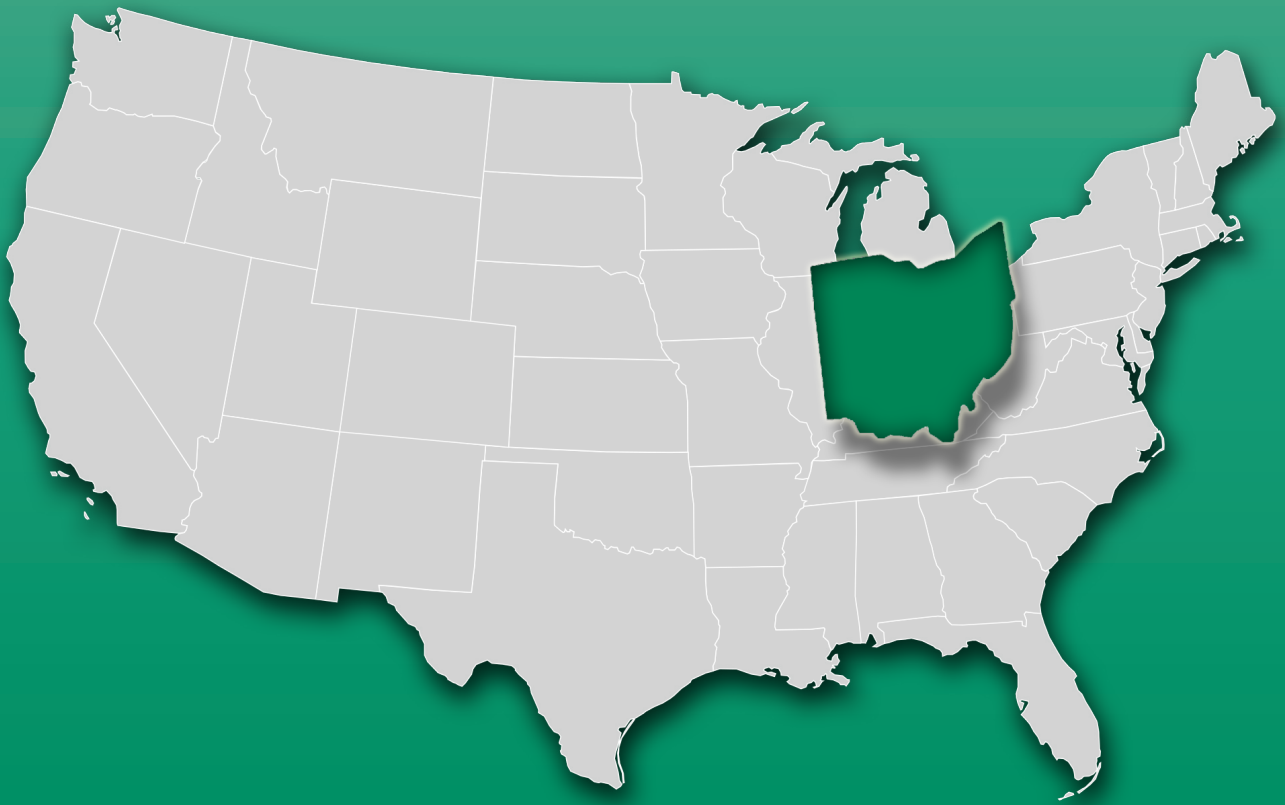


APPALACHIAN OHIO GEOSPATIAL DATA PARTNERSHIP:
**COLLECTION AND UPDATE OF
OHIO GIS METADATA IN RAMONA**



Date: 9.23.2013

Agreement Number: G12AC20105

Project title: "Appalachian Ohio Geospatial Data Partnership: Collection and Update of Ohio GIS Metadata in RAMONA"

Final Report



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EXECUTIVE SUMMARY

The purpose of this project is to collect and update Ohio GIS Metadata entries in the GIS Inventory found at www.gisinventory.net. Buckeye Hills – Hocking Valley Regional Development District and The Appalachian Ohio Geospatial Data Partnership coordinated efforts to accomplish the goals of this project. At the onset of this project the GIS Inventory records for the state of Ohio and Ohio counties were not current and there was no mechanism in place to regularly update the data. This project successfully updated the Ohio GIS Metadata in the GIS Inventory by removing dated entries and providing updated information on data holdings across the state. Cadastral contacts and parcel data status were added for all counties in Ohio to support emergency responders, the growing oil and gas industry, and other end users of this data. The project team identified a sustainability plan for keeping Ohio's GIS inventory data current in the future.

Updating and maintaining this metadata is a key service in order to provide support to emergency responders, local officials, economic development activities (including oil and gas development), and other parties who are end users of this data. Several approaches were evaluated and the best approach to sustain currency in Ohio was to leverage regional and state coordinators to complete updates on behalf of the counties. The state data sets would be updated through the state GIS coordinator. The need for updates would be reviewed annually. Cadastral contacts would continue to be populated in the nationalcad component of the GIS Inventory. Data set availability and currency would be reported in geodatabases and published to the spatial inventory which links to the GIS Inventory.

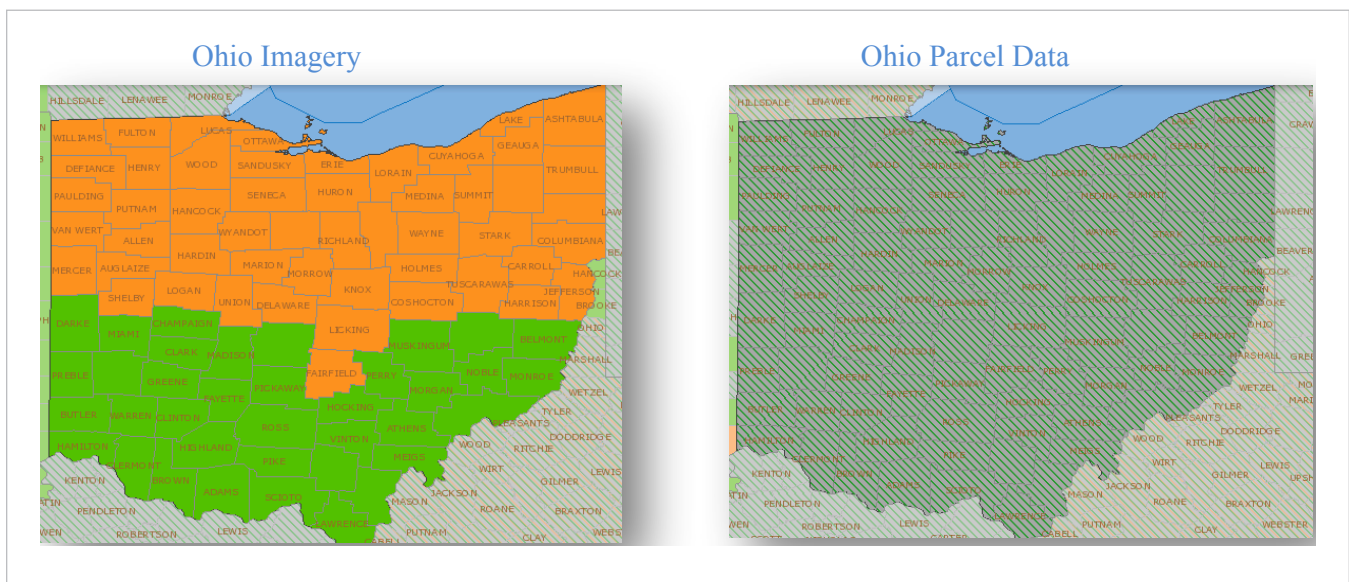
PROJECT NARRATIVE

The three main objectives of the GIS Inventory project were to: 1) Review and update existing entries in the Ohio GIS Inventory, 2) Add cadastral contacts and parcel data status for counties in Ohio, and 3) Identify sustainability plan for keeping information current.

Review and update existing entries in the Ohio GIS Inventory

At the start of this project there were many outdated entries for the Ohio GIS Inventory as well as many entries that were “crowd sourced” and were uncertain in terms of availability, completeness, and authoritative status. As examples, aerial imagery and parcel data inventory appeared as shown in Figure 1.

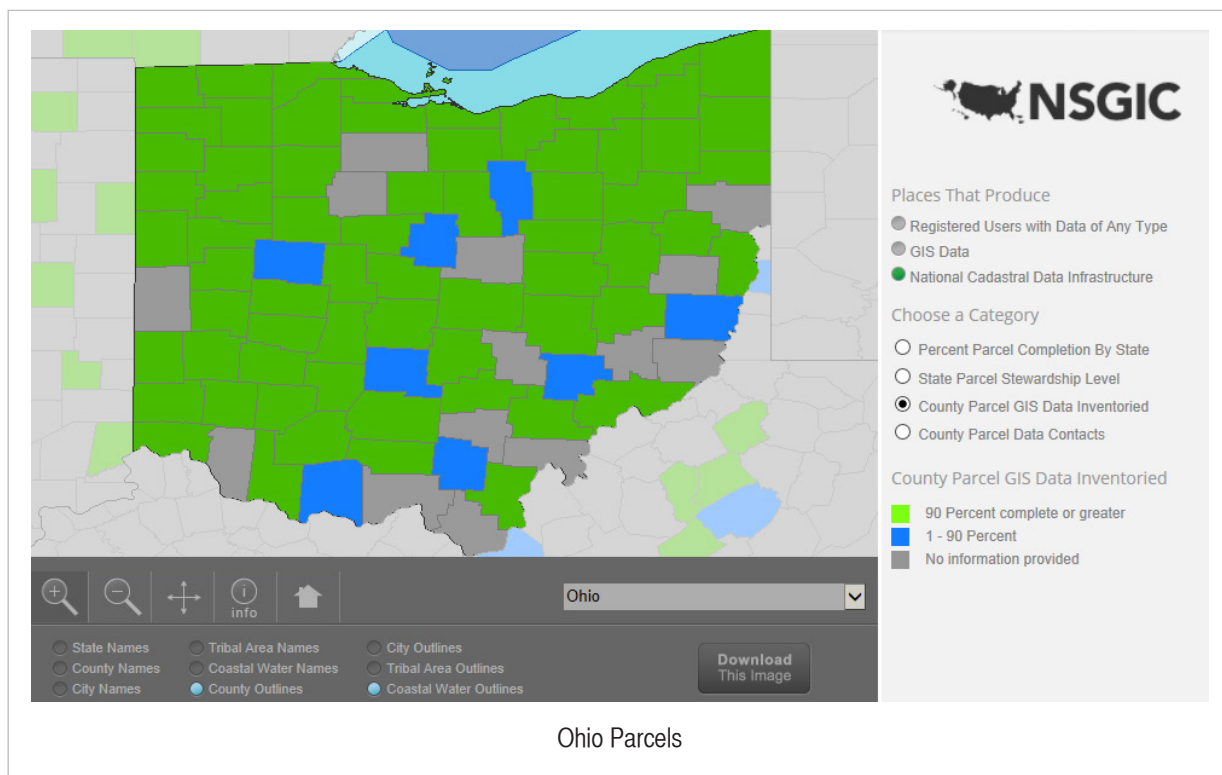
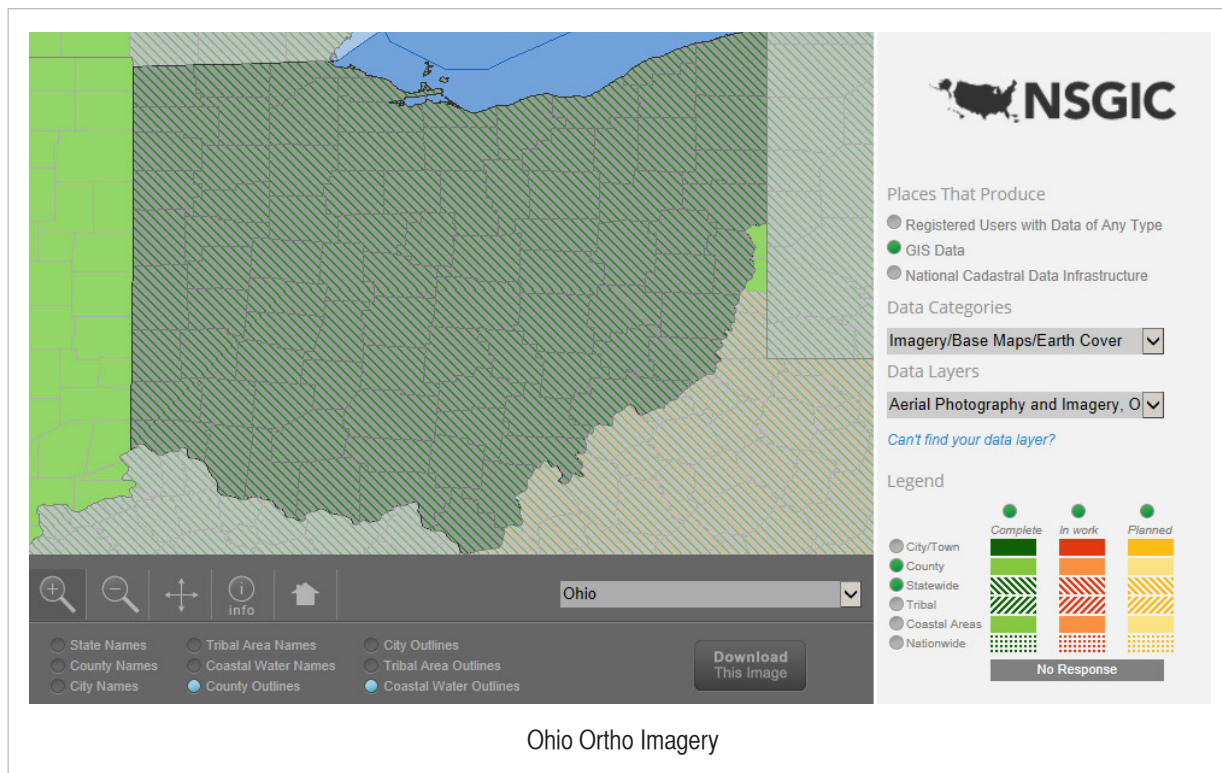
Figure 1 - GIS Inventory Status at the beginning of the Project



Using an administrative log in to the GIS Inventory all of the state hosted data sets were updated to reflect current data availability. Additionally a single point of contact for data access was identified for all state hosted data sets. This streamlined the information related to data access and provided a more robust means to track updates and data requests. Individual state agency data stewards were identified in the metadata record, but the contact information will be managed through a single point of contact. This will increase coordination and communication moving forward and will insure that records are kept current.

Based on this updated process, the resulting update for the two themes shown in Figure 1 are as shown in Figure 2.

Figure 2 - GIS Inventory Status at the end of the Project



In addition to updating the data holdings, an attempt was made to clean up GIS Registered users for Ohio that were no longer active. The list of registered users at the start of project was over 200. As of the writing of the final project there are 163 registered GIS Users. The listing of users is shown in Table 5. Note that there were five listed users with no Organization, Title, or Position.

As can be seen in Table 1, there are many registered users that appear to be data consumers and not data providers. It was difficult to ascertain from the listings how many of these registered users actually provided spatial data to the inventory. Many of these users did not have associated data sources. However only known non-active users were eliminated from the inventory.

Table 1 - Ohio GIS Inventory Register Users Summary 8-1-2013

<i>Organization Name</i>	<i>Title</i>	<i>Position</i>
ADMINISTRATORS		
Springfield Township, Clark County, Ohio	Administrator	Administrator
Pierce Township	Assistant Administrator	Assistant Administrator
Eaton Township	Administrative Assistant to Township Trustees	Administrative Assistant to Township Trustees
ANALYST		
Flood Plus Insurance Agency	Underwriter	Analyst
TradeWind Energy	GIS Analyst	Analyst
NGA	Analyst	Analyst
DCP Midstream	GIS Analyst	Analyst
Lawrence Livermore National Laboratory	Geospatial Developer	Analyst
HDR Engineering	GIS Analyst	Analyst
Stantec	GIS Specialist	Analyst
City of Hamilton	Engineering Technician	Analyst
En Engineering	GIS Analyst	Analyst
En Engineering	GIS Analyst	Analyst
ESI	Environmental Scientist	Analyst
USACE	Engineer Tech	Analyst
Arbormetrics Solutions, Inc	Forester	Analyst
Ohio University	student	Analyst
Ohio DOT Technical Services	GIMS 2/ GIS Coordinator	Analyst
Shared Vistas, LLC	President	Analyst
juwi solar Inc.	Land Acquisition Specialist	Analyst
us coast guard	GIS analyst	Analyst
Gis Dynamics	GIS Analyst	Analyst
Vandewalle & Associates	GIS Analyst	Analyst
U.S. EPA Region 5	Environmental Engineer	Analyst
CARTOGRAPHER		
Embarq	sr cad tech	Cartographer
CenturyLink	Cad designer I	Cartographer
U.S. Geological Survey	Geographer	Cartographer
Department of Homeland Security	GIS Manager	Cartographer
Great Lakes Commission	Senior Program Specialist	Cartographer
CeleritasWorks, LLC		Cartographer
USDA NRCS	Geospatial Data Management Branch Leader	Cartographer

<i>Organization Name</i>	<i>Title</i>	<i>Position</i>
DIRECTOR/COORDINATOR		
Air National Guard	Data Manager	Director/Coordinator
Almac-Sotebeer	Director of Engineering	Director/Coordinator
Bio-Rem International, Inc.	President	Director/Coordinator
B L Robinson Surveying and Engineering	GIS COORDINATOR	Director/Coordinator
Calcasieu Parish Police Jury OHSEP		Director/Coordinator
City of Parma	City Engineer/Building Commissioner	Director/Coordinator
Citynet	Network Engineer/OSP Engineer	Director/Coordinator
Clermont County GIS	GIS Program Administrator	Director/Coordinator
Croswell-Schulte IT Consultants	President	Director/Coordinator
FEMA - Mitigation Division		Director/Coordinator
FGDC Cadastral Subcommittee	Eastern Cadastral Coordinator	Director/Coordinator
Fugro EarthData, Inc.	Business Development	Director/Coordinator
GIS Product Solutions, INC.	GIS Consultant	Director/Coordinator
Hybridica, inc.	Manager	Director/Coordinator
Lake County, Ohio GIS Dept	GIS Director	Director/Coordinator
Lehman & Lehman, Inc.	President	Director/Coordinator
Martin Consulting	president	Director/Coordinator
Muskingum Watershed Conservancy	Information Systems and Technology Manager	Director/Coordinator
National Alliance for Public Safety GIS Foundation	Programs Director	Director/Coordinator
NSGIC	Washington Liaison	Director/Coordinator
Ohio County	County Assessor	Director/Coordinator
Ohio DNR	Department GIS Coordinator	Director/Coordinator
Ohio DOT	Transportation Information Manager	Director/Coordinator
The Polis Center	Director, Professional Education and Outreach	Director/Coordinator
Rails-to-Trails Conservancy	Trail Development and Outreach Coordinator	Director/Coordinator
Real Estate Portal USA LLC	Partner	Director/Coordinator
Sentinel USA	President	Director/Coordinator
Spatial Marvels	Geospatial Technology Consultant	Director/Coordinator
Spatial Matters, Inc.	President	Director/Coordinator
TGS	Director of Geospatial Data	Director/Coordinator
Trumbull County Planning Commission	Community Planning Coordinator	Director/Coordinator
U.S. EPA Region 5	Chief, Office of Information Management	Director/Coordinator
VersaTrans Solutions, Inc.	Director of Client Services	Director/Coordinator
Village of Geneva-on-the-Lake	Village Administrator	Director/Coordinator
Williams Communications, inc.	VP of Operations	Director/Coordinator

<i>Organization Name</i>	<i>Title</i>	<i>Position</i>
GIS USER		
American Electric Power	Designer	GIS User
Biohabitats, Inc	GIS	GIS User
BSA LifeStructures	Sr. Design Professional	GIS User
Chase Bank	Analyst	GIS User
Cheryl Jannette	Researcher	GIS User
CIPC		GIS User
Clear Track Ahead, LLC	Owner	GIS User
Delaware Fire Department	Fire Inspector	GIS User
erdas	Account manager	GIS User
Factual Data Flood		GIS User
FEMA	Geospatial-Intelligence Unit Leader	GIS User
Forsyth County Environmental Affairs	Environmental Specialist IV	GIS User
The KAD Group		GIS User
Katz & Associates	Admin Assistant	GIS User
Miami Township Fire & EMS	Station Officer	GIS User
NSGIC	Regional Planner	GIS User
Paragon Commercial Real Estate	Sales & Leasing Assistant	GIS User
Private		GIS User
ProDev Associates, Ltd.	Research Director	GIS User
Sanborn	Regional Sales	GIS User
Sidwell Company		GIS User
Stantec	Environmental Scientist	GIS User
Strongsville FD/LSU	Assistant Fire Marshal	GIS User
Tennessee Technological University		GIS User
Tetra Tech NUS		GIS User
TMACOG		GIS User
U.S. Census Bureau	Geographer	GIS User
USDA-NRCS	Soil Scientist	GIS User
WC Rocks LLC	Geologist	GIS User
Williams Communications, inc.		GIS User
The Zacher Company	Sales Associate	GIS User
PROJECT MANAGER		
Aerocon	Project Manager	Project Manager
BLM		Project Manager
CDM Smith	Project Manager	Project Manager
Critigen	Spatial Solutions Architect	Project Manager
Data Transfer Solutions	Regional Manager	Project Manager
Energy Management & Services Co.	GIS Manager	Project Manager
Er-Con Technologies, LLC		Project Manager

PROJECT MANAGER *(CONTINUED)*

<i>Organization Name</i>	<i>Title</i>	<i>Position</i>
Fairview Industries	Vice President	Project Manager
FMSM Engineers	GIS Manager	Project Manager
Great Lakes Commission	Project Mgr	Project Manager
J M Smith Engineering LLC	President	Project Manager
Michael Baker Jr. Inc.	Project Manager - FEMA Map Moderniza- tion	Project Manager
Noxious Vegetation Control		Project Manager
OGRP Program (OGRIP)	OSDI Manager	Project Manager
Rich and Associates	Planner	Project Manager
Rundell Ernstberger Associates		Project Manager
WEST, Inc.	Research Ecologist / NEPA Specialist	Project Manager
Wisconsin Dept of Natural Resources	Project Review Engineer	Project Manager
WVPA	Project Engineer	Project Manager

<i>Organization Name</i>	<i>Title</i>	<i>Position</i>
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SALES

TDC Group Inc.	Account Manager	Sales
Sidwell Company	GIS Account Manager	Sales

SUPERVISOR

Crawford, Murphy & Tilly Inc.	Aviation Services	Supervisor
Springfield Township	Administrator	Supervisor
Hocking County Mapping & Drafting	Head Draftsman	Supervisor
chora productions		Supervisor

TECHNICIAN

Advanced Lasers and Instruments		Technician
AJD Geospatial Concepts	consultant	Technician
Eco-Tech, inc.	Biological Technician	Technician
North American Reserve		Technician
State of Ohio	GIS Programmer	Technician
Technographics	Data Tech	Technician
Three Scale Research	GIS Technician and Researcher	Technician
WTH Engineering, Inc	Civil Engineering Student	Technician
WTH Engineering, Inc	Civil Engineer	Technician

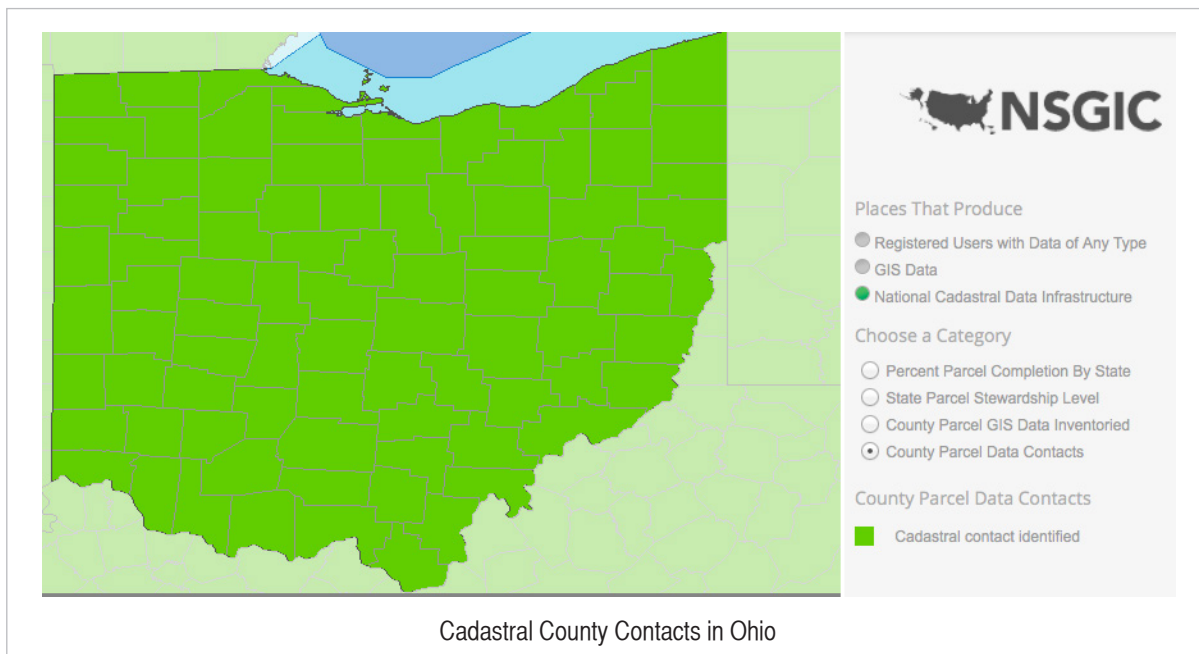
OTHER

AECOM	Senior Manager	
Berlin Township	Zoning Inspector	Township Office
BSA LifeStructures	Site Designer	Site Designer
City of Columbus	Senior Planner	Urban Planning
City of Grove City, Ohio	Clerk of Council	Council administrator
CoBank		Title specialist
Consultants	cad tech	
Efficient Energy Solutions LLC	Managing Director	
FEMA Map Mod - RMC 5	Geospatial Data Coordination Lead	Geospatial Data Coordination Lead
FEMA - Risk Analysis Branch		
Hartsgrove Township		Census Liaison
Liberty Marketing Company		Other
Private Citizen		involved citizen
Remenschneider Associates, Inc.	President	Landscape architect
TDC Group, Inc.		
URS Corporation		
US Census Bureau	Geographer	Geographer
US Environmental Protection Agency	Community Planner	Scientist
US EPA		
WISE Hydrology	Sr Scientist	Consultant, Geomorphology
Wittenberg University		Student
WTH Engineering, Inc	CIO	

ADD CADASTRAL CONTACTS AND PARCEL DATA STATUS

Figure 3 is the status map for the cadastral contacts for counties in Ohio

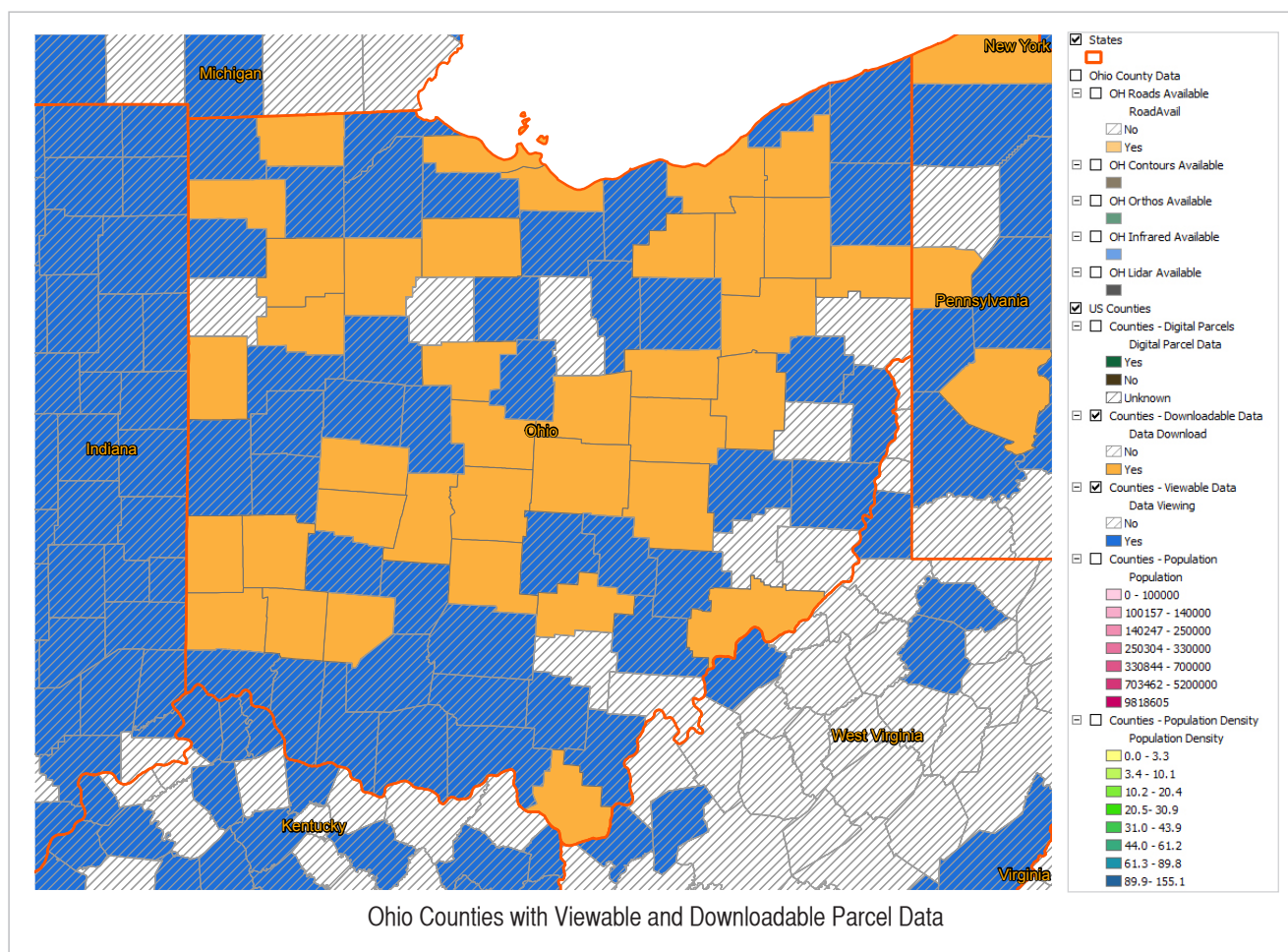
Figure 3 - Cadastral County Contacts in Ohio



At the start of the project there were no cadastral contacts identified for the state or for counties in Ohio. At the end of the project all 88 counties have a current cadastral contact listed in the GIS Inventory. In addition to determining and adding the cadastral contacts to the inventory; the status of parcel data was also determined for every county. Links to viewable and downloadable data were identified and listed where available.

Figure 4 illustrates county parcel data availability, as well as links to downloadable data where available. This image was taken from a publicly available ArcGIS Flex viewer application developed as part of this project (www.bhgis.org/inventory). Users of the GIS Inventory application seem to prefer the ability to see the available data symbolized in an interactive map and have the ability to directly access that data through the viewer application. All of the counties shaded in the illustration below have online viewers and those shaded in yellow also have downloadable data.

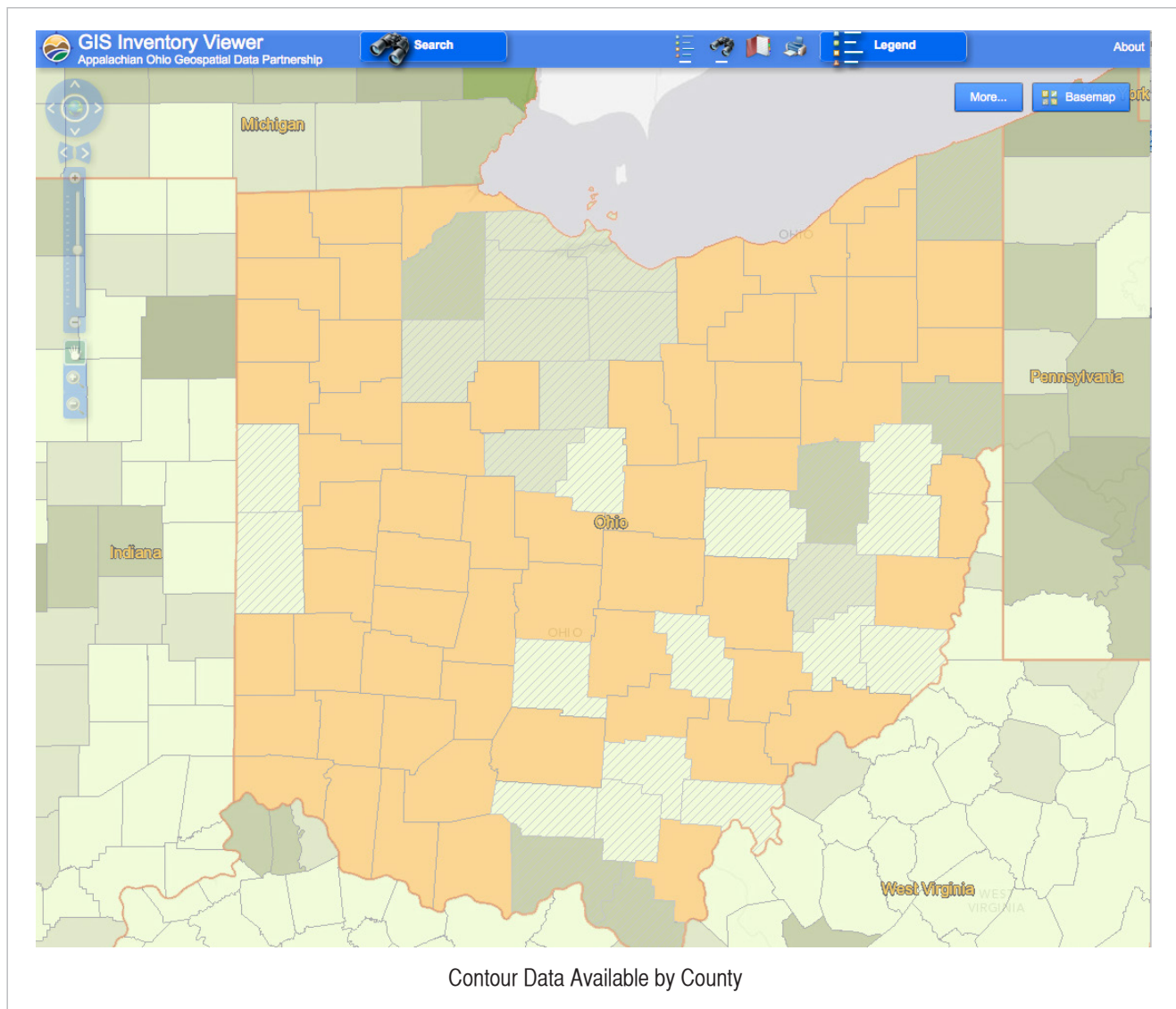
Figure 4 Ohio Counties with Viewable and Downloadable Parcel Data



In addition to the county-by-county sites the State of Ohio is exploring the possibility of a statewide parcel publication standard and hosting data centrally from the same servers where the other framework data is published. This would provide a major enrichment to the framework data for the State of Ohio.

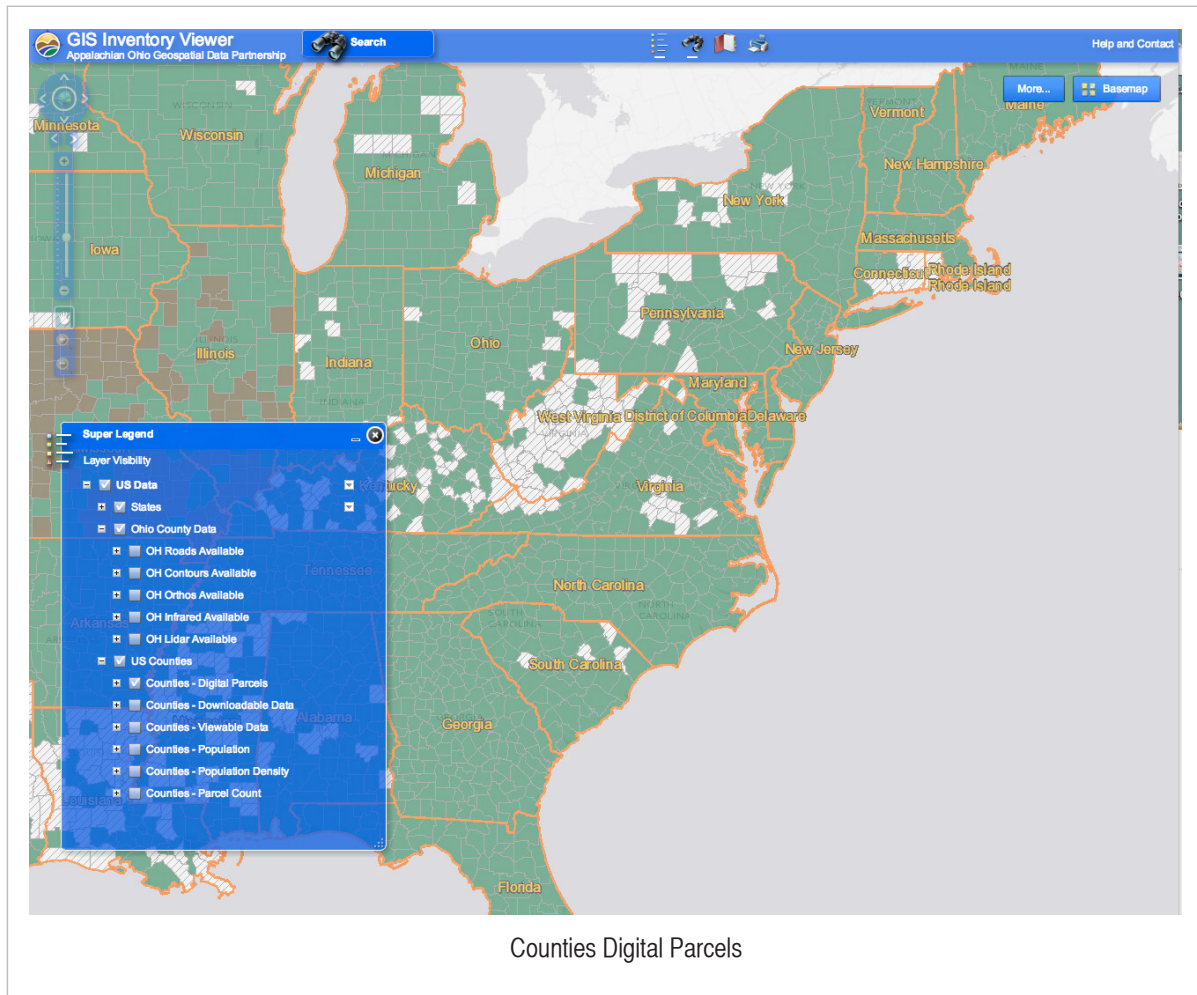
IDENTIFY SUSTAINABILITY PLAN FOR KEEPING INFORMATION CURRENT

The image below was captured from the sample inventory site that provides status data as a web service that is widely available for consumption. This image is showing the status of contour data available by county.



Overall, the existing GIS Inventory website and the proposed inventory web application both provide valuable tools for cataloging and indexing available spatial data in Ohio and beyond. It is the hope of the partners that any new or modified data systems will be easily accessible and updateable by GIS and non-GIS staff alike. The proposed web application will simplify the mechanism of maintaining the existing metadata for the State of Ohio, through the use of widely available and accepted GIS technologies (geodatabases, metadata, ESRI web API) and practices. The

ultimate goal is to not only consolidate the status and location of available of geospatial data across Ohio, but the entire nation. The illustration below shows county level data indicating whether or not a county currently has digital cadastral data. This dataset reflects the entire nation at the county level. At the conclusion of this project, additional research and support resources may be required from the GIS Inventory managers in order to establish an active and meaningful link between the existing GIS Inventory records to the new map based data status application.



Feedback on the NSDI Cooperative Agreements Program

What are the CAP Program strengths and weaknesses?

The CAP program is strong in that it provides an opportunity to attract some rare GIS specific project dollars (and related matching funds), has a relatively basic application process, and provides an opportunity to let local parties focus on some national issues.

For some of the opportunities that the CAP program provides funding for, there aren't really any other sources of funding out there.

Working on those national issues opens up a whole new realm of partnership that otherwise wouldn't be available. Through the last two CAP grants I've been involved with, we've been lucky enough to develop a relationship with someone like Nancy vonMeyer, who has provided tremendous benefit to Ohio since we've been working with her. We wouldn't have had the opportunity or occasion to work with someone like her without the CAP program.

The weakness of the CAP program is that despite these programs, it remains difficult to get local parties to understand the importance of concepts like national standards to facilitate ease of sharing between users on multiple levels. While practitioners like myself, and other professionals can understand it, locals remained focused on only providing what serves their day to day interest. It's highlighted the need for voluntary groups like the AOGDP to be the 'middle man' between local parties and organizations up the data ladder in order to make these standards understandable, relatable, and relevant to local issues. (Really this is more an issue for FGDC than the CAP program itself, but that's just something that's come up during our work.)

Where did it make a difference?

The CAP program allowed us to solidify some very important partnerships and relationships that are still in place today, and have served to bring at least our group forward in the GIS discussion in Ohio. I think it allowed us to answer some of the larger issues collectively that we were previously unable to do effectively in our single organizations (For example, my organization Buckeye Hills really has very little input on something like cadastral standards in Ohio – but Buckeye Hills along with Ohio University, the Muskingum Watershed Conservancy District, 4 local county representatives, as well as representatives from agencies like ODOT have a real ability to provide meaningful input as a group).

The CAP program also served as a 'spring board' in to other programs and opportunities for our group in the past few years.

Was the assistance you received sufficient or effective?

I think the assistance was fine, the regular conference calls allowed us to keep the program folks updated, while not being so overwhelming that it took away from our ability to do the work. Having the ability to connect with the other CAP recipients and hear about their work also helped us determine if we were on track, on the right path, etc.

What would you recommend that the FGDC do differently?

With the emphasis on collaboration in the CAP program, it would be nice if there was a simple to use collaboration software, FTP site, calendar, etc. to help enhance the collaboration further. We all know GIS creates large data, and being able to share that data quickly, easily, and regularly with you and other parties would be helpful to enhance the experience. Just a suggestion.

Also it would be neat if FGDC provided access to web based GIS products that would allow us to publish the data we are creating to services/applications hosted by FGDC.

Are there factors that are missing or are there additional needs that should be considered?

I can't think of any additional factors that are missing or additional needs. When the CAP program is reinstated I think everyone would like to see some additional program areas added to what is currently available.

Are there program management concerns that need to be addressed, such as the time frame?

I think the time frame for the projects is fine. We were able to accomplish our project within the given time frame without any problems.

I would like to see a little more information about how our projects are used to augment, update, change, and improve existing activities and processes. I think it's great we can do these projects, but I also like knowing that we are helping YOU accomplish YOUR goals and objectives at FGDC. Really these projects are all about how we can be better partners helping each other mutually accomplish what we set out to achieve.

If you were to do the project again, what would you do differently?

For our project specifically, I wouldn't really do anything differently, but I would like to see what we put in place (or something very similar to it) implemented and utilized on a wide scale. Really what we are talking about is a simple and interactive way to update this inventory regularly. I also think there probably needs to be more education to state level coordinators as to why this is important and worth their time to maintain. Until you get that message to them, and you make it EASY for them to do (utilizing GIS tools they are most likely already using on a daily basis), I'm not sure they are going to be interested in this – regardless of how important it is as part of the NSDI.

