Title:	Indiana GIO collects data across the state for Data Sharing: GIS Data Harvest Program
Category:	Cross-Boundary Collaboration & Partnerships
State:	Indiana
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Project Initiation Date:	2008
Project End Date:	Ongoing

Executive Summary

Indiana has created a national model for sharing and distributing state and local data sets. In September 2020, the Indiana Geographic Information Office (GIO) sought to drastically improve the data sharing process. The subsequent collaboration with the GIO and the Polis Center at Indiana University-Purdue Indiana University Indianapolis (IUPUI) helped make the 2020 Data Harvest Program, in place since 2008, more successful than ever. The team collected, developed and published four new statewide geographic data layers using existing county data: land parcels, address points that connect a street address with a geographic coordinate, street centerlines, and local administrative boundaries such as school and township boundaries. The GIO worked with all 92 Indiana counties to obtain these disparate data sets and develop them into clean and usable data resources. Indiana citizens and other interested groups or businesses now have access to these data layers at no cost as statewide data sets at both the state and county levels, saving the taxpayers millions in expensive licensing and data collection costs.

With this improved data, a freely made geocoder, including the underlying data and locators, was made available for download as well. A geocoder provides a means of converting a street address into map coordinates (latitude, longitude) so that the address can be located on a map.

Project Narrative

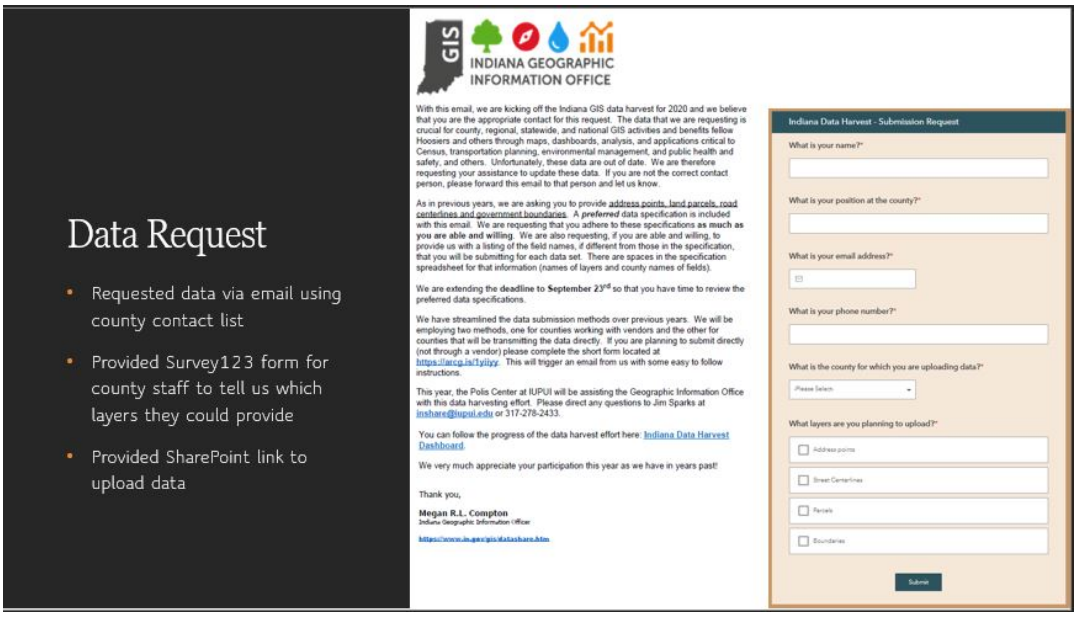
Idea

Since 2008, the Indiana Geographic Information Office (GIO) has been working towards creating statewide data sets for address points, street centerlines, parcels, and administrative boundaries.

While the first county agreed to participate in 2008, it took until 2014 for all 92 Indiana counties to participate in this voluntary effort. The effort to make data open and freely available for utilization was new for Indiana and continues to serve as a model for "open data" across the country. As David Vice, former Executive Director of the Integrated Public Safety Commission, the state's leading agency for communications and public safety support, said of the project; "When agencies share data, lives are saved, and public offices become more efficient. Sharing data encourages collaboration among agencies, provides for informed decision-making and reduces redundancy of data production. Furthermore, planning and policy groups become better informed, particularly in terms of emergency calls and disaster response. We can be proud that 92 counties are now sharing their map data, a major milestone that will benefit all Indiana taxpayers."

The concept of data sharing in 2008 was new, and the six-year effort to bring 92 counties to the table was supported by proponents of open data and those, like Director Vice, whose agencies and constituents directly benefit from data sharing and working across data silos.

Individual data requests and submission forms were distributed statewide to data providers:



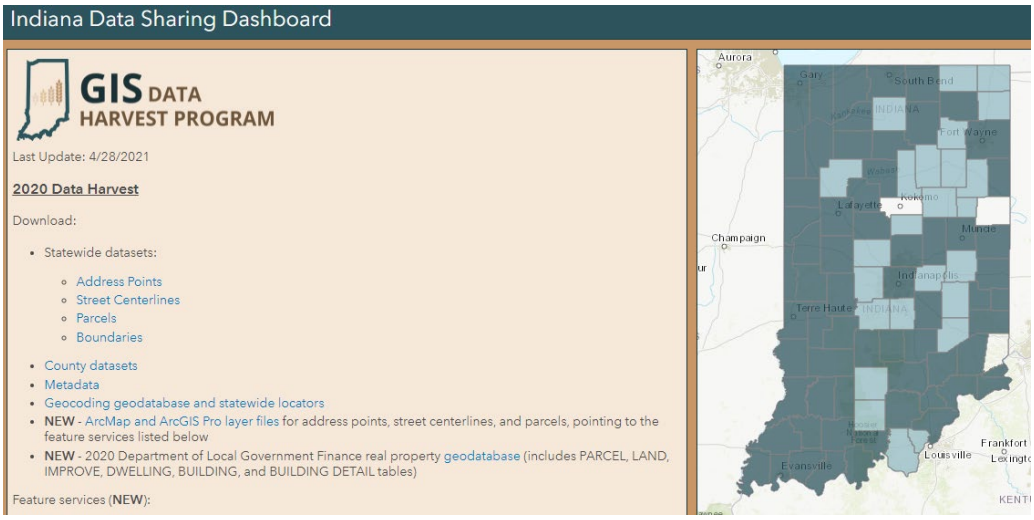
Implementation

Beginning in September 2020, the Indiana Geographic Information Office and Polis Center project staff reached out to Indiana county data stewards to request that the data be available to share with the state. The team carefully reviewed each data set for errors that would require re-submittal by the county. After revising submissions, applying scripts and custom processes to standardize the data, the team successfully homogenized each data set. The result included uniformed parcel and boundary data sets and address point and road centerline data sets that get the state significantly closer to the newly published Indiana GIS data standard.

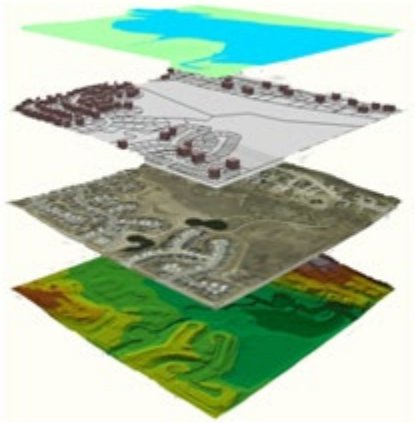
The latest Data Harvest resulted in more than 3.2 million address points, almost 3.6 million parcels, over half a million street centerlines and slightly more than four thousand administrative boundaries. That level of data resulted from the most comprehensive participation of counties sharing new data since 2008, with all 92 counties contributing parcels, address points, streets, and 89 counties contributing boundaries. A significant milestone was reached in the project in that each of these layers included new 2020 data, making it the most accurate and up-to-date data set collected in the state's history.

After the data requests were shared with all counties, it was imperative that respondents have a clear place for project updates and communication, especially in a time when the usual face-to-face meetings were not possible.

The GIO utilized Esri's Dashboard tools to create a simple and intuitive place for agencies, data submitters and the project team to see and review the status of data submissions. By developing a one-stop location for all stakeholders, the team reduced the time of communication with each county data provider on the status of the project. In addition, during the data collection phase, the site included a "help" section to discuss the project, goals and formats for data submission. The "issues" section included a place for data providers and other stakeholders to submit questions about their data and track any updates requests using a Survey123 form. The inclusion of this information on one site streamlined the communications and provided a clearer platform for all parties to stay connected and updated on the large and complex project.



Data Specifics

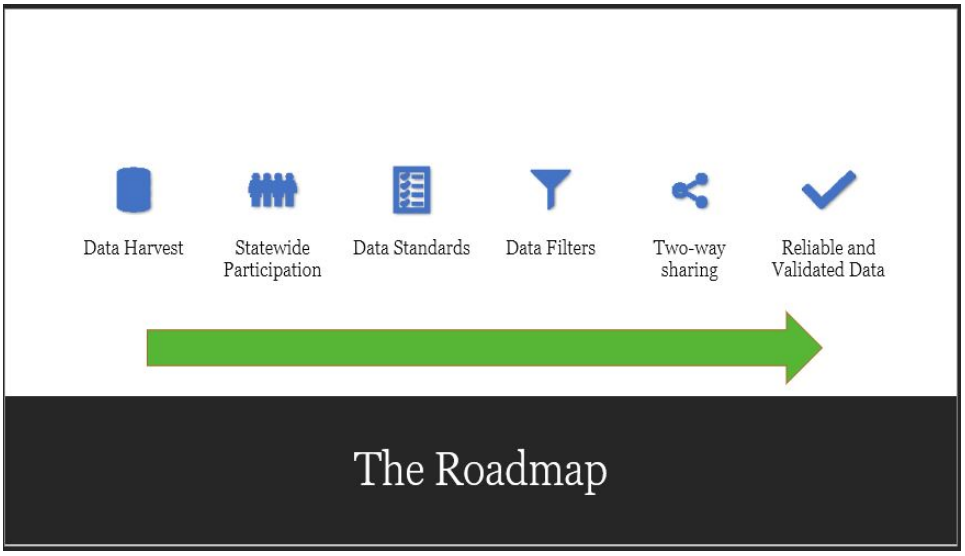


Indiana's 92 counties shared a record number of data sets with more complete data than ever before. The Indiana GIS community is collaborative and committed to sharing GIS data. This is evident by the participation, feedback, data fixes and updates which led to the most accurate data set derived on record, resulting in 100% coverage in the top three data categories, and greater more complete government boundary data than ever before.

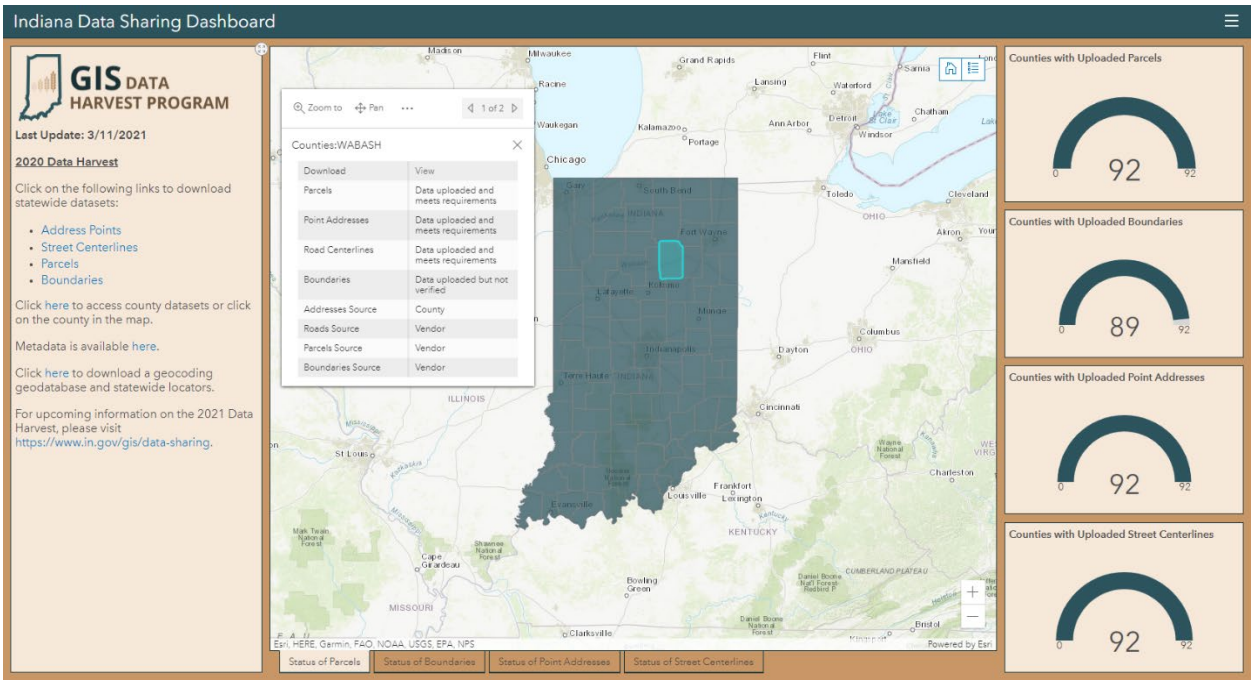
* 6,800+ Jurisdictional Boundaries
* 616,888 Street Centerlines Segments
* 3,117,569 Address Points
* 3,576,546 Land Parcels

The Roadmap for the data harvest is on track, and ahead of the GIO's schedule. With the harvest established as a practice in 2008, statewide participation achieved in 2014 and the implementation of data standards in 2020, the GIO is looking to the next mileposts in the Roadmap; the data filters and two-way data sharing with the end goal of reliable and validated data harvested directly from the local source and made available for public use.

Data filters will enable the two-way data sharing with meaningful, reliable and up-to-date data for dissemination and utilization across the state and with partners.



The utilization of the data harvest dashboard went to a new level after the completion of the harvest. Using the same link (https://arcg.is/Xybj0), the team posted the completed data sets for download. The site also includes the metadata document, detailing the data governance and processes used for homogenizing the data while maintaining the integrity of the locally derived data and attributes. Data is easily viewed and accessible for all level of users, beginner to advanced, and provides data at the county and state level for the four data layers. The site also includes tools and documentation for anyone interested in using the open geocoding service to include in their applications, avoiding costly fees for purchasing data.



Impact

The GIS Data Harvest Program benefits Hoosiers and saves taxpayer dollars by building these reliable data sets once and using them many times, and benefits others by strengthening our state and national geospatial data holding. local, regional, statewide, and national geospatial activities and benefits fellow Hoosiers and others through maps, dashboards, analyses and applications critical to local and national Census efforts, transportation planning, environmental management, public health and safety, and more.

The Program and GIO team save time and money by focusing efforts on state data sets that have the greatest benefit for in use in industries identified in this section. The cross-county data sharing saves local government an estimated $460,000 per year statewide by making the neighboring county data freely available and data cleaning processes already applied. The updated approach for the 2020 project also saves an estimated $30,000 per year in the technology and time needed to transfer the data from counties to the state. For

state agencies utilizing the clean and reliable data for geoprocessing, address locator tools, geofencing and geocoding services, saves the state millions in licensing fees, development and customized services. In the public safety arena alone, this data will save the state an estimated $122,000 in 2021.

The data sets that result from the process described above allow for the most reliable, authoritative and up-to-date data in any sector or space. No other entity or project team collects these data on a routine bases for every county, undergoes detailed analysis for each input data set and collaborates at the local level so effectively. While there are thousands of uses of this data each year, by private corporations, non-profits, local and state government, the points below detail some of the projects the GIO has supported in recent years:

Wayfinding and internet maps: The data shared through the harvest are collected and shared with corporate wayfinding companies and each of the major internet map providers. Having the local data updated means that new developments can now be "on the map" sooner than ever before and the data standards give greater confidence in the authoritative data sets. This project is the most comprehensive update of the local data layers available today.

Economic development: Local, state and corporate economic development groups use the data and associated maps to recruit companies and to site plan. Parcel data, which includes land use type, helps developers and potential site selection groups make early development and land acquisition decisions. The road centerline data is used to understand feasibility of development and boundary data supports the corporations in understanding which county and city will be future partners in the projects. These data, along with the state's imagery data, can be worked together for greater environmental decisions as well.

Rural Broadband: Internet service providers use the spatial maps to plan fiber runs to rural communities. The local address data and boundary data will be used in response to new efforts to enable 1 GB service to every student in Indiana, every school building and all rural health clinics.

Public Safety: The local address data and government boundary sets are critical for the support of public safety across the state. Without the data, public safety dispatch would be unable to locate 911 calls for service and dispatch could not validate the location of a 911 call. Moreover, the local data allows for cross-jurisdictional aide and dispatch support without delay, resulting in faster response times and greater accuracy in emergency response.

Indiana taxes: Several agencies within Indiana responsible for taxing Hoosiers in a reliable manner are using this locally derived data each day. The Bureau of Motor Vehicles relies on the updated address and government boundary data for assessing wheel tax. In recent years, the Department of Revenue has been a partner to understand and improve the accuracy of food and beverage tax distribution and the impact of potential local income tax policy changes.

The Department of Local Government Finance is also a great partner for the project and aides in the collection of parcel data that supports tax financing, special districts and public policy development and learning.

Geo-enable Elections: The Indiana elections system is made up of partnerships across counties and with the Indiana Elections Commission. This office will utilize the new census data and work with the new address data from this project to inform the voter registrations and cross-check county clerk data to ensure fair and accurate elections.

Higher Education: The data sets from the harvest are already utilized by universities and colleges across the state for geography, GIS courses, remote sensing, UAV training and data analysis. When institutions are preparing the next generation, it is critical that they are confident in the data being provided and the frequency of the data updates.

These layers are also used by every state agency and every Hoosier, in effective behind the scene tools or featured public service applications and policy making. From the Indiana Department of Homeland Security and Indiana Department of Transportation to the Family and Social Services Administration and Indiana Legislative Services Agency, the data harvest project enables agency heads and employees to make smarter choices and improve the reliability and functionality of their applications and tools that serve the state.