

**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 OHIO**



April 1, 2011

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OHIO 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 Ohio 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 Ohio has played in creating such a powerful tool that will surely benefit not just Ohioans, but consumers and businesses nationwide.

Therefore, as the State Broadband Designated Entity, in partnership with the Ohio Department of Administrative Services, Office of Information Technology, Connect Ohio, a dedicated program of Connected Nation, is pleased to present this submittal of the state of Ohio's State Broadband Data and Development (SBDD) Grant Program required data.

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 Ohio: 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 Ohio 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 Ohio 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 approximately 83.97% of the Ohio provider community, or 110 of 131 total providers. Of the 110 participating providers, 37 supplied an update to their network or coverage area(s), while 64 have reported no change. The remaining 9 represent providers who previously supplied data but were non-responsive in the April

2011 update effort or could not verify coverage areas at the time of this submission; therefore their previous dataset is being put forward as part of this compilation. A complete roster by provider depicting participation status and contact record is contained herein. Of the 21 providers that are not represented in the attached datasets, 11 have either refused to participate in the voluntary program or have remained unresponsive to the numerous attempts at contact by Connect Ohio. The remaining 10 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 Ohio principals that all commercially reasonable efforts were made to account for 100% of the known Ohio broadband provider community, pursuant to this semi-annual data update submission.

Connect Ohio has also continued to perform broadband verification activities through several means. In addition to confirmation of service area(s) by each provider, Connect Ohio conducts field validation efforts. To date, 38 (29.01%) 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 Ohio launched a website to create awareness about the initiative. Connectohio.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 Ohio website encountered 19,490 unique visits during this reporting period (65,810 total to date for the life of the grant awarded on December 20, 2009). Additionally, this pronounced Web activity netted 305 broadband inquiries over this same reporting period (989 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 Ohio website and the Connect Ohio Interactive Mapping Tool (BroadbandStat) that offer 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 Ohio mapping artifacts. Since the initial data collection and release of corresponding maps, feedback in the form of broadband inquiries has allowed Connect Ohio to identify additional areas that are in need of field validation, which is scheduled as soon as possible.

Community Anchor Institutions

Connect Ohio 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.

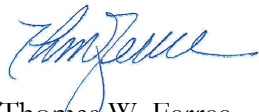
In conjunction with the state of Ohio, outreach was conducted during this data update reporting period by Connect Ohio to continue identification of existing, centralized sources for CAI connectivity data. Outreach was coordinated to distribute the CAI survey to institutions throughout

the state through multiple methods including a customized online survey available on the Connect Ohio website. Connect Ohio continues to identify opportunities to work with associations in the state such as the Ohio Geographically Referenced Information Program and the Ohio Public Library Information Network 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 Ohio 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. From our work in Connect Ohio, 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 Ohio efforts, along with an investment of both human and technical resources required to reach our goal of increasing the data that is secured and reported as part of this process.

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

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Tom Ferree'.

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

DATA ACQUISITION: OHIO COMMUNITY ANCHOR INSTITUTIONS

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

Connect Ohio 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 Ohio through ESRI ArcGIS software.

Connect Ohio continues to utilize a customized online survey hosted through SurveyMonkey, with a link on the Connect Ohio 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 Ohio 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 using the following password:

http://www.surveymonkey.com/s_pass.aspx?sm=ROpanKoKAJTZw4y2qnty0g%3d%3d

Password: CAI_OH_3210

Connect Ohio has worked diligently during this reporting period to conduct research as part of an ongoing process to identify existing, centralized sources for CAI connectivity data. In the last reporting period Connect Ohio reported a statewide geocoded CAI database for approximately 22,000 institutions. Outreach continues to identify broadband connectivity data for these institutions.

In tandem with these efforts to identify existing data, Connect Ohio 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.

Collecting CAI connectivity data continues to be challenging in the state but Connect Ohio will be leveraging the relationships that have been developed through the Every Citizen Online program to specifically target libraries and higher education institutions in the coming months.

Connect Ohio 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 Ohio is developing a CAI newsletter to be distributed quarterly beginning in April 2011. The newsletter will highlight a CAI in Ohio, 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 Ohio will continue its ongoing work with the state of Ohio, existing Connect Ohio staff, and key organization contacts in an effort to raise awareness of this project among CAI.

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	8,703	8,703	8,703	11	7	5
Libraries	759	759	758	687	588	7
Healthcare	1,959	1,959	1,959	5	5	5
Public Safety	4,157	4,157	4,157	6	4	4
Higher Ed Institutions	609	609	609	12	7	7
Other Government	319	319	319	13	7	7
Other Non-Government	3,626	3,626	3,626	28	19	14
Total	20,132	20,132	20,131	762	637	49

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 Ohio.

Inventory of Deliverables, Connect Ohio: April 1, 2011

NOFA Requirement

Appendix A: 1(a)(i)

Data Transfer Model

BB_Service_CensusBlock

Data Description

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 Ohio 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.

OHIO 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 System (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's staff conducted on-site validation tests in Ohio on the following providers: Altius Broadband, Amplex Internet, AT&T, Avolve, Buckeye Cablevision Inc., Cavalier Telephone, Celerity Networks, CenturyLink, Cincinnati Bell Telephone Company LLC, CityNet Fiber, Clearwire Corporation, Computers4U, ConnectLink, Country Connections, Dark Horse Wireless, Databit Solutions, Frontier Communications d.b.a. Citizen's Communications, GMN Wireless, g Wireless Inc., Intellwave, J-B Nets LLC, Just Micro Digital Services Inc., Level 3 Communications, LightSpeed Technologies, MetaLINK, Mikulski Communications LLC, New Era Broadband LLC, New Knoxville Telephone, R.A.A. Services, Sciotowireless, Southern Ohio Communication Services Inc., StratusWave, Talk America Inc., Telephone Service Company, Time Warner Cable Inc., Verizon Communications, W.A.T.C.H. TV, and Wilkshire Wireless.

During this reporting period, Connected Nation conducted 124 additional on-site validation tests with Amplex Internet, AT&T, Avolve, Celerity Networks, CenturyLink, Cincinnati Bell Telephone Company LLC, CityNet Fiber, Clearwire Corporation, Country Connections, Dark Horse Wireless, Databit Solutions, GMN Wireless, Intellwave, J-B Nets LLC, New Knoxville Telephone, Telephone Service Company, Time Warner Cable Inc., Verizon Communications, and Wilkshire Wireless.

From program initiation through this reporting period, Connected Nation has completed in-the-field validation testing against 38 companies (out of a universe of 131 viable providers) totaling 29.01% within the state of Ohio.

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 at a statewide level, static maps of statewide and county-level availability are produced and made publicly available. In addition, consumers can visit the interactive online tool, 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 1.74% of Ohio households do not have terrestrial fixed broadband service available, and approximately 0.48%¹ of Ohio 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 3.81% of rural Ohio households do not have terrestrial fixed broadband service available, and approximately 1.04%³ of rural Ohio households have neither mobile nor fixed broadband service available.⁴

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.

³ See footnote 1.

⁴ See footnote 2.

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)
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 Ohio project has received a total of 305 inquiries (989 grant inception to date). As more inquiries are submitted to Connect Ohio, 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.

New functionality in BroadbandStat allows the consumer 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 Ohio project launched BroadbandStat on February 24, 2010, and has received a total of 5,528 visits to date, of which 2,200 occurred this reporting period.

SPEED TEST METHODOLOGY

The 2,211 speed tests that are represented in the Connect Ohio Speed Test Report during this reporting period (4,999 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 Ohio 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 Ohio 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 Ohio 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 Ohio.



Broadband Provider Log

Complete	153
Non-Responsive/Refused	11
In Progress	15
Count of Datasets by Viable Status	179
Total Unique Providers Represented	131

Provider Name	Platform	Status	NDA Execution Date	Notes
Amplex Internet	Fixed Wireless	Data Added to Statewide Inventory	3/26/2010	
AT&T Inc.	ILEC/CLEC	Data Added to Statewide Inventory	12/16/2009	
AT&T Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/16/2009	
Avolve, Inc.	Fixed Wireless	Data Added to Statewide Inventory	2/17/2011	
Buckeye Cablevision, Inc.	Cable	Data Added to Statewide Inventory	2/8/2010	
CenturyLink	ILEC/CLEC	Data Added to Statewide Inventory	12/4/2009	
Cequel Communications	Cable	Data Added to Statewide Inventory	12/15/2009	
Cincinnati Bell Telephone Company LLC	Mobile Wireless	Data Added to Statewide Inventory	3/16/2010	
Cincinnati Bell Telephone Company LLC	Fiber	Data Added to Statewide Inventory	3/16/2010	
Cincinnati Communications	BPL	Data Added to Statewide Inventory	1/6/2011	
Clearwire Corporation	Fixed Wireless	Data Added to Statewide Inventory	3/3/2010	
Clearwire Corporation	Mobile Wireless	Data Added to Statewide Inventory	3/3/2010	
Comcast Cable Communications, LLC	Cable	Data Added to Statewide Inventory	12/7/2009	
Computers 4 U	Fixed Wireless	Data Added to Statewide Inventory		
Country Connections LLC	Fixed Wireless	Data Added to Statewide Inventory	2/15/2010	
DataBit Solutions	Fixed Wireless	Data Added to Statewide Inventory		
Erie County Cablevision, Inc.	Cable	Data Added to Statewide Inventory	2/8/2010	
Frontier Communications Corporation	ILEC/CLEC	Data Added to Statewide Inventory	1/22/2010	
Hometown Cable Company	Fiber	Data Added to Statewide Inventory	4/15/2010	
Intelliwave, LLC	Fixed Wireless	Data Added to Statewide Inventory		
JB-Nets, LLC	Fixed Wireless	Data Added to Statewide Inventory	4/5/2010	
Leap Wireless International, Inc.	Mobile Wireless	Data Added to Statewide Inventory	4/6/2010	
Massillon Cable TV, Inc.	Cable	Data Added to Statewide Inventory	2/9/2010	
MetalINK Technologies, Inc.	Fixed Wireless	Data Added to Statewide Inventory	3/22/2010	
New Knoxville Telephone Company	Fixed Wireless	Data Added to Statewide Inventory	3/12/2010	
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	
Time Warner Cable LLC	Cable	Data Added to Statewide Inventory	12/21/2009	
Vaughnsville Telephone Company, Inc	ILEC/CLEC	Data Added to Statewide Inventory	12/22/2009	
Verizon Communications, Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/14/2009	
Cincinnati Communications	Backhaul	Backhaul Provider Only Processing Complete	1/6/2011	
Citynet, LLC	Backhaul	Backhaul Provider Only Processing Complete	4/5/2010	
Cogent Communications, Inc.	Backhaul	Backhaul Provider Only Processing Complete		
Com Net, Inc	Backhaul	Backhaul Provider Only Processing Complete		
Covad Communications	Backhaul	Backhaul Provider Only Processing Complete	1/19/2010	
Level 3 Communications, LLC	Backhaul	Backhaul Provider Only Processing Complete	12/14/2009	
One Community	Backhaul	Backhaul Provider Only Processing Complete	4/14/2010	
T-Mobile USA, Inc.	Backhaul	Backhaul Provider Only Processing Complete	1/8/2010	
US Signal Company, LLC	Backhaul	Backhaul Provider Only Processing Complete	6/17/2010	
YES Learning and Computer Center Inc	Backhaul	Backhaul Provider Only Processing Complete	4/24/2010	
Zayo Group, LLC	Backhaul	Backhaul Provider Only Processing Complete		
		Approval for Update Not Received - Use Last Submission Data	12/22/2009	
Farmers Mutual Telephone Company	Fixed Wireless	Provider Approval Solicited		
McLeodUSA Telecommunications Services, Inc.	ILEC/CLEC	Provider Approval Solicited		
One Community	Fixed Wireless	Provider Approval Solicited	4/14/2010	
OmniCity	Fixed Wireless	Partial Data Received		
Bascom Mutual Telephone Company	ILEC/CLEC	Provider Gathering Data	3/22/2010	
Untangled Technology	Fixed Wireless	Provider Gathering Data	5/24/2010	
Armstrong Utilities, Inc.	Cable	No Update to Provide	3/11/2010	
Arthur Mutual Telephone Company	ILEC/CLEC	No Update to Provide	12/22/2009	
AT&T Inc.	Backhaul	No Update to Provide	12/16/2009	
Ayersville Telephone Company	ILEC/CLEC	No Update to Provide	3/22/2010	
Bascom Mutual Telephone Company	Cable	No Update to Provide	3/22/2010	
Bascom Mutual Telephone Company	Fiber	No Update to Provide	3/22/2010	
Bascom Mutual Telephone Company	Fixed Wireless	No Update to Provide	3/22/2010	
Bascom Mutual Telephone Company	Backhaul	No Update to Provide	3/22/2010	
Benton Ridge Telephone Company	ILEC/CLEC	No Update to Provide	4/13/2010	
Benton Ridge Telephone Company	Fixed Wireless	No Update to Provide	4/13/2010	
BluSky Wireless	Fixed Wireless	No Update to Provide	2/24/2010	
Bryan Municipal Utilities	Cable	No Update to Provide		
Bryan Municipal Utilities	Fiber	No Update to Provide		
Buckland Telephone Co.	Fiber	No Update to Provide	4/10/2010	
Buckland Telephone Co.	ILEC/CLEC	No Update to Provide	4/10/2010	
Cable Co-op	Cable	No Update to Provide	4/9/2010	
CenturyLink	Backhaul	No Update to Provide	12/4/2009	
Champaign Telephone Company	Fiber	No Update to Provide		
Champaign Telephone Company	Fixed Wireless	No Update to Provide		
Champaign Telephone Company	ILEC/CLEC	No Update to Provide		
Cincinnati Bell Telephone Company LLC	Cable	No Update to Provide	3/16/2010	
Cincinnati Bell Telephone Company LLC	ILEC/CLEC	No Update to Provide	3/16/2010	
City of Wadsworth Cable	Cable	No Update to Provide	7/19/2010	

Conneaut Telephone Company	Cable	No Update to Provide	12/22/2009	
Conneaut Telephone Company	ILEC/CLEC	No Update to Provide	12/22/2009	
Cox Communications, Inc	Cable	No Update to Provide	1/29/2010	
Cox Communications, Inc	Backhaul	No Update to Provide	1/29/2010	
Coyote Wireless Broadband LLC	Fixed Wireless	No Update to Provide	4/19/2010	
Dark Horse Networks	Fixed Wireless	No Update to Provide	3/15/2010	
Doylestown Telephone Company	Fiber	No Update to Provide	4/14/2010	
Doylestown Telephone Company	Cable	No Update to Provide	4/14/2010	
Doylestown Telephone Company	ILEC/CLEC	No Update to Provide	4/14/2010	
East Cleveland Cable TV	Cable	No Update to Provide	4/13/2010	
FairPoint Communications, Inc.	ILEC/CLEC	No Update to Provide	12/22/2009	
Farmers Mutual Telephone Company	ILEC/CLEC	No Update to Provide	12/22/2009	
Fort Jennings Telephone Company	Fiber	No Update to Provide	4/2/2010	
Fort Jennings Telephone Company	ILEC/CLEC	No Update to Provide	4/2/2010	
g wireless, Inc.	Fixed Wireless	No Update to Provide	3/15/2010	
Gateway Telecom LLC	Fixed Wireless	No Update to Provide	3/22/2010	
Glandorf Telephone Company, Inc.	Cable	No Update to Provide	3/9/2010	
Glandorf Telephone Company, Inc.	ILEC/CLEC	No Update to Provide	3/9/2010	
GMN Wireless Broadband	Fixed Wireless	No Update to Provide	3/15/2010	
Horizon Telcom, Inc.	Fiber	No Update to Provide	3/27/2010	
Horizon Telcom, Inc.	ILEC/CLEC	No Update to Provide	3/27/2010	
Jefferson County Cable, Inc.	Cable	No Update to Provide	2/1/2010	
Kalida Telephone Company, Inc.	ILEC/CLEC	No Update to Provide	3/8/2010	
KeyOn Communications, Inc.	Fixed Wireless	No Update to Provide	10/15/2009	
LightSpeed Technologies	Fixed Wireless	No Update to Provide	2/9/2010	
Mango Bay Internet	Fixed Wireless	No Update to Provide	2/23/2010	
McClure Telephone Company	Fiber	No Update to Provide	4/5/2010	
McClure Telephone Company	ILEC/CLEC	No Update to Provide	4/5/2010	
Mechcom Dot Net	Fixed Wireless	No Update to Provide	4/22/2010	
Mediacom Indiana LLC	Cable	No Update to Provide	1/12/2010	
Middle Point Home Telephone Company	ILEC/CLEC	No Update to Provide	1/19/2010	
Mikulski Communications LLC	Fixed Wireless	No Update to Provide	4/13/2010	
Minford Telephone Company	ILEC/CLEC	No Update to Provide	3/3/2010	
New Era Broadband, LLC	Fixed Wireless	No Update to Provide	7/12/2010	
New Knoxville Telephone Company	Backhaul	No Update to Provide	3/12/2010	
New Knoxville Telephone Company	Cable	No Update to Provide	3/12/2010	
New Knoxville Telephone Company	ILEC/CLEC	No Update to Provide	3/12/2010	
New Knoxville Telephone Company	Fiber	No Update to Provide	3/12/2010	
North Coast Wireless Communications	Fixed Wireless	No Update to Provide	4/14/2010	
North West Net, Inc.	Fixed Wireless	No Update to Provide	4/6/2010	
Nova Telephone Company	ILEC/CLEC	No Update to Provide	4/5/2010	
nTelos, Inc.	ILEC/CLEC	No Update to Provide		[JAN-25-2011 Jeff Beebe] Fibernet of Ohio was purchased by nTelos.com.
One Communications Corporation	Backhaul	No Update to Provide	3/18/2010	
Ottoville Mutual Telephone Company	Backhaul	No Update to Provide	12/22/2009	
Ottoville Mutual Telephone Company	ILEC/CLEC	No Update to Provide	12/22/2009	
Qwest Communications Company, LLC	Backhaul	No Update to Provide	1/4/2010	
R.A.A. Services	Fixed Wireless	No Update to Provide	3/12/2010	
Redbird Internet Services	Fixed Wireless	No Update to Provide	3/22/2010	
Ridgeville Telephone Company	ILEC/CLEC	No Update to Provide	3/12/2010	
Rtec Communications, Inc.	Fiber	No Update to Provide	4/13/2010	
Rtec Communications, Inc.	Cable	No Update to Provide	4/13/2010	
S. Bryer Cable TV Corp.	Cable	No Update to Provide	8/16/2010	
SAA Bright.net	Fixed Wireless	No Update to Provide	3/23/2010	
SciotoWireless	Fixed Wireless	No Update to Provide	3/22/2010	
Sherwood Mutual Telephone Association	ILEC/CLEC	No Update to Provide	3/25/2010	
Slane Telecom	Fixed Wireless	No Update to Provide	4/9/2010	
Southern Ohio Communication Services Inc.	Fixed Wireless	No Update to Provide	4/20/2010	
Sprint Nextel Corporation	Backhaul	No Update to Provide	1/14/2010	
Sycamore Telephone Company	Backhaul	No Update to Provide	12/22/2009	
Sycamore Telephone Company	ILEC/CLEC	No Update to Provide	12/22/2009	
Talk America Inc.	ILEC/CLEC	No Update to Provide		
Talk America Inc.	Backhaul	No Update to Provide		
TDS Telecommunications Corporation	Backhaul	No Update to Provide	1/27/2010	
Telephone Service Company	Cable	No Update to Provide	4/6/2010	
Telephone Service Company	Fiber	No Update to Provide	4/6/2010	
Telephone Service Company	ILEC/CLEC	No Update to Provide	4/6/2010	
The City of Dover	Backhaul	No Update to Provide	4/9/2010	
tw telecom of ohio, llc	Backhaul	No Update to Provide	4/21/2010	
Wabash Mutual Telephone Company	Fiber	No Update to Provide	3/30/2010	
Wabash Mutual Telephone Company	Fixed Wireless	No Update to Provide	3/30/2010	
Wabash Mutual Telephone Company	ILEC/CLEC	No Update to Provide	3/30/2010	
Waldron Communication Company	Backhaul	No Update to Provide	3/19/2010	
Waldron Communication Company	Fixed Wireless	No Update to Provide	3/19/2010	
Wilkshire Communications, Inc.	Fixed Wireless	No Update to Provide	3/16/2010	
XO Communications, LLC	Backhaul	No Update to Provide	2/12/2010	
Access Ohio Valley, Inc.	Backhaul	No Update Provided - Use Last Submission Data	3/2/2010	
Access Ohio Valley, Inc.	Fixed Wireless	No Update Provided - Use Last Submission Data	3/2/2010	
Frontier Communications Corporation	Backhaul	No Update Provided - Use Last Submission Data	1/22/2010	
Jenco Speed Web	Fixed Wireless	No Update Provided - Use Last Submission Data	4/28/2010	
King Office Service, Inc.	Fixed Wireless	No Update Provided - Use Last Submission Data	4/9/2010	
Nelsonville TV Cable	Cable	No Update Provided - Use Last Submission Data	4/7/2010	

NexGenAccess Inc.	Fixed Wireless	No Update Provided - Use Last Submission Data	4/16/2010	
Skymax Broadband	Fixed Wireless	No Update Provided - Use Last Submission Data	2/11/2010	
Verizon Communications, Inc.	Backhaul	No Update Provided - Use Last Submission Data	12/14/2009	
WaveLinc	Fixed Wireless	No Update Provided - Use Last Submission Data		
Windstream Communications	ILEC/CLEC	No Update Provided - Use Last Submission Data	1/28/2010	
Windstream Communications	Backhaul	No Update Provided - Use Last Submission Data	1/28/2010	
Connect Link, Inc.	Fixed Wireless	Solicited Initial Data	3/15/2010	
First Communications, LLC	Fiber	Solicited Initial Data		
Insight Communications of Central, Ohio, LLC	Cable	Solicited Initial Data		
Reliance Globalcom Services, Inc.	Backhaul	Solicited Initial Data		
UDatanet	Fixed Wireless	Solicited Initial Data		
Advanced Computer Connections	Fixed Wireless	Refused to Participate		[JAN-25-11 Chip Spann] Jeff Beebe spoke to a provider representative who stated they are not interested in participating. They are focusing on their business-to-business segment and have no intentions to do anything with residential now or in the future.
Bellaire Television Cable Co. Inc.	Cable	Refused to Participate		[FEB-10-11 Chip Spann] Jeff Beebe received an e-mail from a provider representative and was notified that they are not interested in participating at this time.
GLW Broadband	Cable	Refused to Participate		[FEB-18-11 Chip Spann] Provider representative and stated that they do not wish to participate in our mapping program.
Hocking Internet Technologies, Ltd	Fixed Wireless	Refused to Participate	8/12/2010	[FEB-14-11 Heather Delany] Provider representative indicated they are not interested in providing data at this time. Once county is 80% covered will participate. Heather to follow-up.
Just Micro Digital Services, Inc.	Fixed Wireless	Refused to Participate	4/13/2010	[JAN-26-11 Chip Spann] Chip received back-to-back e-mails stating, "Maybe you didn't get the memo. We don't do Connected Nation. Done with that. Sorry, pal. Well, not really sorry." That message was followed by, "Hey, please remove all mapping of our network, by the way. We don't care about it."
Practical Support, Ltd.	Fixed Wireless	Refused to Participate		[JAN-19-11 Chip Spann] Jeff Beebe spoke with a provider representative at Practical Support and it was stated they do not wish to participate.
Safe-t.net	Fixed Wireless	Refused to Participate		[FEB-17-11 Heather Delany] spoke with a provider representative. They would like to work with us, but are not sharing data at this time as they are the only wireless service provider in the area and feel their data could easily be picked out and access points identified for this reason. Refused to participate at this time.
WideOpenWest Ohio, LLC	Cable	Refused to Participate		[MAR-11-10 Terry Holmes] Received voice message from company executive, "I spoke with my counterparts and we will not share information as requested by CN, so you will not be receiving information from WOW." Subsequent attempts to contact this provider have resulted in no response.
Linked Communications, LLC	Fixed Wireless	Non-Responsive to Multiple Attempts		In addition to multiple contact attempts between January 16, 2010 and August 2, 2010, four attempts were made during this submission period.
Windjammer Communications, LLC	Cable	Non-Responsive to Multiple Attempts	11/16/2009	In addition to multiple contact attempts between October 27, 2009 and August 11, 2010, five attempts were made during this submission period.
Wireless Intranet	Fixed Wireless	Non-Responsive to Multiple Attempts		In addition to multiple contact attempts between March 10, 2010 and August 4, 2010, five attempts were made during this submission period.
Covad Communications	ILEC/CLEC	Other	1/19/2010	[FEB-18-11 Wes Kerr] Provider doesn't offer residential DSL, and the last mile data will not be included in the data submission.
DISH Network Corporation	Satellite	Other	1/27/2010	[MAR-09-11 Amanda Bentley] 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.	Backhaul	Other		[FEB-17-11 Wes Kerr] Received word from a provider representative that they still have a Network Security agreement with several Federal agencies and cannot provide data at this time.

Hughes Network Systems, LLC	Satellite	Other	2/5/2010	[MAR-09-11 Amanda Bentley] 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.
WildBlue Communications, Inc.	Satellite	Other	1/8/2010	[MAR-09-11 Amanda Bentley] 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.