STATE OF INDIANA

OFFICE OF TECHNOLOGY
Jim Sparks
Geological Information Officer

Michael R. Pence, Governor

Indiana Government Center North
100 N. Senate Ave., Room N551
Indianapolis, IN 46204
(317) 234 - 5889

Round 9 (Spring 2014)
Data Submission to NTIA
April 1, 2014

Data Description File Name	Contents	Description
IN_SBDD_2014_04_01.ZIP	**This Delivery Package**	A zip file containing all of the files described below
IN_SBDD_2014_04_01.gdb	Data Transfer Model	Current NTIA approved data model with the assembled data properly loaded into the data transfer model
IN_DataPackage. 2014_04_01.xls	Data Package	A formatted file containing associated documentation about Indiana's submission
IN_2014_04_01.txt	Data Submission Receipt	File containing the results of the submission check tool
IN_ Methodology _2014_04_01.pdf	Methodology White Paper	Documentation about our process
IN_ Readme_2014_04_01.txt	Readme Doc	A document that contains added notes about the delivery
IN_Changes_and_Corrections_2 014_04_01.xlsx	Changes and Corrections	This document contains the changes and updates.

Provider Participation

127 Internet Providers

- 71 Wireline Providers
- 60 Wireless Providers

Fall 2013 Chris – this info. is repeated on page 6 also – please make the changes there also!

68 Data Sets Received

- 41 Wireline Providers
- 27 Wireless Providers

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About this Submission

121 Broadband Providers in State of Indiana
- Some organizations have more than one name (for a total of):
  - 131 Internet Providers
    - 71 Wireline Providers
    - 60 Wireless Providers

Provided New Data:
- **AirHOP Wireless**
- **AT&T, Inc.**
- **Blueriver Networking Services**
- **Bright House Networks, LLC**
- **Clay County Rural Telephone Cooperative, Inc./Endeavor Communications**
- **Comcast Cable Communications Management**
- **Covad Communications Group, LLC/DIECA Communications/MegaPath**
- **Daviess-Martin County RTC/RTC Communications**
- **East Allen High Speed Internet, LLC/ Eastern Indiana WIFI, Inc. (EIWIFI)**
- **Enhanced Telecommunications Corporation/ (Sunman Telecommunications Corp) ETC Communications**
- **Fairnet Wireless / TransWorld Network, Corp./Wi-Power**
- **Frontier Communications of Indiana, Inc. (Frontier North, Inc).**
- **Full Choice Communications, Inc./Indiana Communications**
- **Geetel/Geetingsville Telephone Company, Inc.**
- **Hancock Rural Telephone Corporation/Nine Star Connect**
- **Helix Technologies Incorporated/NetSurfUSA, Inc.**
- **Indiana Fiber Network**
- **Joink, LLC**
- **Leap Wireless International, Inc./Cricket Communications/Denali Spectrum License Sub, LLC**
- **Mediacom Communications Corp.**
- **MetaLINK Technologies, Inc.**
- **Monon Telephone**
- **New Lisbon Telephone Co., Inc.**
- **NewWays Networking, LLC**
- **On-Ramp Indiana (ORI Net)**
- **PCS-WIN / RC-WiFi**

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- **PDS Wireless/Precision Data Solutions**
- **Performance PC / Performance WISP**
- **Perry-Spencer Rural Telephone Coop (Communications)/PSC**
- **Portative Technologies, LLC**
- **Rochester Telephone Co./RTC Communications**
- **Smithville Telephone Company, Inc.**
- **Sprint-Nextel Communications**
- **Telephone and Data Systems, Inc. (TDS)**
- **Time Warner Cable LLC**
- **T-Mobile**
- **Verizon Wireless**

Data Still Current:

- **ABC Hi-DEF Communications/ Broadway Broadband**
- **Accelplus**
- **AdamsWells Telecom**
- **Bloomingdale Home Telephone Company**
- **CenturyTel, Inc.**
- **Citizens Communications**
- **Citizens Telephone**
- **Community Fiber Solutions/Benton Ridge Telephone Company/Watchtv.net/bright.net-BRT**
- **Community Wireless**
- **Comteck**
- **CSInet Internet Access**
- **Echo Wireless**
- **Foundation Communications**
- **Fourway Computer Products, Inc.**
- **FULLnet**
- **Great American Broadband**
- **Hoosier Broadband**
- **Internet Communications Inc**
- **KC Online, Inc.**
- **Kendallville Internet**

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- **Level 3 Communications, LLC**
- **Lightbound**
- **Ligonier Telephone Company**
- **Ligtel Communications**
- **Metro FastNet**
- **Metronet**
- **Michiana Wireless**
- **Microdome Wireless**
- **MidwayNet.net**
- **Mulberry Cooperative Telephone Co. Inc.**
- **New Paris Telephone Co., Inc./Brightnet of Indiana**
- **New Wave Communication**
- **NITCO (Northwestern Indiana Telephone Company)**
- **NITLine (Northern Indiana Technologies, Inc.)**
- **Node 1 Technology**
- **Omnicity (Broadband Networks)**
- **Parallax Systems**
- **Pulaski White Rural Telephone Coop., Inc.**
- **SEI Communications**
- **Sitco Highspeed Internet**
- **Skycasters Satellite Internet**
- **StarBand**
- **State of the Art Communications**
- **Swayzee Telephone Company**
- **Tele-Media Solutions (Washington County Rural Telephone Cooperative)**
- **TV Cable of Rensselaer & Winamac**
- **Wabash Mutual Telephone Company**
- **WideOpenWest**
- **WildBlue Communications, Inc.**
- **Windstream Communications**
- **Wintek**
- **Yeoman Telephone Co.**
- **Zayo Enterprise Networks**
- **Zig Wireless**

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Awaiting Data

- DC Tech Solutions, LLC
- Indiana Data Center/Metrolan
- Locl.Net
- OINC Wireless
- Total Logic Systems (TLS.net)
- YDial LLC

Will Not Provide Data:

- Airbaud (Magnum Wireless)
- Midwest Telecom of America, Inc.
- One Communications Corporation (Now EarthLink Business)
- Broadband Indiana

Updated Information:

- **AirHOP Wireless** – first-time submission. New ownership agreed to participation.
- **Clearwire** – Provider has been purchased by Sprint. Their 2.5 GHz coverage maps are included in the Sprint package.
- **Indiana Data Center/Metrolan** – Provider had previously stated that they would not be participating in the program. Now they are communicating that we will have their data by late spring.
- **aXess America** – New provider coming to the state of Indiana. Plan to be up and running by summer.
- **Apparatus Inc -** New provider coming to the state of Indiana. Plan to be up and running by summer.
- **Qwireless -** New provider coming to the state of Indiana. Plan to be up and running by summer.

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- **Submission differences:**
  - o **Wireline**
    - o **State (square miles) – 36,397.80**
      - 2014 Spring Wireline (square miles) - 29586.25
        - 2013 Fall Wireline (square miles) - 29,073.82
    - o **State (Census Blocks)**
      - 2014 Spring Wireline – 710,078
      - 2013 Fall Wireline - 706,972
  - o **Explanation of increase:** The increase of 512.43 square miles and 3,106 Census Blocks is due to the addition of data from overall territory expansion by existing providers and new records from two providers.

  - o **Wireless**
    - o **State (square miles) – 36,397.80**
      - 2014 Spring Wireless (square miles) - 36133.78
        - 2013 Fall Wireless (square miles) - 36,106.18
  - o **Explanation of increase:** The increase of 27.60 square miles is due to the addition of data from overall territory expansion by existing providers and new records from one provider.

- **Data Sets Received:**

  Spring 2013
  68 Data Sets Received
  - 41 Wireline Providers
  - 27 Wireless Providers

  Fall 2013
  49 Data Sets Received
  - 30 Wireline Providers
  - 19 Wireless Providers

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Data Collection

We continue to collect and compare data from these sources, including:

- The Indiana Utility Regulatory Commission (comparison broadband data)
- Office of Utility Consumer Counselor (comparison 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)
- Reference USA /Infogroup (community anchors)
- **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.

Integration and Verification Processes Used in the Mapping Indiana Broadband Project 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.

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

Validation Processes:

• *Comparing source documents that duplicate geographies or content.* We have public domain data that covers most of the state. We compare this data to that provided by the Internet Service Providers. We note areas of discrepancy for follow-up using other verification methods listed here.

• *Collecting end-user data.* We are working with The Polis Center at Indiana University Purdue University Indianapolis and have created 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). The information collected from this website is valuable for data verification as the database grows.

• *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. These sites are useful for spot checking.

• *Inspection of high-resolution orthophotography.* High-resolution orthophotography has been 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.

• *"Boots on the ground"* inspection. We visually inspect the existence of physical features, where feasible, when we have a question or conflict that can be resolved by an on-site inspection.

Indiana Broadband Providers Website

A URL is available http://www.in.gov/gis/Broadband.htm to communicate and distribute NTIA NOFA requirements to providers along with outreach and data submittal materials including:

- NTIA NOFA and subsequent clarification
- Outreach letter to providers
- Non-Disclosure Agreement
- Data Submission Guidelines
- Broadband Data Submittal Templates (Spreadsheets)
- Data Submittal Assistance Contact Information

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Indiana Broadband Service Questionnaire

http://www.in.gov/gis/BroadbandQuestionnaire.htm

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

www.in.gov/survey

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).

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Data Display

Indiana Map

We are currently displaying the mapping results as additional geospatial layers added to the 220-plus layers already on the IndianaMap (www.indianamap.org)

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Indiana Business Research Center (IBRC)
We have integrated the broadband map data with economic data available from IBRC
www.stats.indiana.edu/broadband/

Indiana Broadband Map

We have developed a web-based information tool that will provide information about broadband service availability at a user-specified location.

www.indianabroadbandmap.com

This application is provides tools for searching and displaying broadband availability information anywhere in Indiana.

Public Use
- Zoom to County
- Zoom to Address and retrieve Broadband Information for that address
- Buffer Address for additional Broadband Information in the area
- View Provider Results
- Filter Broadband Information by Speed
- Filter Broadband Information by Technology (i.e. Wireless, Wireline)
- Filter Broadband Information by Service Provider
- Query Census Blocks

Provider Use
- All of the above
- Edit Broadband Information via Secure Login
    - Multiple webinars were hosted by IOT and our web developer 39°north to train the broadband providers how to update their data. Each broadband provider was given their own unique login information. The website was then released to the public so that they can view the available provider information for their area.
    - Through this secure login, the original provider data may be modified to more accurately reflect the various broadband providers' territories.
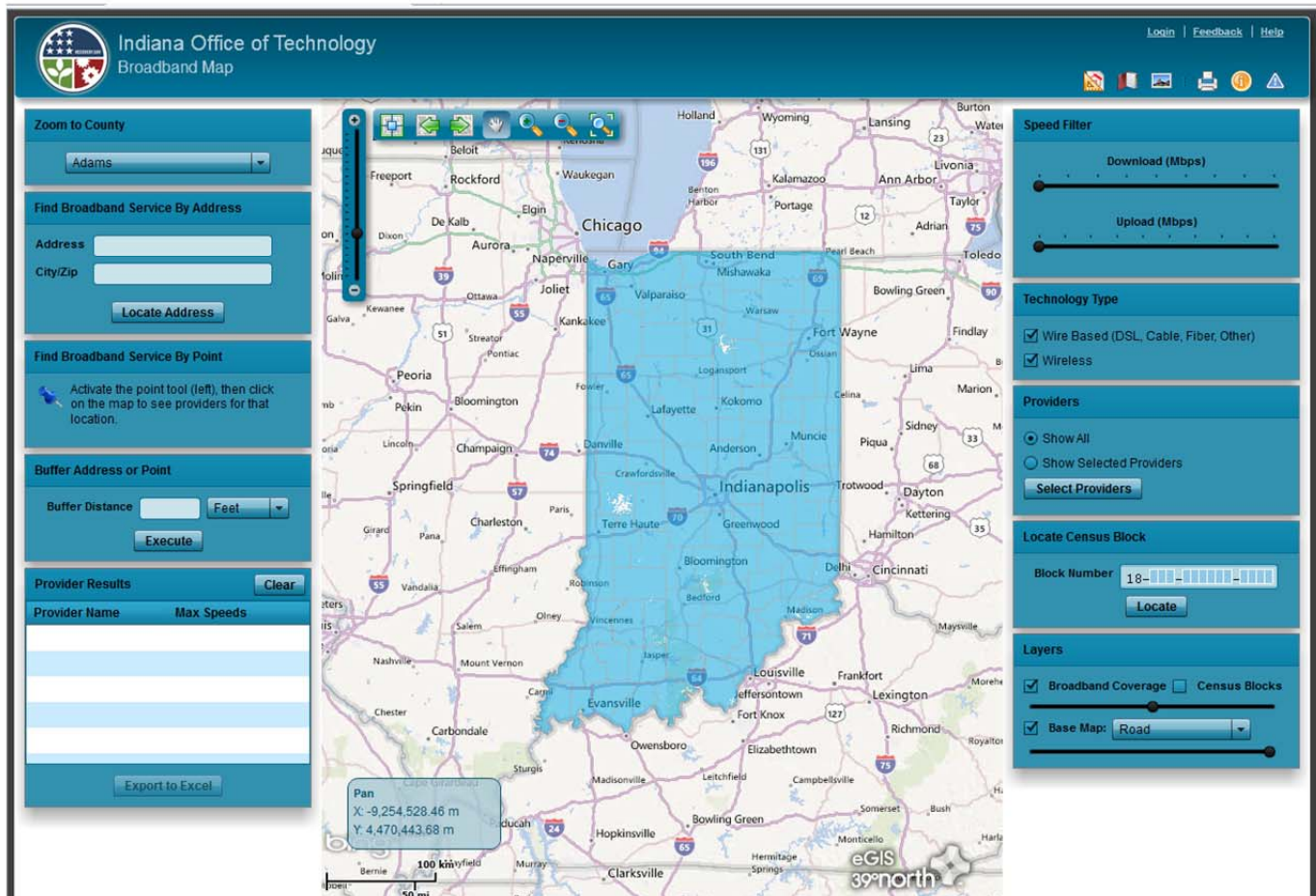
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Address Level Data Collection

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 86 counties who are providing address data as a result of the BB map funding, with more signing up each week.

We are a two-thirds of the way in our acquisition of new orthophotography imagery to serve as the foundation for all other geospatial data, including centerlines and address level data.

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Here is a graphic showing our orthophotography flight schedule.

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 have been included in previous deliveries for records containing name, location, and category at a minimum. These data, however, did not have sufficient broadband service information. Therefore, we have previously engaged a third party to survey the institutions to complete the attributes defined in the NOFA for these institutions.

The Indiana Office of Technology engaged Infogroup to identify and contact all anchor institutions in the State of Indiana. The goal was to determine broadband service and internet service providers that meet the definitions of "broadband" as outlined in the broadband mapping Notice of Funds Availability. The definition is inclusive of two-way data transmission with advertised speeds of 768 kbps downstream and 200 kbps upstream.

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Infogroup had the ability to identify state anchor institutions and developed a script designed to gather the information required to answer to the requirements of the NTIA.

There data compilation process telephone verified all businesses, including those identified as anchor institutes, to ensure the highest level of accuracy with business name, business type and contact information. After compiling the list, Infogroup prepared a script and software to assist in capturing the necessary information. They then begin the telephone survey and data collection process and created a report in the tab-delimited text file format of the required information. This survey included institution name, complete address, latitude/longitude, category of institution, broadband service, technology of transmission and advertised downstream/upstream service speed where they are collected in a tab-delimited text file.