

California Broadband Task Force

Appendix: Broadband Mapping by Speed Methodology

Introduction

The CBTF confronted several significant challenges in developing wireline broadband availability speed maps for California. These included:

- Accurately portraying broadband availability and unavailability
- Preserving provider competitive advantage and confidentiality
- Coordinating provider data through a neutral third party
- Agreeing on a mapping protocol (including the most appropriate scale for data collection, analysis and display – three different issues).
- Agreeing on a speed tier protocol

The Build-Out Working Group to the CBTF and staff described an initial mapping protocol that was presented to the CBTF on May 24. Michael Byrne, GIS Architect for the Office of Statewide Health Planning and Development and staff to the CBTF refined this protocol to meet the needs of wireline broadband providers and the CBTF. The California Emerging Technology Fund adopted the resulting mapping protocol for its project with the third party.

The intent of this mapping protocol was to provide the CBTF, Governor and Legislature with the most comprehensive and accurate assemblage of broadband availability in the State. This effort was accomplished by integrating provider data on speed and availability from the address level.

Supplied Data Specification

Wireline broadband providers submitted to a third party location-based reference(s) (e.g., discrete addresses or map-based service area delineations) for available broadband services. Each was coded by the highest available speed tier offered. Each speed tier represented a combined upstream and downstream speed. The tiers submitted were:

- 500 Kbps to 1 Mbps
- 1 Mbps to 5 Mbps
- 5 Mbps to 10 Mbps
- 10 Mbps to 100 Mbps
- 100 Mbps to 1 Gbps
- 1 Gbps to 10 Gbps

Providers delivered the above data to the third party, Michael Baker Corp. (Baker) in the following format alternatives:

Provider Alternative 1 – Preferred Format for Addresses:

A list of all addresses, in a parsed-address field format, with available broadband within the provider’s service area:

Provider Alternative 1 Š Address Record Format													
Parsed_address													
ID	House Number	Prefix Direction	Street Name	Street Type	Suffix Direction	City	County	Exchange* (Telco only)	ZIP Code	CBTF Speed	Latitude*	Longitude*	Census*
1	818	S	K	St	NW	Sacramento	Sacramento	Sacramento	95814	3	34.386543	-119.7653	60670100111001

Provider Alternative 2 – Secondary Format Preferences for Addresses:

A list of all addresses, in a concatenated-address field format, with available broadband within the provider’s service area:

Provider Alternative 2 Š Address Record Format									
Concatenated-address									
ID	Address	City	County	Exchange* (Telco only)	ZIP Code	CBTF Speed	Latitude*	Longitude*	Census*
1	818 SK St NW	Sacramento	Sacramento	Sacramento	95814	3	34.386543	-119.7653	60670100111001

- Notes Associated with Provider Alternative 1 or 2:
 - All non-* fields (ID, Address (parsed or concatenated), City, ZIP_Code, & CBTF_Speed) are required.
 - Fields with an * (Latitude, Longitude, Census) are optional if available.
 - If submitting Latitude and Longitude, Decimal Degrees (as shown above) is preferred over Degrees Minutes Seconds (e.g. -119 47 13.83)
 - Census will be used (if populated) to assist with the mapping. If providing Census please describe what census codes you are submitting. The preferred census geography is the 15 digit block code (State + County + Tract + Block with leading zero’s).
 - The ID Field is a unique counting number (e.g. record number from 1 ... n)
 - For CBTF_Speed please submit speed tier (e.g. 1 – 5) or raw speed numbers and the vendor will translate for you.
 - A tab-delimited transferable digital table (e.g. tab separated values) with any associated notes and a contact person in a readme.txt file will be accepted.

Provider Alternative 3 – Map-based Service Area Delineations:

A GIS or CADD data file (an ESRI shapefile or personal geodatabase, or Autodesk AutoCAD DWG file, or Bentley Microstation DGN file) with available broadband within the provider’s service area only if such areas are delineated by CBTF_Speed as city blocks or smaller areas. The intent of this

alternative is to permit providers that maintain such broadband availability data as map-based representations an opportunity to provide such information as map-based representations in lieu of a list of all addresses.

Provider Alternative 3 S Map -based Service Area Delineations						Record Format
ID	City	County	Exchange* (Telco only)	ZIP Code	CBTF Speed	Census*
1	Sacramento	Sacramento	Sacramento	95814	3	60670100111001

- Notes Associated with Provider Alternative 3:
 - All areas must be represented as closed polygons with a single unique id.
 - Any variation of a record item, City, County, Exchange (if provided), Zip Code, CBTF_Speed or Census) must result in a separate formed and closed polygon.
 - All areas formed and contained within a closed polygon must have available broadband service within 50' from the inside edge of the surface to which the polygon's area is delineated.
 - All non-* fields (ID, City, County, ZIP_Code, & CBTF_Speed) are required within an associated database record accompanying the GIS or CADD data.
 - Fields with an * (Exchange, Census) are optional if available.
 - Decimal Degrees (as shown above) is preferred over Degrees Minutes Seconds (e.g. -119 47 13.83)
 - Albers Equal Area projection
 - Census will be used (if populated) to assist with the mapping. If providing Census please describe what census codes you are submitting. The preferred census geography is the 15 digit block code (State + County + Tract + Block with leading zero's).
 - The ID Field is a unique counting number (e.g. record number from 1 ... n)
 - For CBTF_Speed please submit speed tier (e.g. 1 – 5) or raw speed numbers and the vendor will translate for you.
 - If a database table is provided for attribute information associated with the GIS or CADD file, please specify its format and schema or deliver the accompanying database records as a tab-delimited transferable digital table (e.g. tab separated values) with any associated notes and a contact person in a readme.txt file will be accepted.

Technical Workflow

The technical workflow used to process the California broadband availability data included seven steps:

- Data Submission Agreements
- Register / describe data,