

“The Little County that Could” ArcGIS Online and Parcel Maps



Jason Gillow

GIS Coordinator

Pickaway County Auditor/GIS Dept.

Ohio GIS Conference

September 24 – 26, 2018

Hyatt Regency Columbus

Columbus, Ohio

GISMATTERS



“The Little County that Could” ArcGIS Online and Parcel Maps 2.0

**SMALL COUNTY
APPROACH**

**A LOOK AT USING ARCGIS
ONLINE FOR WEB PARCEL
MAPS.**

By

Jason Gillow

jgillow@pickaway.org

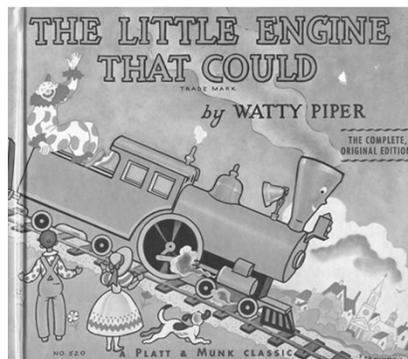


“The Little County that Could” ArcGIS Online and Parcel Maps

- Small counties face many challenges
- Demands from the Public
- Small staffed GIS/Mapping departments
- Limits for small counties
- Leverage ArcGIS Online for web parcel mapping
- The statement “I thought I could” with ArcGIS Online for small counties becomes real.

“The Little County that Could” ArcGIS Online and Parcel Maps

- Why this title – “A little Engine that Could”;
- Basic idea small train being asked to do an impossible task but having the right mind set of saying “I think I can” and doing and proving the task at hand can could be done.
- Short - once was told that can’t be done.
- *Well? Here is my “I think I Can” story.*



Pickaway County, Ohio

- **Established:** Act - March 1, 1810
- **Population – July 1, 2017 – 57,830 US Censes**
- **Land Area 502.2 Square Miles**
- **County Seat: City of Circleville**
- **Named For:** Native American word (piqua) meaning "man risen from ashes".
- **Parcels 9-21-2018: 29,292**
- **LBRS Address Pts 5-1-2018: 24,872**
- **Popular for the Circleville Pumpkin Show is the "Greatest Free Show on Earth" <http://pumpkinshow.com/>**
- **Theme of trains for Pickaway County – works too. We have the Norfolk Southern Multimodal hub in the northern part of the county.**



Brief Pickaway GIS History

- In 2006, Pickaway County – DDTI conducted LBRS Project.
- In 2006 - Pickaway County Auditor - Parcel polygon creation project a project to convert parcel data from paper-based form to digital CAD-shapefile format for use in the GIS.
- Currently, County Auditor and Engineer's office is conducting research parcel project with Ohio University in a full AutoCAD to ArcGIS parcel conversation project moving from AutoCAD files to ArcGIS SDE database format.
- The Tax Map office is under the Engineer's Office and GIS Dept. is under the Auditor's Office.
- The County Auditor has DDTI as our main web hosting service.
<http://pickaway.iviewauditor.com/>



Pickaway Co. GIS Dept.

- Accuglobe and Pictometry Connect Systems.
- Responsible for (LBRS) for Pickaway County.
- Support all levels of government, citizens & businesses within Pickaway county with GIS services.
- Maintain web site.
http://www.pickaway.org/GIS_files/GIS.htm
- The GIS Dept. is an ESRI shop hence ArcGIS Online.

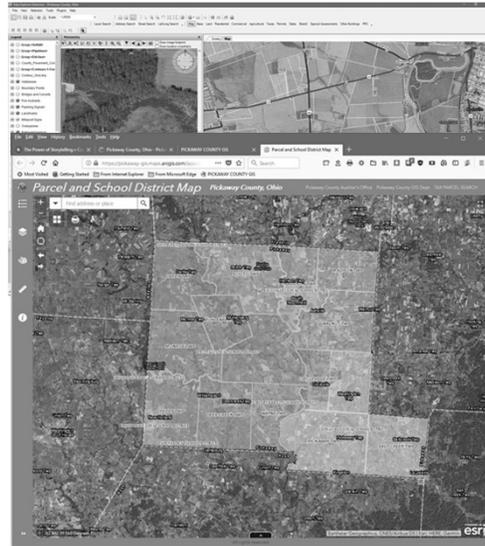


“The Little County that Could” ArcGIS Online and Parcel Maps

- Our “I think I Can” Story:
- “One has to be always learning or willing to learn new things if you want to stay relative in a changing world.”
- COGUG meetings – MORPC Thank you  
- In 2015, looking at parcel conversion project for the county.
- In 2016, research parcel project with Ohio University, currently on-going.
 - Planned end-products – new viewers for Auditor, Engineer & GIS Dept
 - Hosting through ArcGIS Online and county’s web servers.

“The Little County that Could” ArcGIS Online and Parcel Maps

- Our current process
- DDTI is a good popular web-base CAMA solution platform for Auditor sites across Ohio.
- Website:
<http://pickaway.iviewauditor.com/>
- Good application for a one stop all site, but?..?
- *One my goals was “Can we do better given our current resources?”*
- In 2016-2017,
- **December 23, 2016 launched our first web parcel-map app**



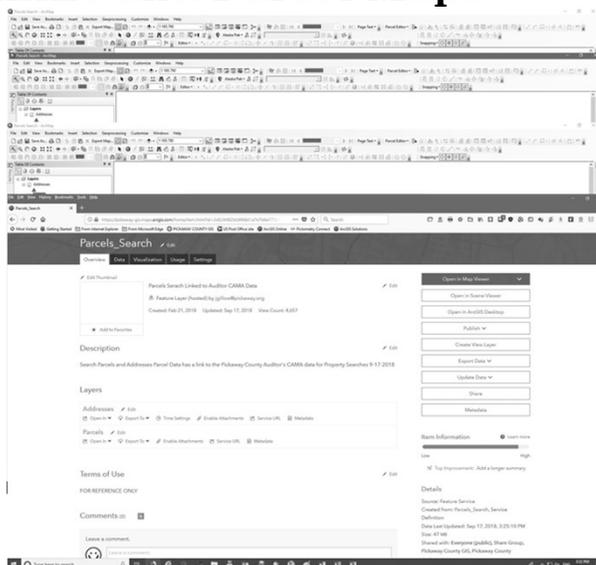
“The Little County that Could” ArcGIS Online and Parcel Maps

- Steps taken:
 - Set-up the data layers in ArcMap or Pro
 - Created separated mxds for theme based hosted “Feature Layer” services.
 - Base Map
 - Parcel Search
 - School Districts
 - Parks Trails
 - Soil Map
 - Flood Map Layers
 - Allows to update at anytime or regularly



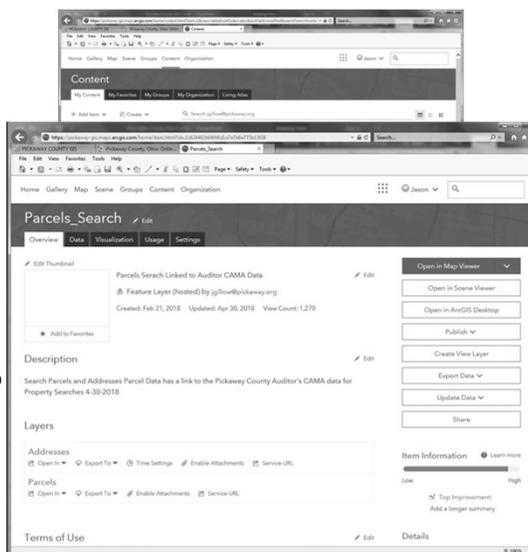
“The Little County that Could” ArcGIS Online and Parcel Maps

- ArcMap or Pro 'Share As' choose Service - follow steps through
- Note *"Spatial Index"* is important to fix - from an ArcGIS Online Help article entitle *"Manage Hosted Feature Layers"* 'Spatial indexes improve the performance of spatial queries, such as drawing features on a map or searching for features.'
- <https://doc.arcgis.com/en/arcgis-online/manage-data/manage-hosted-feature-layers.htm>
- Publish



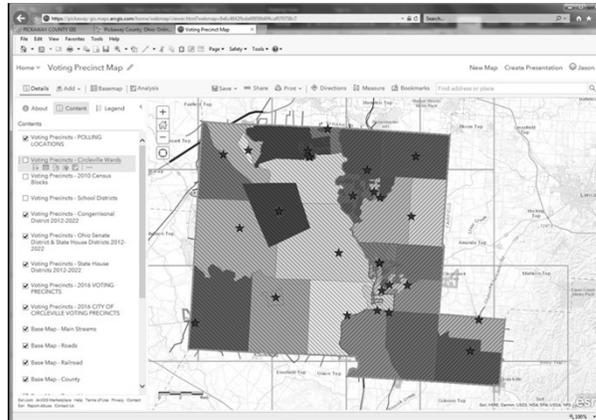
“The Little County that Could” ArcGIS Online and Parcel Maps

- In ArcGIS Online – start to create the web-map
- I would recommend go through each tab
- Note: You can update the information as long as you do not change the format.
- Can be done through ArcGIS Online, Pro or ArcMap



“The Little County that Could” ArcGIS Online and Parcel Maps

- Next go to the Map tab to start the process of setting up the web map.
- Take your time.



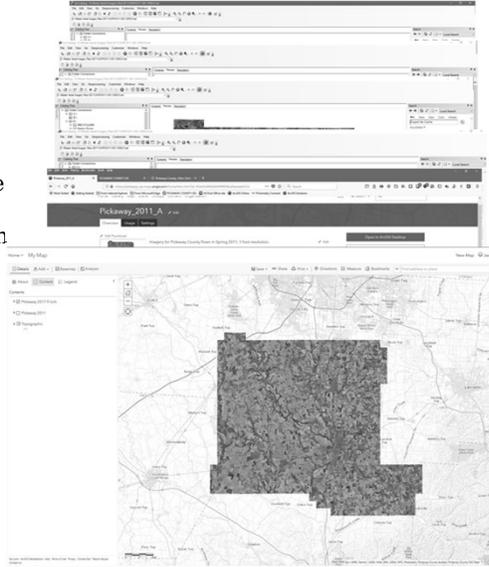
“The Little County that Could” ArcGIS Online and Parcel Maps

- Imagery Resources – ArcGIS Online has rich opportunities to host your own imagery or connect to other sources.
- Learning the process
- Developing imagery resources is NOT a quick process. It takes time.
- Service Credits - <http://doc.arcgis.com/en/arcgis-online/reference/credits.htm>
- Currently I am hosting 4 imagery layers through my Online account, while using about 1.3 credits/day.
- My Process that works for me:



“The Little County that Could” ArcGIS Online and Parcel Maps

- My process:
 1. 'Manage tile Cache' to build the tiles
 2. 'Export tile Cache' to create the tile package
 3. Share Package to upload the tile package (tpk).
 4. Final: Publish the tile package in ArcGIS online
- Once complete use the Hosted Tile Layer in any web-map.
- Note: Remember to go back and delete the tpk to save on duplicate storage.
- You can do this process through ArcGIS Online, but uses a lot of credits.
- Good Link: <https://www.esri.com/arcgis-blog/products/arcgis-online/uncategorized/using-tile-packages-for-publishing-hosted-tile-layers/>



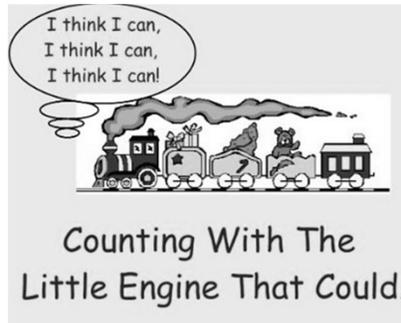
“The Little County that Could” ArcGIS Online and Parcel Maps

- *Some other imagery sources that I have found that are free to use:*
 - ESRI has wealth of imagery Basemap services that can be used.
 - OGRIP OSIP imagery services – an excellent resource for Ohio and the staff OGRIP GIS Support Center are excellent to work with in help you get these services running in your web map.
 - <http://ogrip.oit.ohio.gov/Home.aspx>
 - OGRIP – Ohio Spatial Data Infrastructure -Rest Service Endpoints: Which list all their services.
 - <http://ogrip.oit.ohio.gov/ServicesData/GEOhioSpatialInformationPortal/RESTServiceEndpoints.aspx>
 - USDA Farm Service Agency (FSA) through the Aerial Photography Field Office 2017 National Agriculture Imagery Program (NAIP) imagery for Ohio as an ArcGIS Rest End Point Service <https://gis.apfo.usda.gov/arcgis/rest/services/NAIP/Ohio/ImageServer> - took some work to find this but works very well in the map.
 - NAIP imagery Link <https://www.fsa.usda.gov/programs-and-services/aerial-photography/imagery-programs/naip-imagery/>

“The Little County that Could” ArcGIS Online and Parcel Maps

- Vector Tile Packages

- I was watching my credit usage during the summer and seen my usage for Hosted Feature Service layers were high and wanted find a way to deliver a good product at a cost effective measure but still be functional.
- I had 5-Foot Contours that I developed in-house that were being hosted as a feature service layer.
- “Vector Tile Package”
- So I am thinking MMMMM –
- *I Think I Can*



“The Little County that Could” ArcGIS Online and Parcel Maps

- My Process

- Created 2-foot contours county-wide.
- ESRI Tech Support & ESRI Online Help.
- Note: Vector Tile Packages can not be created in ArcMap.
- Using ArcGIS Pro a tool called “Create Vector Tile Package” (.tph).
- Share the package using “Share Package” tool.
- Once on ArcGIS Online – open the package and click “Publish” button.
- Creates Hosted Vector Tile Layer
- The performance is good, setting scale dependency helps too.
- After all this we went from having 5-foot contours to 2-foot contours while saving on credit usage (using .02/day).
- Good Source: <https://pro.arcgis.com/en/proapp/help/sharing/overview/vector-tile-package.htm>



“The Little County that Could” ArcGIS Online and Parcel Maps

- Create Web App after the web map is set-up



“The Little County that Could” ArcGIS Online and Parcel Maps

- I used 'Using the Web AppBuilder' and went through the process of building and customizing the web app.
- *ArcGIS Online Help* that can provide a lot of assistance. Under the Help section ESRI does have a 'Best Practices' section that I would recommend looking over. <https://doc.arcgis.com/en/arcgis-online/>
- *ESRI Tech Support* another good resource
- Just research what other folks have done with their web-apps will give your ideas and tricks to make web-map unique. *Examples*
- Remember your audience



“The Little County that Could” ArcGIS Online and Parcel Maps

- In Web App Builder – build your app – excellent amount of options, relative easy to learn, create your own style that matches any system.
- Orange for pumpkins.
- <https://pickaway-gis.maps.arcgis.com/apps/webappviewer/index.html?id=76300aad15b14118b78c61b66aa8f6bd>



“The Little County that Could” ArcGIS Online and Parcel Maps

- In Web App Builder there are a lot of good widgets
- Notes: Recommend going through each widget
- **Some widgets will use credits**
- The *search widget*
- Help screen
<http://www.pickaway.org/GIS/Pictures/Help%20View.jpg>



“The Little County that Could” ArcGIS Online and Parcel Maps

- Hyperlinks
- Fill out the detail description page



“The Little County that Could” ArcGIS Online and Parcel Maps

- One of the things I have picked up from the COGUG meetings and ESRI articles is that theme base topic web maps work best and be more user friendly to the public over one stop map for all approach. Currently, I developed 5 parcel based them topic maps.
 1. [Basic Parcel Search](#)
 2. [School Districts](#)
 3. [FEMA Flood Map](#)
 4. [Contours, Soils and Wetlands](#)
 5. [Where do I Vote – my latest](#)
- Future plans
 - Working with OU, further development of new internal and external all-in one web apps for public and in-house use too
 - Development of SDE database
 - Using ArcGIS Online as the backbone of delivering services to the maps

“The Little County that Could” ArcGIS Online and Parcel Maps

- Credit Usage is important.
 - In ArcGIS Online - ESRI has created a cost effective and economic of scale way in hosting services.
 - ArcGIS Online credit usage <https://doc.arcgis.com/en/arcgis-online/reference/credits.htm> good reference to explain this.
 - ESRI has started a subscription fee option now <http://www.esri.com/software/arcgis/arcgisonline/purchase>

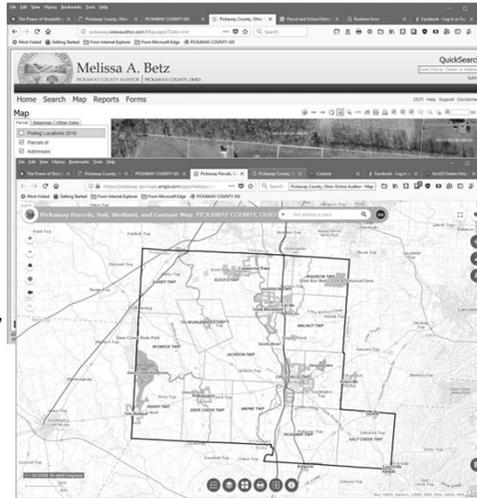
“The Little County that Could” ArcGIS Online and Parcel Maps

- From usage I have monitored through my ArcGIS Online to have a basic parcel viewer would cost about less than a half credit a day. During early part 2018, my credit usage ranged from 1.4 to 4.27 a day. This is because I have the soils, contours, and wetland feature services on my account. But before that I was average .75 credits a day. Under your ArcGIS Online Account, you can monitor all this.
- Currently, I am using roughly 3.33 credits per day.



“The Little County that Could” ArcGIS Online and Parcel Maps

- ArcGIS Online is a viable cost effect solution to provide parcel web mapping services to the public.
- DDTI and ArcGIS Online
- For Pickaway County I still see using DDTI’s web map service for now.
- Future – 2018-2019
- So, with DDTI, ESRI ArcGIS Online, OGRIP and other rest point services a small county has been provide the toolbox, not just a tool, to build a fully enrich web parcel mapping environment that services their community.

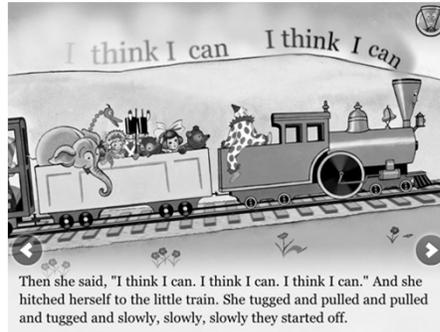


“The Little County that Could” ArcGIS Online and Parcel Maps

- | | |
|---|---|
| <ul style="list-style-type: none"> • Advantages <ul style="list-style-type: none"> • Cost of scalability – • Ever changing and evolving system that help meets the demands of an ever-changing world • ESRI provides a wealth of training and support resources • Hosting your own imagery services. • ArcGIS Online gives small counties more control of their own data. <ul style="list-style-type: none"> • Ability to design your own web map. • Update your data regularly. | <ul style="list-style-type: none"> • Disadvantages <ul style="list-style-type: none"> • Always changing • Always having to learn to new things. • But I think this is where you say, “I think I Can”; and when you have done it you can finally say “I Know I Could”. |
|---|---|

“The Little County that Could” ArcGIS Online and Parcel Maps

- ArcGIS Online for small counties do not need Server or Enterprise
- Still few limits
- **ArcGIS Online** gives the small counties a feasible means to develop and host their own parcel data that gives them an up to date web mapping platform that meets the growing demands of the populace and gives the county control over the process of delivery.



“The Little County that Could” ArcGIS Online and Parcel Maps



- So now with **ArcGIS Online** as the engine we have gone over the mountain to new possibilities saying I Know we could proving to others that whatever you set your mind or heart too then anything is possible. My “I Thought I Could” story.

“The Little County that Could” ArcGIS Online and Parcel Maps

- Special Thanks
 - Pickaway County Auditor *Melissa Betz* – *Greatest County Auditor*
 - Pickaway County Engineer and Tax Map Office – Carrie Stebelton and Annie Bingman for their hard work
 - COGUG
 - OGRIP
 - Ohio University
 - DDTI
 - ESRI
 - USDA
 - And others

“The Little County that Could” ArcGIS Online and Parcel Maps

- THANK YOU
- Questions:
PICKAWAY COUNTY GIS
Jason Gillow, GIS Coordinator
124 W Franklin Street
Circleville, Ohio 43113
jgillow@pickaway.org
www.pickaway.org/GIS_files/GIS.htm
Phone: 740-474-5823
Fax: 740-477-8265

• *Well I Did.*



success is like the little engine that could, you keep saying i think i can, i think i can, i think i can. And if you try hard enough, you find yourself saying, i did it!

- me

boardofwisdom.com