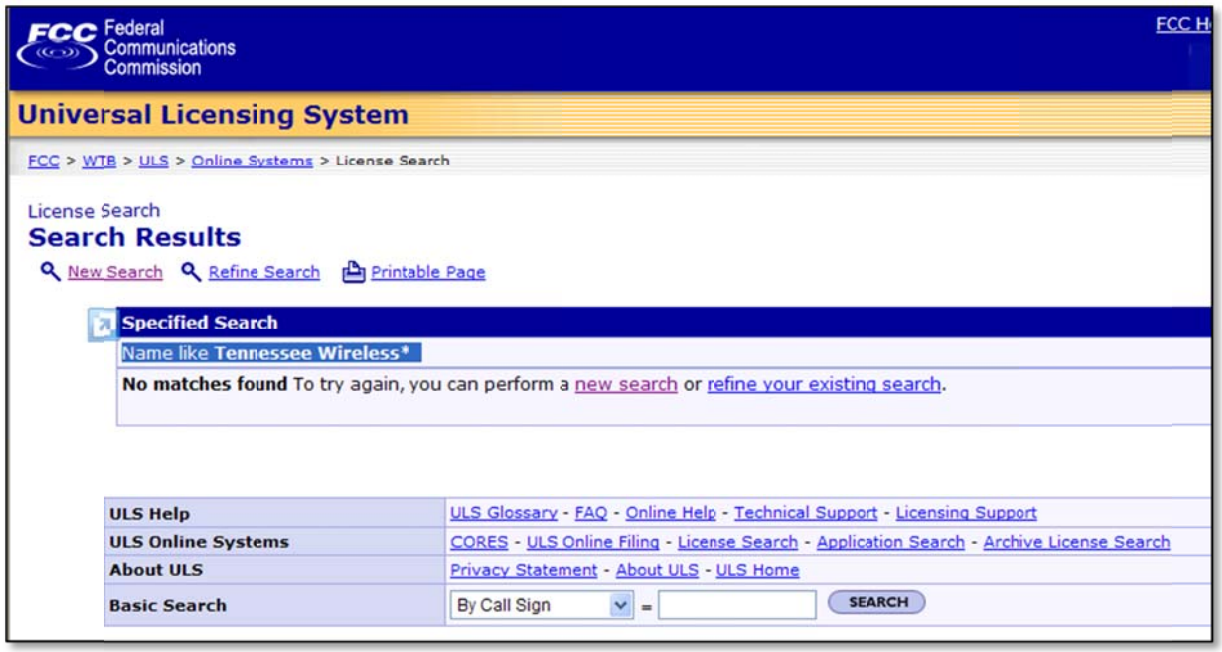


Exhibit D: License Search Results



Preliminary Identification of Provider's Coverage Area

Connected Nation extracted the Tennessee Wireless service area map from the provider's website, along with transmit site specific information from the same website. This combined information was utilized to create a Google Earth image overlay **(Exhibit E).** The image overlay was positioned to match the Google Earth base map's roadways, county boundaries, and water bodies. The degree of accuracy of the image overlay was maintained at less than .1 mile (528 ft.) to establish a minimum search criteria of a given wireless transmit site and/or access point. The provider's service area depiction is represented by shaded symbols (polygons) as shown in **Exhibit B**. Using the site names (2 unique locations) available through the Tennessee Wireless website, a Google search was conducted to determine the locations of the sites. The coordinates for these 2 locations were entered into Google Earth and examined utilizing the zoom option of the aerial imagery. Both locations structures were identified. Both locations were then entered into the Microsoft *Streets & Trips* mapping application **(Exhibit F)** to develop a route for the on-the-ground data collection, site verification, and signal validation process.

Exhibit E: Google Earth: Provider's Service Area Image Overlay

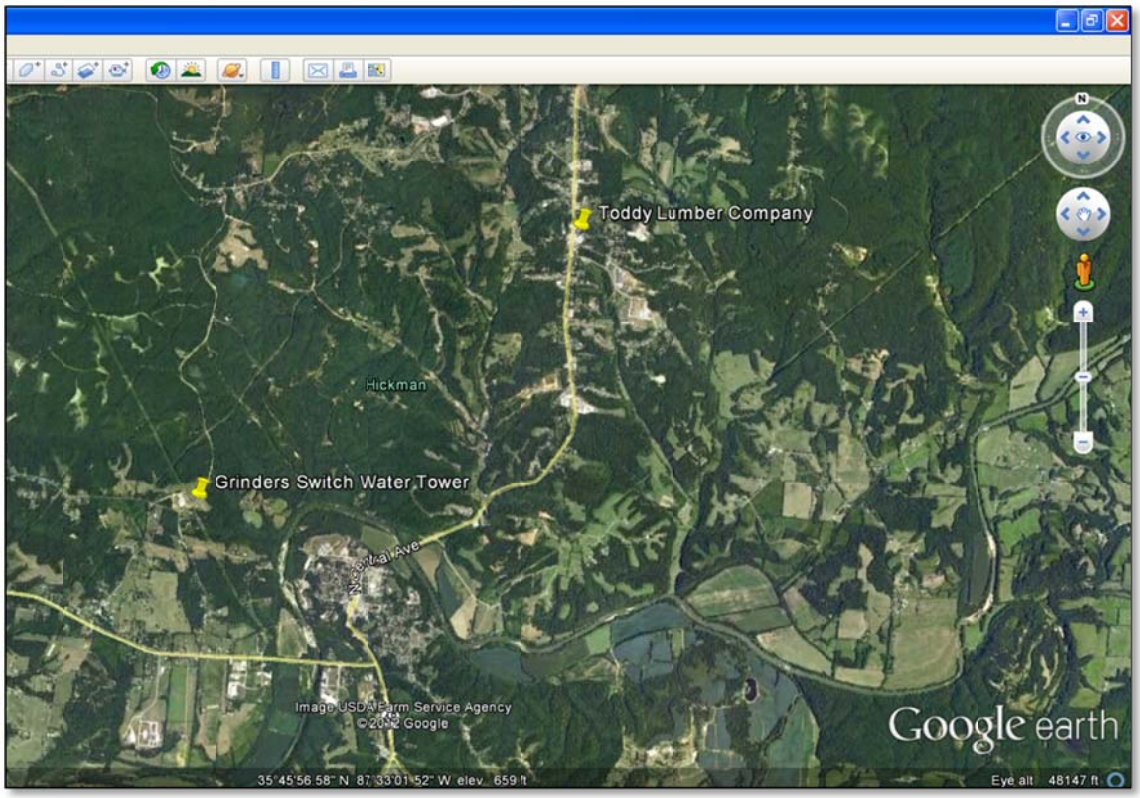
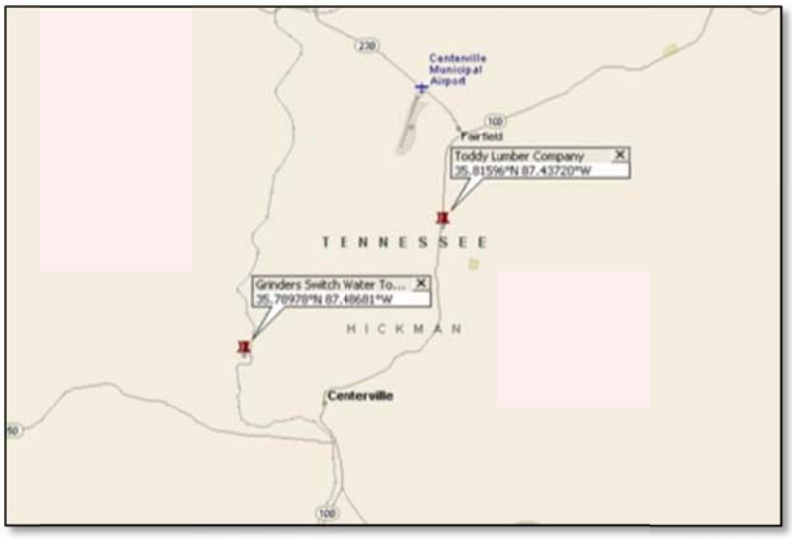


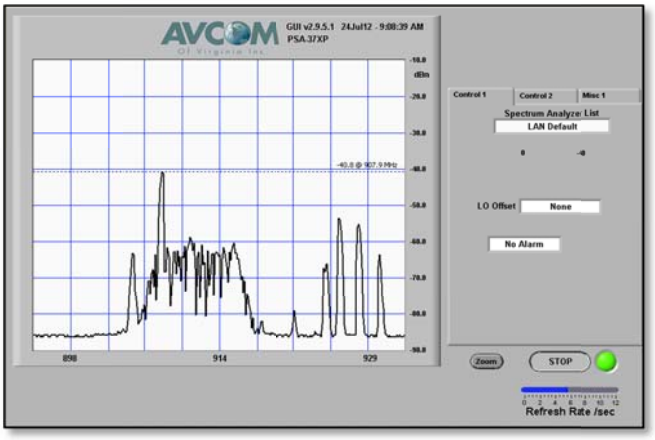
Exhibit F: Validation Points for AP Structures



Testing Techniques

A Connected Nation staff wireless engineer then developed a site validation route based on the datum established with the Google Earth image. The CN wireless engineer was equipped with an AVCOM PSA-37XP analyzer with RF detection from 1 MHz to 6 GHz and an array of antennas tuned specifically for the 900 MHz, 2.4 GHz, 3.65 GHz, and 5 GHz frequency bands **(Exhibit G)**. Each validation point was scrutinized for frequency of operation. A screen image of the operating frequency (or frequencies) was captured; general notes were recorded for each location-approximate antenna height, frequency of operation, antenna type (omnidirectional or directional antenna) and photographs were taken of the wireless transmit sites and access points.

Exhibit G: Field Data for Tennessee Wireless Toddy Lumber Location



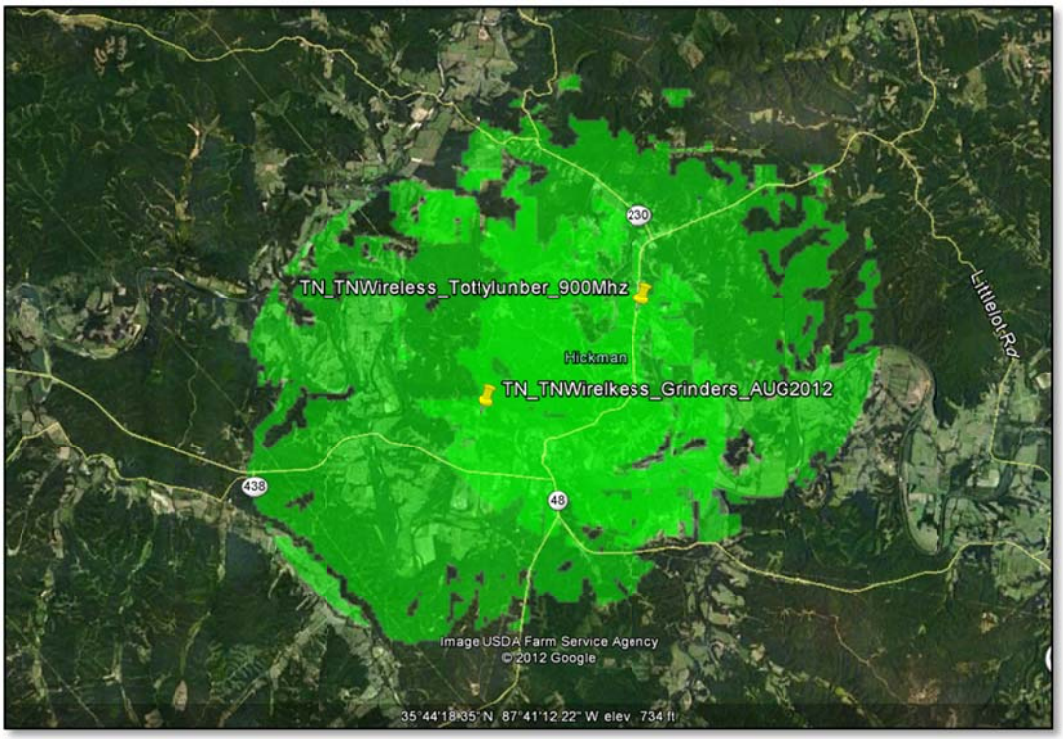
Results and Submission for October 2012

Of the 2 locations visited during the validation point route, 2 access points were identified and relative information was logged into the Tennessee Wireless field validation notes file **(Exhibit H)**. The field and the publicly available data were transferred to the Connected Nation Provider Information file. A composite propagation study was completed based on the field data **(Exhibit I)**. Both documents were forwarded to Tennessee Wireless and the provider was advised that the information would be submitted to Connected Tennessee and to the NTIA if the provider did not respond with additions or discrepancies within a 48-hour period. To date, no response has been received from the provider.

Exhibit H: Field Validation Notes

	Provider	Location	Latitude	Longitude	Frequency Availability				Structure	Approximate Antenna Height	Notes
2					900MHz	2.4GHz	3.65GHz	5.0GHz			
3	TennWireless	Toddy Lumber CO, Centerville, TN	35.815956	-87.437197	*				Free-standing towe	80	found thru press release on wesite. 3 sectors (105, 225, 345). Measured at 908 MHz @ -40.8 dBm
4	TennWireless	Grinders Switch	35.789780	-87.486810	*				Water Tower	100	found thru press release on website. 3 sectors (105, 225, 345). Measured at 908 MHz @ -36.8 dBm. Also captured SSID with network name of Grinders Switch
5											
6											
7											
8											
9											
10											
11											
12											

Exhibit I: Tennessee Wireless, LLC Composite Coverage



TNWEB, LLC

As part of its ongoing broadband mapping efforts, Connected Nation (CN) has developed a series of processes with the goal of submitting mapping data to NTIA for every known and qualifying broadband provider, regardless of whether the provider has chosen to support and participate in the State Broadband Initiative (SBI) program.

The following narrative provides detail regarding the recent data collection and coverage estimation activities related to TNWeb, LLC (TNWeb), a wireless Internet service provider (WISP), located in Lewisburg, Tennessee, with a service area around Marshall County. The narrative will include information regarding how and where CN obtained publicly available data and the on-the-ground validation techniques that support the underlying data.

Background

CN staff members have continued trying to obtain the participation of the provider with 18 instances of communication via telephone and e-mail sessions since January 7, 2010, through July 10, 2012. Telephone conversations took place during the April and October 2010 submissions, but the company was non-responsive during both submission periods. Since the April 2011 submission the provider has either chosen to not respond to telephone and e-mail outreach or has refused to participate. Additionally, a CN staff member visited the business office of TNWeb on July 10, 2012, to discuss the broadband mapping project in person with a representative of TNWeb. A staff member there provided a brochure but almost immediately, another staff member appeared stating their refusal to participate and asking the CN employee to leave at once.

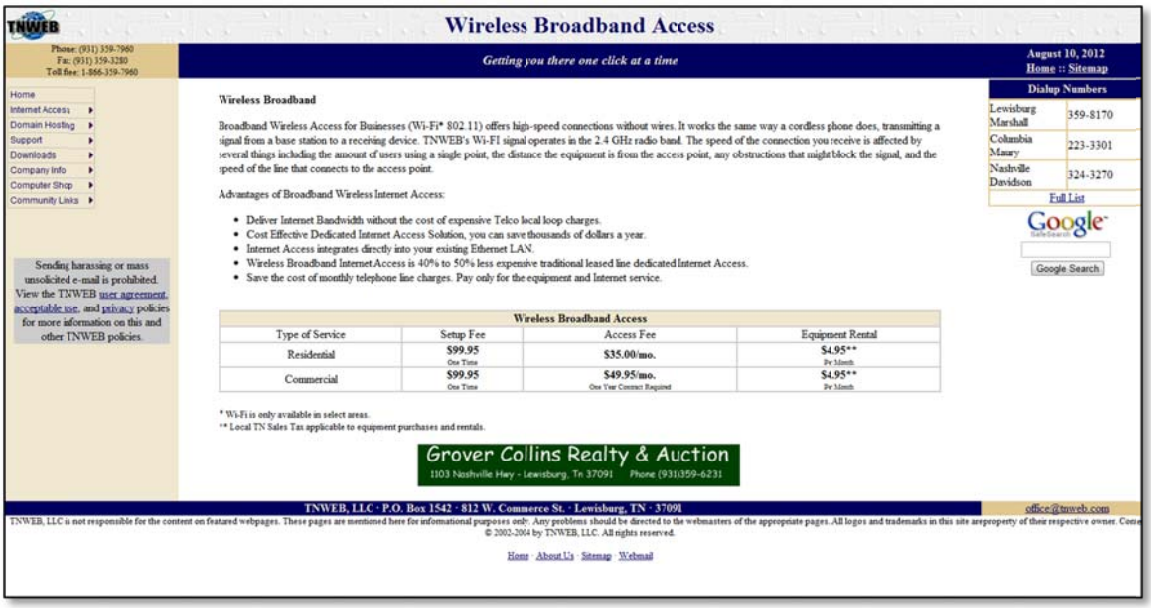
The Issue

TNWeb, by its lack of responsiveness since October 2010, has predicated its unwillingness to participate in the Connected Tennessee broadband mapping initiative.

Identification of Provider's Service Plans, Service Area, Legal Name, d.b.a., FRN, and Licensing

CN began building a file based on research information and, as time progressed, enriched the file with information obtained through the public domain. For example, CN reviewed the provider's website (http://www.tnweb.com), and used the brochure obtained on July 10, 2012, to determine the residential service plans **(Exhibit A)** and the service area **(Exhibit B)** of the provider's wireless network. A search for a Federal Registration Number (FRN) on the FCC **CO**mmission **RE**gistration **S**ystem (CORES) system yielded an FRN of 0019020932 **(Exhibit C)** with contact information relative to the owner of the company. Also, to support field validation of access points, the FRN was referenced to the FCC Universal Licensing System (ULS) to identify any licenses the provider may hold which could possibly enhance locating active access points for the service area. This process yielded no results **(Exhibit D)**.

Exhibit A: Service Plans



TNWEB

Wireless Broadband Access

Phone: (931) 359-7960
Fax: (931) 359-3280
Toll free: 1-866-359-7960

Getting you there one click at a time

August 10, 2012
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Company Info
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Community Links

Sending harassing or mass unsolicited e-mail is prohibited. View the TNWEB user agreement, acceptable use, and privacy policies for more information on this and other TNWEB policies.

Wireless Broadband

Broadband Wireless Access for Businesses (Wi-Fi* 802.11) offers high-speed connections without wires. It works the same way a cordless phone does, transmitting a signal from a base station to a receiving device. TNWEB's Wi-FI signal operates in the 2.4 GHz radio band. The speed of the connection you receive is affected by several things including the amount of users using a single point, the distance the equipment is from the access point, any obstructions that might block the signal, and the speed of the line that connects to the access point.

Advantages of Broadband Wireless Internet Access:

- Deliver Internet Bandwidth without the cost of expensive Telco local loop charges.
- Cost Effective Dedicated Internet Access Solution, you can save thousands of dollars a year.
- Internet Access integrates directly into your existing Ethernet LAN.
- Wireless Broadband Internet Access is 40% to 50% less expensive traditional leased line dedicated Internet Access.
- Save the cost of monthly telephone line charges. Pay only for the equipment and Internet service.

Dialup Numbers

Lewisburg Marshall	359-8170
Columbia Maury	223-3301
Nashville Davidson	324-3270

Full List

Google Search

Wireless Broadband Access

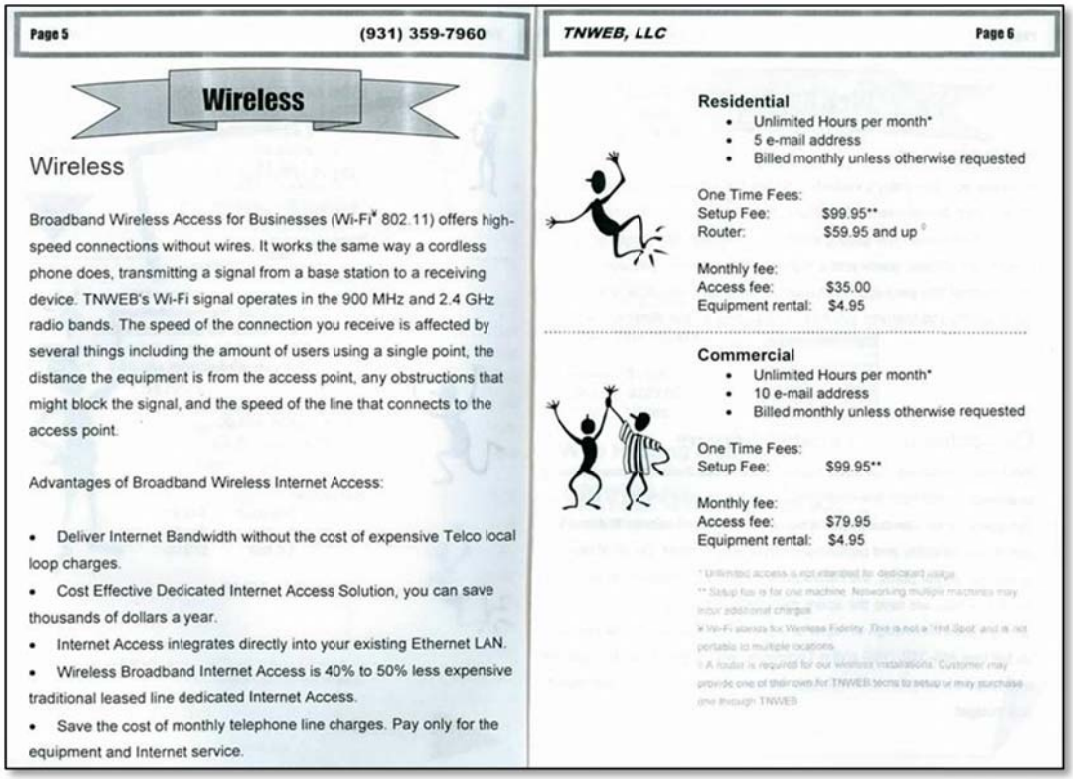
Type of Service	Setup Fee	Access Fee	Equipment Rental
Residential	$99.95 One Time	$35.00/mo.	$4.95** Per Month
Commercial	$99.95 One Time	$49.95/mo. One Year Contract Required	$4.95** Per Month

* Wi-Fi is only available in select areas.
** Local TN Sales Tax applicable to equipment purchases and rentals.

Grover Collins Realty & Auction
1103 Nashville Hwy - Lewisburg, Tn 37091 Phone (931)359-6231

TNWEB, LLC · P.O. Box 1542 · 812 W. Commerce St. · Lewisburg, TN · 37091 office@tnweb.com

Home · About Us · Sitemap · Webmail



Wireless

Wireless

Broadband Wireless Access for Businesses (Wi-Fi* 802.11) offers high-speed connections without wires. It works the same way a cordless phone does, transmitting a signal from a base station to a receiving device. TNWEB's Wi-Fi signal operates in the 900 MHz and 2.4 GHz radio bands. The speed of the connection you receive is affected by several things including the amount of users using a single point, the distance the equipment is from the access point, any obstructions that might block the signal, and the speed of the line that connects to the access point.

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- Cost Effective Dedicated Internet Access Solution, you can save thousands of dollars a year.
- Internet Access integrates directly into your existing Ethernet LAN.
- Wireless Broadband Internet Access is 40% to 50% less expensive traditional leased line dedicated Internet Access.
- Save the cost of monthly telephone line charges. Pay only for the equipment and Internet service.

Residential

- Unlimited Hours per month*
- 5 e-mail address
- Billed monthly unless otherwise requested

One Time Fees:
Setup Fee: $99.95**
Router: $59.95 and up

Monthly fee:
Access fee: $35.00
Equipment rental: $4.95

Commercial

- Unlimited Hours per month*
- 10 e-mail address
- Billed monthly unless otherwise requested

One Time Fees:
Setup Fee: $99.95**

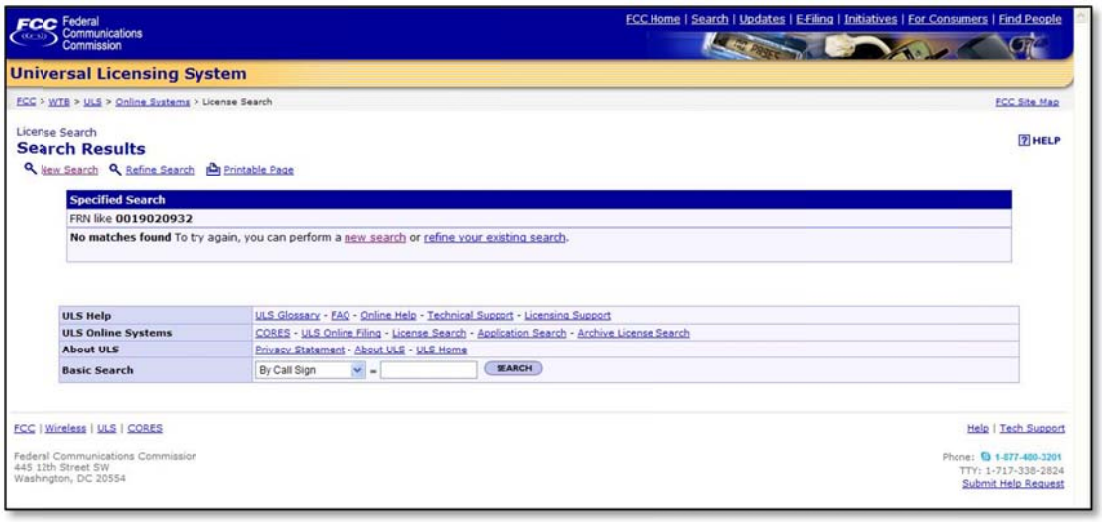
Monthly fee:
Access fee: $79.95
Equipment rental: $4.95

Exhibit B: Service Area

Exhibit C: Federal Registration Number

Registration Detail	
FRN:	0019020932
Registration Date:	08/10/2009 08:22:00 PM
Last Updated:	
Business Name:	TNWEB LLC
Business Type:	Private Sector , Limited Liability Corporation
Contact Organization:	TNWEB LLC
Contact Position:	CEO
Contact Name:	Mr Michael Hardrick
Contact Address:	812 West Commerce Street PO Box 1542 Lewisburg, TN 37091 United States
Contact Email:	office@tnweb.com
ContactPhone:	(931) 359-7960
ContactFax:	(931) 359-3280

Exhibit D: License Reference



Preliminary Identification of Provider's Coverage Area

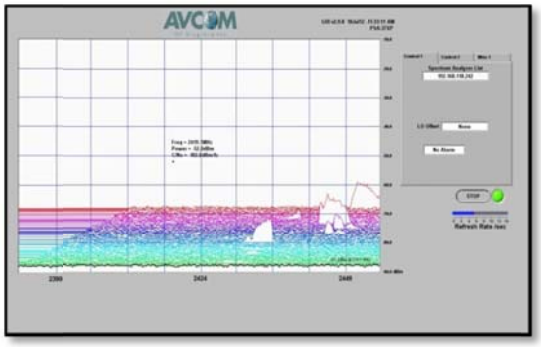
Connected Nation, using the information extracted from the TNWeb website, drove to the address given to validate that TNWeb was still in business. The address is the location of the TNWeb sales office, as well as the location of one of the identified towers for their wireless internet operations. The TNWeb, LLC sales office confirmed that the business is still operational and upon speaking with employees, wireless service availability was confirmed. The tower adjacent to the store was observed, coordinates were taken, and spectrum analysis was performed, along with pictures of the tower and equipment **(Exhibit E)**.

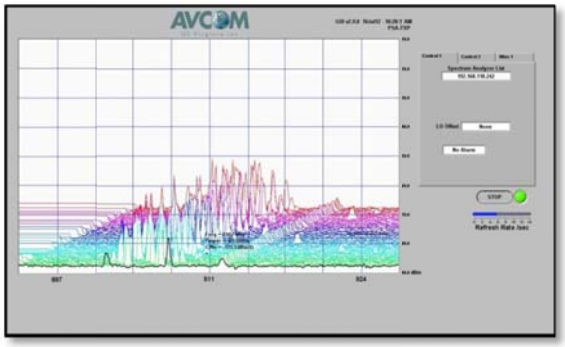
Exhibit E: TNWeb LLC Sales Office

Testing Techniques

Connected Nation staff developed a site validation route based on the information obtained from the TNWeb brochure and website. The CN wireless engineer was equipped with an AVCOM PSA-37XP analyzer with RF detection from 1 MHz to 6 GHz and an array of antennas tuned specifically for the 900 MHz, 2.4 GHz, 3.65 GHz, and 5 GHz frequency bands **(Exhibit F)**. Each validation point was scrutinized for frequency of operation. A screen image of the operating frequency (or frequencies) was captured; general notes were recorded for each location-approximate antenna height, frequency of operation, antenna type (omnidirectional or sectored) and photographs were taken of the access points.

Exhibit F: Field Data for TNWeb Office/Hub Locations





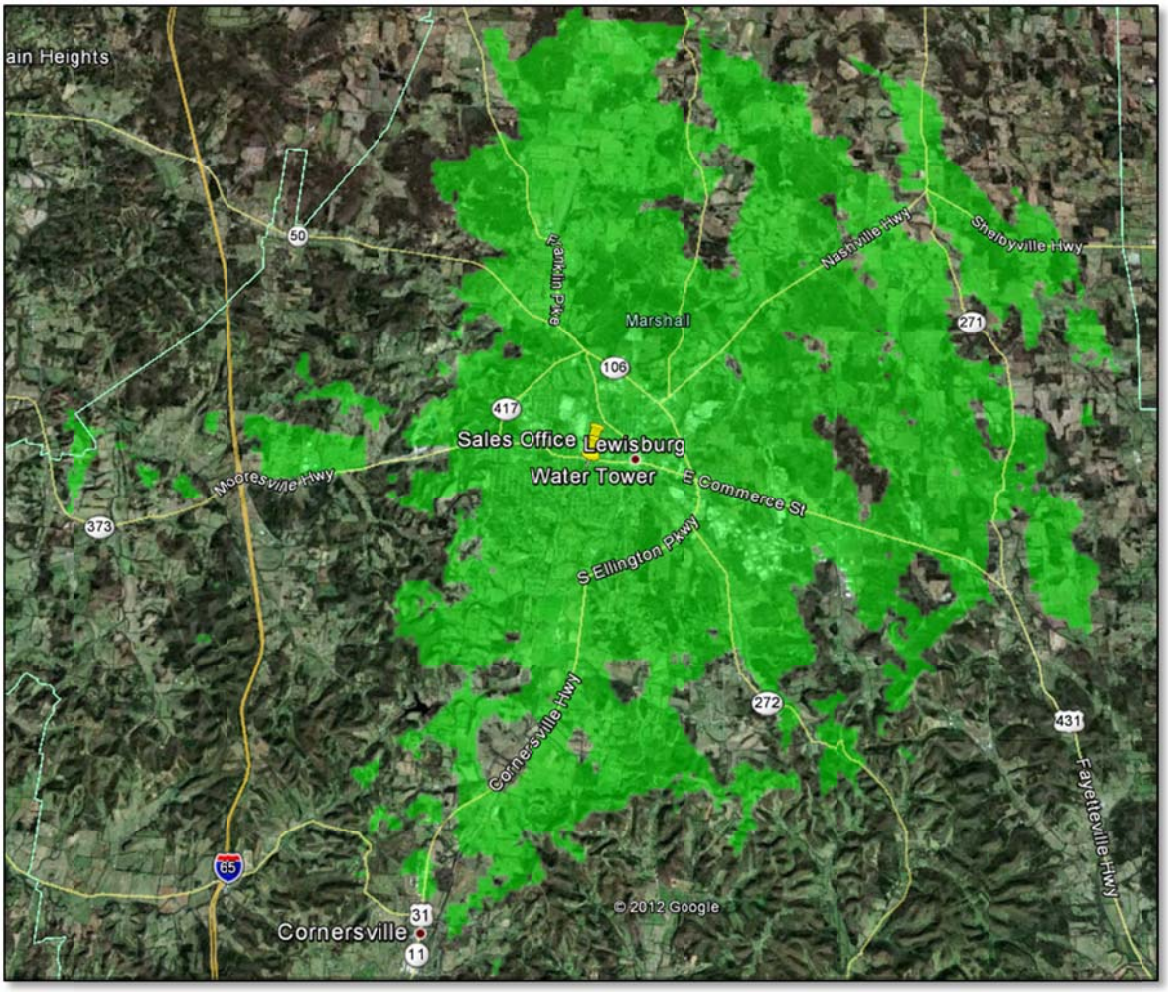
Results and Submission for October 2012

Of the 2 locations visited during the validation point route, 2 access points were identified and relative information was logged into the TNWeb field validation notes file **(Exhibit G)**. The field and the publicly available data were transferred to the CN Provider Information file. A composite propagation study was completed based on the field data **(Exhibit H)**. Both documents were forwarded to Bitwise Wireless as courtesy copies, and the provider was advised that the estimated coverage information would be submitted to Connected Tennessee and to the NTIA unless the provider notified CN within 48 hours of discrepancies of the estimated coverage. The provider did not respond to CN and, as of this date, CN believes the information to be an accurate estimation of the service area of TNWeb, LLC.

Exhibit G: Field Validation Notes

			Test Site Info			Engineer	Coordinates NAD 83 REQUIRED								Platform Type	
Site #	Date	Provider	Test County	Physical Address	Location Description	Engineer	Lat Deg	Lat Min	Lat Sec	(-) Long Deg	Long Min	Long Sec	(N) Lat Decimal	(-)(W) Long Decimal	Type	Presence Confirmed
1	7/10/12	TN Web	Marshall	812 W. Commerce St. Lewisbu	Sales office	Wes Kerr	35	27	3.3	-86	48	0.8	35.450917	-86.800222	Fixed Wir	Yes
2	7/10/12	TN Web		Near 8th Ave. and Cedar St. Le	Water Tower	Wes Kerr	35	26	53.9916	-86	48	2.3652	35.448331	-86.800657	Fixed Wir	Yes
3													0.000000	0.000000		
4													0.000000	0.000000		

Exhibit H: TNWeb Composite Coverage



APPENDIX B: BROADBAND PROVIDER LOG

Broadband Provider Log

Complete	105
Non-Responsive/Refused	4
In Progress	6
Count of Datasets by Status	**115**
Total Unique Providers Represented	**87**

Provider Name	Platform	Status	NDA Execution Date	Notes
Ken-Tenn Wireless, L.L.C.	Fixed Wireless	Approval for Update Not Received - Data Still Submitted	1/25/2010	[SEP-14-12 Frank Aryee] Change: Provider added four fixed wireless towers.
AT&T Inc.	DSL	Data Added to Statewide Inventory	12/16/2009	[AUG-24-12 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2012 submission.
AT&T Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/16/2009	[AUG-21-12 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2012 submission. There was also a speed upgrade.
Ben Lomand Rural Telephone Coop., Inc.	DSL	Data Added to Statewide Inventory	10/21/2009	[JUL-17-12 Frank Aryee] Changes/Corrections: Provider expanded service area; also corrected coverage in Marion and Franklin Counties and made significant correction in Coffee County.
Ben Lomand Rural Telephone Coop., Inc.	Fiber	Data Added to Statewide Inventory	10/21/2009	[JUL-17-12 Frank Aryee] Change: Provider expanded service to additional areas in Van Buren, White, and Warren Counties.
BreezeAir.net	Fixed Wireless	Data Added to Statewide Inventory	8/17/2010	[AUG-02-12 Frank Aryee] Change: Provider activated new tower. There were also speed updates.
Capshaw Enterprises, LLC	Fixed Wireless	Data Added to Statewide Inventory	10/20/2011	[JUL-18-12 Frank Aryee] Change: Provider activated two new towers.
CenturyLink	DSL	Data Added to Statewide Inventory	12/4/2009	[AUG-15-12 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2012 submission
Charter Communications, Inc.	Cable	Data Added to Statewide Inventory	12/15/2009	[AUG-03-12 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2012 submission.
Comcast Cable Communications, LLC	Cable	Data Added to Statewide Inventory	12/7/2009	[AUG-30-12 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2012 submission.
DeKalb Telephone Cooperative, Inc.	Fiber	Data Added to Statewide Inventory	2/24/2010	[SEP-14-12 Frank Aryee] Change: Provider expanded service to city limits of Carthage and South Carthage.
Frontier Communications Corporation	DSL	Data Added to Statewide Inventory	1/22/2010	[AUG-16-12 Frank Aryee] Change: Provider activated four new DSLAMs.
High Country Online LLC	Fixed Wireless	Data Added to Statewide Inventory	3/4/2010	[JUL-18-12 Frank Aryee] Change: Provider activated new tower.
JTM Broadband	Fixed Wireless	Data Added to Statewide Inventory		[JUL-17-12 Frank Aryee] Change: This is a brand new broadband provider in the market.
Leap Wireless International, Inc.	Mobile Wireless	Data Added to Statewide Inventory	4/6/2010	[AUG-02-12 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2012 submission.
MegaPath Inc.	DSL	Data Added to Statewide Inventory	2/15/2010	[AUG-31-12 Frank Aryee] Correction: Initial submission of provider's coverage, but they were in service previously.
Spacenet Inc.	Satellite	Data Added to Statewide Inventory		[SEP-14-12 Frank Aryee] Correction: Initial submission of provider's coverage, but they were in service previously.
Sprint Nextel Corporation	Mobile Wireless	Data Added to Statewide Inventory	1/14/2010	[JUL-18-12 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2012 submission.
T-Mobile USA, Inc.	Mobile Wireless	Data Added to Statewide Inventory	1/8/2010	[AUG-09-12 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2012 submission.

TDS Telecommunications Corporation	DSL	Data Added to Statewide Inventory	1/27/2010	[AUG-21-12 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2012 submission.
TDS Telecommunications Corporation	Fiber	Data Added to Statewide Inventory	1/27/2010	[AUG-20-12 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2012 submission. There was also speed upgrade to fiber coverage.
TEC of Jackson, Inc	DSL	Data Added to Statewide Inventory	7/29/2010	[JUL-31-12 Ashley Hitt] Change: Provider activated a new DSLAM location.
TEC of Jackson, Inc	DSL	Data Added to Statewide Inventory	7/29/2010	[JUL-31-12 Ashley Hitt] Change: A DSLAM was decommissioned and a new one was installed at a new location near the previous site.
Time Warner Cable LLC.	Cable	Data Added to Statewide Inventory	12/21/2009	[AUG-15-12 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2012 submission.
Verizon Communications, Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/14/2009	[JUL-19-12 Frank Aryee] Changes and/or Corrections: Possible service expansion or corrections to previous dataset; entirely new dataset provided for October 2012 submission.
ViaSat, Inc.	Satellite	Data Added to Statewide Inventory	1/8/2010	[AUG-14-12 Frank Aryee] Change: Provider increased maximum advertised speeds.
Conterra Ultra Broadband, LLC	Backhaul	Backhaul Provider Only Processing Complete		
Iris Networks	Backhaul	Backhaul Provider Only Processing Complete	1/5/2010	
Sprint Nextel Corporation	Backhaul	Backhaul Provider Only Processing Complete	1/14/2010	
T-Mobile USA, Inc.	Backhaul	Backhaul Provider Only Processing Complete	1/8/2010	
TDS Telecommunications Corporation	Backhaul	Backhaul Provider Only Processing Complete	1/27/2010	
Columbia Power & Water Systems	Cable	Speed Only Update; Data Processing Complete		[JUL-17-12 Frank Aryee] Change: Provider upgraded infrastructure and can now offer tier 8 download speeds.
James Cable LLC	Cable	Speed Only Update; Data Processing Complete	1/11/2010	[AUG-20-12 Frank Aryee] Change: Provider upgraded infrastructure and can now offer tier 7 download speeds.
TEC of Jackson, Inc	DSL	Speed Only Update; Data Processing Complete	7/29/2010	[JUL-31-12 Ashley Hitt] Change: Max download speed was upgraded on one DSLAM.
Trenton TV Cable Company	Cable	Speed Only Update; Data Processing Complete		[AUG-09-12 Frank Aryee] Change: Provider upgraded infrastructure and can now offer tier 7 download speeds.
Tennessee Wireless, LLC	Fixed Wireless	Estimated Coverage Submitted for Non-Participating Provider		[SEP-17-12 Ashley Hitt] Correction: Provider has not participated to date; coverage submitted was estimated by CN.
TNWEB, LLC	Fixed Wireless	Estimated Coverage Submitted for Non-Participating Provider		[SEP-11-12 Frank Aryee] Correction: Provider has not participated to date; coverage submitted was estimated by CN.
Aurora Cable TV	Fixed Wireless	Partial Data Received	3/12/2010	[SEP-17-12 Ashley Hitt] Provider now offers fixed wireless service, but not enough information was received to create coverage; data should be submitted in April 2013.
Access Cable Television, Inc.	Cable	No Update to Provide		
Ardmore Telephone Company Inc	Backhaul	No Update to Provide	2/16/2010	
Ardmore Telephone Company Inc	DSL	No Update to Provide	2/16/2010	
AT&T Inc.	Backhaul	No Update to Provide	12/16/2009	
Aurora Cable TV	Cable	No Update to Provide	3/12/2010	
Bledsoe Telephone Cooperative Inc	DSL	No Update to Provide	1/20/2010	
Bristol Tennessee Essential Services	Fiber	No Update to Provide	9/1/2010	
Cable ONE Inc.	Cable	No Update to Provide	12/7/2009	
CenturyLink	Backhaul	No Update to Provide	12/4/2009	
Clarksville Department of Electricity	Fiber	No Update to Provide		
Clearwire Corporation	Mobile Wireless	No Update to Provide	3/3/2010	
CRU Enterprises, Inc.	Fixed Wireless	No Update to Provide	2/4/2010	
DeKalb Telephone Cooperative, Inc.	DSL	No Update to Provide	2/24/2010	
DeltaCom, Inc.	Backhaul	No Update to Provide	2/16/2010	
Electric Power Board for the City of Chattanooga	Fiber	No Update to Provide		
ETC Communications, LLC	Cable	No Update to Provide	10/14/2009	
Fayetteville Public Utilities	Cable	No Update to Provide		
Highland Telephone Cooperative, Inc.	DSL	No Update to Provide	3/14/2010	
Hughes Network Systems, LLC	Satellite	No Update to Provide	2/5/2010	
iGiles.net	Fixed Wireless	No Update to Provide	2/25/2010	
Info-Ed Inc	Fixed Wireless	No Update to Provide	2/9/2010	
Jackson Energy Authority	Fiber	No Update to Provide	3/17/2010	
Loretto Telephone Company, Inc.	DSL	No Update to Provide	3/16/2010	
MegaPath Inc.	Backhaul	No Update to Provide	2/15/2010	
Millington CATV, Inc.	Cable	No Update to Provide	10/19/2009	
Millington CATV, Inc.	DSL	No Update to Provide	10/19/2009	
Monster Broadband, Inc.	Fixed Wireless	No Update to Provide	11/6/2009	
Morristown Utilities Commission	Fiber	No Update to Provide	3/25/2010	
NetEase	Fixed Wireless	No Update to Provide	2/3/2010	
North Central Communications	DSL	No Update to Provide	2/5/2010	
OrbWireless.net	Fixed Wireless	No Update to Provide		
Pickwick Cablevision, Inc.	Cable	No Update to Provide		

Skyline Telephone Membership Corporation	Backhaul	No Update to Provide	2/2/2010	
Skyline Telephone Membership Corporation	Fiber	No Update to Provide	2/2/2010	
TEC of Jackson, Inc	Backhaul	No Update to Provide	7/29/2010	
TEC of Jackson, Inc	Backhaul	No Update to Provide	7/29/2010	
TEC of Jackson, Inc	Backhaul	No Update to Provide	7/29/2010	
Tullahoma Utilities Board	Fiber	No Update to Provide		
tw telecom of tennessee, llc	Backhaul	No Update to Provide	3/31/2010	
Twin Lakes Telephone Cooperative Corporation	DSL	No Update to Provide	1/14/2010	
Twin Lakes Telephone Cooperative Corporation	Fixed Wireless	No Update to Provide	1/14/2010	
Ultranet High-Speed Internet	Fixed Wireless	No Update to Provide	2/23/2010	
United States Cellular Corporation	Mobile Wireless	No Update to Provide	2/15/2011	
West Kentucky and Tennessee Telecommunications	DSL	No Update to Provide	1/7/2010	
XO Communications, LLC	Backhaul	No Update to Provide	2/12/2010	
Beasley Wireless	Fixed Wireless	No Update Provided - Use Last Submission Data	1/19/2010	
Celina Cable Communications, Inc.	Cable	No Update Provided - Use Last Submission Data	1/15/2010	
Cellular South Licenses, LLC	Mobile Wireless	No Update Provided - Use Last Submission Data	4/12/2010	
ECSIS.NET	Fixed Wireless	No Update Provided - Use Last Submission Data	10/29/2009	
EnterSource	Backhaul	No Update Provided - Use Last Submission Data	7/7/2010	
EnterSource	Fixed Wireless	No Update Provided - Use Last Submission Data	7/7/2010	
InfoStructure Inc.	Cable	No Update Provided - Use Last Submission Data	10/2/2009	
Knology of Tennessee, Inc.	Cable	No Update Provided - Use Last Submission Data	7/13/2011	
Level 3 Communications, LLC	Backhaul	No Update Provided - Use Last Submission Data	12/14/2009	
Mediacom Southeast LLC	Cable	No Update Provided - Use Last Submission Data	1/12/2010	
Planet Connect Internet	Fixed Wireless	No Update Provided - Use Last Submission Data		
Pulaski Electric System	Fiber	No Update Provided - Use Last Submission Data	12/30/2009	
QuickRelay Wireless Communications	Fixed Wireless	No Update Provided - Use Last Submission Data		
Softek, Inc.	Fixed Wireless	No Update Provided - Use Last Submission Data	1/14/2010	
Spirit Broadband	Cable	No Update Provided - Use Last Submission Data	3/29/2010	
Surfmore.Net, Inc.	Fixed Wireless	No Update Provided - Use Last Submission Data	1/25/2010	
TELE-PAGE Inc.	Fixed Wireless	No Update Provided - Use Last Submission Data	1/26/2010	
United Telephone Company, Inc.	DSL	No Update Provided - Use Last Submission Data	2/25/2010	
United Telephone Company, Inc.	Fiber	No Update Provided - Use Last Submission Data	2/25/2010	
Wave2Wave Communications Inc.	Backhaul	No Update Provided - Use Last Submission Data	4/28/2010	
Windstream Communications	Backhaul	No Update Provided - Use Last Submission Data		
Zayo Group, LLC	Backhaul	No Update Provided - Use Last Submission Data		
Zito Midwest, LLC	Cable	No Update Provided - Use Last Submission Data	2/17/2011	
Windstream Communications	Backhaul	Solicited Initial Data		
Highland Telephone Cooperative, Inc.	Fiber	Other	3/14/2010	AUG-07-12 Chip Spann] Per company representative, the fiber project remains in BETA mode. Construction has been completed in the KY counties, but subscribers have not yet been "cut over" in the TN counties. Target for commercial deployment is September 2012.
North Central Communications	Fiber	Other	2/5/2010	[JUL-06-12 Chip Spann] Provider is apparently working in three counties and has a few test customers, but coverage is not fully available yet.
Twin Lakes Telephone Cooperative Corporation	Fiber	Other	1/14/2010	[AUG-15-12 Wes Kerr] A company representative noted that they did not yet have the ability to provide the data for this round; however they will participate in a timely fashion during the next round.
West Kentucky and Tennessee Telecommunications	Fiber	Other	1/7/2010	[SEP-17-12 Ashley Hitt] Provider indicated that the fiber coverage is not yet active; will confirm with provider for next submission and likely submit data in April 2013.
Birch Communications, Inc.	Backhaul	Refused to Participate		[JUN-27-12 Chip Spann] A company representative replied via e-mail that her company declines to participate.

EnterSource	Fixed Wireless	Non-Responsive to Multiple Attempts	7/7/2010	In addition to numerous contact attempts made during past mapping submission periods, 5 contact attempts were made this period.
Trinity Communications LLC	Cable	Non-Responsive to Multiple Attempts		In addition to numerous contact attempts made during past mapping submission periods, 2 contact attempts were made this period.
Wisper, LLC	Fixed Wireless	Slated Field Audit for Estimated Coverage Analysis	2/22/2011	