Indiana Statewide GIS Resources

GIS Day at Purdue University 2014
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Indiana Statewide GIS Resources

• The IndianaMap
• The Indiana Spatial Data Portal
• NSF OpenTopography – Indiana
• National Hydrography Dataset (NHD)
• Indiana Geographic Information Council
• Indiana Geographic Information Office
Indiana Wind Speed and Power Map

Map showing elevation contours and wind speed and power at 50 and 100 meters above the ground

Legend:
- **Elevation Contours 24k USGS**
- **Wind Speed 50m**
- **Wind Speed 100m**
- **Wind Power 50m**
- **Wind Power 100m**

**Legend**
- Wind Speed 50m
  - 3.46 - 4.88
Thematic Map Gallery

IndianaMap is the public source for Indiana map data. The Thematic Map Gallery helps people find commonly used maps for a better understanding of Indiana issues and trends.

**House Districts (118th Gen. Assembly)**
Show the legislative district boundaries for the House of Representatives, 119th General Assembly of Indiana.
The boundaries were redistricted and adopted in 2011 (current until 2021) and were provided by personnel of the Indiana Election District Number: Select

**Senate Districts (118th Gen. Assembly)**
Show the legislative district boundaries for the Senate, 119th General Assembly of Indiana.
The boundaries were redistricted and adopted in 2011 (current until 2021), and were provided by personnel of the Indiana Election District Number: Select

**Congressional Districts (113th Congress)**
Show the legislative district boundaries in Indiana for the 113th U.S. Congress.
The boundaries were redistricted and adopted in 2011 (current until 2021), and were provided by personnel of the Indiana Election District Number: Select

**National Hydrography Data (NHD) (1:2400)**
Provide access to the local-resolution version of the National Hydrography Dataset (NHD) for Indiana, showing the currently available data as of September 5, 2014. The map contains rivers, streams, and lakes mapped at a scale of 1:2,400 along with the 2009 U.S.G.S. watershed boundary layer for reference. The NHD dataset is intended to be updated at least once every three years.

**Wind Speed and Elevation Contours**
Provide access to wind resource of Indiana and finding suitable sites for wind energy projects. Conventional test techniques of wind resource assessment can be time consuming, however, and often depend heavily on local meteorological expertise as well as the availability of reliable and representative wind measurements.

**Oil and Gas Wells**
Provide access to petroleum well data created from data in the Indiana Geological Survey (IGS) Petroleum Well Database, which is a component of the IGS Petroleum Database Management System (PDMS). The petroleum field dataset was created by comparing digital lines from Indiana Geological Survey Miscellaneous Map (IGSM) with the data.
Layer Gallery

Browse IndianaMap layers to explore and learn more about them. Preview each layer, view its metadata, or download the layer to use in your desktop GIS software. View the layer map service, or choose to add the layer to your Map View. Once you have explored those layers of interest use the Add Content tool on IndianaMap to quickly add, remove, and manage each layer.
INDIANA SPATIAL DATA PORTAL

http://gis.iu.edu/
There are 22 available datasets

- [ ] Topographic Maps description
- [x] 2013 IndianaMap Data description
- [x] 2012 National Agriculture Imagery Program (summer) description
- [x] 2011 IndianaMap Data description
- [x] 2010 National Agriculture Imagery Program (summer) description
- [x] 2008 National Agriculture Imagery Program (summer) description
- [x] 2008 Tippecanoe County Aerial Photos (spring) description
- [x] 2007 National Agriculture Imagery Program (summer) description
- [x] 2006 National Agriculture Imagery Program (summer) description
- [x] 2006 IndianaMap Reflight Natural Color (spring) description
- [x] 2006 IndianaMap Reflight Color Infrared (spring) description
- [x] 2006 IndianaMap Color Infrared Photos (spring) description
- [x] 2005 National Agriculture Imagery Program (summer) description
- [x] 2005 IndianaMap Natural Color Orthos (spring) description
- [x] 2005 IndianaMap Color Infrared Photos (spring) description
- [x] 2005 IndianaMap Surface Model (spring) description
- [x] 2004 National Agriculture Imagery Program (summer) description
- [x] 2003 National Agriculture Imagery Program (summer) description
- [x] 1999 National Elevation Dataset description
- [x] 1998-1999 USGS Digital Ortho Quarterquad (spring) description
- [x] Indiana Sanborn Historic Maps description
There are 22 available datasets

- Topographic Maps
  - 2013 IndianaMap Data
    - RGBI Orthophotography
      - ECW
        - in2013_29951885_12.zip  ECW  5.17 MB  1-foot resolution  na  in_stpl_w  feet
        - in2013_29951887_03.zip  ECW  4.21 MB  3-inch resolution  na  in_stpl_w  feet
        - in2013_29951888_03.zip  ECW  6.34 MB  3-inch resolution  na  in_stpl_w  feet
        - in2013_29951890_03.zip  ECW  4.89 MB  3-inch resolution  na  in_stpl_w  feet
        - in2013_29951890_12.zip  ECW  5.01 MB  1-foot resolution  na  in_stpl_w  feet
        - in2013_29951891_03.zip  ECW  3.9 MB  3-inch resolution  na  in_stpl_w  feet
        - in2013_29961887_03.zip  ECW  4.46 MB  3-inch resolution  na  in_stpl_w  feet
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        - in2013_29971888_03.zip  ECW  5.58 MB  3-inch resolution  na  in_stpl_w  feet
        - in2013_29971890_03.zip  ECW  5.62 MB  3-inch resolution  na  in_stpl_w  feet
        - in2013_29981887_03.zip  ECW  4.88 MB  3-inch resolution  na  in_stpl_w  feet
        - in2013_29981888_03.zip  ECW  5.05 MB  3-inch resolution  na  in_stpl_w  feet
        - in2013_29981890_03.zip  ECW  6.21 MB  3-inch resolution  na  in_stpl_w  feet
        - in2013_30001885_12.zip  ECW  5.38 MB  1-foot resolution  na  in_stpl_w  feet
        - in2013_30001887_03.zip  ECW  6.43 MB  3-inch resolution  na  in_stpl_w  feet
        - in2013_30001890_12.zip  ECW  5.62 MB  1-foot resolution  na  in_stpl_w  feet
http://www.opentopography.org

NSF OPENTOPOGRAPHY – INDIANA
2011 - 2013 Indiana Statewide LiDAR

Overview: Indiana's Statewide LiDAR data is produced at 1.5-meter average point spacing for all 92 Indiana Counties covering more than 36,420 square miles. New LiDAR data was captured except where previously captured LiDAR data exists, or the participating County bought-up to a higher resolution of 1.0-meter average point spacing LiDAR data. Existing LiDAR data exists for: Porter, Steuben, Noble, DeKalb, Allen, Madison, Delaware, Hendricks, Marion, Hancock, Morgan, Johnson, Shelby, Monroe, and portions of Vermillion, Parke, Vigo, Clay, Sullivan, Knox, Gibson, and Posey. These existing LiDAR datasets were seamlessly integrated into this new statewide dataset. From this seamless LiDAR product a statewide 5-foot post spacing hydro-enhanced DEM product was created and is also available. See the FGDC Metadata provided for more details.

This statewide project is divided into three geographic areas captured over a 3-year period (2011-2013):


<table>
<thead>
<tr>
<th>Platform: Airborne LiDAR</th>
<th>Survey Date: 03/13/2011 - 04/30/2012</th>
<th>Survey Area: 96,094.70 km²</th>
<th>Point Density: 1.56 pts/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Metadata</td>
<td>Dataset Acknowledgement</td>
<td>Funders: IDHS, IDOT, IOCR, NCRS, NOAA, NTIA, USGS</td>
<td>Partners: INeGIS, IGIC, IGS, IndianaMap, IUTS, Collecter: Woolpert</td>
</tr>
<tr>
<td>Select Data Product: Point Cloud Download &amp; Processing</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LiDAR (.las) Processing
LiDAR (.las) Processing

1a. Select area of data to download or process:

1b. Choose Return Classification:  
   - Ground
   - Unclassified
   - All

1c. Choose an Output Coordinate System:
   - NAD83 Indiana East (US) [EPSG: 2965]
   - NAD83 Indiana West (US) [EPSG: 2966]
   - NAD83 UTM Zone 16N (Water) [EPSG: 3269]
   **Note:**

2. Point Cloud Data Download:
   - ✔️ Point cloud data in LAS format
   - ✔️ Point cloud data in LAZ format
   - ✔️ Point cloud data in ASCII format
LiDAR (.las) Processing

2. Point Cloud Data Download:
   - Point cloud data in LAS format
   - Point cloud data in LAZ format
   - Point cloud data in ASCII format

3a. DEM Generation (Local Gridding):
   - Grid Method
     - Calculate Zmin grid
     - Calculate Zmax grid
     - Calculate Zmean grid
     - Calculate Zgrid grid
     - Calculate point count grid
   - Grid Parameters
     - Grid Resolution (default = 6 ft): 6
     - Radius value (default = 6 ft): 6
   - Grid Format
     - All formats
   - Null Filling
     - 7

3b. DEM Generation (TIN):
   - Grid Method
     - Calculate TIN
   - Grid Parameters
     - Grid Resolution (default = 6 ft): 6
     - Max triangle size (default in units): 50
   - Grid Format
     - Arc ASCII Grid
     - GeoTiff
     - IWG
     - All formats

4. Derivative Products:
   - Generate hillshade and slope grids in grid format

5. Visualization:
   - Generate hillshade images and Google Earth files from DEMs
   - Attitude of the light, (in degrees): 45
   - Azimuth of the light, (in degrees): 315
   - Generate additional color-relief and colored hillshades

Job Description:
These options allow users to describe and keep track of their jobs. Information entered below is recorded along with other job parameters in your personal LiDAR Job archive accessed via myOpenTopo (available only to registered OpenTopography users).

Job title: (up to 100 characters)
My Indiana Project

Job description:
(up to 500 characters)
LiDAR (.las) Processing

![OpenTopography webpage](image)

**LiDAR Job Report**

<table>
<thead>
<tr>
<th>Job Id</th>
<th>Dataset</th>
<th>Title</th>
<th>Submission</th>
<th>Completion</th>
<th>Duration</th>
<th>Num Points</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1384584052510111825153657</td>
<td>IN_2011_2013</td>
<td>My Indiana Project</td>
<td>2014-03-11</td>
<td>2014-03-11</td>
<td>02:38:42</td>
<td>1,011,414</td>
<td>Done</td>
</tr>
</tbody>
</table>

**Download Job Metadata:**

- metadata-1384584052510111825153657.txt

**Point Cloud Results:**
- Download point cloud data: points.las

**DEM Results:**
- Download compressed DEM results: dem2.tar.gz (Local Gridding)
- Download compressed DEM results: output.tar.gz (TIN)

**Derivative Product Results:**
- Download compressed Hillshade & Slope Products: vit2.tar.gz (Local Gridding)
- Download compressed Hillshade & Slope Products: vit2.tar.gz (TIN)

**Visualization Products:**
- Zidw DEM: Download KMZ file: viz.lidw.kmz
- View with Google Earth browser plug-in
- Download KMZ file: viz.lidw琛s.kmz
- View with Google Earth browser plug-in

**Times by Services:**

- Querying Time: 6 seconds
- Local Gridding Time: 3 seconds
- Streaming TIN Time: 6 seconds
- Format Translation Time: 3 seconds
- Visualization Time: 12 seconds
- Derivative Products Time: 7 seconds
NATIONAL HYDROGRAPHY DATASET
Project to Improve Indiana’s NHD

Goal: Correct & Upgrade NHD to Local Resolution

• Use 2005 and newer Orthophotography and LiDAR to correct the existence and the locations of physical features

Existing High-Res NHD in RED

Improved NHD using 2005 Orthophotography in BLUE
Example of improved alignment

Existing High Res NHD in **RED**
Improved NHD **YELLOW**
Creating Local Resolution NHD

Phase 1 Pilot, Upper Eel Subbasin

- 24K NHD: 2,177 Flowlines; 2,571 Waterbodies
- Local Resolution: 47,821 Flowlines; 3,350 Waterbodies
http://www.in.gov/gis/

THE INDIANA GEOGRAPHIC INFORMATION OFFICE
GIS PUBLICATIONS

A Distributed Model for Effective Geographic Information Management / Building a National Geographic Information Infrastructure

Authors
- Jim Sparks, Geographic Information Officer
- Phillip Worrall, Executive Director
- Kevin Mickey, Director Geospatial Data Sharing - Indiana Information Office

Geospatial Data Sharing - Guidelines

Source
- The National States Geographic Information Council (NSGIC)

This Isn't Private Information

NGA surveillance of our email. Military and civilian use of drones. Applications
State Composite Address Locator

LOCATION: https://gis.in.gov/arcgis/services

To Access the locator from the geocoding toolbar:

1. Geocoding toolbar > GeoCoder > Manage Address Locators

Folders:
- DEM
- DNR
- DOT
- ISDH
- Utilities

Services:
- Imagery_Basemap (MapServer)
- Indiana_Composite_Locator (GeocodeServer)
- IndianaMask_World (MapServer)

Supported Interfaces: REST SOAP Sitemap Geo Sitemap
2. Address Locator Manager > Add > GIS Servers (From Drop down) > Add ArcGIS Server

3. Pop-up > Use GIS services > add server URL (https://gis.in.gov/arcgis/services)

4. Click on server connection > Select Indiana_Composite_Locator from list
Address Geocoding

Judy DeLury
Amanda O’Daniel

Address Geocoding with State Composite Service

Geocoding is the process of transforming a description—such as a pair of coordinates, an address, or a name of a place—to a location on the earth's surface. The state's composite service comes from a collaboration between county governments and the state. The data originates at the county and the state regularly harvests county data for integration into a single dataset.

PowerPoint Presentation
State Composite Address Locator
What We Do

IGIC coordinates geographic information resources in Indiana – we take the lead in getting people and organizations working with each other toward common goals.

IGIC provides education, policy guidance, and technology resources to hundreds of individuals and organizations throughout Indiana.

Mission

Coordination of Indiana GIS through dissemination of data and data products, education and outreach, adoption of standards, building partnerships and the IndianaMap.

Activities

- Leading major data and research initiatives like the IndianaMap
- Coordinating the annual Indiana GIS conference
- Directing activities for data sharing and standards development
- Providing outreach through seminars, workshops and publications
- Managing local and statewide programs like the 2005 Orthophotography Project
- Providing access to data, information and tools

Learning Resources

- IGIC Seminars, Webinars & Road Shows
- GIS Courses

Teaching Resources

- Presenter Kits
- Flyers & Brochures

Past Presentations

- IGIC Seminars & Webinars
- IGIC Road Shows
- Regional Geo-Dinner Meetings
- Annual GIS Conferences

Annual Conference

**IGIC’s Annual Indiana GIS Conference**

Since 2002, the Indiana Geographic Information Council has held an Annual Indiana GIS Conference. Last May, 325 GIS professionals from across Indiana attended our two day conference and enjoyed over 60 outstanding presentations.

Conference Information

Information on our upcoming, 2015 Conference – [HERE](#)
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