

Washington Broadband Mapping

Data Submission Methodology Report

April 1, 2014



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1 Introduction

This report is submitted along with the ninth data submission for the Washington Broadband Mapping Project. This submission includes all data collected to date per the requirements of the National Telecommunications and Information Administration (NTIA) State Broadband Data and Development Grant Program (Docket No. 0660-ZA29) Notice of Funds Availability (NOFA) and formal and informal clarifications to it. Specifically, it includes broadband data collected from broadband providers and community anchor institutions data compiled from various sources for the State of WA. The State of WA has retained a mapping contractor, The Sanborn Map Company, to perform the work related to the Mapping Grant for this project. Data from the previous submission is now publicly accessible via the WA Broadband Program (<http://wabroadbandmapping.org/>).

This document is a supplement to the eight previous reports submitted with previous data submissions on May 1, 2010, October 1, 2010, April 1, 2011, October 1, 2011, April 1, 2012, October 1, 2012, April 1, 2013, and October 1, 2013. Therefore, it builds on the documents provided with those submissions. Rather than repeat the contents of the previous report, this document makes incremental updates on various topics where changes have been made in the methodology or reiterates the methodology used. Please refer to the previous documents for further details.

2 Overall Project Status

2.1 DATA COLLECTION

This section details data collection related to NTIA deliverables which include broadband data and community anchor institution data.

2.1.1 Broadband Data

For this submission, Sanborn started data collection efforts on January 8th, 2014 by sending out data update requests and technical data specifications. These were sent to a large list of companies which were compiled from multiple lists (FCC 477 list (December 31, 2012, as submitted in filings made or revised as of August 16, 2013), a list provided by the Washington UTC, Wireless Internet Service Providers Association (WISPA)) and from any providers that were identified through other sources such as web research, planning meetings, State outreach, etc. Sanborn also uploaded the final data for each provider in NTIA format from the previous submission on the Sanborn Provider Portal. The providers were encouraged to use the provider portal and update their information on it.

We followed the same contact and follow-up protocols as the previous submissions. In brief, this involved following up with already participating providers after sending them a letter requesting data updates. For newly identified providers, we contacted them three additional times and offered any/all support to make this as easy as possible. We provided a due date for submission but worked with providers who needed more time. If participating providers did not submit updated data and did not respond to our efforts to contact them, we reused their existing data.

The following are some of the important changes or no changes:

1. We continued to request all providers to provide us their speed information in mbps rather than as a speed tier. We did this in order to better validate the data, analyze served/underserved, and identify the breakdowns in speeds within a given tier. However, we have found over the last few submissions, this has caused some confusion between what we are asking for (speeds in mbps) vs. typical speeds. Given that many providers are not providing this information, it is hard to use the data effectively for analysis.
2. As in the previous submission, we also requested fixed wireless providers to provide us appropriate information to do propagation analysis. We helped improve data for 3 providers this submission through propagation, got improved propagation from 2 providers through Link Technologies and added 3 new wireless providers. For those WISP providers that provided us the data to accomplish propagation, we used Radio Mobile to

do propagation analysis and iterated with the providers until the parameters were suitably selected to produce appropriate output.

3. As in the past, we did not include resellers in the submission.
4. Due to our NDA restrictions, last mile infrastructure points, if submitted by providers, are not being submitted to NTIA. Likewise, address points are not included in this submission for any commercial provider.
5. We continue to submit data for satellites in this submission based on NTIA clarifications. In this submission, we were told by Viasat that they are reducing service in the eastern half of the state because one of their satellites reached capacity and they were not accepting new customers for that part of the state. We requested guidance from NTIA about how to handle this and did not hear back – so we have gone ahead and represented their service as they told us to.
6. We made a more concerted effort to find out whether providers were business only but once again we did not get many providers that broke down the type of service by blocks or road segments. If the provider stated they only serve business to business customers we fill in the “category of end user” with code 2, or if they told us specifically that they serve only residential, we used code 1. Where companies did not confirm their end user codes we attempted to verify by reference to their online marketing and any company-specific sources available; where we couldn’t verify we entered 5 as a default. In this submission, we found out that Megapath was sending us service area separately for business and for residential service and the speeds for the two different types of service were different. The State of Washington verified and affirmed that they could provide residential service in Washington, and we are submitting their service with the appropriate end user codes (of 1 and 2) and applicable speed tiers even in overlapping blocks, rather than represent them as a primarily business only provider. There are 12 providers in WA who are identified as primarily serving business customers only. These are:

- 1) CSS
- 2) Cogent Communications, Inc.
- 3) Capacity Provisioning, Inc.
- 4) Integra Telecom of WA
- 5) Level 3 Communications, LLC
- 6) LightSpeed Networks, Inc.
- 7) Orcas Power & Light Cooperative
- 8) Startouch
- 9) TW Telecom of Washington LLC
- 10) XO Communications, LLC
- 11) NextLink Wireless
- 12) Zayo Group, LLC

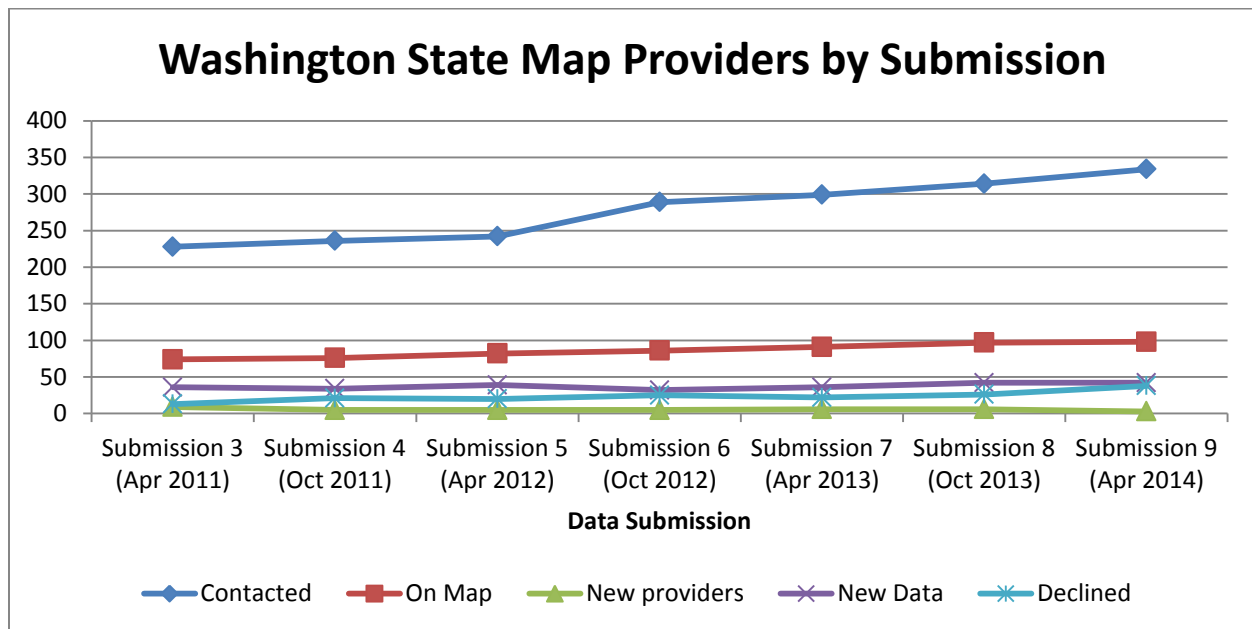
7. The State of Washington is extensively served by Public Utility Districts (PUDs), which are restricted to wholesale service by state law. PUDs typically own the connection to the customer's premises but offer service only through resellers. Some PUD networks offer up to 20 reseller options. In this submission we have continued to report PUD networks as business and residential because it is impractical to obtain detailed network information from multiple resellers on each PUD network.
8. This submission is being made based on the NTIA data model as of January 24, 2014 provided by NTIA.
9. Terrestrial Mobile Wireless and Terrestrial Fixed Wireless (licensed and unlicensed) were again treated as wireless coverage and were delivered as a shape. In cases where a provider served the same spectrum with different speeds, overlapping areas were removed and the higher speed was assigned. The exception to this rule is where a provider is using the same spectrum, but delivering different underlying technologies such as 3G, 4G, or 4G LTE. In this case a continuous polygon is being created that represents the area that is offered for both 3G and 4G even if these polygons overlap.
10. Where providers told us to reuse their data from the previous submission or did not respond to our data request, we are resubmitting data that was submitted in S8 and that we believe is still valid. We validated their data against new speed test points and other feedback from our Interactive Map.
11. We have added the following new providers in this submission. It is to be noted that these providers are not necessarily new providers but are participating in the program for the first time
 - 1) Benton PUD
 - 2) City of Port Angeles
 - 3) Stephouse Networks

In this submission:

- 1) We have contacted a total of 334 providers in WA of which 20 providers were contacted for the first time.
- 2) We have identified 136 potential providers, of which 98 are participating in this map to date and 38 have refused to participate. In addition, 11 providers have not responded to our efforts to contact them and we are not sure whether any of these providers are actual providers or not. A list of the non-responders, resellers and non-providers is provided at the end of the document and all of these potential broadband providers were contacted. Even if some providers were identified as non-providers or resellers in previous submissions, we continue sending out data request letters to these providers in case their status has changed in any way.

- 3) Approximately 43% of the providers submitted new or updated data whereas for the remaining providers we reused data from their previous submissions. This is in contrast to 43% of providers submitting new or updated data in S8 and 40% providing updates or new in S7.

The following chart shows the level of participation in the various submissions in the last few years.



2.1.2 Community Anchor Institutions Data

The community anchor institutions data continues to be crowd-sourced through the online data gathering application created by the Sanborn Team but there has been minimal uptake on this. In this submission we have made several improvements to the CAI data based on guidance from NTIA and work done by the WA Office of Superintendent of Public Instruction (OSPI).

- 1) The OSPI had originally (during Submissions 1 and 2, in 2010) provided us with subscription information that was the basis of the schools data for WA. Late in 2013, the OSPI launched a new initiative to undertake speed tests at schools with the help of Education Superhighway. For those CAIs that were missing subscription information, we used the speed tests as a proxy for subscription. About 309 records were updated in this way. We did not use the speed tests for all the schools because they didn't represent subscription and also because the OSPI informed us

that schools with higher subscriptions were underperforming in the speed tests for some reason.

- 2) We have also added any extra schools and libraries from the websites provided by NTIA - ELSi (tableGenerator) <http://nces.ed.gov/ccd/elsi> and <https://harvester.census.gov/imls/data/pls/index.asp> (for libraries). Any CAIIDs that were in these databases but not represented in our data, were added, even if they had the same address, as long as the CAIID was different. This resulted in about 400 + extra schools and 53 extra libraries that we added to the data. We also added missing CAI IDs where needed based on OSPI data as well as data provided by NTIA.
- 3) Our data continues to contain administrative buildings for schools but they do not have CAIIDs associated with them. There are an additional 150+ schools that have no CAIIDs. We could not resolve these issues using automated methods and will work on these before the tenth submission. Some of these records could be valid facilities without an entry in NCES or facilities we already have in our data as another name or address. Because we did some automated checks to assign IDs, we will need to look through duplicate records and make sure that the right records are retained and the right ones are deleted. Some of these records would require additional investigation into whether a school's name or locations had changed, or if these were additional structures at the location.

We made some data corrections as well in the CAI data from Submission 8. We had accidentally calculated 176 records to have the same upload speeds as download speeds in the past and these have been corrected in this submission.

We have checked the speeds against technologies and found the following issues that we cannot resolve before this submission.

Technology of Transmission	Issue and # of CAIs impacted	Comments
10	1 CAI with Speed Tier 7	We have confirmed that there is a TT 10 provider in WA with Speed Tier 7
20	1 CAI with Speed Tier 8	Our blocks data does not show any TT20 provider with those speeds and technology in the area. We will have to work with the person who provided the information and correct next submission

40	23 CAI with speeds less than SpeedTier 8	The CAIs with this issue encompass many different CAIs and will need to be reviewed individually. We have confirmed that all providers with TT 40 have speeds of Tier 8 and over in WA.
41	29 CAIs have Speed Tier 8 or higher	Will need to resolve by checking in with the provider of the data. We think providers may be confused about Cable DOCSIS or Cable Other and it is difficult to assess what the issue is.
50	114 CAIs have low speeds (Speed Tiers 3, 4, 5 and 6)	We have seen from subscription records from various providers of fiber that many of their subscribers do subscribe to lower speeds.

There is no place on the CAI data model from NTIA for us to track which CAIs were updated with subscription information or CAI ID and which ones were added. However, we are tracking this information on our production databases, should NTIA be interested in knowing what was updated or added.

The above changes have created a more robust dataset for location information.

2.2 DATA PROCESSING

In general, Submission 9 processes followed the same basic approach that was used in earlier submissions. We started with the following base data:

Census Blocks:

For this submission, Census 2010 data was utilized. The data was set up as follows:

- Block size (AREA) is calculated combining the 2010 land area (ALAND) and water area (AWATER)
- AREA is converted from square meters to square miles to calculate square mileage (SMI).
- If the SMI of a block is less than or equal to 2, then the less than or equal to 2 square mile indicator (LE2SMI) is set to true.

- In addition, we looked at the water area in comparison to the total block area, and if the block was 100% water, it was excluded from our reference data.

Road Segments:

2010 Tiger Line IDs (TLID) were used for data processing for this submission. The data was set up as follows:

- The GT2SMI (Greater Than 2 Square Mile) indicator is set to True when:
 - The 2010 road segment is completely within a block that is NOT less than 2 square miles
 - Only minimum and maximum address ranges and a single zip code for each road segment are maintained.

All data received went through the following processing steps:

1. **Triage:** All new data were quickly reviewed to understand what was received, and in what format. We also made sure we had all the required components for NTIA's data model, such as their FRN and advertised speed information. We also screened for any known issues that we might have seen before (such as Excel 2003 spreadsheets that cut off at 32k row).
2. **Ingest:** At this time the data are actually brought into our systems. Each provider is set up with a unique file geodatabase to store their information. Record counts of what was received are logged so that we can validate that we did not drop anything in processing.
3. **Data Processing:** In this step, the data goes through a number of ETL routines to convert the raw proprietary information into a format similar to the NTIA format. The exact routine utilized depends on how the data are received.
 - 1) When a wireline provider submits a service boundary, we select all the blocks and roads inside that shape.
 - 2) If a wireline provider submits a customer address list, the points are geocoded, and then the appropriate block or road segment is selected. In this submission, we added the 2012 TIGER street data for better geocoding and also created a better geocoding routine for addresses missing zip codes.
 - 3) If a wireline provider submits block and road information using Census data, we make sure everything is formatted to the appropriate specifications.
 - 4) If the wireline provider submits any type of road or line data that do not directly correlate to the TIGER data set, we convert the lines to TIGER by selecting the road centroid and spatially selecting the closest segment in our data set. If the road is in a block less than 2 square miles, then the block is selected. Some manual cleanup is also applied to make sure we do not

accidentally drop any road segments that should have been processed.

- 5) Wireless provider data are formatted to ensure that there are no overlapping polygons with the technology type and spectrum. In addition the data are cropped to the state boundary.
 - 6) After each round of processing, we make sure that we only keep unique records. A unique record is defined as having a unique combination of FRN, Block/Road ID, and technology type. If there are multiple records with different speeds, but all else is equal, then we selected the maximum advertised speeds.
4. **QC Review:** All data are then sent to a different analyst to perform a thorough quality control review on the processed data set. Record counts are compared to original submitted data. The QC staff also makes sure the ETL scripts and routines populated all of the right fields.
 5. **QC Change Detection Review:** Data is then sent to another team for a second Quality Control Review. In this step the data is not only double checked against what was originally submitted, but it is also brought up inside standardized MXD templates that allow us to make sure our results make sense. This step involves comparing the new data set with prior submissions, developing change maps, and looking for any possible technology or speed anomalies. At this stage we also begin our validation process. This includes looking at the provider data in comparison to things such as speed test results, franchise boundaries, siting information, and feedback from the planning surveys.
 6. **Provider Review:** Processed data are posted to a customized web-mapping tool we refer to as the Provider Portal. All providers are notified once their data are available on the site, and given a specified period for review of the data and to respond. In this site, providers can log on and visually see their processed data in a map format. It also allows them to overlay their raw data to help them validate that we did indeed process things correctly. In this submission we continued to use our enhancements to this tool that provides the ability to highlight changes between submission 8 and submission 9. The provider portal also has a suite of markup tools that will allow the providers to edit their data, including adding or removing service areas, and making changes to the data attributes.
 7. **Comment Processing:** All comments and feedback received from the provider portal are then reviewed and applied to the processed data set. This updated data set goes back through our QA and QC processes, and if time allows, back out to the Provider Portal, for the provider to review and sign off.
 8. **Data Append:** After all of the individual data sets are processed and approved, we run an append process which merges all of the individual provider data sets into one geodatabase. This is also the point where our

team will do any final transformations to get our working data model into the latest NTIA publishing format.

9. **Submission Comparison Check:** An application was written that compares this submission to the previous submission. We review any variations and assure that the changes found can be documented as being requested by the provider. We also review statewide data with clients to see changes in service areas, technologies, speeds etc. statewide to make sure it aligns with their local knowledge and expectations.
10. **Final QA/QC:** A series of quality checks are run on the final appended data sets to ensure it is ready for submission to NTIA. We also run the latest version of the NTIA receipt tool at this time. If any issues are flagged as failing they are reviewed and corrected. All warnings are also reviewed and either corrected or documented in the attached document which explains that we have validated this data and it should be accepted. Any last issues are corrected, and the data are sent to the state for their review.
11. **Deliver to NTIA and Publish to Web Applications:** A copy of the Append File Geodatabase is generated to be used in the provider portal web-based application. When verification feedback is received, the individual provider geodatabases are updated. After verification is complete, the Append process, including QA steps, is executed again and then submitted to NTIA.

2.3 DATA VALIDATION

Sanborn has continued to perform the same validation on the data as in the previous eight submissions (details in previous reports and a summarized version provided below). Some minor updates to the validation process are discussed below. We also publish our validation methodology online at <http://wabroadbandmapping.org/MapValidation.aspx>

- 1) QC of the data at various steps – this includes when data are received (triage), when they are processed through the various processing steps discussed above, etc.
- 2) Spatial checks against public and commercial datasets
 - a. For WA, we continued to use the following datasets for validation:
 - i. Exchange Boundaries: for DSL boundaries
 - ii. MediaPrints: for Cable and Fiber boundaries
 - iii. We reviewed the FCC Study area boundaries but were not confident about the completeness of that data and hence used our existing exchange boundaries. For the most part the two datasets aligned well.
- 3) Speedtest data and other data collection for verification
 - a. We continue to use speedtest data collected through our interactive map and community anchor data crowd-sourced for

validation purposes. No FCC speed tests were available for this submission.

- b. We also incorporated any feedback we received through the interactive map – this included feedback such as incorrect speeds, incorrect boundaries, missing provider or areas of no service, etc.
- 4) Verification by providers – processed data are uploaded on our Provider Portal for providers to review both the outcome of data processing and any issues that we found in the third-party and crowd-sourced validation. Issues pertaining to a particular provider are highlighted and shown in the portal for those providers only. Issues that are global and cannot be assigned to a particular provider are shown to all providers (e.g. there are no providers in this area, or we tried to get service here and heard x from A provider, y from B provider, etc.). Previously, we were highlighting these issues through a letter but in this submission, we have integrated the feedback through the Provided Portal. We make additional calls to providers who have issues. Planning workshops and local validation – we have looked into any issues that the State Planning team has identified and brought to our attention.
- 5) As with previous submissions, we did a significant amount of data validation at the statewide level and used change maps to see if there were any significant anomalies in the data. The WA State Broadband Office helped in reviewing the data at the statewide aggregation.

2.4 SUBMISSION 9: NTIA DATA MODEL CHANGES

The latest data model released was released in January 2014 and was very similar to the previous data model.

The primary changes that were made to the data model for this submission were:

- a. Technology type Code 60 (Satellite) increased in both Max Advertised Download Speed and Max Advertised Upload Speed
 - i. Max advertised download acceptable range is now Code 3 - Code 7
 - ii. Max advertise upload acceptable range is now Code 2 -Code 5
- b. Added ZZ as default value for road segments
- c. Removed codes 3 and 4 from End User Category in Address feature class.

2.5 UNIVERSE OF CONTACTED PROVIDERS/NON-PROVIDERS

We have contacted a total of 334 providers in WA of which 20 providers were contacted for the first time.

We have identified 136 potential providers, of which 98 are participating in this submission to date and 38 have refused to participate. In addition, 11 providers have not responded to our efforts to contact them and we are not sure whether any of these providers are actual providers or not. A list of the non-responders, resellers and non-providers is provided at the end of the document and all of these potential broadband providers were contacted. Even if some providers

were identified as non-providers or resellers in previous submissions, we continue sending out data request letters to these providers in case their status has changed in any way.

2.5.1 Non-providers

- 1 Advanced Tel, Inc.
- 2 Americom Technologies, Inc.
- 3 Beaver Creek Telephone Company dba Timberline Tele
- 4 Bell South Long Distance, Inc.
- 5 Bellevue, City of
- 6 Big River Telephone Company, LLC
- 7 Bluebird Wireless Broadband Services, LLC
- 8 Cbeyond Communications, LLC
- 9 CCS, LLC
- 10 CIMCO Communications, Inc.
- 11 Clear Talk
- 12 Convergia, Inc.
- 13 Cordia Communications Corp.
- 14 CTC Communications Corp.
- 15 CTG3/Bandwidth Builders
- 16 DigitalBridge Communications Corp.
- 17 Eastern Sub-RSA Limited Partnership
- 18 Eltopia Communications, LLC
- 19 Enhanced Communications Network, Inc.
- 20 Enventis Telecom Inc.
- 21 eVolve Business Solutions LLC/Cincinnati Bell Inc.
- 22 Exenet Systems, Inc.
- 23 First Communications, LLC
- 24 Harbor Communications, LLC
- 25 Horizon Telecom, Inc.
- 26 IDT America, Corp
- 27 Infotelecom Holdings, LLC
- 28 Inland Long Distance Company
- 29 Interstate Telecommunications, Inc.
- 30 Matrix Telecom, Inc.
- 31 McLeod USA Telecomm (PAETEC)
- 32 Navigator Telecommunications, LLC
- 33 Netlogic, Inc.
- 34 NextG Networks of California
- 35 North County Communications Corporation
- 36 Pac-West Telecomm, Inc.
- 37 Public Communications Services, Inc.
- 38 PUD - Asotin
- 39 PUD - Clark
- 40 PUD - Cowlitz
- 41 PUD - Ferry
- 42 PUD - Jefferson

43	PUD - Kittitas
44	PUD - Klickitat
45	PUD - Lewis
46	PUD - Mason #1
47	PUD - Skamania
48	PUD - Snohomish
49	PUD - Stevens
50	PUD - Thurston
51	PUD - Wahkiakum
52	PUD - Whatcom
53	RioNetworks / UIDC Telecom
54	Smart Choice Communications, LLC
55	Stat Network Solutions
56	Syniverse Technologies, Inc.
57	T2 Technologies
58	Tcast Communications, Inc.
59	Telecom Pacific
60	Telovations, Inc.
61	Touchtone Communications, Inc.
62	TransNational Communications International, Inc.
63	Virtual Networking Services, Inc.
64	Voicecom Telecommunications, LLC
65	Wanned Technologies, Inc.
66	Washington RSA No 8 Limited Partnership
67	WCI Cable, Inc.
68	WDT World Discount Telecommunications Co., Inc.
69	Westgate Communications LLC
70	X2Comm, Inc.
71	YMAX Communications Corp.
72	Zayo Bandwidth Northwest, Inc.
73	North Olympic Penninsula Data Centers
74	Plexicomm, LLC
75	Qnect
76	Queenanne.net
77	Axcess Internet
78	DONOBi
79	Envision Technologies
80	Maverick Wireless
81	MultiMeg
82	Webbworks
83	Skyline Telecom
84	Aircado, Inc.
85	Sisna
86	Stroh Publications
87	52-Eighty LLC
88	Pass Word, Inc.
89	CU Online

2.5.2 Resellers

- 1 Access One, Inc.
- 2 Access Point, Inc.
- 3 ACN Communication Services, Inc.
- 4 Airespring, Inc.
- 5 Alliance Group Services, Inc.
- 6 Broadcore, Inc.
- 7 Broadview Networks Holdings, Inc.
- 8 BullsEye Telcom, Inc.
- 9 Cincinnati Bell Any Distance, Inc.
- 10 Computers 5, Inc. d/b/a LocalTel
- 11 Digizip.com, Inc.
- 12 Ernest Communications, Inc.
- 13 Global Crossing
- 14 GlobalCom, Inc.
- 15 Greenfly Networks, Inc.
- 16 Highland Internet Services
- 17 LightEdge Solutions, Inc.
- 18 Metropolitan Telecommunications Holding Company
- 19 New Edge Network, Inc.
- 20 Norlight, Inc.
- 21 OrbitCom, Inc.
- 22 Reliance Globalcom Services, Inc.
- 23 Silver Star Telecom Washington LLC
- 24 Telekenex, Inc.
- 25 Threshold Communications, Inc.
- 26 United Telecom, Inc.
- 27 World Communications, Inc.
- 28 Birch Communications
- 29 Amerion
- 30 GalaxyNet Wireless
- 31 Genext
- 32 One World Telecommunications
- 33 OpenAccess
- 34 Reallinx, Inc.
- 35 Blue Mountain Internet's HyperSpeed Internet
- 36 J & N Cable Systems, Inc.
- 37 Light Tower Fiber Long Island LLC
- 38 NetRiver
- 39 OlympusNet
- 40 dishNET Wireline L.L.C.
- 41 Intelletrace, Inc.
- 42 Network Innovations, Inc.
- 43 Telefónica Global Solutions
- 44 WebBand

2.5.3 Non-Responders/Difficulty Contacting

- 1 ALEC, Inc.
- 2 Global Telecom and Technology Americas, Inc.
- 3 Peninsula Telecom of Washington, LLC
- 4 Primus Telecommunications, Inc.
- 5 Towerstream, Inc.
- 6 Abba Communications
- 7 Cortland Communications /Seattle DSL
- 8 Internet Expressway
- 9 RapidWiFi
- 10 Saddle Mountain Wireless
- 11 Winfield Wireless

2.5.4 Not-Participating

- 1 Accel Net Inc.
- 2 Cactus International, Inc.
- 3 Guinness Communications Inc.
- 4 iFiber Communications
- 5 Master Mind Productions, Inc.
- 6 Meriplex Communications, Ltd.
- 7 Noel Communications Inc.
- 8 Orcas Online, Inc.
- 9 Pend Oreille Valley Network, Inc.
- 10 Thunderbird Broadband
- 11 University Corporation for Advanced Internet
- 12 NCI Datacom
- 13 noWYR
- 14 Symplified Technologies, LLC
- 15 Telebyte NW
- 16 Eastern Oregon Telecom
- 17 360 Communications, LLC
- 18 Last Mile Gear
- 19 Skyline Network LLC
- 20 Methownet Wireless
- 21 Customized Cable Services Inc. DBA Country Cable L
- 22 Zito Media
- 23 Coeur d'Alene Tribe
- 24 CONCEPT COMMUNICATION CORP
- 25 Hughes Computer Services, Inc.
- 26 LocalTel Communication
- 27 Atlas Networks
- 28 BCN Telecom Inc.
- 29 Condo Internet.net
- 30 Cougar Wireless
- 31 Mount Baker Cable

32	Earthlink
33	ReachONE Internet
34	Ritzville Computer & Internet
35	Rodeo Internet
36	OlympicWi-Fi
37	Basin Networking
38	Aspeedynet