



## ***Data Submission Methodology Update (Round 7, December 2012)***

### ***Provider Data Submission:***

The Utah Broadband Project (UBP) communicated with 51 of 54 identified relevant broadband providers that offer services within Utah. Of the 54, 28 providers updated data this round, 19 confirmed no updates, 3 providers didn't meet the deadline to send us updates (AFConnect, Cedar Valley Net, TXOX), 1 provider (Zayo) declared itself a non-relevant provider, and 3 providers did not respond (Baja Broadband, HNS License Sub, and TKS Inc.), despite repeated attempts to engage with these providers. In the case of the non-responding providers, it is assumed that their coverage area and speed remained unchanged.

Again, this round, the Utah Broadband Project invited broadband providers to submit designated commercial service separately from residential/consumer service. We used the NTIA Data Model Guidelines to determine when to mark census blocks and road segments service with an end user category of "Governmental, Small Business, Medium, or Large Enterprise". Several providers clarified their different service offerings to commercial and residential customers.

Three new providers were engaged: AFConnect, Connex and Cedar Valley Net. Data was received from Connex and is included in this submission. Data is expected from Cedar Valley Net and AFConnect for the next submission round.

Coverage data was edited to match the 2012 TIGER Census Utah State Boundary. This change mainly affected satellite provider's coverage areas.

### ***Community Anchor Data Submission:***

The Community Anchor Institutions data layer has been completely rebuilt for this submission round. It includes the majority of locations Utah considers as Community Anchor Institutions. Numerous broadband attributes including technology of transmission, broadband speeds and public WiFi availability have been updated or added for locations.

Where possible the CAID has been populated for Libraries to include "FSSCKEY" and "FSCSSEQ" values in addition to "NCES" codes for Schools.

Some overlap between the Utah Education Network (UEN), The State's Wide Area Network (WAN) and other Community Anchor Institution locations is expected as, in a few cases, offices within the same organization and/or facility are served by different networks. Effort has been taken to reduce duplicate CAI data reported from more than one source at other locations.

UBP has run into a considerable amount of pushback from various Community Anchor Institutions, in

particular from Federal government offices, to disclose broadband subscription information. In some cases we were only provided technology of transmission information and a confirmation that the location has broadband speeds greater than 200 Kbps up and 768 Kbps down.

## ***Map Disclaimer***

Broadband service availability and characteristics are depicted as derived from data assembled by the Utah Broadband Project. Data sources include biannual broadband service provider submissions and publicly available sources. Data has been modified, where necessary, to meet broadband mapping standards set by the National Telecommunications and Information Administration (NTIA).

Broadband service availability is displayed per NTIA specifications which include technology and speed categories and the generalization of non-wireless service availability information to either U.S. Census blocks (where smaller than 2 sq. miles) or road segments.

Speeds shown are the 'maximum advertised' for the geographic features depicted, and must exceed 0.768 Mbps download and 0.2 Mbps upload (NTIA minimum definition of broadband) to be included. Actual speeds may vary within and along census blocks and roads due to the granularity and currency of the data, technological limitations, and service plan limitations. Users of this data and associated map visualizations are encouraged to inquire directly to providers for current service availability and speed.

All information presented on the Utah's interactive broadband map is for general reference purposes only and may contain errors and omissions. The State of Utah makes no warranty with respect to information available, express or implied, including but not limited to the fitness for use for a particular purpose.

The Utah Broadband Project welcomes comments: [broadband@utah.gov](mailto:broadband@utah.gov).

## ***Map Data Description***

All broadband mapping data either is sourced directly from a broadband provider, or from working directly with a provider. Utah has 100% current or anticipated participation from the 54 providers identified to date.

Wireless broadband internet data is mapped using coverage area footprints derived from analyzing antennae location, signal strength and terrain. Wireline broadband internet data is mapped using 2010 census blocks for blocks less than two square miles in area, and road segments in cases of larger census blocks.

Once a provider's broadband coverage is initially mapped, data updates take several forms including GIS files, written descriptions, provider created maps, and verbal and written discussions.

Community Anchor Institution locations are mapped using supporting resources from Utah's State Geographic Information Database (SGID). Broadband Internet subscription information comes from

a variety of sources including the Utah Education Network, the State of Utah Department of Technology Services, the Utah Telehealth Network, and direct phone or email correspondence with onsite staff at identified facilities.

Confidential data not shown on the map is also collected by the Project, and submitted to the NTIA. This information includes a limited number of middle and last mile broadband infrastructure points.

## ***Validation***

The Project's data submission is compliant with the SBDD v.10.1 Data Transfer Model and the [State Broadband Data and Development NOFA](#). All broadband data that does not agree with the allowable values and ranges in the Data Transfer Model is studied and adjusted to agree with the data model or noted as exceptions as appropriate.

Another important part of data validation is the project's data intake and processing flow. In summary, our data flow consists of:

- Initial evaluation of data submission and initial documentation.
  - Recordation what was submitted by provider.
  - Verification that the data update is usable.
- Make data submission updates and put the data in the NTIA data model.
- Detailed evaluation and documentation.
  - Document details of the data and the data processing steps.
  - Review the provider's changes from previous submissions for consistency between what is in the data and what discussions have been made with providers.
- Create data feedback for provider to review.

Aerial photography, address location services, census block geometry, and road segment geometry used for broadband service mapping and for quality control of the broadband data are from public domain resources in the [SGID](#).

## ***Verification***

All Broadband data received by the project is reviewed for overall verification. Besides our initial verification, other sample verification methods are listed below.

- The project maintains archives and documentation of a given provider's data over time, and changes are noted and verified as to their plausibility. All data related interaction with a provider since the project began in June 2010 is also documented. This provider submission history is periodically referred to in order to guide correspondence needs and special handling of the submission data.

- Visual inspection and comparisons, to past submissions and other providers data, are performed to evaluate spatial and attribute logic
- Provider websites are explored to confirm maximum advertised speeds.
- For each provider's geographical extent, examination of areas that are not served or are underserved is completed and discussed with the provider for accuracy.
- Every time the project receives updates from a broadband provider, providers are asked to review the update to verify that the data or updates have been prepared accurately. The biggest source of feedback for providers is being able to interact one on one with their specific data on the Utah Broadband Interactive Map. ***The February release of the Utah Broadband Interactive Map allows for custom URLs to be made that allow entry to the map with only specific speeds, tech types, providers, and geographic extent shown. This allows a provider specific URL to be passed back to the provider for review of their data*** ([example](#)). Providers can do this on their own or with the project during a scheduled conference.
- Local telecom territories are used to verify reported DSL coverage areas.
- Wireless Drive Test: In July 2011, the Utah Broadband Project contracted with Isotrope LLC, a Massachusetts-based company, to perform a drive test to assess wireless broadband services and capabilities throughout the state. The drive test data, collected by traversing over 6000 miles of the state , provides a snapshot in time of mobile broadband speeds, signal strength and technologies. After being collected, the drive test data was used to assess broadband provider data and was used in verification discussions with wireless providers. It was also provided to all wireless providers for their own use.
- Prior to July 2011, commercial wireless data such as the American Roamer data was used to verify reported wireless coverage areas.
- In order to map the wireless data more accurately, whenever possible the project mapping team has worked with providers to acquire wireless coverage areas based on signal propagation modeling. If a provider does not have the capacity to submit a propagated coverage area, the project encourages providers to provide tower locations and antenna locations and specifications to the project mapping team that are then used for a viewshed to create a propagated coverage area.

### ***Additional Utah Broadband Maps and Data Resources***

The Utah Broadband Project maintains additional maps beyond the online interactive map. These are available on request and include maps of broadband coverage availability, best available speed, and highest available speeds and technologies in Utah. The project is also willing to work on other specific mapping requests.

### ***About the State Level Broadband Map***

The [Utah Broadband Interactive Map](#) was developed and is hosted by the Utah Automated

Geographic Reference Center (AGRC) utilizing data compiled by the Project from broadband providers and public sources, including Utah's State Geographic Information Database (SGID) which is utilized extensively for locating addresses, locating geographic places, and displaying background maps.

## ***Goals***

- The map attempts to provide consumers, community leaders, and broadband providers with a comprehensive map-based view of non-confidential data compiled by the Utah Broadband Project.
- The map is also meant to be used by policy makers or policy maker supporters, such as the Utah Broadband Advisory Council.
- The map serves as a basis of discussion with Broadband Providers to verify accuracy of data.
- The data on the map is used in our twice yearly submission to the NTIA.