



Data Submission Methodology Update (Round 10)

Provider Data Submission Provider Engagement:

The Utah Broadband Project (UBP) communicated with 54 of the 61 participating broadband providers identified by UBP as offering services within Utah. Of the 54, 25 updated data and 22 confirmed no updates. The remaining 3 providers reported being acquired; LEAP, Wildfire Broadband, and Xpressweb. Data labeled as LEAP (Cricket Wireless) was reported by AT&T.

Provider Data Submission Data verification and validation:

In June 2013, UBP completed a statewide address point dataset. This dataset continues to be used in verification processes to highlight to providers where service is and where it isn't, and is also used as a guide of the developed areas in Utah during the creation/editing of broadband coverage areas.

In November 2013, Utah completed a mobile drive test as a verification means of the mobile broadband dataset. This round the UBP met locally with mobile broadband providers to discuss the results of the drive test, current data, and future mobile plans. Prior to this submission, the project met with AT&T, T-Mobile, Sprint, and Verizon and presented the results and a comparison to their reported coverage areas. These discussions informed the verification process and provided input for the provider data submission to UBP.

UBP also continues to meet locally with other broadband providers to discuss the mapping process and verify provider data with local broadband provider representatives. This round, UBP met AWI, Baja, Beehive Broadband, CentraCom, CenturyLink, Comcast, Gunnison Telcom, InfoWest, Manti Telecommunications, and Skywire to discuss provider data, the submission process, and clarify relationship between the parallel NTIA and FCC form 477 submissions.

Community Anchor Data Submission:

The focus for the Community Anchor Institutions layer has continued to be on school and library broadband information. Updates provided by the Utah Education Network (UEN) have been incorporated. UBP also worked with UEN to determine schools in Utah in which UEN provides broadband connectivity to, but does not directly manage. Broadband information for these schools may have not been previously reported.

In addition, UBP has continued to contact School District IT managers for information on the broadband capabilities of the schools in their district where UEN does not manage the school and

library endpoints.

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 was performed in Fall of 2013. Through a new competitive bid process, Isotrope was again awarded a contract and performed tests that were as similar as possible given the changes to the mobile broadband landscape (data caps, potential throttling, etc).
- 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.