

OFFICIAL APRIL 2012 UPDATE SUBMISSION TO  
THE NATIONAL TELECOMMUNICATIONS AND INFORMATION  
ADMINISTRATION UNDER THE  
STATE BROADBAND INITIATIVE GRANT PROGRAM FOR THE  
STATE OF MINNESOTA

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April 1, 2012

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## COVER LETTER

April 1, 2012

Ms. Anne W. Neville  
SBI 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 State Broadband Designated Entity, in partnership with the Minnesota Department of Commerce, please accept this submission from Connected Nation on behalf of the state of Minnesota's State Broadband Initiative (SBI) Grant Program, known as Connect Minnesota.

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

These artifacts should be found to be compliant with the April 1, 2012, 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 Minnesota: April 1, 2012***

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

Appendix A: 1(a)(ii)	BB_Service_RoadSegment	Broadband Service Availability of Facilities-Based Providers by Road Segment in Census Blocks Larger in Area Than Two Square Miles
Appendix A: 1(b)	BB_Service_Wireless	Broadband Service Availability of Wireless Services Not Provided to a Specific Address
Appendix A: 3(b)	BB_ConnectionPoint_MiddleMile	Broadband Service Infrastructure Middle-Mile and Backbone Interconnection Points
Appendix A: 4	BB_Service_CAInstitutions	Community Anchor Institutions-Listing
Appendix A: 4	n/a	Community Anchor Institutions-Narratives
VII.A.1(a)	n/a	Accuracy and Verification Report
n/a	DataPackage.xlsx	Worksheets of Contact Information, Record Count, and Provider Summary Table
n/a	n/a	List of Changes and Corrections to the Dataset
n/a	n/a	Non-Participating Provider (NPP) Narratives
n/a	n/a	Broadband Provider Roster and Participation Status

In addition, this data update submission should be found to be compliant with the additional program requirements instituted by the National Telecommunications and Information Administration since the time of the October 2011 SBI data submission for the Connect Minnesota program. Specifically, these new requirements are:

### **SBI Data Transfer Model**

The submission of the broadband dataset for April 1, 2012, is contained within the SBI Data Transfer Model as released on the Grantee Workspace on January 17, 2012. All efforts have been made to comply with formatting, domain, and metadata requirements to include as much information on each provider as possible.

### **Additional Submission Guidance**

This submission continues to follow the speed technology guidance released by the Program Office on December 22, 2011, to review speed tier codes in correspondence with technology of transmission codes. In the October 2011 submission, descriptions were provided in the methodology paper that offered an explanation for any submitted technology of transmission and speed combinations that were outside of the expected value range. That practice continues in this submission as technology and speed combinations are reviewed and scrutinized; any questionable information supplied by providers is reviewed more in

depth with the provider to ensure the information is accurately captured or a proper explanation is provided as to why the speed information should be submitted as supplied even if it falls outside the expected value range.

In addition to the requirements mentioned above, please find this methodology paper to be inclusive of a new section pertaining to industry mergers and acquisitions – specifically this section will detail any and all mergers or acquisitions that have taken place in Minnesota, since the October 2011 submission. The intent of this new section is to provide a better understanding of how the broadband provider landscape has changed over time.

This April 2012 semi-annual data update under the State Broadband Initiative Grant Program continues to demonstrate our dedication to implementing the joint purposes of the Recovery Act and the Broadband Data Improvement Act (BDIA) by gathering comprehensive and accurate state-level broadband mapping data, developing state-level broadband maps, aiding in the development and maintenance of the National Broadband Map, and undertaking statewide initiatives for broadband planning.

### ***Broadband Service Availability — Provider Outreach and Verification***

This data update submission under the SBI program includes datasets for approximately 96.67 percent of the Minnesota provider community, or 116 of 120 total providers. There are 112 participating providers and 4 additional non-participating providers whose estimated coverage areas have been submitted. Of the 112 participating providers, 55 supplied an update to their network or coverage area(s), while 53 have reported no change. The remaining 4 represent providers who previously supplied data but were non-responsive in the April 2012 update effort; therefore their previous dataset is being put forward as part of this compilation. A complete roster by provider depicting participation status and contact record is contained herein. The 4 providers that are not represented in the attached datasets were non-responsive to multiple contact attempts.

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

Connect Minnesota has also continued to perform broadband verification activities through several means. In addition to confirmation of service area(s) by each provider, Connect Minnesota conducts field validation efforts. To date, 75 (61.98 percent) providers have been validated through field verification activities. Additional details on verification activities are contained within the Field Validation Methodology.

The Connect Minnesota website, ([www.connectmn.org](http://www.connectmn.org)), continues to serve a prominent role in the outreach and data collection effort. This program asset provides a way for the general public to participate in the process by offering interactive tools for users to test their connection speed, submit broadband inquiries, or contact a program representative.

As an indicator of stakeholder penetration, the Connect Minnesota website encountered 4,691 unique visits during this reporting period (18,762 total to date for the life of the grant awarded on December 20, 2009). Additionally, this pronounced Web activity netted 36 broadband inquiries over this same reporting period (151 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 Minnesota website and the Connect Minnesota interactive mapping tool (BroadbandStat) that offer the citizens the vehicles to provide information regarding availability in their respective service area, either in affirmation or contest of the reported data represented in the Connect Minnesota mapping artifacts. Since the initial data collection and release of corresponding maps, feedback in the form of broadband inquiries has allowed Connect Minnesota to identify additional areas that are in need of field validation, which is scheduled as soon as possible.

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

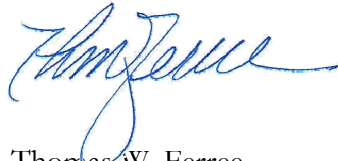
Connect Minnesota has established an ongoing mechanism for gathering data on the location and broadband connectivity of Community Anchor Institutions (CAI), in accordance with the data requirements of the SBI NOFA Technical Appendix.

In conjunction with the Minnesota Department of Commerce, outreach was conducted during this data update reporting period by Connect Minnesota to continue identification of existing, centralized sources for CAI connectivity data. Additionally, outreach was coordinated to distribute the CAI survey to institutions throughout the state through multiple methods including a customized online survey available on the Connect Minnesota website. Connect Minnesota and the Department of Commerce solicited support of the CAI data collection from Minnesota Department of Public Safety, Minnesota Department of Education, University of Minnesota, Minnesota Library Association, Minnesota League of Cities, Minnesota Township Association, and Minnesota Association of Counties. Connect Minnesota continues to promote the importance of broadband connectivity at anchor institutions and encourage participation in this data collection process. Connect Minnesota will continue to build upon these relationships over the coming months and utilize its contacts throughout the state to collect data and raise awareness of this project.

From our work in Minnesota, as well as other states, we recognize the great value of this data to future collaboration efforts within the state as well as its value to the National Broadband Map. We plan to continue to bring best practices to the Connect Minnesota efforts, along with an investment of both human and technical resources required to reach our goal of increasing the data that is secured and reported as part of this process.

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

Respectfully submitted,



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

## DATA ACQUISITION: MINNESOTA COMMUNITY ANCHOR INSTITUTIONS METHODOLOGY

In this fifth reporting period of the SBI, Connect Minnesota, working in close coordination with the state of Minnesota, 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 SBI NOFA Technical Appendix. During this reporting period Connect Minnesota has continued to focus efforts on conducting outreach and raising awareness of this important project.

Connect Minnesota 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 Minnesota through ESRI ArcGIS software.

Connect Minnesota continues to utilize a customized online survey hosted through SurveyMonkey, with a landing page on the Connect Minnesota website that was developed during the first reporting period. This survey, in combination with a customized data-gathering spreadsheet, was distributed on a regular basis to a targeted list of CAI throughout the state as well as organizations and agencies that work closely with the CAI. Connect Minnesota 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 SBI NOFA.

The survey can be accessed at this link: <http://www.surveymonkey.com/s/RFNMFVK>.

Connect Minnesota conducts significant 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 Minnesota continues to identify key CAI contacts in an effort to distribute and promote the online survey and raise awareness of the importance of CAI broadband connectivity. Also, when possible, Connect Minnesota works with the Minnesota Department of Commerce to identify existing relationships that can support CAI outreach.

Connect Minnesota has an ongoing mission to educate CAI throughout the state on the importance of participating in the project. Participation by these institutions will raise awareness about the importance of broadband connectivity and the need to report the requested data for inclusion on the National Broadband Map. During this reporting period, Connect Minnesota and the Department of Commerce solicited the support of the CAI data collection including the Minnesota Department of Public Safety, the Minnesota Department of Education, the University of Minnesota, the Minnesota Library Association, the Minnesota League of Cities, the Minnesota Township Association, and the Minnesota Association of Counties.

The greatest challenge with collecting CAI data continues to be educating the CAI about the Connect Minnesota project as well as self-awareness of their own CAI connectivity (specifically upload and download speeds). Connect Minnesota will continue to research key CAI organizations and agency contacts in an effort to raise awareness of this project among CAI. When applicable, the



Minnesota Department of Commerce will continue to be briefed on the current CAI data and provided information so they can assist with outreach and promotion within the state.

A CAI summary of all processed and submitted data is provided below:

CAI Type	Total	Physical Address	Lat/Long	Technology of Transmission	Download Speed	Upload Speed
<b>K-12 Schools</b>	3732	3732	3730	703	616	171
<b>Libraries</b>	1014	1014	1014	18	16	11
<b>Healthcare</b>	206	206	206	57	56	56
<b>Public Safety</b>	1544	1544	1539	25	21	21
<b>Higher Ed Institutions</b>	183	183	181	3	1	3
<b>Other Government</b>	132	132	125	28	26	26
<b>Other Non-Government</b>	112	112	110	8	7	7
<b>Total</b>	<b>6923</b>	<b>6923</b>	<b>6905</b>	<b>842</b>	<b>743</b>	<b>295</b>

During the coming months, CAI data collection will be supported by regular reporting to the Connect Minnesota team. The CAI data is proving an invaluable resource to all components of the Connect Minnesota effort. The data identifies potential local champions, sector trends, and opportunities for improvement as well as opportunities to educate CAI not familiar with their current connectivity.

## **SBI DATA SUBMISSION METHODOLOGY**

The submission of the broadband dataset for April 1, 2012, is contained within the SBI Data Transfer Model and additional components as released on the Grantee Workspace on January 17, 2012. Connected Nation (CN) 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. Guidance from the Technical Mapping Guide, as released on the Grantee Workspace on March 24, 2011, was also followed to ensure the completeness and validity of the submission through completion steps and checklists, completing the DataPackage spreadsheet, uploading broadband datasets into the Data Transfer Model, and checking the dataset using the SBDD\_CheckSubmission receipt process.

In addition to the 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 SBI Data Transfer Model for the state of Minnesota.

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***Inventory of Deliverables, Connect Minnesota: April 1, 2012***

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Appendix A: 1(b)	BB_Service_Wireless	Broadband Service Availability of Wireless Services Not Provided to a Specific Address.
Appendix A: 3(b)	BB_ConnectionPoint_MiddleMile	Broadband Service Infrastructure Middle-Mile and Backbone Interconnection Points.
Appendix A: 4	BB_Service_CAInstitutions	Community Anchor Institutions-Listing.

The provider data collected by CN on behalf of the state of Minnesota have been formatted per the given specifications and uploaded into the appropriate feature classes of the SBI Data Transfer Model. Wireline availability is contained within census blocks and road segments, wireless availability is contained as polygons of coverage areas, and middle-mile connections and Community Anchor Institutions are contained as point data. All speed data is contained at the census block, road segment, or wireless polygon level of availability. All efforts have been made to comply with formatting, domain, and metadata requirements to include as much information as possible.

Connected Nation has continued outreach to satellite providers on their availability, technology, and speed information, but granular coverage is not yet available. Submitted within the wireless feature class are the satellite companies providing service to Minnesota as a polygon of the state boundary. Efforts will continue to collect, process, or otherwise create more granular satellite data based on availability analyses and guidance received from NTIA. Process development is underway at CN as well to be able to create more granular satellite coverage based on satellite equipment positioning and geographic inputs.

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## MERGERS AND ACQUISITIONS

Throughout the course of the SBI program, CN has maintained a repository of electronic records related to its provider outreach activities. Recently, due to the high volume of mergers and acquisitions (M&A) within the provider community, CN elected to create a listing of M&A activities for this mapping cycle as a way of supplementing the Provider Changes and Corrections section of this document. M&A activities for this state are listed below with a brief description and date as obtained through public records or provider disclosure.

- **CenturyLink Merged with Qwest**  
On April 1, 2011, CenturyLink, Inc. (NYSE: CTL) and Qwest Communications completed their merger, creating the nation's third largest telecommunications company. The combined companies will deliver a broader range of communications services to consumers and small businesses throughout its 37-state service area and to business, wholesale, and government customers nationwide via its 190,000 route mile fiber network.
- **HickoryTech Corp. Acquired IdeaOne Telecom Group LLC**  
On March 2, 2012, HickoryTech Corporation (NASDAQ: HTCO - News) announced the completion of its acquisition of IdeaOne Telecom Group, LLC, a fiber-based CLEC serving the greater Fargo, North Dakota area, in a transaction valued at \$28 million.
- **Level 3 Acquired Global Crossing**  
The Global Crossing website confirmed that Level 3 and Global Crossing joined forces under the brand name Level 3 on October 4, 2011.
- **Midcontinent Communications Acquired US Cable**  
Independent reports posted by dslreports.com and forestlaketimes.com confirm that MidContinent Communications picked up roughly 33,000 customers through its acquisition of U.S. Cable in Minnesota and Wisconsin. This transaction became effective on October 1, 2011.
- **Savage Communications Acquired Portions of Jaguar Communications**  
There was no public announcement of the acquisition of properties in Bovey and Coleraine from Jaguar Communications.
- **Windstream Acquired PAETEC**  
The News section of the Windstream website dated December 1, 2011, announced that it had completed the acquisition of PAETEC Holding Corp. in a transaction valued at approximately \$2.3 billion.
- **Zayo Acquired 360networks**  
On December 2, 2011, the Zayo website announced that it had completed its transaction to purchase 360networks. The resulting company is one of the largest bandwidth infrastructure

companies in North America with an estimated annualized pro forma revenue of \$393 million.

- **Zayo Acquired American Fiber Systems**

On October 1, 2011, Zayo Group, a provider of telecom and Internet infrastructure services, announced that it had closed its previously announced transaction to purchase American Fiber Systems (AFS), a leading provider of metropolitan fiber network and telecom services. The acquisition adds approximately 1,000 route miles of metropolitan fiber footprint and over 600 incremental buildings. AFS operated in nine markets, six of which are new markets for Zayo Group and three of which bolster Zayo's network in existing markets.

## MINNESOTA FIELD VALIDATION METHODOLOGY

CN focused a portion of its time on specific validation processes such as:

- conducting random spectrum analysis studies throughout the state using an Avcom PSA-37-XP spectrum analyzer;
- conducting mobile speed tests throughout the state using an iPhone, Android (or other smart phone) as well as provider-specific aircards (Sprint 3G/4G, Clearwire et al);
- identifying pre-selected, provider-submitted wireless transmit tower sites and cross-referencing data about that tower against the Federal Communications Commission (FCC) databases such as Antenna Structure Registration and/or the Universal Licensing System;
- cross-referencing Federal Registration Number data against available FCC Form 477 data as well as the FCC **COM**mision **RE**gistration **S**ystem (CORES);
- validating provider submitted data (for example: latitude/longitude) using a handheld Garmin eTrex Summit GPS unit or GPS enabled software such as Microsoft Streets and Trips;
- locating physical wire-line attributes (such as Central Offices, Remote Terminals, CATV plant, etc.) and comparing them against provider submitted data; and
- conducting on-net and off-net speed tests using the FCC portal at <http://www.broadband.gov/qualitytest/about/> or using the Ookla Net Metrics enabled speed test utility located on each of CN's state specific websites.

Additionally, CN cross-referenced numerous public documents in order to ensure that all known broadband providers were located and contacted. This included searching membership logs from trade associations (WISPA, WCAI, PCIA, etc.), the Cable Television Fact Book, Public Utility Commission records, Public Service Commission records, Chamber of Commerce, etc.

To date, Connected Nation's staff conducted on-site validation tests in Minnesota on the following providers: A Better Wireless, NISP, LLC; Ace Telephone Association; Albany Mutual Telephone Association; Alliance Communications; Arvig Communications Systems; AT&T, Inc.; Barnesville Municipal Telephone; Benton Cooperative Telephone Company; Blue Earth Valley Telephone

Company; Bradco-WISP, Inc.; Broadband Corp.; CenturyLink (also formerly Qwest); Charter Communications; Chaska.net; Christensen Communications Company; CitiScape Communications; City of Detroit Lakes; City of Windom; Clear Choice; Clearwire Corporation; Cloudnet, Inc.; Comcast Cable Communications LLC; CTC Telecom; diversiCOM; Enterpoint; Evertex Enterprises LLC; Farmers Mutual Telephone; Fibernet Monticello; Frontier Communications Corporation; FTTH Communications; Garden Valley Telephone Company; Gardonville Cooperative Telephone Association; Genesis Wireless; Granada Telephone Company; Halsted Telephone; Harmony Telephone Company; Hickory Tech Corporation; Info Link Wireless, Inc.; Interstate Telecommunications Cooperative, Inc.; Invisimax; Jaguar Communications; Kasson & Mantorville Telephone Company; KeyOn Communications, Inc.; Knology of the Plains, Inc.; Lonsdale Telephone; Loterel Systems, Inc.; Mable Cooperative Telephone Company; Manchester Heartland Telephone Company; Midcontinent Communications (also d.b.a. US Cable Corporation); Minnesota Valley Telephone Company; Minnesota Valley TV Improvement Corporation; New Ulm Telecom, Inc.; Nextera Communications; NorthfieldWireless; Park Region Mutual Telephone Company (also d.b.a. Otter Tail Telecom); Polar Telcom, Inc.; Red River Rural Telephone Association; River Valley Telecommunications Cooperative; SCI Cable; Scott Rice Telephone; Sioux Valley Wireless; Sleepy Eye Telephone Company; SMBS; Southern Cablevision, Inc.; Spring Grove Cooperative Telephone Company; Sprint Nextel Corporation; Starpoint Communications, Inc.; TDS Telecommunications Corporation; tothome.com, LLC; T-Mobile USA, Inc.; U.S. Internet (d.b.a. USI Wireless); Upsala Cooperative Telephone Company; VAL-ED Joint Venture; Verizon Communications, Inc.; Western Telephone Company; Windstream (also d.b.a. Lakedale LINK) and Winnebago Cooperative Telephone Association.

From program initiation through this reporting period, CN has completed in-the-field validation testing against 75 companies (out of a universe of 121 viable providers) totaling 61.98 percent within the state of Minnesota. This percentage also considers the non-participating provider records submitted to NTIA as may be contained herein (see “Data Submission and Coverage Estimation of Non-Participating Provider” below).

CN has also continued to review provider datasets for accurate speed information, platform listings, and other intricacies that may fall outside of the standard SBI Data Transfer Model parameters. Any providers whose submitted coverage and attributes are anticipated to come into question have been further reviewed and confirmed; details on a case-by-case basis are presented below.

### **Ace Telephone Association**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 15 Mbps service; screenshot below.

**If you have Ace Digital TV–Expanded package:**

Ace High-speed – up to 8Mbps

**\$34.95 per month****If you have Ace High-speed by itself:**

Ace High-speed (basic) – up to 1Mbps

**\$39.95 per month**

Ace High-speed – up to 15Mbps

**\$49.95 per month****Arvig Communication Systems**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: provider website advertises 20 Mbps service; screenshot below.

**Lightning, up to 20Mb/512Kb**☐ with Arvig Phone and Digital TV ..... \$79.95☐ with Arvig Phone or Digital TV ..... \$85.95☐ without Arvig Phone or Digital TV ..... \$154.95**Blue Earth Valley Telephone Company**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 15 Mbps service; screenshot below.

Surf the Internet at speeds from 1Mb to 15Mb/second. All plans allow for multiple users at the same location, business or residential. Stop wasting time waiting for web sites and files to download and see the benefits of BEVCOMM High Speed Internet today!

**Broadband Corp**

Issue: Fixed wireless platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: The equipment being used for the 3650 MHz spectrum allows for 14 Mbps speeds.



### Century Link

Issue: DSL platform with maximum advertised download speed in tiers 7 and 8, higher than expected value range for the technology.

Resolution: Provider website advertises 25 and 40 Mbps service; screenshot below.



Service Tier	Connection Speeds up to	Prepaid Card	Download Time (4MB music file)	Speed (Mbps)
25 Mbps	25 Mbps	\$50 PREPAID CARD	2 seconds	25 Mbps
40 Mbps	40 Mbps	\$50 PREPAID CARD	1 seconds	40 Mbps

### Christensen Communications Company

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 12 Mbps service; screenshot below.



Service Tier	Price	Download Speed	Upload Speed	Mailboxes	Modem
DSL Mega	*\$62.95 per month	12MB Download	1MB Upload	6 Free Mailboxes \$2.00 for each additional Mailbox	FREE use of company supplied modem

**CitEscape, LLC**

Issue: Fixed wireless platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: The documentation on the equipment being used indicates that 16.5 Mbps is achievable speed depending on the settings.

**Clara City Telephone Company**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Confirmed with provider that 12 Mbps service is available, but speeds are not advertised on their website.

**Crosslake Telephone Company**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider representative indicated that tier 7 speeds are indeed available to all customers.

**Crosslake Telephone Company**

Issue: Technology of transmission 40 with maximum advertised download speed in tier 7, lower than expected value range for the technology.

Resolution: Provider representative indicated that DOCSIS 3.0 has been installed, but speeds across their service area have not been bumped up yet. That will occur after the connectivity to fiber backbone is complete and middle-mile bandwidth is increased.

**Frontier Communications of Minnesota, Inc.**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 12 Mbps service; screenshot below.

**High-Speed Internet Max**

With Max speeds as high as 12 Mbps, get the reliability, security and ease of installation with Frontier's acclaimed customer service.

**Garden Valley Telephone Company**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider representative indicated that tier 7 speeds are indeed available to all customers.



### Granada Telephone Company

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 15 Mbps service; screenshot below.

Plan	Speed	Monthly Fee
Basic	1 Mb	\$74.95
Silver	5 Mb	\$94.95
Gold	15 Mb	\$114.95

### Hiawatha Broadband Communications, Inc.

Issue: Technology of transmission 40 with maximum advertised download speed in tier 8, lower than expected value range for the technology.

Resolution: Provider website advertises 25 Mbps service; screenshot below.

#### Digital Value: \$114.84/month

##### TV –

Expanded Plus Lineup  
Music Choice  
VOD (Where Available)

##### Internet –

25 Mbps  
6 E-mails  
100 MB Server Space  
SpamCu s

##### Phone –

Local Service  
60 min. Long Distance  
2 Features

### Hickory Tech Corporation

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 20 Mbps service; screenshot below.

Plans:	<u>Lite</u>	<u>Prime</u>	<u>Pro</u>	<u>Premium</u>
Download Speeds:	1 Mbps*	6 Mbps*	9 Mbps*	20 Mbps*
Emails:	5	5	5	5
Web Space:	20 MB	30 MB	40 MB	50 MB

### InvisiMax, Inc.

Issue: Fixed wireless platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: The equipment being used allows for 14 Mbps speeds.

**Jaguar Communications**

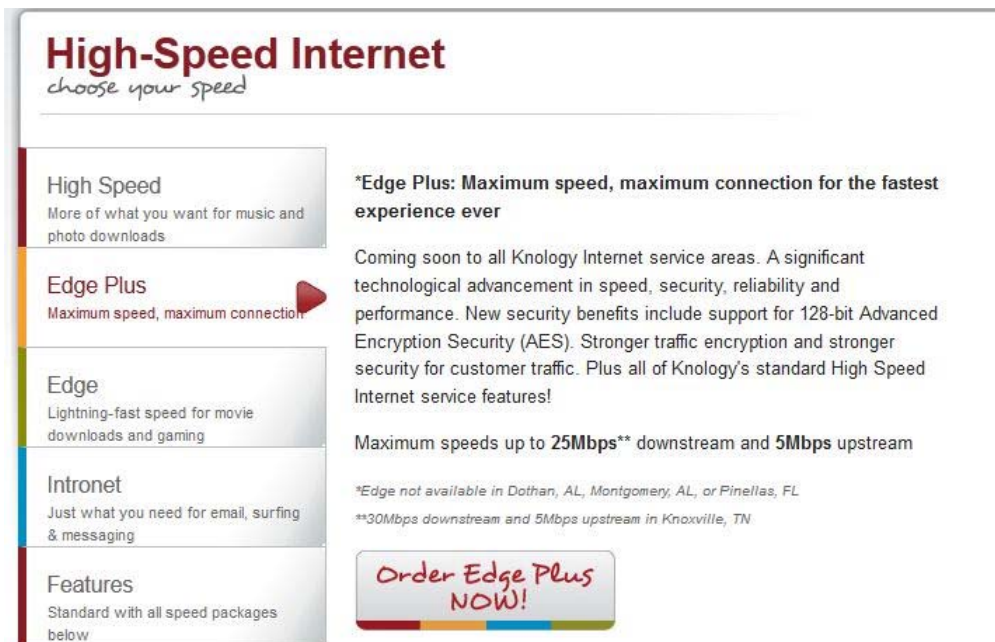
Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider representative confirmed that 10 Mbps service is available.

**Knology of the Plains, Inc.**

Issue: Technology of transmission 40 with maximum advertised download speed in tier 8, lower than expected value range for the technology.

Resolution: Provider website advertises 25 Mbps service; screenshot below.



The screenshot shows the Knology High-Speed Internet website. The header reads "High-Speed Internet" with the tagline "choose your speed" in a script font. On the left is a vertical navigation menu with five items: "High Speed" (More of what you want for music and photo downloads), "Edge Plus" (Maximum speed, maximum connection), "Edge" (Lightning-fast speed for movie downloads and gaming), "Intronet" (Just what you need for email, surfing & messaging), and "Features" (Standard with all speed packages below). The main content area highlights "Edge Plus: Maximum speed, maximum connection for the fastest experience ever". It states that this service is coming soon to all Knology Internet service areas and lists technological advancements in speed, security, reliability, and performance, including support for 128-bit Advanced Encryption Security (AES). It also mentions that Edge Plus includes all of Knology's standard High Speed Internet service features. Below this, it specifies "Maximum speeds up to 25Mbps\*\* downstream and 5Mbps upstream". Two footnotes are provided: "\*Edge not available in Dothan, AL, Montgomery, AL, or Pinellas, FL" and "\*\*30Mbps downstream and 5Mbps upstream in Knoxville, TN". At the bottom right, there is a button that says "Order Edge Plus NOW!" in a script font.

**Midcontinent Communications**

Issue: Technology of transmission 41 with maximum advertised download speed in tier 8, higher than expected value range for the technology.

Resolution: Provider website advertises 30 Mbps service; screenshot below.

**Speed things up!**

**MidcoNet Xstream® Wideband 1.0**

Remember the files that normally took minutes to download over a typical dial-up or DSL connection? With MidcoNet Xstream® Wideband 1.0, you've got them in just seconds! MidcoNet Xstream® Wideband 1.0 packs your computer with download speeds up to 30 Mbps and uploads up to 5 Mbps.\* It's amazing speed at a very affordable price – and backed by our friendly, 24/7 customer service.

**New Ulm Telecom, Inc.**

Issue: Technology of transmission 40 with maximum advertised download speed in tier 8, lower than expected value range for the technology.

Resolution: Provider website advertises 25 Mbps; screenshot below.

**Internet Pricing**

Download speeds up to 1 mbps	\$29.95
Download speeds up to 15 mbps	\$44.95
Download speeds up to 25 mbps	\$64.95

**New Ulm Telecom, Inc.**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 10 Mbps service; screenshot below.

10 Mbps	\$59.95
10 MBps + NU-Basic TV	\$71.90
10 Mbps + NU-Entertainment TV	\$104.90
10 Mbps + NU-Variety TV	\$109.90

**NorthfieldWiFi LLC**

Issue: Fixed wireless platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider representative confirmed that higher speeds are available on its fixed wireless network.

**Paul Bunyan Rural Telephone Cooperative**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 25 Mbps service; screenshot below.

Broadband Service Plans		Fee
Up to 10 Mb		\$44.95/mo.
Up to 15 Mb		\$54.95/mo.
Up to 20 Mb		\$64.95/mo.
Up to 25 Mb		\$74.95/mo.

**Pine Island Telephone Company**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 15 Mbps service; screenshot below.

High Speed Internet - Residential			
Plan	Speed	E-Mail Boxes	Monthly Fee
Silver DSL*	1 Mb	5	\$49.95
Platinum DSL*	5 Mb	5	\$59.95
Platinum Plus*	15 Mb	5	\$64.95

**Polar Telcom, Inc.**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider representative indicated that tier 7 speeds are indeed available to all customers.

**Sacred Heart Telephone Company**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Confirmed with provider that 12 Mbps service is available, but speeds are not advertised on their website.

**Scott Rice Telephone Co.**

Issue: DSL platform with maximum advertised download speed in tiers 7 and 8, higher than expected value range for the technology.

Resolution: Provider representative confirmed that 10 Mbps service is available in some areas and 30 Mbps service is also available in some areas.

**Sjoberg's Inc.**

Issue: Technology of transmission 40 with maximum advertised download speed in tier 8, lower than expected value range for the technology.

Resolution: Provider representative confirmed that 40 Mbps service is available to all customers, using DOCSIS 3.0.

**Sleepy Eye Telephone Company**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 10 Mbps service; screenshot below.

**Residential Rates**

Various options for Internet speeds are available.

- 256k DSL \$39.95
- 2Mbps DSL \$44.95
- 5Mbps DSL \$59.95
- 10Mbps DSL \$79.95

**Southern Cablevision, Inc.**

Issue: Technology of transmission 40 with maximum advertised download speed in tier 7, lower than expected value range for the technology.

Resolution: Provider representative confirmed that service area is DOCSIS 3.0, but lower speeds are still advertised and in use while customers move modems up to DOCSIS 3.0.

**TDS Telecommunications Corporation**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 15 Mbps service; screenshot below.

<b>15Mbps High-Speed Internet</b>		<b>5Mbps High-Speed Internet</b>	
<a href="#">► Check availability to see pricing information!</a>		<a href="#">► Check availability to see pricing information!</a>	
Serious Internet speed for serious Web surfers. Great for video watchers, gamers, and those who work from home but don't care for the new meaning of whoosh.		5Mbps Broadband Internet makes everything you do online faster and easier. Enjoy a fast high-speed connection, and quicker uploads and downloads.	
<a href="#">Check Availability ►</a>		<a href="#">Check Availability ►</a>	



**T-Mobile USA, Inc.**

Issue: Mobile wireless platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website confirms that service greater than speed tier 6 is available; screenshot below.

T-Mobile customers with 4G phones are already experiencing data speeds that are comparable to or faster than the speed of a home broadband network. And with recent improvements to our 4G network-doubling our theoretical download speeds-we're giving our customers enhanced 4G data speeds. We've seen average download speeds on our HSPA+ 42 Mbps-capable data stick approaching 10 Mbps with peak speeds of 27 Mbps, and download speeds approaching 8 Mbps with peak speeds of 20 Mbps on our upcoming HSPA+ 42 Mbps-capable smartphones.

**VAL-ED Joint Venture, LLP**

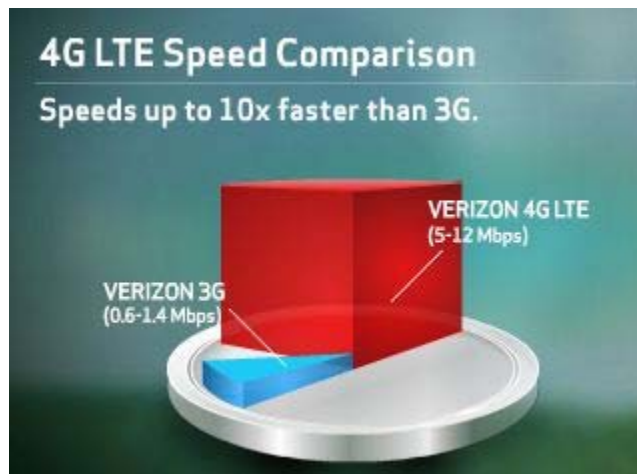
Issue: Fixed wireless platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: The equipment being used allows for 14 Mbps speeds.

**Verizon Communications, Inc.**

Issue: Mobile wireless platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 12 Mbps service; screenshot below.



### Western Telephone Company

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 10 Mbps service; screenshot below.

10 Mbps	\$59.95
10 MBps + NU-Basic TV	\$71.90
10 Mbps + NU-Entertainment TV	\$104.90
10 Mbps + NU-Variety TV	\$109.90

### Wikstrom Telephone Company

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Could not confirm the tier 7 service with the provider prior to submission and could not find any speeds advertised on its website to provide as confirmation; will continue outreach to this provider for next submission.

### Windstream Communications

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider website advertises 12 Mbps service; screenshot below.

See which of our speeds matches your online activities. Choose the right Internet speed (WATCH VIDEO)	3 Mbps (Basic Use)	6 Mbps (Most Popular)	12 Mbps (Fastest Option)
E-mail friends	X	X	X
Browse the Internet	X	X	X
Bank online	X	X	X
Shop for deals	X	X	X
Download music	X	X	X
Connect with friends on Facebook and Twitter	X	X	X
Use wireless home networking	X	X	X
Download large files		X	X
Stream video		X	X
Watch TV shows online			X
Play online games			X

**Wolverton Telephone Company**

Issue: DSL platform with maximum advertised download speed in tier 7, higher than expected value range for the technology.

Resolution: Provider representative indicated that tier 7 speeds are indeed available to all customers.

As requested of SBI grantees through e-mail correspondence on February 22, 2012, CN has also reviewed the fixed wireless coverage of providers in Minnesota that NTIA has recognized as “having an unusual shape” that does not appear to be propagated service. Descriptions on the data collection and methodology used for each provider are supplied below.

**City of Chaska**

Background: This is a non-participating provider whose coverage has been estimated for submission. The coverage resembles buffered WiFi hotspots; additional information is available in the non-participating provider section of the methodology paper.

Resolution: No resolution at this time as more complete information on the equipment is necessary to produce the propagations.

**Federated Telephone Cooperative**

Background: Coverage for this provider had what appeared to be arbitrary boundaries.

Resolution: Portion of provider's licensed wireless is now a real-world propagation unlike prior submissions.

**Halstad Telephone Company**

Background: Coverage for this provider had what appeared to be arbitrary boundaries.

Resolution: Portion of provider's licensed wireless is now a real-world propagation unlike prior submissions.

**US Internet of Minnetoka**

Background: According to provider representative, service area is derived from a real-world wireless propagation and is cut to the allowed service boundary. It is a city funded project and the provider is required to only provide within this service boundary.

Resolution: No change to the coverage being submitted based on explanation provided by provider.

**Windstream**

Background: This coverage is the former Lakedale fixed wireless service area; it appeared that the DSL service area was removed from the fixed wireless service area and clipped to the exchange boundaries.

Resolution: Provider's licensed wireless is now a real-world propagation unlike prior submissions. It has also been clipped to its serviceable exchange boundary, as the provider does not offer service to locations outside the exchange boundary that may still be able to obtain a proper signal.



---

## DATA SUBMISSION AND COVERAGE ESTIMATION OF NON-PARTICIPATING PROVIDER

### A Better Wireless

As part of its ongoing broadband mapping efforts, Connected Nation has developed a series of processes with the goal of submitting mapping data to NTIA for every known and qualifying broadband provider, regardless of whether the provider has chosen to support and participate in the SBI mapping initiative.

The following narrative provides detail regarding the recent data collection activities related to A Better Wireless, a wireless Internet service provider (WISP), located in Henning, MN, with a service area around Henning, Deer Creek, and Leaf Lakes. The narrative will include information regarding how and where CN obtained publicly available data and the on-the-ground validation techniques that support the underlying data.

#### **Background**

CN staff members have continued trying to obtain the participation of the provider with 24 instances of communication via telephone and e-mail sessions since January 26, 2010, through August 15, 2011. Communication replies were received from a company representative on July 19, 2011, with the response of electing not to participate. Additionally, a CN staff member visited the A Better Wireless office on September 21, 2011, to discuss the broadband mapping project in person with A Better Wireless staff, but staff was not available.

#### **The Issue**

A Better Wireless, by its lack of responsiveness since January 26, 2010, has predicated its unwillingness to participate in the Connect Minnesota broadband mapping initiative.

#### **Identification of Provider's Service Plans, Service Area, Legal Name, d.b.a., FRN, and Licensing**

CN began building a file based on research information and, as time progressed, enriched the file with information obtained through the public domain. For example, CN reviewed the provider's website ([www.abetterwireless.com](http://www.abetterwireless.com)) to determine the residential service plans (**Exhibit A**) and the service area (**Exhibit B**) of the provider's wireless network. A search for a Federal Registration Number (FRN) on the FCC **CO**mmission **RE**gistration **S**ystem (CORES) system yielded an FRN of 0015093073 (**Exhibit C**) with contact information relative to the owner of the company. Also, to support field validation of access points, the FRN was referenced to the FCC Universal Licensing System (ULS) to identify any licenses the provider may hold which could possibly enhance locating active access points for the service area. This process yielded license WQKB862 (**Exhibit D**), Radio Service: WQKB862 with 0 unique locations.

## Exhibit A: Service Plans

Service Packages - Microsoft Internet Explorer provided by ConnectKentucky

http://www.abetterwireless.com/service\_packages.html

### A Better Wireless Internet

Introducing a Better Wireless to Rural Minnesota

**Service Packages**

	Home Packages		Business Packages		Enterprise Packages	
	Freedom	Eagle	Business Freedom	Business Eagle	1000 kb	1500 kb
Download Speed (up to)	512 kb	768 kb	512 kb	768 kb	1000 kb	1500 kb
Upload Speed (up to)	256 kb	256 kb	512 kb	512 kb	1000 kb	1500 kb
Data Transfer (per month)	10,240 MB (20 GB)	15,360 MB (30 GB)	20,480 MB (40 GB)	25,600 MB (50 GB)	\$1,200 MB (20 GB)	unlimited (100 GB)
Additional Bandwidth	\$5 per 5 GB	\$5 per 5 GB	\$5 per 5 GB	\$5 per 5 GB	\$5 per 5 GB	\$5 per 5 GB
Email Address	5	5	5	5	Unlimited	Unlimited
Static IP Address	optional	optional	1	1	up to 20	up to 20
Set Up Fee	\$40.00	\$40.00	\$40.00	\$40.00	\$60.00	\$60.00
Monthly Billing	\$37.45	\$47.45	\$57.45	\$57.45	\$177.45	\$217.45
Equipment Lease*	\$5.99/month	\$5.99/month	\$5.99/month	\$5.99/month	\$5.99/month	\$5.99/month
Total Base Monthly w/ Tax	\$43.44	\$53.44	\$63.44	\$63.44	\$183.45	\$223.45
One-Time Installation Fee	\$75 for 2.4 GHz \$100 for 900 MHz	\$75 for 2.4 GHz \$100 for 900 MHz	\$75 for 2.4 GHz \$100 for 900 MHz	\$75 for 2.4 GHz \$100 for 900 MHz	\$75 for 2.4 GHz \$100 for 900 MHz	\$75 for 2.4 GHz \$100 for 900 MHz
	• 5 email addresses • Dynamic IP address		• 5 email addresses • 1 static IP address		• Unlimited email addresses • Up to 10 static IP addresses	

A Better Wireless - Microsoft Internet Explorer provided by ConnectKentucky

http://www.abetterwireless.com/

### A Better Wireless Internet

Introducing a Better Wireless to Rural Minnesota

**A Better Wireless**

**Service Packages**

If you are struggling with a slow Internet connection, we are here to help you. Our service uses equipment that, if needed, may be mounted to your structure similar to a satellite dish to receive the Internet. Service includes email address and an Internet connection that is always on. A Better Wireless does not require a phone line, or cable tv connection. Wireless Internet Service is available to anyone who lives within range of our service area.

**Serving Henning, Deer Creek, and Leaf Lakes Areas of Rural Minnesota**

Join A Better Wireless and be on the cutting edge of technology.

**NO MORE ROOSTING WITH THE BUZZARDS WHEN YOU CAN SOAR WITH THE EAGLES.**

We've continued to work hard to setup a reliable Internet service that is fast, secure, and most importantly AVAILABLE TO YOU!

We offer both residential and business service. Refer to our service packages to find the package that fits your budget and meets your Internet Freedom needs.

To enjoy your Internet freedom our service allows you the option to roam within our service area with only a wireless network card in your laptop.

\*Certain conditions may prevent you from receiving A Better Wireless Internet Services. These include distance, terrain, or obstructions that cause radio interference. Prior to installation we will conduct a site survey to determine if further equipment is required.

[A Better Wireless >](#)

Exhibit B: Service Area



Exhibit C: Federal Registration Number

FCC Registration System - Microsoft Internet Explorer provided by ConnectKentucky

https://fjallfoss.fcc.gov/coresWeb/searchDetail.do?frn= Federal Communications Commission [...]

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AVG Search Calculator Notepad Windows Explorer Weather Facebook

Favorites Suggested Sites Free Hotmail Web Slice Gallery

FCC Registration System

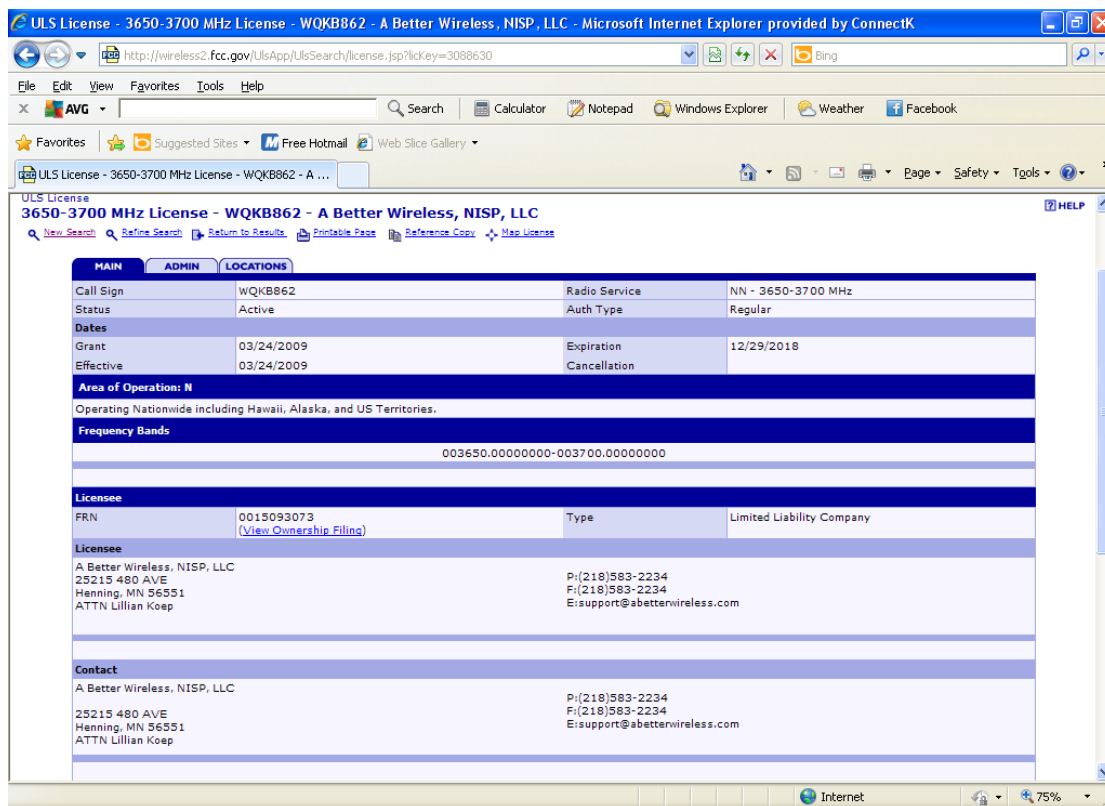
Close Window

Registration Detail	
FRN:	0015093073
Registration Date:	05/24/2006 10:32:00 PM
Last Updated:	10/16/2009 11:27:17 AM
Business Name:	A Better Wireless, NISP, LLC
Business Type:	Private Sector , Limited Liability Corporation
Contact Organization:	A Better Wireless, NISP, LLC
Contact Position:	Consultant
Contact Name:	Mr Mitchell D Koep
Contact Address:	25215 480 AVE Henning, MN 56551 United States
Contact Email:	support@abetterwireless.com
ContactPhone:	(218) 583-2234
ContactFax:	(218) 583-2234

javascript:self.close()

Internet 125%

## Exhibit D: WQKB862 License Reference



ULS License - 3650-3700 MHz License - WQKB862 - A Better Wireless, NISP, LLC - Microsoft Internet Explorer provided by ConnectK

http://wireless2.fcc.gov/UlsApp/UlsSearch/license.jsp?licKey=3088630

File Edit View Favorites Tools Help

Search Calculator Notepad Windows Explorer Weather Facebook

ULS License - 3650-3700 MHz License - WQKB862 - A ...

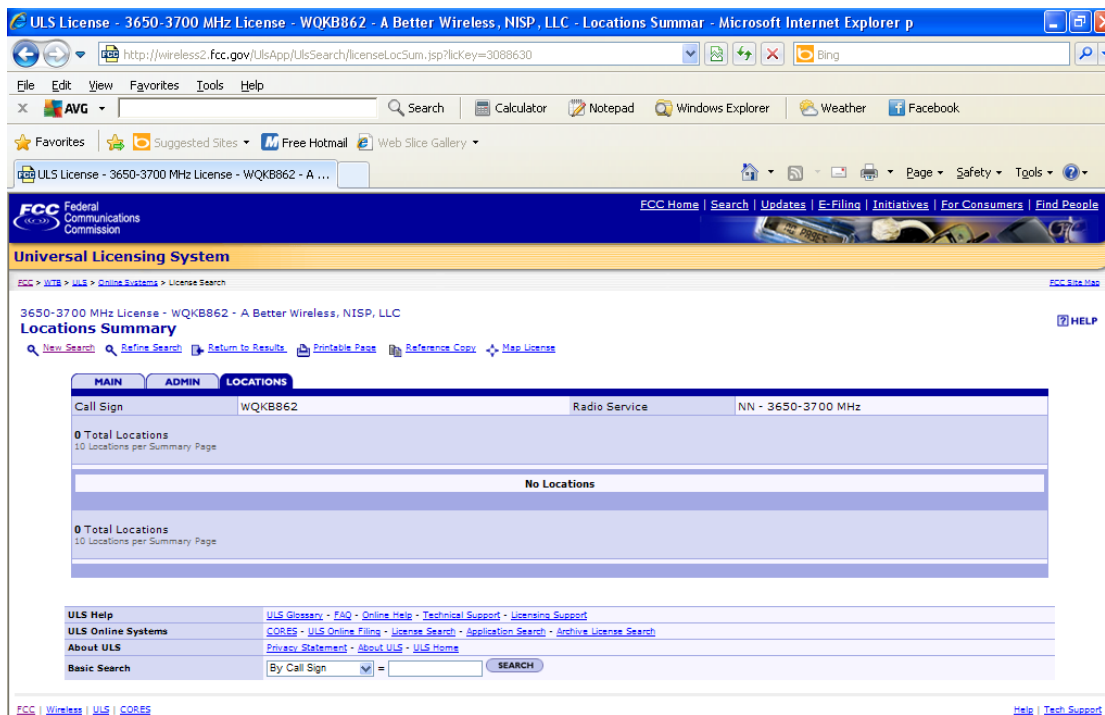
ULS License

3650-3700 MHz License - WQKB862 - A Better Wireless, NISP, LLC

[New Search](#) [Refine Search](#) [Return to Results](#) [Printable Page](#) [Reference Copy](#) [Map License](#)

MAIN ADMIN LOCATIONS			
Call Sign	WQKB862	Radio Service	NN - 3650-3700 MHz
Status	Active	Auth Type	Regular
<b>Dates</b>			
Grant	03/24/2009	Expiration	12/29/2018
Effective	03/24/2009	Cancellation	
<b>Area of Operation: N</b>			
Operating Nationwide including Hawaii, Alaska, and US Territories.			
<b>Frequency Bands</b>			
003650.00000000-003700.00000000			
<b>Licensee</b>			
FRN	0015093073 <a href="#">(View Ownership Filing)</a>	Type	Limited Liability Company
<b>Licensee</b>			
A Better Wireless, NISP, LLC 25215 480 AVE Henning, MN 56551 ATTN Lillian Koep		P:(218)583-2234 F:(218)583-2234 E:isupport@abetterwireless.com	
<b>Contact</b>			
A Better Wireless, NISP, LLC 25215 480 AVE Henning, MN 56551 ATTN Lillian Koep		P:(218)583-2234 F:(218)583-2234 E:isupport@abetterwireless.com	

Internet 75%



ULS License - 3650-3700 MHz License - WQKB862 - A Better Wireless, NISP, LLC - Locations Summar - Microsoft Internet Explorer p

http://wireless2.fcc.gov/UlsApp/UlsSearch/licenseLocSum.jsp?licKey=3088630

File Edit View Favorites Tools Help

Search Calculator Notepad Windows Explorer Weather Facebook

ULS License - 3650-3700 MHz License - WQKB862 - A ...

FCC Federal Communications Commission

FCC Home | Search | Updates | E-Filing | Initiatives | For Consumers | Find People

Universal Licensing System

FCC > ULS > Online Systems > License Search

3650-3700 MHz License - WQKB862 - A Better Wireless, NISP, LLC

**Locations Summary**

[New Search](#) [Refine Search](#) [Return to Results](#) [Printable Page](#) [Reference Copy](#) [Map License](#)

MAIN ADMIN LOCATIONS			
Call Sign	WQKB862	Radio Service	NN - 3650-3700 MHz
<b>0 Total Locations</b> 10 Locations per Summary Page			
No Locations			
<b>0 Total Locations</b> 10 Locations per Summary Page			

<b>ULS Help</b>	<a href="#">ULS Glossary</a> - <a href="#">FAQ</a> - <a href="#">Online Help</a> - <a href="#">Technical Support</a> - <a href="#">Licensing Support</a>
<b>ULS Online Systems</b>	<a href="#">CORES</a> - <a href="#">ULS Online Filing</a> - <a href="#">License Search</a> - <a href="#">Application Search</a> - <a href="#">Archive License Search</a>
<b>About ULS</b>	<a href="#">Privacy Statement</a> - <a href="#">About ULS</a> - <a href="#">ULS Home</a>
<b>Basic Search</b>	By Call Sign <input type="text"/> <input type="button" value="SEARCH"/>

FCC | Wireless | ULS | CORES

Help | Tech Support



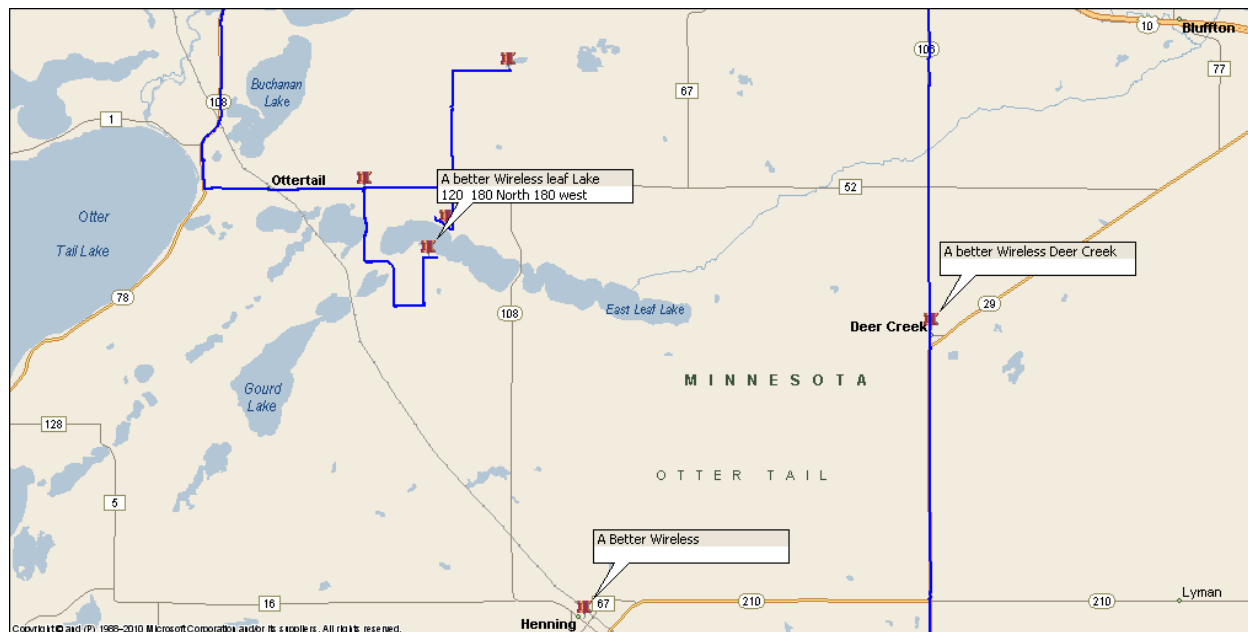
### Preliminary Identification of Provider's Coverage Area

Connected Nation extracted the A Better Wireless service area locations from its website and the information through the FCC ULS database in reference to license WQKB862. The website service area locations were utilized to create a Google Earth image overlay (**Exhibit E**). The image overlay was positioned to match the Google Earth base map's roadways, county boundaries, and water bodies. The degree of accuracy of the image overlay was maintained at less than 1 mile (5280 ft.) to establish a minimum search criteria of a given access point. The provider's service area depiction is represented by tower symbols as shown in **Exhibit B**. Using the coordinates determined to be center coordinates, search rings were created with the image overlay to determine the feasibility of locating the Structures to identify coordinates of the locations. The location's center coordinates were inputted into Google Earth and examined utilizing the zoom option of the aerial imagery. A portion of the Transmitting locations structures were identified. This resulted in the means of establishing coordinates for the access point locations. A site validation trip was also planned and executed to the area. All 3 locations were entered into the *Streets and Trips* mapping application (**Exhibit F**) to develop a route for the validation process.

#### Exhibit E: Google Earth: Provider's Service Area Image Overlay



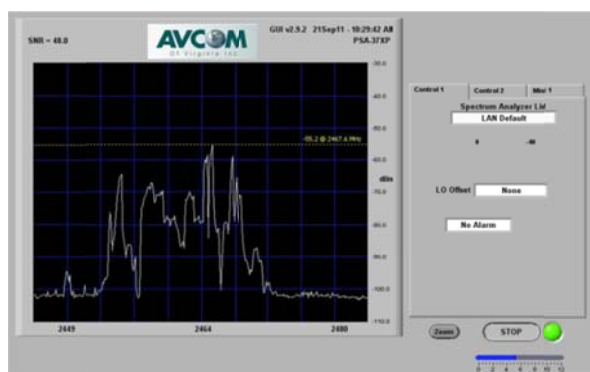
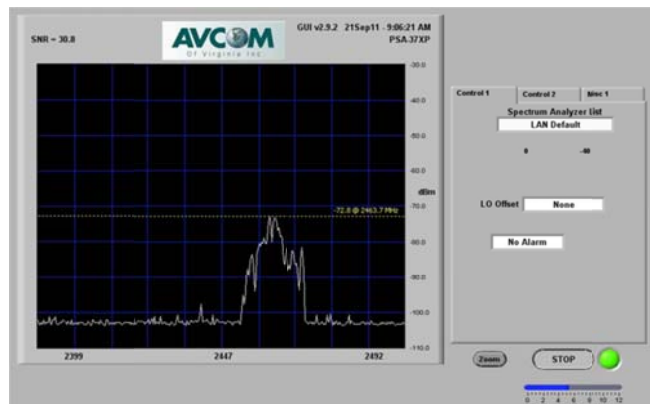
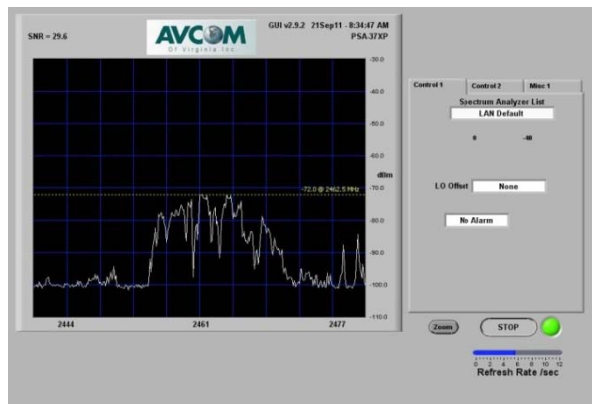
## Exhibit F: Validation Points for AP Structures



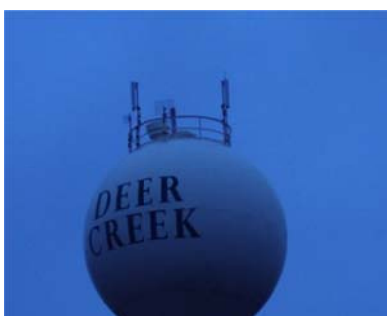
### Testing Techniques

Connected Nation staff developed a site validation route based on data established with the Google Earth image overlay and publicly available data through the FCC ULS database for A Better Wireless WQKB862 radio service. The CN wireless engineer was equipped with an AVCOM PSA-37XP analyzer with RF detection from 1 MHz to 6 GHz and an array of antennas tuned specifically for the 900 MHz, 2.4 GHz, 3.65 GHz, and 5 GHz frequency bands (**Exhibit G**). Each validation point was scrutinized for frequency of operation. A screen image of the operating frequency (or frequencies) was captured; general notes were recorded for each location—approximate antenna height, frequency of operation, antenna type (omni or sectored), and photographs were taken of the access points. See Exhibit G on the following page.

## Exhibit G: Field Data for A Better Wireless Hub Location



Provider	Area Covered	Structure type	Longitude	Latitude	Frequency Band	TX Ant Height	Notes
A Better Wireless	Henning	Water Tower	46.31916667	-95.44777778	2400 Mhz	120 feet	Ant Ht 120' Omni
A Better Wireless	Deer Creek	Water Tower	46.39138889	-95.32666667	2400 Mhz	120 feet	Ant Ht 120' Omni
A Better Wireless	Leaf Lake Area	Grain Silo's	46.41001000	-95.50138889	2400 Mhz	120 feet	120' 180 North 180 west Farm 2 silos



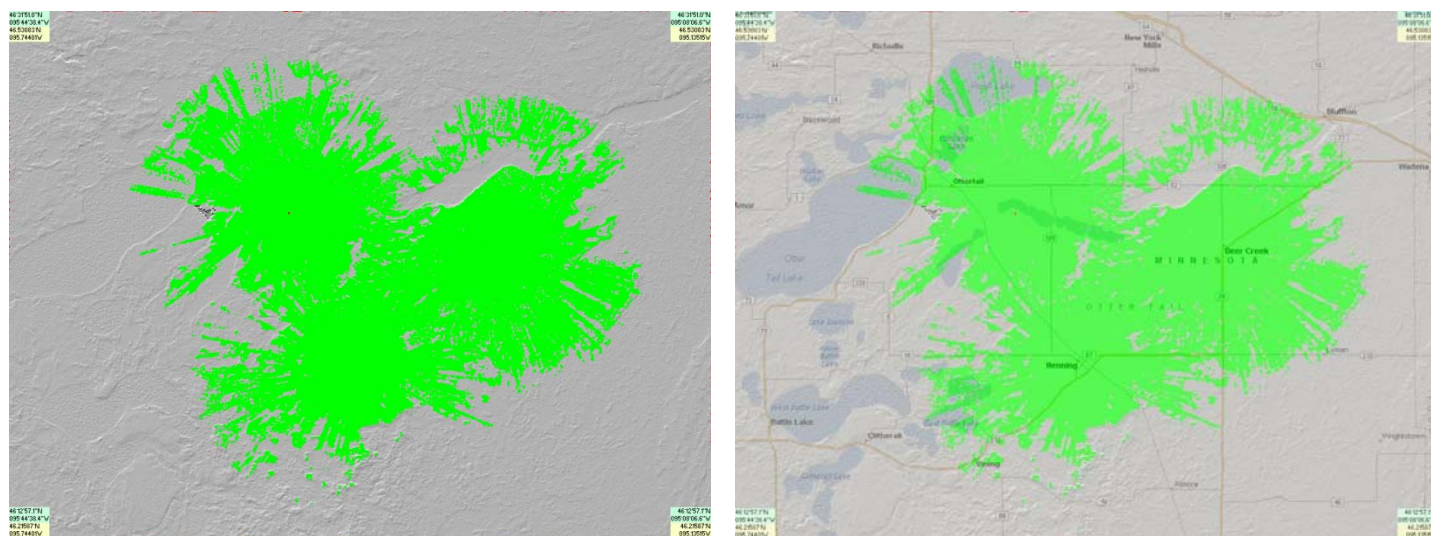
### Results and Submission for April 2012

Of the 3 locations visited during the validation point route, 3 access points were identified and relative information was logged into the A Better Wireless field validation notes file (**Exhibit H**). The field and the publicly available data were transferred to the Connected Nation Provider Information file. A composite propagation study was completed based on the field data (**Exhibit I**). Both documents were forwarded to A Better Wireless and advised the information will be submitted to Connect Minnesota and the NTIA broadband mapping project for processing if there are no discrepancies of the estimated coverage received from the provider within a 48-hour period.

### Exhibit H: Field Validation Notes

Provider		Test Site Info		Coordinates NAD 83		Platform Type		Test Data	
Provider	FRN Validation	Test City	Location Description	Lat Decimal	Long Decimal	Type	Presence Confirmed	Type	Pass or Fail?
A Better Wireless	Yes	Henning	South edge town	46.319167	-95.447778	Fixed Wireless	Yes	Signal Verification	Pass
A Better Wireless	Yes	Deer Creek	West Part of Town	46.391389	-95.326667	Fixed Wireless	Yes	Signal Verification	Pass
A Better Wireless	Yes	Leaf Lake	Leaf Lake area	46.410000	-95.501389	Fixed Wireless	Yes	Signal Verification	Pass

### Exhibit I: A Better Wireless Composite Coverage





## Chaska.net

As part of its ongoing broadband mapping efforts, CN has developed a series of processes with the goal of submitting mapping data to NTIA for every known and qualifying broadband provider, regardless of whether the provider has chosen to support and participate in the SBI mapping initiative.

The following narrative provides detail regarding the recent data collection activities related to Chaska.net, a wireless Internet service provider (WISP), located in Chaska, Minnesota. Owned by the City of Chaska, the network is actually an unlicensed, metro-mesh network that provides service to the residents and businesses of Chaska, as well as some surrounding areas. The narrative will include information regarding how and where CN obtained publicly available data and the on-the-ground validation techniques that support the underlying data.

### April 2012 Submission Commentary

Connected Nation created this coverage estimation document during the October 2011 submission period as a result of the ongoing non-participatory status of the provider. In addition to the 6 instances of e-mail and/or telephone communication during the October 2011 submission period (as previously reported), CN made 4 additional attempts to contact the provider during this mapping cycle.

CN closely monitored the provider's website to identify any changes in the coverage area or maximum advertised speeds but did not locate evidence of any recent changes. To that end, CN is resubmitting this coverage estimation narrative, substantially in its original format, and will continue to monitor the provider's website as well as ensure ongoing outreach until either the expiration of the SBI grant or until such time as the provider voluntarily contributes data.

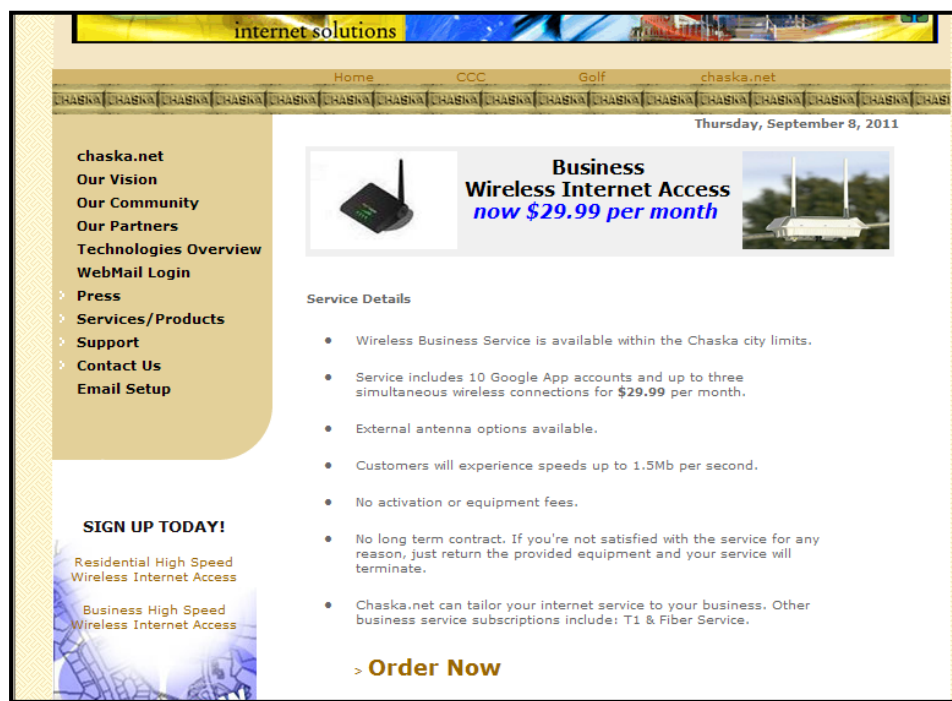
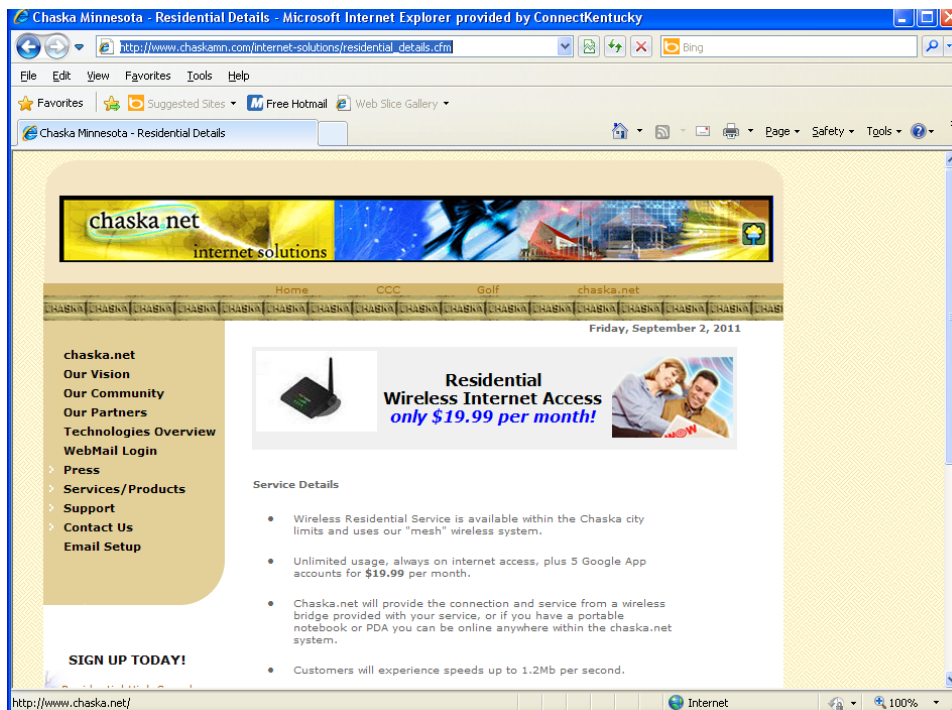
### The Issue

By its lack of data submission since August 4, 2010, Chaska.net has predicated its unwillingness to participate in the Connect Minnesota broadband mapping initiative.

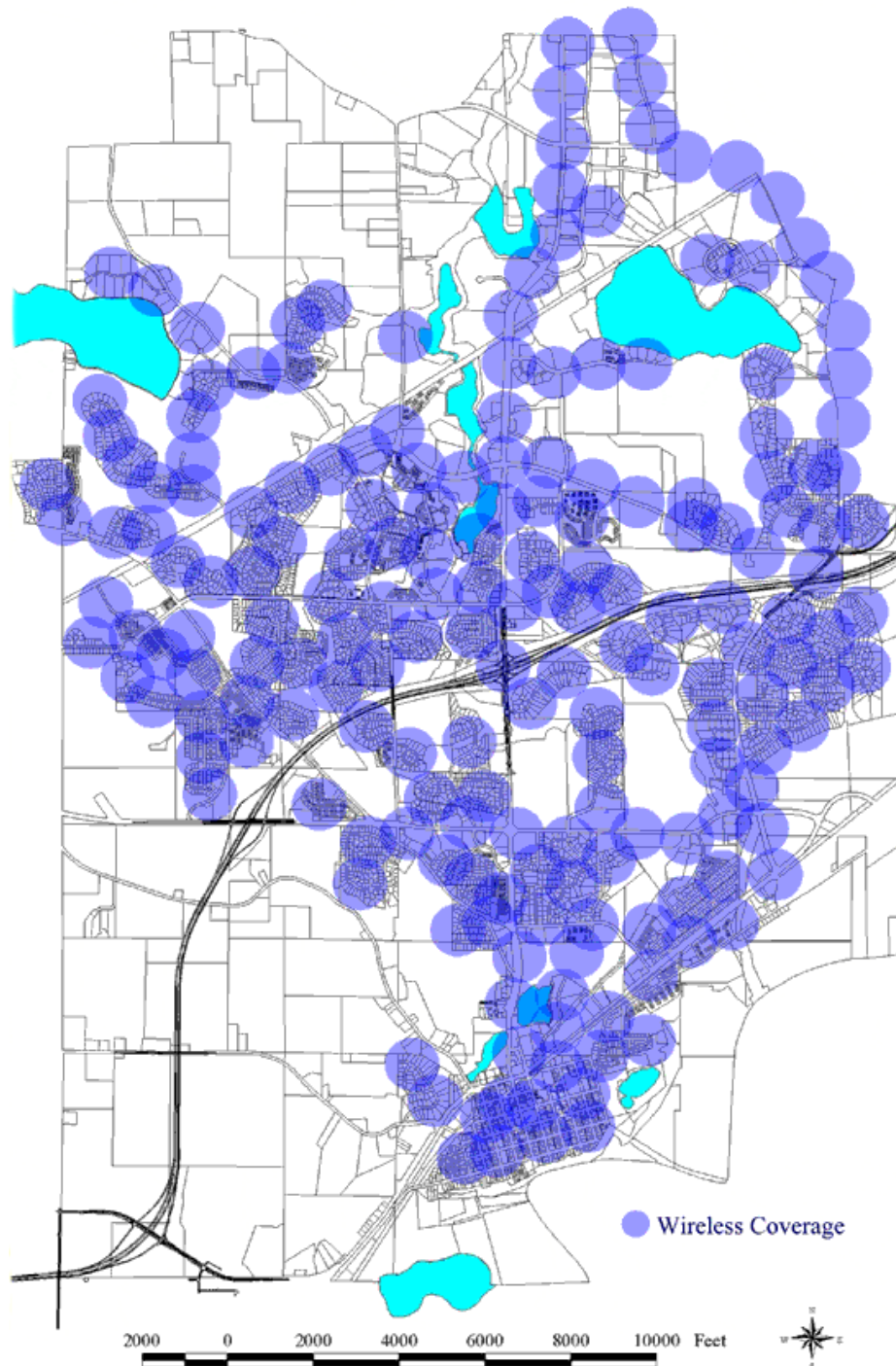
### Identification of Provider's Service Plans, Service Area, Legal Name, d.b.a., FRN, and Licensing

CN began building a file based on research information and, as time progressed, enriched the file with information obtained through the public domain. For example, CN reviewed the provider's website (<http://www.chaskamn.com/internet-solutions/>) to determine the residential service plans (**Exhibit A**) and the service area (**Exhibit B**) of the provider's wireless network. A search for a Federal Registration Number ("FRN") on the FCC COmmission REgistration System ("CORES") system yielded an FRN of 0002606630 (**Exhibit C**) with contact information relative to the owner of the company. Also, to support field validation of access points, the FRN was referenced to the FCC Universal Licensing System (ULS) to identify any licenses the provider may hold which could possibly enhance locating active access points for the service area. This process yielded one active License: KRX-344 (**Exhibit D**), Radio Service: Public Safety License with Mobile applications. It is licensed to the City of Chaska and not affiliated with the Chaska.net business venture.

## Exhibit A: Service Plans



**Exhibit B: Service Area**



## Exhibit C: Federal Registration Number

FCC Registration System - Microsoft Internet Explorer provided by Conn...

https://f... Bing

File Edit View Favorites Tools Help

★ Favorites | ★ Suggested Sites | M Free Hotmail | Web Slice Gallery

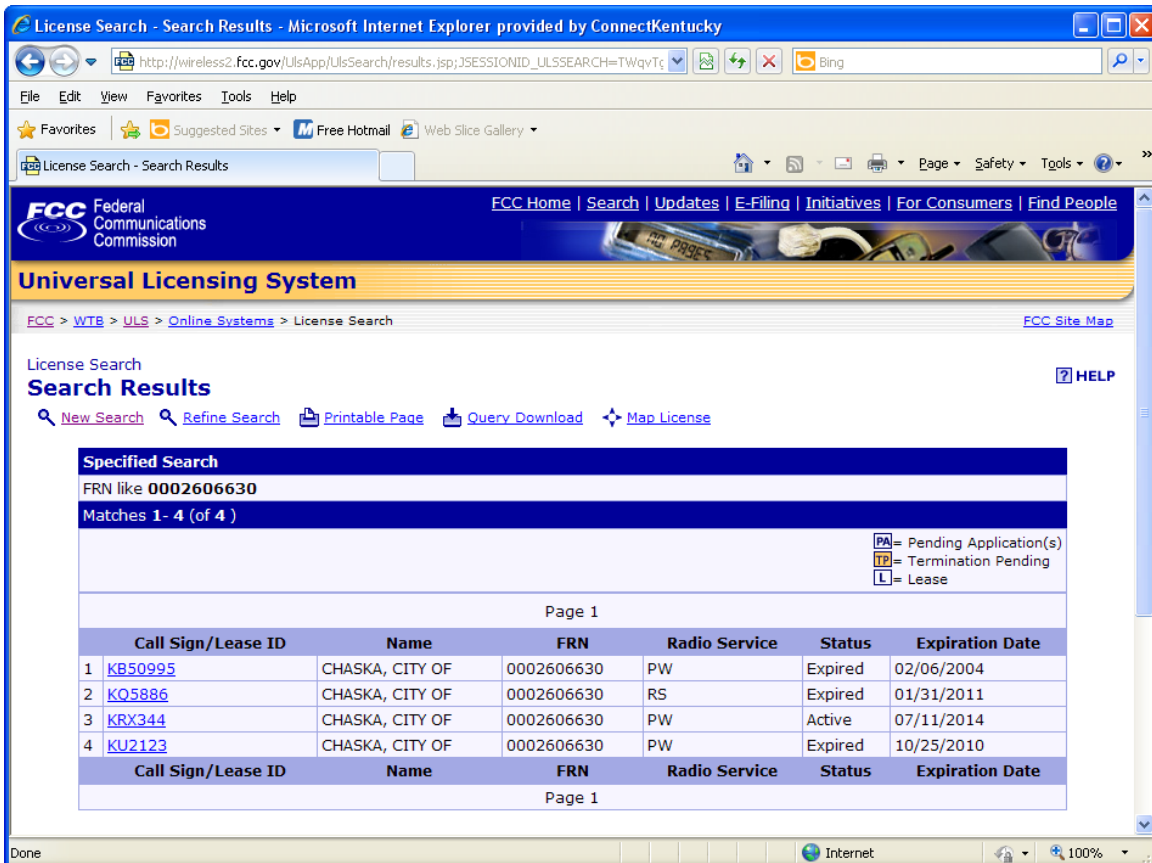
FCC Registration System

[Close Window](#)

Registration Detail	
FRN:	0002606630
Registration Date:	06/24/2000 10:02:41 PM
Last Updated:	05/13/2004 10:34:37 AM
Business Name:	Chaska, City of
Business Type:	State or Local Agency , County
Contact Organization:	
Contact Position:	FCC CONTACT
Contact Name:	
Contact Address:	Two City Hall Plaza Chaska, MN 55318 United States
Contact Email:	
ContactPhone:	(612) 448-4200
ContactFax:	(612) 448-2307

Internet 100%

## Exhibit D: KRX344 License Reference



The screenshot shows the FCC Universal Licensing System search results for the FRN 0002606630. The search results are displayed in a table with columns: Call Sign/Lease ID, Name, FRN, Radio Service, Status, and Expiration Date. The results show four matches, with KRX344 being the active license.

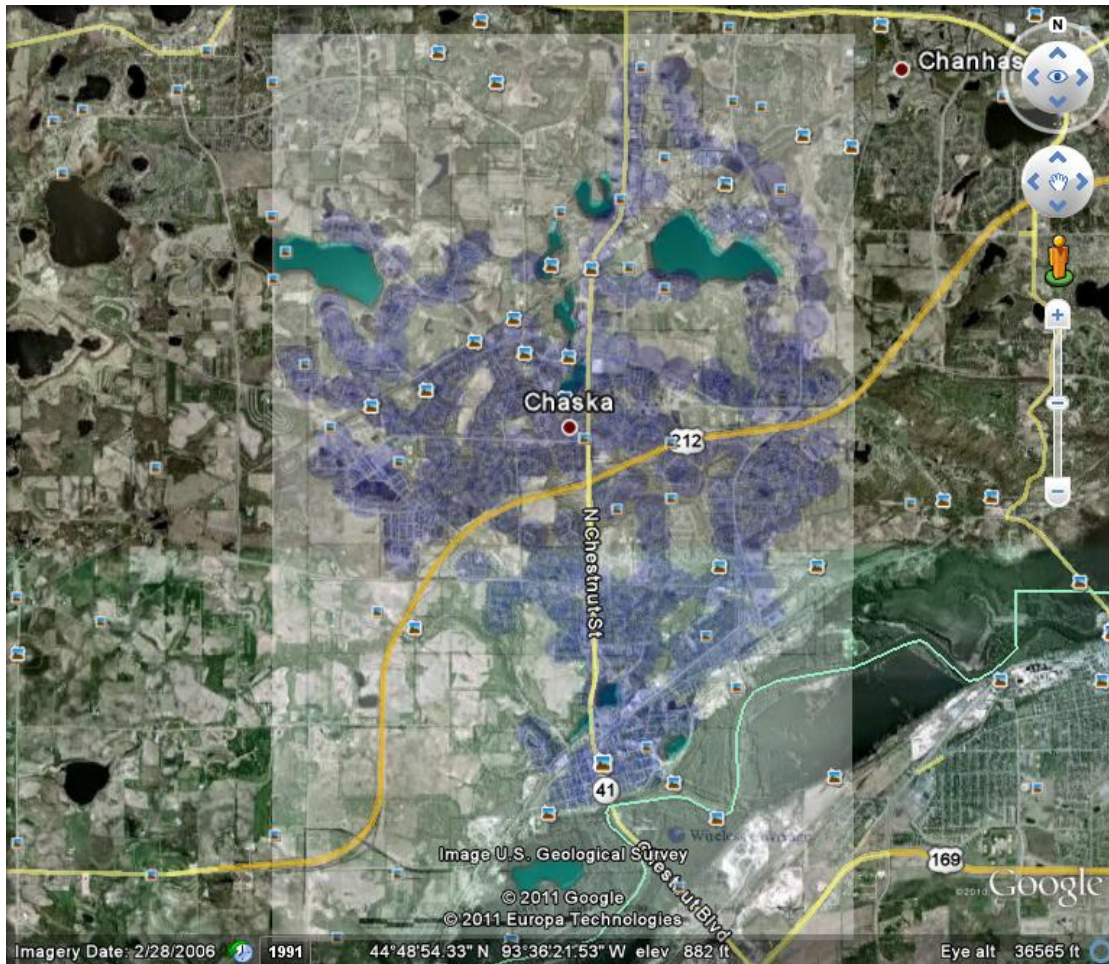
Call Sign/Lease ID	Name	FRN	Radio Service	Status	Expiration Date
1 <a href="#">KB50995</a>	CHASKA, CITY OF	0002606630	PW	Expired	02/06/2004
2 <a href="#">KQ5886</a>	CHASKA, CITY OF	0002606630	RS	Expired	01/31/2011
3 <a href="#">KRX344</a>	CHASKA, CITY OF	0002606630	PW	Active	07/11/2014
4 <a href="#">KU2123</a>	CHASKA, CITY OF	0002606630	PW	Expired	10/25/2010

### Preliminary Identification of Provider's Coverage Area

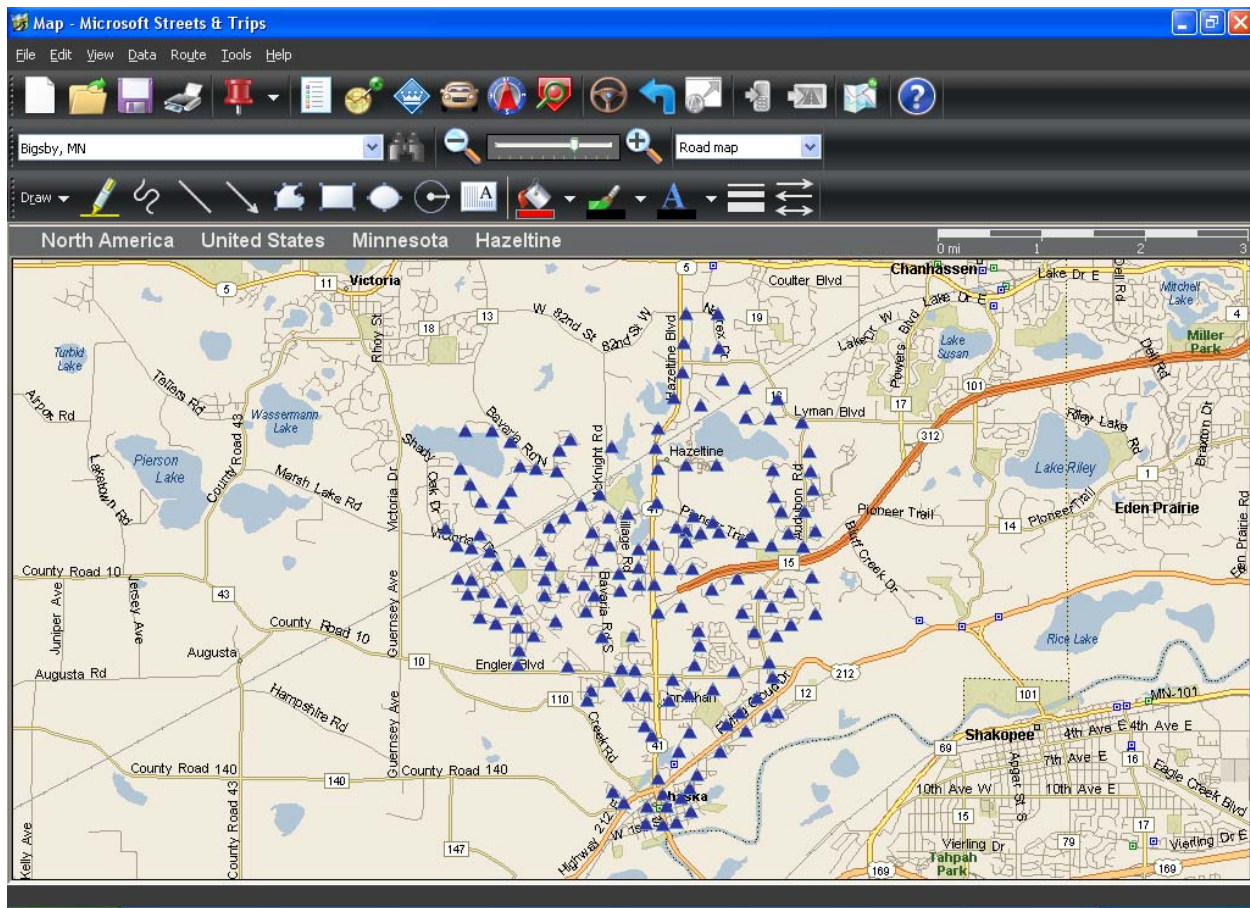
Connected Nation extracted the Chaska.net service area polygon (**Exhibit B**) from its website. The website service area was utilized to create a Google Earth image overlay (**Exhibit E**). The image overlay was positioned to match the Google Earth base map's roadways, county boundaries, and water bodies. The degree of accuracy of the image overlay was maintained at less than .2 mile (1058 ft.) to establish a minimum search criteria of a given access point. By estimating the coordinates for each polygon, search rings were created with the image overlay to determine the most probable locations for the transmit sites and/or structures. The estimated center coordinates were geocoded into Google Earth and examined utilizing the zoom option of the aerial imagery. This established the means of determining coordinates for the access point locations. A CN engineer then conducted an on-site field verification, and validation trip to the targeted areas to verify the theorems, related to transmit frequencies, locations, and device types. One hundred sixty-four (164) locations were entered into a GPS-enabled version of Microsoft's *Streets and Trips* software (**Exhibit F**) to develop a route for the validation process.



Exhibit E: Google Earth - Provider's Service Area Image Overlay



## Exhibit F: Validation Points for AP Structures



### Testing Techniques

At this juncture, a Connected Nation engineer developed a site test route based on the estimated coordinates for the center of each polygon. The CN wireless engineer was equipped with an AVCOM PSA-37XP spectrum analyzer with RF detection from 1 MHz to 6 GHz and an array of antennas tuned specifically for the 900 MHz, 2.4 GHz, 3.65 GHz, and 5 GHz frequency bands (**see tabular chart contained within Exhibit G**). Numerous validation points were scrutinized for frequency of operation; general notes were recorded for each location including approximate antenna height, frequency of operation, antenna type (omni or sectored), and exact coordinates, and digital photographs were taken of the wireless access points as each was discovered throughout the process.



### Exhibit G: Field Data for Chaska.net Office/Hub Location



Unit name	DL	UL	Latitude(°	Longitude	Elevation	Frequency	Ant Height	Ant Type
Chaskanet1	1.2 Mbps	1.2 Mbps	44.7847	-93.6039	222	2400	15	Omni
2	1.2 Mbps	1.2 Mbps	44.78453	-93.6006	219	2400	15	Omni
3	1.2 Mbps	1.2 Mbps	44.78497	-93.5977	217	2400	15	Omni
4	1.2 Mbps	1.2 Mbps	44.78646	-93.595	220	2400	15	Omni
5	1.2 Mbps	1.2 Mbps	44.78708	-93.6037	222	2400	15	Omni
6	1.2 Mbps	1.2 Mbps	44.78717	-93.5997	223.5	2400	15	Omni
7	1.2 Mbps	1.2 Mbps	44.7884	-93.5969	220.8	2400	15	Omni
8	1.2 Mbps	1.2 Mbps	44.78963	-93.5951	221	2400	15	Omni





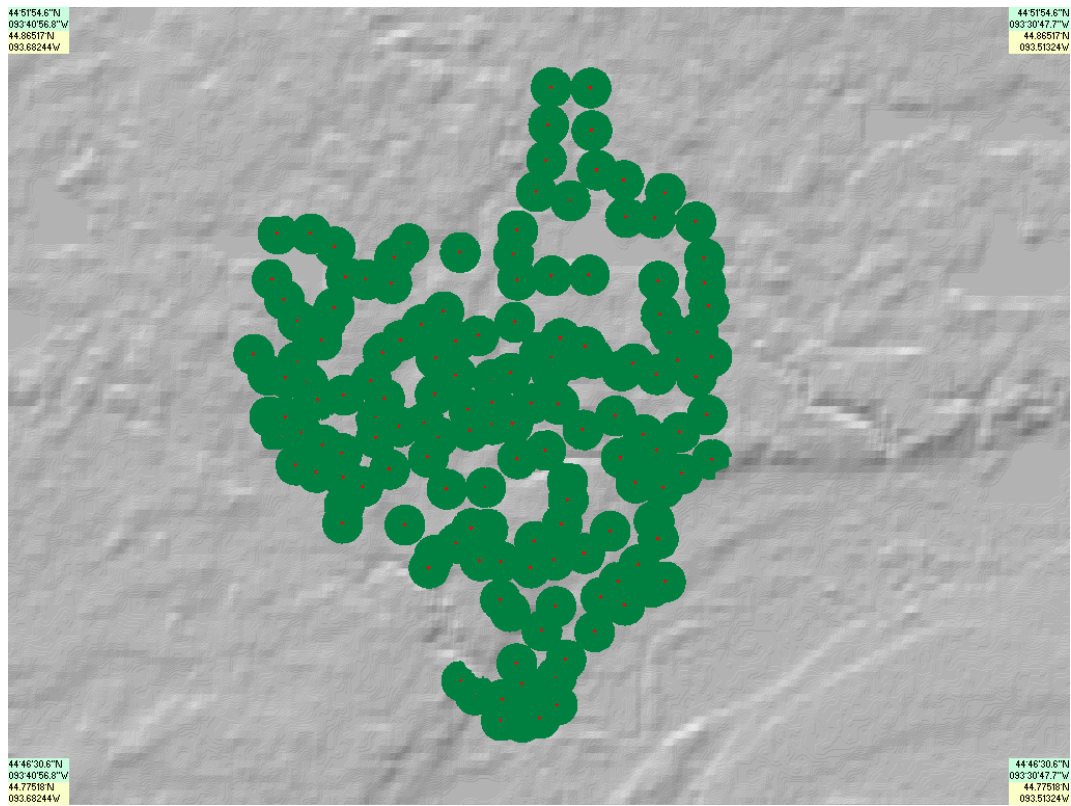
### **Background Results and Submission for April 2012**

Of the locations visited during the validation point route, 15 access points were identified and relative information was logged into the Chaska.net data form and field validation notes file (**Exhibit H**). The extensive field analysis and the publicly available data were transferred to the Connected Nation Provider Information file and a composite propagation study was completed, which yielded the propagation representation shapefiles (**Exhibit I**). The CN developed propagation shapefiles and supporting documentation was e-mailed to Chaska.net on August 22, 2011, with a request for confirmation or comment; it was advised that, unless someone from Chaska.net contested the findings, this information would be submitted to the NTIA during the October 2011 mapping cycle. On January 17, 2012, the CN engineer spoke with a representative from the City of Chaska and, despite their inability to voluntarily submit data, the representative indicated that he was “ok with everything” submitted to NTIA herein.

### **Exhibit H: Field Validation Notes**

Platform Type		Test Data		Visual Confirmation
Type	Presence Confirmed	Type	Pass or Fail?	Type
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip
Fixed Wireless	Yes	Visual	Pass	Pole Mounted Equip

### Exhibit I: Chaska.net Composite Coverage



## Nextera Communications

As part of its ongoing broadband mapping efforts, Connected Nation has developed a series of processes with the goal of submitting mapping data to NTIA for every known and qualifying broadband provider, regardless of whether the provider has chosen to support and participate in the SBI mapping initiative.

The following narrative provides detail regarding the recent data collection activities related to Nextera Communications, a wireless Internet service provider (WISP), located in Baxter, Minnesota, with a service area around Minneapolis, St. Paul, and the surrounding areas. The narrative will include information regarding how and where CN obtained publicly available data and the on-the-ground validation techniques that support the underlying data.

### **Background**

CN staff members have continued trying to obtain the participation of the provider with 20 instances of communication via telephone and e-mail sessions since February 10 2010, through July 20, 2011. One reply was received from a company representative on July 20, 2011, with a response of electing not to participate due to the resources needed for a project of this magnitude. Additionally, a CN staff member visited the Nextera Communications office on March 16, 2010, to discuss the broadband mapping project in person with Nextera Communications staff, but the appropriate contact person was unavailable at the time of the visit.

### **The Issue**

Nextera Communications, by its lack of responsiveness since February 10, 2010, has predicated its unwillingness to participate in the Connect Minnesota broadband mapping initiative.

### **Identification of Provider's Service Plans, Service Area, Legal Name, d.b.a., FRN, and Licensing**

CN began building a file based on research information and, as time progressed, enriched the file with information obtained through the public domain. For example, CN reviewed the provider's website (<http://nextera.net/>) to determine the residential service plans (**Exhibit A**) and the service area (**Exhibit B**) of the provider's wireless network. A search for a Federal Registration Number (FRN) on the FCC COMmission REGistration System (CORES) system yielded an FRN of 0012927992 (**Exhibit C**) with contact information relative to the owner of the company. Also, to support field validation of access points, the FRN was referenced to the FCC Universal Licensing System (ULS) to identify any licenses the provider may hold which could possibly enhance locating active access points for the service area. This process yielded licenses WQLV608, WQNA425, and WQNA429 (**Exhibit D**), with 0 unique locations in the area.

## Exhibit A: Service Plans

State Provider Management ...

Nextera Communications...

Page

Safety

Tools

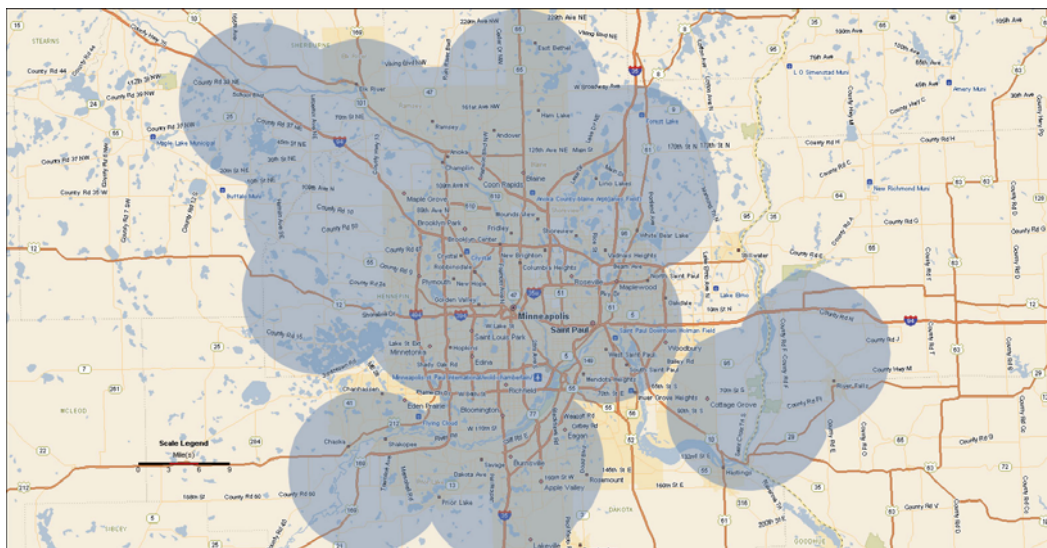
### NEXTERA HIGH SPEED INTERNET ACCESS

Nextera is poised and ready to act as your primary access point or to supplement your current Internet connection over our wireless backbone. As a Nextera customer, you receive carrier class service with access to three Central Offices.

Symmetrical Speed (Upload/Download)	Email Addresses Included	Scalable	1 Static IP	Price
Burstable T-1 (1.544Mbps) upload & download	10	Yes	Yes	\$189 <b>New Customers Only!</b>
Burstable 3000Kbps (3.0Mbps) upload & download	10	Yes	Yes	\$399 <b>New Customers Only!</b>

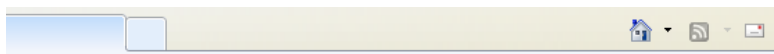
Internet 100%

## Exhibit B: Service Area





## Exhibit C: Federal Registration Number



[Close Window](#)

Registration Detail	
FRN:	0012927992
Registration Date:	03/04/2005 12:19:12 PM
Last Updated:	08/31/2009 04:36:54 PM
Business Name:	Nextera Communications
Business Type:	Private Sector , Limited Liability Corporation
Contact Organization:	Nextera Communications
Contact Position:	President
Contact Name:	Mr Greg G Arvig
Contact Address:	619 Maple Street Brainerd, MN 56401 United States
Contact Email:	garvig@nextera.net
ContactPhone:	(218) 824-6400
ContactFax:	(218) 824-6401

## Exhibit D: WQLV608 License Reference

License Search - Search Results

FCC Home | Search | Updates | E-Filing | Initiatives | For Consumers | Find People

**Universal Licensing System**

FCC > WTB > ULS > Online Systems > License Search

License Search

**Search Results**

[New Search](#) [Refine Search](#) [Printable Page](#) [Query Download](#) [Map License](#)

**Specified Search**

FRN like **0012927992**

Matches **1- 3 (of 3)**

PA = Pending Application(s)  
TP = Termination Pending  
L = Lease

Page 1

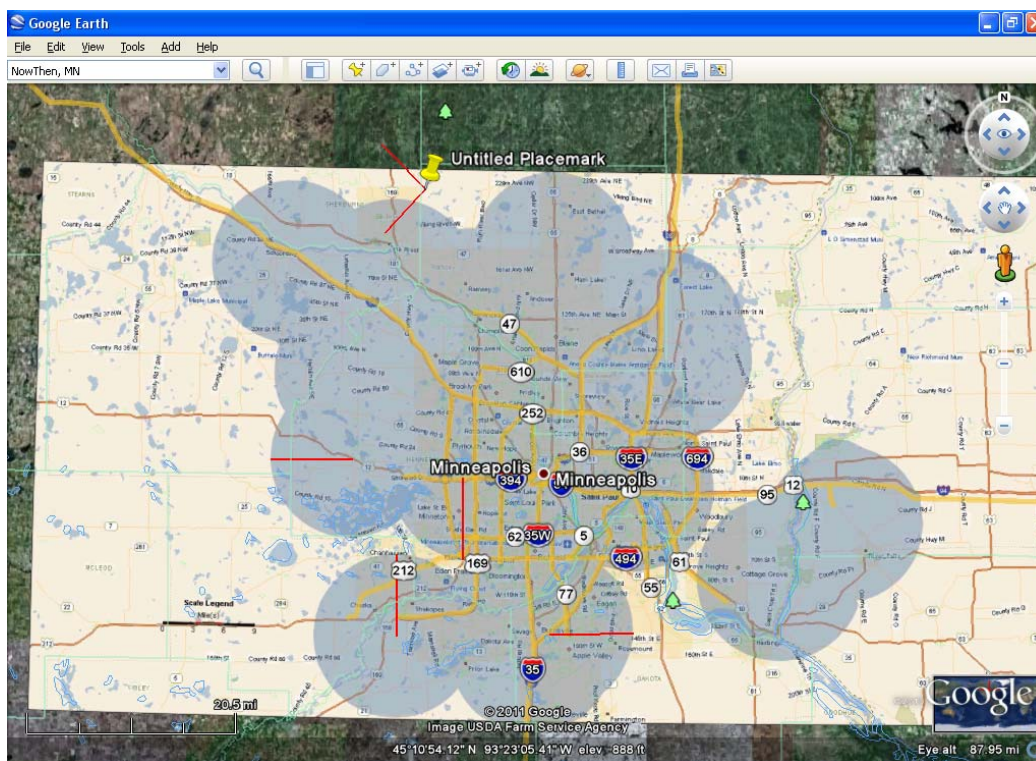
	Call Sign/Lease ID	Name	FRN	Radio Service	Status	Expiration Date
1	PA WQLV608	Nextera Communications	0012927992	NN	Active	05/04/2020
2	WQNA425	Nextera Communications	0012927992	CF	Active	11/23/2020
3	WQNA429	Nextera Communications	0012927992	CF	Active	11/23/2020

Page 1

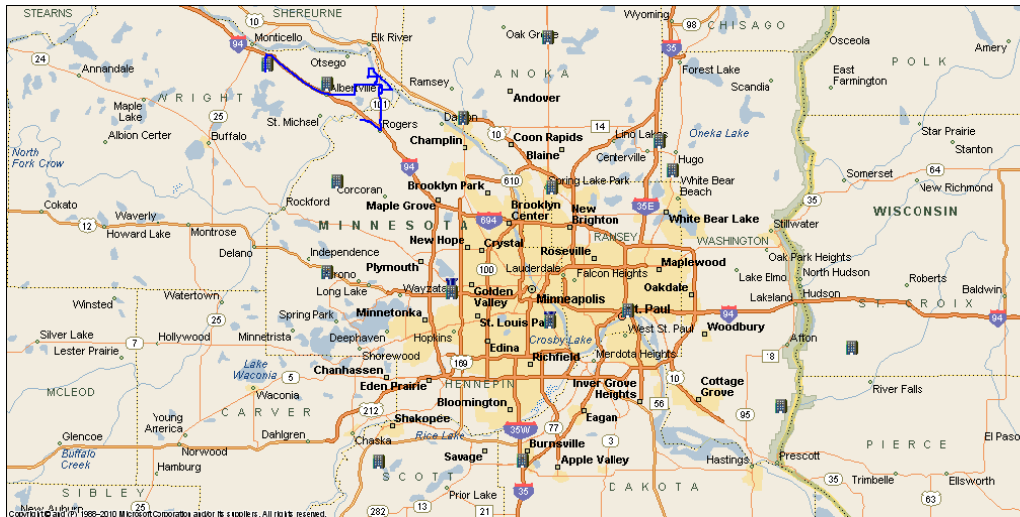
### Preliminary Identification of Provider's Coverage Area

Connected Nation extracted the Nextera Communications service area map from its website. The website service area was utilized to create a Google Earth image overlay (**Exhibit E**). The image overlay was positioned to match the Google Earth base map's roadways, county boundaries, and water bodies. The degree of accuracy of the image overlay was maintained at less than .2 mile (1058 ft.) to establish a minimum search criteria of a given access point. The provider's service area depiction is represented by polygons as shown in Exhibit B. Using the coordinates determined to be center coordinates a search ring was created with the image overlay to determine the feasibility of locating the towers to identifying coordinates of the locations. The 16 locations' center coordinates were inputted into Google Earth and examined utilizing the zoom option of the aerial imagery. The 16 transmitting locations structures were not all identified. This required a means of establishing coordinates for the access point locations. A site validation trip was planned and executed to the area. All 16 locations were entered into the *Streets and Trips* mapping application (**Exhibit F**) to develop a route for the validation process.

Exhibit E: Google Earth: Provider's Service Area Image Overlay



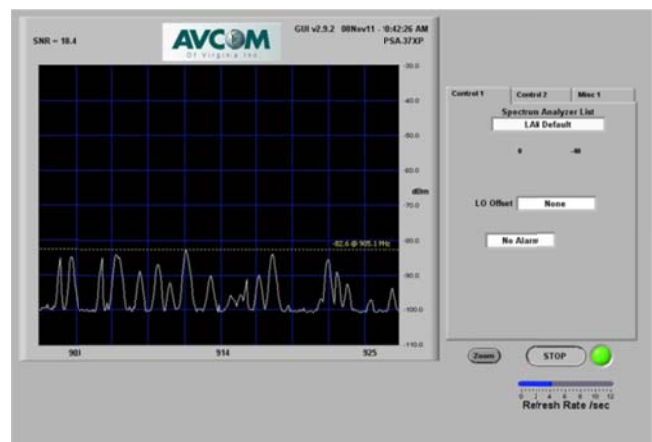
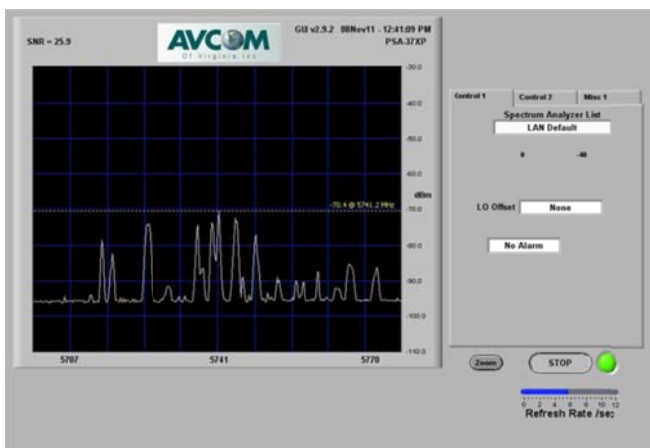
## Exhibit F: Validation Points for AP Structures

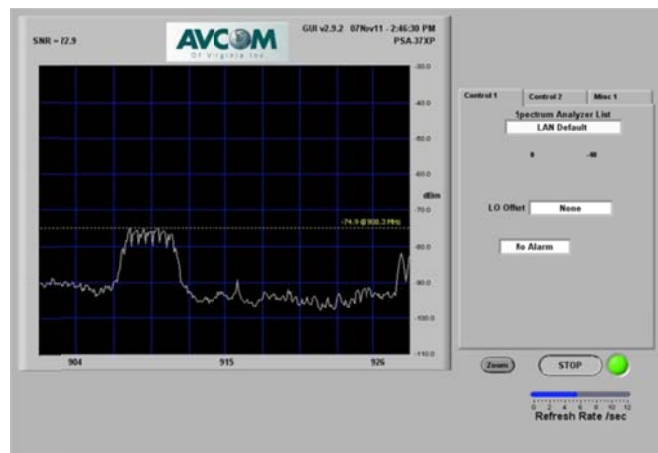
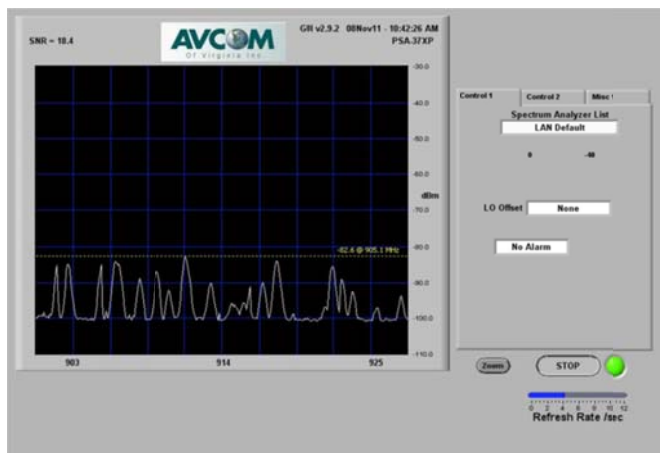


### Testing Techniques

Connected Nation staff developed a site validation route based on data established with the Google Earth image overlay for Nextera Communications. The CN wireless engineer was equipped with an AVCOM PSA-37XP analyzer with RF detection from 1 MHz to 6 GHz and an array of antennas tuned specifically for the 900 MHz, 2.4 GHz, 3.65 GHz, and 5 GHz frequency bands (**Exhibit G**). Each validation point was scrutinized for frequency of operation. A screen image of the operating frequency (or frequencies) was captured; general notes were recorded for each location-approximate antenna height, frequency of operation, antenna type (omni or sector), and photographs were taken of the access points.

## Exhibit G: Field Data for Nextera Communications





Test Site Info		Coordinates NAD 83 REQUIRED		Platform Type		Visual Confirmation		Signal Verification/Spectrum Analyzer		Notes
Test City	(N) Lat Decimal	(-)(W) Long Decimal	Type	Presence Confirmed	Type	Images	Peak Freq	Peak Sig Strength		
Monticello	45.279167	-93.768333	Fixed Wireless	Yes	Headend	Yes	914	-71	On tower Approx 220 Feet Sectors 900 Mhz	
Hanover	45.124167	-93.633333	Fixed Wireless	Yes	Headend	Yes	2400	-70	On tower 280' 260 feet Sectors	
Ostego	45.254722	-93.652500	Fixed Wireless	Yes	Headend	Yes	914	-65	180' 3 sectors on watertower	
Maple Plain	45.003333	-93.652500	Fixed Wireless	Yes	Headend	Yes	914	-71	300' 3 sectors 900 Mhz on Tower no access	
Chaska	44.751111	-93.553056	Fixed Wireless	Yes	Headend	Yes	914	-72	250' 3 sectors 900 Mhz FCC ID 1200989	
Cedar	45.345140	-93.233990	Fixed Wireless	Yes	Headend	Yes	5741	-71	160' 3 sectors 5700 Mhz Tower	
Hugo-LinLakes	45.182510	-93.000900	Fixed Wireless	Yes	Headend	Yes	5742	-72	140' 3 Sectors 5750 Mhz Watertower	
Hugo-WhiteBearLake	45.138579	-93.005850	Fixed Wireless	Yes	Headend	Yes	2467	-61	140' 3 sectors 900 Mhz/2400 Mhz Watertower	
St Paul	44.950880	-93.096760	Fixed Wireless	Yes	Headend	Yes	2484	-74	250' 3 sectors 2400 mhz Building	
Burnsville-AppleValley	44.752680	-93.291370	Fixed Wireless	Yes	Headend	Yes	914	-74	80 feet 3 sectors 900 Mhz Watertower/Tower near	
Hastings-Afton	44.826990	-92.796690	Fixed Wireless	Yes	Headend	Yes	2434	-63	180 Omni 2400Mhz Tower	
River Falls-Lakeland	44.902600	-92.689890	Fixed Wireless	Yes	Headend	Yes	5756	-63	200 feet 3 sectors 5700 Mhz tower	
Medicine Lake	44.929770	-93.223220	Fixed Wireless	Yes	Headend	Yes	2434	-73	140' 2400 Mhz sectors Elevator	
Powderhorn Park	44.937860	-93.231520	Fixed Wireless	Yes	Headend	Yes	2462	-59	180' Sectors 24090 mhz building	
Ankoo	45.208130	-93.384420	Fixed Wireless	Yes	Headend	Yes	5743	-56	140' sectors 5700 Mhz tower	
Spring Lake Park	45.118200	-93.231990	Fixed Wireless	Yes	Headend	Yes	5755	-64	140' Sectors' 5700 Mhz Watertower	







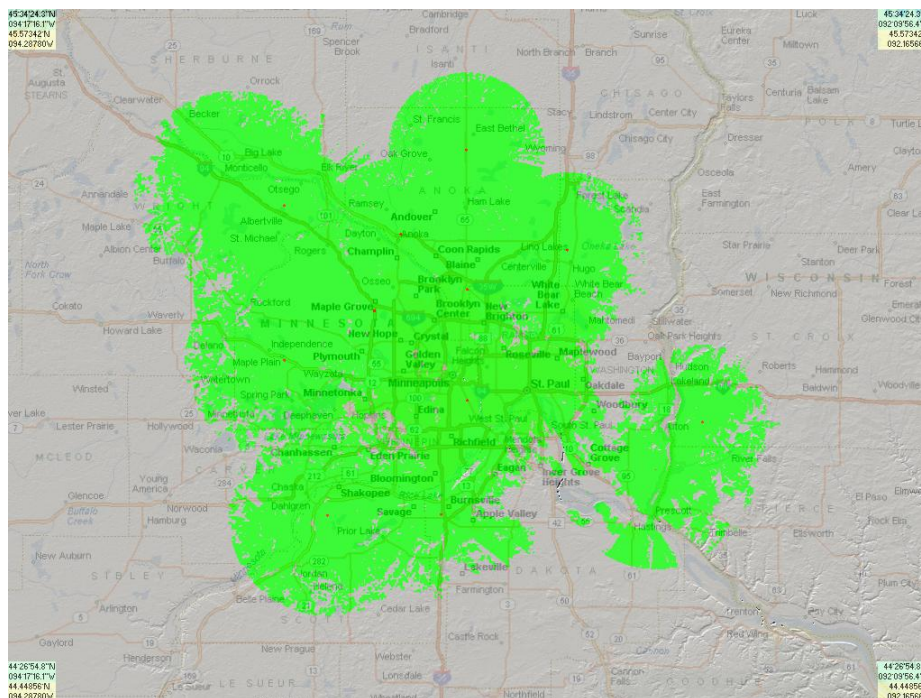
## Results and Submission for April 2012

Of the 16 locations visited during the validation point route, 16 access points were identified and relative information was logged into the Nextera Communications field validation notes file (**Exhibit H**). The field and the publicly available data were transferred to the Connected Nation Provider Information file. A composite propagation study was completed based on the field data (**Exhibit I**). Both documents were forwarded to Nextera Communications and advised the information will be submitted to Connect Minnesota and the NTIA broadband mapping project for processing if there are no discrepancies of the estimated coverage received from the provider within a 48-hour period.

### Exhibit H: Field Validation Notes

Primary Population Center Covered by Service (city, county, etc.)	Transmission Location (water tank, tower, silo, rooftop or other structure)	Decimal Degree Conversion (automatically converted here if you completed columns K, L and M)	Decimal Degree Conversion (automatically converted here if you completed columns O, P and Q)	Is the Transmit Antenna Omni-Directional?	Transmit Frequency (MHz)	Polarity (V or H)	Antenna Elevation (feet above ground)	Comments: Tell us anything you feel is important for us to know about your system (e.g., foliage).
▼ Monticello	Tower	45.279157	-93.768333	<input type="checkbox"/> Yes <input type="checkbox"/> No	914	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	220	On tower Approx 220 Feet Sectors 900 Mhz
▼ Hanover	Tower	45.124157	-93.633333	<input type="checkbox"/> Yes <input type="checkbox"/> No	2400	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	280	On tower 280' 280 feet Sectors
▼ Ostego	Watertower	45.254722	-93.652500	<input type="checkbox"/> Yes <input type="checkbox"/> No	914	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	180	180' 3 sectors on watertower
▼ Maple Plain	Tower	45.003333	-93.652500	<input type="checkbox"/> Yes <input type="checkbox"/> No	914	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	300	300' 3 sectors 900 Mhz on Tower no access
▼ Chaska	Tower FCC ID 1200989	44.751111	-93.553056	<input type="checkbox"/> Yes <input type="checkbox"/> No	914	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	250	250' 3 sectors 900 Mhz FCC ID 1200989
▼ Cedar	Tower	45.345110	-93.233990	<input type="checkbox"/> Yes <input type="checkbox"/> No	5741	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	160	160' 3 sectors 5700 Mhz Tower
▼ Hago-LinoLakes	Watertower	45.182510	-93.000900	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5742	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	140	140' 3 Sectors 5750 Mhz Watertower
▼ Hug-WhiteBearLake	Watertower	45.138579	-93.005850	<input type="checkbox"/> Yes <input type="checkbox"/> No	2467	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	140	140' 3 sectors 900 Mhz/2400 Mhz Watertower
▼ St Paul	Building	44.950000	-93.096760	<input type="checkbox"/> Yes <input type="checkbox"/> No	2484	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	250	250' 3 sectors 2400 mhz Building
▼ Burnsville-AppleValley	Watercower/Tower	44.752680	-93.291370	<input type="checkbox"/> Yes <input type="checkbox"/> No	914	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	80	80 feet 3 sectors 900 Mhz Watertower/Tower near
▼ Hastings-Alton	Tower	44.826990	-92.796690	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2434	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	180	180 Omni 2400Mhz Tower
▼ River Falls-Lakeland	Tower	44.902600	-92.689890	<input type="checkbox"/> Yes <input type="checkbox"/> No	5756	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	200	200 feet 3 sectors 5700 Mhz tower
▼ Medicine Lake	Elevator	44.929770	-93.223220	<input type="checkbox"/> Yes <input type="checkbox"/> No	2434	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	140	140' 2400 Mhz sectors Elevator
▼ Powderhorn Park	building	44.937880	-93.231520	<input type="checkbox"/> Yes <input type="checkbox"/> No	2462	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	180	180' Sectors 2400 mhz building
▼ Anko	Tower	45.208130	-93.384420	<input type="checkbox"/> Yes <input type="checkbox"/> No	5743	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	140	140' sectors 5700 Mhz tower
▼ Spring Lake Park	Watertower	45.118200	-93.231990	<input type="checkbox"/> Yes <input type="checkbox"/> No	5755	<input type="checkbox"/> V <input checked="" type="checkbox"/> H	140	140' Sectors' 5700 Mhz Watertower

## Exhibit I: Nextera Communications Composite Coverage



### TotheHome.com

As part of its ongoing broadband mapping efforts, Connected Nation has developed a series of processes with the goal of submitting mapping data to NTIA for every known and qualifying broadband provider, regardless of whether the provider has chosen to support and participate in the SBI program.

The following narrative provides detail regarding the recent data collection and coverage estimation activities related to TotheHome.com a wireless Internet service provider (WISP), located in Carver County, Minnesota, with a service area around Cologne. The narrative will include information regarding how and where CN obtained publicly available data and the on-the-ground validation techniques that support the underlying data.

### **Background**

CN staff members have continued trying to obtain the participation of the provider with 5 instances of communication via telephone and e-mail sessions since November 4, 2011, through January 25, 2012. Only one communication reply was received from a company representative on November 4, 2011, with a response indicating a willingness to review the requirements for the SBI project.

Additionally, a CN staff member visited the TotheHome.com office location on January 25, 2012, to discuss the broadband mapping project in person with TotheHome.com staff but necessary staff was unavailable to discuss the project with the CN engineer.

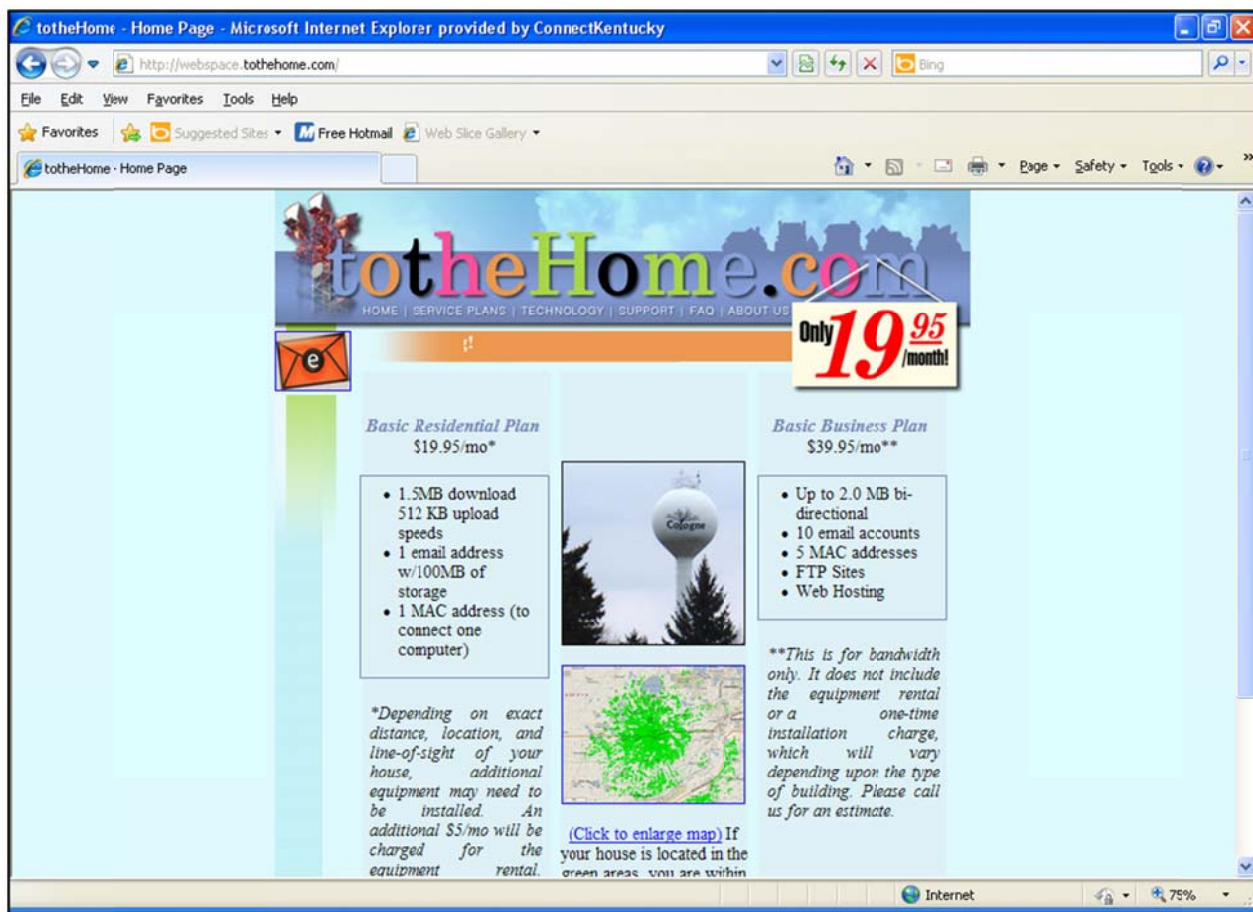
### **The Issue**

TotheHome.com, by its lack of responsiveness since November 4, 2011, has predicated its unwillingness to participate in the Connect Minnesota broadband mapping initiative.

### **Identification of Provider's Service Plans, Service Area, Legal Name, d.b.a., FRN, and Licensing**

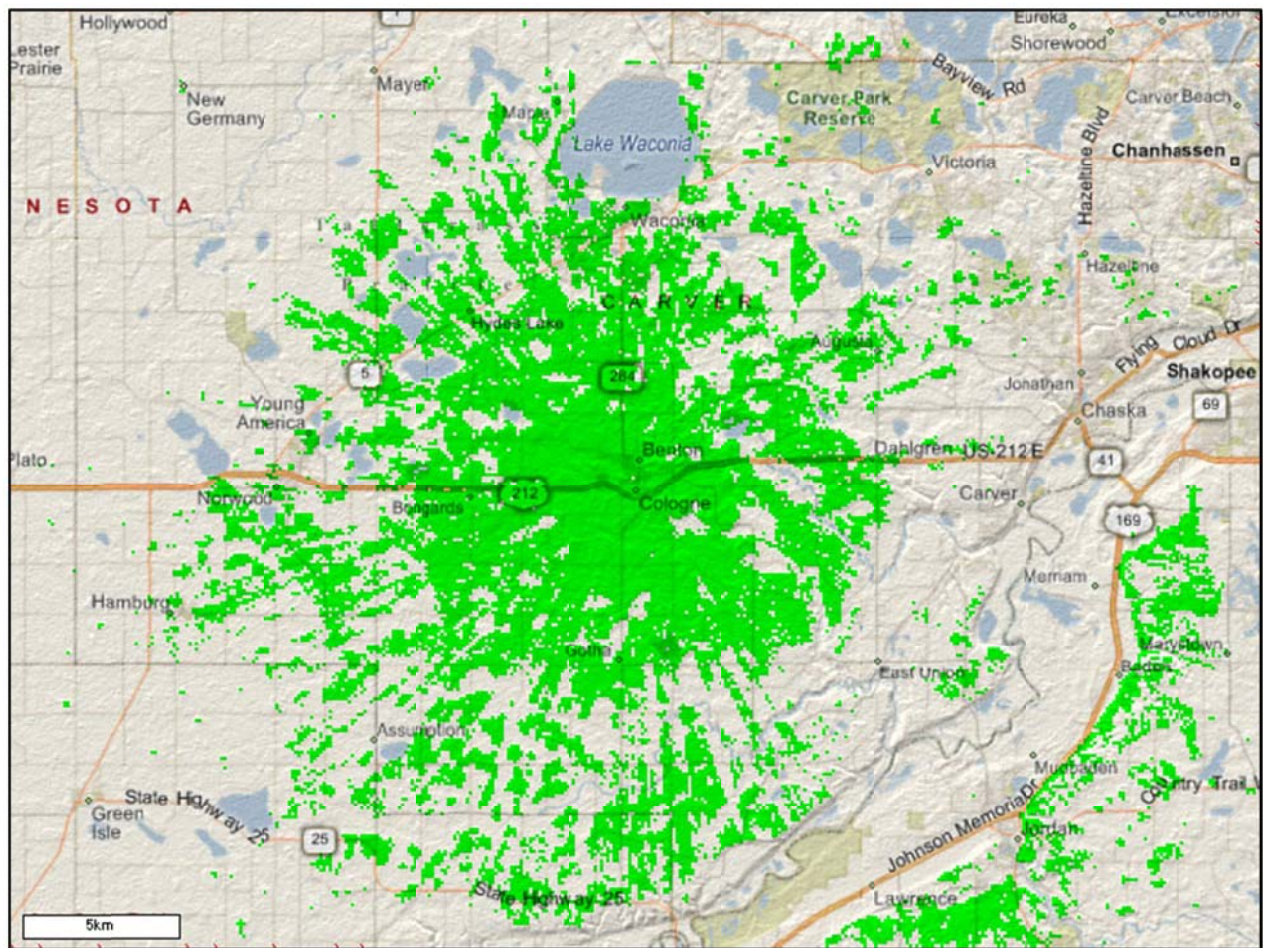
CN began building a file based on research information and, as time progressed, enriched the file with information obtained through the public domain. For example, CN reviewed the provider's website ([www.tothehome.com](http://www.tothehome.com)) to determine the residential service plans (**Exhibit A**) and the service area (**Exhibit B**) of the provider's wireless network. A search for a Federal Registration Number ("FRN") on the FCC **CO**mmission **RE**gistration **S**ystem ("CORES") system yielded an FRN of 0021284443 (**Exhibit C**) with contact information relative to the owner of the company. Also, to support field validation of wireless access points, the FRN was referenced against the FCC Universal Licensing System (ULS) to identify any spectrum authorizations that may be held by the provider that could supplement the dataset of estimated coverage by isolating and identifying active wireless access points for the service area. This process yielded no licenses through the FCC ULS search (**Exhibit D**).

## Exhibit A: Service Plans





**Exhibit B: Service Area**





### Exhibit C: Federal Registration Number

[Close Window](#)

**Registration Detail**

<b>FRN:</b> 0021284443
<b>Registration Date:</b> 11/11/2011 12:22:00 PM
<b>Last Updated:</b>
<b>Business Name:</b> totheHome.com, LLC
<b>Business Type:</b> Private Sector , Limited Liability Corporation
<b>Contact Organization:</b> totheHome.com, LLC
<b>Contact Position:</b> President
<b>Contact Name:</b> Mr Shawn L Sprengeler
<b>Contact Address:</b> 2195 Grimm Rd Chaska, MN 55318 United States
<b>Contact Email:</b>
<b>ContactPhone:</b> (952) 454-0716
<b>ContactFax:</b>

### Exhibit D: License Search Reference

License Search - Search Results - Microsoft Internet Explorer provided by ConnectKentucky

http://wireless2.fcc.gov/UlsApp/UlsSearch/results.jsp;JSESSIONID\_UlsSEARCH=4Y26PgWbh79qWj332

File Edit View Favorites Tools Help

License Search - Search Results

FCC Home | Search | Updates | E-Filing | Initiatives | For Consumers | Find People

**Universal Licensing System**

FCC > WTB > ULS > Online Systems > License Search

License Search

**Search Results**

[New Search](#) [Refine Search](#) [Printable Page](#)

**Specified Search**

FRN like 0021284443

No matches found To try again, you can perform a [new search](#) or [refine your existing search](#).

<b>ULS Help</b>	<a href="#">ULS Glossary</a> - <a href="#">FAQ</a> - <a href="#">Online Help</a> - <a href="#">Technical Support</a> - <a href="#">Licensing Support</a>
<b>ULS Online Systems</b>	<a href="#">CORES</a> - <a href="#">ULS Online Filing</a> - <a href="#">License Search</a> - <a href="#">Application Search</a> - <a href="#">Archive License Search</a>
<b>About ULS</b>	<a href="#">Privacy Statement</a> - <a href="#">About ULS</a> - <a href="#">ULS Home</a>

**Basic Search**

By Call Sign

FCC | Wireless | ULS | CORES

Federal Communications Commission  
445 12th Street SW  
Washington, DC 20554

Phone: 1-877-480-3201  
TTY: 1-717-338-2824

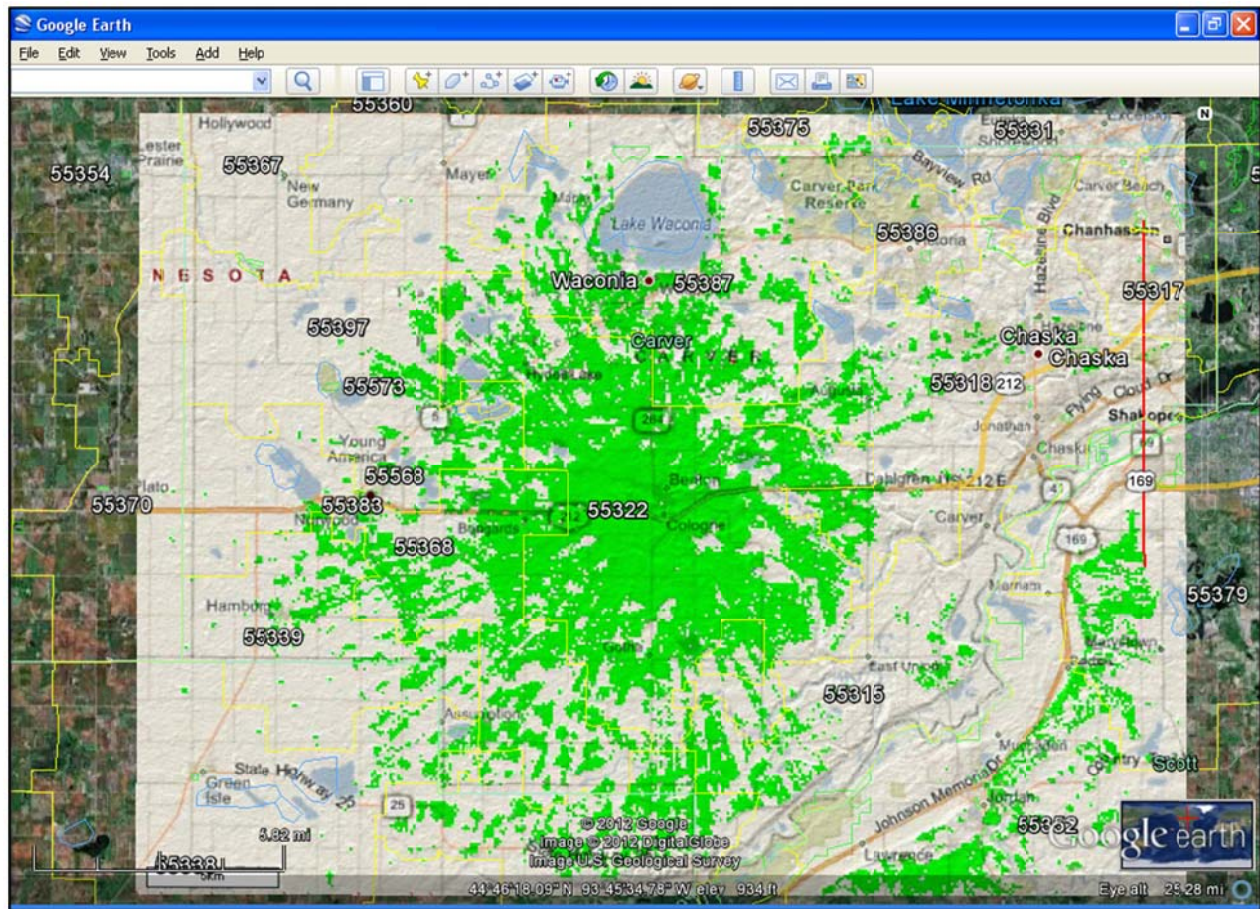
Help | Tech Support

Internet 100%

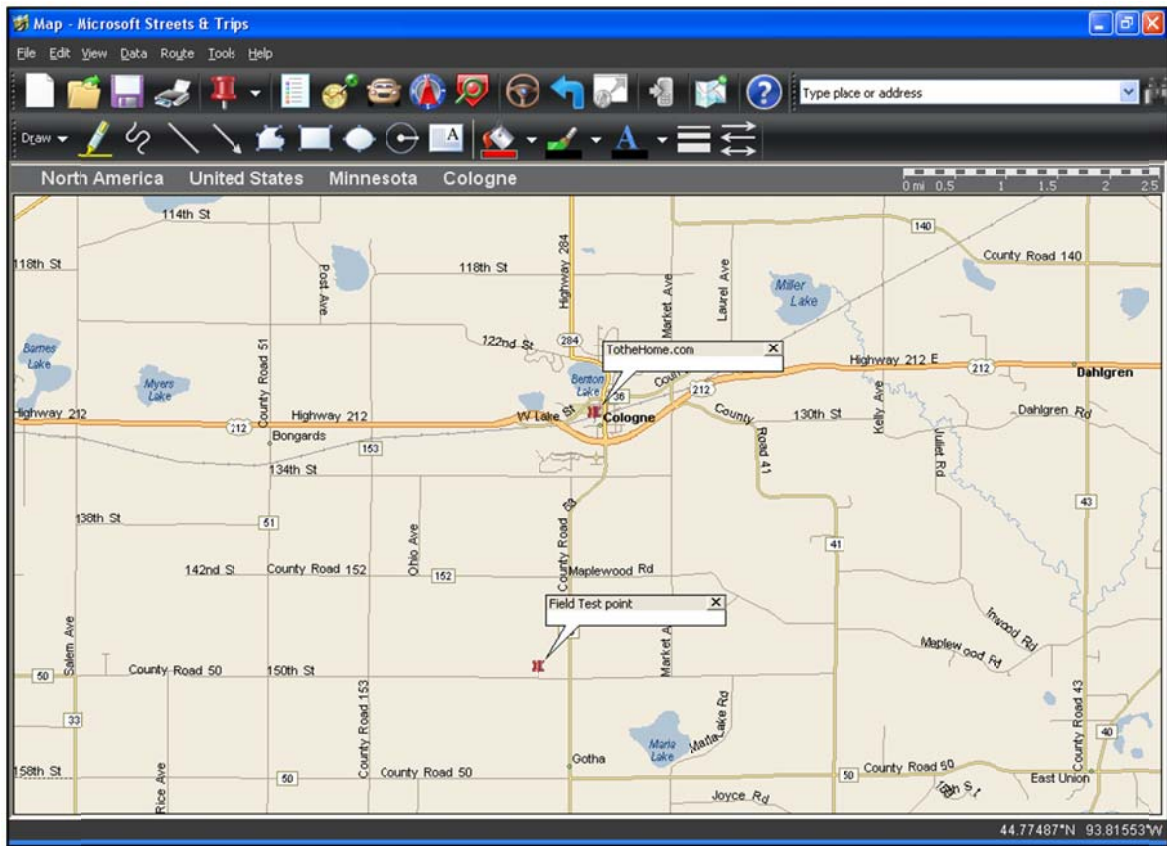
### **Preliminary Identification of Provider's Coverage Area**

CN extracted the TotheHome.com service area map directly from the provider's website. Information from that website was utilized to create a Google Earth image overlay (**Exhibit E**). The image overlay was positioned to match the Google Earth base map's roadways, county boundaries, and water bodies. The degree of accuracy of the image overlay was maintained at less than .2 mile (1058 ft.) to establish a minimum search criteria of a given wireless access point. The provider's estimated service area depiction is represented by the wireless propagation model as shown in Exhibit B. The location's center coordinates were populated into Google Earth and examined utilizing the zoom option of the aerial imagery. An on-site trip was conducted in the area utilizing Microsoft *Streets & Trips* mapping application (**Exhibit F**) to develop a route for the coverage estimation and validation process.

**Exhibit E: Google Earth: Provider's Service Area Image Overlay**



## Exhibit F: Validation Points for AP Structures

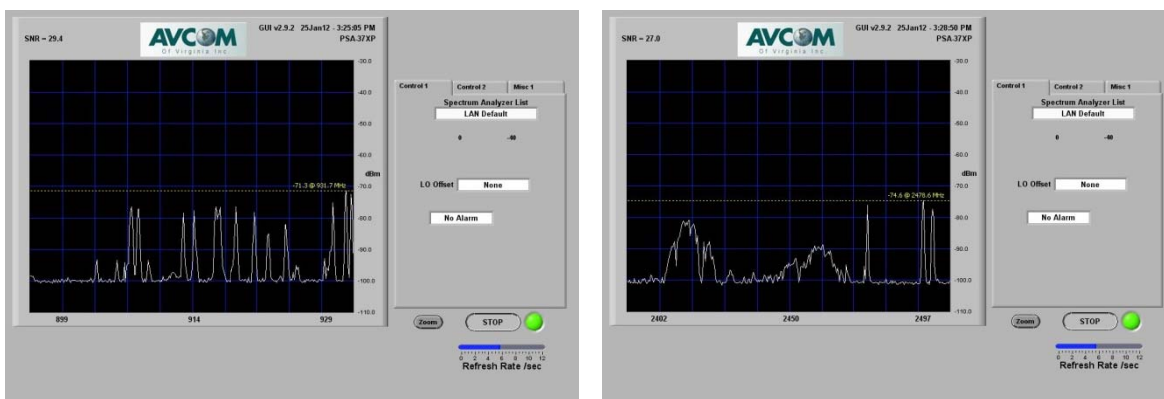




## Testing Techniques

CN staff developed a data collection and site validation route based on information derived from the Google Earth image overlay and from data gleaned from the provider's website. The CN wireless engineer was equipped with an AVCOM PSA-37XP analyzer with RF detection from 1 MHz to 6 GHz and an array of antennas tuned specifically for the 900 MHz, 2.4 GHz, 3.65 GHz, and 5 GHz frequency bands (**Exhibit G**). Two validation points were scrutinized for frequency of operation. General notes were recorded for each location-approximate antenna height, frequency of operation, antenna type (omni or sectored), and photographs were taken of the access points.

**Exhibit G: Field Data for TotheHome.com Hub Location**



Name of Access Point/Transmission Location:	DL Speeds	UL Speeds	lat	Long	Frequency	Ant type	Antenna Height
Cologne	1.5 Mbps	512 Mbps	44.7701	-93.7829	2400	120 Deg	140 feet



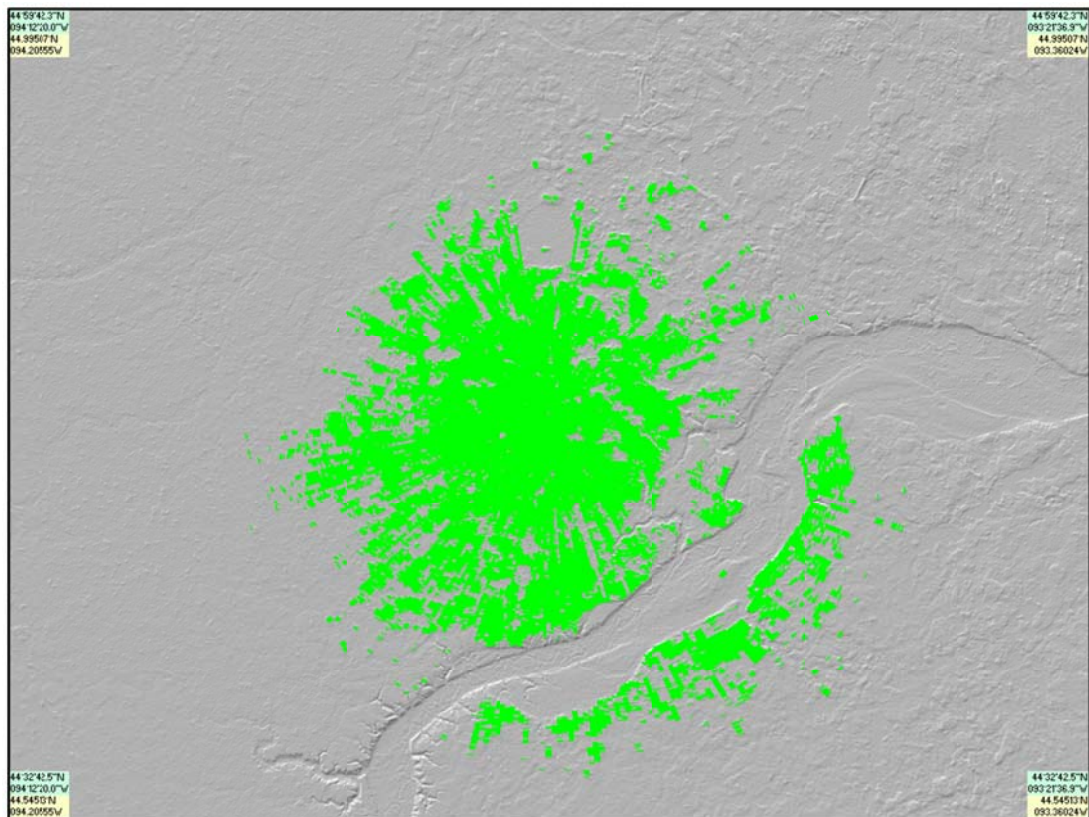
### Results and Submission for April 2012

Of the 2 locations visited during the validation point route, 1 access point was identified and relative information was logged into the TotheHome field validation notes file (**Exhibit H**). The field and the publicly available data were transferred to the Connected Nation Provider Information file. A composite propagation study was completed based on the field data and goggle earth overlay information. (**Exhibit I**). Both documents were forwarded to TotheHome.com and advised the information will be submitted to Connect Minnesota and the NTIA broadband mapping project for processing if there are no discrepancies of the estimated coverage received from the provider within a 48-hour period.

### Exhibit H: Field Validation Notes

	Provider	Test Site Info							Platform Type		Test Data		Visual Confirmation		
Date	Provider	Test City	Test State	Test County	Physical Address	Location Description	Lat Decimal	Long Decimal	Type	Presence Confirmed	Type	Pass or Fail?	Type	Images	
1/25/12	TotheHome	Cologne	MN	Carver	111 Village Parkway	Security bank	44.764081	-93.783070	Fixed Wireless	Yes	Signal Verification	Pass	Wi-Fi/AP	Yes	Security Bank Parking lot
1/25/12	TotheHome	Cologne	MN	Carver	124 S Market Lane	Watertower	44.770101	-93.782900	Fixed Wireless	Yes	Signal Verification	Pass	Wi-Fi/AP	Yes	140' sectors 3 120 degree 2400 Mhz

### Exhibit I: TotheHome.com Composite Coverage





## ACCURACY AND VERIFICATION: PROVIDER VALIDATION METHODOLOGY

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, CN translates and formats the data that providers are able to supply into a GIS shapefile and produces maps for the provider to review. The resulting map(s) and review process allow for providers to see their service area in a geographic format – for some providers, this is the first time they have seen maps of their broadband service area. Having the mapped service area allows providers to quickly identify any issues that appear in the data representation, whether the issue is in the data translation into a GIS format or from the original data collection and submission. Often data is provided from various sources and through the review and revision process, local engineers who operate the networks and work in the field are able to ensure that the tabular data that has been submitted is accurate and represents the real-world network extent. Any issues in how the service area is represented on the map(s) are remedied by CN, 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; CN will revise data and return maps as many times as necessary until the provider is in agreement that the map represents their service area as accurately as possible. Once the review process has been completed and final approval of the data is provided, the data is deemed ready for NTIA submission.

Once the data collection has been aggregated at a statewide level, static maps of statewide and county-level availability are produced and made publicly available. In addition, consumers can visit the interactive online tool, BroadbandStat, to create customized views of broadband service areas and analyze corresponding demographic information. Leveraging broadband service data on various platforms allows for public users, providers, and other stakeholders to review, scrutinize, and provide feedback on the represented data. This feedback becomes a validation method in itself as consumers submit inquiries to CN 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 CN 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 CN to resolve inaccuracies as they are identified to ensure that only the highest quality information is provided to stakeholders.

Additionally, NPP narratives that were submitted in previous mapping cycles are subjected to the same level of scrutiny. Occasionally, a provider may elect to voluntarily participate (thus eliminating the need for future data estimation activities in the field). However, more often than not, the NPP narrative is updated with a combination of data gleaned from the provider's website, data obtained through FCC research and/or data collected/verified in the field by a CN staff engineer.

Estimates derived from provider-validated data indicate that approximately 2.23 percent of Minnesota households do not have terrestrial fixed broadband service available, and approximately 0.10 percent of Minnesota households have neither mobile nor fixed broadband service available.<sup>2</sup>

Within rural areas of the state, results derived from provider-validated data indicate that approximately 5.17 percent of rural Minnesota households do not have terrestrial fixed broadband service available, and approximately 0.24 percent<sup>3</sup> of rural Minnesota households have neither mobile nor fixed broadband service available.<sup>4</sup> Please note that the availability estimates presented are based on Census 2010 household information.

## WIRELESS METHODOLOGY

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

Data solicited from a fixed wireless provider to create propagation models include, but are not limited to:

1. The name of the structure.
2. Whether the transmitting device is operational or proposed.
3. The maximum advertised downstream speed, the maximum advertised upstream speed.
4. The typical downstream speed, the typical upstream speed (peak periods for both).
5. The frequency range of spectrum being used (as prescribed by NTIA). In the case of NPP documents, this may include (but is not limited to) spectrum authorizations identified within the Federal Communications Commission (FCC) Universal Licensing System (ULS) database or located on the FCC's Spectrum Dashboard.
6. The primary population center(s) being served (for geopolitical boundary reference).
7. The physical address of the transmit site (in the event latitude/longitude is unavailable from the provider this allows a quick reference point for geocoding).

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<sup>1</sup> In accordance with NTIA's definition of available broadband service as specified in the SBI 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>2</sup> Due to the nature of the SBI 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.

<sup>3</sup> See footnote 1.

<sup>4</sup> See footnote 2.

8. Latitude in either Degrees, Minutes, and Seconds and/or in Decimal Degrees (typically received as NAD 27 or NAD 83).
9. Longitude in either Degrees, Minutes and Seconds and/or in Decimal Degrees (typically received as NAD 27 or NAD 83).
10. Antenna pattern (e.g. omni-directional, 180°, 120°, 90°, etc.).
11. Azimuth of antenna (e.g. 360° with magnetic declination if known).
12. Approximate transmit radius (in feet, miles, or kilometers).
13. Polarity of transmit antenna (Vertical or Horizontal).
14. Transmit antenna gain (in dBi).
15. Line loss (applicable only to providers using coax, heliax, waveguide or other forms of cabling – excludes power-over-Ethernet devices).
16. Mechanical and/or Electrical beam tilt (if applicable).
17. Equipment Manufacturer (allows easy cross-reference against manufacturer's specification sheet).
18. Power output of the transmitting device (if unknown, FCC standards or manufacturer specifications are applied).
19. AMSL at base of tower site.
20. Antenna centerline AGL (height of antenna above ground level measured at the centerline of the actual antenna).
21. Foliage factors (Evergreens/Deciduous and percent of ground cover).
22. Ground Clutter (primarily used in rural areas to account for foliage and in metropolitan areas to account for types and heights of buildings if known).
23. Average gain of receive antenna.
24. Receive antenna is estimated at height above average terrain (HAAT) of 6.2 meters/20 feet.
25. Federal Registration Numbers (if applicable) which may allow opportunities to cross-reference and/or obtain additional data from the FCC's ULS and the **COMmission REgistration System**.

Propagation modeling combines scientific data and empirical mathematical formulation for the characterization of radio wave propagation as a function of frequency, distance, and other conditions. Propagation software(s) typically use the Irregular Terrain Model (also known as Longley-Rice) of radio propagation for frequencies between 20 MHz and 20 GHz. This model is based on electromagnetic theory and statistical analyses of the combination of terrain features and radio measurements, then predicting the median attenuation of a radio signal as a function of distance and the variability of the signal in time and in space. For metropolitan areas, the software can typically be adjusted to use the Okumura-Hata model which accounts for predicting the behavior of cellular transmissions in areas where buildings are the primary obstructions. The resulting product from either model depicts a graphical illustration of the theoretical propagation characteristics of a selected frequency range based on defined variables (receiver sensitivity of the home/mobile device, foliage factor, and digital elevation terrain input).

After converting propagation models into a geospatial format, additional processing is completed to remove the small pixels representing service present in the resulting dataset. These areas are initially created based on the parameters entered in the software from the provider equipment information, the underlying data parameters of elevation, hillshade, etc., and the limitations of the software itself to display a broadband service area as accurately as possible. Generally, these random pixel striations appear as a result of signal levels reaching the highest elevated points within the prescribed radius. Typically, while this pixilation anomaly shows legitimate areas where signals can be received, these highly elevated points may have exceedingly sparse populations or are entirely void of population. As a result, and congruent to the *Wireless Technology Methodologies and Business Logic* white paper submitted to NTIA on January 20, 2011, all independent pixels representing service that are less than 0.125 square miles in area have been removed from the geospatial representation of each wireless provider.

## BROADBAND INQUIRIES METHODOLOGY

CN collects consumer feedback in the form of broadband inquiries (BBIs). These inquiries represent any type of communication received from the public regarding broadband service. Once BBIs are received across the state, this information is overlaid with the broadband availability information which was collected through the SBI program. This allows for a real-world comparison of the broadband landscape to the information received from broadband inquiries. Consumers submitting these inbound comments and/or inquiries are able to provide information regarding three categories: 1) residents who do not have broadband but want it; 2) residents who have broadband but want a different provider; and 3) residents who do not have broadband, but the broadband inventory maps indicate that they do.

BBIs are submitted frequently by consumers via the Connect Minnesota website. Inquiries often seek help to identify local broadband provider options, or to learn when a specific provider may be able to provide service to that consumer. Consumer comments also provide information which may help modify maps with actual service area information. The primary objectives of CN regarding these inquiries are 1) to improve the accuracy of the state maps with submitted consumer information and follow-up field research; 2) to provide broadband options to consumers through cooperation with mapped providers and by facilitating new broadband service options; and 3) to map and analyze information from consumers about areas of unmet broadband demand and alternatives to currently mapped services. A prime example of the second option is the utilization of the Rural Utility Service satellite eligibility tool. By simply entering the consumer's address, the CN engineer can quickly determine if the consumer meets the initial qualification status for BIP satellite subsidies.

New BBIs are assigned to either the GIS department or the Engineering & Technical Services (ETS) team depending on the category entered by the consumer on the website submission form. The GIS or ETS team members respond to each inquiry according to the information requested by the consumer. Many BBIs can be resolved through desktop research; however, if a BBI requires research in the field, the assigned ETS team member conducts such research when performing field

validations in the area of the inquiry, or at other such time as is practical and appropriate. GIS and ETS team members respond to and conclude BBIs via telephone contact and/or e-mail communication.

The broadband inquiry process has been implemented in each of the CN state programs with successful results. Altogether CN has received over 18,000 broadband inquiries since 2007, allowing the state programs to evaluate each inquiry for broadband demand and data verification. These inquiries are continuously examined against current broadband availability, updated every six months, to determine if previously unserved households have been expanded to and can now receive broadband at their residence. This database of broadband inquiries has also allowed the CN state programs to aggregate demand in concentrated areas to show providers the exact locations where the population has made it clear that they would purchase broadband if it was made available to them. Providers in the states have responded to this process and have expanded to areas knowing that their investment will be worthwhile. Data verification methods have also proven successful, as the state programs have been able to show those inquiries that indicate the broadband service areas are misrepresented on the map to providers, who then verify where service cannot reach in regard to that residence(s). The broadband coverage in these states has been altered to create a more accurate map based on the inquiries submitted by the public.

During this reporting period, the Connect Minnesota project has received a total of 36 inquiries (151 grant inception to date). As more inquiries are submitted to Connect Minnesota, a more thorough validation of the broadband landscape can be performed, while also allowing providers to see which areas have a high demand for broadband adoption.

## **BROADBANDSTAT METHODOLOGY**

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

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

New functionality in BroadbandStat allows the consumer to provide feedback on the broadband data displayed on the interactive map. Through the collection of this feedback, a visual demand for broadband is presented. This visualization allows the CN state programs the ability to validate the broadband availability for accuracy. If residents within a region state they are without broadband, but the interactive map shows otherwise, this allows CN to approach the providers within that area



in an effort to trim down their coverage to more accurately represent real-world availability on the ground.

The Connect Minnesota project launched BroadbandStat on May 21, 2010, and has received a total of 3,879 visits to date, of which 779 occurred this reporting period.

## **SPEED TEST METHODOLOGY**

The 1,621 speed tests that are represented in the Connect Minnesota Speed Test Report during this reporting period (9,680 grant inception to date) are the result of a partnership between CN 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 Minnesota speed test website, for partners around the world. This network of sites that is developed and run on its testing technology provides Ookla with a vast dataset that, due to the variability of geographic information collected across the varying speed test sites, is geocoded utilizing Geo-IP technology. This technology allows for tests to be geocoded to points of aggregation, typically larger nodes across provider networks. While there are hundreds of thousands of tests that have been conducted, the level of aggregation is only sufficient for county-level detail due to the test results being located at these larger nodes and not at an absolute location for each speed test.

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

## **PROVIDERS DEEMED NON-VIABLE**

The following list of companies represents the remainder of the broadband provider universe that was originally identified as complete for outreach to begin for the State Broadband Initiative. These providers are not included in the Data Package for the April 2012 submission because they have been deemed non-eligible under the parameters and guidance of the SBI grant program. This list of companies includes, but is not limited to: providers offering service but below the current definition of broadband, those that have gone out of business, technology consulting firms, infrastructure or network construction companies, etc.

	<b>Company Name</b>	<b>URL</b>	<b>Comments</b>
1	360networks	<a href="http://www.360networks.com/">http://www.360networks.com/</a>	Acquired by another company
2	Access Media 3, Inc.	<a href="http://www.am3inc.com">http://www.am3inc.com</a>	Company is a bulk reseller to MDU and commercial properties
3	Airespring, Inc.	<a href="http://www.airespring.com">http://www.airespring.com</a>	Company is a nonfacilities-based reseller
4	Akeva	n/a	Reseller of Verizon Mobile Phones in mall kiosk
5	Arrowhead Electric Cooperative, Inc.	<a href="http://www.aecimn.com/">http://www.aecimn.com/</a>	Construction is underway; need to indicate provider viable for next submission
6	Boreal Access	<a href="http://boreal.org/drupal/">http://boreal.org/drupal/</a>	Provider does not meet minimum speed requirements for participation
7	Broadcore, Inc.	<a href="http://www.broadcore.com/">www.broadcore.com/</a>	Broadcore is a national provider of business-class hosted unified communications services and has no ISP offerings
8	BullsEye Telecom, Inc.	<a href="http://www.bullseyetelecom.com">http://www.bullseyetelecom.com</a>	Company is a nonfacilities-based reseller
9	Carver County Fiber Initiative	<a href="http://www.co.carver.mn.us">www.co.carver.mn.us</a>	Construction bids were approved and construction slated for Late 2012 completion; middle mile project
10	Cbeyond Communications, LLC	<a href="http://www.cbeyond.net/index.htm">http://www.cbeyond.net/index.htm</a>	Company is a nonfacilities-based reseller
11	City of Bagley	<a href="http://www.bagley.mn.us/">http://www.bagley.mn.us/</a>	Cable system does not offer Internet service
12	Cloudnet Inc.	<a href="http://www.cloudnet.com">http://www.cloudnet.com</a>	Nonfacilities-based reseller for DSL services and wireless coverage; does not meet minimum speed requirements
13	Computer Pro Inc.	<a href="http://www.hickorytech.com">www.hickorytech.com</a>	Company reporting data is provided by Hickory Tech
14	Delavan Telephone Company	<a href="http://www.bevcomm.net/">http://www.bevcomm.net/</a>	Company reporting data is provided by Blue Earth Valley Telephone Company (BEVCOMM)
15	Digital Telecommunications, Inc	<a href="http://www.pickdti.com/">http://www.pickdti.com/</a>	No longer in business
16	Dunnell Telephone Company	<a href="http://bevcomm.net/">http://bevcomm.net/</a>	Offer service, but below broadband threshold.
17	EN-TEL	<a href="http://www.en-">http://www.en-</a>	Acquired by another company

	Communications, LLC	<a href="http://tel.com/">tel.com/</a>	
18	Enventis Telecom, Inc.	<a href="http://www.enventis.com/">http://www.enventis.com/</a>	Provider does not offer broadband in Minnesota
19	Global Crossing Telecommunications, Inc.	<a href="http://www.globalcrossing.com/">http://www.globalcrossing.com/</a>	Acquired by another company.
20	GN Wireless	n/a	Local phone disconnected and website not located; provider no longer in business
21	Home Telephone Company	<a href="http://www.hmtel.com">http://www.hmtel.com</a>	Company reporting data is provided by Arvig Communications Services
22	Lake County Fiber Network	<a href="http://www.co.lake.mn.us/">http://www.co.lake.mn.us/</a>	Construction slated to begin in late 2011
23	Lakedale LINK	<a href="http://www.lakedaletelephone.com/">http://www.lakedaletelephone.com/</a>	Acquired by another company
24	Lakedale Telephone	<a href="http://www.lakedaletelephone.com/">http://www.lakedaletelephone.com/</a>	Acquired by another company
25	LightEdge Solutions, Inc.	<a href="http://www.lightedge.com">http://www.lightedge.com</a>	Provider does not offer residential broadband service in Minnesota
26	Lightyear Network Solutions, LLC	<a href="http://www.lightyear.net">www.lightyear.net</a>	Nonfacilities-based reseller for DSL services
27	Lismore Cooperative Telephone Company	<a href="http://www2.lismoretel.com/">http://www2.lismoretel.com/</a>	Provider does not offer residential broadband service in Minnesota
28	Lowry Telephone LLC	<a href="http://www.home.runestone.net/rta">www.home.runestone.net/rta</a>	Company acquired by Runestone Telecom Association
29	Maple Leaf Networks	<a href="http://www.mleaf.net/">http://www.mleaf.net/</a>	No longer in business
30	Merit Network, Inc.	<a href="http://www.merit.edu">www.merit.edu</a>	Provider has operations in Michigan; no operations in Minnesota completed to date
31	Metropolitan Telecommunications Holding Company	n/a	Nonfacilities-based reseller for DSL services
32	MLM Project Services, Inc.	<a href="http://www.mlmpsi.com">http://www.mlmpsi.com</a>	Company does not offer residential broadband service in Minnesota
33	M-Tek Systems	<a href="http://www.mteksystems.com">www.mteksystems.com</a>	Company does not offer residential broadband service in Minnesota
34	Nates Net	<a href="http://www.natesnet.com/">http://www.natesnet.com/</a>	Offer service, but below broadband threshold
35	New Edge Network, Inc.	<a href="http://www.newedgenetworks.com/">http://www.newedgenetworks.com/</a>	Nonfacilities-based backhaul reseller

36	North American Communications Corp (NACC)	<a href="http://www.jaguarcommunications.com">http://www.jaguarcommunications.com</a>	Maps and data are supplied by DBA Jaguar Communications
37	Northeast Service Cooperative	<a href="http://www.nesc.k12.mn.us/">http://www.nesc.k12.mn.us/</a>	Middle mile fiber construction is underway; expect data for next submission
38	OrbitCom, Inc.	<a href="http://www.orbitcom.biz">http://www.orbitcom.biz</a>	Reseller of Qwest Services and has been non-responsive to multiple contact attempts
39	PAETEC Communications, Inc.	<a href="http://www.paetec.com/">http://www.paetec.com/</a>	Acquired by another company
40	Popp.com, Inc.	<a href="http://www.popp.com/">http://www.popp.com/</a>	Provider is a supplier of business services only
41	Reliance Globalcom Services, Inc.	<a href="http://www.relianceglobalcom.com/">http://www.relianceglobalcom.com/</a>	Wholesale reseller of backhaul and managed B2B circuits
42	Renville-Sibley Fiber to the Farm	<a href="http://www.scfiber.com/Sibley_County_Fiber/Home.html">http://www.scfiber.com/Sibley_County_Fiber/Home.html</a>	Fiber to the Farm project still seeking funding; construction could start in 2012
43	Ridge Runner Internet Services Inc.	<a href="http://www.ridge-runner.com/index.html">http://www.ridge-runner.com/index.html</a>	No longer in business
44	RRC Net	<a href="http://www.rrcnet.org/java.shtml">http://www.rrcnet.org/java.shtml</a>	Provider does not meet minimum speed requirements for participation
45	Sihope Communications	<a href="http://www.sihope.com/">http://www.sihope.com/</a>	Facilities-based company offering B2B solutions and reseller of circuits (non-residential)
46	Sioux Valley Rural Television, Inc.	n/a	Company does not offer broadband services; affiliate Sioux Valley Wireless coverage and data is provided
47	St. Olaf College Telecommunications	<a href="http://www.stolaftelephone.com/">http://www.stolaftelephone.com/</a>	Company does not offer broadband services
48	Tekstar Communication Systems, Inc.	n/a	Company reporting data is provided by Arvig Communications Services
49	Telefonica USA, Inc.	<a href="http://www.us.telefonica.com/">http://www.us.telefonica.com/</a>	Provider does not offer services in Minnesota
50	Terril Telephone Cooperative	<a href="http://www.terril.com">http://www.terril.com</a>	Provider does not offer services in Minnesota
51	The City of Boyd, Minnesota	n/a	The City of Boyd offers cable television only over cable plant; leases cable spectrum to ISP, MVTW Wireless

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52	United States Cellular Corporation	<a href="http://www.uscellular.com/uscellular/index.jsp">http://www.uscellular.com/uscellular/index.jsp</a>	Provider does not offer broadband services in Minnesota
53	University Corporation for Advanced Internet Development	n/a	Nationwide Gbit network for anchor institutions; under construction utilizing existing fiber and new installations; will classify as middle mile in upcoming submission
54	US Cable Corporation	<a href="http://www.uscablegroup.com/">http://www.uscablegroup.com/</a>	Acquired by another company
55	US Family Internet	<a href="http://www.usfamily.net/">http://www.usfamily.net/</a>	Nonfacilities-based reseller of Qwest Services
56	US Internet of Minnetonka	<a href="http://www.usiwireless.com/">http://www.usiwireless.com/</a>	Provider coverage and data is reported by DBA USI Wireless
57	Velocity Telephone, Inc.	<a href="http://www.velocitytelephone.com">http://www.velocitytelephone.com</a>	Nonfacilities-based reseller of Qwest Services
58	WilTel Communications, LLC.	n/a	As of December 23, 2005, WilTel Communications Group Inc. operates as a subsidiary of Level 3





## Broadband Provider Log

Complete	180
Non-Responsive/Refused	4
In Progress	6
Count of Datasets by Status	190
Total Unique Providers Represented	120

Provider Name	Platform	Status	NDA Execution Date	Notes
Ace Telephone Association	DSL	Data Added to Statewide Inventory	8/3/2010	[FEB-07-12 Brian Dudek] Change: Provider expanded DSL territory and increased maximum advertised download speed near Brownsville to tier 7.
AirLink Broadband, LLC	Fixed Wireless	Data Added to Statewide Inventory		[NOV-08-11 Brian Dudek] Change: Provider modified coverage on two transmission sites and added an additional one as well.
Alliance Communications Cooperative, Inc.	Fiber	Data Added to Statewide Inventory	3/2/2012	[JAN-17-12 Brian Dudek] Change: Provider converted rest of their DSL infrastructure to fiber and increased their speed capabilities in MN to max advertised speed tier 9 download, 7 upload.
Arvig Communication Systems	Fiber	Data Added to Statewide Inventory	2/2/2011	[JAN-18-12 Brian Dudek] Change: Expanded fiber territory primarily in and around the towns of Waubun and Flom.
AT&T Corp, Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/16/2009	[FEB-28-12 Brian Dudek] Change: Provider expanded mobile territory.
Barnesville Municipal Telephone	DSL	Data Added to Statewide Inventory	3/4/2010	[MAR-16-12 Brian Dudek] Correction: Provider indicated that they want to be more conservative with the maximum advertised download speed tier. Decreased to tier 6.
Benton Cooperative Telephone Company	DSL	Data Added to Statewide Inventory	6/16/2010	[FEB-07-12 Brian Dudek] Change: Provider increased maximum advertised download speed to tier 6.
Benton Cooperative Telephone Company	Fiber	Data Added to Statewide Inventory	6/16/2010	[FEB-07-12 Brian Dudek] Change: Provider increased maximum advertised download speed to tier 6.
Benton Cooperative Telephone Company	Cable	Data Added to Statewide Inventory	6/16/2010	[FEB-07-12 Brian Dudek] Change: Provider increased maximum advertised download speed to tier 6 near Rice.
Blue Earth Valley Telephone Company	DSL	Data Added to Statewide Inventory	6/16/2010	[FEB-06-12 Brian Dudek] Change: Provider expanded DSL territory further into Delavan and Huntley exchanges. Increased speeds in Freeborn exchange.
Broadband Corp	Fixed Wireless	Data Added to Statewide Inventory	5/11/2010	[JAN-26-12 Brian Dudek] Correction: Provider indicated a correction that reduced the maximum advertised upload speed to tier 3 on some 3650 sites.
Cable ONE Inc.	Cable	Data Added to Statewide Inventory	12/7/2009	[FEB-21-12 Brian Dudek] Change: Provider added a few additional census blocks to their cable territory.
CenturyLink	DSL	Data Added to Statewide Inventory	12/4/2009	[FEB-17-12 Brian Dudek] Change/Correction: Possible service expansion or corrections to previous dataset; entirely new dataset for April 2012 submission.

Charter Communications, Inc.	Cable	Data Added to Statewide Inventory	12/15/2009	[FEB-03-12 Brian Dudek] Change/Correction: possible service expansion or corrections to previous dataset; entirely new dataset for April 2012 submission. Minor spatial changes with an increase in maximum advertised download speed to tier 10. All now DOCSIS 3.0.
City of Detroit Lakes	Fixed Wireless	Data Added to Statewide Inventory	5/10/2010	[DEC-20-11 Brian Dudek] Correction: New provider for April 2012 submission that was previously unresponsive.
City of Windom	Fiber	Data Added to Statewide Inventory		[JAN-17-12 Brian Dudek] Change: Provider upgraded speed capabilities to max advertised speed tier 9 download, 8 upload.
Clearwire Corporation	Mobile Wireless	Data Added to Statewide Inventory	3/3/2010	[JAN-25-12 Brian Dudek] Change: Provider slightly expanded mobile territory on the northern side of their service area near Anoka. □ [MAR-12-12 Terry Holmes] Provider supplied additional information on coverage for substantial service sites in October 2011, however requested that CN not submit or publish this coverage since they do not market to these areas.
Comcast Cable Communications, LLC	Cable	Data Added to Statewide Inventory	12/7/2009	[FEB-14-12 Brian Dudek] Change/Correction: possible service expansion or corrections to previous dataset; entirely new dataset for April 2012 submission.
Consolidated Telephone Company	Fiber	Data Added to Statewide Inventory	3/1/2012	[JAN-24-12 Brian Dudek] Change: Provider expanded fiber coverage into two exchanges.
diversiCOM	Fiber	Data Added to Statewide Inventory	4/20/2010	[NOV-08-11 Brian Dudek] Change: Provider expanded fiber territory in Richmond and increased max advertised download speeds to tier 7.
Eagle Valley Telephone Company	DSL	Data Added to Statewide Inventory	4/14/2010	[MAR-16-12 Brian Dudek] Change/Correction: Service expansion and corrections to previous dataset; entirely new dataset for April 2012 submission.
Emily Cooperative Telephone Company	Fiber	Data Added to Statewide Inventory	6/24/2010	[OCT-20-11 Brian Dudek] Correction: Corrected fiber network speed tiers to current offering. Provider did not provide this data in the past submission even though it was available at the time. Advertised speeds increased to tier 10 download and tier 3 upload.
Fallsnet	Fixed Wireless	Data Added to Statewide Inventory		[FEB-29-12 Brian Dudek] Change: New fixed wireless provider in the market.
Federated Telephone Cooperative	Fiber	Data Added to Statewide Inventory	4/1/2010	[JAN-17-12 Brian Dudek] Change: Provider expanded fiber coverage into the Morris exchange.
Felton Telephone Company	DSL	Data Added to Statewide Inventory	4/14/2010	[MAR-16-12 Brian Dudek] Change/Correction: Service expansion and corrections to previous dataset; entirely new dataset for April 2012 submission.
Frontier Communications of Minnesota, Inc.	DSL	Data Added to Statewide Inventory	1/22/2010	[JAN-27-12 Brian Dudek] Change/Correction: Provider expanded DSL territory by adding additional CO/RT's. Reduced coverage in a few areas where residents claimed they could not get service.

Garden Valley Telephone Company	DSL	Data Added to Statewide Inventory	2/17/2010	[DEC-19-11 Brian Dudek] Change/Correction: Provider converted some DSL infrastructure to fiber and corrected speed capabilities. Previously speeds were reported as exchange maximum.
Garden Valley Telephone Company	Fiber	Data Added to Statewide Inventory	2/17/2010	[DEC-19-11 Brian Dudek] Change: Provider expanded fiber territory and upgraded speed capabilities to max advertised download speed tier 7.
Granada Telephone Company	DSL	Data Added to Statewide Inventory	4/14/2010	[FEB-27-12 Brian Dudek] Change/Correction: Service expansion and corrections to previous dataset; entirely new dataset for April 2012 submission.
Hiawatha Broadband Communications, Inc.	Fiber	Data Added to Statewide Inventory	3/8/2010	[FEB-27-12 Brian Dudek] Change: Provider expanded fiber territory into six additional town areas.
Hiawatha Broadband Communications, Inc.	Fixed Wireless	Data Added to Statewide Inventory	3/8/2010	[MAR-01-12 Brian Dudek] Change: New provider platform in service for April 2012 submission.
Hickory Tech Corporation	DSL	Data Added to Statewide Inventory		[MAR-06-12 Brian Dudek] Change/Correction: Provider supplied new dataset indicating a reduction of speeds in entire service area.
IdeaOne Telecom Group, LLC	DSL	Data Added to Statewide Inventory	11/4/2011	[NOV-09-11 Brian Dudek] Correction: New provider for April 2012 submission that previously refused to participate.
IdeaOne Telecom Group, LLC	Fixed Wireless	Data Added to Statewide Inventory	11/4/2011	[NOV-16-11 Brian Dudek] Correction: New provider for April 2012 submission that previously refused to participate.
Info Link Wireless, Inc.	Fixed Wireless	Data Added to Statewide Inventory	4/19/2010	[FEB-21-12 Brian Dudek] Change: Provider added additional 2.5Ghz transmission sites. Increased speed capabilities for unlicensed and licensed area.
InvisiMax, Inc.	Fixed Wireless	Data Added to Statewide Inventory	2/29/2012	[FEB-06-12 Brian Dudek] Change: Added wireless traffic layer. No coverage change by area as this layer coverage is less than the Oct. 2011 unlicensed coverage.
Lismore Cooperative Telephone Company	Fiber	Data Added to Statewide Inventory		[MAR-01-12 Brian Dudek] Correction: New provider for April 2012 submission that was previously thought to be included under Woodstock Telephone.
Loretel Systems, Inc.	DSL	Data Added to Statewide Inventory	4/14/2010	[MAR-16-12 Brian Dudek] Change/Correction: Service expansion and corrections to previous dataset; entirely new dataset for April 2012 submission.
Midcontinent Communications	Cable	Data Added to Statewide Inventory	12/9/2009	[JAN-27-12 Brian Dudek] Change/Correction: Entirely new dataset submitted. Provider expanded cable coverage area by purchasing US Cable and increased maximum advertised upload speed in their already owned tier 8 area. Also provider made some corrections to their serviceable node boundaries, which increased the accuracy of their block submission.
Mille Lacs Energy Cooperative	Fixed Wireless	Data Added to Statewide Inventory		[MAR-02-12 Brian Dudek] Change: New provider in service for April 2012 submission.
Minnesota Valley TV Improvement Corporation	Fixed Wireless	Data Added to Statewide Inventory	4/13/2010	[JAN-05-12 Brian Dudek] Change: Provider added additional transmission sites, which expanded territory into multiple counties in SW Minnesota. Also increased max advertised download/upload speed tier to 5.

New Ulm Telecom, Inc.	Cable	Data Added to Statewide Inventory	2/25/2010	[JAN-12-12 Brian Dudek] Change: New provider platform in service for April 2012 submission. Provider purchased legacy CATV properties covering four towns.
NorthfieldWiFi LLC	Fixed Wireless	Data Added to Statewide Inventory	2/4/2011	[FEB-10-12 Brian Dudek] Change: Provider added an additional transmission point. Upgraded infrastructure of another tower to maximum advertised download tier 7.
Paul Bunyan Rural Telephone Cooperative	DSL	Data Added to Statewide Inventory	6/24/2010	[JAN-24-12 Brian Dudek] Change/Correction: Upon closer examination, minor adjustments made to DSL coverage as fiber is being added to multiple exchanges.
Paul Bunyan Rural Telephone Cooperative	Fiber	Data Added to Statewide Inventory	6/24/2010	[JAN-24-12 Brian Dudek] Change: Provider expanded fiber territory in multiple exchanges.
Pine Island Telephone Company	DSL	Data Added to Statewide Inventory	4/14/2010	[FEB-27-12 Brian Dudek] Change/Correction: Service expansion and corrections to previous dataset; entirely new dataset for April 2012 submission.
Red River Rural Telephone Association	Fixed Wireless	Data Added to Statewide Inventory	3/17/2010	[FEB-07-12 Brian Dudek] Correction: New dataset indicates that wireless speed change was missed last submission. Max Upload and typical download speeds only.
Red River Rural Telephone Association	DSL	Data Added to Statewide Inventory	3/17/2010	[FEB-07-12 Brian Dudek] Change: Provider increased maximum advertised download speed to tier 6 and converted some DSL infrastructure to fiber.
Red River Rural Telephone Association	Fiber	Data Added to Statewide Inventory	3/17/2010	[FEB-07-12 Brian Dudek] Change: Provider increased maximum advertised download speed to tier 9 and expanded fiber territory.
Savage Communications Inc.	Cable	Data Added to Statewide Inventory	2/19/2010	[FEB-06-12 Brian Dudek] Change: Provider expanded cable coverage into Grand Lake and Canosia townships. Also increased speed capabilities in Bovey and Coleraine.
Sjoberg's Inc.	Cable	Data Added to Statewide Inventory	12/21/2009	[MAR-06-12 Brian Dudek] Change: Provider increased upload speeds to tier 4 in DOCSIS-Other areas. Download and upload speeds increased in new DOCSIS 3.0 areas (Warroad and Roseau).
Sleepy Eye Telephone Company	DSL	Data Added to Statewide Inventory	4/14/2010	[FEB-27-12 Brian Dudek] Change/Correction: Service expansion and corrections to previous dataset; entirely new dataset for April 2012 submission.
SMBS	Fiber	Data Added to Statewide Inventory		[JAN-31-12 Brian Dudek] Change: New provider in service for April 2012 submission.
Sprint Nextel Corporation	Mobile Wireless	Data Added to Statewide Inventory	1/14/2010	[JAN-30-12 Brian Dudek] Change/Correction: Provider made significant refinements to their mobile coverage area. Increased coverage in some areas while decreased in others.
Starpoint Communications, Inc.	Fixed Wireless	Data Added to Statewide Inventory	2/18/2011	[FEB-03-12 Brian Dudek] Change: Added underlying unlicensed traffic layer at existing tower locations with speed tiers of 5.
T-Mobile USA, Inc.	Mobile Wireless	Data Added to Statewide Inventory	1/8/2010	[FEB-20-12 Brian Dudek] Change: Provider expanded mobile territory in UMTS and HSPA areas.

TDS Telecommunications Corporation	DSL	Data Added to Statewide Inventory	1/27/2010	[FEB-28-12 Brian Dudek] Change/Correction: Possible service expansion or corrections to previous dataset; entirely new dataset for April 2012 submission.
TDS Telecommunications Corporation	Fiber	Data Added to Statewide Inventory	1/27/2010	[FEB-28-12 Brian Dudek] Change/Correction: Possible service expansion or corrections to previous dataset; entirely new dataset for April 2012 submission.
Upsala Cooperative Telephone Association	Fiber	Data Added to Statewide Inventory	2/29/2012	[DEC-16-11 Brian Dudek] Change/Correction: Provider expanded and reduced/corrected fiber territory in multiple parts of their exchange area.
Verizon Communications, Inc.	Mobile Wireless	Data Added to Statewide Inventory	12/14/2009	[FEB-20-12 Brian Dudek] Change/Correction: Provider corrected their speed tiers and increased coverage areas in EVDO and LTE areas.
ViaSat, Inc.	Satellite	Data Added to Statewide Inventory	1/8/2010	[MAR-07-12 Brian Dudek] Change: Provider upgraded speed capabilities to maximum advertised download speed tier 5 and upload tier 3 in western portion of state. Changed provider name and DBA from WildBlue Communications, Inc. to ViaSat, Inc.
Western Telephone Company	DSL	Data Added to Statewide Inventory	4/14/2010	[JAN-12-12 Brian Dudek] Change: Provider upgraded speed capabilities in Springfield and Sanborn to max advertised speed tier download 7, upload 5.
Charter Communications, Inc.	Backhaul	Backhaul Provider Only Processing Complete	12/15/2009	
Mediacom Communications Corporation	Backhaul	Backhaul Provider Only Processing Complete	1/12/2010	
Midcontinent Communications	Backhaul	Backhaul Provider Only Processing Complete	12/9/2009	
Sprint Nextel Corporation	Backhaul	Backhaul Provider Only Processing Complete	1/14/2010	
T-Mobile USA, Inc.	Backhaul	Backhaul Provider Only Processing Complete	1/8/2010	
TDS Telecommunications Corporation	Backhaul	Backhaul Provider Only Processing Complete	1/27/2010	
Zayo Group, LLC	Backhaul	Backhaul Provider Only Processing Complete		
City of Chaska	Fixed Wireless	No Update-Estimated Coverage Submitted for Non-Participating Provider		
A Better Wireless, NISP, LLC	Fixed Wireless	Estimated Coverage Submitted for Non-Participating Provider		[NOV-09-11 Brian Dudek] Correction: New provider for April 2012 submission that has refused to participate. Connected Nation estimated coverage for this provider.
Nextera Communications	Fixed Wireless	Estimated Coverage Submitted for Non-Participating Provider		[DEC-20-11 Brian Dudek] Correction: New provider for April 2012 submission that has either been non-responsive or has refused to participate in past submissions. Connected Nation estimated coverage for this provider.
tothelhome.com, LLC	Fixed Wireless	Estimated Coverage Submitted for Non-Participating Provider		[MAR-08-12 Brian Dudek] Correction: New provider for April 2012 submission that was unresponsive. Connected Nation estimated coverage for this provider.
Ace Telephone Association	Backhaul	No Update to Provide	8/3/2010	
Albany Mutual Telephone Association	DSL	No Update to Provide	3/4/2010	
Albany Mutual Telephone Association	Fiber	No Update to Provide	3/4/2010	
Alliance Communications Cooperative, Inc.	Backhaul	No Update to Provide	3/2/2012	
Arrowhead Communications Corporation	DSL	No Update to Provide	4/14/2010	
Arvig Communication Systems	DSL	No Update to Provide	2/2/2011	
Arvig Communication Systems	Fixed Wireless	No Update to Provide	2/2/2011	
AT&T Corp, Inc.	Backhaul	No Update to Provide	12/16/2009	
Benton Cooperative Telephone Company	Mobile Wireless	No Update to Provide	6/16/2010	
Benton Cooperative Telephone Company	Cable	No Update to Provide	6/16/2010	
Blue Earth Valley Telephone Company	Cable	No Update to Provide	6/16/2010	
Blue Earth Valley Telephone Company	Fiber	No Update to Provide	6/16/2010	
Bradco-Wisp, Inc.	Fixed Wireless	No Update to Provide		
CenturyLink	Backhaul	No Update to Provide	12/4/2009	
Christensen Communications Company	Backhaul	No Update to Provide	2/2/2010	
Christensen Communications Company	DSL	No Update to Provide	2/2/2010	
CitEscape, LLC	Fixed Wireless	No Update to Provide	1/25/2010	
Clara City Telephone Company	DSL	No Update to Provide	2/5/2010	
Clear Choice Communications	Fixed Wireless	No Update to Provide		
Clearwire Corporation	Fixed Wireless	No Update to Provide	3/3/2010	



Consolidated Telephone Company	DSL	No Update to Provide	3/1/2012	
Consolidated Telephone Company	Fixed Wireless	No Update to Provide	3/1/2012	
Crosslake Telephone Company	Cable	No Update to Provide	6/16/2010	
Crosslake Telephone Company	DSL	No Update to Provide	6/16/2010	
Crosslake Telephone Company	Fiber	No Update to Provide	6/16/2010	
DISH Network Corporation	Satellite	No Update to Provide	1/27/2010	
diversiCOM	DSL	No Update to Provide	4/20/2010	
diversiCOM	Cable	No Update to Provide	4/20/2010	
diversiCOM	Fixed Wireless	No Update to Provide	4/20/2010	
Enterpoint Wireless	Fixed Wireless	No Update to Provide		
Evertex Enterprises, Inc.	Fixed Wireless	No Update to Provide	6/17/2010	
Farmers Mutual Telephone Company	Fiber	No Update to Provide	4/1/2010	
Farmers Mutual Telephone Company	Fixed Wireless	No Update to Provide	4/1/2010	
				[MAR-12-12 Brian Dudek] Correction: Portion of provider's licensed wireless is now a real-world propagation unlike prior submissions.
Federated Telephone Cooperative	Fixed Wireless	No Update to Provide	4/1/2010	
Fibernet Monticello	Fiber	No Update to Provide		
Frontier Communications of Minnesota, Inc.	Backhaul	No Update to Provide	1/22/2010	
FTTH Communications	Fiber	No Update to Provide		
Gardonville Cooperative Telephone Association	DSL	No Update to Provide	2/23/2010	
Gardonville Cooperative Telephone Association	Fixed Wireless	No Update to Provide	2/23/2010	
Gardonville Cooperative Telephone Association	Fiber	No Update to Provide	2/23/2010	
Genesis Wireless	Fixed Wireless	No Update to Provide		
Halstad Telephone Company	DSL	No Update to Provide	6/16/2010	
				[MAR-09-12 Brian Dudek] Correction: Portion of provider's licensed wireless is now a real-world propagation unlike prior submissions.
Halstad Telephone Company	Fixed Wireless	No Update to Provide	6/16/2010	
Harmony Telephone Company	Fiber	No Update to Provide	1/12/2010	
Hiawatha Broadband Communications, Inc.	Cable	No Update to Provide	3/8/2010	
HomeTown Solutions LLC	Fiber	No Update to Provide	4/1/2010	
Hughes Network Systems, LLC	Satellite	No Update to Provide	2/5/2010	
Hutchinson Telecommunications, Inc.	DSL	No Update to Provide	4/14/2010	
Hutchinson Telecommunications, Inc.	Fixed Wireless	No Update to Provide	4/14/2010	
Interstate Telecommunications Cooperative, Inc.	DSL	No Update to Provide	2/10/2010	
Interstate Telecommunications Cooperative, Inc.	Fiber	No Update to Provide	2/10/2010	
Jaguar Communications	DSL	No Update to Provide	4/12/2010	
Jaguar Communications	Fiber	No Update to Provide	4/12/2010	
Jaguar Communications	Fixed Wireless	No Update to Provide	4/12/2010	
Johnson Telephone Company	DSL	No Update to Provide		
Kasson & Mantorville Telephone Company	DSL	No Update to Provide	6/30/2010	
Knology of the Plains, Inc.	Cable	No Update to Provide	7/13/2011	
Lonsdale Telephone Company, Inc.	DSL	No Update to Provide		
Lonsdale Telephone Company, Inc.	Fiber	No Update to Provide		
Mabel Cooperative Telephone Company	DSL	No Update to Provide	4/7/2010	
Manchester-Hartland Telephone Company	Fiber	No Update to Provide	4/14/2010	
Mediacom Communications Corporation	Cable	No Update to Provide	1/12/2010	
MegaPath Inc.	Backhaul	No Update to Provide	2/15/2010	
Minnesota Valley Telephone Company	DSL	No Update to Provide	4/29/2010	
Minnesota Valley TV Improvement Corporation	Cable	No Update to Provide	4/13/2010	
New Ulim Telecom, Inc.	DSL	No Update to Provide	2/25/2010	
Park Region Mutual Telephone Company	DSL	No Update to Provide	3/18/2010	
Park Region Mutual Telephone Company	Fiber	No Update to Provide	3/18/2010	
Polar Telecom, Inc.	DSL	No Update to Provide	2/11/2010	
River Valley Telephone Coop.	Fixed Wireless	No Update to Provide	4/28/2010	
Rothsay Telephone Company Inc.	DSL	No Update to Provide	2/18/2010	
Runestone Telecom Association	DSL	No Update to Provide	4/14/2010	
Runestone Telecom Association	Fiber	No Update to Provide	4/14/2010	
Sacred Heart Telephone Company	DSL	No Update to Provide	2/5/2010	
Savage Communications Inc.	Backhaul	No Update to Provide	2/19/2010	
Scott Rice Telephone Co.	DSL	No Update to Provide	2/15/2010	
Scott Rice Telephone Co.	Fiber	No Update to Provide	2/15/2010	
Sheehan Gas	Fixed Wireless	No Update to Provide		
Sioux Valley Wireless	Fixed Wireless	No Update to Provide	4/21/2010	
Southern Cablevision, Inc.	Cable	No Update to Provide	3/30/2010	
Spring Grove Cooperative Telephone Co.	Fiber	No Update to Provide	1/12/2010	
Starbuck Telephone Company	DSL	No Update to Provide	2/5/2010	
tw telecom of minnesota, llc	Backhaul	No Update to Provide	4/20/2010	
Upsala Cooperative Telephone Association	DSL	No Update to Provide	2/29/2012	
				[MAR-12-12 Brian Dudek] According to provider representative, service area is derived from a real-world wireless propagation and is cut to the allowed service boundary. It is a city funded project and the provider is required to only provide within this service boundary.
US Internet of Minnesota	Fixed Wireless	No Update to Provide	2/29/2012	
VAL-ED Joint Venture, LLP	DSL	No Update to Provide	4/21/2010	
VAL-ED Joint Venture, LLP	Fixed Wireless	No Update to Provide	4/21/2010	
West Central Telephone Association	DSL	No Update to Provide	2/18/2010	

West Central Telephone Association	Fiber	No Update to Provide	2/18/2010	
Wikstrom Telephone Company	DSL	No Update to Provide	4/12/2010	
Wikstrom Telephone Company	Fixed Wireless	No Update to Provide	4/12/2010	
Windstream Communications	Backhaul	No Update to Provide		
Windstream Communications	DSL	No Update to Provide		
				[MAR-12-12 Brian Dudek] Correction: Provider's licensed wireless is now a real-world propagation unlike prior submissions. It has also been clipped to their serviceable exchange boundary.
Windstream Communications	Fixed Wireless	No Update to Provide		
Winnebago Cooperative Telecom Association	DSL	No Update to Provide	6/17/2010	
Winnebago Cooperative Telecom Association	Fiber	No Update to Provide	6/17/2010	
Winnebago Cooperative Telecom Association	Fixed Wireless	No Update to Provide	6/17/2010	
Winnebago Cooperative Telecom Association	Backhaul	No Update to Provide	6/17/2010	
Wolverton Telephone Company	DSL	No Update to Provide	6/22/2010	
Woodstock Telephone Company	DSL	No Update to Provide	2/18/2010	
Woodstock Telephone Company	Fiber	No Update to Provide	2/18/2010	
Zumbrota Telephone Company	DSL	No Update to Provide	2/5/2010	
Cogent Communications, Inc.	Backhaul	No Update Provided - Use Last Submission Data		
KeyOn Communications, Inc.	Fixed Wireless	No Update Provided - Use Last Submission Data		
Level 3 Communications, LLC	Backhaul	No Update Provided - Use Last Submission Data	12/14/2009	
Verizon Communications, Inc.	Backhaul	No Update Provided - Use Last Submission Data	12/14/2009	
XO Communications, LLC	Backhaul	No Update Provided - Use Last Submission Data	2/12/2010	
Knology of the Plains, Inc.	Backhaul	Solicited Initial Data	7/13/2011	
Nextera Communications	DSL	Solicited Initial Data		
				[JAN-17-12 Brian Dudek] Provider indicated DSL is now inactive. All prior coverage was converted to fiber.
Alliance Communications Cooperative, Inc.	DSL	Other	3/2/2012	
				[NOV-08-11 Brian Dudek] Cable properties are reported under Arvig Communications, subsidiary company Home Telephone, dba Southern Cablevision.
Arvig Communication Systems	Cable	Other	2/2/2011	
Emily Cooperative Telephone Company	DSL	Other	6/24/2010	
				[FEB-22-12 Brian Dudek] Provider indicated DSL is now inactive.
Windstream Communications	DSL	Other		[FEB-08-12 Brian Dudek] Company representative notified us that they do not have the ability at this time to provide data for the acquired company.
				[FEB-28-12 John Determan] After soliciting data in accordance with the NOFA and clarification, provider has not provided data within the deadline and has become non-responsive.
Access Broadband	Fixed Wireless	Non-Responsive to Multiple Attempts		