



Data Submission Methodology Update (Round 8, July 2013)

Provider Data Submission:

The Utah Broadband Project (UBP) communicated with 54 of the 56 identified relevant broadband providers that offer services within Utah. Of the 56, 32 providers updated data this round, 18 confirmed no updates, 3 providers didn't meet the deadline to send us updates (AFConnect, Txox, and the Ute Indian Tribe), and 3 reported they are no longer in service and have been acquired by other companies (Altazip, Bresnan, and Skywire). For the latter three former providers, the service area is now reflected in the acquiring providers' service data.

There are 4 new broadband providers in the dataset this round that were included as having updated their data: Farmer's Telephone, that serves Hovenweep National Monument near the Colorado/Utah border in San Juan county, Neighborhood ISP, a WISP in Utah County, Wildfire Broadband, who acquired Skywire and Altazip, and Charter Communications, who acquired Bresnan Communications.

There are also 5 new providers identified by the Project that are still in the process of being engaged and determining relevancy: First Digital, I Web Conn, Interlinx, PDQ Xchange, and SenaWave. Finally, there are two providers, Choice NTUA (which will likely be providing service to the Navajo Reservation by next round) and Vivint (also expected next round) that are not yet not providing and/or advertising service.

During the Round 8 submission, the Utah Broadband Project continued to invite 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.

The Utah Broadband Project completed the first version of a statewide address point dataset this past June. This new data resource was put to work in the verification activities conducted together with many rural DSL providers including (Allwest, Beehive, Centracom, Emery, South Central, and Strata as well as NeboNet, a fixed wireless provider). The UBP mapping staff created PDF map books of rural provider DSL coverage with address points, territory information, and other geographic context ([example map](#)). UBP staff worked with these providers onsite and virtually to

review the existing coverage and speed data, especially in the context of unserved address points, that were likely to be populated (2010 census data and aerial photos were used to highly these address points). The providers were very receptive to the finer scale maps and hands on review, and the speed and coverage data in the Round 8 submission should be further refined as a result.

Community Anchor Data Submission:

For this submission the focus for the Community Anchor Institutions layer has mainly been on school broadband information. We have incorporated updates provided by the Utah Education Network (UEN) and have added additional schools and locations served by UEN broadband connectivity via circuits managed within the local school district. To accomplish this, IT managers from targeted school districts were contacted about the broadband capabilities of each school in their district not reported in the UEN data. In a few cases, schools districts reported Gigabit fiber connections for all schools. In this case only school facilities found National Center for Educational Statistics (NCES) schools list (<http://nces.ed.gov/>) were populated as having Gigabit connections and a transmission technology of optical fiber. Extra attention was also put on populating CAIID codes for schools and libraries.

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.

Map Data Description

All broadband mapping data either is sourced directly from a broadband provider, or from working directly with a provider.

Wireless broadband internet data is mapped using coverage area footprints derived from analyzing antenna positionings, 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 for CAIs 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.

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 workflow. In summary, our data flow consists of:

- Initial evaluation of data submission and initial documentation.
 - Recording of what was submitted by provider.
 - Verification that the data update is usable.
- Complete data submission updates and transform 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.
- Creation of data feedback and publishing of provider data to the state broadband interactive

map for the provider to review prior to the submission. The state broadband map allows for speed, technology, provide and geographic extent to be stored within a URL for future use.

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 goes through a data content verification process. 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
- Each provider website is explored during each submission period 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. For Round 8, this process was enhanced through the creation of 1:40000 scale map books depicting provider service areas and Utah's new state address point map data layer. Rural DSL providers were asked to mark these map books with changes/corrections and other refinements to speed, technology, and service information.
- 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. Beginning in February of 2013, 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 conduct a review on their own or together with project team staff during a scheduled conference.
- Local telecom territories, as established through filings with the State of Utah's Public Service Commission, 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 measuring wireless broadband services and capabilities throughout the state using consumer devices. 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. An additional, similar drive test will be performed in Fall of 2013. This year, through a new competitive bid process, Isotrope was again awarded a contract to perform similar work.

- 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 or line of sight 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.
- Prior to July 2011, commercial wireless data such as the American Roamer data was used to verify reported wireless coverage areas.

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 made by relevant stakeholders.

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 broadband planning efforts, such as the Utah Broadband Advisory Council and regional broadband planning teams.
- The map serves as a basis of discussion with Broadband Providers to verify accuracy of data.