OFFICIAL OCTOBER 2010 UPDATE SUBMISSION TO THE NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION UNDER THE STATE BROADBAND DATA AND DEVELOPMENT GRANT PROGRAM FOR THE STATE OF MINNESOTA

October 1, 2010

TABLE OF CONTENTS

COVER LETTER

September 29, 2010

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

Dear Ms. Neville:

As the Designated Entity, and in partnership with the Minnesota Department of Commerce (MNDOC), please accept this submission from Connected Nation on behalf of the state of Minnesota's State Broadband Data and Development (SBDD) Grant Program, Connect Minnesota.

These artifacts should be found to be compliant with the October 1, 2010, deadline for the semi-annual data update and in accordance with the terms of the July 1, 2009, Notice of Funds Availability (NOFA) and all subsequent clarifications pertaining to delivery of State-Level Mapping of Broadband Service Availability. This packet includes:

Inventory of Deliverables, Connect Minnesota: October 1, 2010

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
Appendix A: 4	n/a	Community Anchor Institutions-Narratives
VII.A.1(a)	n/a	Accuracy and Verification Report

n/a	DataPackage.xls	Worksheets of Contact Information, Data Dictionary, and Provider Summary Table
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 initial SBDD data submission for the Connect Minnesota program, on April 30, 2010. Specifically, these new requirements are:

Census Blocks
This dataset should be found to be in full compliance with the request to use Census 2000 geography with the availability of wireline broadband services in census blocks with an area of no greater than two square miles.

SBDD Data Transfer Model
The submission of the broadband dataset for October 1, 2010, is contained within the SBDD Data Transfer Model as released on the Grantee Workspace on September 9, 2010. All efforts have been made to comply with formatting, domain, and metadata requirements to include as much information on each provider as possible.

It is therefore with great pleasure that the Connect Minnesota program submits this first, semi-annual data update under the State Broadband Data and Development Grant Program. We will continue in partnership with MNDOC to implement the joint purposes of the Recovery Act and the BDIA by the gathering of comprehensive and accurate state-level broadband mapping data, developing state-level broadband maps, aiding in the development and maintenance of a national broadband map, and undertaking statewide initiatives for broadband planning.

As the submission of this semi-annual data update is concentrated on the delivery of Broadband Service Availability and Community Anchor Institutions (CAI) data, we provide the following insight into the compilation of these datasets contained herein.

Broadband Service Availability — Provider Outreach
This data update submission under the SBDD includes the participation of approximately 78.9% of the Minnesota provider community, or 97 of 123 total providers. Of the 97 participating providers, 20 supplied an update to their network or coverage area(s), while 69 have reported no change. The remaining 8 represents providers who supplied initial submission data but were non-responsive in the October 2010 update effort or could not verify coverage areas at the time of this submission; therefore their initial dataset is being put forward as part of this compilation. A complete roster by provider depicting participation status and contact record is contained herein. Of the 26 providers that are not represented in the attached datasets, 5 have either refused to participate in the voluntary program or have remained unresponsive to the numerous attempts at contact by Connect Minnesota. The remaining 21 providers are currently in some form of progress toward data submission but were not able to either submit or verify coverage areas at the time of this submission.

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

At the program's inception, Connect Minnesota launched a website to create awareness about the initiative. Connectmn.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. These program stakeholders are an essential component in the larger Connect Minnesota data validation methodology.

As an indicator of stakeholder penetration, the Connect Minnesota website encountered 4,240 unique visits during this reporting period (6,744 total to date for the life of the grant which was awarded on December 20, 2009). Additionally, this pronounced Web activity netted 45 broadband inquiries over this same reporting period (63 grant inception to date). The website also provides the BroadbandStat application, which allows the consumer to confirm or dispute the coverage represented on the broadband inventory map. These consumer initiated actions are facilitated through the Connect Minnesota website and offer the citizens a vehicle to provide information regarding availability in their respective service area, either in affirmation or contest of the reported data represented in the Connect Minnesota mapping artifacts. Since the initial data collection and release of corresponding maps, feedback in the form of broadband inquiries has allowed Connected Nation to identify additional areas that are in need of field validation, which is scheduled as soon as possible. Additional information on field validation can be found in the Field Validation Narrative.

Community Anchor Institutions

Connect Minnesota 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 SBDD NOFA Technical Appendix.

In conjunction with the MNDOC, significant additional research and outreach was conducted during this data update reporting period by Connect Minnesota to continue identification of existing, centralized sources for CAI connectivity data. Outreach was coordinated with the MNDOC to distribute the CAI survey to institutions throughout the state. The MNDOC assisted in the outreach effort by providing their contact information and initiating the conversations with their CAI partners. Connect Minnesota has also identified and processed a list of CAI through a combination of datasets including publicly available and privately held datasets from online sources, including:

- The National Public Safety Information Bureau
  http://www.safetysource.com
- American Hospital Association
  http://www.hospitalconnect.com/hospitalconnect_app/hospitalfinder

- National Center for Education Statistics
  Public Schools: http://nces.ed.gov/ccd/schoolsearch/
  Private Schools: http://nces.ed.gov/surveys/pss/privateschoolsearch/
  Colleges: http://nces.ed.gov/collegenavigator
  Libraries: http://nces.ed.gov/surveys/libraries/librarysearch/
- United States Fire Administration
  http://www.usfa.dhs.gov/applications/census/search.cfm

As of this semi-annual reporting period, a total of 99.9% Minnesota CAI were identified, addressed, and geocoded. As is evident in the datasets being conveyed, while we were able to document institutions and the related addresses, the connectivity data collected in most categories remains less than complete. From our work in Minnesota, as well as other states, we recognize the great value of this data to future collaboration efforts within the state, and to the accomplishment of the purposes in the recently released National Broadband Plan. We plan to continue to bring best practices to the Minnesota efforts, along with an investment of both human and technical resources required to reach these goals in advance of the submission of the semi-annual update of this data due in April 2011.

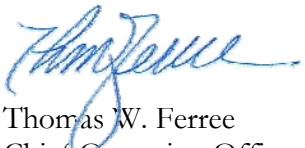
In acquiring both broadband availability and CAI data within the state of Minnesota, Connected Nation made special effort to engage all federally engaged tribal lands in the area covered by the Minnesota SBDD grant. According to the U.S. Department of the Interior — Bureau of Indian Affairs, there are 11 Native-American lands in this area:

1. Bois Forte Band (Nett Lake) - Minnesota Chippewa Tribe
2. Fond du Lac Band - Minnesota Chippewa Tribe
3. Grand Portage Band - Minnesota Chippewa Tribe
4. Leech Lake Band - Minnesota Chippewa Tribe
5. Lower Sioux Indian Community in the State of Minnesota
6. Mille Lacs Ban - Minnesota Chippewa Tribe
7. Prairie Island Indian Community in the State of Minnesota
8. Red Lake Band of Chippewa Indians
9. Shakopee Mdewakanton Sioux Community of Minnesota
10. Upper Sioux Community
11. White Earth Band - Minnesota Chippewa Tribe

Connected Nation has successfully contacted all of the 11 tribes as part of the SBDD program and is accounting for the resulting data in the creation of the artifacts for this submission.

The Connect Minnesota 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 Minnesota, as well as the United States through contribution to the National Broadband Map. We look forward to the remaining work ahead.

Respectfully submitted,



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

DATA ACQUISITION: MINNESOTA COMMUNITY ANCHOR INSTITUTIONS

In this second reporting period of the SBDD, Connect Minnesota, working in close coordination with the Minnesota Department of Commerce 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 SBDD NOFA Technical Appendix. Connect Minnesota has focused efforts during this reporting period on conducting outreach and raising awareness of this important project.

In conjunction with the Department of Commerce, Connect Minnesota 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 Connect Minnesota through ESRI ArcGIS software.

Connect Minnesota continues to utilize a customized online survey hosted through SurveyMonkey, with a landing page on the Connect Minnesota website, that was developed during the first reporting period. Connect Minnesota 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 SBDD NOFA.

Survey Link:
http://connectmn.org/mapping/Community_Anchor_Institution_Data_Collection.php

Connect Minnesota and the Department of Commerce have worked closely together during this reporting period to conduct research as part of an ongoing process to identify existing, centralized sources for CAI connectivity data. The research has resulted in the identification of two extensive databases within the state containing CAI connectivity data. The Minnesota Office of Enterprise Technology has agreed to provide Connect Minnesota with access to their statewide network which includes data for thousands of CAI within the state who exclusively purchase service for their institutions. The Minnesota Department of Natural Resources has also agreed to provide access to their statewide database of government CAI that utilize their network for broadband access. Both departments are in the process of augmenting this data from their systems and converting it into a format that will be appropriate for the project. Connect Minnesota will be reporting this data in the upcoming 2011 submission.

In tandem with these efforts to identify existing data, Connect Minnesota and the Department of Commerce are working together to identify CAI contacts among all CAI categories in an effort to distribute and promote the online survey and raise awareness of the importance of CAI broadband connectivity. This coordination has resulted in the identification of key contacts at numerous statewide organizations and will also encompass the newly appointed Minnesota Broadband Task Force. Coordination with the Task Force will be used as a tool to engage the newly appointed members and tap their contacts within the state to promote the CAI project. Connect Minnesota also continues to operate a CAI hotline to answer questions related to the survey tools and CAI data collection.

Connect Minnesota 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 Connect Minnesota interactive map.

The greatest challenge faced in both reporting periods continues to be the difficulty in securing CAI broadband connectivity data. Connect Minnesota will continue its ongoing work with Minnesota's key CAI contacts in an effort to raise awareness of this project among Minnesota CAI. Future efforts will involve targeted planning with representatives from each of the CAI categories, as well as a structured outreach to each category, supported by messaging and meetings showcasing the value of these data for planning and collaboration purposes. Targeted outreach efforts will be conducted through phone calls, industry/trade association meetings and newsletters, Task Force coordination, and the potential use of CAI webinars to gather additional data and raise awareness of the project.

SBDD Data Transfer Model Methodology

The submission of the broadband dataset for October 1, 2010, is contained within the SBDD Data Transfer Model as released on the Grantee Workspace on September 9, 2010. Connected Nation 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.

In addition to the narratives and methodologies contained herein, 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 SBDD Data Transfer Model for the state of Minnesota.

Inventory of Deliverables, Connect Minnesota: October 1, 2010

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 Connected Nation on behalf of the state of Minnesota have been formatted per the given specifications and uploaded into the appropriate feature classes of the SBDD Data Transfer Model. Wireline availability is contained within census blocks and road segments, wireless availability is contained as polygons of coverage areas, middle-mile connections and community anchor institutions are contained as point data, and the subscriber weighted nominal speed (if available) is contained within the overview feature class. 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.

MINNESOTA FIELD VALIDATION NARRATIVE

As of this reporting period, Connected Nation has conducted data validation on the following providers: Minnesota Valley Television Improvement Corporation, Winnebago Telephone Cooperative, StarCom, Sioux Valley Wireless, WISPer Wireless, Clearwire, diversiCom, Arvig Communications, Bradco Wireless, Min-Kota Wireless, Polar Communications, Charter Communications, Evertek, Park Region Mutual Telephone, AT&T Mobility, Frontier Communications, Verizon Wireless, T-Mobile, Qwest, Red River Telephone, Comcast, MidContinent Cable, 702 Communications, City of Barnesville, CiteScape, Garden Valley Telephone, Lakedale Link, Hector Communications d/b/a Loretel, Genesis Wireless, Southern Cablevision d/b/a Home Telephone Company, Charter Communications, and Jaguar. Statistically, this represents 33 validated providers against a viable universe of 123 qualifying providers and/or a completion percentage of 26.83%.

Sixty-seven tests locations were selected in large cities and rural areas alike for these validation tests. Whether testing DOCSIS III cable modem service or 20 Mbps DSL in the Minneapolis-St. Paul area, WiMAX services in St. Cloud and Barnesville, FTTx in Kent, fixed wireless in Granite Falls or mobile services across the state, Connected Nation's Engineering & Technical services staff strived to validate all technology platform types. Additionally, Connected Nation has hosted or participated in numerous public forums to discuss its general findings as well as to demonstrate the capabilities of the BroadbandStat interactive mapping tool.

Many of these tests allowed Connected Nation the opportunity to personally meet several of Minnesota's entrepreneurial broadband providers, to identify households subscribing to fixed wireless broadband services, to watch as companies erected new equipment and/or upgraded their facilities, and to discuss expansion opportunities where unserved and underserved areas of the state were identified.

Additionally, Charles Spann, John Determan, and other Connected Nation staff members have participated in numerous public forums and trade association conferences to ensure that the dialogue between broadband providers and the mapping agent remain healthy and productive for the remainder of the SBDD mapping grant timeframe.

ACCURACY AND VERIFICATION: METHODOLOGY - PROVIDER VALIDATION

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, Connected Nation 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 Connected Nation, 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; Connected Nation 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 to 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, BroadbandStat, 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 Connected Nation 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 Connected Nation 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 Connected Nation to resolve inaccuracies as they are identified to ensure that only the highest quality information is provided to stakeholders.

DATA VALIDATION: SURVEY RESEARCH

Between June and July 2010, Connect Minnesota conducted a statistically significant telephone survey of 800 businesses, to offer as a comparison against the provider-validated statewide

broadband inventory. The survey provides an estimate of the percentage of all Minnesota businesses and a subset percentage of *rural* Minnesota businesses that report that they are unaware of available broadband service at their location. These figures are then compared against broadband availability estimates derived from provider-supplied data to provide a macro-level comparison to the provider-validated data. This test measures how state businesses' awareness of broadband availability compares to provider-validated availability information. Results are reported below.

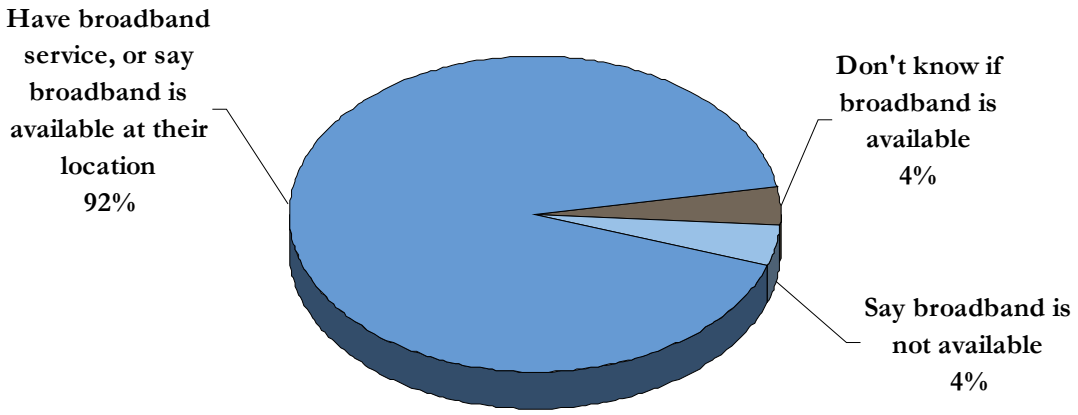
DATA VALIDATION: METHODOLOGY

Connect Minnesota conducted a random digit dial (RDD) survey of 800 businesses contacted between June 23 and July 21, 2010. Data were collected by telephone through live, computer-assisted interviews, with quotas set by business size and industry sector to ensure adequate representation of all businesses across the state. Weights were applied to correct for minor variations and ensure that the sample matched U.S. Census estimates of the state's business establishments, as reported in their County Business Patterns Report. The statewide full sample (n=800) provides a margin of error of ±4.9% at the 95% level of confidence. The full sample of rural businesses (n=273 businesses located in rural counties) provides a margin of error of ±8.1% at the 95% level of confidence. These sample errors account for sample weighting, using the effective sample size. For the purposes of this survey, broadband is defined as "an Internet connection with speeds of 768 kilobits per second or higher in at least one direction."

Results

Statewide, 4% of businesses report that broadband service is not available at their location, another 4% don't know if broadband is available, and 92% report with certainty that broadband is available (Figure 1).

Figure 1.
Awareness of broadband availability among Minnesota businesses

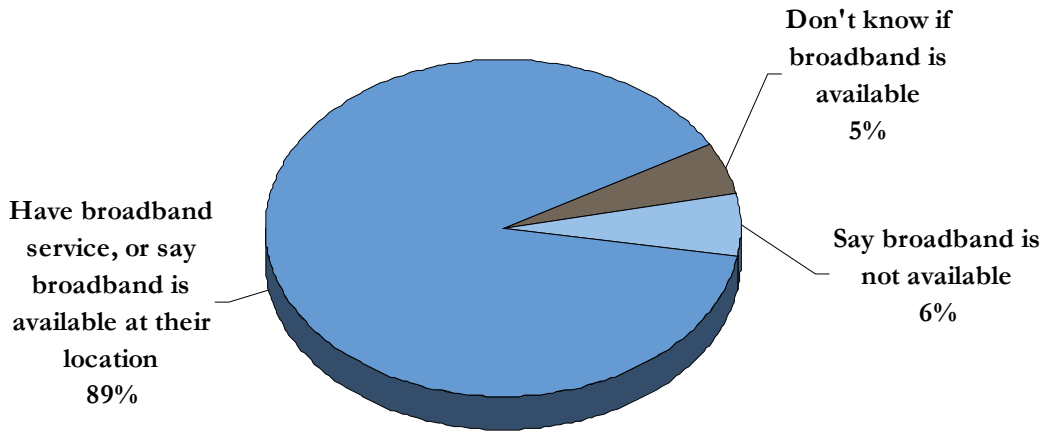


Taking into account the survey's margin of error, the results estimate that between 0% and 8.9% of Minnesota businesses do not have broadband service available.

Estimates derived from provider-validated data indicate that approximately 3.41% of Minnesota households do not have terrestrial fixed broadband service available, and approximately 0.42%[1] of Minnesota households have neither mobile nor fixed broadband service available.[2]

Among rural businesses, 6% of respondents report that broadband service is not available to them, 5% do not know if broadband is available, and 89% report with certainty that broadband is available (Figure 2).

Figure 2.
Awareness of broadband availability among *rural* Minnesota businesses



Taking into account the survey's margin of error, the results estimate that between 0% and 14.1% of rural Minnesota businesses do not have broadband service available.

[1] In accordance with NTIA's definition of available broadband service as specified in the SBDD NOFA, this estimate includes both terrestrial fixed *and* mobile broadband service, if the service offers download speeds of at least 768 Kbps and upload speeds greater than 200 Kbps.

[2] Due to the nature of the SBDD 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.

Results derived from provider-validated data indicate that approximately 7.24% of rural Minnesota households do not have terrestrial fixed broadband service available, and approximately 0.75%[3] of rural Minnesota households have neither mobile nor fixed broadband service available.[4]

WIRELESS METHODOLOGY

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

Data is solicited from the wireless provider to include, but is not limited to:

1. The name of the structure
2. Whether the transmitting device is operational or proposed
3. The maximum advertised downstream speed and the maximum advertised upstream speed
4. The typical downstream speed and the typical upstream speed (peak periods for both)
5. The frequency range of spectrum being used (as prescribed by NTIA)
6. The primary population center(s) being served (for geopolitical boundary reference)
7. Latitude in either Degrees, Minutes and Seconds and/or in Decimal Degrees (typically received as NAD 27 or NAD 83)
8. Longitude in either Degrees, Minutes and Seconds and/or in Decimal Degrees (typically received as NAD 27 or NAD 83)
9. 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)
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 manufacturers' specification sheet)
18. Power output of the transmitting device (if unknown FCC standards 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 only in metropolitan areas – accounts for types and heights of buildings)

Propagation modeling is an empirical mathematical formulation for the characterization of radio wave propagation as a function of frequency, distance, and other conditions. Propagation software

[3] Ibid.
[4] Ibid.

typically uses 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, 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).

BROADBAND INQUIRIES METHODOLOGY

Connected Nation collects consumer feedback in the form of broadband inquiries. These inquiries represent any type of communication received from the public regarding broadband service. Once broadband inquiries are received across the state, this information is overlaid with the broadband availability information which was collected through the SBDD program. This allows for a real-world comparison of the broadband landscape to the information received from broadband inquiries. Broadband inquiries are able to provide three types of information: 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.

Through the collection of broadband inquiries, a visual demand for broadband is presented. This visualization allows Connected Nation the ability to validate broadband availability maps for accuracy. If residents within a region state that they are without broadband, but the broadband inventory maps show otherwise, this allows Connected Nation 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. On the other hand, if there is a region in the state in which broadband is not available, broadband inquiries allow providers close to that region to see where they can successfully expand their broadband networks, leading to a high return on investment. In short, the higher number of inquiries leads to a higher level of certainty in regard to the broadband availability maps. Since the initial data collection and release of corresponding maps, feedback in the form of broadband inquiries has allowed Connected Nation to identify additional areas that are in need of field validation, which are scheduled as soon as possible. Additional information on field validation can be found in the Field Validation Narrative.

The broadband inquiry process has been implemented in several other Connected Nation state programs with successful results. Citizens in the State of Tennessee have submitted over 10,000 broadband inquiries since 2007, allowing the Connected Tennessee program to evaluate each inquiry for broadband demand and data verification. These inquiries are continuously examined against current broadband availability, updated every three months, to determine if previously unserved households have been expanded to and can now received broadband access at their residence. This database of broadband inquiries has also allowed Connected Tennessee 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 state 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 Connected Tennessee has 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 Tennessee has been altered to create a more accurate map based on the inquiries submitted by the public.

During this reporting period, the Connect Minnesota project has received a total of 45 inquiries (63 grant inception to date). As more inquiries are submitted to Connect Minnesota, 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.

BROADBANDSTAT METHODOLOGY

BroadbandStat is an online, interactive mapping tool for viewing, analyzing, and validating broadband data. Developed through a partnership with ESRI, the market leader in geographic information system (GIS) software, BroadbandStat 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, BroadbandStat 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 education and population demographics, broadband availability, and research about the barriers to adoption.

The Connect Minnesota project launched BroadbandStat on May 21, 2010, and has received a total of 1,409 visits to date.

SPEED TEST METHODOLOGY

The 1,567 speed tests that are represented in the Connect Minnesota Speed Test Report during this reporting period (3,111 grant inception to date) are the result of a partnership between Connected Nation and Ookla Net Metrics. Utilizing this relationship increases the level of confidence in the data being collected and provides for a far greater sample size than could be collected by a single testing site.

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

In an effort to validate broadband data from the Connect Minnesota 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. This collection of speed information is two tiered. First, it allows for a comprehensive dataset of speeds, while also providing Connect Minnesota 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 Minnesota.

Broadband Provider Log

Complete	108
Non-Responsive/Refused	5
In Progress	22
Count of Datasets by Status	**135**
Total Unique Providers Represented	**123**

Provider Name	Platform	Status	NDA Execution Date	Notes
AT&T Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/16/2009	
Blue Earth Valley Telephone Company	Fiber	Data Added to Statewide Inventory	6/16/2010	
Broadband Corp	Fixed Wireless	Data Added to Statewide Inventory	5/11/2010	
CenturyLink	ILEC/CLEC	Data Added to Statewide Inventory	12/4/2009	
Comcast Cable Communications, LLC	Cable	Data Added to Statewide Inventory	12/7/2009	
Federated Telephone Cooperative	Fixed Wireless	Data Added to Statewide Inventory	4/1/2010	
Frontier Communications Corporation	ILEC/CLEC	Data Added to Statewide Inventory	1/22/2010	
Garden Valley Telephone Company	Fiber	Data Added to Statewide Inventory	2/17/2010	
Garden Valley Telephone Company	ILEC/CLEC	Data Added to Statewide Inventory	2/17/2010	
Gardonville Cooperative Telephone	Fixed Wireless	Data Added to Statewide Inventory	2/23/2010	
Hiawatha Broadband Comunications, Inc.	Fiber	Data Added to Statewide Inventory	3/8/2010	
Johnson Telephone Company	ILEC/CLEC	Data Added to Statewide Inventory		
Midcontinent Communications	Cable	Data Added to Statewide Inventory	12/9/2009	
Qwest Corporation	ILEC/CLEC	Data Added to Statewide Inventory	1/4/2010	
Savage Communications	Cable	Data Added to Statewide Inventory	2/19/2010	
Sprint Nextel Corporation	Mobile Wireless	Data Added to Statewide Inventory	1/14/2010	
T-Mobile USA, Inc.	Mobile Wireless	Data Added to Statewide Inventory	1/8/2010	
TDS Telecommunications Corporation	ILEC/CLEC	Data Added to Statewide Inventory	1/27/2010	
TDS Telecommunications Corporation	Fiber	Data Added to Statewide Inventory	1/27/2010	
US Cable Corp.	Cable	Data Added to Statewide Inventory	5/20/2010	
Verizon Communications, Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/14/2009	
Midcontinent Communications	Backhaul	Backhaul Provider Only Processing Complete	12/9/2009	
TDS Telecommunications Corporation	Backhaul	Backhaul Provider Only Processing Complete	1/27/2010	
Verizon Communications, Inc.	Backhaul	Backhaul Provider Only Processing Complete	12/14/2009	
Zayo Group, LLC	Backhaul	Backhaul Provider Only Processing Complete		
McLeodUSA Telecommunications Services, Inc.	ILEC/CLEC	All Data Received		
US Cable Corp.		Provider Gathering Data	5/20/2010	
360networks		No Update to Provide	1/19/2010	
Ace Telephone Association		No Update to Provide	8/3/2010	
Alliance Communications Cooperative, Inc.		No Update to Provide		
Arrowhead Communications		No Update to Provide	4/14/2010	
Arvig Communications Systems		No Update to Provide	3/30/2010	
AT&T Inc.		No Update to Provide	12/16/2009	
Barnesville Municipal Telephone		No Update to Provide	3/4/2010	
Benton Cooperative Telephone Co.		No Update to Provide	6/16/2010	
Cable ONE Inc.		No Update to Provide	12/7/2009	
CenturyLink		No Update to Provide	12/4/2009	
Charter Communications		No Update to Provide	12/15/2009	
City of Windom		No Update to Provide		
Clara City Telephone Company		No Update to Provide	2/5/2010	
Clearwire Corporation		No Update to Provide	3/3/2010	
DIECA Communications, Inc.		No Update to Provide	1/19/2010	
diversiCOM		No Update to Provide	4/20/2010	
Eagle Valley Telephone Company		No Update to Provide	4/14/2010	
Emily Cooperative Telephone Company		No Update to Provide	6/24/2010	
EN-TEL Communications, LLC		No Update to Provide		
Farmers Mutual Telephone Company		No Update to Provide	4/1/2010	
Felton Telephone Company		No Update to Provide	4/14/2010	
Genesis Wireless		No Update to Provide		
Granada Telephone Company		No Update to Provide	4/14/2010	
Halstad Telephone Company		No Update to Provide	6/16/2010	
Harmony Telephone Company		No Update to Provide	1/12/2010	
Hickory Tech Corporation		No Update to Provide		
HomeTown Solutions LLC		No Update to Provide	4/1/2010	
Hutchinson Telecommunications Inc.		No Update to Provide	4/14/2010	
Info Link Wireless, Inc.		No Update to Provide	4/19/2010	
Interstate Telecommunications		No Update to Provide	2/10/2010	
InvisiMax, Inc.		No Update to Provide		
Jaguar Communications		No Update to Provide	4/12/2010	
KM Telecom		No Update to Provide	6/30/2010	
Lakedale LINK		No Update to Provide		
Lakedale Telephone		No Update to Provide		
Lonsdale Telephone Company		No Update to Provide		
Loretel Systems, Inc.		No Update to Provide	4/14/2010	
Mabel Cooperative Telephone Company		No Update to Provide	4/7/2010	
Manchester-Hartland Telephone Company		No Update to Provide	4/14/2010	
Mediacom Minnesota, LLC		No Update to Provide	1/12/2010	
Minnesota Valley Telephone Company		No Update to Provide	4/29/2010	
Minnesota Valley TV Improvement		No Update to Provide	4/13/2010	
New Ulm Telecom Inc.		No Update to Provide	2/25/2010	

Otter Tail Telecom		No Update to Provide	3/18/2010	
Paul Bunyan Rural Telephone Cooperative		No Update to Provide	6/24/2010	
Pine Island Telephone Company		No Update to Provide	4/14/2010	
Polar Telcom, Inc.		No Update to Provide	2/11/2010	
Red River Rural Telephone Association		No Update to Provide	3/17/2010	
River Valley Telecommunications Coop		No Update to Provide	4/28/2010	
Rothsay Telephone Company		No Update to Provide	2/18/2010	
Runestone Telecom Association		No Update to Provide	4/14/2010	
Sacred Heart Telephone Company		No Update to Provide	2/5/2010	
Scott Rice Telephone		No Update to Provide	2/15/2010	
Sheehan Gas		No Update to Provide		
Sioux Valley Wireless		No Update to Provide	4/21/2010	
Sjoberg's Inc.		No Update to Provide	12/21/2009	
Sleepy Eye Telephone Company		No Update to Provide	4/14/2010	
Southern Cablevision, Inc.		No Update to Provide	3/30/2010	
Spring Grove Cooperative Telephone Co.		No Update to Provide	1/12/2010	
Sprint Nextel Corporation		No Update to Provide	1/14/2010	
Starbuck Telephone Company		No Update to Provide	2/5/2010	
T-Mobile USA, Inc.		No Update to Provide	1/8/2010	
tw telecom of Minnesota, LLC		No Update to Provide	4/20/2010	
Upsala Cooperative Telephone Association		No Update to Provide		
VAL-ED Joint Venture		No Update to Provide	4/21/2010	
West Central Telephone Association		No Update to Provide	2/18/2010	
Western Telephone Company		No Update to Provide	4/14/2010	
Wikstrom Telephone Company		No Update to Provide	4/12/2010	
Winnebago Cooperative Telephone Association		No Update to Provide	6/17/2010	
Wolverton Telephone Company		No Update to Provide	6/22/2010	
Woodstock Telephone Company		No Update to Provide	2/18/2010	
XO Communications, LLC		No Update to Provide	2/12/2010	
Zumbrota Telephone Company		No Update to Provide	2/5/2010	
Albany Mutual Telephone Association		No Update Provided - Use Initial Data	3/4/2010	
Bradco-WISP Inc		No Update Provided - Use Initial Data		
Christensen Communications Co.		No Update Provided - Use Initial Data	2/2/2010	
CitEscape Wireless Internet, LLC		No Update Provided - Use Initial Data	1/25/2010	
Cogent Communications, Inc.		No Update Provided - Use Initial Data		
Consolidated Telecommunications		No Update Provided - Use Initial Data		
Crosslake Telephone Company		No Update Provided - Use Initial Data	6/16/2010	
Enterpoint Wireless		No Update Provided - Use Initial Data		
Evertek Enterprises LLC		No Update Provided - Use Initial Data	6/17/2010	
Level 3 Communications, LLC		No Update Provided - Use Initial Data	12/14/2009	
Chaska Net		Solicited Initial Data		
City of Detroit Lakes		Solicited Initial Data	5/10/2010	
Clements Telephone Company Inc.		Solicited Initial Data		
Cloudnet Inc		Solicited Initial Data		
Digital Telecommunications, Inc		Solicited Initial Data		
Dunnell Telephone Company		Solicited Initial Data		
Fibernet Monticello		Solicited Initial Data		
FTTH Communications		Solicited Initial Data		
Ideaone Telecom Group, LLC		Solicited Initial Data		
Maple Leaf Networks		Solicited Initial Data		
Redwood County Telephone Company		Solicited Initial Data		
Ridge Runner Internet Services Inc.		Solicited Initial Data		
USI Wireless		Contact Attempted		
Kentucky Data Link, Inc.		Refused to Participate		[JUL-22-10 Ira Dye] Company representative replied back and stated that they are "electing not to contribute at this time."
Knology of the Plains, Inc.		Refused to Participate		[MAY-11-10 Wes Kerr] Response received from company representative said: "I appreciate the follow-up. Unfortunately Knology will not be able to participate at this time. We are staffed very thinly and, at this time, we just don't have the resources to gather this and report this information. I apologize for not getting back to you sooner."
Nextera Communications		Refused to Participate		[SEP-9-10 Determan] After solicitation of Provider Data for the Connect Minnesota mapping project in accordance with the NOFA Nextera has chosen not to partcipate due to cost of data collection and CLEC status. We will continue to contact provider to solicit data.
A Better Wireless, NISP, LLC		Non-Responsive to Multiple Attempts		After multiple attempts between January 26 and April 21, three attempts were made between June 25 and August 27.

Minnesota Network Services		Non-Responsive to Multiple Attempts		Attempts to reach provider representative have been unsuccessful.
DIECA Communications, Inc.		Other	1/19/2010	[SEPT-17-10 Wes Kerr] This provider provided limited ILEC/CLEC data and will not be processed because there is no way of determining where residential or business services are or verifying these services.
DISH Network Corporation		Other	1/27/2010	[SEP-16-10 Brian Dudek] Satellite data will not be submitted due to additional information being necessary to show where service is available in the state, rather than submitting the entire state boundary as serviceable area.
Global Crossing Telecommunications, Inc.		Other		[JUL-26-10 Ira Dye] Global Crossing responded to follow-up and, due to legal constraints, they are unable to participate at this time.
Hughes Network Systems, LLC		Other	2/5/2010	[SEP-16-10 Brian Dudek] Satellite data will not be submitted due to additional information being necessary to show where service is available in the state, rather than submitting the entire state boundary as serviceable area.
Midcontinent Communications		Other	12/9/2009	[08-12-10 Dudek] Received fiber data, but it is business only.
Utopian Wireless Coporation		Other		[AUG-12-10 Wes Kerr] Utopian confirmed that they do not yet offer any services however will begin offering services in Quarter 4 of
WildBlue Communications, Inc.		Other	1/8/2010	[SEP-16-10 Brian Dudek] Satellite data will not be submitted due to additional information being necessary to show where service is available in the state, rather than submitting the entire state boundary as serviceable area.