Data and Mapping Methodology

Data Submission Methodology Update (Round 6, June 2012)

The Utah Broadband Project communicated with 43 of 44 previously identified broadband providers that offer services within Utah. Of the 44, 29 providers updated their data, 12 confirmed no updates this round, 2 didn't meet the deadline to send us updates, and no correspondence, in response to repeated email and telephone attempts, was returned by the remaining provider, HNS License Sub.

This round, the Utah Broadband Project invited broadband providers to submit designated commercial 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".

In addition to the 44 broadband providers, we identified 7 new providers this round to the project. Three providers are WISPS- TKS, Rapidwave, and Txox. Two providers are satellite providers that the NTIA asked us to reach out to- Starband and Skycaster, We didn't hear back from either. The last three are business only providers that we are including for the first time this round and using the ENDUSERCAT field to distinguish them from residential providers. The business only providers new this round are Zayo and Syringa. Of the 7 new providers, data was received data from only TKS and Rapidwave before the deadline. We expect data for the next submission round from Txox, Zayo, and Syringa. Utah now has a total of 51 broadband providers.

Utah Community Anchor Institutions (CAIs): Numerous records have been removed to eliminate duplicates stemming from overlap between datasets such as Schools, Libraries, the Utah Education Network (UEN), the State of Utah's Wide Area Network (WAN) etc. In all over 840 records have been removed from the original 4080 records. The library records' CAIID field was updated to contain both the "FSSCKEY" and "FSCSSEQ" values. Also many school and school district records CAIID field have been populated with their "NCES" codes. Previously submitted records with no associated point geometry have been removed or have had the correct geometry assigned to them. For many records the broadband speeds and Technology of Transmission have been populated and updated. Where possible, address record values have been normalized. All CAI records now have the "Full Census Block ID" codes.

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

Update October 18, 2012: Due to issues discovered during validation and verification, Frontier Communication's data was not updated this round. We are currently working with the provider to determine a process to map their service area most accurately and this issue will be resolved by the Spring 2013 data submission.

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. Utah has 100% participation from the 51 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, and the Utah Telehealth Network.

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

Validation

The Project's data submission is compliant with the December 2011 SBDD 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.
- 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, data feedback is sent to the provider for them 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. 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 order technology 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 complied 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 complied 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.