

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Connect America Fund)	WC Docket No. 10-90
High-Cost Universal Service Support)	WC Docket No. 05-337
Petition for Waiver of Section 54.312(b)(2))	
and (b)(3) of the Commission's Rules of)	
)	
ACS of Anchorage, Inc.,)	
ACS of the Northland, Inc.,)	
ACS of Fairbanks, Inc., and)	
ACS of Alaska, Inc.)	

COMMENTS OF CONNECTED NATION, INC. ON ACS ' PETITION FOR WAIVER

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October 9, 2012

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COMMENTS OF CONNECTED NATION, INC.

Connected Nation, Inc., hereby submits comments in response to the Petition for Waiver filed by ACS of Anchorage, Inc., ACS of the Northland, Inc., ACS of Fairbanks, Inc., and ACS of Alaska, Inc. (collectively, “ACS”) on September 26, 2012 in the above-captioned proceedings. ACS is seeking a waiver from the Commission that would allow it to accept Connect America Fund Phase I incremental subsidies to build broadband to areas that are marked as “served” on the National Broadband Map (the “Map”) by fixed wireless Internet service providers.¹

The State of Alaska has designated Connected Nation, Inc., as the designated entity for the U.S. Department of Commerce, National Telecommunications and Information Administration State Broadband Initiatives (“SBI”) grant program. Pursuant to this grant program, since 2010, Connected Nation, Inc., through its nonprofit subsidiary Connect Alaska, has collected and independently validated

¹ ACS ILEC’s Petition for Waiver of Section 54.312(b)(2) and (3) of the Commission’s Rules, WC Docket No. 10-90 and 05-337 (filed September 26, 2012). (“ACS Waiver Petition” or “ACS Petition for Waiver”).

information on the availability of residential broadband service in Alaska at various speed tiers. Connected Nation collects this information from providers, independently validates it, and submits it to the NTIA, which uses these data to support the National Broadband Map in Alaska. For the last two mapping cycles, Connected Nation has mapped data from 95.45% and 100% of the identified residential broadband providers in Alaska; and in both cases these maps included 100% of the fixed wireless providers in Alaska that meet the NTIA definition of broadband.

Connected Nation stands by the Connect Alaska broadband map and the National Broadband Map data for Alaska, which is based on the same broadband inventory data. In Alaska and other states and jurisdictions across the country, Connected Nation has amassed a solid expertise on how to build accurate, comprehensive, granular broadband maps. Attachment A to these Comments includes a Connected Nation technical brief on *Engineering Technical Service Field Validation Techniques* describing Connected Nation's protocols for how to collect, analyze and validate broadband inventory data. In prior Comments and presentations in this docket, Connected Nation has outlined and described this approach to the Commission.²

As the entity responsible for collecting and validating broadband inventory in Alaska, Connected Nation has implemented these techniques across the state. In particular, Connected Nation has conducted field validation tests on the broadband inventory data submitted by four wireless providers in the state that are mentioned in ACS' waiver petition. Attachment B to these Comments includes a Declaration of Charles A. Spann, Director of Engineering and Technical Services ("ETS") for Connected Nation, which provides the evidence – including photographs and speed test results conducted from residential neighborhoods – that supports our data submission to the NTIA. This evidence shows that the four wireless ISPs referenced by ACS in its Petition for Waiver do, in fact, offer residential broadband service at the speed tiers depicted on the map. **Based on this data validation, and similar efforts invested throughout the State of Alaska, Connected Nation reaffirms its confidence in the validity of the broadband service inventory depicted on the National Broadband Map for these four providers and across the State of Alaska.**

² Comments of Connected Nation, Inc. on CenturyLink's Petition for Waiver, In the Matter of Connect America Fund, WC Docket No. 10-90 et. al., July 12, 2012 (available at <http://apps.fcc.gov/ecfs/document/view?id=7021986458>). "Engineering and Technical Services Field Validation Techniques: A Technical Brief by Connected Nation", presented to the FCC, June 22, 2011 (available at <http://apps.fcc.gov/ecfs/document/view?id=7021689631>). Comments of Connected Nation, In the Matter of Connect America Fund, WC Docket No. 10-90 et. al., April 18, 2011 (available at <http://apps.fcc.gov/ecfs/document/view?id=7021239880>).

Connected Nation strongly believes that robust policy decisions depend upon sound data. Across Alaska and elsewhere where Connected Nation is charged with collecting and validating broadband inventory data, we are committed to continue implementing these best practices.

I. BACKGROUND: THE ACS PETITION FOR WAIVER

On September 26, 2012, ACS submitted to the FCC a petition for waiver of Section 54.612(d)(2) of the Commission's rules, 47 C.F.R. § 54.612(d)(2), governing use of Connect America Fund Phase I incremental support.³ ACS claims in this petition that having "accepted the Commission's offer of \$4,185,103.00 in CAF Phase I incremental support on July 24, 2012, information emerged after that date indicating that ACS cannot utilize the full amount of that support while adhering strictly to the Commission's attendant broadband deployment obligations."⁴ In particular, ACS bases this petition on two distinct new sources of information they claim affects the business case developed in preparation for their original acceptance of CAF Phase I incremental support: i) completion of "a more detailed analysis of the market opportunity associated with the unserved locations where it planned to deploy broadband," and ii) the realization, based on information provided by the FCC Wireline Competition Bureau, "that hundreds of census blocks that ACS had initially targeted for deployment are ineligible as a result of the presence of fixed wireless broadband providers."⁵ Based on this alleged new information, ACS claims that it "would be able to deploy broadband to only 2,163 qualifying locations, utilizing \$1,676,325.00 in CAF Phase I incremental support [...]."⁶

In order to use the remaining CAF Phase I support originally accepted by the company, ACS requests waiver of either "(1) of the \$775.00 per location rule, in order to enable ACS to receive higher levels of per-location support for deployment beyond the initial 2,163 locations identified above; (2) a waiver of the definition of "broadband," to enable ACS to use CAF Phase I incremental support to replace obsolete equipment that currently can deliver only the Commission's lowest broadband speed tier in areas unserved by any other broadband provider; or (3) a waiver of the definition of "unserved," to enable ACS to deploy broadband where existing service is limited to, at most, fixed wireless broadband providers that lack the capacity [sic] the necessary capacity on their networks; are limited to

³ ACS Waiver Petition.

⁴ ACS Waiver Petition, at i.

⁵ ACS Waiver Petition, at i.

⁶ ACS Waiver Petition, at ii.

locations where their wireless signal can be received; and focus in many cases on the business and government markets.”⁷

In its Petition, ACS challenges the residential service offerings and coverage areas of four fixed wireless providers offering broadband service across various areas in Alaska: Ace Tekk Wireless, AlasConnect, SPITwSPOTS and Yukon Tech.⁸ According to ACS “after investigating the service offered by these providers, ACS believes that the presence of these providers, even if true, should not preclude investment by the ACS ILECs in wireline broadband facilities using CAF Phase I incremental support. The service offered by these providers appears to utilize unlicensed spectrum, and their facilities lack sufficient capacity to deliver substantial service to any significant portion of the locations covered by their service territories shown on the National Broadband Map. In addition, at least one of the providers, AlasConnect, primarily serves business and government customers, offering little benefit to small businesses and residential consumers.”⁹ ACS continues, noting that “the data shown on the National Broadband Map notwithstanding, ACS believes that the presence of these fixed wireless providers alone should not render these census blocks ineligible. As a general matter, the wireless technology they employ has severe capacity constraints and, in fact, they appear to serve limited numbers of customers at rates much higher than those ACS would charge.”¹⁰

ACS further makes the following allegations regarding the broadband service territory, quality of service and market segment targeted by four of its competitors, without providing any factual data to back it.

“In any event, even today, fixed wireless service benefits relatively few consumers. Ace Tekk Wireless, for example, which is listed as the service provider in nearly 100 census blocks initially targeted by ACS, offers a top speed of 768 kbps/512 kbps at a monthly rate of \$89.99, just barely meeting the Commission’s definition of broadband. Although the National Broadband Map indicates that its service area covers an area encompassing 90,444 individuals and 37,638 housing units, ACS believes that it actually serves only about 600-700 customers near Fairbanks.”¹¹

and

⁷ ACS Waiver Petition, at ii.

⁸ ACS Waiver Petition, at 17-19.

⁹ ACS Waiver Petition, at 11-12.

¹⁰ ACS Waiver Petition, at 15-16.

¹¹ ACS Waiver Petition, at 17.

“AlasConnect, identified as the service provider to over 200 census blocks initially targeted by ACS, offers similar service to that of Ace Tekk Wireless in terms of speed, capacity, and price, with a “premium” offering of 1 Mbps download speeds at \$85 per month, with \$200 in additional nonrecurring charges for activation, antenna installation, and site optimization. Like Ace Tekk, an individual site survey is required to verify coverage. According to the National Broadband Map, its service area covers some 94,995 individuals and 39,455 housing units, but ACS understands AlasConnect actually serves only approximately 800 customers within that area. Many of its customers appear to be business or government entities [...].”¹²

and, finally,

“According to the National Broadband Map, the smaller providers, SPITwSPOTS and Yukon Tech only even purport to cover 9,183 and 872 customer locations, respectively, and their customer bases are likewise considerably smaller. Their services suffer from the same limitations identified above for AlasConnect and Ace Tekk.”¹³

II. CONNECTED NATION’S MAPPING AND FIELD VALIDATION TECHNIQUES

Connected Nation strongly believes that robust policy decisions depend upon sound data. As a firm, we have been mapping broadband provider service availability for over ten years across a number of states. It was this experience and approach – of collecting data from broadband providers and then independently confirming and testing those service claims – that ultimately led to Congress passing the Broadband Data Improvement Act of 2008, the program that established the state broadband data development grant program (now known as SBI) that now supports the National Broadband Map.

Connected Nation has developed a whole protocol for confirming and verifying residential broadband service offerings. In prior Comments and presentations in this docket, Connected Nation has outlined and described that approach to the Commission.¹⁴ Attachment A to these Comments, including

¹² ACS Waiver Petition, at 18.

¹³ ACS Waiver Petition, at 19.

¹⁴ Comments of Connected Nation, Inc. on CenturyLink’s Petition for Waiver, In the Matter of Connect America Fund, WC Docket No. 10-90 et. al., July 12, 2012 (available at <http://apps.fcc.gov/ecfs/document/view?id=7021986458>). “Engineering and Technical Services Field Validation Techniques: A Technical Brief by Connected Nation,” presented to the FCC, June 22, 2011 (available at <http://apps.fcc.gov/ecfs/document/view?id=7021689631>). Comments of Connected Nation, In the Matter of Connect America Fund, WC Docket No. 10-90 et. al., April 18, 2011 (available at <http://apps.fcc.gov/ecfs/document/view?id=7021239880>).

a *Connected Nation Technical Brief on Engineering and Technical Services Field Validation Techniques*, provides a description of the processes that Connected Nation uses to confirm broadband availability. We have also employed this approach to map the broadband service areas of providers that do not willingly provide coverage data.

Stated simply, Connected Nation understands that important policy initiatives like Universal Service Fund reform are using the Map, and we take our role in this process seriously. While no broadband coverage map is infallible, relying upon multiple means of data validation – including on-the-ground field work, as has been done in Alaska – has made the National Broadband Map the most comprehensive source of broadband availability information to which the Commission has ever had access. While ACS admits that it did not completely check the publically available,¹⁵ user friendly National Broadband Map database before filing its acceptance of Connect America Fund Phase I subsidies, it is important to note that broadband mapping information, along with Commission rules defining *served* and *unserved* areas under the Connect America Fund Phase I program, have long been publically available. Indeed, information regarding *served* and *unserved* service areas across Alaska has been publically available through the Map’s interactive online site since February 2011. Moreover, Connected Nation posted a beta version of the Connect Alaska mapping data set even earlier, in 2010.¹⁶ In short, there has been ample opportunity for parties like ACS to review the Alaska broadband inventory data collected by Connected Nation and provide feedback.

Indeed, Connected Nation’s broadband mapping procedures, developed since 2004 when we constructed the first state-wide broadband map in the state of Kentucky, are designed to facilitate easy access and analysis of existing underlying broadband inventory data and an interphase where third-party feedback can be provided. From its inception, Connected Nation mapping programs have adamantly incorporated public, online publication of existing broadband inventory data through maps depicting *served* and *unserved* areas. The very purpose of providing these online data resources was to obtain crowdsourcing feedback from all broadband providers, with intimate knowledge of the markets they target, public and private stakeholders and the public at large. In 2007, Connected Nation incorporated interactivity to these maps, allowing third parties further ease of access and commentary on the underlying broadband inventory data. Through time, Connected Nation has incorporated more

¹⁵ ACS Petition for Waiver, at 15.

¹⁶ <http://www.connectak.org/interactive-map>

data layers, interactivity functions and ease of use to, once again, encourage easy access to the information and rapid feedback.

This feedback is essential to Connected Nation's data verification processes of the meta-data populating Connected Nation maps. Through online interactive tools, or directly via a phone call, Connected Nation offers third parties an easy way to provide feedback where the map is deemed to incorrectly represent the actual coverage available in a given area, a process that is explained in further detail in Attachment A of these comments. This information is provided through Broadband Inquiries ("BBI"), which are routinely processed and analyzed by Connected Nation's GIS mapping technical staff and assessed by our engineering team. Where deemed necessary, Connected Nation's ETS engineers will conduct field validation tests on site to assess on the ground the validity of BBIs and the underlying broadband inventory data. Where facts on the ground showcase that the underlying broadband inventory data is in fact incorrect, Connected Nation adjusts state-wide broadband maps and submits appropriately corrected datasets to the NTIA.

We have actively encouraged this type of feedback from all stakeholders, including broadband providers, private and public stakeholders and the public at large, across all of our state mapping programs, including the Connect Alaska interactive broadband map program. To date, Connected Nation has received over 20,000 such Broadband Inquiries. To date, ACS has not submitted any broadband inquiries through this process.

III. THE WIRELESS ISPS REFERENCED IN ACS'S PETITION FOR WAIVER ARE OFFERING QUALIFYING RESIDENTIAL BROADBAND SERVICE IN THE AREAS DEPICTED ON THE NATIONAL BROADBAND MAP

Connected Nation uses the data collection and validation tools discussed above and in Attachment A – *Engineering Technical Services Field Validation Techniques* across Alaska to generate the Connect Alaska broadband map. In particular, Connected Nation has independently validated and confirmed the residential broadband service offerings and signal quality of four wireless ISPs referenced in the ACS Petition for Waiver. Connected Nation's engineering team has performed on-the-ground field validation that confirms their offering of residential broadband service that meets the NTIA mapping program standards.

Attachment B to these comments includes a Declaration of Connected Nation's chief engineer, Charles A. Spann, who provides the documentary evidence of Connected Nation's independent validation of each of these four providers identified in ACS's Petition for Waiver. This evidence includes on-the-ground spectrum analysis, photographic evidence of end-user equipment installed on residential households, speed tests and signal strength tests. For each of these wireless ISPs, Connected Nation's engineers have traveled to the wireless provider's service area and confirmed that these providers do offer residential broadband service that meets the NTIA's mapping program standards.

Similar validation techniques are applied to all known facilities-based fixed, both wireline and wireless, and mobile broadband providers across the State of Alaska. **Based on these validation efforts, Connected Nation reaffirms its confidence in the validity of the broadband service inventory depicted on the National Broadband Map for these four providers.**

As Connected Nation has stated before, it supports the Commission's use of the National Broadband Map as it transforms the universal service fund to the Connect America Fund. It is important to know that the Map is more than simply a database, because behind and supporting that database is a series of outreach and validation efforts. Connected Nation's work –as well as that of other SBI designated entities –to check and validate residential broadband coverage is a significant and important resource that the Commission should utilize when presented with questions and disputes. The SBI mapping grants and validation efforts are principally funded by federal resources, so the Commission should make full use of that resource. While the National Broadband Map is not infallible, in situations like the current Petition, it would make sense for the Commission to clearly articulate its expectations that any party seeking to challenge the Map for purposes of universal service funding should document that it first discussed the matter with the SBI designated entity in the state. If the designated entity has performed independent field validation of the provider or area in question, that finding should be granted deference. Any party wishing to challenge the Map in that regard should be required to provide its own engineering field validation analysis that supports its challenge.

IV. CONCLUSION

ACS Petition for Waiver of certain rules pertaining to the implementation of the Connect America Fund Phase I program includes a number of aspects that are not in dispute by Connected Nation. In particular, Connected Nation does not offer a position on matters relating to the amount of

subsidy per location allotted under the program, or the definition of broadband used to determine *served* and *unserved* areas eligible for this funding.

Connected Nation's comments simply aim to set the record straight regarding allegations made by ACS on its Petition for Waiver that the service offerings of four wireless broadband providers in the State of Alaska are overstated on the National Broadband Map. After conducting a thorough examination of our field validation records, Connected Nation reaffirms with confidence the validity of the broadband service inventory depicted on the National Broadband Map for these four providers and across the State of Alaska.

Respectfully submitted,
[submitted electronically]

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October 9, 2012

(Attachment A – Field Validation
Attachment B – Declaration of Charles Spann)

ATTACHMENT A

Engineering Technical Services Field Validation Techniques

A Technical Brief From Connected Nation

October 2012



**ENGINEERING AND TECHNICAL SERVICES
FIELD VALIDATION TECHNIQUES
A TECHNICAL BRIEF FROM CONNECTED NATION**

OCTOBER 2012

Introduction

Connected Nation, Inc. is a not-for-profit company working across states and with the federal government to implement the State Broadband Initiative (SBI) mapping program created by the Broadband Data Improvement Act of 2008 and funded by the American Recovery and Reinvestment Act of 2009, and is managed by the National Telecommunications and Information Administration (NTIA) within the Department of Commerce. One of the main components of the SBI program is the creation of a detailed, nationwide map of broadband coverage in order to accurately pinpoint remaining gaps in broadband availability across the nation. Connected Nation is the largest mapping agent across the nation supporting the SBI program, currently working in Alaska, Iowa, Michigan, Minnesota, Nevada, Ohio, Puerto Rico, South Carolina, Tennessee, and Texas to collect, process, integrate, and validate provider data, and map the broadband inventory across these jurisdictions.

The Notice of Funds Availability (“NOFA”) issued by the National Telecommunications and Information Administration states (at footnote 27 in the NOFA) “[f]or example, a project should propose to collect availability data..., as required [in] the *Technical Appendix*, and should cross-check that data for accuracy by using at least one other metric (e.g., the location and capability of local infrastructure and whether such infrastructure could realistically serve a supposed service address, on-the-ground verification or telephone survey”. The following summary of best practices for field based verification discusses the methodologies and processes utilized by Connected Nation in order to meet this NTIA required objective.

Connected Nation’s methodology for fulfilling the charge of the SBI program starts with first establishing a trustworthy relationship with the dozens and sometimes hundreds of providers in each jurisdiction. Our mapping and engineering experts work with the providers to understand what data they have or can develop in-house describing their service territory and maximum advertised speed tiers. Connected Nation then processes these data through a validation process that helps ensure the accuracy of the mapping information. This validation process is informed with, among other methods, broadband inquiries provided by consumers and local stakeholders about the information depicted through Connected Nation’s interactive broadband maps. This crowdsourcing approach is instrumental in helping guide our validation process. Where providers are unable or unwilling to participate in the program and share data about their service territory, Connected Nation implements a coverage estimation of their service territory using various techniques.

This white paper provides an overview of Connected Nation's methodology for provider outreach and relationship management, consumer data collection, and analysis to leverage crowdsourcing data stemming from broadband inquiries, and field validation of data volunteered over a thousand participating broadband providers.

Provider Relationship Management

Over the past few years, Connected Nation's Engineering & Technical Services (ETS) team has created a strong rapport with broadband providers on a local and national level. The goal was to develop trustworthy relations with providers across the jurisdictions where we are charged with completing a broadband inventory map: Alaska, Iowa, Michigan, Minnesota, Nevada, Ohio, Puerto Rico, South Carolina, Tennessee, and Texas. Beginning with an initial database of several thousand potential providers two years ago, the ETS team has contacted every known provider of broadband services in 10 U.S. states and territories, spoken with provider executives and broadband technicians, identified that the companies were viable providers of backhaul and residential broadband services, and learned about each of the broadband service businesses. The ETS team has worked with providers, large and small, to understand what data they had available or could develop within the allotted time; it has collected these data and in tandem with Connected Nation's GIS mapping team, validated, integrated, and ultimately mapped the service territory of approximately these providers.

The NITA requires two annual updates to the SBI mapping data, in the spring and fall. During these biannual mapping cycles, each provider is contacted at least three times by ETS team members by e-mail or telephone. Each year, providers rely on Connected Nation's ETS team members as well for information about mapping updates or federal programs. While in the field, ETS team members also meet and talk face-to-face with broadband business owners, ask questions, and learn a variety of useful information:

- What challenges do providers face in the current business environment?
- Which providers are growing and which are contracting?
- Which providers seek help and which have received assistance?
- Which providers are reluctant to participate in special programs?
- Which providers have compelling success stories that can be shared?
- Who is pushing the envelope to extend broadband services in new ways and to more remote locations?
- How is new broadband deployment financed in different regions and for different platforms?
- How have federal stimulus funding programs impacted the business?
- Do providers find the annual RUS funds accessible and practical to manage?

Members of the ETS team regularly attend provider conferences and trade shows to stay abreast of ever-changing regulatory and technical advances. On many occasions, the attending ETS team member is participating as one of

the defining speakers to share knowledge on broadband mapping, digital literacy, broadband adoption and sustainability programs, and to report on real-time research analysis conducted by Connected Nation.

Consumer Data Collection and Analysis

Broadband inquiries (BBIs) are submitted frequently by consumers via Connected Nation's state-level websites. Inquirers often seek help to identify local broadband provider options, or to learn when a specific provider may be able to provide service at a particular location. Consumer comments also provide information which may help validate the underlying mapping data.

To date, Connected Nation has received more than 20,500 BBIs representing a large crowdsourcing database of service information and consumer experiences. The primary objectives of Connected Nation regarding these inquiries are to 1) improve the accuracy of the state maps with submitted consumer information and follow-up field research, 2) provide broadband options to consumers through cooperation with mapped providers and by facilitating new broadband service options, and 3) map and analyze information from consumers about areas of unmet broadband demand and alternatives to currently mapped services.

The process for responding to a BBI is straightforward, while the tools used by the ETS team are varied. Tools include the state-specific interactive broadband maps, ArcGIS Explorer for reviewing (i) confidential provider inventory maps, (ii) geocoded BBIs; and (iii) geocoded tower location maps, provider data submission updates, provider websites, as well as research conducted using the publically available information found at the Federal Communications Commission ("FCC") Spectrum Dashboard, FCC Universal Licensing System ("ULS") and the FCC Antenna Structure Registration databases, and a plethora of other useful resources.

Following completion of desktop research and a provider inventory for the BBI address, an ETS team member speaks directly to the BBI consumer to gather more specific information, with the objective of either: a) confirming or revising the BBI's provider inventory, or b) gathering information about possible broadband options near the BBI address.

While the mapping engine is designed to capture the **supply** of broadband services in any particular state, the BBI process has the ability to capture **demand** information, and measure that demand against the available supply.

Examples of questions that may be answered by a completed BBI dataset:

- Where are there concentrations of unmet demand (e.g., neighborhoods, lakeshores, school district boundaries)?
- Where are areas where consumers say price is a barrier for broadband adoption?
- Which providers are most often reported as mapped, but not providing service?
- How many unserved consumers are close to a wireless tower, and how many might be able to receive wireless broadband with installation of a signal repeater?

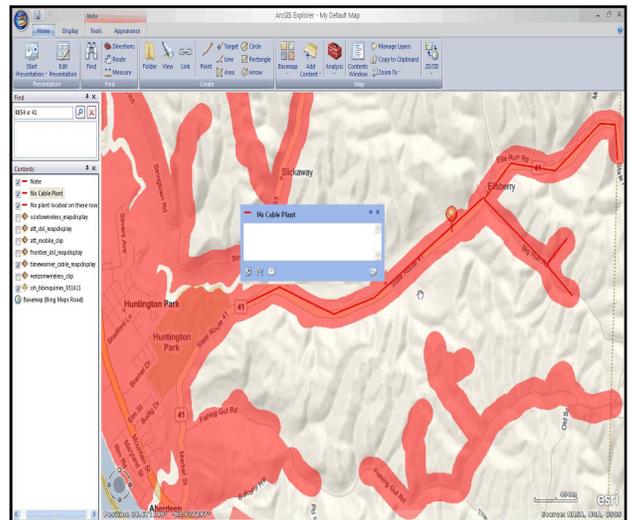
- What service platform is most requested by BBI consumers?
- What service providers are most often requested by BBI consumers?

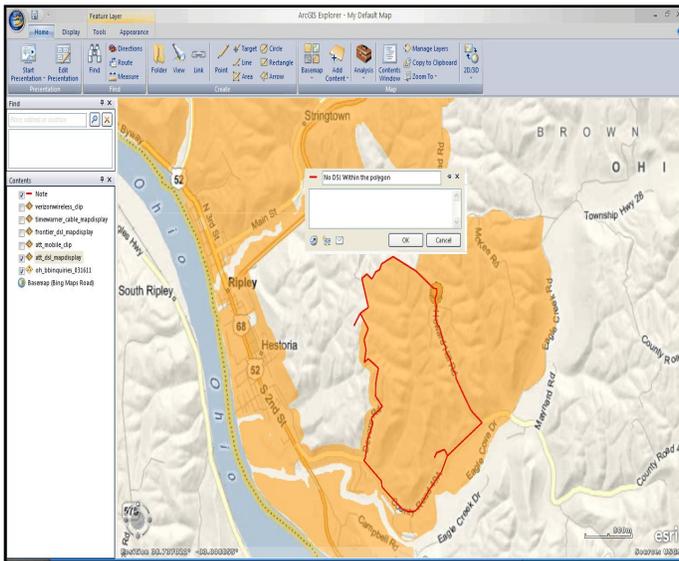
The answers to these and other questions present opportunities to Connected Nation for identifying and participating in broadband expansion opportunities and challenges.

Following the completion of the provider inventory with the consumer, the ETS team member can offer the consumer location-specific options for obtaining service, such as providing contact information for providers that the consumer was unaware were available, including satellite providers offering service and equipment assistance in certain situations. Potentially, the BBI process can capture information related to satellite referrals and other data points. Further, in instances where the provider inventory indicates a mapping discrepancy, the GIS department can potentially capture information related to census-block and road-segment reporting. Such information can yield other information, such as which platform is more likely to be overstated due to these issues, or what percentage of the mapped population is affected by use of these reporting blocks.

Field research for BBIs provides yet another important layer to the validation efforts which ultimately help to improve the broadband maps for each state. One specific BBI recently submitted by a consumer through a Connected Nation state website led to the validation example below. The BBI stated that the online broadband map indicated cable service availability where none actually existed. In this case, the consumer claimed to have contacted the broadband provider, and was unable to obtain service.

Although Connected Nation’s GIS department could have simply created a “pin-point polygon” around the customer’s home demonstrating no service on the Connected Nation online broadband mapping platform, follow-up calls to the consumer indicated a larger potential problem: the consumer commented on the mapped area stating that cable modem service is “generally unavailable for several miles on my road.” The ETS team elected to conduct on-site research, and the results of the field validation effort produced a fairly noticeable mapping refinement (the pink shading at right represents the provider service area while the dark red line indicates where there is no cable plant).





Mapping discrepancies similar to the example above are certainly to be expected in areas where providers submit census-block data. At left, the red-line polygon indicates an unserved area within the orange-shaded service region. This discussion drives home the importance of BBI, crowdsourcing information and the field validation effort as a way of resolving broadband inquiries, improving the broadband maps, and responding more fully to clients, the general public demanding broadband, and other stakeholders.

Field Data Collection

Connected Nation's ETS team has driven nearly 200,000 miles since the inception of the SBI program and completed thousands of on-site validations of data submitted by the thousands of broadband providers included in Connected Nation's broadband maps. Provider field validations are performed throughout the calendar year to meet NTIA requirements, as well as to test and confirm provider service boundaries, deployed assets, broadband speeds, and delivery platforms. ETS team members utilize a variety of resources for validation support, including provider coverage maps, FCC databases, and volunteered provider data submissions. Validation locations are selected based on a broad set of criteria, and include all platform types. A significant benefit to field work is that the ETS team gains a better understanding of the local broadband environment while on-site, and can identify previously unknown broadband providers – particularly, fixed wireless providers. Such first-hand knowledge can be an important asset in informing future programs.

Various tools, visual inspections, and tests provide the basis for a validation report. ETS engineers utilize spectrum analyzers and frequency-tuned antennas, GPS devices, cameras, and mapping programs to test, capture, and record validation information. All validation information is recorded directly into Connected Nation's electronic repository for geocoding, review, analysis, and reporting. Using common laptop computer software combined with provider specific equipment, ETS engineers can access open broadband connections, determine the first-, middle-, and last-mile providers for an Internet connection, and complete speed tests through Connected Nation's online speed test tools or through other speed-test utilities.

Visual confirmation of a provider's presence in a community includes visiting provider offices and network operations centers, identifying and inspecting overhead (utility pole) and underground (pedestals and cabinets) gear labeled with provider names, seeking print-media listings and outdoor advertisements, researching federal

licenses and local franchises, and testing wireless frequencies for transmissions and signal strengths. Validations may also include direct communication with broadband consumers in the provider's service area.

Data Validation Techniques

Field validations on data volunteered by broadband providers begin weeks in advance of the field trips as members of the ETS team work to prioritize an area of the state for field visitation. As described above, this process is also informed by crowdsourcing data collected through broadband inquiries from the general public. The next task involves identifying all viable providers in the defined area and determining their current level of participation in the broadband mapping program. Contact attempts are made to schedule on-site visits with providers to engage active participation in the validation process and to further the relationship. Lastly, ETS specialists will research the FCC Spectrum Dashboard to identify licensed mobile and fixed wireless spectrum users in the area. Armed with relevant data, provider appointments and an arsenal of test equipment (as shown below), the ETS team member sets out to determine how closely the actual broadband environment matches the graphic depiction displayed on the Connected Nation state-level interactive broadband map.

Signal Strength Verification

For both fixed and mobile providers, (whether licensed or unlicensed) signal strength verification is conducted using an Avcom PSA-37-XP spectrum analyzer to confirm the frequency on which they are transmitting. In parallel, cross reference of the latitude and longitude (the "coordinates") of the data the provider supplied is conducted to verify the exact location of wireless transmitting devices.

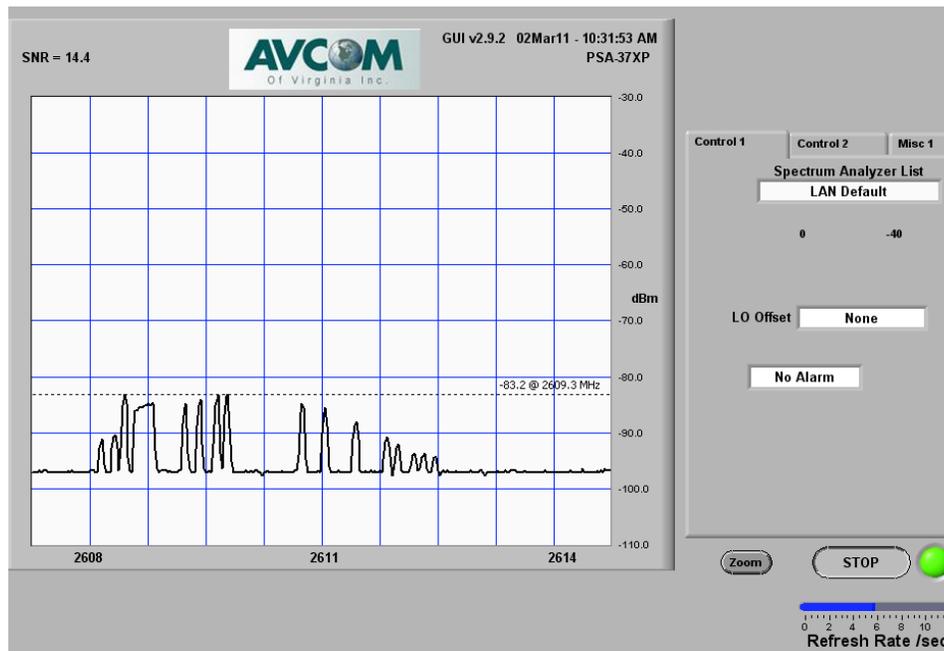
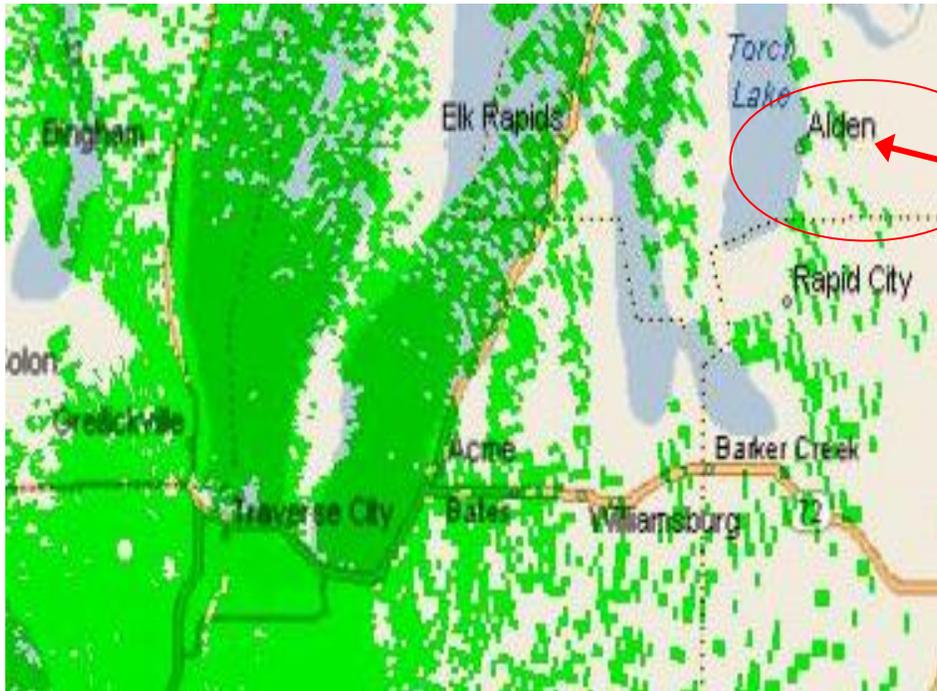
For licensed wireless providers, the Connected Nation field technician will search the FCC spectrum dashboard (accessible at <http://reboot.fcc.gov/reform/systems/spectrum-dashboard>) or the FCC ULS to confirm coordinates and specific spectrum frequency bands used. Further searches are completed using the FCC station call sign, the provider's FCC federal registration number ("FRN"), by provider name or by selecting the state or county using the map search.



A brief video available at <http://www.youtube.com/watch?v=tNMEQKHbDIs> provides an example of a typical Connected Nation field validation performed by ETS engineer Dwayne Goodman in Midlothian, a community south of Dallas, Texas.

Another typical field validation exercise was conducted on broadband data provided to Connected Nation by a fixed wireless provider in Michigan using licensed BRS spectrum to deliver broadband services across mostly rural areas in the upper portion of Michigan's lower-peninsula.

The ETS member was armed with spectrum analyzer and a propagation map such as the one depicted below displaying coverage in Alden, MI, which is 21.5 miles from the wireless provider's transmit site west of Traverse City, MI. Using the data submitted by the provider, the ETS engineer conducting this field validation calculated a receiver threshold at the test point of approximately -81dBm using a 9dBi gain receive antenna, and an actual field reading of -83.2dBm, as depicted in the chart below.



Visual Confirmation of Network Assets

A direct field validation test confirming the possible existence of a network reported by a provider is visual confirmation of external network assets supporting that network. In other words, simply going out in the streets and checking whether a given network asset is indeed located where a provider has indicated such asset should be. Visual confirmation can be performed by locating a provider's equipment such as a cell site, DSLAM, head-end equipment, overhead equipment, advertisements, access point, hot-spot or labeling on cabinets that indicate the provider has a presence in the area. If no signage is available at a cell site, it is important to check the tower site or enclosure for carrier-specific labels, CLLI codes or other specific markings. Another means of visual confirmation of external assets can be obtained by looking for residential, apartment complexes or commercial facilities that may have their Internet provider labeled on utility boxes.



Occasionally, field validation testing uncovers information that is contrary to data submitted by a provider. One such instance involved a Michigan Competitive Local Exchange Carrier (CLEC) that had provided coordinates for a remote terminal, a field enclosure that houses DSL distribution equipment (see picture below).

The CLEC affirmed it provided DSL services to the surrounding community over copper owned by the Incumbent Local Exchange Carrier (ILEC), but from equipment owned by the CLEC.



An ETS team member drove to the listed coordinates and located underground telephone pedestals belonging to the ILEC, but there was no remote terminal enclosure belonging to the CLEC. What was found at that location was a concrete pad with empty conduit. This suggests that someone prepared for an enclosure to be installed, but no equipment was provisioned and no wires were installed. Such field validation is then used to make relevant corrections to that provider's estimated broadband service territory.

Speed Tests

Speed tests can be conducted several ways and is one of the many ways that Connected Nation can validate data during the field validation process. It not only proves the presence of a provider but also serves to ensure that the provider meets the minimum NTIA requirements for broadband – service at speeds meeting or exceeding 768 kbps (download) and 200 kbps (upload). Testing the reported speeds of broadband service offered by a provider, however, is one of the toughest jobs facing a broadband mapping engineer. This is so because there are few publically available assets that the engineer can test independent of direct involvement of the provider offering the service. Connected Nation’s ETS team has derived several methods to get around this problem and obtain actual experienced speeds by users of the network in question. Key among these techniques are the following.

Meetings can be scheduled with the provider to complete a speed test at the provider’s office location or, the Connected Nation field technician can conduct speed tests at other unique locations within the provider’s service territory (such as a local library). For nationwide carriers a data card, dongle, modem or other provider specific device will be used.

Open Wi-Fi connections can usually be located around apartment complexes, hotels, and restaurants, or “Internet Cafés”. When connecting to an open Wi-Fi network the Connected Nation field technician opens a command window and performs a trace route (tracert) showing the provider’s network ID, making sure to capture a screen shot of both the tracert and network connections screen showing the Wi-Fi network ID. Below is an example of a tracert command showing Comcast as the network provider.

```
C:\Users\Jill>tracert www.yahoo.com

Tracing route to any-fp.wa1.b.yahoo.com [209.191.122.70]
over a maximum of 30 hops:
  0  0 ms  0 ms  0 ms  192.168.0.1
  1  61 ms  24 ms  56 ms  c-76-25-0-1.hsd1.co.comcast.net [76.25.0.1]
  2  24 ms  9 ms  24 ms  te-8-1-ur01.englewood.co.denver.comcast.net [68.
85.221.197]
  3  11 ms  17 ms  11 ms  te-8-4-ur02.englewood.co.denver.comcast.net [68.
86.103.114]
  4  13 ms  30 ms  31 ms  te-0-0-0-4-ar02.aurora.co.denver.comcast.net [68
.86.103.45]
  5  13 ms  13 ms  29 ms  pos-2-3-0-0-cr01.denver.co.ibone.comcast.net [68
.86.91.1]
  6  12 ms  13 ms  13 ms  4.79.82.57
  7  28 ms  13 ms  28 ms  vlan51.ebr1.Denver1.Level3.net [4.69.147.94]
  8  29 ms  28 ms  27 ms  ae-2-2.ebr2.Dallas1.Level3.net [4.69.132.106]
  9  28 ms  27 ms  32 ms  ae-72-72.csw2.Dallas1.Level3.net [4.69.151.141]
 10  28 ms  26 ms  28 ms  ae-2-70.edge3.Dallas1.Level3.net [4.69.145.72]
 11  35 ms  27 ms  42 ms  YAHOO-INC.edge3.Dallas1.Level3.net [4.79.182.2]
 12  29 ms  28 ms  28 ms  ae-2-d121.msr1.mud.yahoo.com [216.115.104.91]
 13  30 ms  30 ms  29 ms  te-8-1.fab1-a-gdc.mud.yahoo.com [209.191.78.133]
 14  29 ms  30 ms  29 ms  te-9-2.has-c2.mud.yahoo.com [209.191.78.171]
 15  30 ms  30 ms  27 ms  ir1.fp.vip.mud.yahoo.com [209.191.122.70]

Trace complete.
```

Further, as part of the validation process Connected Nation periodically reviews independent speed test data from Ookla, compares such data against similar speed test data collected at each state specific Connected Nation

website (e.g. <http://speedtest.connectak.org/?lang=en>) and conducts a review of each provider's website in order to confirm maximum advertised speeds tiers (per NTIA guidelines). The data collected by Ookla and Connected Nation is gathered through a crowdsourcing effort as individuals choose to conduct test speeds on their home or work broadband connections. Through this crowdsourcing method, Connected Nation is able to obtain actual speeds experienced by users at a given point in the network and time. This information provides another layer of information to help assess the accuracy of the residential broadband services territory at various speeds submitted to Connected Nation by providers. In instances where a speed test is not feasible and Ookla data is also absent, the Connected Nation field technician should always check the provider's website or local advertising to confirm offered speed tiers.

Connected Nation Validation Achievements

In-field validations have proven to be the most reliable verification method of local broadband landscapes across jurisdictions mapped by Connected Nation. No other methodology can ascertain deployed asset coordinates, wireless broadband frequency and signal strength attributes, and physical plant locations as accurately as being there in person. The Connected Nation ETS team has discovered cable broadband services where they were not reported to exist, no cable broadband where it was reported to exist, missing DSL equipment, and wireless broadband towers at locations other than reported, which directly affects signal coverage area. All of this information is used to revise, refine, and reconfirm the mapping database that ultimately feeds the National Broadband Map.

Additionally, many fixed wireless providers operate "below the radar," meaning they are not a member of any association, and typically do not advertise their services, but they still offer a viable service with broadband speeds often exceeding those of DSL providers. The only dependable process to certify there is no fixed wireless broadband coverage in a given area is to conduct a frequency analysis with a spectrum analyzer across all available frequencies.

ATTACHMENT B

Declaration by Charles Spann

Director, Engineering Technical Services

October 2012

DECLARATION OF CHARLES SPANN

My name is Charles Spann. I am a Director, Engineering and Technical Services at Connected Nation, Inc. My responsibilities at Connected Nation include overseeing the process of broadband inventory data validation as part of the State Broadband Initiative ("SBI") federal grant program. I hereby declare that the information contained in this affidavit is accurate to the best of my knowledge.

This statement includes four separate statements summarizing Connected Nation's efforts to collect and validate broadband inventory data from four fixed wireless broadband providers operating in the State of Alaska, including AlasConnect, Inc., Yukon Tech, Inc., Ace Tekk, Inc., and SPITwSPOTS.

As part of the SBI program in the State of Alaska, Connected Nation conducts similar and ongoing field validation tests on the broadband service of all known fixed and mobile facilities-based broadband providers in the state.

For further information regarding the described data and processes, please contact me at cspann@connectednation.org.

Respectfully submitted,



Charles Spann

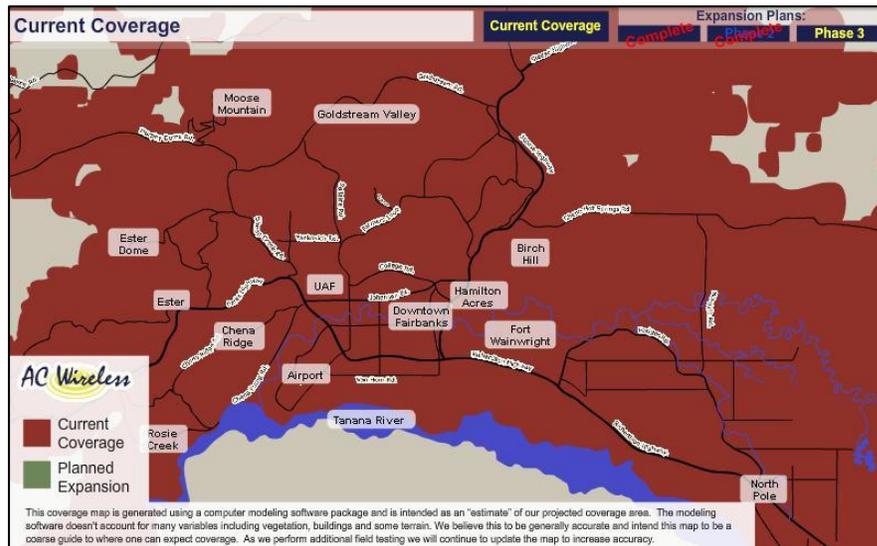
October 5th, 2012

**CONNECTED NATION BROADBAND INVENTORY DATA VALIDATION EFFORTS FOR
ALASCONNECT, INC.**

Connected Nation has confirmed that AlasConnect, Inc., operates in the unlicensed spectrum bands as well as in the licensed 700 MHz band (Stations WPWU902 - leased from Artic Slope Telephone Association Cooperative, Inc.) and WQIZ358 (FCC authorization held by AlasConnect, Inc.). The company uses several commercial names including Golden Valley Electric Association, Inc. and AC Wireless.



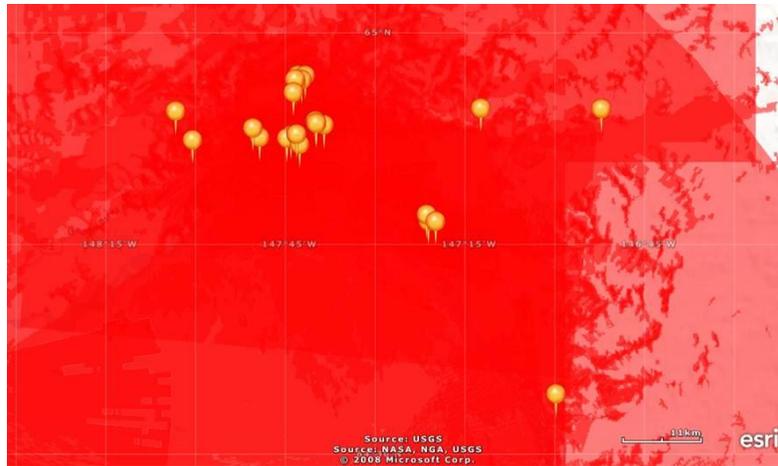
AC Wireless Retail Shop at 612 Illinois St., Fairbanks, AK.
Screenshot of AC Wireless website.



Coverage area depicted on AC Wireless website.

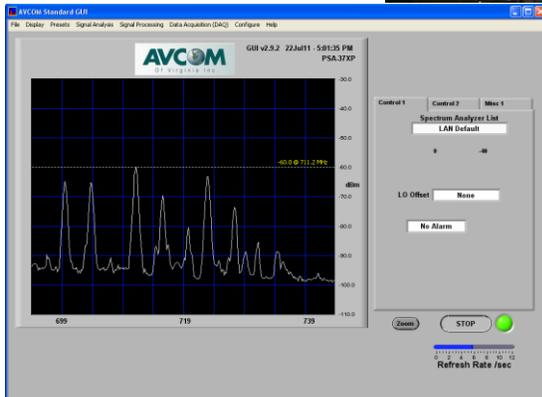
Connected Nation contacted AlasConnect in 2010, at the beginning of the Alaska State Broadband Initiative (SBI) grant program. AlasConnect submitted data to Connected Nation in April 2010 and has not submitted any changes to its original service area since that time.

Connected Nation conducted field validations on data submitted by AlasConnect in October 2010 and July 2011. In 2010 a total of 4 separate field validation points across the service territory polygon submitted by the provider were conducted. Field validations in 2010 included one retail office, one tower location, and two remote locations. In 2011, a total of 9 field validation points were conducted including retail locations and 7 remote locations (see validation points below).



Field Validation Points Conducted by Connected Nation across AlasConnect Service Territory

When performing the boundary checks of wireless propagation data, as submitted by a provider (as was the case with AlasConnect), Connected Nation’s ETS team verifies the effective isotropic radiated power (EIRP) of the subject test station and performs at least one field check per wireless access point that has been verified as operational. Polygonal boundaries are tested by selecting specific sites within and at the border of the provider-submitted polygon. For AlasConnect, such validation testing was conducted within its polygonal borders and included the Ester Dome Road and North Pole areas.

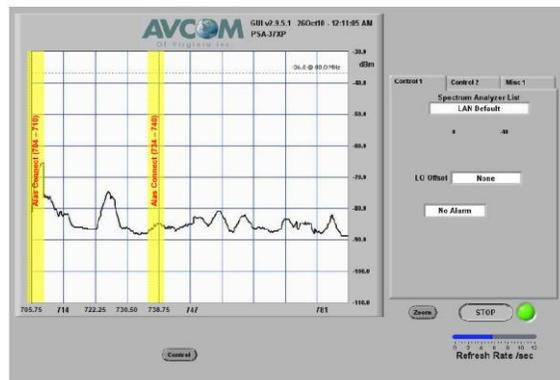


Confirmed AlasConnect wireless tower on Ester Dome Rd., Fairbanks, AK, and spectrum analyzer readings from Near Ben Franklin Mall in North Pole, AK.



Tower location at 612 Illinois St., Fairbanks, AK.

Connected Nation confirmed that AlasConnect offers broadband service to residential customers that meets the standards set by the NTIA's SBI mapping grant rules across a number of communities in Alaska.^{1, 2} Connected Nation conducted field validation tests at residential locations at 391 10th Ave, Fairbanks, AK and in the housing development near the intersection of Ouida Way & 8th St., North Pole, AK. With the visible presence of multiple antennas in the area, Connected Nation performed spectrum analysis testing on the licensed band operated by AlasConnect. Signal levels of -72 dBm and -75 dBm were logged by the Connected Nation engineer and these levels were deemed "acceptable" for operation and suitable for the reception of a wireless broadband service.



AC Wireless Spectrum analysis near 391 10th St., Fairbanks, AK. AC Wireless Antenna Serving Residential Community, Ouida Way & 8th St., North Pole, AK.



AC Wireless CPE on Residential Home, Johnson Rd., Salcha, AK.

¹ See <https://www.acwireless.com/ebpp/CoverageAreaAfterRequestService.do>

² See <https://www.acwireless.com/ebpp/PlansExternalAfterRequestService.do>

As part of the validation process, Connected Nation periodically reviews independent speed test data from Ookla, compares such data against similar speed test data collected at each state-specific Connected Nation website (e.g. <http://speedtest.connectak.org/?lang=en>) and conducts a review of each provider's website in order to confirm maximum advertised speeds tiers (per NTIA guidelines). The data collected by Ookla and Connected Nation is gathered through a crowdsourcing effort as individuals choose to conduct test speeds on their home or work broadband connections. Through this crowdsourcing method, Connected Nation is able to obtain actual speeds experienced by users at a given point in the network and time. This information provides another layer of information to help assess the accuracy of the residential broadband services territory at various speeds submitted to Connected Nation by providers. Connected Nation implemented speed tests as part of its Connect Alaska program starting in April 2010. To date, multiple speed tests have been conducted by subscribers of AlasConnect wireless broadband service. The data obtained through this crowdsourcing method shows that AlasConnect meets the minimum speed requirements of the Connect Alaska project.

While no broadband map is 100% accurate, based on the validation tests conducted by Connected Nation's ETS team, I reaffirm that "on-the-ground" validation tests and crowdsourcing comparison and research has been conducted to ensure that the data submitted by AlasConnect (the same broadband mapping data reflected in the Connect Alaska interactive broadband map and the National Broadband Map database) has been validated. Additionally, it is Connected Nation's standard operating procedure to assess any feedback from the general public regarding possible misalignments between AlasConnect's actual service offering and that depicted on these public mapping tools. Where inconsistencies between the map and the reality on the ground are found, Connected Nation will take the necessary steps to adjust the Connect Alaska map and submit modified data to the NTIA.

CONNECTED NATION BROADBAND INVENTORY DATA VALIDATION EFFORTS
FOR YUKON TECH, INC.

Connected Nation has confirmed that Yukon Tech, Inc., operates in the 2400 and 5700 MHz unlicensed spectrum bands. The company uses the commercial names of BBN, Inc., Yukon Telephone Company, Inc., and Supervision, Inc. Further information of its retail offerings can be found at <http://www.nenana.net/index.html>.

Connected Nation contacted Yukon Tech in 2010, at the beginning of the Alaska SBI grant program. Yukon Tech submitted data to Connected Nation in June 2010. In April 2011, changes in speed tier offering were submitted to Connected Nation by Yukon Tech, but no changes were submitted regarding service territory polygon information.

Connected Nation conducted field validation tests on data submitted by Yukon Tech on July 2011 and May 2012. Over these field validation exercises, members of Connected Nation's ETS team conducted a total of 10 separate field validation tests across the service territory polygon submitted by the provider. Field tests included 3 tower locations and 7 remote locations near the cities of Nenana, Anderson, and Clear (See validation points below). The coverage signal levels received and presence of residential service during validation process matched the coverage polygon depiction submitted by the provider.



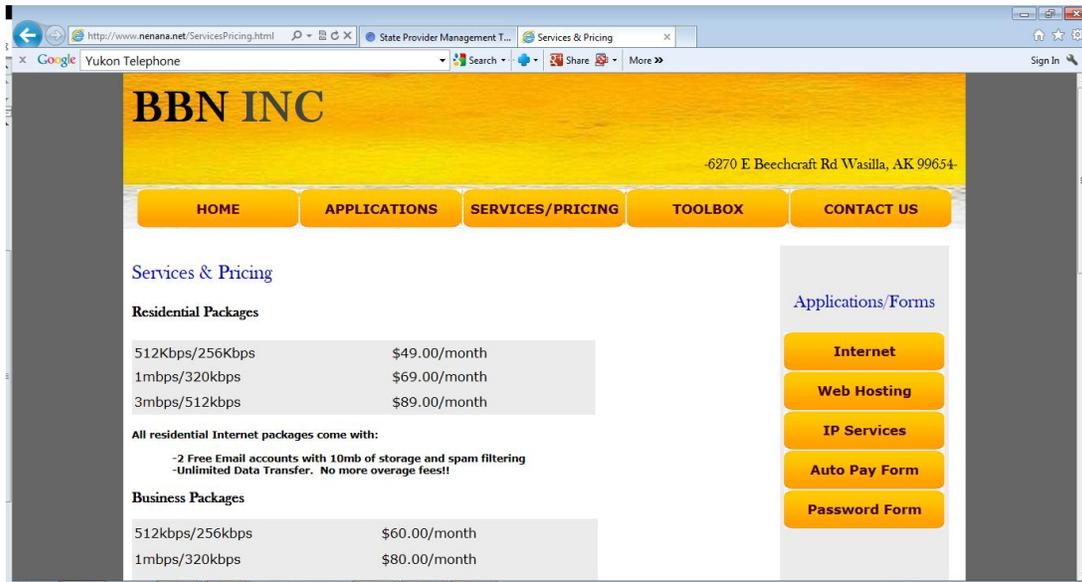
Field Validation Points Conduced by Connected Nation across Yukon Tech Service Territory.



Confirmed and Tested Yukon Tech Wireless Antenna Tower Locations at Tower Hill, Nenana, AK; FAA Rd and Rt. A3, Nenana, AK; and Rt. A3 at MM289, Fireweed, AK.

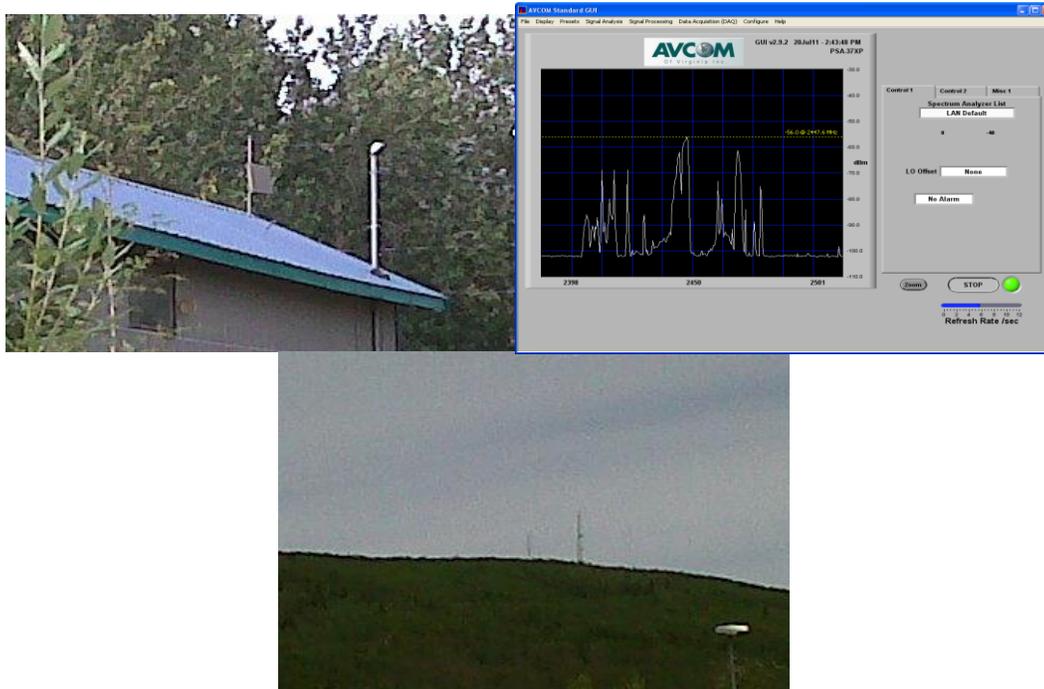
Connected Nation confirmed that Yukon Tech offers broadband service to residential customers that meets the standards set by the NTIA for the SBI mapping grant program across a number of communities in Alaska (see the BBN website screen shot below).³

³ See <http://www.nenana.net/ServicesPricing.html>



Online Advertisement of Residential and Business Packages offered by Yukon Tech.

Based on field validations, Connected Nation confirmed that there was in fact fixed wireless service across several residential locations including B St. and 1st St., and at 307 East St. in Nenana, AK, as well as at route A3 at mile market 289. Based on these tests, Connected Nation was able to establish the presence of external network antennas pointed in the direction of Yukon Tech Access points along the validation route demonstrating acceptable signal levels at (e.g. -56 dBm as illustrated below).



Yukon Tech analysis and CPE on residential locations confirmed at B St. and 1st St., Nenana, AK.



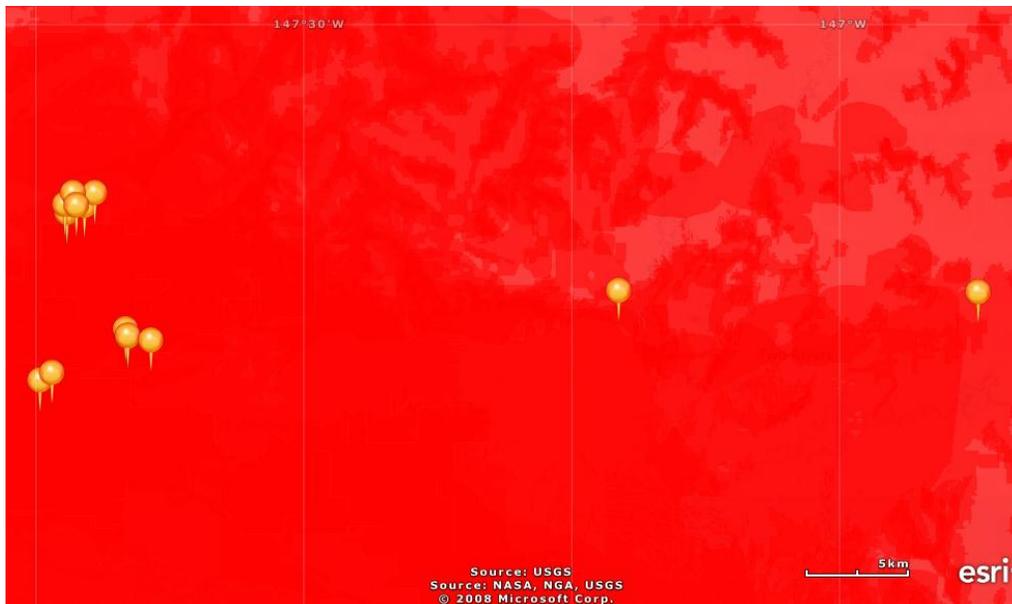
Confirmed CPE Antenna at Residential Location on 307 E 2nd St., Nenana, AK.

While no broadband map is 100% accurate, based on the validation tests conducted by Connected Nation's ETS engineering team, I reaffirm that the Yukon Tech broadband mapping data reflected in the Connect Alaska interactive broadband map and the National Broadband Map database has been validated. Additionally, it is Connected Nation's standard operating procedure to assess any feedback from the general public regarding possible misalignments between Yukon Tech's actual service offering and that depicted on these public mapping tools. Where inconsistencies between the map and the reality on the ground are found, Connected Nation will take the necessary steps to adjust the Connect Alaska map and submit modified data to the NTIA.

CONNECTED NATION BROADBAND INVENTORY DATA VALIDATION EFFORTS
FOR ACE TEKK WIRELESS INTERNET

Connected Nation has confirmed that Ace Tekk Wireless Internet operates in 900, 2400, and 5700 MHz unlicensed bands. The company uses the commercial name of Ace Tekk. Further information on its retail offerings can be found at <http://www.acetek.com/>. Connected Nation contacted Ace Tekk in 2010, at the beginning of the Alaska State Broadband Initiative grant program. Ace Tekk submitted data to Connected Nation in June 2010.

Connected Nation conducted field validation tests on data submitted by Ace Tekk on July 2010 and October 2010. Over these field validation exercises, Connected Nation's ETS team conducted a total of 13 separate field validation tests across the service territory polygon submitted by the provider. Test sites included 5 tower locations and 8 remote locations. The coverage signal levels received during validation process matched the coverage polygon depiction submitted by the provider.



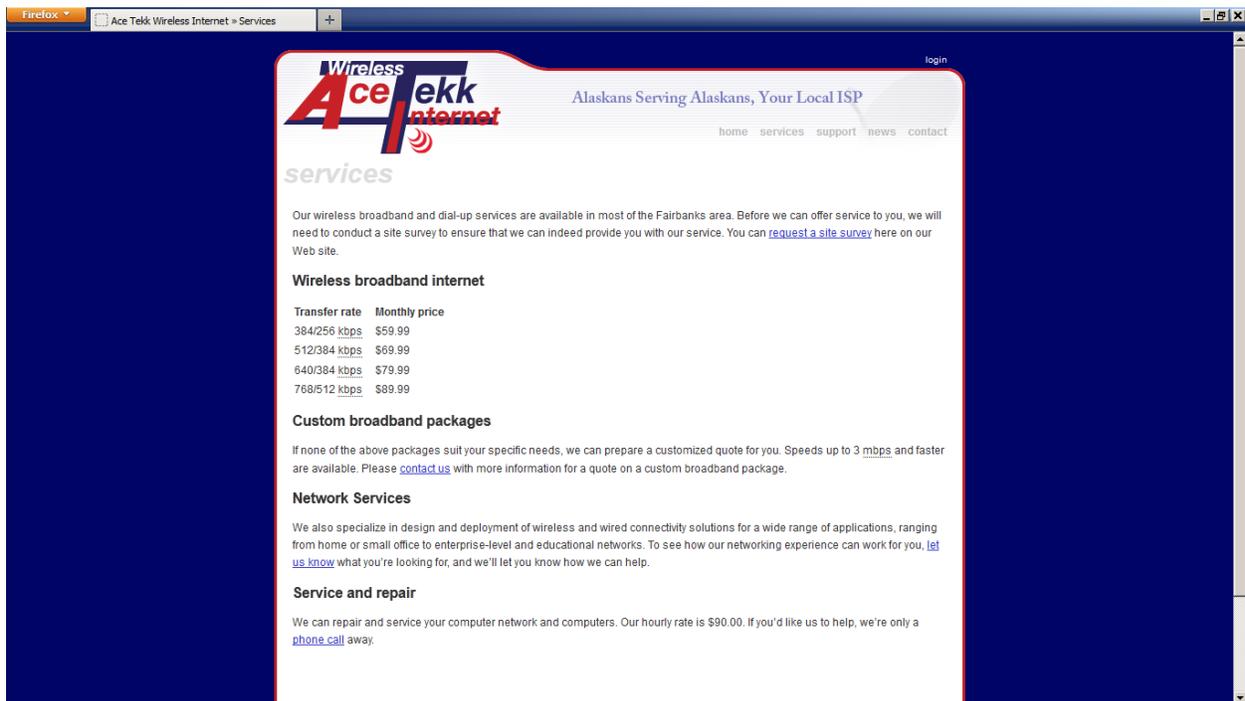
Field Validation Points Conducted by Connected Nation across Ace Tekk Service Territory.



Confirmed and Tested Ace Tekk Wireless Antenna at Birth Hill Towers Site, Fairbanks, AK.

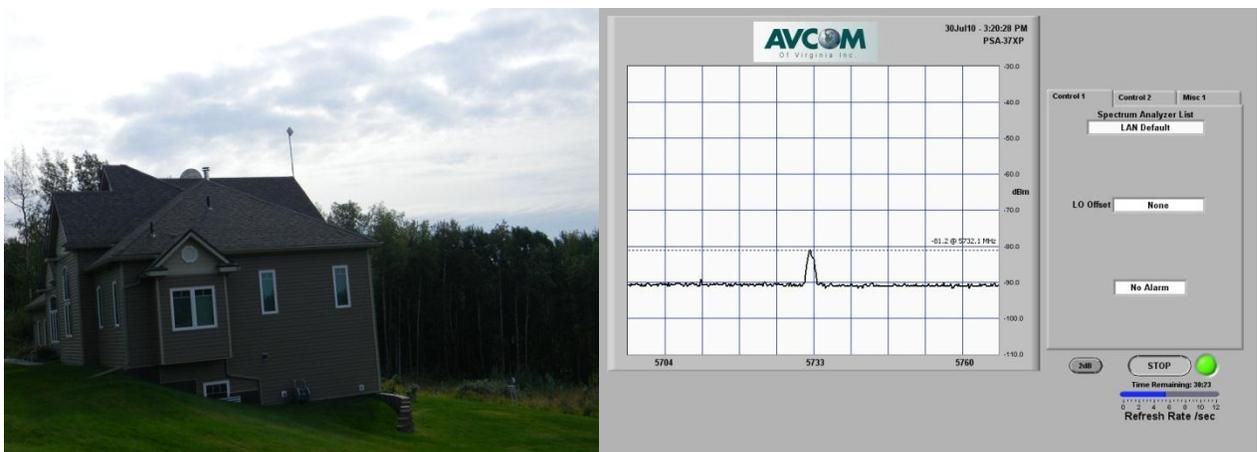
Connected Nation confirmed that Ace Tekk offers broadband service to residential customers that meets the standards set by the NTIA for the SBI mapping grant program across a number of communities in Alaska (see the Ace Tekk website screen shot below).⁴

⁴ See <http://www.acetek.com/services>



Online Advertisement of Broadband Packages offered by Ace Tekk.

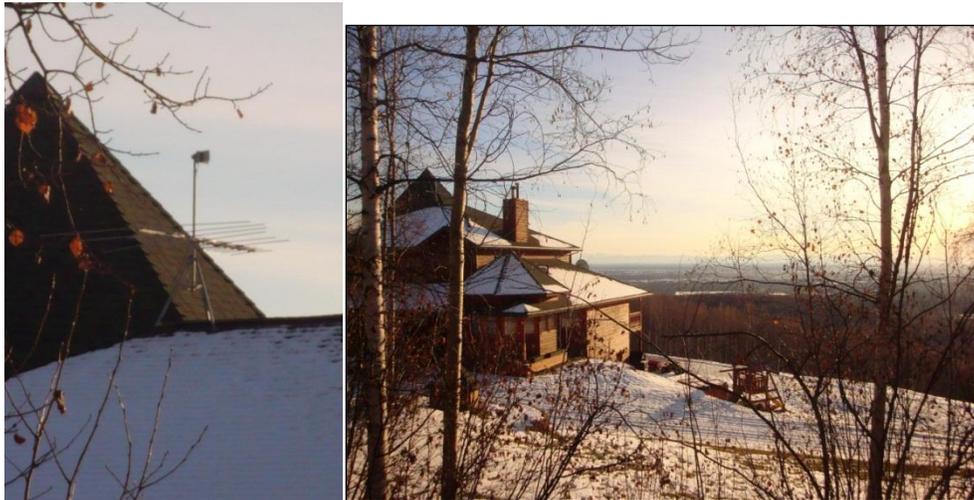
Based on field validations, Connected Nation confirmed that there was, in fact, fixed wireless service across several residential locations including 869 Cranberry Ridge Drive, Fairbanks, AK; 1210 Summit Drive, Fairbanks, AK; 622 Cranberry Ridge Drive, Fairbanks, AK; 7407 Chena Hot Springs Road, Fairbanks, AK; 4208 Chena Hot Springs Road, Fairbanks, AK; 344 Fairhill, Fairbanks, AK; 117 Kniffen Road, Fairbanks, AK; and Skyline Drive area near, Fairbanks, AK.



Confirmed CPE at Residential Location, Spectrum Analysis of Ace Tekk Wireless Service at Skyline Drive, [Fairbanks] AK



Confirmed CPE at Residential Location on 869 Cranberry Ridge Drive, Fairbanks, AK.



Confirmed CPE at Residential Location on 1210 Summit Drive, Fairbanks, AK.



Confirmed CPE at Residential Location on 4208 Chena Hot Springs Road, Fairbanks, AK.

While no broadband map is 100% accurate, based on the validation tests conducted by Connected Nation's ETS engineering team, I reaffirm that the Ace Tekk broadband mapping data reflected in the Connect Alaska interactive broadband map and the National Broadband Map database has been validated. Additionally, it is Connected Nation's standard operating procedure to assess any feedback from the general public regarding possible misalignments between Ace Tekk's actual service offering and that depicted on these public mapping tools. Where inconsistencies between the map and the reality on the ground are found, Connected Nation will take the necessary steps to adjust the Connect Alaska map and submit modified data to the NTIA.

CONNECTED NATION BROADBAND INVENTORY DATA VALIDATION EFFORTS FOR SPITwSPOTS

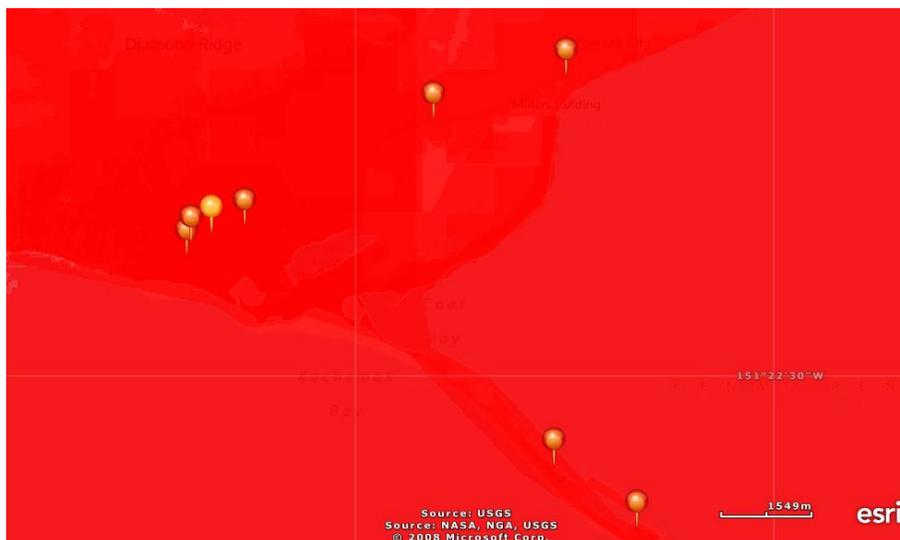
Connected Nation has confirmed that SpitwSpots, with Federal Registration Number (FRN) 0003715087, operates in the 900, 2400, and 5700 MHz unlicensed bands as well as in the licensed 3650 MHz band under an FCC authorization for Station WQJW755 (see copy below). SpitwSpots currently has 9 link locations registered in the FCC Universal Licensing System per band licensing requirements.



SpitwSpots Wireless Retail Shop at 369 E. Pioneer Ave, Suite B, Homer, AK 99603 and SpitwSpots license WQJW755 ULS.

Connected Nation contacted SpitwSpots in 2010, at the beginning of the SBI grant program in the state and it submitted data to Connected Nation in April 2010. SpitwSpots has provided Connected Nation with updates effecting speed or coverage in the February 2011, August 2011, April 2012, and October 2012 broadband inventory submission periods.

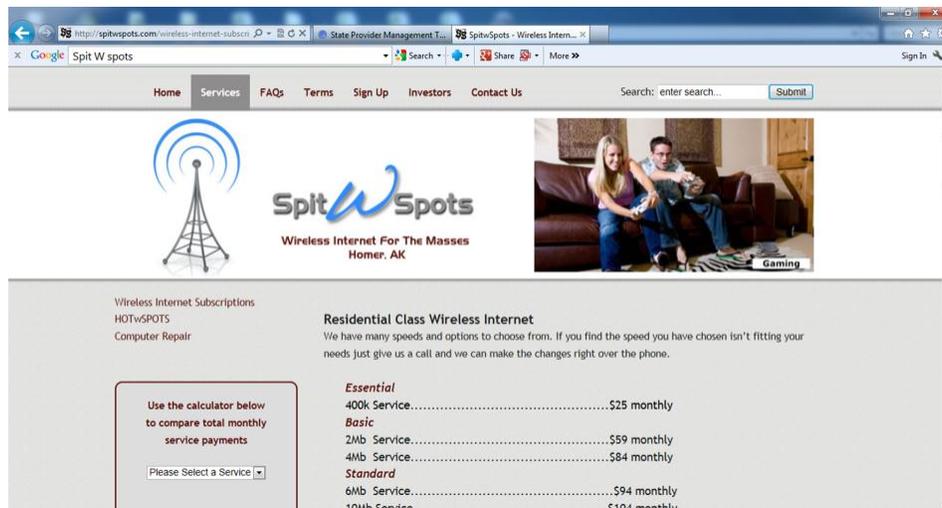
Connected Nation conducted field validations on data submitted by SpitwSpots in November 2010. A total of 8 separate field validation points across the service territory polygon submitted by the provider were conducted. Field validations included 1 retail office, 6 tower locations, and 3 remote locations.



Field Validation Points Conduced by Connected Nation across SpitwSpots Service Territory.

When performing boundary checks of wireless data submitted by a provider and propagation studies created by Connected Nation, as was the case with SpitwSpots, Connected Nation's ETS team verifies the physical location of the subject station under test and performs at least one field check per access point verified. Submitted polygon boundaries are tested by selecting specific sites within and near the border of the submitted polygon. For SpitwSpots, field validation tests were conducted within its polygon border and includes the Homer and Fritz Creek areas of Alaska.

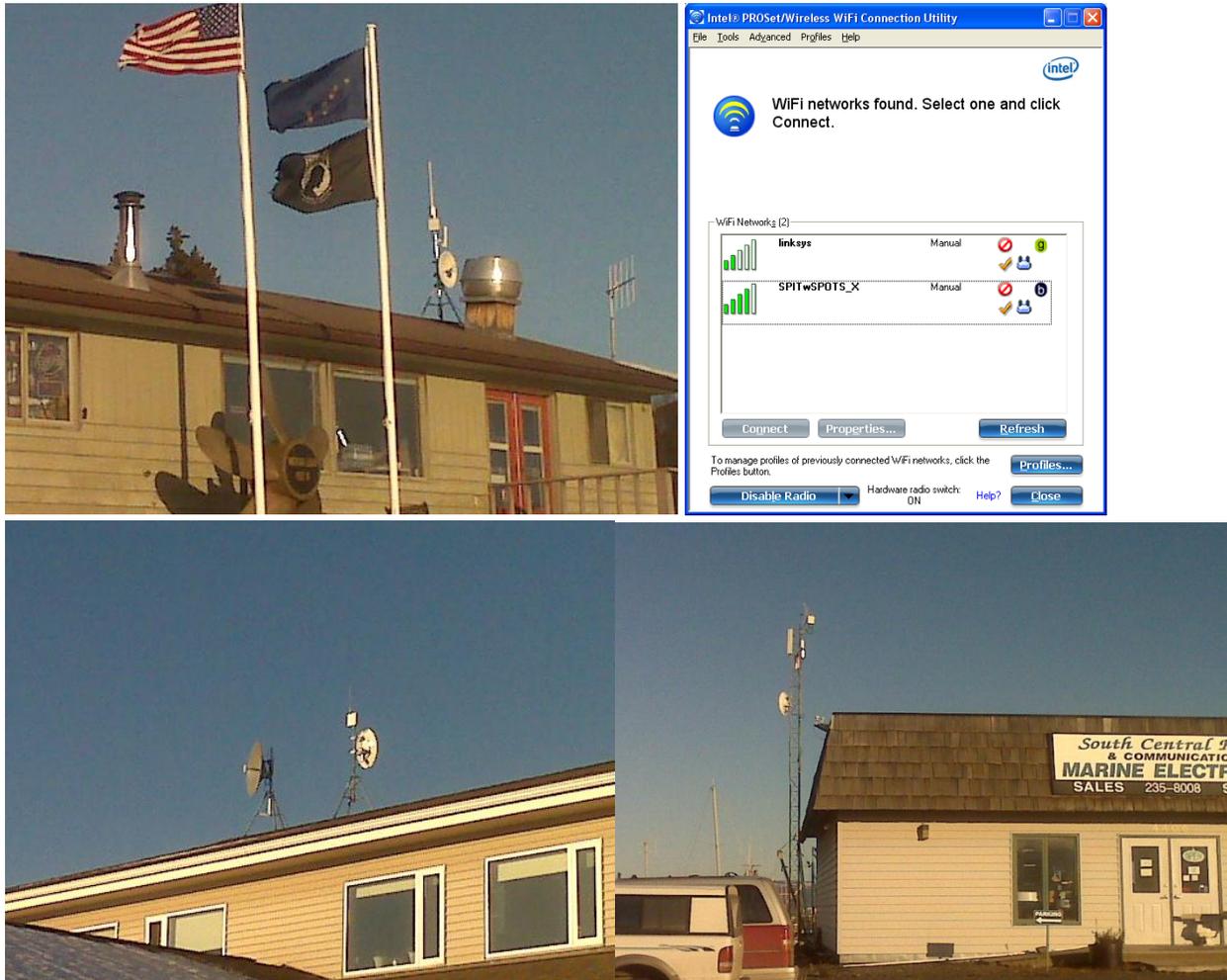
Connected Nation confirmed that SpitwSpots offers broadband service to residential customers that meet the standards set by the NTIA's SBI mapping grant rules across a number of communities in Alaska.^{5, 6}



Connected Nation conducted field validation tests at residential locations at 3829 Shelford St, Homer, AK, and in the Rolling Meadows Road area also in Homer, AK. Both residential locations had visible antennas present aimed in the direction of a SpitwSpots wireless access point. SpitwSpots utilizes hotspots as access points in areas where many residential addresses may access Wi-Fi without the need for an external antenna.

⁵ See <http://spitwspots.com/>

⁶ See <http://spitwspots.com/wireless-internet-subscriptions.html>



Confirmed SpitwSpots wireless access points and screen shot identifying SpitwSpots hotspot.



SpitwSpots wireless antenna near 3829 Shelford St, Homer, AK, serving residential customers in the area and SpitwSpots wireless antenna serving residences near Rolling Meadows Road, Homer, AK.

While no broadband map is 100% accurate, based on the validation tests conducted by Connected Nation's ETS engineering team, I reaffirm that the SpitwSpots broadband mapping data reflected in the Connect Alaska interactive broadband map and the National Broadband Map database has been validated. Additionally, it is Connected Nation's standard operating procedure to assess any feedback from the general public regarding possible misalignments between SpitwSpots' actual service offering and that depicted on these public mapping tools. Where inconsistencies between the map and the reality on the ground are found, Connected Nation will take the necessary steps to adjust the Connect Alaska map and submit modified data to the NTIA.