NTIA Broadband Availability Data

Data Submission Guidelines

1. Overview

NTIA is seeking voluntary submissions of broadband availability data to expand and inform the understanding of broadband availability in the United States and to support broadband policy-making and investment decision-making.

Specifically, NTIA is seeking sub-Census block geographic information on service availability. NTIA is seeking this information across the 50 states, the District of Columbia, the Commonwealth of Puerto Rico, the Island Areas of American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the United States Virgin Islands. Applicable data would indicate the location of the data point – such as address, address range, road centerline, land-parcel identification, latitude/longitude, polygon, or other location information – and the corresponding broadband availability data for that location – such as technology type, upload and download speed, etc.) The data would be submitted in a Data Format (see section 3) that includes multiple locations.

NTIA expects respondents to provide information in its current format, with little to no modification, save that necessary to remove Personally Identifiable Information (PII). However, by following the guidelines below, NTIA will be able to maximize its use of the data submitted through this program. These guidelines also indicate how NTIA will attempt to normalize and process the information it receives from respondents.

2. Suggested Data Fields

To the extent possible, NTIA is seeking information on the location, transmission speeds, and technologies used to deliver broadband services. For standardization, NTIA intends to utilize the same technology codes defined by the FCC in its Form 477 process.[1]

- Location Data
  - Examples include:
    - Latitude/longitude (WGS84 or NAD83 geographic coordinate system)
    - Address
    - Address Range
    - Road Segment

- Technology Type
  - Fixed Broadband
    - 10 - Asymmetric xDSL
    - 11 - ADSL2, ADSL2+
    - 12 - VDSL

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[1] See FCC Form 477 Local Telephone Competition and Broadband Reporting Instructions at 30, OMB Control No. 3060-0816, *available at* https://transition.fcc.gov/form477/477inst.pdf.

- 20 - Symmetric xDSL*
- 30 - Other Copper Wireline (Ethernet over copper and T-1 are examples)
- 40 - Cable Modem other than DOCSIS 1, 1.1, 2.0, 3.0, or 3.1
- 41 - Cable Modem – DOCSIS 1, 1.1 or 2.0
- 42 - Cable Modem – DOCSIS 3.0
- 43 - Cable Modem – DOCSIS 3.1
- 50 - Optical Carrier / Fiber to the end user (Does not include "fiber to the curb")
- 60 - Satellite
- 70 - Terrestrial Fixed Wireless
- 90 - Electric Power Line
- 0 - All Other
  - Wireless Broadband
    - 80 - Terrestrial Mobile Wireless – WCDMA/UMTS/HSPA
    - 81 - Terrestrial Mobile Wireless – HSPA+
    - 82 - Terrestrial Mobile Wireless – EVDO/EVDO Rev A
    - 83 - Terrestrial Mobile Wireless – LTE
    - 84 - Terrestrial Mobile Wireless – WiMAX
    - 85 - Terrestrial Mobile Wireless – CDMA
    - 86 - Terrestrial Mobile Wireless – GSM
    - 87 - Terrestrial Mobile Wireless – Analog
    - 88 - Terrestrial Mobile Wireless – Other
- Transmission Speeds
  - Download Speed
  - Upload Speed
  - Transmission speeds are regularly defined as kilobits per second (kbps), megabits per second (Mbps) and gigabits per second (Gbps). As a result, common transmission speeds include:
    - 256 kbps
    - 768 kbps
    - 1 Mbps
    - 3 Mbps
    - 4 Mbps
    - 5 Mbps
    - 10 Mbps
    - 25 Mbps
    - 100 Mbps
    - 1 Gbps

3. Data Format

To the extent possible, NTIA is seeking data in common geospatial and data file formats. Please submit data in the following format.

- Shapefile: The most common geospatial file type; however, the term is misleading since the format consists of a collection of files stored in the same directory or archive.

- o File Type:
  - .shp is the feature geometry.
  - .shx is the shape index position.
  - .dbf is the attribute data.
  - .prj is the projection system metadata.
  - .xml is the associated metadata.
  - .sbn is the spatial index for optimizing queries.
  - .sbx optimizes loading times.
- Geographic JavaScript Object Notation (GeoJSON): this format is mostly for web-based mapping. GeoJSON stores coordinates as text in JavaScript Object Notation (JSON) form. This includes vector points, lines and polygons as well as tabular information.
  - o File Type
    - .geojson
    - .json
- Google Keyhole Markup Language: this GIS format is XML-based and is primarily used for Google Earth. KML was developed by Keyhole Inc. which was later acquired by Google.
  - o File Type
    - .kmz
    - .kml
- Esri File Geodatabase: Esri's file geodatabase is a container for storing multiple attribute tables, vector and raster data sets.
  - o File Type
    - .gdb
- Esri Personal Geodatabase: uses the default Microsoft Access database file extension. A common database type for managing geospatial data.
  - o File Type
    - .mdb
- Web Feature Service (WFS): this format permits users to share geospatial (or non-spatial) over the internet in web maps, desktop and web applications.
  - o File Type
    - .url
- Esri ArcGIS Online Web Services: Esri's cloud-based platform that allows users to publish content online to share collaboratively with other organizations or the general public.
  - o File Type
    - .url
- Spreadsheets or comma-separated data file: these files can be extremely useful, as long as some form of location data is associated with the content (such as addresses, latitude/longitude, eetc.)
  - o File Type
    - Microsoft Excel
    - Comma- or Tab-Separated Text Files

- Database extracts (e.g. JSON or SQL)

To the extent possible, NTIA requests that respondents please avoid the following data formats.

- Portable Document Format: a file format used to present and exchange documents reliably, independent of software, hardware, or operating system.
    - File Type
        - .pdf
- Image Files:
    - File Type examples
        - .jpeg
        - .png
        - .gif
- Other Proprietary Formats: while NTIA will make every effort to work with the data supplied by respondents, data that is in proprietary geospatial, database, or other similar format may not be compatible with NTIA systems.

Please avoid any Personally Identifiable Information (PII).