

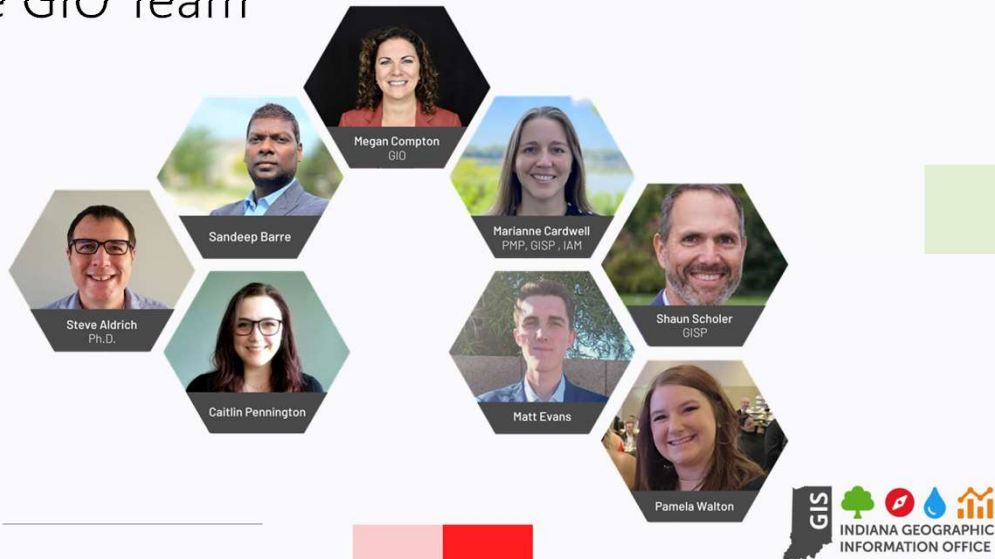
1

Agenda

- Introduction to the GIO
- Data Harvest Program
- Imagery & Elevation
- IndianaMap
- How is this Data Used?
- Q&A

2

The GIO Team



3

About the GIO

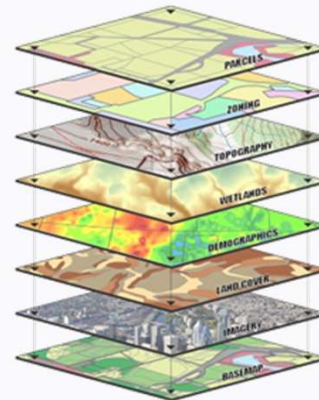
- Indiana Geographic Information Office created by I.C. 4-23-7.3
- Facilitate GIS data cooperation between federal, state, and local governments
- Integrate spatial data to inform state policies, processes, and decision makers
- Coordinate with a variety of stakeholders across all sectors



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State Framework Data Layers

- Promote the development and maintenance of statewide GIS data and framework data layers associated with a statewide base map.
- Disseminate framework data, which includes **imagery**, **cadastral** data, **PLSS**, **elevation**, geodetic control, **governmental boundary units**, **water features**, **addresses**, **streets**.



Source: USGS



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What Does the GIO Do?

- Support state agencies with their GIS needs
- Support GIS infrastructure for the state
- Manage imagery, elevation, and framework data layers programs
- Provide access to statewide GIS data layers



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Data Harvest Program

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What is it?

- Collaborative project with Indiana counties to increase availability of key data layers at all levels of government
- Data includes:
 - Address points
 - Street centerlines
 - Parcels
 - Administrative boundaries

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Incorporation of Real Property Data

```
graph TD; Parcel --> Land; Parcel --> Improve; Improve --> Building; Improve --> Dwelling; Building --> Building_Detail[Building Detail];
```

Includes statewide real property tables from DLGF combining data provided by each county.

Data can be joined to GIS data through the PARCEL_NUMBER field.

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History

- 2008**: Indiana Data Harvest begins
- 2011**: 80% County participation
- 2014**: 100% county participation
- 2018**: Indiana GIS data standards (addresses & roads); New addresses found for the US Census LUCA
- 2019**: Dedicated funds for data collection and review; Dedicated funds for data collection and review
- 2020**: Data feedback shared with counties
- 2022**: First time funding for data improvement

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Partners

The Polis Center

Schneider
GEO SPATIAL

WTH
Smarter just got easier®

INDIANA GEOGRAPHIC INFORMATION COUNCIL
IGIC

IBRC
Indiana Business
Research Center

INDIANA GEOGRAPHIC INFORMATION OFFICE

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Typical Cycle

August 1
Data submissions open

Late October
Parcels

Late December
Address points
Boundaries

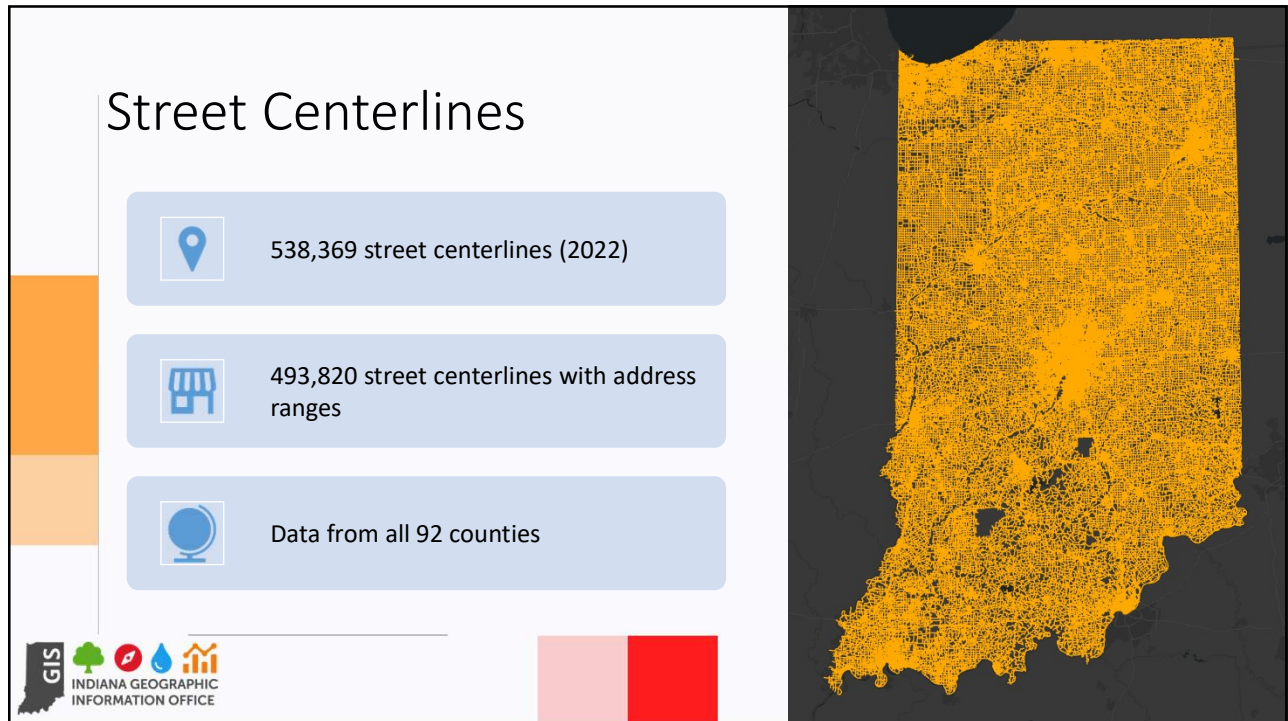
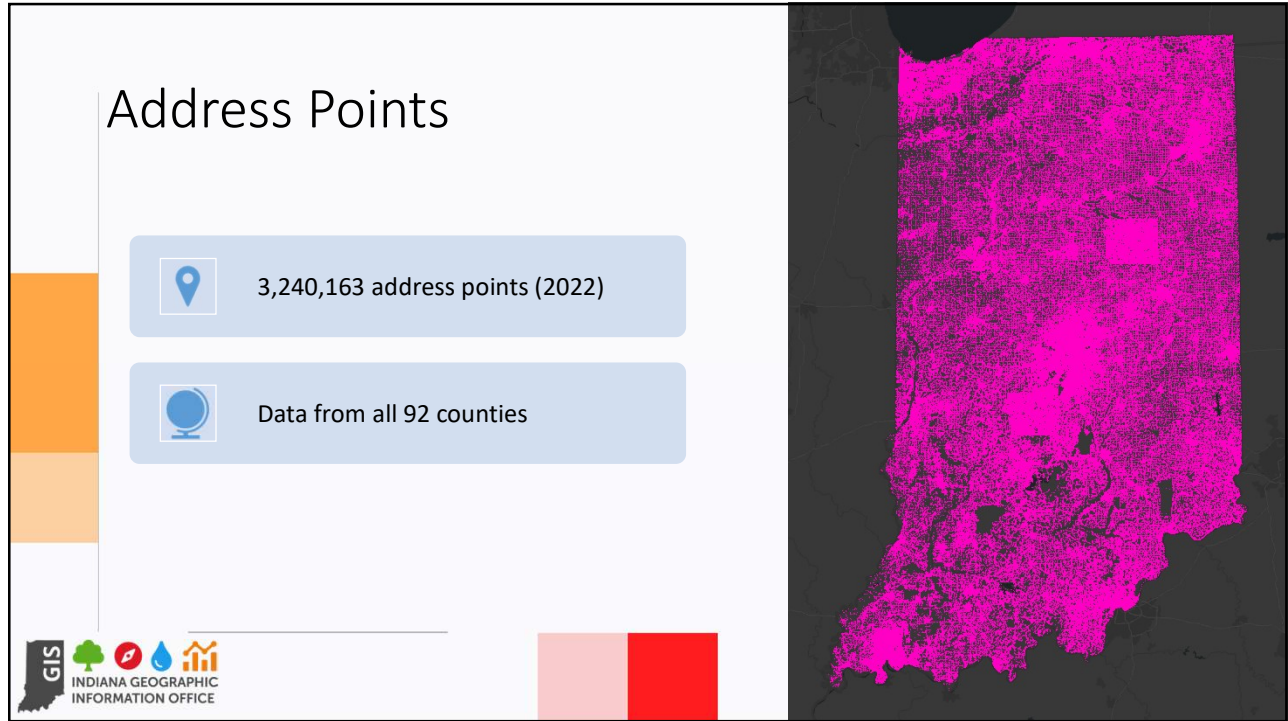
August 31
Data submissions close

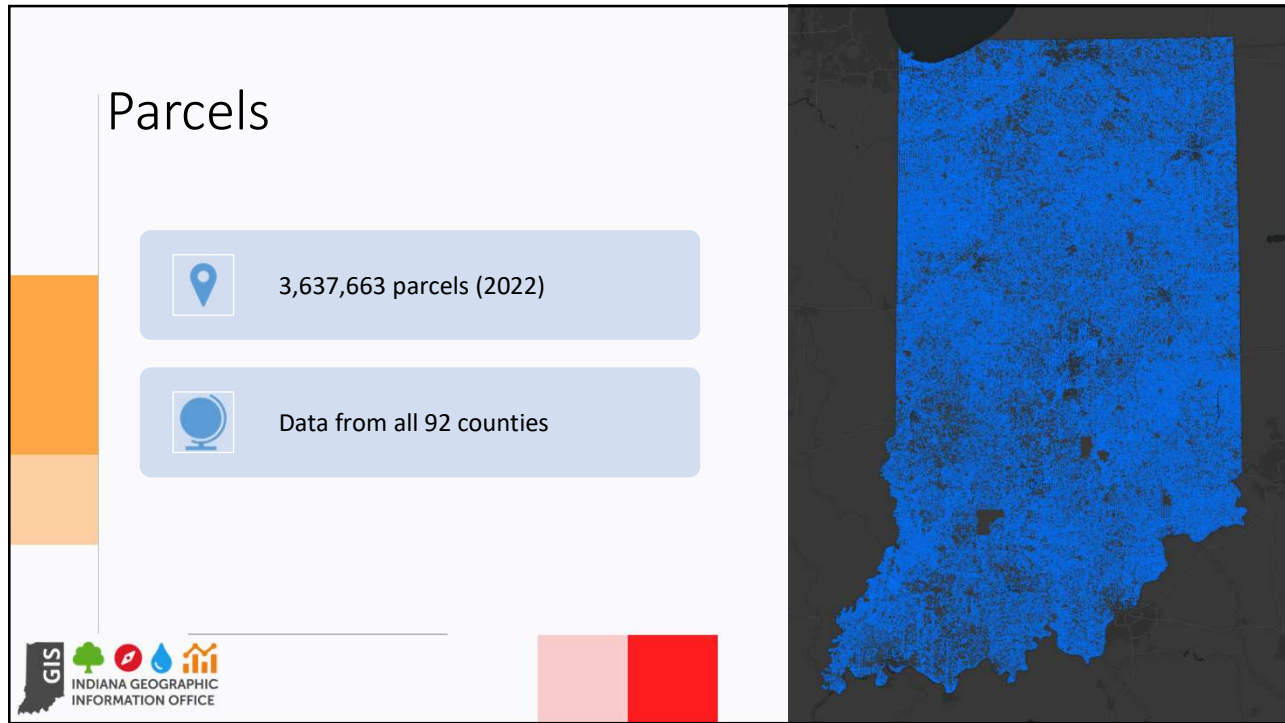
Late November
Road centerlines

January
Statewide geocoder
Documentation

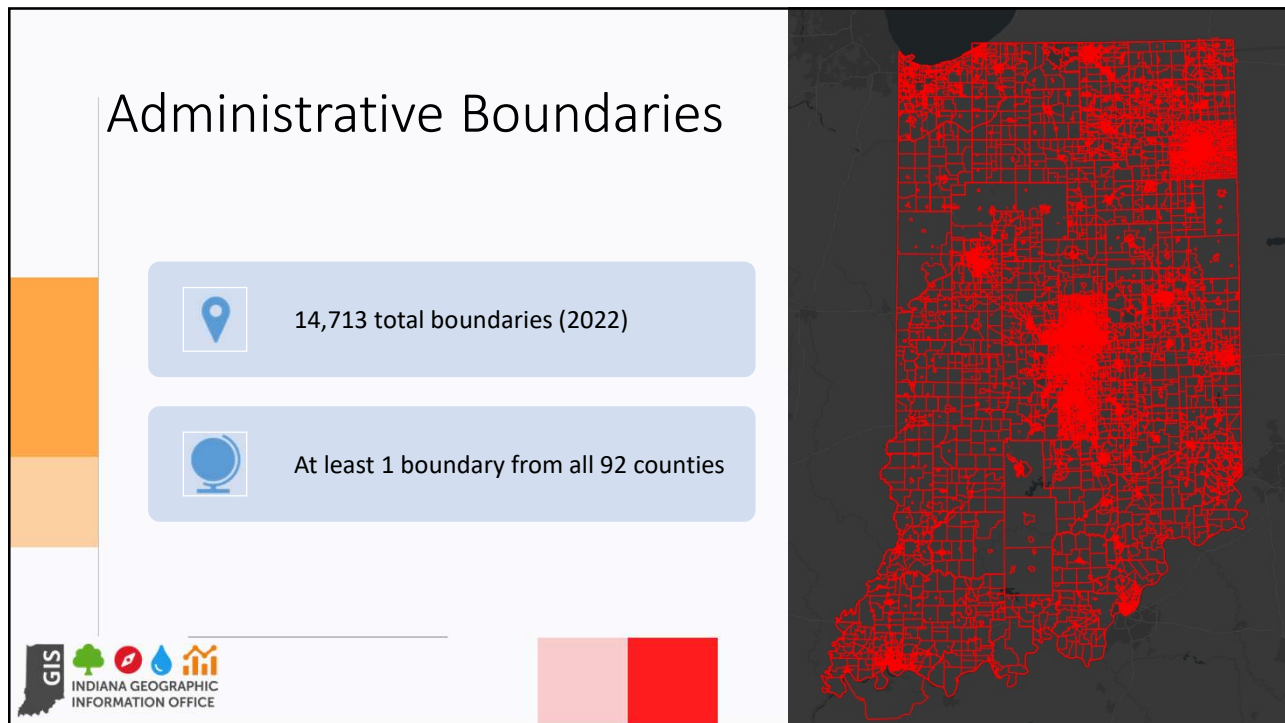
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Geocoder

- Geocode-specific geodatabase
- Multiple locators
- UTM16 & WGS84 composite locators

- DataHarvest_2020_Geocoder.gdb
- Toolbox.tbx
- City.loc
- COUNTY_single.loc
- IDSI_Address.loc
- IDSI_Street.loc
- PLSS_Single.loc
- State_Geocoder_UTM16.loc
- State_Geocoder_WGS84.loc
- Tiger_Street.loc
- Zipcode.loc

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Home Submit FAQs Recognition Resources Previous Harvests

Indiana GIS Data Harvest

Contribute to Indiana's growing geospatial data resources

Achieving our Vision

Geospatial data in Indiana comes from a variety of sources. This is a collaborative project with Indiana counties to increase the availability of key data layers at all levels of government, leading to better service to Hoosiers.

- #### 1 Join

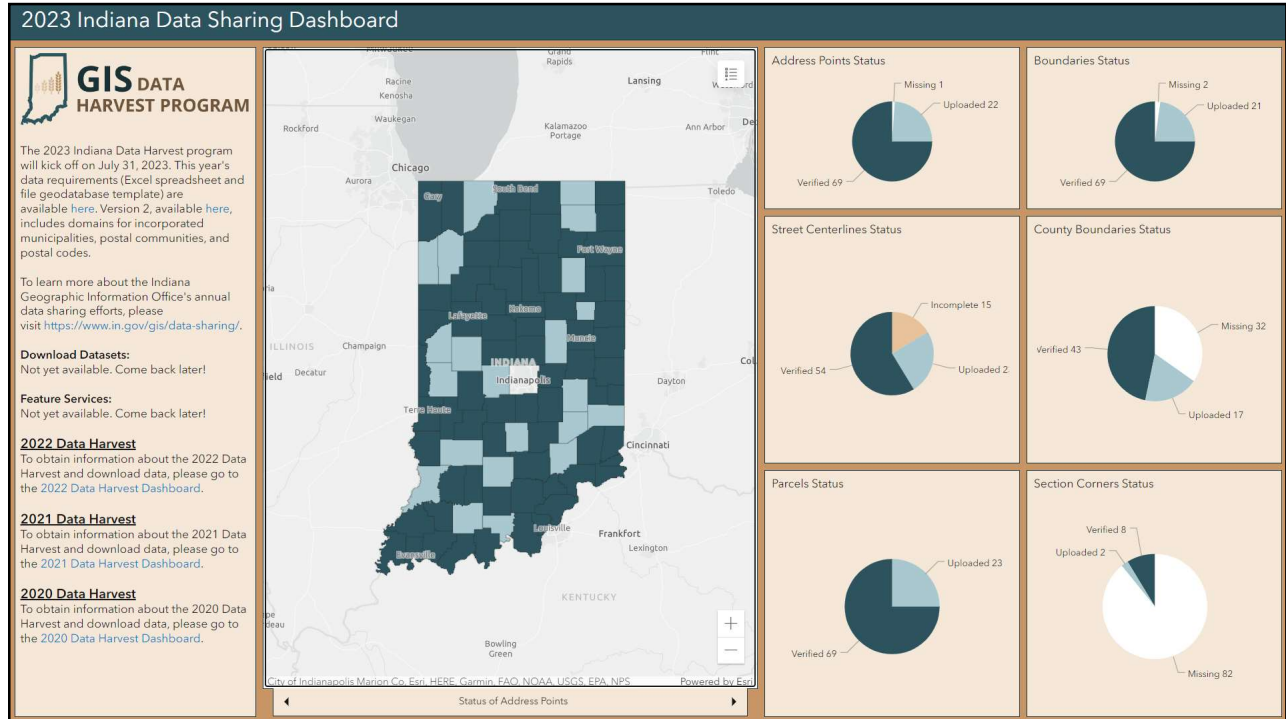
Become part of the process by [signing up](#) and completing the survey.
- #### 2 Contribute

Contribute your County's Geospatial data via web services or upload.
- #### 3 Integrate

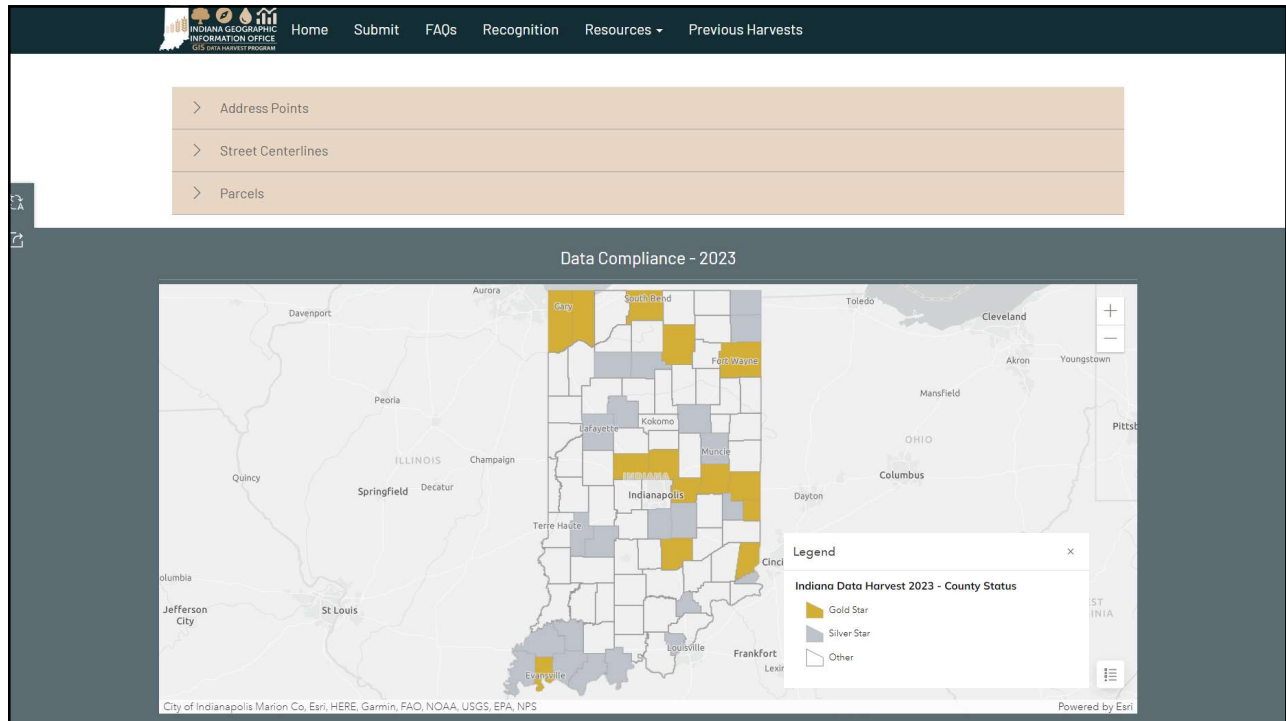
The datasets are standardized to meet industry standards.
- #### 4 Use

Datasets are available for download, as web services, and embedded in address matching routines

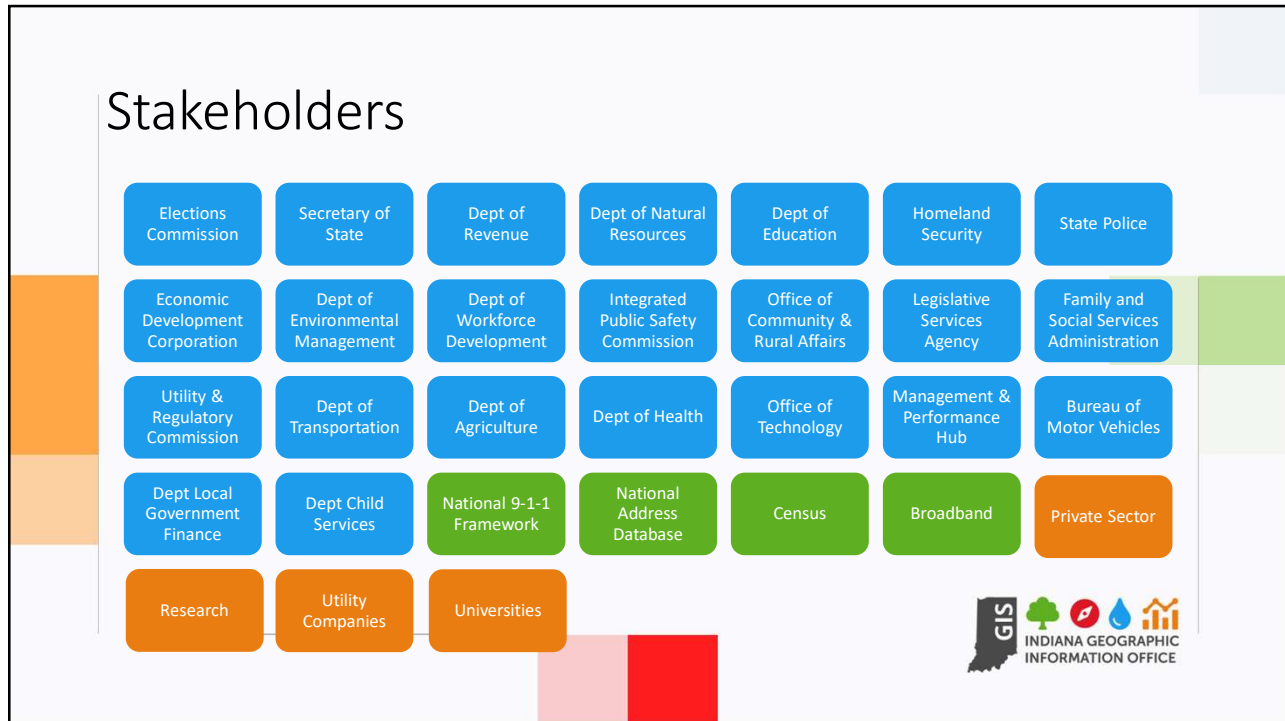
18



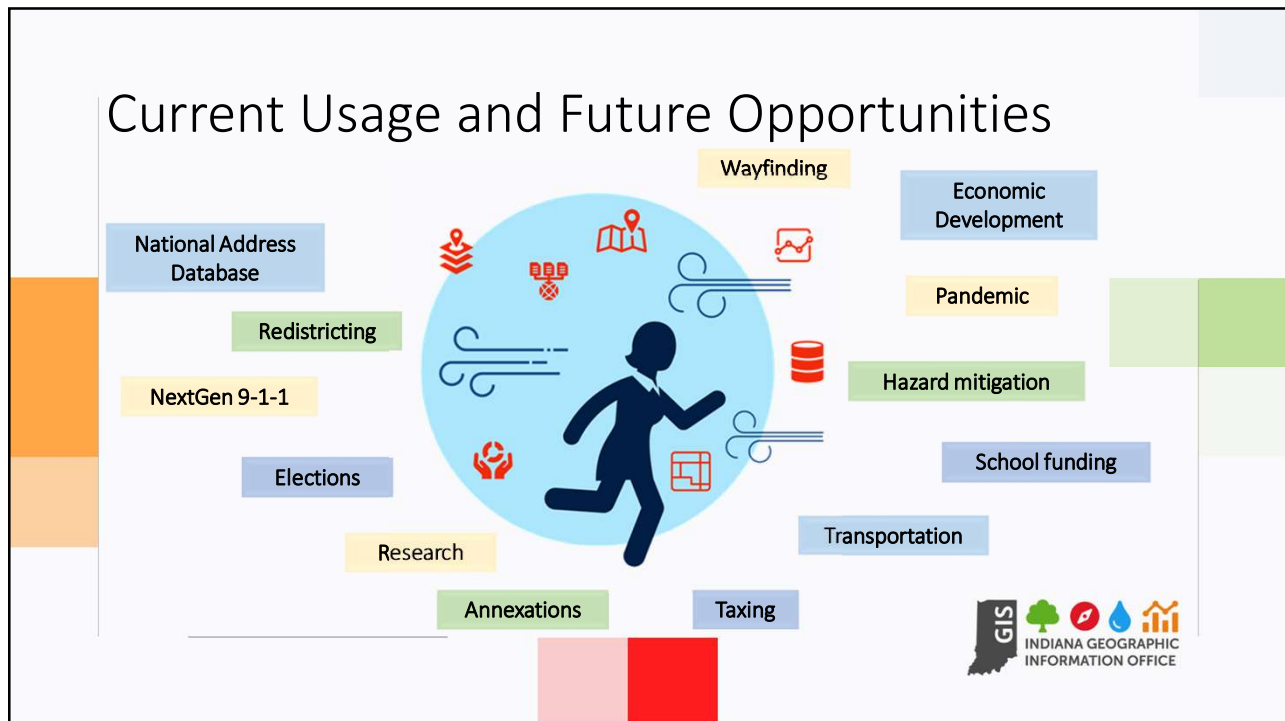
19



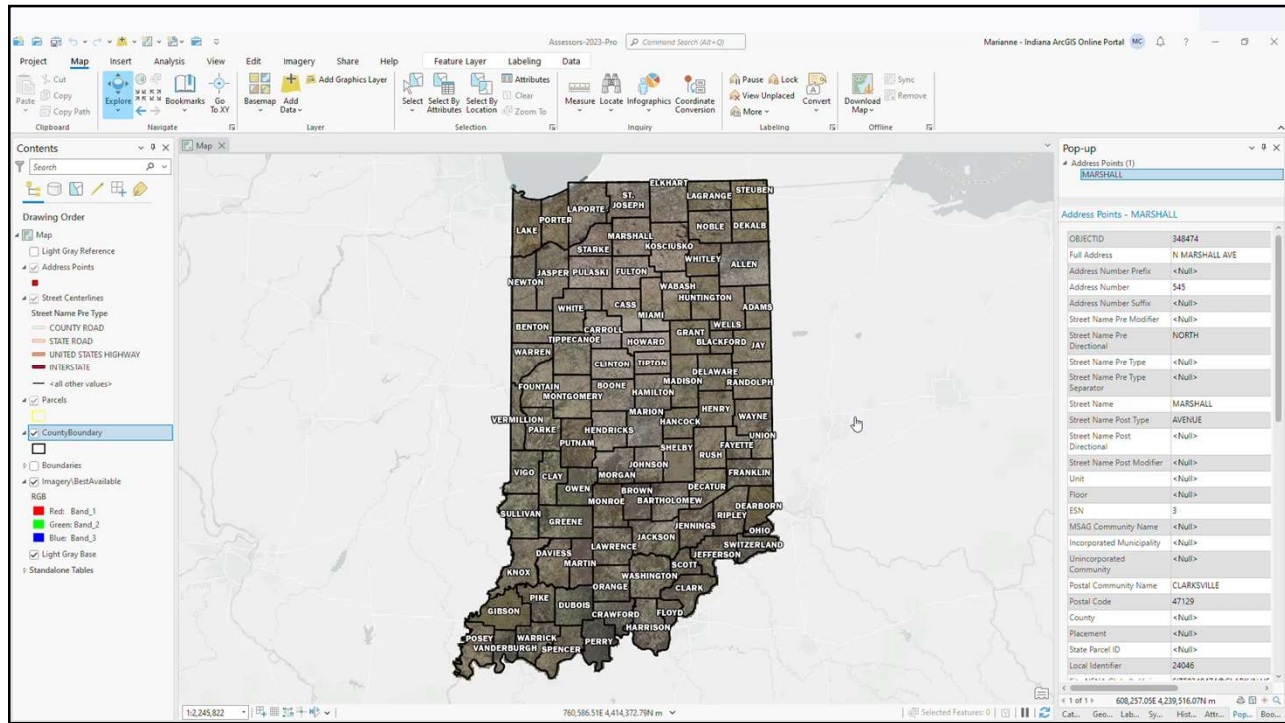
20



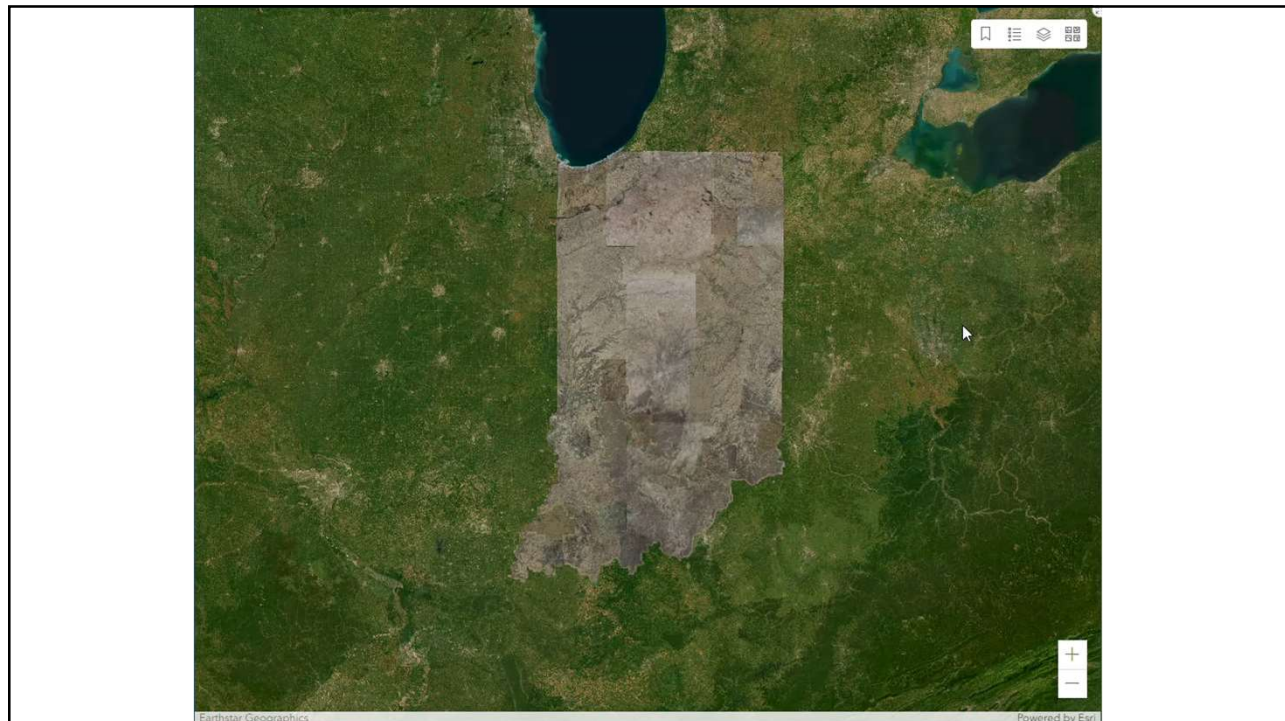
21



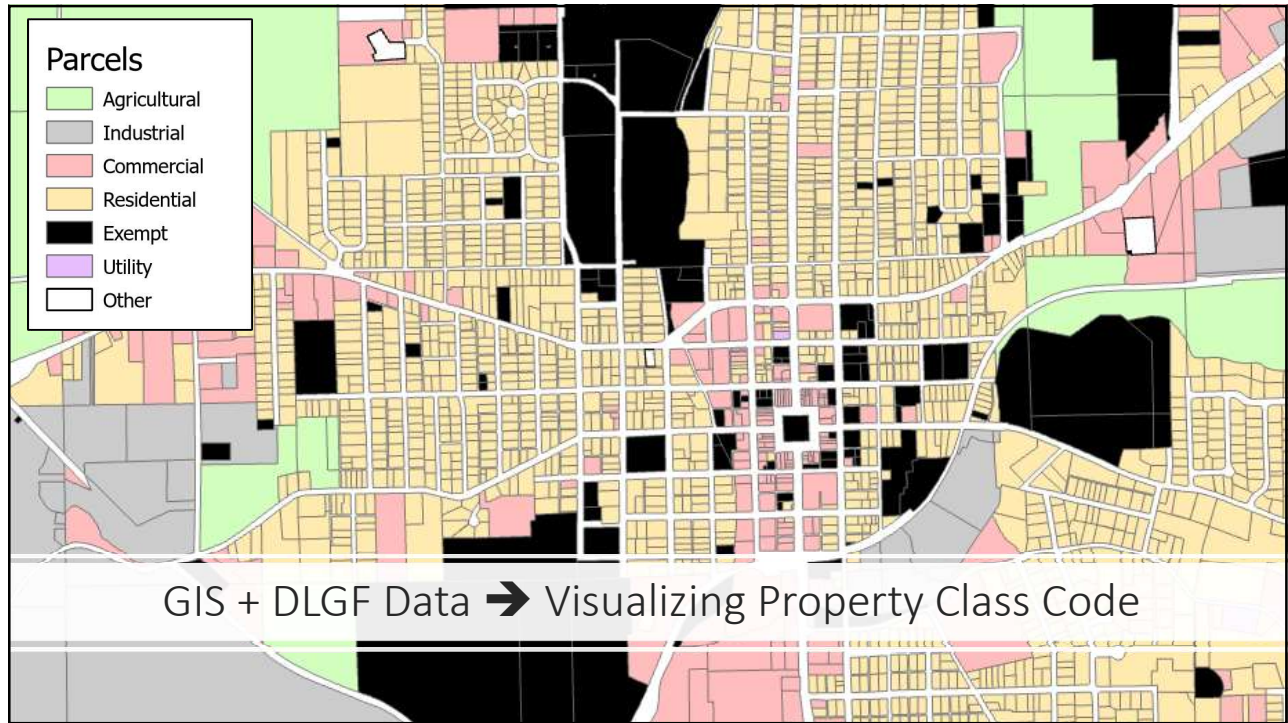
22



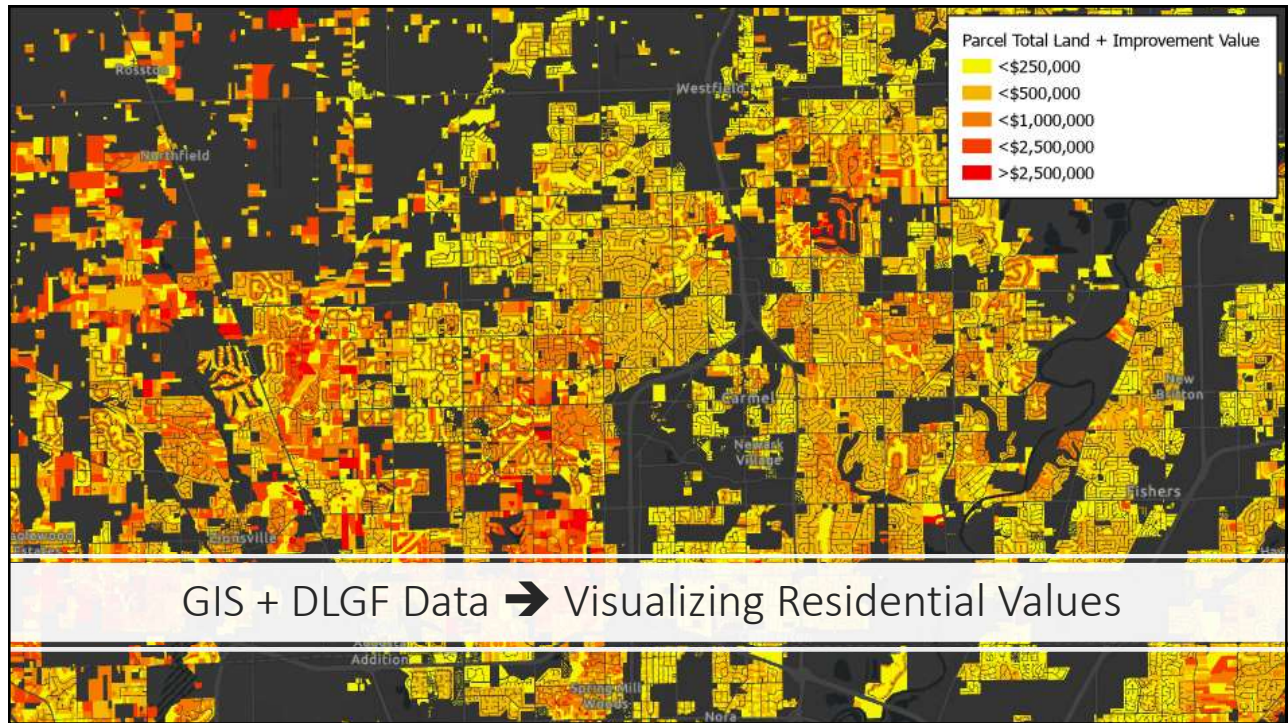
23



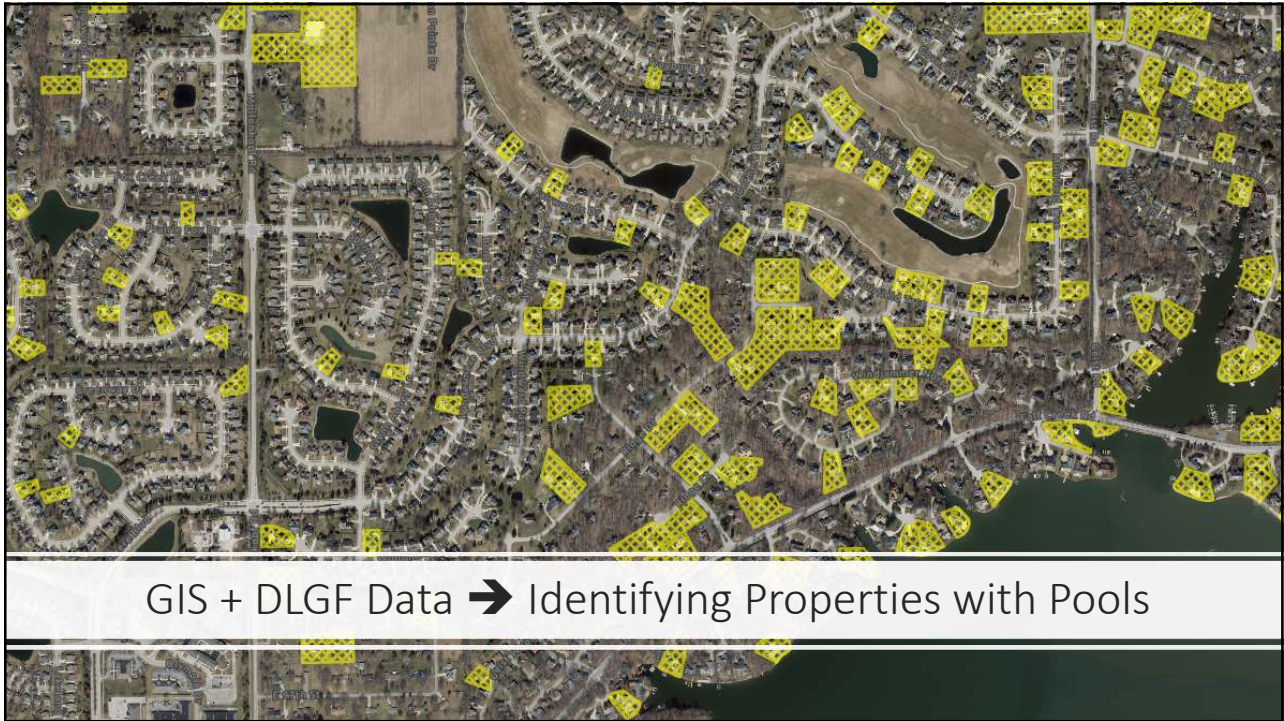
24



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What's Next?


- 


Increase data quality over time
- 

Set of rules (geometry, attributes, cross-layer)
- 


Provide funding avenues
- 

Provide tools to identify data issues
- 

Provide tools to fix common data issues
- 

Potential for more frequent data updates
- 

New submission platform



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For More Information about the Data Harvest



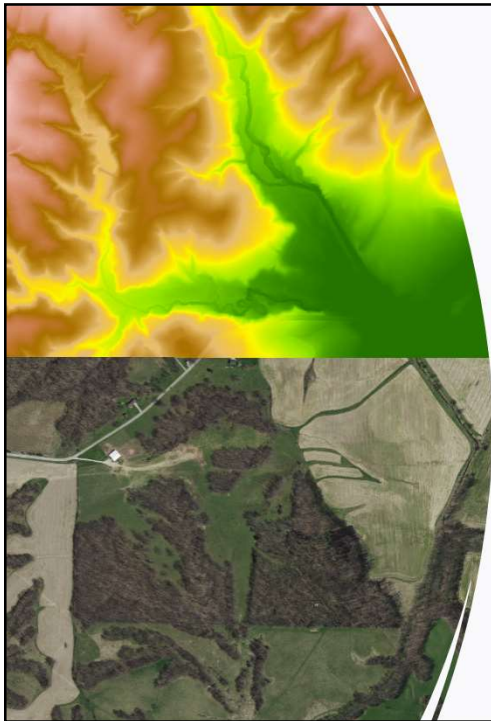
Marianne Cardwell
Deputy GIO
Programs & Outreach
mcardwell@iot.in.gov



Matt Evans
GIS Program Specialist
mevans@iot.in.gov



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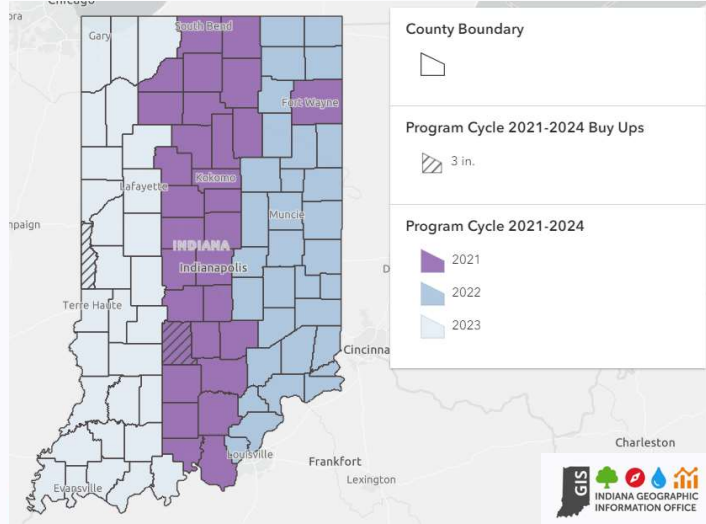


Imagery & Elevation

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Indiana Statewide Imagery Programs

- 2021-2024 Ortho – 6”
- 2016-2019 Ortho – 1’
- 2011-2014 Ortho – 1’
- 2005-2006 Ortho - 1’



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Why Statewide Imagery

"State imagery has been invaluable to our organization."

"Having aerial photography available gives police, fire, and EMS people a visual understanding of their surroundings and situational awareness."

"Statewide projects have helped fill in the gaps for years we might have not flown otherwise."



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Imagery is Authoritative



- Defined resolution
- Known accuracy
- Known time capture
- Professional-level QC verification meeting State-mandated standards and specifications



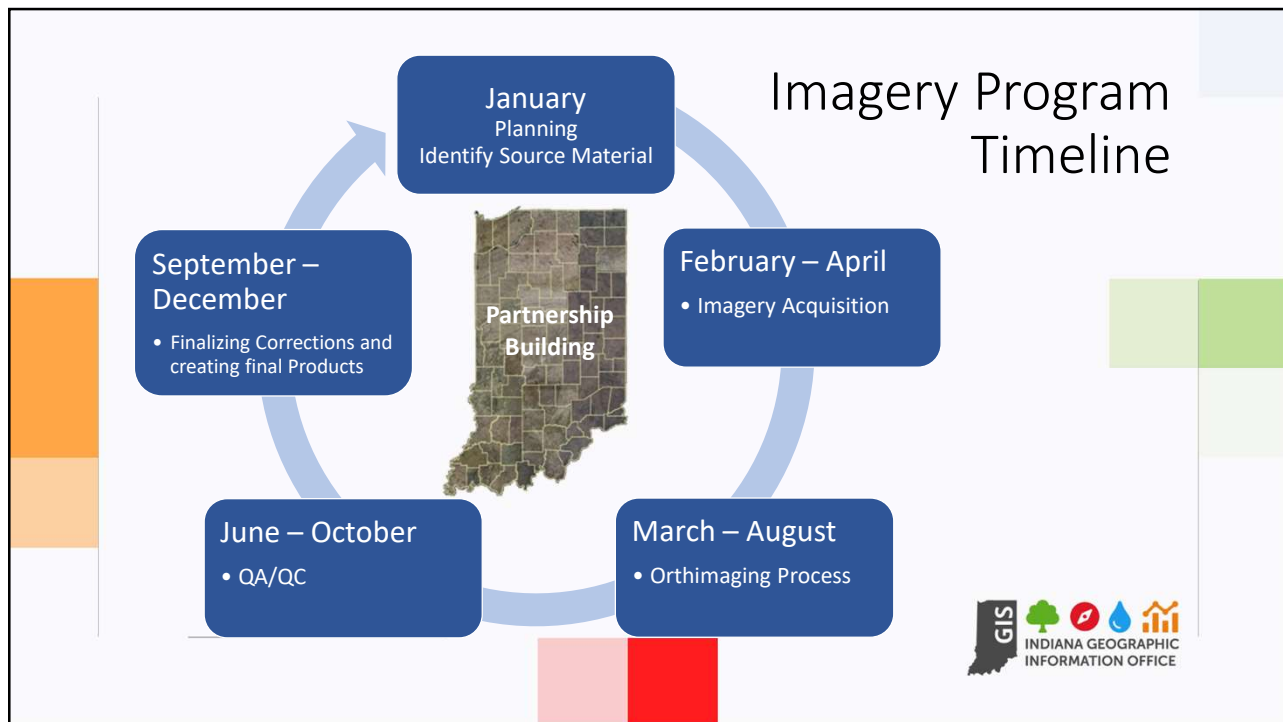
33

Imagery is Available

- Web map applications
- Image services available to the public
- Downloadable



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Indiana Statewide Program - Specification

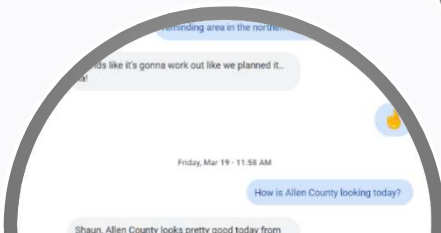
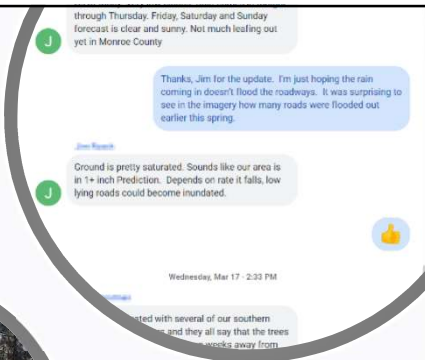
- **Base Products**
 - 6-inch (15-cm) pixel resolution
 - Tile 4 -Band (R,G,B, NIR) imagery
 - GeoTIFF uncompressed
 - ECW & MrSID compressed
 - County mosaic MrSID 3-Band

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Boots on the Ground

- DNR Employees
- GIS Vendor Employee
- County GIS Managers
- County 911 Director
- County IT Director



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Indiana Statewide Program – Products

Survey

2021 Orthophotography Download

Please complete the following survey to receive the login information in order to download Indiana's Orthophotography acquired in 2021.

Employee of ...?*

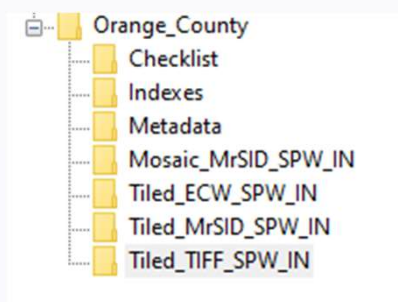
County, Municipality, Regional Government, University, Company, etc

Project Area/County interested in downloading*

All datasets are organized by county. Check all that apply. All datasets will be available for download.

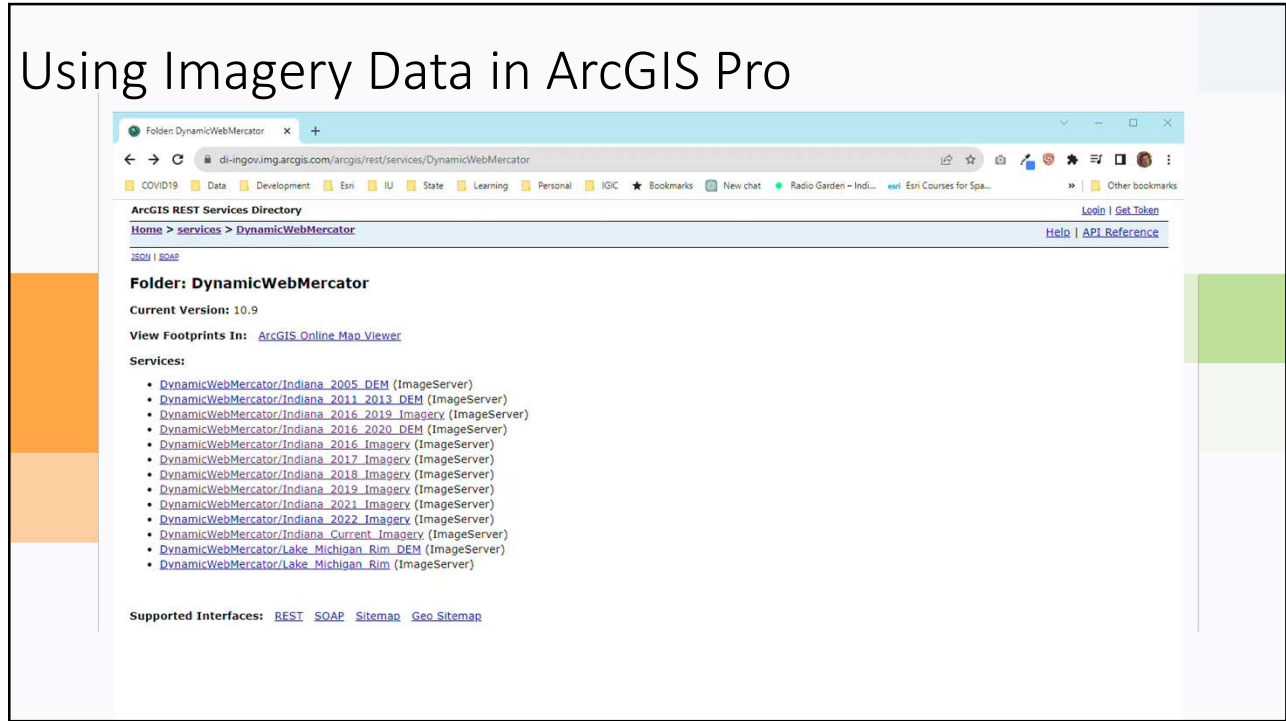
<input type="checkbox"/> Allen	<input type="checkbox"/> Bartholomew	<input type="checkbox"/> Boone
<input type="checkbox"/> Brown	<input type="checkbox"/> Carroll	<input type="checkbox"/> Cass
<input type="checkbox"/> Clinton	<input type="checkbox"/> Crawford	<input type="checkbox"/> Elkhart
<input type="checkbox"/> Fulton	<input type="checkbox"/> Hamilton	<input type="checkbox"/> Harrison

File Structure



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Using Imagery Data in ArcGIS Pro



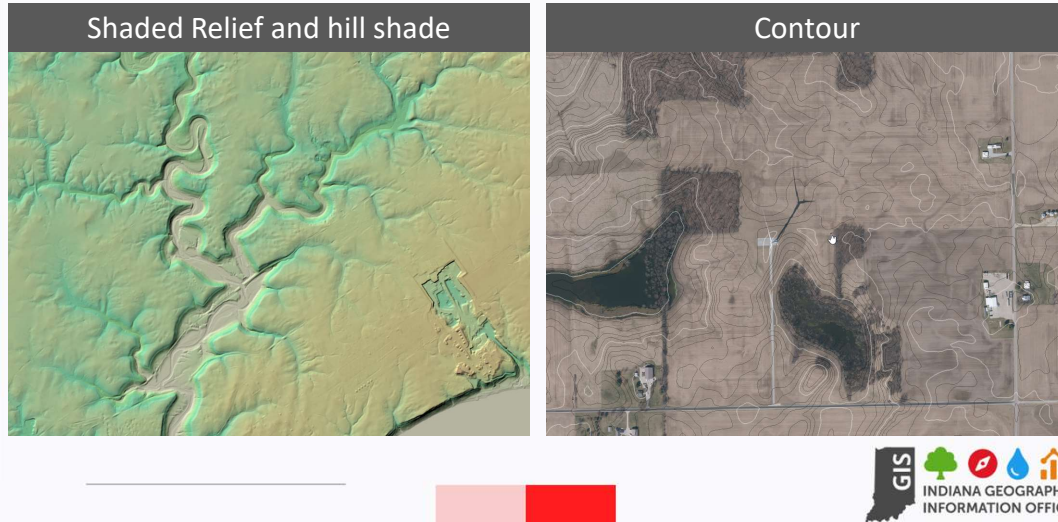
39

Lidar Program History

Proposed 2025-2028	2016-2020	2011-2013
QL1	QL2	QL3
10 cm V.A. 8 pts/sq meter	10 cm V.A. 2 pts/sq meter	20 cm V.A. .5 pts/sq meter

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Visual Elevation Products



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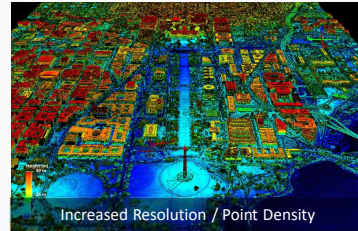
Lidar Point Classification

Table 5: Minimum light detection and ranging data classification scheme.

Code	Description
1	Processed, but unclassified
2	Bare earth
7	Low noise
9	Water
17	Bridge deck
18	High noise
20	Ignored ground (<i>typically breakline proximity</i>)
21	Snow (<i>if present and identifiable</i>)
22	Temporal exclusion (<i>typically nonfavored data in intertidal zones</i>)

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Planned Contract Provisions for Lidar



Main Classifications

- Bare earth
- Low/Med/High Vegetation
- Building
- Water
- Bridge deck

Increased Point Density

- 8 points/meter
- 14 points/meter
- 20 points/meter



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Using Elevation Data in ArcGIS Pro

Folder: DynamicWebMercator

di-ingov.img.arcgis.com/arcgis/rest/services/DynamicWebMercator

COVID19 Data Development Esri IU State Learning Personal IGIC Bookmarks New chat Radio Garden - Indi... Esri Courses for Spa... Other bookmarks

ArcGIS REST Services Directory [Login](#) | [Get Token](#)

[Home](#) > [services](#) > [DynamicWebMercator](#) [Help](#) | [API Reference](#)

[JSON](#) | [SOAP](#)

Folder: DynamicWebMercator

Current Version: 10.9

View Footprints In: [ArcGIS Online Map Viewer](#)

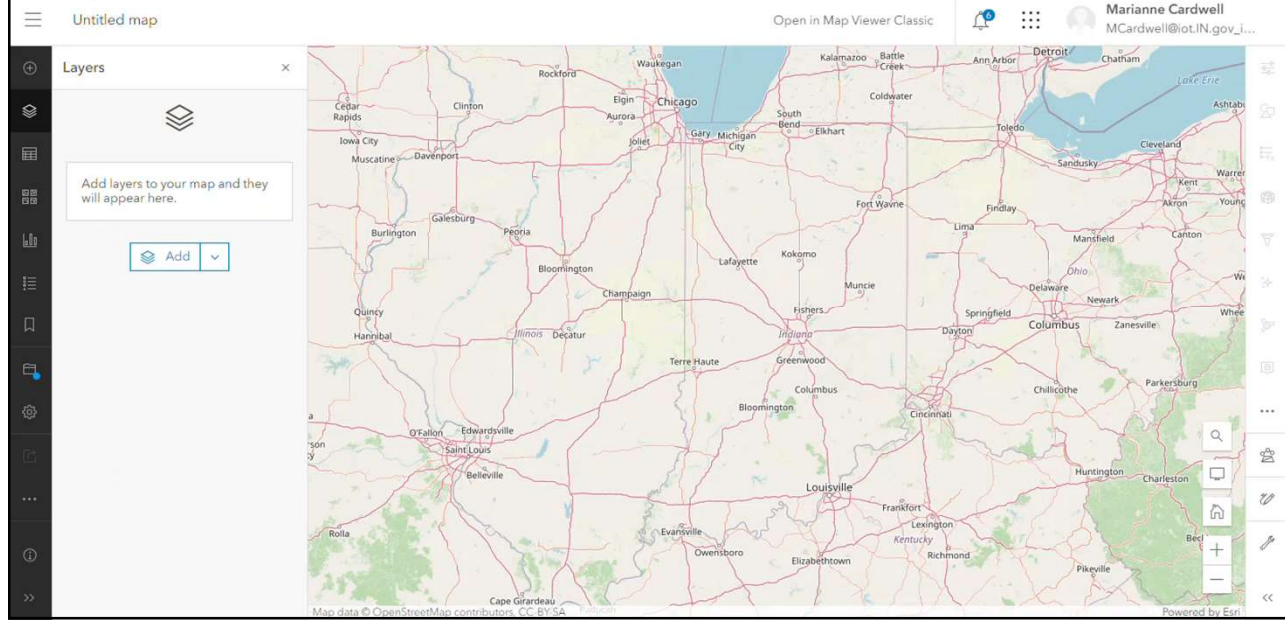
Services:

- [DynamicWebMercator/Indiana_2005_DEM](#) (ImageServer)
- [DynamicWebMercator/Indiana_2011_2013_DEM](#) (ImageServer)
- [DynamicWebMercator/Indiana_2016_2019_Imagery](#) (ImageServer)
- [DynamicWebMercator/Indiana_2016_2020_DEM](#) (ImageServer)
- [DynamicWebMercator/Indiana_2016_Imagery](#) (ImageServer)
- [DynamicWebMercator/Indiana_2017_Imagery](#) (ImageServer)
- [DynamicWebMercator/Indiana_2018_Imagery](#) (ImageServer)
- [DynamicWebMercator/Indiana_2019_Imagery](#) (ImageServer)
- [DynamicWebMercator/Indiana_2021_Imagery](#) (ImageServer)
- [DynamicWebMercator/Indiana_2022_Imagery](#) (ImageServer)
- [DynamicWebMercator/Indiana_Current_Imagery](#) (ImageServer)
- [DynamicWebMercator/Lake_Michigan_Rim_DEM](#) (ImageServer)
- [DynamicWebMercator/Lake_Michigan_Rim](#) (ImageServer)

Supported Interfaces: [REST](#) [SOAP](#) [Sitemap](#) [Geo Sitemap](#)

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Using Elevation Data in ArcGIS Online



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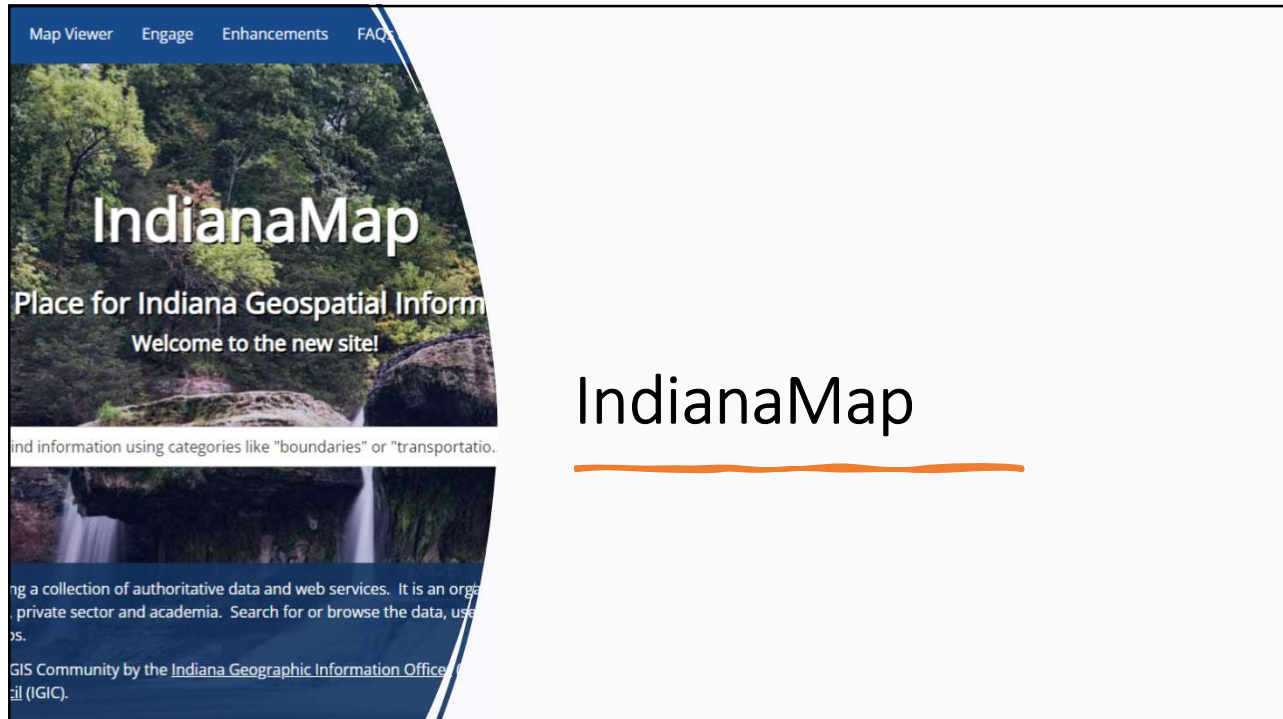
For More Information on Imagery & Elevation



Shaun Scholer
GIS Program Director
sscholer@iot.in.gov



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Map Viewer Engage Enhancements FAQ

IndianaMap

Place for Indiana Geospatial Information
Welcome to the new site!

Find information using categories like "boundaries" or "transportation".

ing a collection of authoritative data and web services. It is an organization serving the public, private sector and academia. Search for or browse the data, use the data in your applications.


GIS Community by the [Indiana Geographic Information Office](#) (IGIO).

IndianaMap

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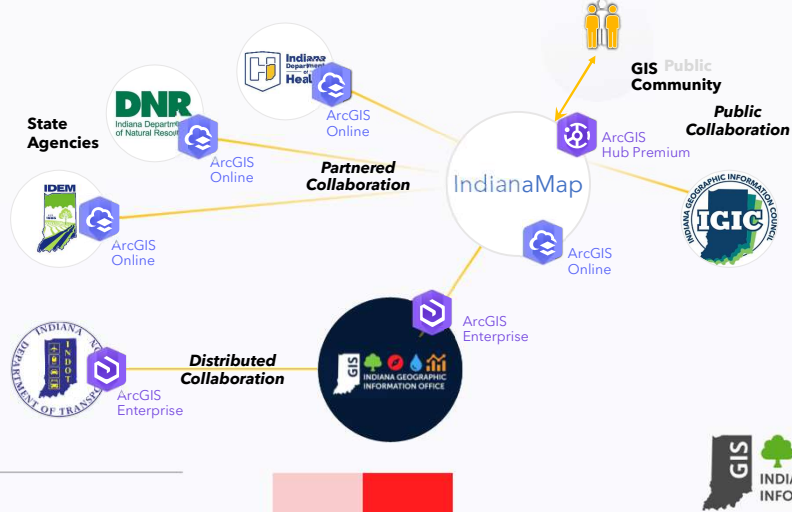
What is IndianaMap?

- Authoritative collection of statewide framework data
 - Federal, State, and Local data stewards contribute
- Portfolio of Projects
 - Data acquisition and management
 - Open data portal for discovery, access, and analysis of GIS data
 - Education, outreach, and training
- Open Data for All
 - Explore and interact with data in an online map (basic users)
 - Download and stream data in other applications (advanced users)



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Collaborative Data Sharing



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Downloading Data

The screenshot shows the ArcGIS interface with a map of a river area. On the left, there are three download options:

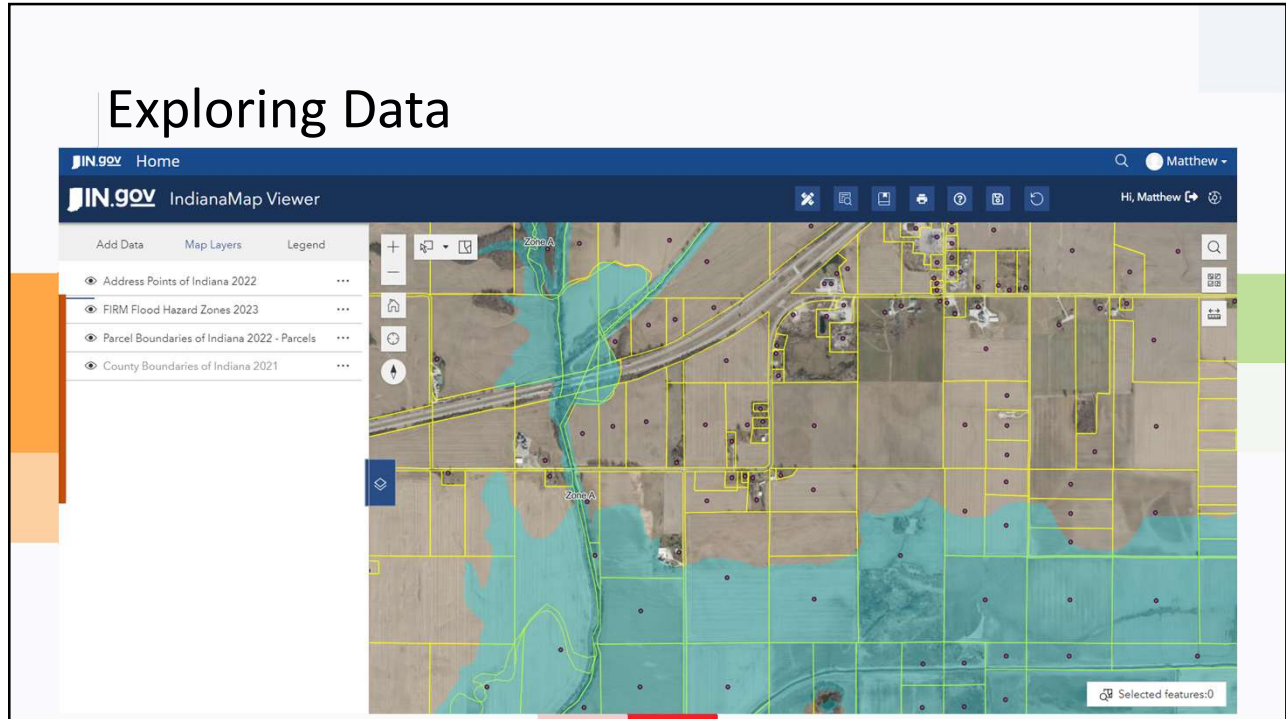
- Shapefile:** File created: Aug 8, 2023, 10:50. File size: 205.2 MB. Download Options.
- GeoJSON:** File created: Aug 8, 2023, 11:00. File size: 233.6 MB. Download Options.
- File Geodatabase:** File created: Aug 8, 2023, 10:48. File size: 89.8 MB. Download Options.

A pop-up window for record '18109C' displays the following metadata:

OBJECTID	22897
DFIRM_ID	18109C
VERSION_ID	1.1.1.0
FLD_AR_ID	18109C_671
STUDY_TYP	NP
FLD_ZONE	AE
ZONE_SUBTY	FLOODWAY

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Exploring Data



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Downloading & Streaming Data



- Download formats for a variety of applications

- CSV
- KML
- Shapefile
- GeoJSON
- File Geodatabase



- Streaming

- Real-time connection to data
- Customize output fields and parameters with an API explorer



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Data Highlights

- FIRM Flood Hazard Zones
- Historic Sites and Structures
- Soil Units
- Elevation Contours
- Land Use
- Impervious Surfaces
- Municipal Boundaries
- Parcel Boundaries



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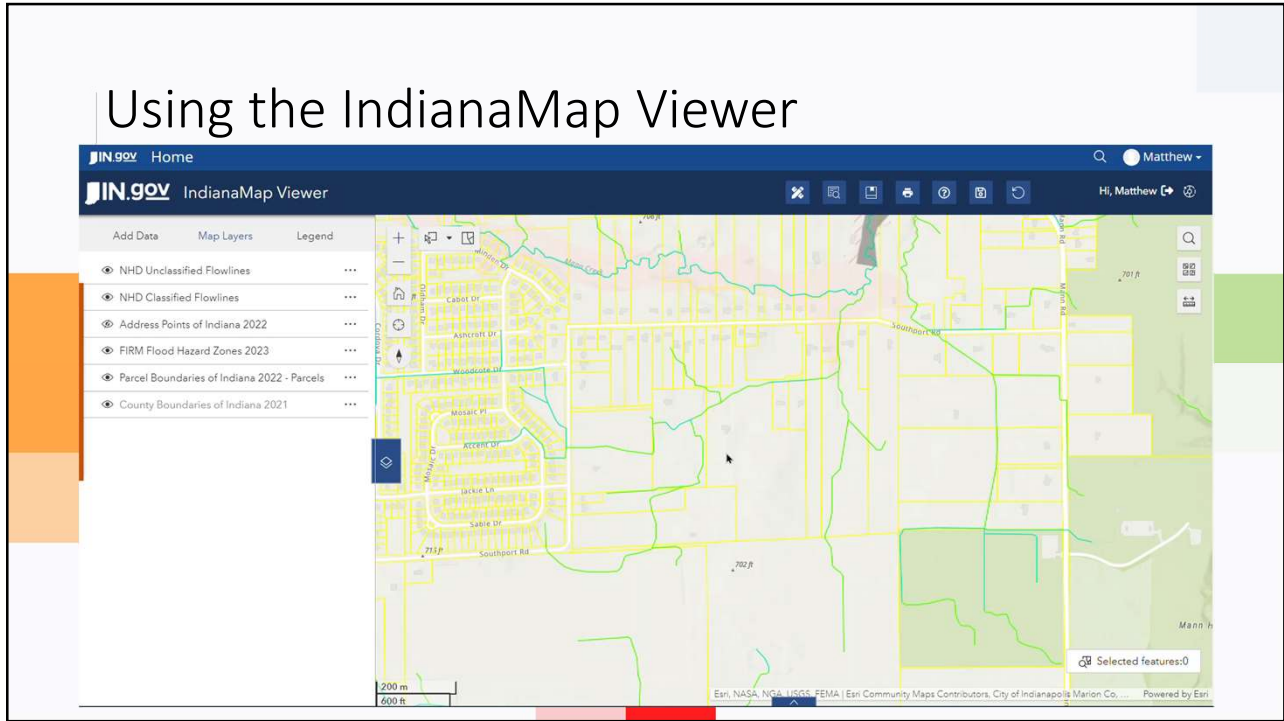
Get Involved – IndianaMap Community

- Open data platform allows users to (all free of charge)
 - Host their own data
 - Create custom web maps and applications
 - Analyze data with geoprocessing tools
 - Geocode address data in bulk
 - Contribute statewide data to IndianaMap
- Customize data visualization for your needs



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Using the IndianaMap Viewer



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What's Coming

- IndianaMap is a dynamic place for the GIS Community, IGIC, and State Agencies to connect around the data we produce and consume.
- Future: **More Data! Quarterly Webinars! Training!**



IndianaMap:
Accessing,
Downloading, &
Streaming Data



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For More Information on IndianaMap



Matt Evans
GIS Program Specialist
mevans@iot.in.gov



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How is this Data Used?

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Geocoding

- Many state agencies use the geocoding service developed from county-level data.
- 17 MILLION geocoded addresses so far in 2023.



...as > Indiana_CompositeLocator_WGS84 (GeocodeServer)

Indiana_CompositeLocator_WGS84 (GeocodeServer)

Description:

Ess Fields:

- Address (type: esriFieldTypeString, alias: Address or Place, required: false, length: 100)
- Address2 (type: esriFieldTypeString, alias: Address2, required: false, length: 100)
- Address3 (type: esriFieldTypeString, alias: Address3, required: false, length: 100)
- Neighborhood (type: esriFieldTypeString, alias: Neighborhood, required: false, length: 50)
- City (type: esriFieldTypeString, alias: City, required: false, length: 50)
- Subregion (type: esriFieldTypeString, alias: County, required: false, length: 50)
- Region (type: esriFieldTypeString, alias: State, required: false, length: 50)
- Postal (type: esriFieldTypeString, alias: ZIP, required: false, length: 20)
- PostalExt (type: esriFieldTypeString, alias: ZIP4, required: false, length: 20)
- CountryCode (type: esriFieldTypeString, alias: Country, required: false, length: 100)

Single Line Address Field:

- SingleLine (type: esriFieldTypeString, alias: Single Line Input, required: false, length: 100)

Candidate Fields:

- Loc_name (type: esriFieldTypeString, alias: Loc_name, required: false, length: 14)
- Shape (type: esriFieldTypeGeometry, alias: Shape, required: true)
- Status (type: esriFieldTypeString, alias: Status, required: true, length: 1)
- Score (type: esriFieldTypeDouble, alias: Score, required: true)
- Match_addr (type: esriFieldTypeString, alias: Match_addr, required: true, length: 500)
- LongLabel (type: esriFieldTypeString, alias: LongLabel, required: false, length: 500)
- ShortLabel (type: esriFieldTypeString, alias: ShortLabel, required: false, length: 500)
- Addr_type (type: esriFieldTypeString, alias: Addr_type, required: false, length: 20)
- Type (type: esriFieldTypeString, alias: Type, required: false, length: 50)
- PlaceName (type: esriFieldTypeString, alias: PlaceName, required: false, length: 200)
- Place_addr (type: esriFieldTypeString, alias: Place_addr, required: false, length: 500)
- Phone (type: esriFieldTypeString, alias: Phone, required: false, length: 25)
- URL (type: esriFieldTypeString, alias: URL, required: false, length: 250)
- Rank (type: esriFieldTypeDouble, alias: Rank, required: false)

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Building Footprints

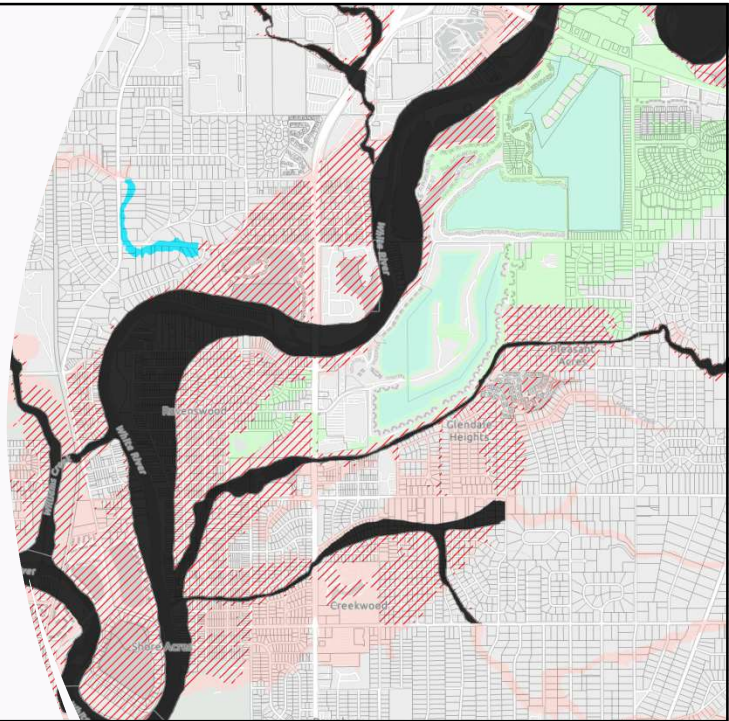
- Statewide
- Generated from 2016-2020 lidar
- Nearly 4 million structures



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Informing Owners of Changes to Flood Zones

- FEMA requires owners be notified of changes to flood zones on their properties
- Determine parcels impacted by mapping change
- Use DLGF data for owner name and mailing address



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Identifying Flood Risk at the Structure Level

Risk Category	Criteria
Extreme Risk	FFE lower than 10% flood elevation
Very High Risk	FFE Between 10% and 2% flood elevation
High Risk	FFE Between 2% and 1% flood elevation
Moderate Risk	FFE between 1% and 0.2% flood elevation
Marginal Risk	FFE between 0.2% and 0.1% flood elevation
Latent Risk	FFE higher than 0.1% flood elevation




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Discussion

- Do you need additional statewide datasets?
- Does our statewide imagery program meet your needs?
- Does our statewide elevation program meet your needs?
- Any other questions / needs?


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GIS day

INSPIRE THE WORLD THROUGH GIS

Register for GIS Day



Visit IGIO Website



WHERE:
Indiana Government Center South
Conference Center
Indianapolis, IN

WHEN:
Wednesday,
November 15, 2023

Contact Us

Marianne Cardwell (Data Harvest)
Deputy GIO
Programs & Outreach
mcardwell@iot.in.gov

Matt Evans (IndianaMap)
GIS Program Specialist
mevans@iot.in.gov

Shaun Scholer (Imagery & Elevation)
GIS Program Director
sscholer@iot.in.gov

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