

**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 ALASKA**

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October 1, 2010

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## COVER LETTER

September 30, 2010

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

Dear Ms. Neville:

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

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

### ***Inventory of Deliverables, Connect Alaska: October 1, 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	Accuracy and Verification Report Worksheets of Contact Information, Data Dictionary, and Provider Summary Table
n/a	DataPackage.xls	
n/a	n/a	Broadband Provider Roster and Participation Status

In addition, this data update submission should be found to be compliant with the additional program requirements instituted by the National Telecommunications and Information Administration since the time of the initial SBDD data submission for the Connect Alaska program, on June 30, 2010. Specifically, these new requirements are:

**Census Blocks**

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

**SBDD Data Transfer Model**

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

It is therefore with great pleasure that the Connect Alaska program submits this first, semi-annual data update under the State Broadband Data and Development Grant Program. We will continue in partnership with Alaska Department of Commerce, Community & Economic Development 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.

This data update submission under the SBDD includes the participation of approximately 85.7% of the Alaska provider community, or 18 of 21 total providers. Of the 18 participating providers, 5 supplied an update to their network or coverage area(s), while 12 have reported no change. The remaining provider supplied initial submission data but could not submit updated coverage area(s) 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 3 providers that are not represented in the attached datasets, one provider has refused to participate in the voluntary program. The remaining provider is currently in some form of progress toward data submission but was not able to submit coverage area(s) at the time of this submission.

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

At the program's inception, Connect Alaska launched a website to create awareness about the initiative. Connectak.org continues to serve a prominent role in the outreach and data collection effort. This program asset provides a way for the general public to participate in the process by offering interactive tools for users to test their connection speed, submit broadband inquiries, or contact a program representative. These program stakeholders are an essential component in the larger Connect Alaska data validation methodology.

As an indicator of stakeholder penetration, the Connect Alaska website encountered 1,617 unique visits during this reporting period (1,810 total to date for the life of the grant which was awarded on June 1, 2010). Additionally, this pronounced Web activity netted 23 broadband inquiries over this same reporting period (24 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 Alaska website and offer the citizens a vehicle to provide information regarding availability in their respective service area, either in affirmation or contest of the reported data represented in the Connect Alaska mapping artifacts. Since the initial data collection and release of corresponding maps, feedback in the form of broadband inquiries has allowed Connected Nation to identify additional areas that are in need of field validation, which is scheduled as soon as possible. Additional information on field validation can be found in the Field Validation Narrative.

### ***Community Anchor Institutions***

Connect Alaska 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 Alaska Department of Commerce, Community & Economic Development, significant additional research and outreach was conducted during this data update reporting period by Connect Alaska to continue identification of existing, centralized sources for CAI connectivity data. Outreach was coordinated with the following state agencies in Alaska to distribute the CAI survey to institutions throughout the state: Alaska Department of Commerce, Community and Economic Development. The Alaska Department of Commerce, Community & Economic Development assisted in the outreach effort by providing their contact information for their CAI partners. Connect Alaska has identified and processed a list of CAI through a combination of datasets including publicly available and privately held datasets from online sources, including:

- The National Public Safety Information Bureau  
<http://www.safetysource.com>
- American Hospital Association  
[http://www.hospitalconnect.com/hospitalconnect\\_app/hospitalfinder](http://www.hospitalconnect.com/hospitalconnect_app/hospitalfinder)
- National Center for Education Statistics  
Public Schools: <http://nces.ed.gov/ccd/schoolsearch/>

Private Schools: <http://nces.ed.gov/surveys/pss/privateschoolsearch/>

Colleges: <http://nces.ed.gov/collegenavigator>

Libraries: <http://nces.ed.gov/surveys/libraries/librarysearch/>

- United States Fire Administration  
<http://www.usfa.dhs.gov/applications/census/search.cfm>

As of this semi-annual reporting period, a total of 99.5% Alaska CAI were identified, addressed, and geocoded. As is evident in the datasets being conveyed, while we were able to document institutions and the related addresses, the connectivity data collected in most categories remains less than complete. From our work in Alaska, as well as other states, we recognize the great value of this data to future collaboration efforts within the state, and to the accomplishment of the purposes in the recently released National Broadband Plan. We plan to continue to bring best practices to the Alaska efforts, along with an investment of both human and technical resources required to reach these goals in advance of the submission of the semi-annual update of this data due in April 2011.

In acquiring both broadband availability and CAI data within the state of Alaska, Connected Nation made special effort to engage all native communities in the area covered by the Alaska SBDD grant. According to the U.S. Department of the Interior — Bureau of Indian Affairs, there are 228 native communities in the area covered by the Alaska SBDD grant. Please refer to page 16 for a complete listing of these native communities. Connected Nation has successfully contacted 119 of the 228 native communities as part of the SBDD program and is accounting for the resulting data in the creation of the artifacts for this submission.

The Connect Alaska 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 Alaska, as well as the United States through contribution to the National Broadband Map. Please accept this submission by Connected Nation and on behalf of Wanetta Ayers, Director of the Office of Economic Development for the State of Alaska, Department of Commerce, Community & Economic Development. It is through the partnership that we have formed that we have been able to accomplish this valuable undertaking together. We look forward to the remaining work ahead.

Respectfully submitted,



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

## DATA ACQUISITION: ALASKA COMMUNITY ANCHOR INSTITUTIONS

In this second reporting period of the SBDD, Connect Alaska, working in coordination with the Alaska Department of Commerce, Community and Economic Development has established an ongoing mechanism for gathering data on the location and broadband connectivity of Community Anchor Institutions (CAI), in accordance with the data requirements of the SBDD NOFA Technical Appendix. Connect Alaska has focused efforts during this reporting period on conducting outreach and raising awareness of this important project.

In conjunction with the Alaska Department of Commerce, Community and Economic Development; Connect Alaska 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 Alaska through ESRI ArcGIS software.

Connect Alaska continues to utilize a customized online survey hosted through SurveyMonkey, with a landing page on the Connect Alaska 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 Alaska will continue to use these data-gathering tools for future targeted outreach efforts throughout the coming months leading up to the next reporting period. These materials are customized to fit the CAI categories as defined in the SBDD NOFA. Survey Link:

[http://connectak.org/mapping/Community\\_Anchor\\_Institution\\_Data\\_Collection.php](http://connectak.org/mapping/Community_Anchor_Institution_Data_Collection.php)

Connect Alaska, working with the Alaska Department of Commerce, Community and Economic Development, continues to conduct research as part of an ongoing process to identify existing, centralized sources for CAI connectivity data. In tandem with these efforts to identify existing data, Connect Alaska and the Alaska Department of Commerce are working together to identify key contacts among all CAI categories in an effort to distribute and promote the online survey and raise awareness of the importance of CAI broadband connectivity. This coordination has resulted in the identification of key contacts at numerous statewide organizations including the Division of Community and Regional Affairs, Alaska State Archives, Department of Education, Alaska State Library, University of Alaska and the Department of Public Safety. Connect Alaska also continues to operate a CAI hotline to answer questions related to the survey tools and CAI data collection.

Connect Alaska has an ongoing mission to educate CAI throughout the state on the importance of participating in the project. Participation by these institutions will raise awareness about the importance of broadband connectivity and the need to report the requested data for inclusion on the Connect Alaska interactive map.

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

## SBDD DATA TRANSFER MODEL METHODOLOGY

The submission of the broadband dataset for October 1, 2010, is contained within the SBDD Data Transfer Model as released on the Grantee Workspace on September 9, 2010. Connected Nation has reviewed all literature that relates to the release and use of this data transfer model and recognizes that it does not replace or dictate how data is stored, processed, or displayed for the state, as it is meant primarily as a means to transfer the broadband data from all states and territories and populate the National Broadband Map in a seamless fashion.

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

### *Inventory of Deliverables, Connect Alaska: October 1, 2010*

<u>NOFA Requirement</u>	<u>Data Transfer Model</u>	<u>Data Description</u>
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Appendix A: 3(b)	BB_ConnectionPoint_MiddleMile	Broadband Service Infrastructure Middle-Mile and Backbone Interconnection Points
Appendix A: 4	BB_Service_CAInstitutions	Community Anchor Institutions-Listing

The provider data collected by Connected Nation on behalf of the state of Alaska 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.

## ALASKA FIELD VALIDATION NARRATIVE

The Connected Nation staff of Chip Spann, Layne Wagner, John Determan, and Terry Holmes have focused their time on both data collection and validation within the state of Alaska. While in the field, these staff members have (a) conducted random spectrum analysis studies throughout the state to verify both licensed and unlicensed broadband operations; (b) validated the coordinates for infrastructure locations (DSLAMs, towers, remote terminals, etc.) using Microsoft Streets & Trips and a handheld Garmin eTrex Summit GPS unit; and (c) identified physical wire-line attributes (such as fiber node, CATV headends, etc.).

On-the-ground tests complement the cross-referencing of data, collected from the broadband provider community, against records and information contained in the public domain. In addition to simply testing and validating data, these on-site visits allow Connected Nation staff members to meet with representatives from the broadband provider community. This not only strengthens the relationship between the provider and mapping agent, it allows the Connected Nation staff to gain a unique perspective into the inner workings of each broadband distribution network.

Connected Nation has completed 44 on-site validation tests and has verified all, or parts of, the data for 8 companies including AT&T, TelAlaska, Borealis, GCI, Copper Valley Wireless, Clearwire, Matanuska Telephone, and Ace Tekk. This testing schedule has ensured that 34.78% of the broadband provider universe<sup>1</sup> has received some form of field testing and data verification technique. Field tests have been completed in Anchorage, Girdwood, Wasilla, Juneau, Fairbanks, Auk Harbor, Douglas, Mendenhall, and other remote areas of the state.

Before December 31, 2011, Connected Nation will target an additional 4 randomly selected companies in order to ensure a total field validation rate equal to or exceeding 40%. Due to the unique nature of the state's terrain and the remote population centers, Connected Nation will also use those travel opportunities to attempt to meet with representatives from some the 200+ federally recognized native communities. During recent trips to Alaska, additional CAI data has been collected due to the personalized visits with the native communities in Nenana and Dot Lake.

## 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

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<sup>1</sup> Based on criteria as established by the NTIA and the FCC.

represents the real-world network extent. Any issues in how the service area is represented on the map(s) are remedied by Connected Nation, whether they are additions, removal of service, or any other revisions. Revised maps of service area representations are sent to the provider for review and approval; Connected Nation will revise data and return maps as many times as necessary until the provider is in agreement that the map represents their service area as accurately as possible. Once the review process has been completed and final approval of the data is provided, the data is deemed ready for NTIA submission.

Once the data collection has been aggregated to a statewide level, static maps of statewide and county-level availability are produced and made publicly available. In addition, consumers can visit the interactive online tool, BroadbandStat, to create customized views of broadband service areas and analyze corresponding demographic information. Leveraging broadband service data on various platforms allows for public users, providers, and other stakeholders to review, scrutinize, and provide feedback on the represented data. This feedback becomes a validation method in itself as consumers submit inquiries to Connected Nation either affirming where service is not available or identifying areas where broadband service is shown on the map, but in actuality is not available. This allows for a follow-up to providers regarding revisions to the data as it is represented; it also allows for Connected Nation to identify locations where on-site visits may be necessary to complete field validation of available services. Public feedback on all forms of mapping products serves as a localized validation method for provider-supplied information and allows Connected Nation to resolve inaccuracies as they are identified to ensure that only the highest quality information is provided to stakeholders.

### **DATA VALIDATION: SURVEY RESEARCH**

During June and July 2010, Connect Alaska conducted a statistically significant telephone survey of 817 Alaska businesses, to offer as a comparison against the provider-validated statewide broadband inventory. The survey provides an estimate of the percentage of all Alaska businesses and a subset percentage of all *rural* Alaska businesses that report that they are unaware of available broadband service at their location. These figures are then compared against broadband availability estimates derived from provider-supplied data to provide a macro-level comparison to the provider-validated data. This test measures how state businesses' awareness of broadband availability compares to provider-validated availability information. Results are reported below.

### **DATA VALIDATION: METHODOLOGY**

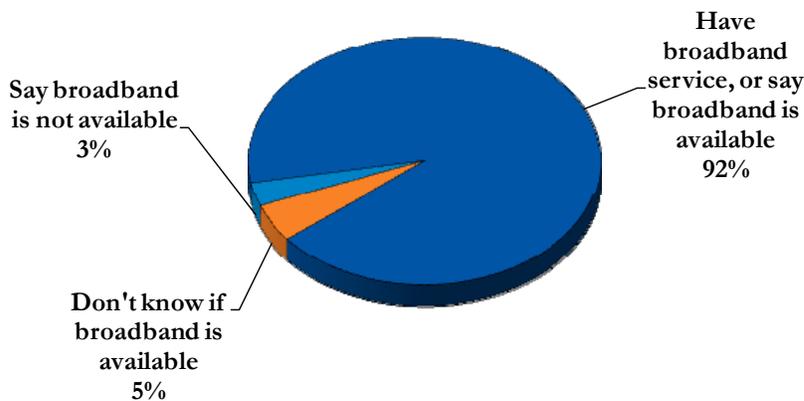
Connect Alaska conducted a random digit dial (RDD) survey of 817 businesses contacted between June 22 and July 16, 2010. Data were collected by telephone through live, computer-assisted interviews, with quotas set by business size and industry sector to ensure adequate representation of all businesses across the state. Weights were applied to correct for minor variations and ensure that the sample matched U.S. Census estimates of the state's business establishments, as reported in the County Business Patterns Report. The statewide full sample (n=817) provides a margin of error of  $\pm 4.6\%$  at the 95% level of confidence. The full sample of rural businesses (n=303 businesses located in rural boroughs/census areas) provides a margin of error of  $\pm 7.6\%$  at the 95% level of confidence. These sample errors account for sample weighting, using the effective sample size. For

the purposes of this survey, broadband is defined as “an Internet connection with speeds of 768 kilobits per second or higher in at least one direction.”

**Results**

Statewide, 3% of businesses report that broadband service is not available at their location, 5% don’t know if broadband is available, and 92% report with certainty that broadband is available (Figure 1).

**Figure 1.**  
**Awareness of broadband availability among Alaska businesses**



Taking into account the survey’s margin of error, the results estimate that between 0% and 7.6% of Alaska businesses do not have broadband service available.

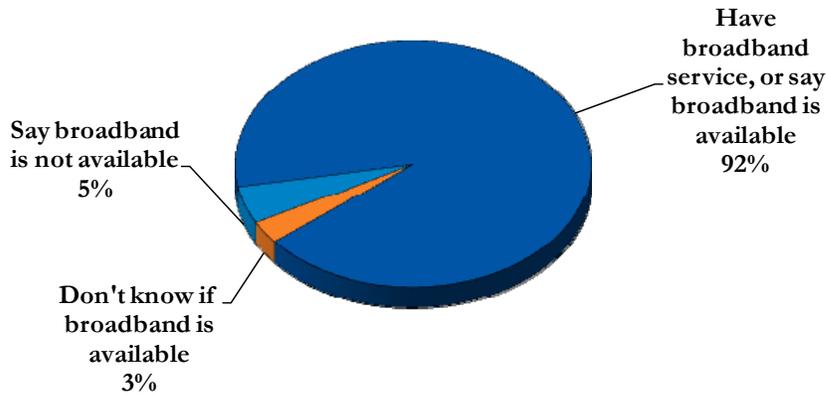
Estimates derived from provider-validated data indicate that approximately 14.04% of Alaska households do not have terrestrial fixed broadband service available, and approximately 9.3%<sup>2</sup> of Alaska households have neither mobile nor fixed broadband service available.<sup>3</sup>

Among rural businesses, 5% of respondents report that broadband service is not available to them, 3% do not know if broadband is available, and 92% report with certainty that broadband is available (Figure 2).

<sup>2</sup> 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.

<sup>3</sup> 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.

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



Taking into account the survey's margin of error, the results estimate that between 0% and 12.6% of rural Alaska businesses do not have broadband service available.

Results derived from provider-validated data indicate that approximately 24.75% of rural Alaska households do not have terrestrial fixed broadband service available, and approximately 15.71%<sup>4</sup> of rural Alaska households have neither mobile nor fixed broadband service available.<sup>5</sup>

## 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)

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

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 Connect Alaska project has received a total of 23 inquiries (24 grant inception to date). As more inquiries are submitted to Connect Alaska, a more thorough validation of the broadband landscape can be performed, while also allowing providers to see which areas have a high demand for broadband adoption.

## **BROADBANDSTAT METHODOLOGY**

BroadbandStat is an online, interactive mapping tool for viewing, analyzing, and validating broadband data. Developed through a partnership with ESRI, the market leader in geographic information system (GIS) software, BroadbandStat is a multi-functional, user-friendly way for local leaders, policymakers, consumers, and technology providers to devise a plan for the expansion and adoption of broadband.

First and foremost, BroadbandStat allows consumers to locate their residence and identify providers that offer broadband Internet service to that location. The interactive platform allows for users to build and evaluate broadband expansion scenarios using a wealth of data, including education and population demographics, broadband availability, and research about the barriers to adoption.

The Connect Alaska project launched BroadbandStat on September 1, 2010, and has received a total of 378 visits to date.

## **SPEED TEST METHODOLOGY**

The 278 speed tests that are represented in the Connect Alaska Speed Test Report during this reporting period (305 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 Alaska speed test website, for partners around the world. This network of sites that is developed and run on their testing technology provides Ookla with a vast dataset that, due to the variability of geographic information collected across the varying speed test sites, is geocoded utilizing Geo-IP technology. This technology allows for tests to be geocoded to points of aggregation, typically larger nodes across provider networks. While there are hundreds of thousands of tests that have been conducted, the level of aggregation is only sufficient for county-level detail due to the test results being located at these larger nodes and not at an absolute location for each speed test.

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

## NATIVE COMMUNITIES IN ALASKA

1. Agdaagux Tribe of King Cove
2. Akiachak Native Community
3. Akiak Native Community
4. Alatna Village
5. Algaaciq Native Village (St. Mary's)
6. Allakaket Village
7. Angoon Community Association
8. Anvik Village
9. Arctic Village (See Native Village of Venetie Tribal Government)
10. Asa'carsarmiut Tribe
11. Atkasuk Village (Atkasook)
12. Beaver Village
13. Birch Creek Tribe
14. Central Council of the Tlingit & Haida Indian Tribes
15. Chalkyitsik Village
16. Cheesh-Na Tribe (formerly the Native Village of Chistochina)
17. Chevak Native Village
18. Chickaloon Native Village
19. Chignik Bay Tribal Council (formerly the Native Village of Chignik)
20. Chignik Lake Village
21. Chilkat Indian Village (Klukwan)
22. Chilkoot Indian Association (Haines)
23. Chinik Eskimo Community (Golovin)
24. Chuloonawick Native Village
25. Circle Native Community
26. Craig Community Association
27. Curyung Tribal Council
28. Douglas Indian Association
29. Egegik Village
30. Eklutna Native Village
31. Ekwok Village
32. Emmonak Village
33. Evansville Village (aka Bettles Field)
34. Galena Village (aka Loudon Village)
35. Gulkana Village
36. Healy Lake Village
37. Holy Cross Village
38. Hoonah Indian Association
39. Hughes Village
40. Huslia Village
41. Hydaburg Cooperative Association
42. Igiugig Village
43. Inupiat Community of the Arctic Slope
44. Iqurmit Traditional Council (formerly the Native Village of Russian Mission)
45. Ivanoff Bay Village

46. Kaguyak Village
47. Kaktovik Village (aka Barter Island)
48. Kasigluk Traditional Elders Council (formerly the Native Village of Kasigluk)
49. Kenaitze Indian Tribe
50. Ketchikan Indian Corporation
51. King Island Native Community
52. King Salmon Tribe
53. Klawock Cooperative Association
54. Knik Tribe
55. Kokhanok Village
56. Koyukuk Native Village
57. Lesnoi Village (aka Woody Island)
58. Levelock Village
59. Lime Village
60. Manley Hot Springs Village
61. Manokotak Village
62. McGrath Native Village
63. Mentasta Traditional Council
64. Metlakatla Indian Community, Annette Island Reserve
65. Naknek Native Village
66. Native Village of Afognak (formerly the Village of Afognak)
67. Native Village of Akhiok
68. Native Village of Akutan
69. Native Village of Aleknagik
70. Native Village of Ambler
71. Native Village of Atka
72. Native Village of Barrow Inupiat Traditional Government
73. Native Village of Belkofski
74. Native Village of Buckland
75. Native Village of Cantwell
76. Native Village of Chenega (aka Chanega)
77. Native Village of Chignik Lagoon
78. Native Village of Chitina
79. Native Village of Chuathbaluk (Russian Mission, Kuskokwim)
80. Native Village of Council
81. Native Village of Deering
82. Native Village of Diomedede (aka Inalik)
83. Native Village of Eagle
84. Native Village of Eek
85. Native Village of Ekuk
86. Native Village of Elim
87. Native Village of Eyak (Cordova)
88. Native Village of False Pass
89. Native Village of Fort Yukon
90. Native Village of Gakona
91. Native Village of Gambell

92. Native Village of Georgetown
93. Native Village of Hamilton
94. Native Village of Hooper Bay
95. Native Village of Kanatak
96. Native Village of Karluk
97. Native Village of Kiana
98. Native Village of Kipnuk
99. Native Village of Kivalina
100. Native Village of Kluti Kaah (aka Copper Center)
101. Native Village of Kobuk
102. Native Village of Kongiganak
103. Native Village of Kotzebue
104. Native Village of Koyuk
105. Native Village of Kwinhagak (aka Quinhagak)
106. Native Village of Larsen Bay
107. Native Village of Marshall (aka Fortuna Ledge)
108. Native Village of Mary's Igloo
109. Native Village of Mekoryuk
110. Native Village of Minto
111. Native Village of Nanwalek (aka English Bay)
112. Native Village of Napaimute
113. Native Village of Napakiak
114. Native Village of Napaskiak
115. Native Village of Nelson Lagoon
116. Native Village of Nightmute
117. Native Village of Nikolski
118. Native Village of Noatak
119. Native Village of Nuiqsut (aka Nooiksut)
120. Native Village of Nunam Iqua (formerly the Native Village of Sheldon's Point)
121. Native Village of Nunapitchuk
122. Native Village of Ouzinkie
123. Native Village of Paimiut
124. Native Village of Perryville
125. Native Village of Pilot Point
126. Native Village of Pitka's Point
127. Native Village of Point Hope
128. Native Village of Point Lay
129. Native Village of Port Graham
130. Native Village of Port Heiden
131. Native Village of Port Lions
132. Native Village of Ruby
133. Native Village of Saint Michael
134. Native Village of Savoonga
135. Native Village of Scammon Bay
136. Native Village of Selawik
137. Native Village of Shaktoolik

138. Native Village of Shishmaref
139. Native Village of Shungnak
140. Native Village of Stevens
141. Native Village of Tanacross
142. Native Village of Tanana
143. Native Village of Tatitlek
144. Native Village of Tazlina
145. Native Village of Teller
146. Native Village of Teller
147. Native Village of Tetlin
148. Native Village of Tuntutuliak
149. Native Village of Tununak
150. Native Village of Tyonek
151. Native Village of Unalakleet
152. Native Village of Unga
153. Native Village of Venetie Tribal Government (Arctic Village and Village of Venetie)
154. Native Village of Wales
155. Native Village of White Mountain
156. Nenana Native Association
157. New Koliganek Village Council
158. New Stuyahok Village
159. Newhalen Village
160. Newtok Village
161. Nikolai Village
162. Ninilchik Village
163. Nome Eskimo Community
164. Nondalton Village
165. Noorvik Native Community
166. Northway Village
167. Nulato Village
168. Nunakauyarmiut Tribe (formerly the Native Village of Toksook Bay)
169. Organized Village of Grayling (aka Holikachuk)
170. Organized Village of Kake
171. Organized Village of Kasaan
172. Organized Village of Kwethluk
173. Organized Village of Saxman
174. Orutsararmuit Native Village (aka Bethel)
175. Orutsararmuit Native Village (aka Bethel)
176. Oscarville Traditional Village
177. Pauloff Harbor Village
178. Pedro Bay Village
179. Petersburg Indian Association
180. Pilot Station Traditional Village
181. Platinum Traditional Village
182. Portage Creek Village (aka Ohgsenakale)
183. Pribilof Islands Aleut Communities of St. Paul & St. George Islands

184. Qagan Tayagungin Tribe of Sand Point Village
185. Qawalangin Tribe of Unalaska
186. Rampart Village
187. Saint George Island (See Pribilof Islands Aleut Communities of St. Paul & St. George Islands)
188. Saint Paul Island (See Pribilof Islands Aleut Communities of St. Paul & St. George Islands)
189. Seldovia Village Tribe
190. Shageluk Native Village
191. Sitka Tribe of Alaska
192. Skagway Village
193. South Naknek Village
194. Stebbins Community Association
195. Sun'aq Tribe of Kodiak (formerly the Shoonaq' Tribe of Kodiak)
196. Takotna Village
197. Telida Village
198. Traditional Village of Togiak
199. Tuluksak Native Community
200. Twin Hills Village
201. Ugashik Village
202. Umkumiute Native Village
203. Village of Alakanuk
204. Village of Anaktuvuk Pass
205. Village of Aniak
206. Village of Atmautluak
207. Village of Bill Moore's Slough
208. Village of Chefornak
209. Village of Clarks Point
210. Village of Crooked Creek
211. Village of Dot Lake
212. Village of Iliamna
213. Village of Kalskag
214. Village of Kaltag
215. Village of Kotlik
216. Village of Lower Kalskag
217. Village of Ohogamiut
218. Village of Old Harbor
219. Village of Red Devil
220. Village of Salamatoff
221. Village of Sleetmute
222. Village of Solomon
223. Village of Stony River
224. Village of Venetie (See Arctic Village)
225. Village of Wainwright

- 226. Wrangell Cooperative Association
- 227. Yakutat Tlingit Tribe
- 228. Yupiit of Andreafski



## Broadband Provider Log

Complete	18
Non-Responsive/Refused	1
In Progress	2
Count of Datasets by Status	21
Total Unique Providers Represented	21

Provider Name	Platform	Status	NDA Execution Date	Notes
Alaska Telephone Company	ILEC/CLEC	Data Added to Statewide Inventory	2/26/2010	
AT&T Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/16/2009	
Cordova Telephone Cooperative, Inc.	ILEC/CLEC	Data Added to Statewide Inventory		
Craig Cable TV, Inc.	Cable	Data Added to Statewide Inventory	7/27/2010	
Verizon Business Global LLC	Backhaul	Backhaul Provider Only Processing Complete	12/14/2009	
Ace Tekk Wireless Internet		No Update to Provide		
Adak Eagle Enterprises, LLC		No Update to Provide	12/22/2009	
AlasConnect, Inc.		No Update to Provide		
Borealis Broadband		No Update to Provide	2/1/2010	
Clearwire Corporation		No Update to Provide	3/3/2010	
Copper Valley Telephone Cooperative, Inc.		No Update to Provide	1/11/2010	
GCI Internet		No Update to Provide	2/25/2010	
Ketchikan Public Utilities		No Update to Provide	1/8/2010	
Matanuska Telephone Association, Inc.		No Update to Provide	6/15/2010	
OTZ Telephone Cooperative, Inc.		No Update to Provide		
TelAlaska Long Distance, Inc.		No Update to Provide	6/7/2010	
Yukon Telephone Company, Inc.		No Update to Provide	6/23/2010	
SPITwSPOTS LLC		No Update Provided - Use Initial Data		
Atcontact Communications, Inc.		Solicited Initial Data		
Alaska Communications Systems (ACS)		Refused to Participate		[Aug-9-10 M Iverson] Per e-mail from a company representative at ACS, ACS chooses not to participate in the Connect Alaska project at this time. However, as it is an on going situation, they may choose to participate at some later date.
Hughes Network Systems, LLC		Other	2/5/2010	[SEP-16-10 Brian Dudek] Satellite data will not be submitted due to additional information being necessary to show where service is available in the state, rather than submitting the entire state boundary as serviceable area.