

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



October 8, 2010

TABLE OF CONTENTS

| | |
|---|----|
| COVER LETTER..... | 3 |
| DATA ACQUISITION: ILLINOIS COMMUNITY ANCHOR INSTITUTIONS | 8 |
| SBDD DATA TRANSFER MODEL METHODOLOGY..... | 11 |
| ILLINOIS FIELD VALIDATION NARRATIVE | 12 |
| ACCURACY AND VERIFICATION: METHODOLOGY - PROVIDER VALIDATION..... | 13 |
| WIRELESS METHODOLOGY..... | 14 |
| BROADBAND INQUIRIES METHODOLOGY..... | 15 |
| BROADBANDSTAT METHODOLOGY | 16 |
| SPEED TEST METHODOLOGY..... | 16 |
| BROADBAND PROVIDER LOG..... | 18 |

COVER LETTER

October 8, 2010

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

Dear Ms. Neville:

In support of the Partnership for a Connected Illinois (PCI), the Designated Entity for Illinois, please accept this submission from Connected Nation and PCI.

These artifacts should be found to be compliant with the October 8, 2010, deadline for the semi-annual data update and in accordance with the terms of the July 1, 2009, Notice of Funds Availability (NOFA) and all subsequent clarifications pertaining to delivery of State-Level Mapping of Broadband Service Availability. This packet includes:

Inventory of Deliverables, Partnership for a Connected Illinois: October 8, 2010

| <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 | n/a DataPackage.xls | Accuracy and Verification Report Worksheets of Contact Information, Data Dictionary, and Provider Summary Table |
| n/a | n/a | Broadband Provider Roster and Participation Status |

In addition, this data update submission should be found to be compliant with the additional program requirements instituted by the National Telecommunications and Information Administration since the time of the initial SBDD data submission by PCI on March 31, 2010. Specifically, these new requirements are:

Census Blocks

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

SBDD Data Transfer Model

The submission of the broadband dataset for October 8, 2010 is contained within the SBDD Data Transfer Model as released on the Grantee Workspace on September 9, 2010. All efforts have been made to comply with formatting, domain, and metadata requirements to include as much information on each provider as possible.

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

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

Broadband Service Availability — Provider Outreach

This data update submission under the SBDD includes the participation of approximately 68.7% of the Illinois provider community, or 114 of 166 total providers. Of the 114 participating providers, 39 supplied an update to their network or coverage area(s), while 57 have reported no change. The remaining 18 represents providers who supplied initial submission data but were non-responsive in the October 2010 update effort or could not verify coverage areas at the time of this submission; therefore their initial dataset is being put forward as part of this compilation. A complete roster by provider depicting participation status and contact record is contained herein. Of the 52 providers that are not represented in the attached datasets, 23 have either refused to participate in the

voluntary program or have remained unresponsive to the numerous attempts at contact by Connected Nation. The remaining 29 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.

Estimates derived from provider-validated data indicate that approximately 1.35% of Illinois households do not have terrestrial fixed broadband service available, and approximately 0.17%¹ of Illinois households have neither mobile nor fixed broadband service available.²

Results derived from provider-validated data indicate that approximately 3.99% of rural Illinois households do not have terrestrial fixed broadband service available, and approximately 0.51%³ of rural Illinois households have neither mobile nor fixed broadband service available.⁴

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

In late 2009 and early 2010, Connected Nation launched a web site (<http://connectillinois.org>) to create awareness about the initiative. With the launch of the Partnership for a Connected Illinois' web site, <http://broadbandillinois.org> will soon serve as the principal vehicle for outreach and data collection efforts. This web site will serve as an essential component of data validation methodology for the efforts undertaken by Connected Nation and the Partnership for a Connected Illinois.

Until the full establishment of <http://broadbandillinois.org> as a robust vehicle for the collection of "crowdsourced" broadband data, <http://connectillinois.org> continues to host data and maps compiled on behalf of the Partnership for a Connected Illinois. As an indicator of stakeholder penetration, <http://connectillinois.org> encountered 3,972 unique visits during this reporting period (5,875 total to date for the life of the grant which was awarded on December 20, 2009).

Additionally, this web activity netted 26 broadband inquiries over this same reporting period, and 37 from the grant inception to date. The web site also provides the BroadbandStat application, which allows the consumer to confirm or dispute the coverage represented on the broadband inventory

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 Ibid.

⁴ Ibid.

map. Since the initial data collection and release of corresponding maps, feedback in the form of broadband inquiries has allowed Connected Nation to identify additional areas that are in need of field validation, which is scheduled as soon as possible. Additional information on field validation can be found in the Field Validation Narrative.

Community Anchor Institutions

PCI has established an ongoing procedure for gathering data on the physical location and broadband connectivity of Community Anchor Institutions (CAIs) in accordance with the data requirements of the SBDD NOFA Technical Appendix.

As with the March 31, 2010, submittal, PCI identified existing, centralized sources for CAI connectivity data. With the assistance of Southern Illinois University, PCI geocoded each submitted data point by using ESRI software and Google batch geocoding programs.

PCI has supplemented the approach taken in the March 31 filing. For the October filing, the electronic survey itself was revised in several ways for PCI's use in a range of projects vital to the planning and outreach mission of the organization. Both carrier and price information were requested, and the speed test became a required item for completion of the survey. For the CAI survey, we utilized the speed test(s) currently being administered on the Federal Communications Commission web site.

As of this semi-annual reporting period, a total of 26,869 Illinois CAIs were identified, addressed, and geocoded. Of this total, 3,867 locations were identified with connectivity data, or 14.39% of the database. As further described herein, a total of 10,063 priority locations were actually surveyed for connectivity data. Consequently, the 3,867 locations with connectivity data represent 38.43% of locations surveyed.

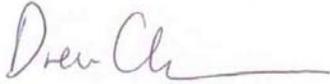
Working with organizations and regional outreach initiatives, PCI considers its CAI electronic survey effort to be a process of continual improvement of our existing database, methodology, and results obtained. Our goal is to collect and display CAI broadband data most relevant to the needs of Illinois residents.

From the work of PCI in Illinois, plus the work of Connected Nation in other states, each of us recognizes the great value of this data to future collaboration efforts within the state of Illinois, and to the accomplishment of the purposes in the recently released National Broadband Plan. We plan to continue to bring best practices to the Illinois efforts, along with an investment of both human and technical resources required to reach these goals in advance of the submission of the semi-annual update of this data due in April 2011.

As an additional note, in acquiring broadband data within Illinois, Connected Nation made efforts to engage any federally recognized tribal lands. According to the U.S. Department of the Interior's Bureau of Indian Affairs, there are no federally recognized tribal lands in Illinois.

The Partnership for a Connected Illinois 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 Illinois, as well as the United States through contribution to the National Broadband Map. Each of us looks forward to the remaining work ahead.

Respectfully submitted,



Drew Clark
Executive Director
Partnership for a Connected Illinois, Inc.



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

DATA ACQUISITION: ILLINOIS COMMUNITY ANCHOR INSTITUTIONS

PCI has established an ongoing procedure for gathering data on the physical location and broadband connectivity of Community Anchor Institutions (CAIs) in accordance with the data requirements of the SBDD NOFA Technical Appendix.

As with the March 31, 2010, submittal, PCI identified existing, centralized sources for CAI connectivity data. With the assistance of Southern Illinois University, PCI geocoded each submitted data point by using ESRI software and Google batch geocoding programs.

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The March filing included a total of 25,531 CAIs. Certain significant locations were added, which brought the October total to 26,869. Notwithstanding this relatively high number, PCI has made an effort to refine the survey process to identify priority CAIs within each category, and to collect connectivity data for these locations.

As an example, of the 25,531 locations submitted in March, there were 14,000 Category 3 Healthcare locations which were geocoded, yet had no connectivity data. Many of these were for actual practitioners as opposed to clinics, or what might be considered institutions. While we have elected to include this larger number for the October filing, we have also identified 1,358 priority Healthcare locations, which include hospitals, clinics and other significant facilities. Smaller adjustments in Categories 4 and 5 have resulted in a total of 12,051 CAI institutions within the PCI priority list.

Category 6 also requires some explanation. Data for the 1,459 Governmental locations had been submitted as a set of existing connectivity data with a 100% response rate. These numbers have been included again in the October filing.

Total CAI data acquisition responses, as compared to March, may be summarized as follows:

| Category | Total Number of CAIs in March Submission | Connectivity Data Points in March Submission | % of CAIs with Connectivity Data in March Submission | Total Number of CAIs in October Submission | Connectivity Data Points in October Submission | % of CAIs with Connectivity Data in October Submission |
|-----------------------------------|--|--|--|--|--|--|
| School - K through 12 | 5,651 | 999 | 17.68% | 5,651 | 1,165 | 20.62% |
| Library | 892 | 332 | 37.22% | 1,505 | 633 | 42.06% |
| Medical/healthcare | 15,358 | 50 | 0.33% | 15,358 | 96 | 0.63% |
| Public safety | 1,635 | 280 | 17.13% | 2,360 | 384 | 16.27% |
| University, college, other | 302 | 89 | 29.47% | 307 | 116 | 37.79% |
| Other community support - gov | 1,459 | 1,447 | 99.18% | 1,454 | 1,454 | 100.00% |
| Other community support - non-gov | 234 | - | - | 234 | 19 | 8.12% |
| Totals | 25,531 | 3,197 | 12.52% | 26,869 | 3,867 | 14.39% |

Outreach for this submission included survey development, web site database research and teleconferences. Together with the Illinois Department of Commerce and Economic Opportunity (DCEO), we have engaged in a process of working with CAIs on an organized basis. Other state agencies and organizations have included the Illinois Commerce Commission, Illinois Board of Education, and the Illinois State Police. Additional Agencies and organizations have been referenced throughout this presentation, and were included in our March submission.

PCI has worked with a number of organizations in gathering data for the October submission in addition to those already identified in the March filing. We are encouraged that relationships with these organizations will continue to develop and facilitate our electronic data collection efforts in future filings. These organizations are listed below:

- | | | |
|---|---------------------------|---|
| 1 | K-12 | Illinois Association of Regional School Superintendents |
| 2 | Libraries | Illinois Library Association |
| 3 | Healthcare | Illinois Critical Access Hospital Network, Illinois Rural HealthNet |
| 4 | Public Safety | Existing Database |
| 5 | Colleges and Universities | Illinois Community Colleges Board |
| 6 | Other-Government | Existing Database |
| 7 | Other-Non Government | Man-Tra-Con |

For Category 1, K-12, we have been working with Gil Morrison of the Illinois Association of Regional School Superintendents. A cover letter and link was sent to each of the Regional Superintendents with instructions to disseminate to the Technical Director for each their respective School Districts. From there, the Technical Director distributed the survey to each school location.

PCI had an existing database of email contacts for Category 2, Libraries in Illinois. We worked with the Illinois Library Association and found that generally the libraries were receptive to taking the survey, given need for broadband in the library sciences.

In Category 3, Healthcare, PCI worked with Pat Schou of the Illinois Critical Access Hospital Network and Alan Kraus of the Illinois Rural Health Network. Both organizations were referenced in our cover letter, and the survey was sent from PCI's email database.

For Category 4, Public Safety, surveys were also sent via the PCI database. As with the Libraries, the response from this category was favorable.

PCI worked with Elaine Johnson at the Illinois Community Colleges Board for Category 5, Universities and Colleges. A cover letter and link was sent to over 40 Community Colleges, with a very positive response. The remaining Category 5 surveys we sent via email.

For Category 6, Community Support-Government, the survey was distributed electronically via PCI's existing database.

For Category 7, Community Support-Non Government, PCI worked with Kathy Lively at Man-Tra-Con to disseminate the survey to Illinois WorkNet Centers. The remaining surveys were sent via our exiting email database.

In addition to the web sites included in our March submission, PCI utilized the following web sites to assemble relevant datasets:

| | |
|---|------------------------------------|
| Illinois High School Association | Illinois State Police |
| Illinois Elementary School Association | 911 Fire Police Medical Web |
| Illinois Sheriffs' Association | Illinois Workforce Partnership |
| National Public Safety Information Bureau | American Hospital Association |
| National Center for Education Statistics | United States Fires Administration |

The schedule below includes a breakdown of our CAI priority list, the number of locations surveyed, and those with connectivity data. Among our most successful efforts were results achieved from the Libraries, and the Colleges and Universities. Of 1,505 Libraries surveyed connectivity information was obtained for 643 or 42.1%. Of 217 Colleges and Universities surveyed, 116 responded, or 56.0%. Public Safety was also impressive, with 384 of 660 responding, or 58.2%.

| Category | Total Number of CAIs | Priority List of CAIs | Surveyed for Connectivity Data | Connectivity Data Responses | % of CAIs Surveyed with Connectivity Data |
|-----------------------------------|----------------------|-----------------------|--------------------------------|-----------------------------|---|
| School - K through 12 | 5,651 | 5,651 | 5,651 | 1,165 | 20.62% |
| Library | 1,505 | 1,505 | 1,505 | 633 | 42.06% |
| Medical/healthcare | 15,358 | 1,358 | 352 | 96 | 27.27% |
| Public safety | 2,360 | 1,642 | 660 | 384 | 58.18% |
| University, college, other | 307 | 207 | 207 | 116 | 56.04% |
| Other community support - gov | 1,454 | 1,454 | 1,454 | 1,454 | 100.00% |
| Other community support - non-gov | 234 | 234 | 234 | 19 | 8.12% |
| Totals | 26,869 | 12,051 | 10,063 | 3,867 | 38.43% |

Working with both organizations and regional outreach initiatives PCI considers its CAI electronic survey effort to be a process of continually improving our existing database, methodology, and results obtained. Our goal is to collect and display CAI broadband data most relevant to the needs of Illinois residents.

SBDD DATA TRANSFER MODEL METHODOLOGY

The submission of the broadband dataset for October 8, 2010, is contained within the SBDD Data Transfer Model as released on the Grantee Workspace on September 9, 2010. Connected Nation has reviewed all literature that relates to the release and use of this data transfer model and recognizes that it does not replace or dictate how data is stored, processed, or displayed for the state, as it is meant primarily as a means to transfer the broadband data from all states and territories and populate the National Broadband Map in a seamless fashion.

In addition to the narratives and methodologies contained herein, as well as the DataPackage.xls containing contact information, the data dictionary, and a provider summary table, the following feature classes are submitted within the SBDD Data Transfer Model for the state of Illinois.

Inventory of Deliverables, Partnership for a Connected Illinois: October 8, 2010

| <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 |

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| Appendix A: 1(a)(ii) | BB_Service_RoadSegment | Broadband Service Availability of Facilities-Based Providers by Road Segment in Census Blocks Larger in Area Than Two Square Miles |
| Appendix A: 1(b) | BB_Service_Wireless | Broadband Service Availability of Wireless Services Not Provided to a Specific Address |
| Appendix A: 3(b) | BB_ConnectionPoint_MiddleMile | Broadband Service Infrastructure Middle-Mile and Backbone Interconnection Points |
| Appendix A: 4 | BB_Service_CAInstitutions | Community Anchor Institutions-Listing |

The provider data collected by Connected Nation on behalf of the state of Illinois have been formatted per the given specifications and uploaded into the appropriate feature classes of the SBDD Data Transfer Model. Wireline availability is contained within census blocks and road segments, wireless availability is contained as polygons of coverage areas, middle-mile connections and community anchor institutions are contained as point data, and the subscriber weighted nominal speed (if available) is contained within the overview feature class. All speed data is contained at the census block, road segment, or wireless polygon level of availability. All efforts have been made to comply with formatting, domain, and metadata requirements to include as much information as possible.

ILLINOIS FIELD VALIDATION NARRATIVE

John Determan (Sr. WiMAX Engineering Consultant), Layne Wagner (Technical Engineering Analyst) and Chip Spann (Director of Engineering and Technical Services) were tasked with field verification and data validation for some of the 166 viable broadband providers that contributed data to the Partnership for a Connected Illinois broadband inventory map. After analyzing the mix (40 ILECs, 20 cable modem providers, 12 FTTx providers, 97 fixed wireless operators, 32 backhaul providers and 6 mobile wireless companies), 13 broadband providers were randomly selected for field validation activities. Upon the conclusion of testing at 28 test locations, the current data validation completion rate of 7.83% was achieved through July 28, 2010.

The results of the testing techniques affirmed that (i) 100% spectrum frequencies (as tested by an Avcom PSA-37XP spectrum analyzer) were accurate; (ii) 96.4% of the physical coordinates (tested using either a GPS enabled version of Microsoft Streets & Trips or a Garmin eTrex Summit GPS unit) were correct and, in cases where a discrepancy was discovered, they were presented to the appropriate provider and further verified/validated by the provider; and (iii) 100% of the mobile broadband speeds tested achieved the criteria as established for broadband (minimum of 768 kbps X 200 kbps). Mobile testing was conducted using a 3G smart phone and/or a 3G aircard.

As part of its verification testing, Connected Nation regularly completes random spectrum analysis studies throughout the state, cross-references antenna structure registration numbers and federal registration numbers against Federal Communications Commission databases, and strives not only

to personally meet with participating broadband providers but to encourage them (whenever possible) to accompany Connected Nation engineers on these randomly selected test locations.

To date, these tests have included in-field validation for AT&T Mobility, Illinois Valley Cellular, XO – Nextlink, Clearwire, KeyOn Wireless, Heartland, Egyptian Telephone, Banicon, Comcast, Geneseo, Volo Broadband, SparkPlug Wireless and Cellular Properties. The compilation of tests on these companies covers fixed and mobile wireless, WiMAX, backhaul, DSL, and cable modem technologies representing a cross-cut from all applicable technology platforms (excluding satellite and broadband over power line).

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.

WIRELESS METHODOLOGY

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

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

1. The name of the structure
2. Whether the transmitting device is operational or proposed
3. The maximum advertised downstream speed and the maximum advertised upstream speed
4. The typical downstream speed and the typical upstream speed (peak periods for both)
5. The frequency range of spectrum being used (as prescribed by NTIA)
6. The primary population center(s) being served (for geopolitical boundary reference)
7. Latitude in either Degrees, Minutes and Seconds and/or in Decimal Degrees (typically received as NAD 27 or NAD 83)
8. Longitude in either Degrees, Minutes and Seconds and/or in Decimal Degrees (typically received as NAD 27 or NAD 83)
9. The physical address of the transmit site (in the event latitude/longitude is unavailable from the provider this allows a quick reference point for geocoding)
10. Antenna pattern (e.g. omni-directional, 180°, 120°, 90°, etc.)
11. Azimuth of antenna (e.g. 360° with magnetic declination if known)
12. Approximate transmit radius (in feet, miles or kilometers)
13. Polarity of transmit antenna (Vertical or Horizontal)
14. Transmit antenna gain (in dBi)
15. Line loss (applicable only to providers using coax, heliax, waveguide or other forms of cabling – excludes power-over-Ethernet devices)
16. Mechanical and/or electrical beam tilt (if applicable)
17. Equipment manufacturer (allows easy cross-reference against manufacturers' specification sheet)
18. Power output of the transmitting device (if unknown FCC standards applied)
19. AMSL at base of tower site
20. Antenna centerline AGL (height of antenna above ground level measured at the centerline of the actual antenna)
21. Foliage factors (evergreens/deciduous and percent of ground cover)
22. Ground clutter (primarily used only in metropolitan areas – accounts for types and heights of buildings)

Propagation modeling is an empirical mathematical formulation for the characterization of radio wave propagation as a function of frequency, distance, and other conditions. Propagation software typically uses the Irregular Terrain Model (also known as Longley-Rice) of radio propagation for frequencies between 20 MHz and 20 GHz. This model is based on electromagnetic theory and statistical analyses of the combination of terrain features and radio measurements, then predicting the median attenuation of a radio signal as a function of distance and the variability of the signal in time and in space. For metropolitan areas, the software can typically be adjusted to use the

Okumura-Hata, which accounts for predicting the behavior of cellular transmissions in areas where buildings are the primary obstructions.

The resulting product from either model depicts a graphical illustration of the theoretical propagation characteristics of a selected frequency range based on defined variables (receiver sensitivity of the home/mobile device, foliage factor, and digital elevation terrain input).

BROADBAND INQUIRIES METHODOLOGY

Connected Nation collects consumer feedback in the form of broadband inquiries. These inquiries represent any type of communication received from the public regarding broadband service. Once broadband inquiries are received across the state, this information is overlaid with the broadband availability information which was collected through the SBDD program. This allows for a real-world comparison of the broadband landscape to the information received from broadband inquiries. Broadband inquiries are able to provide three types of information: 1) Residents who do not have broadband but want it. 2) Residents who have broadband but want a different provider. 3) Residents who do not have broadband, but the broadband inventory maps indicate that they do. Through the collection of broadband inquiries, a visual demand for broadband is presented. This visualization allows Connected Nation the ability to validate broadband availability maps for accuracy. If residents within a region state that they are without broadband, but the broadband inventory maps show otherwise, this allows Connected Nation to approach the providers within that area in an effort to trim down their coverage to more accurately represent real-world availability on the ground. On the other hand, if there is a region in the state in which broadband is not available, broadband inquiries allow providers close to that region to see where they can successfully expand their broadband networks, leading to a high return on investment. In short, the higher number of inquiries leads to a higher level of certainty in regard to the broadband availability maps. Since the initial data collection and release of corresponding maps, feedback in the form of broadband inquiries has allowed Connected Nation to identify additional areas that are in need of field validation, which are scheduled as soon as possible. Additional information on field validation can be found in the Field Validation Narrative.

The broadband inquiry process has been implemented in several other Connected Nation state programs with successful results. Citizens in the State of Tennessee have submitted over 10,000 broadband inquiries since 2007, allowing the Connected Tennessee program to evaluate each inquiry for broadband demand and data verification. These inquiries are continuously examined against current broadband availability, updated every three months, to determine if previously unserved households have been expanded to and can now receive broadband access at their residence. This database of broadband inquiries has also allowed Connected Tennessee to aggregate demand in concentrated areas to show providers the exact locations where the population has made it clear that they would purchase broadband if it was made available to them. Providers in the state have responded to this process and have expanded to areas knowing that their investment will be worthwhile. Data verification methods have also proven successful, as Connected Tennessee has been able to show those inquiries that indicate the broadband service areas are misrepresented on the map to providers, who then verify where service cannot reach in regard to that residence(s). The

broadband coverage in Tennessee has been altered to create a more accurate map based on the inquiries submitted by the public.

During this reporting period, the Illinois project has received a total of 26 inquiries (37 from grant inception to date). As more inquiries are submitted, 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.

Connected Nation launched BroadbandStat at <http://connectillinois.org> on February 24, 2010, and has received a total of 1,400 visits to date.

SPEED TEST METHODOLOGY

The 220 speed tests that are represented in the Illinois Speed Test Report during this reporting period (330 from 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 for partners around the world. This network of sites that is developed and run on their testing technology provides Ookla with a vast dataset that, due to the variability of geographic information collected across the varying speed test sites, is geocoded utilizing Geo-IP technology. This technology allows for tests to be geocoded to points of aggregation, typically larger nodes across provider networks. While there are hundreds of thousands of tests that have been conducted, the level of aggregation is only sufficient for county-level detail due to the test results being located at these larger nodes and not at an absolute location for each speed test.

In an effort to validate the broadband data currently on <http://connectillinois.org>, speed test information is collected throughout the state. Speed tests provide speed information on the path taken through all networks (a provider's network as well as additional networks) a local machine must connect to in order to reach the host test. This collection of speed information is two-tiered.

First, it allows for a comprehensive dataset of speeds, while also providing the Partnership for a Connected Illinois with the information on where broadband services are available. Second, unlike theoretical speed information received through the data collection process from carriers, user speed tests provide real world information on the speeds that currently exist within the state of Illinois.

Broadband Provider Log

| | |
|------------------------------------|-----|
| Complete | 124 |
| Non-Responsive/Refused | 23 |
| In Progress | 25 |
| Count of Datasets by Status | 172 |
| Total Unique Providers Represented | 166 |

| Provider Name | Platform | Status | NDA Execution Date | Notes |
|---|-----------------|---|--------------------|-------|
| Alhambra-Grantfork Telephone Company | ILEC/CLEC | Data Added to Statewide Inventory | 11/16/2009 | |
| AT Cyber Systems | Fixed Wireless | Data Added to Statewide Inventory | | |
| AT&T Inc. | Mobile Wireless | Data Added to Statewide Inventory | 12/16/2009 | |
| AT&T Inc. | ILEC/CLEC | Data Added to Statewide Inventory | 12/16/2009 | |
| Barbeck Communications Group, Inc. | Fixed Wireless | Data Added to Statewide Inventory | | |
| Broadband Heaven, Inc. | Fixed Wireless | Data Added to Statewide Inventory | | |
| Cellular Properties, Inc. | Fixed Wireless | Data Added to Statewide Inventory | 2/18/2010 | |
| CenturyLink | ILEC/CLEC | Data Added to Statewide Inventory | 12/4/2009 | |
| Cequel III Communications II, LLC | Cable | Data Added to Statewide Inventory | 12/15/2009 | |
| Comcast Cable Communications, LLC | Cable | Data Added to Statewide Inventory | 12/7/2009 | |
| Comelec Services, Inc. | Fixed Wireless | Data Added to Statewide Inventory | | |
| Computer Techniques, Inc. | Fixed Wireless | Data Added to Statewide Inventory | 12/2/2009 | |
| Frontier Communications Corporation | ILEC/CLEC | Data Added to Statewide Inventory | 1/22/2010 | |
| Full Choice Communications, Inc | Fixed Wireless | Data Added to Statewide Inventory | | |
| Genisys-NotWires Internet | Fixed Wireless | Data Added to Statewide Inventory | | |
| Glasford Telephone Company | ILEC/CLEC | Data Added to Statewide Inventory | 12/9/2009 | |
| Gridley Telephone Company | ILEC/CLEC | Data Added to Statewide Inventory | 11/5/2009 | |
| Heartland Cable | Cable | Data Added to Statewide Inventory | | |
| Heartland Cable | Fixed Wireless | Data Added to Statewide Inventory | | |
| Home Telephone Company | Fiber | Data Added to Statewide Inventory | 12/10/2009 | |
| Illinois Consolidated Telephone Company | ILEC/CLEC | Data Added to Statewide Inventory | 11/30/2009 | |
| Jo-Carroll Energy, Inc. | Fixed Wireless | Data Added to Statewide Inventory | 3/15/2010 | |
| Lazernet Inc. | Fixed Wireless | Data Added to Statewide Inventory | 3/25/2010 | |
| Leap Wireless International, Inc. | Mobile Wireless | Data Added to Statewide Inventory | 4/6/2010 | |
| Maxis Wireless Internet Service | Fixed Wireless | Data Added to Statewide Inventory | | |
| McNabb Telephone Company | ILEC/CLEC | Data Added to Statewide Inventory | 11/24/2009 | |
| New Windsor Telephone Company | ILEC/CLEC | Data Added to Statewide Inventory | 12/15/2009 | |
| One-Eleven Internet Services, Inc. | Fixed Wireless | Data Added to Statewide Inventory | 12/8/2009 | |
| RCN Corporation | Cable | Data Added to Statewide Inventory | 3/4/2010 | |
| 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 | |
| Time Warner Cable Inc. | Cable | Data Added to Statewide Inventory | 12/21/2009 | |
| Tonica Telephone Company | ILEC/CLEC | Data Added to Statewide Inventory | 12/9/2009 | |
| Verizon Communications, Inc. | Mobile Wireless | Data Added to Statewide Inventory | 12/14/2009 | |
| WOWACCESS Inc. | Fixed Wireless | Data Added to Statewide Inventory | | |
| AT&T Inc. | Backhaul | Backhaul Provider Only Processing Complete | 12/16/2009 | |
| CenturyLink | Backhaul | Backhaul Provider Only Processing Complete | 12/4/2009 | |
| Covad Wireless | Backhaul | Backhaul Provider Only Processing Complete | 1/19/2010 | |
| Qwest Communications Company, LLC | Backhaul | Backhaul Provider Only Processing Complete | 1/4/2010 | |
| Sprint Nextel Corporation | Backhaul | Backhaul Provider Only Processing Complete | 1/14/2010 | |
| T-Mobile USA, Inc. | Backhaul | Backhaul Provider Only Processing Complete | 1/8/2010 | |
| tw telecom of Illinois, LLC | Backhaul | Backhaul Provider Only Processing Complete | 4/28/2010 | |
| US Signal Company, LLC | Backhaul | Backhaul Provider Only Processing Complete | 6/17/2010 | |
| Wave2Wave Communications Inc. | Backhaul | Backhaul Provider Only Processing Complete | 4/28/2010 | |
| Zayo Group, LLC | Backhaul | Backhaul Provider Only Processing Complete | | |
| LaHarpe Telephone Company, Inc. | Fiber | Approval for Update Not Received - Use Initial Data | 6/17/2010 | |
| Mediacom Communications Corporation | Cable | Approval for Update Not Received - Use Initial Data | 1/12/2010 | |
| Wonderwave Internet | Fixed Wireless | Provider Approval Solicited | | |
| McLeodUSA Telecommunications Services, Inc. | ILEC/CLEC | All Data Received | | |
| DerbyNet | | Partial Data Received | | |
| Air-Wans, Inc. | | Provider Gathering Data | | |
| 360networks | | No Update to Provide | 1/19/2010 | |
| Adams Networks Incorporated | | No Update to Provide | 12/9/2009 | |
| Avenue Broadband Communications, LLC | | No Update to Provide | 3/26/2010 | |
| Bergen Telephone Company | | No Update to Provide | 12/7/2009 | |
| Cass Communications Management, Inc. | | No Update to Provide | 2/17/2010 | |
| Charter Communications | | No Update to Provide | 12/15/2009 | |
| Clearwave Communications | | No Update to Provide | 1/15/2010 | |
| Clearwire Corporation | | No Update to Provide | 3/3/2010 | |
| Crossville Telephone Company, Inc. | | No Update to Provide | 12/10/2009 | |
| DeKalb Fiber Optic, LLC | | No Update to Provide | 3/22/2010 | |
| Denali Spectrum License Sub, LLC. | | No Update to Provide | 4/6/2010 | |
| E-vergent.com, LLC | | No Update to Provide | 12/8/2009 | |
| Egyptian Internet Service | | No Update to Provide | 12/11/2009 | |
| Fairpoint Communications, Inc. | | No Update to Provide | 1/27/2010 | |
| Flat Rock Telephone Co-Op, Inc | | No Update to Provide | 12/11/2009 | |
| Fox Valley Internet, Inc | | No Update to Provide | 2/17/2010 | |
| Geneseo Communications Services, Inc. | | No Update to Provide | 11/17/2009 | |
| Harrisonville Telephone Company | | No Update to Provide | 11/10/2009 | |
| Heartland Communications Internet Services, Inc | | No Update to Provide | 1/25/2010 | |

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|---|--|---------------------------------------|------------|---|
| I.V. Net, LLP | | No Update to Provide | | |
| Indian Valley .com | | No Update to Provide | 6/17/2010 | |
| Intellifiber Networks, Inc. | | No Update to Provide | | |
| Intelligent Computing Solutions | | No Update to Provide | 2/16/2010 | |
| ISI Communications, Inc. | | No Update to Provide | 3/9/2010 | |
| JAG Holdings Corp. | | No Update to Provide | | |
| Jakmart.com, Inc. | | No Update to Provide | 12/3/2009 | |
| Joink LLC | | No Update to Provide | | |
| KWISP Wireless Internet Services | | No Update to Provide | | |
| Leaf River Telephone Company | | No Update to Provide | 12/10/2009 | |
| Leonore Mutual Telephone Co., Inc. | | No Update to Provide | 3/18/2010 | |
| Madison Telephone Company, Inc. | | No Update to Provide | 12/9/2009 | |
| McDonough Telephone Cooperative | | No Update to Provide | 10/30/2009 | |
| Mid Century Telephone Cooperative, Inc. | | No Update to Provide | 12/9/2009 | |
| Monster Wireless Internet, LLC | | No Update to Provide | | |
| Montrose Mutual Telephone Company | | No Update to Provide | | |
| Moultrie Independent Telephone Company | | No Update to Provide | 12/9/2009 | |
| Mount Vernon.Net, Inc. | | No Update to Provide | 12/10/2009 | |
| MTCO Corporation | | No Update to Provide | 3/12/2010 | |
| Netwitz Internet Services, Inc. | | No Update to Provide | 3/12/2010 | |
| NewarkNet Wireless | | No Update to Provide | | |
| Norcom 2000 | | No Update to Provide | | |
| NOW Wireless, LLC | | No Update to Provide | 1/14/2010 | |
| One Communications Corporation | | No Update to Provide | 3/18/2010 | |
| Prairie iNet | | No Update to Provide | 3/16/2010 | |
| Reynolds Telephone Company | | No Update to Provide | 11/20/2009 | |
| Royell Communications, Inc. | | No Update to Provide | 12/2/2009 | |
| Sat-a-link | | No Update to Provide | 2/2/2010 | |
| Shawnee Telephone Company | | No Update to Provide | 2/23/2010 | |
| Stelle Telephone Company | | No Update to Provide | 1/22/2010 | |
| Telecommunications Management, LLC | | No Update to Provide | 10/13/2009 | |
| Trilutions Computer & Internet Center | | No Update to Provide | | |
| Viola Home Telephone Company | | No Update to Provide | 12/3/2009 | |
| Volo Broadband | | No Update to Provide | | |
| Wabash Telephone Cooperative, Inc. | | No Update to Provide | 1/26/2010 | |
| Wisper ISP, Inc | | No Update to Provide | | |
| Woodhull Telephone Company | | No Update to Provide | 12/12/2009 | |
| XO Communications, LLC | | No Update to Provide | 6/2/2010 | |
| BANICON Inc. | | No Update Provided - Use Initial Data | 2/26/2010 | |
| Bspeedy Wireless Inc | | No Update Provided - Use Initial Data | 12/3/2009 | |
| CCAonline, Inc. | | No Update Provided - Use Initial Data | 3/11/2010 | |
| Cogent Communications, Inc. | | No Update Provided - Use Initial Data | | |
| Computer Dynamics | | No Update Provided - Use Initial Data | 3/9/2010 | |
| Cyber Broadcasting, LLC | | No Update Provided - Use Initial Data | 3/10/2010 | |
| Data Moving Company | | No Update Provided - Use Initial Data | | |
| Ekco Wireless | | No Update Provided - Use Initial Data | 12/11/2009 | |
| Galaxy Cable, Inc. | | No Update Provided - Use Initial Data | 2/10/2010 | |
| Grafton Telephone Company | | No Update Provided - Use Initial Data | 12/11/2009 | |
| Hamilton County Telephone CO-OP | | No Update Provided - Use Initial Data | 12/11/2009 | |
| Heartland Cable Broadband | | No Update Provided - Use Initial Data | | |
| HofNet Communications, Inc | | No Update Provided - Use Initial Data | | |
| KeyOn Communications, Inc. | | No Update Provided - Use Initial Data | 10/15/2009 | |
| Kraus Electronics | | No Update Provided - Use Initial Data | | |
| Level 3 Communications, LLC | | No Update Provided - Use Initial Data | 12/14/2009 | |
| Oneida Telephone Exchange, Inc. | | No Update Provided - Use Initial Data | 12/10/2009 | |
| Tel-Star Cablevision, Inc. | | No Update Provided - Use Initial Data | 12/2/2009 | |
| Tincans Wireless Internet | | No Update Provided - Use Initial Data | 12/9/2009 | |
| US Sonet | | No Update Provided - Use Initial Data | | |
| Airbaud, Inc. | | Solicited Initial Data | | |
| Foresite Wireless, LLC | | Solicited Initial Data | | |
| I Route Inc. | | Solicited Initial Data | 4/1/2010 | |
| Logonix Corporation | | Solicited Initial Data | | |
| Maxwire | | Solicited Initial Data | | |
| McHenryCom Company, Inc. | | Solicited Initial Data | | |
| Medianet Computers | | Solicited Initial Data | | |
| Nova Cablevision | | Solicited Initial Data | | |
| Oglecom Internet, Inc. | | Solicited Initial Data | | |
| Open Air Wireless | | Solicited Initial Data | | |
| Park TV & Electronics | | Solicited Initial Data | | |
| RMU Advanced Communications | | Solicited Initial Data | | |
| Springnet1 | | Solicited Initial Data | | |
| US Broadband, LLC | | Solicited Initial Data | 1/14/2010 | |
| Xanadoo, LLC | | Solicited Initial Data | | |
| DuPage Internet Services | | Contact Attempted | | |
| | | | | [AUG-24-10 Charlie Roodenburg] Provider is "Business Only" and does not provide broadband Internet access to residential customers. They do provide backhaul services to a few WISP but because this is less than one-half of one percent of the company's total business, the company is unwilling to devote any time to providing mapping data. |
| BOB Business Only Broadband | | Refused to Participate | | |
| | | | | [AUG-20-2010 Charlie Roodenburg] A company representative stated that he does not want to participate at this time due to "legal concerns" and time constraints. |
| Cygnus Communications | | Refused to Participate | | |

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|------------------------------------|--|-------------------------------------|-----------|---|
| DLS Internet Services | | Refused to Participate | | [AUG-20-2010 Charlie Roodenburg] Spoke with a company representative who explained that he is phasing out wireless service and will be evolving his company into a B2B business. He cannot compete with other providers. He sees no reason to participate in mapping project. |
| Essex Computers | | Refused to Participate | 1/25/2010 | [Aug-25-10 Mark Messer] Spoke with a company representative on the phone and he indicated they did not wish to participate at this time. |
| JISP Wireless Internet | | Refused to Participate | | [Sept-1-10 Mark Messer] Spoke with a company representative who reported no changes to service area and his stance on participating has not changed. |
| Kentucky Data Link, Inc. | | Refused to Participate | | [JUL-22-10 Ira Dye] A provider representative replied back stating that they are "electing not to contribute at this time." |
| Urban Communications, Inc. | | Refused to Participate | | [Sept-1-10 Mark Messer] Spoke with a company representative on the phone and she indicated that she did notify other representative from the company about the update, and that they are not interested in participating. |
| WOW! Internet | | Refused to Participate | | [AUG-11-10 Wes Kerr] The provider responded to e-mail outreach requesting if they would be participating in the October data submission and responded, "No we are not, thank you for the opportunity." |
| AJ Internet, Inc. | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between September 1, 2009 and March 24, 2010, three attempts were made between August 23 and August 27. |
| American Wireless Broadband | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between July 30, 2009 and March 26, 2010, three attempts were made between August 23 and August 27. |
| Atmosphere Communications, Inc. | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between November 18, 2009 and March 26, 2010, three attempts were made in August. |
| Copper-Free Networks, Inc. | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between October 26, 2009 and March 16, 2010, attempts made during this period were unsuccessful. |
| EJB Technologies | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between August 28, 2009 and March 23, 2010, attempts made during this period were unsuccessful. |
| Empowering Technologies, Inc. | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between October 27, 2009 and March 10, 2010, attempts made during this period were unsuccessful. |
| HiBeam | | Non-Responsive to Multiple Attempts | | Three attempts were made between July 22 and August 26. |
| New Wave Net Corp | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between August 29, 2009 and March 23, 2010, six attempts were made between August 20 and September 12. |
| Quincy Wireless | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between August 29, 2009 and March 23, 2010, four attempts were made between June 28 and August 31. |
| Telesti Corp. | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between September 9, 2009 and March 17, 2010, three attempts were made between August 20 and September 2. |
| theWISP.net, Inc. | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between September 9, 2009 and March 26, 2010, six attempts were made between June 28 and August 31. |
| Watekco | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between September 9, 2009 and March 10, 2010, three attempts were made between August 24 and September 2. |
| Winco Inc. | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between September 9, 2009 and March 9, 2010, four attempts were made between June 29 and August 31. |
| WiresAway, Inc. | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between September 9, 2009 and March 23, 2010, four attempts were made between June 28 and August 31. |
| WishCom Wireless Internet Services | | Non-Responsive to Multiple Attempts | | In addition to multiple attempts made between September 9, 2009 and March 24, 2010, three attempts were made between August 24 and September 2. |
| DISH Network Corporation | | Other | 1/27/2010 | [Sep-16-10 Jess Cary] 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. |

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|--------------------------------|--|-------|----------|---|
| Hughes Network Systems, LLC | | Other | 2/5/2010 | [Sep-16-10 Jess Cary] 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. |
| Urbana-Champaign Big Broadband | | Other | | [SEPT-17-10 Ashley Littell] Provider indicated that "Urbana-Champaign Big Broadband has not built any network yet and probably will not until the first quarter of next year." |
| Utopian Wireless Coporation | | Other | | [AUG-12-10 Wes Kerr] Utopian confirmed that they do not yet offer any services however will begin offering services in Quarter 4 of 2010. |
| WildBlue Communications, Inc. | | Other | 1/8/2010 | [Sep-16-10 Jess Cary] 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. |