



BROADMAPSM
Beyond The Boundaries

Oregon Broadband Mapping Project: Product Release White Paper

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OVERVIEW

This white paper highlights the **Submission Summary** for this deliverable, as well as describes the **Data Gathering**, **Data Integration**, **Data Validation and Verification** and **Quality Control** processes used to create the Broadband Mapping Project's April 1, 2012 data submission. To support varying levels of technical and program knowledge, both a **high-level summary** and a **detailed process review** are supplied.

SUBMISSION SUMMARY

PROVIDER DETAILS

PROVIDER PARTICIPATION

- Provider Participation Statistics Summary

Summary	Count
Total Providers Researched/Contacted	449
Total Valid Broadband Providers	119
Non-Responsive Providers	10
Non-Cooperative Providers	5
Number of Providers - Supplied Updates for this Submission	73
Number of Providers - Confirmed No Updates	11

- New Providers Since Last Data Submission
 - Frontier Communications of the Northwest Inc
 - Rural Technology Group
 - Silver Star Telecom Ilc
 - UnwiredWest Internet
 - US Cellular
- Existing Providers – No Updates
 - City of Ashland Fiber Network
 - Comspan Communications
 - Hughes Network Systems
 - Integra Telecom of Oregon Inc
 - J & N Cable Systems, Inc.
 - LEVEL 3 COMMUNICATIONS LLC
 - Monroe Telephone Company
 - NEW EDGE NETWORK INC (Earthlink)
 - Pine Telephone Systems, Inc.
 - Starband Communications Inc / Spacenet
 - Warm Springs Telecommunications Company



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- Providers Included (listed by Provider and Holding Company name)

Abovenet Communications Inc
Alyricatel inc
AT&T Communications of the Pacific Northwest Inc
Axxis Communication Inc
Bend Broadband
Broadband Cable Telecommunications LLC Beaver Creek Telephone Company
Cable One Inc
Cal-Ore Communications, Inc.
Canby Telephone Association; Canby Telecom
Cascade Networks
Cascade Utilities (Cascade Access)
Casco Communications Inc
CenturyLink (OR)
Chambers Cable
Charter Fiberlink OR - CCVII LLC
City of Ashland Fiber Network
City of Sandy Oregon
Clear Creek Telephone & TeleVision
Clearwire
COLTONTEL
COMCAST CABLE COMMUNICATIONS INC
Comspan Communications
Country Vision Cable
Covad Communication
Crestview Cable
Cricket Communications
Douglas Services, Inc/Douglas Cooperative
Eastern Oregon Net, Inc (EONI)

Freewire Broadband
Frontier Communications of America
Gervais Telephone Company
Gorge Networks
Helix Telephone Company
Hood River Electric Cooperative
Hughes Network Systems
Integra Telecom of Oregon Inc
J & N Cable Systems, Inc.
LEVEL 3 COMMUNICATIONS LLC
Lightspeed Networks Inc.
McMinnville Access Company DBA OnlineNW.
Molalla Communications
Monitor Cooperative Telephone Company
Monmouth Independence Networks (DBA MINet)
Monroe Telephone Company
Mount Angel Telephone
Nehalem Telecommunications Inc (RTI)
NEW EDGE NETWORK INC (Earthlink)
North-State Telephone Co.
Oregon Telephone Company
Oregonfast.net
OREGON-IDAHO UTILITIES INC
Peoples Telephone Co
Pine Telephone Systems, Inc.
PocketiNet Communications, Inc.
Qlife
Roome Telecommunications, Inc.

Rural Network
Rural Technology Group
SCIO Mutual Telephone Assn.
SCS Communications and Security Inc
Silver Star Telecom Ilc
Skycasters
Sprint Nextel Corp
St Paul Telephone
Starband Communications Inc / Spacenet
Stayton Cooperative Telephone Co (SCTC)
Stephouse Holdings Company Ilc
TDS Telecom
Tillamook - CoastCom, Inc
T-Mobile
Trans-Cascades Telephone
TW Telecom of Oregon LLC
Umpqua Indian Development Corporation Telecommunications Division (Rio Net)
UnwiredWest Internet
Upward Access Support
US Cellular
Verizon Wireless
Warm Springs Telecommunications Comp
Wave Division Holdings LLC (Wave Broadband)
Webformix
Whiz to Coho Inc
WildBlue Communications Inc.
Wtechlink Wireless Broadband
Zayo Bandwidth Northwest Inc

- Non-Responsive Providers
 - Air Speed LLC
 - Bendtel Inc.
 - Eagle Telephone System, Inc.
 - Hunter Communications Inc.
 - Nextnet Telecom Inc
 - Preferred Connections Inc NW
 - Tillamook Lightwave
 - Vertex Group Inc.
 - X5 PDX LLC
 - Yellow Knife Wireless



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- Non-Cooperative Providers
 - Blue Mt TV Cable Co
 - Cogent Communications Group
 - Gorge Ventures Inc
 - Meritel Group Inc
 - NextGen Internet Systems, Inc.

- Providers researched and identified as non-broadband providers can be viewed within the table at the end of this document.

- Other Provider Changes
 - Zayo Bandwidth Northwest Inc. has acquired 360networks and supplied supporting data that replaces them, which was ingested for this data submission.



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COVERAGE AREA CHANGES

- Coverage Footprint Reductions/Map Refinement –
 - Casco Communications (TT-10)
 - CenturyLink (TT-10)
 - Covad Communications Company (TT-10 and TT-20)
 - Douglas Services, Inc. (TT-70)
 - Gervais Telephone Company (TT-50)
 - Monitor Cooperative Telephone Company (TT-10)
 - Trans-Cascade Telephone (TT-10)
 - UIDC Telecom (TT-30)
- Technology Changes/Additions -
 - Charter Communications Inc. – Upgraded some of their TT-41 coverage to TT-40
- Coverage Footprint Expansion –
 - AT&T Mobility LLC (TT-80)
 - Cableone (TT-41)
 - Cellco Partnership and its Affiliated Entities (TT-80)
 - Chambers Cable (TT-41)
 - Clearwire (TT-80)
 - CoastCom, Inc (TT-50)
 - Comcast Cable Communications, LLC. (TT-40)
 - Covad Communications Company (TT-30)
 - Douglas Services, Inc. (TT-10)
 - Frontier Communications Northwest Inc. (TT-10)
 - Gervais Telephone Company (TT-10)
 - Helix Telephone Co. (TT-10)
 - Home Telephone Company (TT-10)
 - Leap Wireless International, Inc. (TT-80)
 - Monitor Cooperative Telephone Company (TT-50)
 - Oregon Telephone Corporation (TT-10)
 - Pendleton Fiber Company (TT-50)
 - Sprint Nextel Corporation (TT-80)
 - T-Mobile USA, Inc. (TT-80)
 - Wave Division Holdings LLC (TT-41)



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DATA CORRECTIONS

- Per NTIA's guidance on 02/21/12, we updated all Verizon speed data to support the business rules they laid out.

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All grantees should then apply the following business rule, as some of the speed ranges fall into two tiers:

3G Speeds:

Maximum and Typical download speed: 600 kbps to 1.4 Mbps (Speed Tier 3: 768 kbps – 1.5 Mbps)

Maximum and Typical upload speed: 500 kbps to 800 kbps (Speed Tier 2: 200 – 768 kbps)

4G LTE Speeds:

Max Adv Download Speed: 12 Mbps (Speed Tier 7: 10 Mbps – 25 Mbps)

Max Adv Upload Speed: 5 Mbps (Speed Tier 5: 3 Mbps – 6 Mbps)

Typical download speed: 8.5 Mbps (Speed Tier 6: 6 Mbps – 10 Mbps)

Typical upload speed: 2 Mbps to 5 Mbps (Speed Tier 5: 3 Mbps – 6 Mbps)

- The NTIA 3<sup>rd</sup> Party data review and summary were also compared to the product prior data submission and no changes were required. The Technology/Speed tier differences highlighted were reviewed with the providers and corrected, where needed.

## COMMUNITY ANCHOR INSTITUTION (CAI) DETAILS

### OVERALL STATISTICS

| Community Anchor Institution - Categories | Overall Count | Broadband Subscriber (1 or 2) | Trans Tech | Advertised Speed Down | Advertised Speed Up |
|-------------------------------------------|---------------|-------------------------------|------------|-----------------------|---------------------|
| Category 1 - School K through 12          | 1616          | 359                           | 349        | 318                   | 318                 |
| Category 2 - Library                      | 189           | 185                           | 185        | 177                   | 177                 |
| Category 3 - Medical/Healthcare           | 342           | 12                            | 9          | 5                     | 5                   |
| Category 4 - Public Safety                | 1135          | 238                           | 114        | 65                    | 65                  |
| Category 5 - Universities/Colleges        | 69            | 38                            | 37         | 34                    | 34                  |
| Category 6 - Other: Government            | 227           | 43                            | 38         | 34                    | 34                  |
| Category 7 - Other: Non-Government        | 19            | 3                             | 1          | 1                     | 1                   |
| <b>Total</b>                              | <b>3597</b>   | <b>878</b>                    | <b>733</b> | <b>634</b>            | <b>634</b>          |



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## CAI CHANGES

- No significant changes for the CAI layer this round.
- The CAI inventory was reviewed again against the database mentioned below for the following categories: Category 1: K-12 Schools, Category 2: Libraries and Category 5: Colleges  
These databases are as follows:
  - For K-12 institutions (CAI type 1) please add the NCES ID CCD ID value found here:  
<http://nces.ed.gov/ccd/bat/>
  - For Higher Education (CAI type 5) please add the NCES IPEDS ID value found here:  
<http://nces.ed.gov/ipeds/datacenter/>
  - For Libraries (CAI type 2) please. Combine (do not add) "FSCSKey" and "FSCs\_SEQ" from the "puout08av2000" file and place them here:  
<http://harvester.census.gov/imsls/data/pls/index.asp> (FYI the LIBID is your state's unique ID for libraries)

## SUBMISSION RECEIPT

### SUBMISSION RECEIPT RESULTS

- Attached are the results from the NTIA data submission receipt quality script.



OR\_2012\_3\_30.txt

- Error Report
  - The only items flagged in the submission receipt output are as follows, which has been verified as correct entries within the data submission. Please see the ReadMe text file for more details.
  - The exceptions NTIA noted during the 03/27/12 webinar are as follows:
    - Middle Mile Elevation Fails
    - Middle Mile Latitude/Longitude Fails
    - Middle Mile Ownership Fails
    - Address SpeetTier Fails
    - CAI Transtech Fail

Hyperlinks to Grantee Workspace in which the same issues were identified by other Grantees:

<https://sbdd-granteeworkspace.pbworks.com/w/page/50162555/December%202011%20Data%20Package%20Issues>

<https://sbdd-granteeworkspace.pbworks.com/w/file/49939449/December%202011%20Submission.zip>





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## HIGH-LEVEL SUMMARY

### DATA GATHERING

#### BROADBAND SERVICE AREAS, MIDDLE MILE AGGREGATION POINTS AND BROADBAND SERVICE OVERVIEW

The collection of Broadband Service Areas, Middle Mile Aggregation Points and Broadband Service Overview information is handled through the following Provider Outreach Process:

- Build and maintain an inventory of Broadband providers through currently known providers and research.
- The inventory and everyday interaction with providers is tracked using the Provider Catalog (PCat). Below are some examples of the web application, which has a shared access between our team and mapping partner (BroadMap).

| Company Information     |                                     | Edit                           | Clone                                                                                                                                                                       | History | AAD |
|-------------------------|-------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|
| Provider Name           | acmetech (All)                      | Source Name                    | acmetech                                                                                                                                                                    |         |     |
| Company Address         |                                     | Source Description             |                                                                                                                                                                             |         |     |
| Company PO Box          |                                     | Layer Name                     | TBD                                                                                                                                                                         |         |     |
| Company House Number    | 12345                               | Source Usage Type              | Tracking                                                                                                                                                                    |         |     |
| Company Street Name     | Acme Avenue                         | Source Provider Type           | BroadMap                                                                                                                                                                    |         |     |
| Company City Name       | Portland                            | Source Content Type            |                                                                                                                                                                             |         |     |
| Company Suite           |                                     | Source Restrictions            | <input type="checkbox"/>                                                                                                                                                    |         |     |
| Company Postal Boundary |                                     | Source Restriction Description |                                                                                                                                                                             |         |     |
| Company State           |                                     | TT Types                       | --None--<br>Asymmetric xDSL<br>Symmetric xDSL<br>Other Copper Wireline<br>Cable Modem-DOCSIS 3.0<br>Cable Modem-Other<br>Optical Carrier/Fiber to the End User<br>Satellite |         |     |
| Company Website         | http://www.acmebroadband.com        | Addr Level Data Provided       | <input type="checkbox"/>                                                                                                                                                    |         |     |
| Source ID               | 4999                                | Preferred Contact Method       |                                                                                                                                                                             |         |     |
| Child Source            | <input type="checkbox"/>            |                                |                                                                                                                                                                             |         |     |
| Parent URL              |                                     |                                |                                                                                                                                                                             |         |     |
| Parent Source ID        | 0                                   |                                |                                                                                                                                                                             |         |     |
| User Name               |                                     |                                |                                                                                                                                                                             |         |     |
| Password                |                                     |                                |                                                                                                                                                                             |         |     |
| Form 477 Interest       | <input type="checkbox"/>            |                                |                                                                                                                                                                             |         |     |
| Provider Portal Trained | <input checked="" type="checkbox"/> |                                |                                                                                                                                                                             |         |     |

| Contacts |          |           |         |         |       |          | New |
|----------|----------|-----------|---------|---------|-------|----------|-----|
| Type     | Name     | Preferred | Phone 1 | Phone 2 | Email | Position |     |
| P        | Sourcing |           |         |         |       |          |     |

| FRN Info      |     |            |
|---------------|-----|------------|
| Provider Name | DBA | FRN Number |
|               |     |            |



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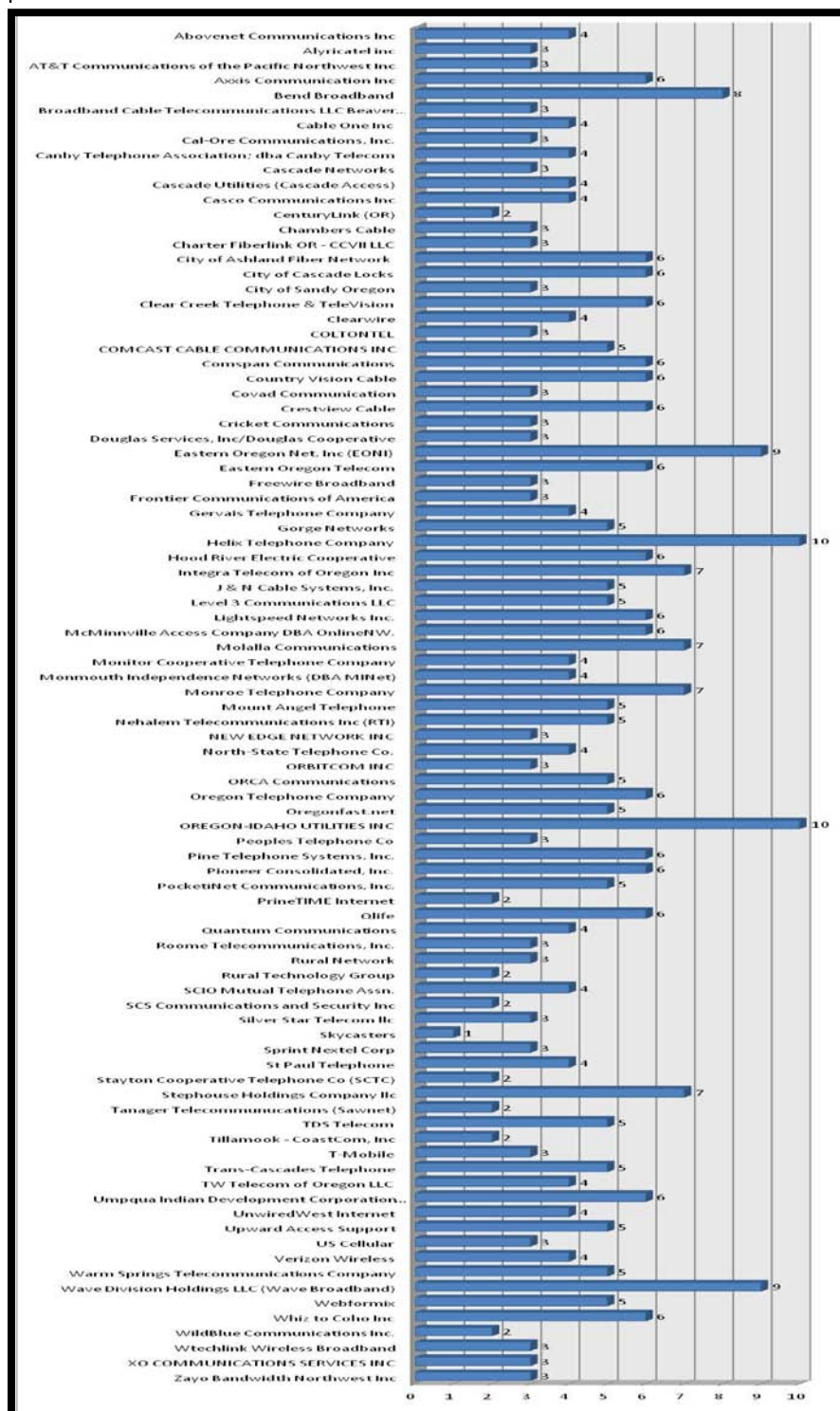
| Confidence                      |                          | New                     |                          |
|---------------------------------|--------------------------|-------------------------|--------------------------|
| TI Type                         | Confidence               | Last Modified           | Comment                  |
| <b>Status Tracking</b>          |                          |                         |                          |
| Non Facilities Based Provider   | <input type="checkbox"/> |                         |                          |
| Business Only Provider          | <input type="checkbox"/> |                         |                          |
| Reseller                        | <input type="checkbox"/> |                         |                          |
| NDA Review - Internal           | <input type="checkbox"/> |                         |                          |
| NDA Review - External           | <input type="checkbox"/> |                         |                          |
| <b>Service Provider Details</b> |                          |                         |                          |
| BroadMapper                     | --None--                 | BroadMap Status         | Unassigned               |
| Initial State Outreach Date     |                          | Initial Contact Vehicle |                          |
| Provider Origin                 |                          | Member Association      |                          |
|                                 |                          | Initial State Outreach  | <input type="checkbox"/> |
|                                 |                          | NDA Status              | --None--                 |
|                                 |                          | NDA Not Required        | <input type="checkbox"/> |
|                                 |                          | NDA Requested           | <input type="checkbox"/> |
|                                 |                          | NDA Exchanged           | <input type="checkbox"/> |
|                                 |                          | NDA Exchange Date       |                          |
|                                 |                          | NDA Signed              | <input type="checkbox"/> |
|                                 |                          | NDA Signed Date         |                          |
|                                 |                          | Date Loaded             |                          |
|                                 |                          | Source Closed Date      |                          |

| BDIA Delivery 0412     |                              | Edit                        |                               |
|------------------------|------------------------------|-----------------------------|-------------------------------|
| Status                 | --None--                     | Provider Data Reviewed      | <input type="checkbox"/>      |
| Outreach Date          |                              | Provider Data Reviewed Date |                               |
| Initial Response       |                              | FootPrint                   |                               |
| Meeting Date           |                              | MiddleMile                  |                               |
| No Update Date         |                              | Subscriber                  |                               |
| Waiting For Data Date  |                              | Provider Login              | <input type="checkbox"/>      |
| Data Received Date     |                              | Provider Login Date         |                               |
| Data Accepted Date     |                              |                             |                               |
| Source Ingested        |                              | Source Ingested Date        |                               |
| <b>Additional Data</b> |                              |                             |                               |
| Notes                  |                              |                             |                               |
| Next Steps             |                              |                             |                               |
| Inactive               | <input type="checkbox"/>     | Owner                       | briordan                      |
| Created By             | briordan 2011-06-13 12:06:35 | Last Modified By            | krousseau 2012-03-16 13:41:58 |



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- In order to encourage participation throughout the life of the program, we feel it's important to foster relationships with the providers and encourage a collaborative team effort between all parties for each data submission. The chart below represents that interaction count with each provider.





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- Update provider material that describes the data requirements and logistics for data transfer.
- Update Non-Disclosure Agreement (NDA) for use in the project, where applicable.
- Maintain multiple protocols for the provider to submit data, including Secure File Transfer Protocol (SFTP) technology when desired.
- Conduct one-on-one informational discussions with each provider to communicate the following:
  - Requirements of this project;
  - Broadband data required to support the product data model;
  - Submission protocols available;
  - Capability to validate how the supplied data is aggregated.
- Download/receive provider data.
- Establish a repeatable process with provider. Maintain provider communication, transaction and data handling records throughout the project (dates contacted, data received, etc.).

### **COMMUNITY ANCHOR INSTITUTION (CAI)**

The collection of CAI information is handled through the following CAI Collection Process:

- Collect and maintain inventory of CAIs through currently known CAIs, data mining, and research.
- Maintain web-based CAI portal for institutions to add or confirm attribution, location and enter broadband-specific information.
- Upload web-based data to Core Database for standardization.
- Perform internal cleansing, such as removing duplicate records, identifying gaps in broadband attribution and verifying category.
- Geocode CAI locations.
- Translate Core Database data to deliverable-ready format.
- Continue engagement with non-responsive institutions.



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## DATA INTEGRATION PROCESS

The data integration and processing mechanisms currently used allows for multiple types of inputs and result in a standardized output that meets the NTIA deliverable requirements. This flexible process supports data model changes and project-requested enhancements.

- Receive inputs from providers via submission protocols; upload into Sourcing Database and catalog with provider information.
- Review provider-supplied data for completeness and for potential discrepancies that require resolution prior to processing and flag as necessary.
- Categorize input into data-type category (addresses, block lists, paper maps, etc.).
- Standardize input based on data type within Staging Database.
- Create Compact Polygons (CP)—(internal methodology for generating area-based feature for coverage in Staging Database).
- Apply broadband attribution to CP; apply metadata to CP.
- Perform quality analysis of the CP against the source supplied to identify any completeness or accuracy issues.
- Request additional information from the provider if elements of coverage are missing or contain discrepancies. This is a second manual quality check to ensure data is complete.
  - Process coverage area to build the required NTIA data model layers.

With the deployment of the Provider Portal this round, the data collection and later validation process was streamlined allowing both activities to occur within a secure web application. The majority of the providers used this methodology as it supplies them with more visibility into how their data is being represented and gives them knowledge and ownership of their coverage representation. Below are some bullet points and supporting screen shots on how the portal is used.

- Each provider is assigned credentials with a strong password to ensure security measures are taken into consideration

Login

Username

Password

Login

- Collection and confirmation our contact, as well as the company's DBA Name and FRN accuracy

Contact and Provider Information

Please enter contact information and change provider information if incorrect:

Contact name:

Contact E-mail:

Contact Phone:

Doing Business As (DBA) Name:

FCC Registration Number (FRN):

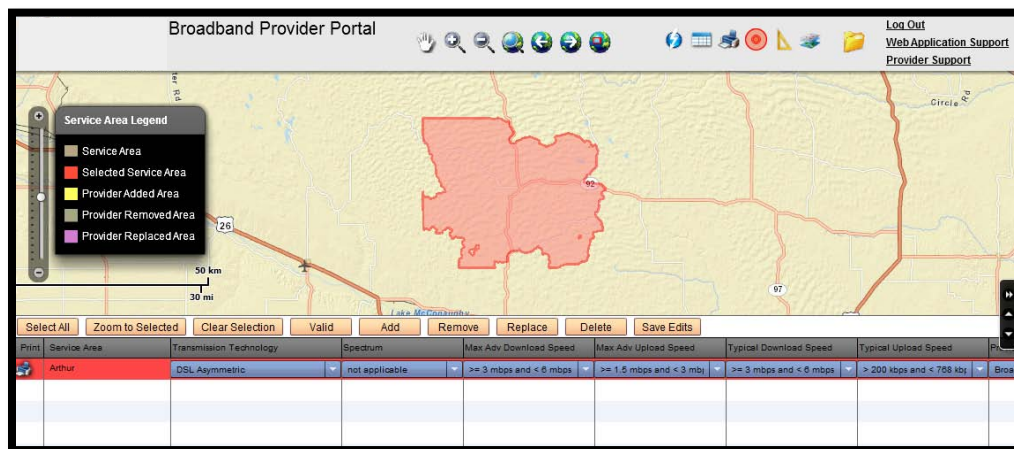
Please note the following:

- Contact info will only be stored when a record is saved
- Provider info will be applied to all service areas

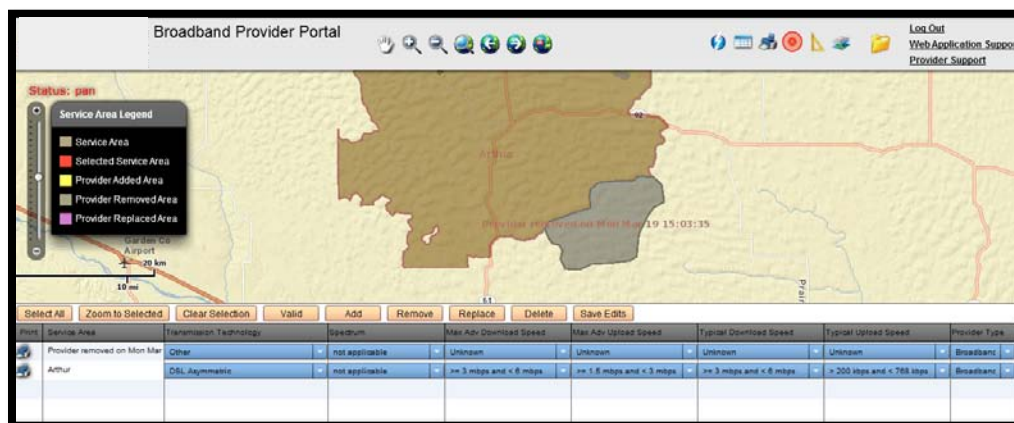


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- Capability to review and request changes to the coverage footprint



- The provider can Add/Remove portions, or all, of the footprint requesting that their footprint be increased or refined.







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- Middle Mile and Average Weight Nominal Speed (AWNS) collection and validation

**Broadband Provider Portal**

Status: Click to select pushpin

**Service Area Legend**

- Service Area
- Selected Service Area
- Provider Added Area
- Provider Removed Area
- Provider Replaced Area

**Middle Mile Information Editor**

Ownership:

Back-haul Capacity:

Back-haul Type:

Elevation (feet):

State Location:

Location Valid:

| Service Area | Transmission Technology | Spectrum       | Max Adm Download Speed        | Max Adm Upload Speed            | Typical Download Speed        |
|--------------|-------------------------|----------------|-------------------------------|---------------------------------|-------------------------------|
| Arthur       | DSL, Asymmetric         | not applicable | up to 3 mbps and up to 6 mbps | up to 1.5 mbps and up to 3 mbps | up to 3 mbps and up to 6 mbps |

**Display Information**

Display Middle-Mile information by hovering over the Middle-Mile location with the cursor.

**Edit Information**

Edit Middle-Mile information by clicking on the Middle-Mile location.

**Validate Information**

**Add Middle-Mile location on map:**

Select Find Address or Pushpin Location

☐ Find Address ☐ Pushpin Location

**AWNS**

**AWNS Settings for 'DSL Symmetric' in Arthur County**

Change the advertised download speeds and/or change the number of subscribers and click 'Calculate AWNS'

Advertised Download kbps #1:  # of Subscribers:

Advertised Download kbps #2:  # of Subscribers:

Advertised Download kbps #3:  # of Subscribers:

Advertised Download kbps #4:  # of Subscribers:

Advertised Download kbps #5:  # of Subscribers:

AWNS in kbps:

- File upload functionality to support providers that would prefer a shapefile, spreadsheet, PDF, KMZ/KML file be used to reflect changes for the data round



Welcome

1 Choose a file to upload:    (50MB max)

\*Uploading a new file with the same name as an existing file will overwrite the existing file

Uploaded Files

2 Please click here to auto-notify BroadMap of your uploads, thanks.



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- Once the provider has review completed changes to their coverage, middle mile and AWNS, then can validate them all by signing off that everything is accurate.

## DATA VALIDATION AND VERIFICATION

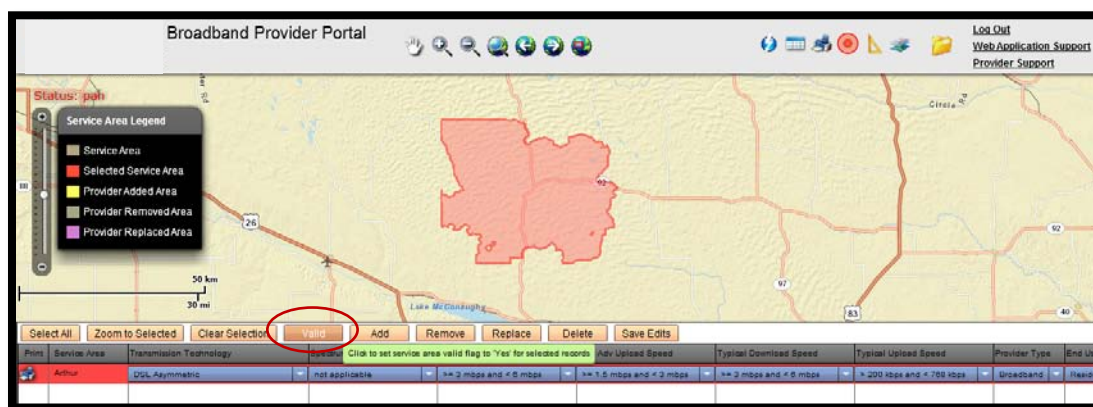
Following the creation of the product, process steps within Data Validation and Verification occur. To ensure the data collected and processed is as accurate and comprehensive as possible, provider validation and internal verification activities are employed. After the initial mapping of providers' coverage areas and serviceability claims, additional reviews are performed using the methods described in the subsections below in order of action (**Broadband Provider Validation, Third-Party Data Verification, Public Verification, and Confidence Values**).

### BROADBAND PROVIDER VALIDATION—PROVIDER PORTAL APPLICATION

Providers are trained on and requested to use a secure interactive web application to review their current coverage area(s) and supporting broadband attribution and validate their data or submit change requests to update their data. All provider change requests go through the **Data Integration Process** and are reviewed with the provider to complete validation.

With the latest released of the Provider Portal, validation on the coverage area, middle mile and average could be completed individually. Validation examples are as follows:

- Coverage validation can be done on one record/footprint at a time or by selecting footprints and selecting the 'Valid' button. The provider could also print off or download their coverage for their own tracking purposes.

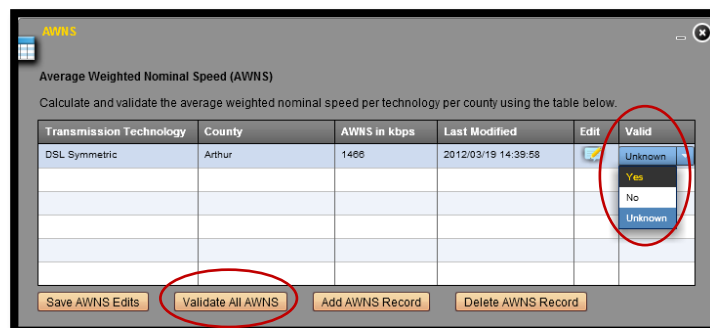
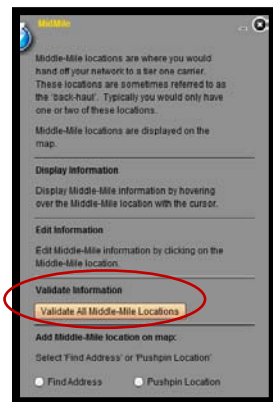






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- Middle Mile & AWNS Validation



All validation results are tracked internally through our Validation Table, which also improves the overall **Confidence Value** as mentioned below.

### THIRD-PARTY DATA VERIFICATION

The coverage is visually and programmatically compared against third-party data as new or updated coverage area information is received and ingested from providers. All anomalies identified during this analysis are reviewed with the providers.

| 3 <sup>rd</sup> Party Source Name | Source Type                                         | Verification Type                                                                                                                                                                                         |
|-----------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pitney Bowes (PBBI)               | Exchange Info Plus<br>(Central Office Locations)    | Exchange datasets are used to verify the following Transmission Technologies (TT): Asymmetric xDSL (10), Symmetric xDSL (20), Other Copper Wireline (30), and Optical Carrier/Fiber to the End User (50). |
| Media Prints                      | Cable Boundaries                                    | Used to verify the following TT: Cable Modem—DOCSIS 3.0 (40) and Cable Modem—Other (41)                                                                                                                   |
| American Roamer                   | Wireless Coverage Patterns (EVDO, GPRS, WISP, HSPA) | Used to verify the following TT: Terrestrial Fixed Wireless—Unlicensed (70), Terrestrial Fixed Wireless—Licensed (71) and Terrestrial Mobile Wireless (80)                                                |
| Comsearch                         | Wireless Spectrum Holdings and Tower Data           | Used to verify the following TT: Terrestrial Fixed Wireless—Unlicensed (70), Terrestrial Fixed Wireless—Licensed (71) and Terrestrial Mobile Wireless (80)                                                |



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## **PUBLIC VERIFICATION – CROWD SOURCING**

Since the last data submission, we have improved the public website - interactive map to collect more detailed feedback on the represented broadband coverage areas. The feedback is also displayed on the map itself, which we're currently using as discussion points with providers during the outreach phases of each data submission. The data collected can be seen at the following path:

Hyperlink: <http://broadband.oregon.gov/StateMap/index.html>

## **CONFIDENCE VALUES**

All verification, validation and manual quality review results are tracked by provider/technology type and stored and maintained within a **Validation table**. A confidence value is assigned, based on internal assessments of the collected information, to highlight the provider coverage areas and/or attributions that would benefit from further investigation and/or enhancements.

With the continued efforts on provider validation, 3<sup>rd</sup> party verification and the release of the public interactive map with feedback collection functionality, the confidence values will be utilized further to identify specific areas in need of attention. We're currently at the initial stages of this initiative, but will have a more complete picture in time for the next data submission.

## **QUALITY CONTROL**

Following collection, processing and analysis of the provider and CAI data, the product is checked manually and algorithmically against the NTIA data model. Some of the items included within these checks are:

- Format correctness;
- Table and field structure;
- Valid values, including default values, where applicable;
- Geographic extent and topology errors.

Prior to data submission, another quality control script supplied by NTIA is run. This script, SBDD\_CheckSubmission.py, creates an output in text form that is required to be submitted along with the final deliverable. All errors must come up clean, unless otherwise specified by NTIA.

List of errors within the script, which will be listed as exceptions, can be found on PB Works – Grantee Workspace at the following link:

<https://sbdd-granteeworkspace.pbworks.com/w/page/50162555/December%202011%20Data%20Package%20Issues>

<https://sbdd-granteeworkspace.pbworks.com/w/file/49939449/December%202011%20Submission.zip>



**BROADMAP**  
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## DETAILED PROCESS REVIEW

To review the detailed process, please review the attached object:



BMap\_ProcessDetails  
\_2012\_04\_01.docx

## PROVIDERS RESEARCHED

Below is a list of providers that were researched and contacted, but identified as non-broadband providers and didn't require inclusion within the data submission. Some may be due to different naming conventions or inaccurate FRN/DBA names and were therefore considered a closed source.

|                                           |                                             |                                   |
|-------------------------------------------|---------------------------------------------|-----------------------------------|
| 1-800-RECONEX INC                         | ForesTel, LLC                               | NORTHSTAR TELECOM INC             |
| 800 RESPONSE INFORMATION SERVICES LLC     | France Telecom Corporate Solutions, LLC     | NORTHWEST OPEN ACCESS NETWORK     |
| ACCESS ONE INC                            | FREEDOMSTARR COMMUNICATIONS INC             | NOS COMMUNICATIONS INC            |
| ACCESS POINT INC                          | FRONTIER TELENET                            | NOSVA LIMITED PARTNERSHIP         |
| Access2Go                                 | GCI COMMUNICATION CORP                      | OLS INC                           |
| ACCESSLINE COMMUNICATIONS CORPORATION     | GLOBAL CAPACITY GROUP INC                   | ONESUITE CORP                     |
| ACN COMMUNICATION SERVICES INC            | Global Connection Inc. of America           | ONLINE NORTHWEST                  |
| ADVANCED TEL INC                          | GLOBAL CROSSING LOCAL SERVICES INC          | OPERATOR SERVICE CO               |
| ADVANCED TELCOM INC                       | GLOBAL CROSSING NORTH AMERICAN NETWORKS INC | OPEX COMMUNICATIONS INC           |
| ADVANTAGE TELECOMMUNICATIONS CORP         | GLOBAL CROSSING TELECOMMUNICATIONS INC      | ORBITCOM INC                      |
| AFFINITY NETWORK INC                      | GLOBAL CROSSING TELEMAGEMENT INC            | OREGON GOVWORKS                   |
| AFFORDABLE VOICE COMMUNICATIONS INC       | GLOBAL TEL*LINK CORP                        | OREGON HEALTH NETWORK             |
| AFN, Inc.                                 | GLOBALCOM INC                               | OREGON MUNICIPAL ISP COALITION    |
| AGM TELECOM CORPORATION                   | GLOBALSTAR USA LLC                          | OREGON TELECOM INC                |
| AIRESPRING INC                            | GO SOLO TECHNOLOGIES INC                    | Outdoor DAS - American Tower Corp |
| AIRNEX COMMUNICATIONS INC                 | GOLD LINE TELEMAGEMENT INC                  | Pac-West Telecomm, Inc.           |
| ALLIANCE GLOBAL NETWORKS LLC              | Granite Telecommunications                  | PACIFIC-SOUTH TELECOM INC         |
| ALLIANCE GROUP SERVICES INC               | GROUP SIX COMMUNICATIONS LLC                | PACIFIC NORTHWEST TELCO, INC.     |
| AMERICA NET LLC                           | GTC TELECOM CORP                            | Pacific West                      |
| AMERICAN PHONE SERVICES CORP              | HARBOR COMMUNICATIONS LLC                   | PAETEC Communications, Inc.       |
| American Telecommunications Systems, Inc. | HickoryTech/Eventis Telecom                 | Peerless Network of Oregon, LLC   |
| AMERICOM TECHNOLOGIES INC                 | HORIZON TELECOM INC                         | PELZER COMMUNICATIONS CORPORATION |
| AMERIVISION COMMUNICATIONS INC            | HUGHES COMMUNICATIONS INC / HNS LICENSE LLC | PIC Professional Services         |
| ANDIAMO TELECOM LLC                       | HYPERCUBE TELECOM LLC                       | PNG TELECOMMUNICATIONS INC        |
| Applegate Broadband LLC                   | iBasis                                      | PORTLAND STATE UNIVERSITY         |
| APPLEWOOD COMMUNICATIONS CORPORATION      | IBASIS RETAIL INC                           | PREFERRED LONG DISTANCE INC       |



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|                                                   |                                                        |                                                           |
|---------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------|
| ASSOCIATED COOPERATIVE TELECOMMUNICATIONS INC     | IBFA ACQUISITION COMPANY LLC                           | PRIME TIME VENTURES LLC                                   |
| ASSOCIATED NETWORK PARTNERS INC                   | IDT AMERICA CORP                                       | PRIMUS TELECOMMUNICATIONS INC                             |
| ATC OUTDOOR DAS LLC                               | INDIGENOUS TELEPHONE INC                               | Priority ONE Telecommunication, Inc.                      |
| ATL COMMUNICATIONS INC                            | INETWORKS GROUP INC                                    | PRIORITYONE TELECOMMUNICATIONS INC                        |
| ATX LICENSING INC                                 | INFOTELECOM LLC                                        | PUBLIC COMMUNICATIONS SERVICES INC                        |
| BANDWIDTH.COM CLEC LLC                            | INLAND DEVELOPMENT CORPORATION                         | PULSE TELECOM LLC                                         |
| BCN TELECOM INC                                   | INMARK INC                                             | QUANTUMSHIFT COMMUNICATIONS INC                           |
| BELLSOUTH LONG DISTANCE INC                       | Inmate Calling Solutions, LLC                          | QUASAR COMMUNICATIONS CORPORATION                         |
| BETTERWORLD TELECOM LLC                           | INMATE COMMUNICATIONS CORP                             | Radix Networks                                            |
| BG ENTERPRISES INC                                | INTEGRATED SERVICES INC A NEVADA CORPORATION           | REDUCED RATE LONG DISTANCE LLC                            |
| BIGREDWIRE.COM INC                                | INTELEPOINT LLC                                        | RELIANT COMMUNICATIONS INC                                |
| BLUEBIRD WIRELESS BROADBAND SERVICES LLC          | INTELLETRACE INC                                       | RIDLEY TELEPHONE CO LLC                                   |
| BROADBAND DYNAMICS LLC                            | INTELLICALL OPERATOR SERVICES INC                      | RRV ENTERPRISES INC                                       |
| BROADCORE                                         | INTELLIGENT COMMUNITY SERVICES INC                     | Rural Services Company; dba Ulatilla Electric Cooperative |
| BROADVIEW NETWORKS INC                            | Intlepoint, LLC                                        | Sage Telecom, Inc.                                        |
| BROADWING COMMUNICATIONS LLC                      | INTRADO COMMUNICATIONS INC                             | Salem Hospital Regiona Health Center                      |
| BT COMMUNICATIONS SALES LLC                       | IPC NETWORK SERVICES INC                               | SBC LONG DISTANCE LLC                                     |
| BUDGET CALL LONG DISTANCE INC                     | J IRWIN COMMUNITY INFORMATICS CONSULTING               | SHARED COMMUNICATIONS INC                                 |
| BUDGET PREPAY INC                                 | KANSAS INDEPENDENT TELECOMMUNICATIONS LLC              | SILV COMMUNICATION INC                                    |
| BUEHNER FRY INC                                   | KDDI AMERICA INC                                       | SMARTRAK INCORPORATED                                     |
| BULLSEYE TELECOM INC                              | KRUSE - MERCANTILE PROFESSIONAL SUITES                 | SNAKE RIVER PCS                                           |
| BUSINESS DISCOUNT PLAN INC                        | Lane Telecommunications Services, Inc.                 | SNET AMERICA INC                                          |
| BUSINESS NETWORK LONG DISTANCE INC                | LCR TELECOMMUNICATIONS LLC                             | SNIP LINK LLC                                             |
| BUSINESS TELECOM INC                              | LDMI TELECOMMUNICATIONS INC                            | Spacenet, Inc.                                            |
| CALIFORNIA OREGON BROADCASTING INC                | LEGACY LONG DISTANCE INTERNATIONAL INC                 | Sprinfild Utility Board                                   |
| CALL PLAN USA INC                                 | LEGENT COMMUNICATIONS CORP                             | STARTEC GLOBAL OPERATING COMPANY                          |
| Cause Based Commerce Inc., - dba The Sienna Group | LEWIS & CLARK COLLEGE                                  | STELERA WIRELESS                                          |
| CBEYOND COMMUNICATIONS LLC                        | LIGHTYEAR NETWORK SOLUTIONS LLC                        | Sterling Communications                                   |
| CCI NETWORK SERVICES LLC                          | Lincoln County                                         | STI PREPAID LLC                                           |
| CENTEL COMMUNICATIONS INC                         | LONG DISTANCE CHARGES INC                              | SUNGARD NETWORK SOLUTIONS INC                             |
| CENTRAL TELECOM LONG DISTANCE INC                 | LONG DISTANCE CONSOLIDATED BILLING CO                  | TALK AMERICA INC                                          |
| CENTRAL TELEPHONE INC                             | LOTTEL INC                                             | TCAST COMMUNICATIONS INC                                  |
| CIMCO COMMUNICATIONS INC                          | LSSI DATA CORPORATION                                  | TCG JOINT VENTURE HOLDINGS INC                            |
| CINCINNATI BELL ANY DISTANCE INC                  | MAIN STREET TELEPHONE CO                               | TECHNOLOGY SERVICES INC                                   |
| CITY OF EUGENE                                    | MALHEUR HOME TELEPHONE CO                              | TEL WEST COMMUNICATIONS LLC                               |
| CITY OF KLAMATH FALLS                             | Master Call Communications                             | TELCO PARTNERS INC                                        |
| CITY OF PORTLAND                                  | MATRIX TELECOM INC                                     | Telecare, Inc.                                            |
| Clear World Communication Corporation             | MCGRAW COMMUNICATIONS INC                              | Telecom Management - dba Pioneer LD                       |
| CLOSECALL AMERICA INC                             | MCI COMMUNICATIONS SERVICES INC                        | TELECONNECT LONG DISTANCE SERVICES & SYSTEMS CO           |
| COAST INTERNATIONAL INC                           | MCIMETRO ACCESS TRANSMISSION SERVICES LLC              | TELENATIONAL COMMUNICATIONS INC                           |
| COLUMBIA BROADBAND INC                            | MCLEODUSA TELECOMMUNICATIONS SERVICES INC              | TELEQUALITY COMMUNICATIONS INC                            |
| COMCAST BUSINESS COMMUNICATIONS LLC               | MD Communications                                      | TELMEX USA LLC                                            |
| COMCAST PHONE OF OREGON LLC                       | Metropolitan Telecommunications of Oregon - dba MetTel | TELRITE CORPORATION                                       |



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|                                              |                                                   |                                                 |
|----------------------------------------------|---------------------------------------------------|-------------------------------------------------|
| COMMPARTNERS LLC                             | MIDCOLUMBIA.NET                                   | TELTRUST CORPORATION                            |
| COMMUNICATIONS NETWORK BILLING INC           | MIDVALE TELEPHONE EXCHANGE INC                    | THRESHOLD COMMUNICATIONS INC                    |
| ComTech21, LLC                               | Miracle Communications                            | TIME WARNER CABLE LLC                           |
| COMTEL TELCOM ASSETS LP                      | Mitel NetSolutions, Inc.                          | TON SERVICES INC                                |
| CONSUMER TELCOM INC                          | MOBILITIE LLC                                     | TOTAL CALL INTERNATIONAL INC                    |
| CONVERGIA INC                                | MOMENTUM TELECOM INC                              | TOTAL HOLDINGS INC                              |
| COOPERATIVE COMMUNICATIONS INC               | Monroe Area Communications                        | TOUCHTONE COMMUNICATIONS INC                    |
| Corban Technologies, Inc.                    | MULTILINE LONG DISTANCE INC                       | TRANS NATIONAL COMMUNICATIONS INTERNATIONAL INC |
| CORDIA COMMUNICATIONS CORP                   | MY TEL CO INC                                     | TRANSPAC TELECOM INC                            |
| CORE DIGITAL SERVICES                        | NATIONAL ACCESS LONG DISTANCE INC                 | TRANSUNION TELEDATA LLC                         |
| CoVista                                      | National Brands, Inc.                             | Tri-M Communications - dba TCM Communications   |
| COVISTA INC                                  | NATIONAL DIRECTORY ASSISTANCE LLC                 | TRIBAL ONE BROADBAND TECHNOLOGIES               |
| CTC Communications Corp                      | NationalComtel                                    | TTI NATIONAL INC                                |
| CTI LONG DISTANCE INC                        | NATIONWIDE LONG DISTANCE SERVICE INC              | U S TELECOM LONG DISTANCE INC                   |
| CUSTOM TELECONNECT INC                       | Navigator                                         | U.S. Cellular                                   |
| CYPRESS COMMUNICATIONS OPERATING COMPANY LLC | NECC Telecom                                      | UCN INC                                         |
| DABNEY/STRAWN LLC                            | NET ONE INTERNATIONAL INC                         | UNI-TEL COMMUNICATIONS GROUP INC                |
| DCT Telecom Group, Inc.                      | NET TALK.COM INC                                  | UNITED AMERICAN TECHNOLOGY INC                  |
| DDD CALLING INC                              | NETLOJIX TELECOM INC                              | UNITED COMMUNICATIONS INC                       |
| DELTACOM INC                                 | NETWORK BILLING SYSTEMS LLC                       | UNITED TELECOM INC                              |
| DELTEL INC                                   | NETWORK COMMUNICATIONS INTERNATIONAL CORP         | UTILITY TELEPHONE INC                           |
| DIGIZIP.COM INC                              | NETWORK ENHANCED TECHNOLOGIES INC                 | Value-Added Communications, Inc.                |
| DIRECT COMMUNICATIONS LONG DISTANCE INC      | Network Operator Services                         | VANCO DIRECT USA LLC                            |
| DSLnet Communications, LLC                   | NETWORK SERVICE BILLING INC                       | VANCO US LLC                                    |
| EASTON TELECOM SERVICES LLC                  | NETWORK US INC                                    | VIDAFON INC                                     |
| ELECTRIC LIGHTWAVE LLC                       | NETWORKIP LLC                                     | VOICECOM TELECOMMUNICATIONS LLC                 |
| Ektopia Communications, LLC                  | NEUTRAL TANDEM-OREGON LLC                         | WESTERN INDEPENDENT NETWORKS INC                |
| ENCOMPASS COMMUNICATIONS LLC                 | NEW CENTURY TELECOM INC                           | WHOLESALE CARRIER SERVICES INC                  |
| ENHANCED COMMUNICATIONS GROUP LLC            | NEW HORIZONS COMMUNICATIONS CORP                  | WILLAMETTE UNIVERSITY                           |
| Enhanced Communications Network              | NEWPATH NETWORKS LLC                              | WILTEL COMMUNICATIONS LLC                       |
| ENTRIX TELECOM INC                           | NextGNetworks                                     | WINDSTREAM COMMUNICATIONS INC                   |
| ERNEST COMMUNICATIONS INC                    | NEXLINK WIRELESS INC                              | WIRED OR WIRELESS INC                           |
| ESCHELON TELECOM OF OREGON INC               | NEXUS COMMUNICATIONS INC DBA NEXUS-TSI            | WORKING ASSETS FUNDING SERVICE INC              |
| Evercom Systems, Inc.                        | NEXUSTEL LLC                                      | WORLD COMMUNICATIONS INC                        |
| Extenet Systems                              | NiTel                                             | WORLDNET COMMUNICATION SERVICES INC             |
| Fiber South Consortium                       | NOBELTEL LLC                                      | X2COMM INC                                      |
| FIBERLINK LLC                                | NobelTel, LLC                                     | YESTEL USA INC                                  |
| FIRST CHOICE TECHNOLOGY INC                  | Norlight, Inc.                                    | YMAX COMMUNICATIONS CORP                        |
| FIRST COMMUNICATIONS LLC                     | NORSTAR TELECOMMUNICATIONS LLC                    | ZEUS TELECOMMUNICATIONS LLC                     |
| FLATEL INC                                   | NORTH COUNTY COMMUNICATIONS CORPORATION OF OREGON |                                                 |