

**OFFICIAL APRIL 2011 UPDATE SUBMISSION TO
THE NATIONAL TELECOMMUNICATIONS AND INFORMATION
ADMINISTRATION UNDER THE
STATE BROADBAND DATA AND DEVELOPMENT GRANT PROGRAM
FOR THE STATE OF KANSAS**



April 1, 2011

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KANSAS COVER LETTER

April 1, 2011

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:

It is with highest regard that the collective stakeholders of Connect Kansas offer congratulations to the U.S. Department of Commerce's National Telecommunications & Information Administration (NTIA) on the recent release of the National Broadband Map. This extraordinary milestone demonstrates the intense and joint effort of the NTIA, FCC, state governments, industry, and non-profits like Connected Nation and will serve as a key tool for the American public and policymakers resulting in smarter investments and targeted state and local broadband policies and programs. We are proud of the role that Connect Kansas has played in creating such a powerful tool that will surely benefit not just Kansans, but consumers and businesses nationwide.

Therefore, Connected Nation as the State Broadband Designated Entity, in partnership with the Kansas Department of Commerce (KDOC), is pleased to present this submittal of the state of Kansas State Broadband Data and Development (SBDD) Grant Program, known as Connect Kansas.

These artifacts should be found to be compliant with the April 1, 2011, 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 Kansas: April 1, 2011

<u>NOFA Requirement</u>	<u>Data Transfer Model</u>	<u>Data Description</u>
Appendix A: 1(a)(i)	BB_Service_CensusBlock	Broadband Service Availability of Facilities-Based Providers in Census Blocks of No Greater Than Two Square Miles in Area
Appendix A: 1(a)(ii)	BB_Service_RoadSegment	Broadband Service Availability of Facilities-Based Providers by Road Segment in Census Blocks Larger in Area Than Two Square Miles

Appendix A: 1(b)	BB_Service_Wireless	Broadband Service Availability of Wireless Services Not Provided to a Specific Address
Appendix A: 3(b)	BB_ConnectionPoint_MiddleMile	Broadband Service Infrastructure Middle-Mile and Backbone Interconnection Points
Appendix A: 4	BB_Service_CAInstitutions	Community Anchor Institutions-Listing
Appendix A: 4	n/a	Community Anchor Institutions-Narratives
VII.A.1(a)	n/a	Accuracy and Verification Report
n/a	DataPackage.xlsx	Worksheets of Contact Information, 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 October 2010 SBDD data submission for the Connect Kansas program. Specifically, these new requirements are:

SBDD Data Transfer Model

The submission of the broadband dataset for April 1, 2011, is contained within the SBDD Data Transfer Model as released on the Grantee Workspace on January 14, 2011. 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

This submission also includes the updated DataPackage spreadsheet with enhanced provider listings as well as satisfactory outputs from the SBDD_Check toolbox to ensure fewer unexpected values with the submitted broadband datasets prior to federal processing for the National Broadband Map update.

It is therefore with great pleasure that the Connect Kansas program submits this April 2011 semi-annual data update under the State Broadband Data and Development Grant Program. We will continue to implement 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 SBDD includes the participation of 86% of the Kansas provider community, or 86 of 100 total providers. Of the 86 participating providers, 47 supplied an update to their network or coverage area(s), while 38 have reported no change. The remaining provider previously supplied data but was non-responsive in the April 2011 update effort; therefore

its 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. Of the 14 providers that are not represented in the attached datasets, 9 have either refused to participate in the voluntary program or have remained unresponsive to the numerous attempts at contact by Connect Kansas. The remaining 5 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 Kansas principals that all commercially reasonable efforts were made to account for 100% of the known Kansas broadband provider community, pursuant to this semi-annual data update submission.

Connect Kansas has also continued to perform broadband verification activities through several means. In addition to confirmation of service area(s) by each provider, Connect Kansas conducts field validation efforts; between the October 2010 and this April 2011 data submission, 53 (53%) providers have been validated through field verification activities. Additional details on verification activities are contained within the Field Validation Narrative.

At the program's inception, Connect Kansas launched a website to create awareness about the initiative. Connectkansas.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 Connect Kansas website encountered 5,236 unique visits during this reporting period and 11,499 total to date for the life of the grant (awarded on November 1, 2009). Additionally, this pronounced Web activity netted 39 broadband inquiries over this same reporting period (393 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 Kansas website and the Connect Kansas Interactive Mapping Tool (BroadbandStat) that offer the citizens the vehicles to provide information regarding availability in their respective service area, either in affirmation or contest of the reported data represented in the Connect Kansas 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.

Community Anchor Institutions

Connect Kansas 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 state of Kansas, outreach was conducted during this data update reporting period by Connect Kansas to continue identification of existing, centralized sources for CAI connectivity data. Outreach was coordinated to distribute the CAI survey to institutions throughout the state through multiple methods including a customized online survey available on the Connect

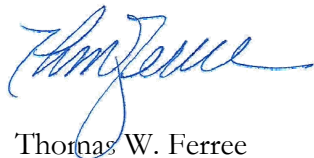
Kansas website. Connect Kansas continues to work diligently in the state to identify statewide associations and to work closely with organizations such as the Kansas State Library, Kansas Department of Education, and the State Office of the Adjutant General to promote the importance of broadband connectivity at anchor institutions and participation in this data collection process.

While we continue to document institutions and the related addresses, the connectivity data collected in most categories remains incomplete at this time. Connect Kansas will be implementing a number of new processes to increase participation including launching a CAI newsletter to connect communities across the state, increasing industry-specific planning to target new community contacts, and revising the CAI portion of our website to increase visibility and content. Additionally, Connect Kansas will continue to work collaboratively with the Kansas Broadband Advisory Task Force to identify opportunities to gather and promote CAI data. From our work in Kansas, as well as other states, we recognize the great value of this data to future collaboration efforts within the state and its value to the recently released National Broadband Map. We plan to continue to bring best practices to the Connect Kansas 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.

In acquiring both broadband availability and CAI data within the state of Kansas, Connected Nation has previously engaged all federally recognized tribal lands in the area covered by the Connect Kansas SBDD grant and reported that outreach as part of past submissions. Throughout the next reporting period Connect Kansas plans to engage directly with these tribal communities and will also conduct affirmative outreach with Native American tribal organizations that are active within the area. Connect Kansas understands the connectivity challenges facing these tribes, and we have identified a need to include their data as part of our upcoming submissions.

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

Respectfully submitted,



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

DATA ACQUISITION: KANSAS COMMUNITY ANCHOR INSTITUTIONS

In this third reporting period of the SBDD, Connect Kansas, working in close coordination with the Kansas 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. During this reporting period Connect Kansas has continued to focus efforts on conducting outreach and raising awareness of this important project.

Connect Kansas 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 Kansas through ESRI ArcGIS software.

Connect Kansas continues to utilize a customized online survey hosted through SurveyMonkey, with a landing page on the Connect Kansas website that was developed during the first reporting period. This survey, in combination with a customized data gathering spreadsheet, was distributed to a targeted list of CAI throughout the state. Connect Kansas 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.

The survey can be accessed at this link (no password required):

http://www.connectkansas.org/mapping/Community_Anchor_Institution_Data_Collection.php

Connect Kansas and the Kansas Department of Commerce have worked closely during this reporting period to conduct research as part of an ongoing process to identify existing, centralized sources for CAI connectivity data. The Kansas State Library is currently compiling data from its own internal sources on hundreds of libraries in the state. Connect Kansas will be submitting this data in the next reporting period.

In tandem with these efforts to identify existing data, Connect Kansas continues to identify key 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.

Connect Kansas continues to utilize the extensive database of contact information that was provided by the Kansas Department of Education (KanEd) to distribute surveys to schools and hospitals throughout the state. Additionally, Connect Kansas will once again be working with the Kansas Adjutant General to distribute surveys to key public safety contacts throughout the state in the coming months. Connect Kansas expects another increase in this data for the upcoming reporting period.

Connect Kansas 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. To assist with our data collection efforts, Connect Kansas is developing a CAI newsletter to be distributed quarterly beginning in April 2011. The newsletter will highlight a

CAI in Kansas, encourage institutions to share their data, and highlight the National Broadband Map.

The greatest challenge with collecting this data continues to be the difficulty in securing CAI broadband connectivity data. Connect Kansas will continue its ongoing work with the Kansas Department of Commerce and key organization contacts in an effort to raise awareness of this project among CAI. An update on our current data will be provided to the Kansas Broadband Advisory Task Force and participation by its members to assist with promoting our survey will be encouraged. Leading up to the next reporting period, Connect Kansas will be specifically focusing on leveraging our relationship with the Kansas Adjutant General's office to secure additional public safety data, continuing to utilize data from the Kansas Department of Education, and focusing on securing data from governmental entities.

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	2,175	2,174	2,175	885	1,998	1,999
Libraries	438	438	438	220	330	261
Healthcare	245	245	244	132	197	196
Public Safety	1,698	1,684	1,696	302	112	107
Higher Ed Institutions	103	103	102	76	101	100
Other Government	520	519	520	265	267	266
Other Non-Government	3	3	3	3	3	3
Total	5,182	5,166	5,178	1,883	3,008	2,932

SBDD DATA SUBMISSION METHODOLOGY

The submission of the broadband dataset for April 1, 2011, is contained within the SBDD Data Transfer Model and additional components as released on the Grantee Workspace on January 14, 2011. 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 or territory, 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. Guidance from the Technical Mapping Guide, as released on the Grantee Workspace on March 24, 2011, was also 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.

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 Kansas.

Inventory of Deliverables, Connect Kansas: April 1, 2011

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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 Kansas 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, 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 it is not included in this submission dataset. Additional information is necessary to be able to show where service satisfactorily exists in the state, rather than submitting the entire boundary of the state as the serviceable area. Analysis information distributed and discussed with the satellite providers, as well as any additional guidance from the Program Office on the desired analysis for satellite-serviceable areas, will be implemented for the October 2011 data submission.

KANSAS FIELD VALIDATION NARRATIVE

Connected Nation 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 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 Connected Nation's state specific websites.

Additionally, Connected Nation cross-referenced numerous public documents in order to ensure that all known broadband providers were located and contacted. This included searching membership logs from the 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 has conducted field validation on 53 (53%) of the viable providers in Kansas. Field validation tests have been conducted on Allegiance Communications, AT&T, Benson Telephone Service, BroadBand Wireless Internet (BBWI), Cable ONE Inc., CenturyLink, Clearwire Corporation, Columbus Telephone Company, Cox Communications Inc., Craw-Kan Telephone Cooperative Inc., CTC Wireless Internet, Cyber Lodge Wireless, Eagle Communications Inc., Elkhart Telephone Company Inc., Fairpoint Communications Inc., Golden Belt Telephone Association Inc., H&B Cable Service Inc., Haviland Telephone Company, IdeaTek Systems Inc., J.B.N. Telephone Company, Kanokla Telephone, Kansas Broadband Internet Inc., LaHarpe Telephone Company Inc., Madison Telephone Company LLC, Mediacom Communications Corporations, Mercury Wireless, Mid-Kansas Cable Services, Midwest Connections Inc., Mobil1.net, Moundridge Telephone Company Inc., Pioneer Telephone Association, Pixius Communications LLC, Rainbow Telecommunications Associations Inc., Rural Telephone Service Company Inc., S&A Telephone Company Inc., S&T Telephone Cooperative Association, SKT Inc., South Central Telephone Association, Sprint, St. Joe Wireless, Sumner Communications, Sunflower Broadband (Knology), The Computer Generation, Totah Communications Inc., Tri-County Telephone Association Inc., Tri-Rivers, United Telephone Association, U.S. Cellular, Valnet LLC, Verizon Communications Inc., Wamego Telecommunications Company Inc., Wave Wireless, Wheat State Telephone Inc., and Wheatland Electric Cooperative Inc.

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.

Estimates derived from provider-validated data indicate that approximately 2.29% of Kansas households do not have terrestrial fixed broadband service available, and approximately 0.12%¹ of Kansas households have neither mobile nor fixed broadband service available.²

Within rural areas of the state, results derived from provider-validated data indicate that approximately 4.85% of rural Kansas households do not have terrestrial fixed broadband service

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.

available, and approximately 0.28%³ of rural Kansas 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 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)
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)

³ See footnote 1.

⁴ See footnote 2.

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 Federal Communications Commission Universal Licensing System and the **CO**mmission **RE**gistration **S**ystem

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(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).

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 territory in which broadband is not available, the 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 each of the Connected Nation state programs with successful results. Altogether Connected Nation has received over 16,000 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 Connected Nation state programs to aggregate demand in concentrated areas to show providers the exact locations where the population has made it clear that they would purchase broadband if it was made available to them. Providers in the states have responded to this process and have expanded to areas knowing that their investment will be worthwhile. Data verification methods have also proven successful, as the state programs have been able to show those inquiries that indicate the broadband service areas are misrepresented on the map to providers, who then verify where service cannot reach in regard to that residence(s). The broadband coverage in these states has been altered to create a more accurate map based on the inquiries submitted by the public.

During this reporting period, the Connect Kansas project has received a total of 39 inquiries (393 grant inception to date). As more inquiries are submitted to Connect Kansas, 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.

BROADBAND INVENTORY MAPS

The Broadband Inventory Maps are printer-friendly maps that include broadband coverage, cities, and towns, county boundaries, and detailed road information across the state of Kansas. The accuracy of these maps is critical to the future of broadband infrastructure planning in Kansas. The purpose of the maps is two-fold:

- **Data Verification** – Broadband providers and the public should use the map to ensure the current service area is accurately reflected.
- **Broadband Expansion Plans** – Broadband providers can use the inventory maps and unserved household density maps to learn where there are currently unserved areas that are densely populated. These maps can aid providers in identifying potential areas of expansion that could yield a high return on investment.

To date, the Connect Kansas Broadband Inventory Maps have received a total of 9,358 downloads. Of those 9,358 downloads, the Statewide Broadband Inventory Maps received 902 downloads, the County Broadband Inventory Maps received 6,116 downloads, and the census block level data received 1,907 downloads.

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.

New functionality in BroadbandStat allows the consumers to 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 Connected Nation 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 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.

The Connect Kansas project launched BroadbandStat on September 23, 2010, and has received a total of 950 visits to date, of which 932 occurred this reporting period.

SPEED TEST METHODOLOGY

The 909 speed tests that are represented in the Connect Kansas Speed Test Report during this reporting period (2,014 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 Kansas speed test website, for partners around the world. This network of sites that is developed and run on its testing technology provides Ookla with a vast dataset that, due to the variability of geographic information collected across the varying speed test sites, is geocoded utilizing Geo-IP technology. This technology allows for tests to be geocoded to points of aggregation, typically larger nodes across provider networks. While there are hundreds of thousands of tests that have been conducted, the level of aggregation is only sufficient for county-level detail due to the test results being located at these larger nodes and not at an absolute location for each speed test.

In an effort to validate broadband data from the Connect Kansas project, speed test information is collected throughout the state. Speed tests provide speed information on the path taken through all networks (a provider's network as well as additional networks) a local machine must connect to in order to reach the host test. The benefit of this collection of speed information is two-tiered. First, it allows for a comprehensive dataset of speeds, while also providing Connect Kansas 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 Kansas.



Broadband Provider Log

Complete	142
Non-Responsive/Refused	12
In Progress	17
Count of Datasets by Viable Status	171
Total Unique Providers Represented	100

Provider Name	Platform	Status	NDA Execution Date	Notes
Allegiance Communications	Cable	Data Added to Statewide Inventory	2/4/2010	
AT&T Communications of Texas, Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/16/2009	
AT&T Communications of Texas, Inc.	ILEC/CLEC	Data Added to Statewide Inventory	12/16/2009	
Atwood Cable Systems, Inc.	Cable	Data Added to Statewide Inventory		
Benkelman Telephone Company	Fiber	Data Added to Statewide Inventory	1/12/2010	
Blue Valley Tele-Communications, Inc.	Cable	Data Added to Statewide Inventory	11/17/2009	
Blue Valley Tele-Communications, Inc.	ILEC/CLEC	Data Added to Statewide Inventory	11/17/2009	
Blue Valley Tele-Communications, Inc.	Fiber	Data Added to Statewide Inventory	11/17/2009	
Cable ONE, Inc.	Cable	Data Added to Statewide Inventory	12/7/2009	
CenturyLink	ILEC/CLEC	Data Added to Statewide Inventory	12/4/2009	
Cequel Communications, LLC	Cable	Data Added to Statewide Inventory	12/15/2009	
City of Chanute	Fiber	Data Added to Statewide Inventory		
Clearwire Corporation	Mobile Wireless	Data Added to Statewide Inventory		
Comcast Cable Communications, LLC	Cable	Data Added to Statewide Inventory	12/7/2009	
Craw-Kan Telephone Cooperative, Inc.	Fixed Wireless	Data Added to Statewide Inventory	12/7/2009	
Craw-Kan Telephone Cooperative, Inc.	Fiber	Data Added to Statewide Inventory	12/7/2009	
Cunningham Communications, Inc.	Fiber	Data Added to Statewide Inventory	9/8/2009	
Eagle Communications, Inc.	Fixed Wireless	Data Added to Statewide Inventory		
Eagle Communications, Inc.	Cable	Data Added to Statewide Inventory		
Eagle Communications, Inc.	Fiber	Data Added to Statewide Inventory		
Golden Belt Telephone Association, Inc.	Fiber	Data Added to Statewide Inventory		
Golden Belt Telephone Association, Inc.	Cable	Data Added to Statewide Inventory		
H & B Cable Service, Inc.	ILEC/CLEC	Data Added to Statewide Inventory	10/13/2009	
H & B Cable Service, Inc.	Fiber	Data Added to Statewide Inventory	10/13/2009	
H & B Cable Service, Inc.	Fixed Wireless	Data Added to Statewide Inventory	10/13/2009	
Home Communications, Inc.	ILEC/CLEC	Data Added to Statewide Inventory	11/5/2009	
Home Communications, Inc.	Fiber	Data Added to Statewide Inventory	11/5/2009	
KanOkla Telephone Association, Inc.	Fixed Wireless	Data Added to Statewide Inventory	12/18/2009	
Knology of Kansas	Cable	Data Added to Statewide Inventory		
Knology of Kansas	Fixed Wireless	Data Added to Statewide Inventory		
Leap Wireless International, Inc.	Mobile Wireless	Data Added to Statewide Inventory	4/6/2010	
Mercury Wireless	Fixed Wireless	Data Added to Statewide Inventory	3/25/2010	
Moundridge Telephone Company, Inc.	ILEC/CLEC	Data Added to Statewide Inventory	10/7/2009	
Mutual Telephone Company	Fixed Wireless	Data Added to Statewide Inventory	12/9/2009	
North Central Kansas Community Network	Fixed Wireless	Data Added to Statewide Inventory		
Peoples Telecommunications, LLC	ILEC/CLEC	Data Added to Statewide Inventory	12/1/2009	
Pioneer Telephone Association, Inc.	Cable	Data Added to Statewide Inventory	12/7/2009	
Rural Telephone Service Company, Inc.	Fixed Wireless	Data Added to Statewide Inventory	11/16/2009	
Rural Telephone Service Company, Inc.	ILEC/CLEC	Data Added to Statewide Inventory	11/16/2009	
Rural Telephone Service Company, Inc.	Fiber	Data Added to Statewide Inventory	11/16/2009	
South Central Telephone Association	ILEC/CLEC	Data Added to Statewide Inventory	12/17/2009	
South Central Telephone Association	Fiber	Data Added to Statewide Inventory	12/17/2009	
Sprint Nextel Corporation	Mobile Wireless	Data Added to Statewide Inventory	1/14/2010	
St. Joe Wireless	Fixed Wireless	Data Added to Statewide Inventory		
Stelera Wireless, LLC	Mobile Wireless	Data Added to Statewide Inventory		
Sumner Cable TV, Inc.	Fixed Wireless	Data Added to Statewide Inventory		
Sumner Cable TV, Inc.	Cable	Data Added to Statewide Inventory		
SWKO, Inc.	Fixed Wireless	Data Added to Statewide Inventory	2/18/2011	
T-Mobile USA, Inc.	Mobile Wireless	Data Added to Statewide Inventory	1/8/2010	
Time Warner Cable LLC.	Cable	Data Added to Statewide Inventory	12/21/2009	
Tri-County Telephone Association, Inc.	ILEC/CLEC	Data Added to Statewide Inventory	12/1/2009	
Tri-County Telephone Association, Inc.	Fiber	Data Added to Statewide Inventory	12/1/2009	
Tri-County Telephone Association, Inc.	Fixed Wireless	Data Added to Statewide Inventory	12/1/2009	
United States Cellular Corporation	Mobile Wireless	Data Added to Statewide Inventory	2/15/2011	
Vainet Telecommunications, LLC	Fixed Wireless	Data Added to Statewide Inventory		
Verizon Communications, Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/14/2009	
Wamego Telecommunications Company, Inc.	ILEC/CLEC	Data Added to Statewide Inventory	9/29/2009	
Wheatland Broadband Services	Fixed Wireless	Data Added to Statewide Inventory	6/17/2010	
Wilson Telephone Company, Inc.	Fiber	Data Added to Statewide Inventory	9/29/2009	
Zito Midwest, LLC	Cable	Data Added to Statewide Inventory	2/17/2011	[JAN-19-11 Daryl Coffey] Zito Midwest purchased Galaxy Cable.
CenturyLink	Backhaul	Backhaul Provider Only Processing Complete	12/4/2009	
City of Chanute	Backhaul	Backhaul Provider Only Processing Complete		
Cogent Communications, Inc.	Backhaul	Backhaul Provider Only Processing Complete		
Level 3 Communications, LLC	Backhaul	Backhaul Provider Only Processing Complete	12/14/2009	
MCC Missouri LLC	Backhaul	Backhaul Provider Only Processing Complete	1/12/2010	
Zayo Group, LLC	Backhaul	Backhaul Provider Only Processing Complete		
McLeodUSA Telecommunications Services, Inc.	ILEC/CLEC	Provider Approval Solicited		
Ace Computers	Fixed Wireless	Provider Gathering Data		
City of Coffeyville	Fixed Wireless	Provider Gathering Data		
JMZ CORPORATION	Fixed Wireless	Provider Gathering Data		
Knology of Kansas	Fiber	Provider Gathering Data		
Midwest Connections, Inc.	Fixed Wireless	Provider Gathering Data		
Benkelman Telephone Company	ILEC/CLEC	No Update to Provide	1/12/2010	
Benson Tel Service Inc.	Fixed Wireless	No Update to Provide	12/15/2009	
Blue Valley Tele-Communications, Inc.	Fixed Wireless	No Update to Provide	11/17/2009	

Cequel Communications, LLC	Backhaul	No Update to Provide	12/15/2009	
Columbus Telephone Company	Fiber	No Update to Provide	10/2/2009	
CoxComm Inc.	Cable	No Update to Provide	1/29/2010	
CoxComm Inc.	Backhaul	No Update to Provide	1/29/2010	
Craw-Kan Telephone Cooperative, Inc.	ILEC/CLEC	No Update to Provide	12/7/2009	
CTC Wireless Internet	Backhaul	No Update to Provide	11/20/2009	
Cunningham Communications, Inc.	Cable	No Update to Provide	9/8/2009	
Cunningham Communications, Inc.	ILEC/CLEC	No Update to Provide	9/8/2009	
Cyber Lodge Internet Services, Inc.	Fixed Wireless	No Update to Provide	1/6/2010	
Diller Telephone Company	ILEC/CLEC	No Update to Provide		
Eagle Communications, Inc.	Backhaul	No Update to Provide		
Elkhart Telephone Company, Inc.	Fiber	No Update to Provide	3/23/2010	
Elkhart Telephone Company, Inc.	Fixed Wireless	No Update to Provide	3/23/2010	
Elkhart Telephone Company, Inc.	Backhaul	No Update to Provide	3/23/2010	
Fairpoint Communications, Inc.	ILEC/CLEC	No Update to Provide	1/22/2010	
Fairpoint Communications, Inc.	Fixed Wireless	No Update to Provide	1/22/2010	
Golden Belt Telephone Association, Inc.	ILEC/CLEC	No Update to Provide		
Golden Belt Telephone Association, Inc.	Fixed Wireless	No Update to Provide		
Gorham Telephone Company, Inc.	ILEC/CLEC	No Update to Provide	9/30/2009	
Gorham Telephone Company, Inc.	Fiber	No Update to Provide	9/30/2009	
H & B Cable Service, Inc.	Cable	No Update to Provide	10/13/2009	
Haviland Telephone Company, Inc.	ILEC/CLEC	No Update to Provide	12/3/2009	
Haviland Telephone Company, Inc.	Fixed Wireless	No Update to Provide	12/3/2009	
Home Communications, Inc.	Cable	No Update to Provide	11/5/2009	
IdeaTek Systems, Inc.	Fiber	No Update to Provide	3/4/2010	
JBN Telephone Company, Inc.	Fixed Wireless	No Update to Provide	12/14/2009	
JBN Telephone Company, Inc.	ILEC/CLEC	No Update to Provide	12/14/2009	
KanOkla Telephone Association, Inc.	ILEC/CLEC	No Update to Provide	12/18/2009	
Kansas Broadband Internet, Inc.	Fixed Wireless	No Update to Provide	1/15/2010	
Kansas Data Internet, Inc.	Fixed Wireless	No Update to Provide		
KeyOn Communications, Inc.	Fixed Wireless	No Update to Provide	10/15/2009	
LaHarpe Telephone Company, Inc.	Fiber	No Update to Provide	9/28/2009	
Lawrence Freenet	Fixed Wireless	No Update to Provide	10/5/2009	
Madison Telephone Company, LLC	ILEC/CLEC	No Update to Provide	11/17/2009	
MCC Missouri LLC	Cable	No Update to Provide	1/12/2010	
Mokan Dial, Inc.	ILEC/CLEC	No Update to Provide	12/2/2009	
Mutual Telephone Company	Fiber	No Update to Provide	12/9/2009	
Mutual Telephone Company	Backhaul	No Update to Provide	12/9/2009	
Nautilus Net	Fixed Wireless	No Update to Provide		
Pioneer Telephone Association, Inc.	ILEC/CLEC	No Update to Provide	12/7/2009	
Pixius Communications LLC	Fixed Wireless	No Update to Provide		
Rainbow Telecommunications Association, Inc.	ILEC/CLEC	No Update to Provide	12/9/2009	
Rainbow Telecommunications Association, Inc.	Cable	No Update to Provide	12/9/2009	
Rainbow Telecommunications Association, Inc.	Fiber	No Update to Provide	12/9/2009	
Rainbow Telecommunications Association, Inc.	Fixed Wireless	No Update to Provide	12/9/2009	
Rebeltec Communications LLC	Fixed Wireless	No Update to Provide		
S & A Telephone Company, Inc.	ILEC/CLEC	No Update to Provide	11/20/2009	
S&T Telephone Cooperative Association	ILEC/CLEC	No Update to Provide	8/28/2009	
S&T Telephone Cooperative Association	Fiber	No Update to Provide	8/28/2009	
S&T Telephone Cooperative Association	Fixed Wireless	No Update to Provide	8/28/2009	
South Central Telephone Association	Backhaul	No Update to Provide	12/17/2009	
Southern Kansas Telephone Company, Inc.	ILEC/CLEC	No Update to Provide	12/31/2009	
Southern Kansas Telephone Company, Inc.	Cable	No Update to Provide	12/31/2009	
Southern Kansas Telephone Company, Inc.	Fiber	No Update to Provide	12/31/2009	
Sprint Nextel Corporation	Backhaul	No Update to Provide	1/14/2010	
Superior iNET	Fixed Wireless	No Update to Provide	1/29/2010	
The Computer Generation, Inc.	Fixed Wireless	No Update to Provide	1/8/2010	
Totah Communications, Inc.	ILEC/CLEC	No Update to Provide	9/8/2009	
Tri-Rivers Internet	Fixed Wireless	No Update to Provide		
Twin Valley Telephone, Inc.	ILEC/CLEC	No Update to Provide	10/12/2009	
Twin Valley Telephone, Inc.	Fiber	No Update to Provide	10/12/2009	
Twin Valley Telephone, Inc.	Fixed Wireless	No Update to Provide	10/12/2009	
TwinMounts	Fixed Wireless	No Update to Provide		
United Communications Association, Inc.	ILEC/CLEC	No Update to Provide	11/23/2009	
United Communications Association, Inc.	Cable	No Update to Provide	11/23/2009	
United Communications Association, Inc.	Fixed Wireless	No Update to Provide	11/23/2009	
United Communications Association, Inc.	Mobile Wireless	No Update to Provide	11/23/2009	
Wamego Telecommunications Company, Inc.	Fiber	No Update to Provide	9/29/2009	
Wave Wireless	Fixed Wireless	No Update to Provide	2/19/2010	
Wheat State Telephone, Inc.	Fiber	No Update to Provide	12/7/2009	
Wheat State Telephone, Inc.	ILEC/CLEC	No Update to Provide	12/7/2009	
Wilson Telephone Company, Inc.	ILEC/CLEC	No Update to Provide	9/29/2009	
Haug Communications, Inc.	Fixed Wireless	No Update Provided - Use Last Submission Data	12/4/2009	
arcplasma.com	Fixed Wireless	Refused to Participate		[JAN-18-11 James Tull] While attempting to solicit data in accordance with the NOFA, a company representative stated that they had no interest in participating and preferred that we not contact them anymore.
Southeast Nebraska Communications	ILEC/CLEC	Refused to Participate		[FEB-15-11 J Determan] While soliciting data in accordance with the NOFA, provider representative stated that there are still only five lines available in Kansas. They see no benefit in involvement.
Davin Wireless	Fixed Wireless	Non-Responsive to Multiple Attempts		In addition to multiple contact attempts between July 30, 2009 and March 24, 2010, nine attempts were made during this submission period.

Granby Telephone Co.	ILEC/CLEC	Non-Responsive to Multiple Attempts		Identified provider on October 26, 2010. Since then, five contact attempts were made.
SCI Cable, Inc.	Cable	Non-Responsive to Multiple Attempts		In addition to multiple contact attempts made between January 7, 2010 and August 5, 2010, four attempts were made during this submission period.
SureWest Communications	Cable	Non-Responsive to Multiple Attempts		In addition to multiple contact attempts made between September 8, 2009 and March 25, 2010, five attempts were made during this submission period.
SureWest Communications	Fiber	Non-Responsive to Multiple Attempts		In addition to multiple contact attempts made between September 8, 2009 and March 25, 2010, five attempts were made during this submission period.
SureWest Communications	Backhaul	Non-Responsive to Multiple Attempts		In addition to multiple contact attempts made between September 8, 2009 and March 25, 2010, five attempts were made during this submission period.
SureWest Communications	ILEC/CLEC	Non-Responsive to Multiple Attempts		In addition to multiple contact attempts made between September 8, 2009 and March 25, 2010, four attempts were made during this submission period.
SwiftLink Communications	Fixed Wireless	Non-Responsive to Multiple Attempts		Provider was identified on October 28, 2010. Since then, five contact attempts were made.
Windjammer Communications, LLC	Cable	Non-Responsive to Multiple Attempts	11/16/2009	Provider was identified on October 28, 2010. Since then, five contact attempts were made.
WISP-Router, Inc.	Fixed Wireless	Non-Responsive to Multiple Attempts		In addition to multiple contact attempts made between July 30, 2009 and August 17, 2010, four attempts were made during this submission period.
Columbus Telephone Company	ILEC/CLEC	Other	10/2/2009	[JAN-21-11 James Tull] In collecting data in accordance with the NOFA, a company representative advised that Columbus Telephone is strictly a FTTH provider and that they offer no DSL services (and have not for many years).
DISH Network Corporation	Satellite	Other	1/27/2010	[MAR-09-11 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.
Elkhart Telephone Company, Inc.	ILEC/CLEC	Other	3/23/2010	[FEB-24-11 John Determan] Entire exchange FTTH. Provider is an ILEC, not a DSL provider.
Elkhart Telephone Company, Inc.	Cable	Other	3/23/2010	[FEB-24-11 John Determan] No cable modem operation. Cable delivers cable TV service only.
Fairpoint Communications, Inc.	Fiber	Other	1/22/2010	[MAR-08-11 Wes Kerr] This provider doesn't offer fiber service and never has provided any fiber data.
Hughes Network Systems, LLC	Satellite	Other	2/5/2010	[MAR-09-11 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.
Madison Telephone Company, LLC	Fiber	Other	11/17/2009	[MAR-23-11 Dawn Clark] Provider will not offer fiber until summer 2011.
Rebeltec Communications LLC	Cable	Other		[MAR-02-11 Brian Dudek] Provider offers cable service in Colorado only.
S & A Telephone Company, Inc.	Fiber	Other	11/20/2009	[MAR-02-11 Brian Dudek] They currently do not offer fiber, but plans are in place to replace their copper network soon.
Southern Kansas Telephone Company, Inc.	Mobile Wireless	Other	12/31/2009	[FEB-18-11 Brian Dudek] Changed status as provider does not offer any mobile wireless services.
WildBlue Communications, Inc.	Satellite	Other	1/8/2010	[MAR-09-11 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.
Elkhart Telephone Company, Inc.	Mobile Wireless	Offers Service but Below FCC Definition	3/23/2010	