IGIC Geospatial Data Coordination, Sharing and Advocacy

Phil Worrall
Executive Director
Indiana Geographic Information Council (IGIC)
What is IGIC?

• IGIC is a nonprofit 501(c)(3)
• IGIC is a membership organization
• IGIC is administered by an elected board of directors
• IGIC helps our members build a modern, accurate, documented, and accessible geospatial information infrastructure for Indiana.
Who We are

IGIC 2017 Board of Directors
Who We Are

- Representative organization of professionals and stakeholders (GIS, surveyors, utilities, universities, non-profits, government, private industry, and more)
- 350+ General Members
- 34 Elected Directors (Representing 13 Different Sectors)
- 150+ Active Volunteers
- 3,000+ Volunteer Hours Annually
- 1 paid staff
IGIC - Committees & Workgroups

IndianaMap Framework Data Workgroups
- Boundaries-Cadastre-PLSS Workgroup
- Elevation Workgroup
- IGIC / ISPLS Geodetic Control Workgroup
- IndianaMap “Steering” Committee
- Orthophotography Workgroup
- Streets and Addresses Workgroup
- Waters Workgroup

NEW
- 2020 Census

IGIC Committees
- Communication Committee
- Conference Committee
- Data Sharing Committee
- Education Committee
- Elections Committee
- Executive Committee
- Finance Committee
- Geospatial Preparedness
- Legislative Committee
- Membership Committee
- Recognition Committee

IGIC User Groups
- GeoHealth Collaborative
- Regional GIS User Groups (NE, NW, Central, & SW)
Coordinating GIS in Indiana

I.C. 4-23-7.3 Indiana GIS Mapping Standards (2007)
Coordinating GIS in Indiana

The State Geographic Information Office (GIO)
Indiana Geographic Information Council (IGIC)
An Active and Engaged GIS Community
Coordinating GIS in Indiana

THE BIG PICTURE
The IndianaMap is a portfolio of projects that involve the collaborative efforts of federal, state, and local partners. The purpose of these efforts is to acquire, improve, and deliver a wide variety of Geographic Information Systems (GIS) data for Indiana.

The IndianaMap provides a viewing tool that can be used to view and query more than 220 layers of GIS data through the web. The available data include aerial photographs, land cover, reference layers, and layers related to infrastructure, demography, environment, hydrology, and geology.
Hoosier Hospitality

Why?

Data Sharing & Project Partnerships

- Federal Government
- State Government
- Private Sector
- Universities
- Counties
- Cities & Towns

COMMON INTERESTS

Indiana MAP
One Map for Indiana
It’s Statewide
It’s Regional
It’s Local
It’s Yours!

Enable improved government service to citizens, and an enhanced ability for citizens to stay informed and to engage in the democratic process
IndianaMap

Build Once, Use Many Times

Framework Data

Parcels & Ownership
Streets & Addresses
PLSS
Water
Boundaries
Elevation
Orthophotography
Geodetic Control

Your Data / Other Thematic Data

Zoning
Wetlands
Landcover
Infrastructure
Water Lines
Soils
Welcome to IndianaMap

IndianaMAP is the largest publicly available collection of Indiana geographic information system (GIS) map data. It is made possible by an alliance of partners from federal, state, local organizations and agencies, and universities. You can:

NEW & Updated Layers

- Updates for Five Layers added to the Map
- Four IndianaMap Data Sharing Initiative Layers Updated
- Four IDNR Layers Updated
- Four IndianaMAP Data Sharing Initiative Layers Updated

IndianaMap News

- Three Layers Removed from IndianaMap
- Institutional Control Sites (IDEM) Layer Updated
- Explore the New IndianaMap Layer Gallery
- Custom Printing Added to the Map

Important Links

- Indiana Geological Survey
- Indiana Spatial Data Portal
- Indiana Geographic Information Council
KARST_DYE_LINES_IN: Inferred Connections for Selected Subsurface Dye Traces in Southern Indiana (Indiana Geological Survey, 1:24,000, Line Shapefile)

Metadata:

- Identification_Information
- Data_Quality_Information
- Spatial_Data_Organization_Information
- Spatial_Reference_Information
- Entity_and_Attribute_Information
- Distribution_Information
- Metadata_Reference_Information

Identification_Information:

Citation:

Originator: Indiana Geological Survey
Publication_Date: 20020717
Title: KARST_DYE_LINES_IN: Inferred Connections for Selected Subsurface Dye Traces in Southern Indiana (Indiana Geological Survey, 1:24,000, Line Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Information:
Publication_Place: Bloomington, Indiana
Publisher: Indiana Geological Survey

Online_Repository: <http://igs.indiana.edu/accims/statewide/download.html>
Other_Citation_Details:
A predecessor of this shapefile (a coverage named DYE_LINE) was used in the publication of the following map: Frushour, S.S., Harper, D., and Dintaman, C., 2000, Selected subsurface dye traces in south-central Indiana, Indiana Geological Survey, Miscellaneous Map 66.

Description:

Abstract: KARST_DYE_LINES_IN is a line shapefile that shows inferred subsurface connections between input and detection points of various dye-trace investigations in southern Indiana. This shapefile should be used in conjunction with an associated shapefile named KARST_DYE_PTS_IN, which shows input, output, and intermediate dye-trace points.

Purpose: KARST_DYE_LINES_IN was derived from a coverage named DYE_LINE. The purpose of DYE_LINE was to compile unpublished work maps of Samuel S. Frushour (Indiana Geological Survey) and to bring
Welcome to gis.iu.edu

The Indiana Spatial Data Portal (ISDP) provides access to more than 30 terabytes of Indiana geospatial data. Most datasets are available to the public for download and have no use restrictions. Indiana University’s (IU) high performance networks and computing infrastructure support the ISDP which archives and provides web access to imagery provided by data partners within and outside IU. To learn more about discovering, downloading and viewing data from the ISDP, see the ISDP tutorials.

Available statewide datasets include aerial photos, topographic maps, LIDAR and elevation data, and Sanborn historic maps. In addition, the ISDP hosts several local datasets for Allen, Barbolomew, Boone, Dearborn, Gibson, Hamilton, Hancock, Hendricks, Johnson, Marion, Monroe, Morgan, Posey, Shelby and Wayne Counties.

This web site connects to Indiana University’s Scholarly Data Archive (SDA) which provides long-term, disaster-tolerant data archival and distribution capabilities to hundreds of terabytes of IU data. The SDA archives data on tapes. When downloading files please be aware that you may experience a short delay (20 seconds to 1 minute) before the download begins. During this time a robotic system is locating and mounting a tape and transferring your file from tape to spinning disk.
Indianamap Gallery

Indiana Oil and Gas Well Map
IndianaMap Data Sharing Initiative Layers: Parcels,
Indiana Bedrock Geologic Map
Petroleum_Wells

Indianamap is the public source for map data in Indiana. It includes the information people need most in a format that is accessible to both the general public and expert geographic information systems (GIS) users.
IndianaMap Open Data Site - Hosted by the Indiana Geographic Information Council (IGIC) & the Indiana Geological Survey (IGS)

Through our IndianaMap initiatives, IGIC’s mission to lead the effective application of geographic information across Indiana and our vision to provide a modern, accurate, documented, and accessible geospatial information infrastructure for Indiana is realized. IndianaMAP is the largest publicly available collection of Indiana geographic information system (GIS) map data. It is made possible by an alliance of partners from federal, state, local organizations and agencies, and universities.
The Indiana OpenTopography Server

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

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

1c. Choose an Output Coordinate System:
   - NAD83 UTM Zone 10N (Meter) [EPSG: 32610]
   - NAD83 Indiana East (ftUS) [EPSG: 2965]
   - NAD83 Indiana West (ftUS) [EPSG: 2966]
   - NAD83 UTM Zone 16N (Meter) [EPSG: 32619]

2. Point Cloud Data Download:
The Indiana OpenTopography Server

The Future of GIS in Indiana

- Continued support of Statewide GIS data development projects (existing & new)
- Developing a sustainable GIS funding model that supports both bottom>top, and top>bottom GIS data flows.
- Building an Active and Engaged GIS Community across Indiana
The Future of GIS in Indiana

Continued support of Statewide GIS data development projects (existing & new)
- County Data Sharing Initiative (NG9-1-1)
- Ortho & LiDAR
- Indiana Hydrography (NHD & WBD)
- Indiana Historic & Current Land Surveying Data
- 2020 Census

Developing a sustainable GIS funding model that supports both bottom>top, and top>bottom GIS data flows.

Building an Active and Engaged GIS Community across Indiana
All 92 Indiana Counties are participating, consisting of...

4,870 Government Boundaries

603,132 Street Centerlines

3,630,775 Parcels

3,191,230 Address Points
Dare To Dream!

April 6, 2015

92
NG9-1-1 utilizes GIS data for 9-1-1 Emergency Call Routing Functions and Location Validation Functions (ECRF/LVF)
Geospatial call routing enables more accurate call routing than traditional E9-1-1 systems and can reduce the number of 9-1-1 call transfers due to misrouted 9-1-1 calls.

This in turn can help reduce emergency response times and save more lives and property.
In addition to being used when routing 9-1-1 calls, NG9-1-1 systems use GIS data before a 9-1-1 call is placed to see if the address is valid for 9-1-1.

The GIS data provisioned to the LVF is identical to the GIS database provisioned to the ECRF.
Next Generation 9-1-1

**Required Data***
- Address points
- Road centerlines
- PSAP boundaries
- ESA boundaries
- Orthoimagery

**Optional Data***
- Local Administrative Boundaries
- Land Parcels
- Structures (Strong need for structures on “campuses”)

*Many of these data layers are already being shared through the GIO’s County Data Sharing Initiative.*
Administered through Geographic Information Office, Indiana Office of Technology – Jim Sparks, IN GIO.

IGIC Orthophotography Workgroup RFP support.

Base Products

- 30-cm (1-foot) Pixel Resolution
- 4-Band Imagery (R,G,B, NIR)
- Seamless GeoTIFF Tiles

2016-2018 Statewide Orthoimagery Program
Orthoimagery: Optional Resolution 6-inch
Orthoimagery: Optional Resolution 3-inch
3DEP FY15 BAA / FY16 Awards

BAA Solicitation

II. 3D Elevation Program Opportunity Description

- D. 3DEP Lidar Base Specifications, Project Deliverables and Upgrade Options
  - http://pubs.usgs.gov/tm/11b4
  - Must meet QL2 specifications

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<th>Nominal Pulse Density (NPD)</th>
<th>DEM Post Spacing</th>
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2016-2018 Statewide 3DEP Lidar Program

2016: 3 County USGS/IGIC Cooperative Agreement Administered through IGIC, Phil Worrall

2017 – 2018: 89 County USGS/NRCS Cooperative Agreement Administered through Indiana NRCS Office, Chris Morse

IGIC Elevation Workgroup support

Base Products (QL2 Lidar & DEM)
Indiana Local-Resolution Hydrography data

- NHD Updates completed in 2016
- WBD Updates still to be done (funding?)
Improving Indiana’s NHD

Example of improved alignment

Existing High Res NHD in RED

Improved NHD YELLOW
NHD Swipe Map illustrates the difference between Indiana's original USGS 1:24,000 High-Resolution National Hydrography Data Set (NHD), and Indiana's new USGS 1:24,000 Local-Resolution NHD. Click on the Vertical line and slide it left-right to expose Indiana's new Local-Resolution streams and ditches. Click on the Bookmarks 1 - 9 to zoom to US House Congressional Districts. Click on #10 to go back to statewide view. Enter a full address [or a zip code] in the search box in the upper right corner and click on the magnifier to zoom to an
Improving Indiana’s WBD

Example of potential WBD improvements to Grand Calumet, Little Calumet, and Hart Ditch in NW Indiana.
IGIC has a long-term commitment to make foundational survey and historic land records data available on IndianaMap.

Current Initiatives Include...

1. County Geospatial Information Resource
2. Grid Point Layer
3. Tie Card Layer
4. General Land Office (GLO) Field Notes and Plats Layer
5. GLO Land Patents Layer
6. Timeline Layer
7. GIS County Boundary Layer
Indiana Historic & Current Land Surveying Data

1. County Geospatial Information Resource Layer (Government websites and contacts plus links to various government resources)
   - County Surveyor Website
   - County Surveyor
   - County GIS Website
   - County GIS Contact
   - Links to survey layers and information of importance, etc.
2. Grid Point Layer (Computer generated Grid Points showing the approximate location of Public Land Survey System (PLSS) points used to geo-reference scanned documents

- Points not survey grade accurate
- Statewide Grid Point Naming Convention

IN02_T23NR06E03_08
Indiana Historic & Current Land Surveying Data

3. Tie Card Layer (Grid points linked to scanned County Surveyor Tie Cards) (not survey grade accuracy)

Bartholomew County - Click on Grid Point and the Tie Card pops up

Scanned Tie Card – Opens when link is clicked
Indiana Historic & Current Land Surveying Data

4. General Land Office (GLO) Field Notes and Plats Layer (Original, Federal, State, and County records)

Marion Co. Notes
4. General Land Office (GLO) Field Notes and Plats Layer (Original, Federal, State, and County records)

Example of a copy error below:

T21N R4W – Tippecanoe County (Compared all four datasets)

Source: Clayton Hogston
Indiana Historic & Current Land Surveying Data

5. GLO Land Patents Layer (Links to GLO Patents documents by which land was sold to private individuals)

T015N - R04E
6. Timeline Layer (Traces Indiana history of land records: PLSS, GLO, GLO Districts, Treaties, and Congressional Acts)

Examples:
• 1783 - Virginia legislature relinquished all claim to sovereignty for the remaining territory northwest of the Ohio River
• 1785 - Land Ordinance of 1785 created PLSS
• 1788 - Built in 1788 ... this is the oldest building still standing in Ohio. In this office the first maps of the territory were made and lands sold and recorded
• 1826 - Potawatomi Cession of 1826 1st Article Land Laws (not in Ft Wayne District)
• 1887 - the State Land Office was established in 1887 by order of the Indiana General Assembly
7. GIS County Boundary Layer (Created from County Surveyor's Office data to provide best available GIS layer to support creation of seamless statewide GIS layers)

Noble County

Source: Steve Hook
Indiana Historic & Current Land Surveying Data

Current Status:
- Successful Pilots and Plans in place ready to implement these efforts statewide

The Problem:
- Lack of funding or volunteer resources to complete these efforts as individual or combined projects statewide [all 92 Counties]

A Potential Solution:
- Try Leveraging Social Media (GoFundMe)
IGIC Go Fund Me Project: Marion Co, IN Historic Survey Data

https://www.gofundme.com/MarionCo-IN-Historic-Survey-Data
Geography is KEY to the successful conduct of the Census

Local Update of Census Addresses begins NOW
2020 Census

Census Undercounting costs States Tax income per person
Census Geography Errors Cost Local Communities share of Tax Income

http://www.arcgis.com/home/webmap/viewer.html?webmap=aeea99903613493fbb12db94076c0e37&extent=-152.3653,9.2622,-43.2052,64.9922

6,663,000
1.60%
106,608
$178,355,184
IGIC 2020 Census Committee (Purpose)

Provide a highly focused, central clearinghouse for all GIS information and questions relating to the engagement of local government in Census 2020.

Help insure Indiana communities provide accurate and up-to-date street, address, and boundary GIS data to Census to help them “get the count right”

The committee can produce targeted material (emails, tweets, other TBD) to encourage participation.

The committee can use the Census in Indiana website and the IGIC website to make information available, leveraging the work that the State Data Center and the IBRC will already be doing.
The Future of GIS in Indiana

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- Developing a sustainable GIS funding model that supports both bottom>top, and top>bottom GIS data flows.

- Building an Active and Engaged GIS Community across Indiana
The Future of GIS Nationally & Locally

- How will federal agencies work geospatially with each other and with state partners?

- 2017 Digital Coast Act

- 2017 Geospatial Data Act

- 2017 Open Government Data Act

- 2018 Federal Budget Support for Earth Science initiatives [NASA, USGS, NOAA]

NG9-1-1 (Interested? Join our Legislative Committee)
The Future of GIS in Indiana

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- Developing a sustainable GIS funding model that supports both bottom-to-top, and top-to-bottom GIS data flows.

- Building an Active and Engaged GIS Community across Indiana
IndianaMap Partners

• Indiana Local Government (Counties & Cities & Towns)
• Indiana State Government Agencies (INDOT, IDHS, IDNR, IDEM, DLGF, OCRA, ...)
• Indiana Geological and Water Survey (IGWS)
• University Information Technology Services, Indiana University (UITS)
• IndianaView Consortium
• U.S. Geological Survey (USGS)
• Indiana Natural Resource Conservation Service (NRCS)
• State Data Center, Indiana State Library
• Indiana Business Research Center (IBRC)
• The Nature Conservancy (TNC)
• The Polis Center at IUPUI
• Associations (AIC, AIM, INAFSM, ISJ, ISPLS, IPLS Foundation, GENI,...)
• Coalition of Universities for Spatial Information Sciences (CUSIS)
• Geographic Information Office (GIO), Indiana Office of Technology
• Indiana Geographic Information Council (IGIC)
• Private Industry CORPORATE PARTNERS ...
IGIC CORPORATE MEMBERS AND SPONSORS
<table>
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<tr>
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<td>Eastern Engineering</td>
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Building an Active and Engaged GIS Community across Indiana

The Future of GIS in Indiana

Indiana Geographic Information Council (IGIC)
2018 Membership Drive for Full-Time College Students

If you are a full-time student attending an Indiana College or University any time during 2018 you are invited to join IGIC for FREE.

Your membership will make you a part of Indiana’s growing GIS community, and provide networking, volunteer and education opportunities throughout the year.

To become a Student Member of IGIC in 2018 please provide your contact information below. Also, if you think you would like to be a part of our 2018 Annual GIS Conference in Fort Wayne on May 9 – 11, 2018, please check the Student Poster Competition and/or Student Volunteer boxes below and we will send you some more information.

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The Future of GIS in Indiana

- Building an Active and Engaged GIS Community across Indiana

YOU!
Building an Active and Engaged GIS Community across Indiana (You!)

- Get on the IGIC News and General Listservs
- Become an IGIC Member in 2018 (Nov 1)
- Get involved in a Committee / Workgroup (Today)
- IGIC Members can run for the IGIC Board of Directors (Nov – Dec 2017)
- Attend IGIC’s 2017 Geospatial Coordinators Forum, Thursday, November 16, 2017 – Hamilton County 4-H Fairgrounds, Noblesville, IN
- Present at and Attend IGIC’s Annual Indiana GIS Conference, May 9-11, 2018 Fort Wayne, IN
Thank You!

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