

INDIANA

Round 3 (Spring 2011)

Data Submission to NTIA

April 1, 2011

Data Description

File Name	Contents	Description
IN_SBDD_20110401.ZIP	This Delivery Package	A zip file containing all of the files described below
IN_SBDD_2011_04_01.gdb	Data Transfer Model	Current NTIA approved data model with the assembled data properly loaded into the data transfer model
IN_DataPackage.2010_10_01.xls 	Data Package	A formatted file containing associated documentation about Indiana's submission
IN_2011_04_01.txt	Data Submission Receipt	File containing the results of the submission check tool
IN_Methodology_2011_04_01.pdf	Methodology White Paper	Documentation about our process
IN_Readme_2011_04_01.pdf	Readme Doc	A document that contains added notes about the delivery

Provider Participation

107 Internet Providers

- 68 Wireless Providers
- 39 Wireline Providers

47 Data Sets Received

- 22 Wireline Providers
- 25 Wireless Providers

Indiana Utility Regulatory Commission (IURC) Data

- 61 Data Sets (with FRN)

Data Collection

We continue to collect data from these sources, including:

- The Indiana Utility Regulatory Commission (broadband data)
- Office of Utility Consumer Counselor (broadband data)
- The Indiana Business Research Center (demographic data)
- Indiana Department of Local Government Finance (residential versus commercial status by address)
- Indiana Counties (point addresses, land parcels, road centerlines with address ranges, and administrative boundaries, aggregated and integrated into the IndianaMap)
- Indiana Department of Natural Resources (state forests and parks)
- Indiana Department of Homeland Security (locations of emergency medical service (EMS) stations, fire stations, and hospitals)
- Department of Education (school locations)
- Indiana Libraries (point of connectivity for low income/unemployed consumers— provide vital speed information for respective geographical locations)
- Commission for Higher Education (locations of colleges and universities)
- Broadband service providers, and others

This information is processed according to the current data submission model offered by the National States Geographic Information Council and to be able to perform spatial comparisons, logic rules and other checks.

We also add emphasis to the collection of speed information using the “crowd sourcing” web-based application already implemented.

Indiana Broadband Service Questionnaire

<http://www.in.gov/iot/BroadbandQuestionnaire.htm>

<http://in-polis-app21.ads.iu.edu/BroadbandService/default.aspx>

We also support small service providers (and those with smaller information technology teams) in the area of data submission. We recognize the challenge that some providers have in submitting data in the formats and specifications required. We have successfully contacted all of the wireless service providers and hosted their annual meeting in January of this year.

Data Integration

When data is received from a service provider, it is loaded into either Excel or Access depending on the number of records and file size. This table is then joined with a copy of the Census block *.dbf file from our census block shapefile. After the data has been joined, it is exported as a new*.dbf. The original Census block *.dbf is renamed to preserve the original integrity and the newly exported *.dbf is renamed to the same name as the shapefile. The shapefile is then

loaded into ArcMap and a Feature Class is generated. The number of records is then validated against the number of records that were originally imported into either Excel or Access.

Data Loading

A final integration check occurs when the data is loaded into the data model. This includes the logic checks for values.

Validation

We validate the collected data for completeness, currency, and accuracy using a variety of methods that include:

- **“Boots on the ground” inspection.** We visually inspect the existence of physical features, where feasible, to verify that service could exist in a specific location.
- **Inspection of high-resolution orthophotography.** High-resolution orthophotography is used to verify the existence and location of wireless towers. Where recent six-inch resolution orthophotography exists (cities and counties), it can also be used to verify the existence of residence connection boxes.
- **Comparing source documents that duplicate geographies or content.** We recognize that within the above list of data sources, some information is duplicated. In these cases, discrepancies will be noted for follow-up using other verification methods listed here.
- **Collecting end-user data.** We work with The Polis Center at Indiana University Purdue University Indianapolis to create a Google Map-based, user-friendly web application hosted on the IndianaMap portal to collect information from end-users about their location, broadband service provider, and speed (as captured from a speed test).
 - **Indiana Broadband Service Questionnaire**
 - <http://www.in.gov/iot/BroadbandQuestionnaire.htm>
 - <http://in-polis-app21.ads.iu.edu/BroadbandService/default.aspx>
 - The information collected from this website is valuable for data verification. The Polis Center works with communities in Indiana and beyond to develop and apply knowledge, to build collaborations and to find innovative solutions to common problems. The center excels in community-based research and advanced information technologies, especially geographic information systems (GIS).
- **Using service providers’ websites,** especially those that contain service area information. Many service providers have websites that give service area information (often address by address) to assist consumers. We use these websites in conjunction with “boots on the ground” and the other methods listed here to verify the data.

Data Display

We are currently displaying the mapping results as additional geospatial layers added to the 220-plus layers already on the IndianaMap (www.indianamap.org), through the Indiana State Library, and the Indiana Business Research Center (IBRC). We are expanding the availability of the data by adding a new web-based information tool that will provide information about broadband service availability at a user-specified location. In addition, we propose to further integrate the broadband map data with economic data available from IBRC (www.stats.indiana.edu).

Address Level Data Collection

We continue to collect address level data. Indeed, as described above, Indiana is well on the way to creating address level reference data to facilitate the collection of address level broadband service availability, not just in census blocks larger than two square miles, but statewide. These data will be invaluable as the lowest common denominator to allow the construction of any geography in support of broadband map display and analysis. This expands the options for how to depict speed across multiple geographies, and facilitates the inquiry of service data at a given x,y.

We have committed to the acquisition of new orthophotography imagery to serve as the foundation for all other geospatial data, including centerlines and address level data. We currently have about \$1.5 million committed by partners that include USGS, Indiana Department of Homeland Security, Indiana Department of Transportation, Indiana Department of Environmental Management, and others. We anticipate contributions from most of the Metropolitan Planning Organizations in Indiana and from many Indiana cities and counties.

Efforts in Process

- **Community Anchor Institutions.** We identified community anchor institutions by cross referencing a statewide land parcel dataset with a data set from the Indiana Local Government Finance office containing, among other information, institution name, location by address, and use category. The results of this analysis are included in this delivery for all records containing name, location, and category at a minimum. These data, however, do not have sufficient broadband service information. Therefore, we are currently working with a third party to survey the institutions to complete the attributes defined in the NOFA for these institutions. We anticipate that this additional data will be included in the fall 2011 submission.
- **IURC data replacement.** Per our approved project methodology, we began this project by taking advantage of public data that existing in Indiana about broadband service. While we recognized that these data were not granular enough geographically to satisfy the long term goals of this project, they were nonetheless informative and could provide value until more granular data was obtained from the service providers and verified. We still have some of this original data in our submission because we have not received

data from all of those service providers originally identified. It is a high priority objective over the next 6 months to replace all original data with new more granular data or to verify that we can delete whatever original data remains.