



# Implementing an Open Data Strategy

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**R&D Center, Washington, DC** 

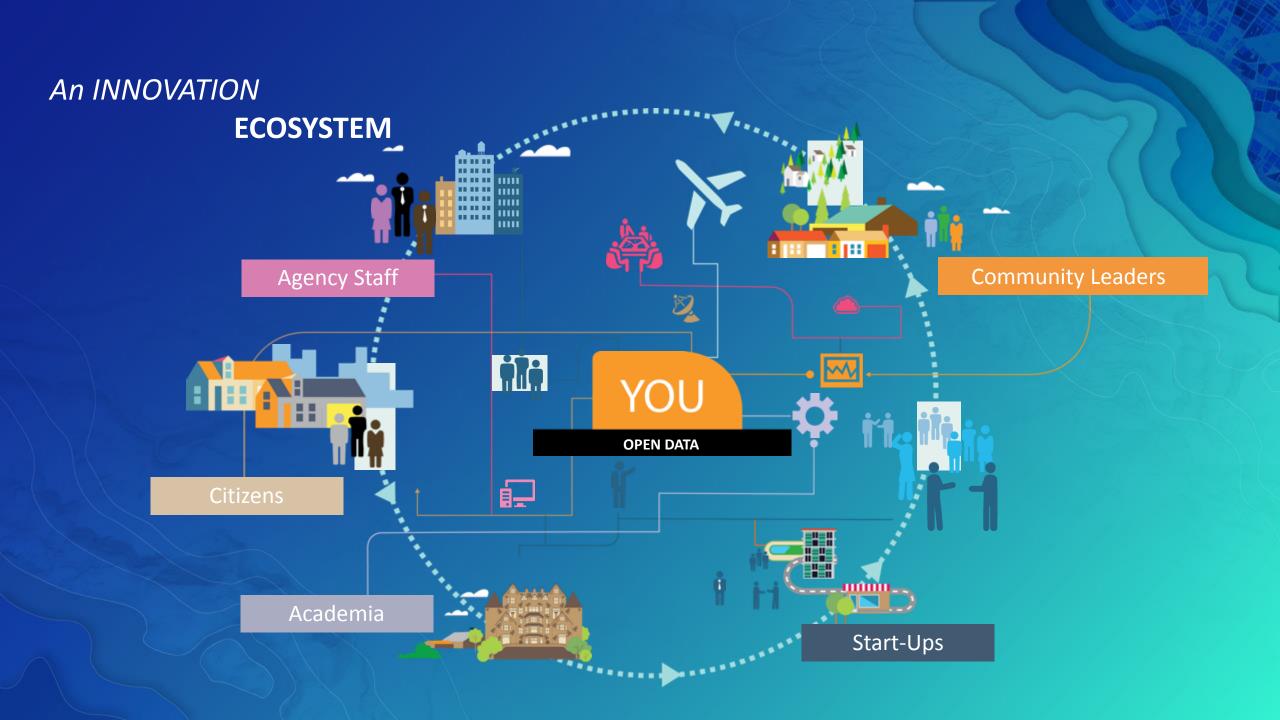


### **Historic Sharing Practices**

- Physical Media and FTP Sites
  - Static snapshots over time
  - Quarterly release
  - Manual process to produce
- Data typically had terms of use
  - Used by academia & neighboring governments for analysis
  - Possibly aggregated into commercial datasets
  - Mindset was to sell data

### Modern Expectations of Sharing

- Open Data is now an EVERYDAY THING
  - International movement to provide transparency and enable economic development
  - Formalized process to license and share data to the public
  - Often supported by governing legislation
- Solutions connected to Enterprise Architecture
  - Leveraging Servers to share out and ingest data
  - Minimal impact on the information workers



#### Part of the ArcGIS Platform

Providing open access to your published data

Simple
Integrated
Open



Open Data Site

### **Open Data Principles**



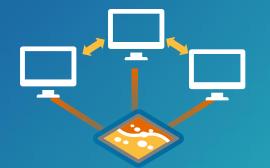
Accessible



Discoverable



Explorable



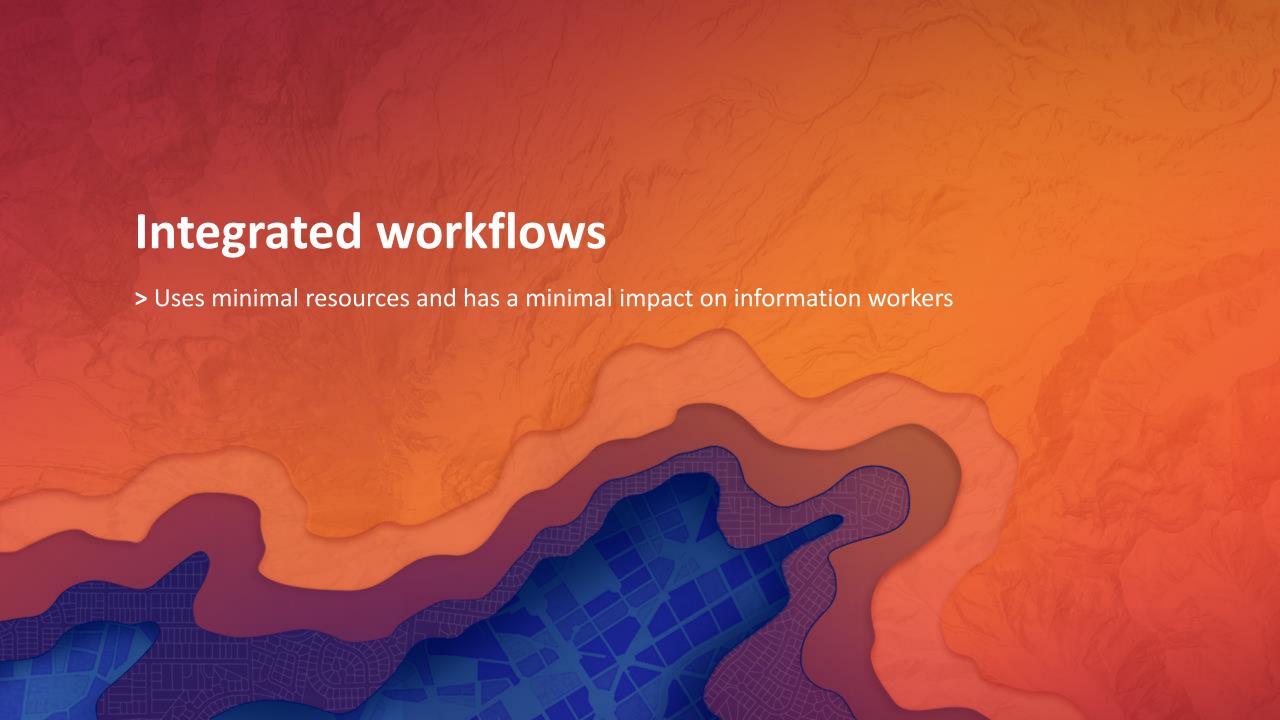
Collaborative

### **Current State of Open Data**

- · Complete open data solution for operational tables and spatial data
  - 7,600+ Organizations around the world
  - 70,000 Datasets shared into Open Data
  - 20,000,000+ Downloads in 2016
- Provide custom sites you control
  - Unlimited Bandwidth and API Usage
  - No restriction on the number of datasets
  - Auto-generated downloads
  - Suite of applications to provide context
  - ArcGIS sharing model

What does a successful open data program look like?

- 1. Uses minimal resources and has a minimal impact on information workers
- 2. Successfully communicates meaning via data and information
- 3. Engages end users in a sustainable manner



### Leverages existing services and familiar workflows





## Open Data Workflows

Auto ETL and Custom Search



Site

Preview Interact Download

Search Metadata

Shapefile KML CSV GeoJSON





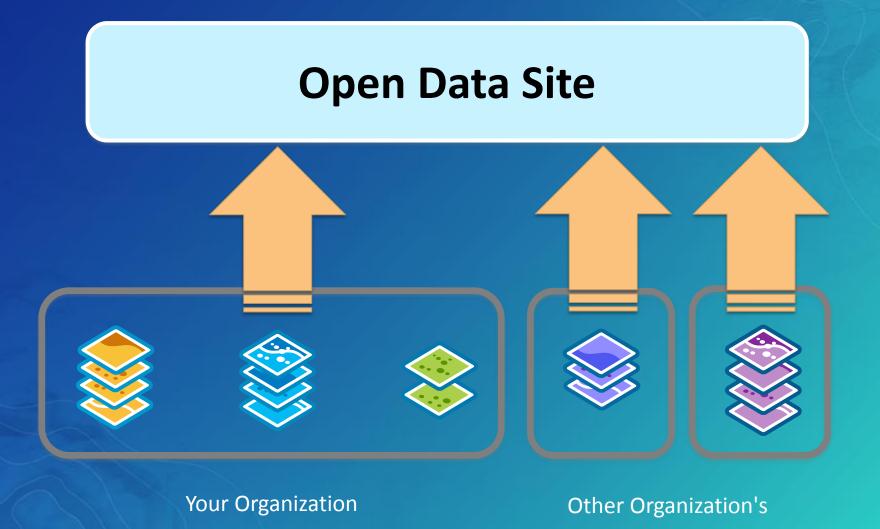


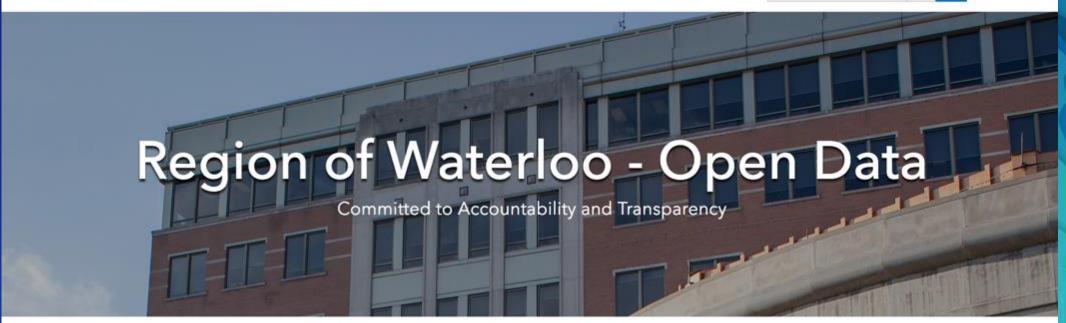


- Tax Parcels
- Sales
- Foreclosures
- Street Centerlines
- Address Points
- Points of Interest
- Building Footprints
- Subdivision Boundary

- Purchase Card Transactions
- Use of Force Events
- Calls for Service
- Tax Districts
- Park Locations
- School Zones
- Public Buildings
- Parking Ticket Locations

### Federating groups into open data sites





#### Open Data Provided by our Partners

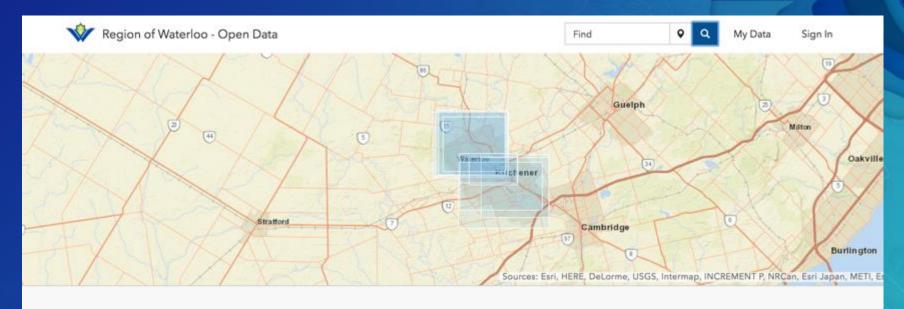
The Region of Waterloo has teamed up with the cities of Cambridge, Kitchener and Waterloo, to provide access to data from all four organizations. By visiting any of the four Open Data sites, you can access hundreds of datasets with the click of your mouse.











#### Filter By

Tags

Open Data (82)

Open Data (81)

City Of Kitchener (70)

Kitchener (69)

City Of Waterloo (55)

More Y

Source

City of Kitchener (75)

City of Waterloo (48)

Cambridge, Ontario (27)

Region of Waterloo (1)

Content Type

spatial dataset (217)

document (46)

table (5)

web mapping application (2)

( 1 - 10 of 270 results )

#### Application Status Report Subdivision &

Shared by KitchenerGIS

Subdivision Applications as generated from AMANADA Daily updates FieldsAPPLICATION #Unique number assigned to filePLANNERStaff person working on fileDESCRIPTIONBrief explanation of the proposalAPPLICANTWho submitted the applicationNUMBERStreet numberADDRESSStreet



#### Application Status Report Zone Change 🗗

Shared by KitchenerGIS

Zone Change Applications as generated from AMANDA Daily updates FieldsAPPLICATION #Unique number assigned to filePLANNERStaff person working on fileDESCRIPTIONBrief explanation of the proposalAPPLICANTWho submitted the applicationNUMBERStreet numberADDRESSStreet



#### Elected Officials C

Shared by KitchenerGIS

All council members are elected for a four-year term. The mayor is elected by voters from across the city and Councillors are elected by voters within specific wards. Council members are elected for a four-year term. This dataset conforms to the Represent CSV Schema for elected officials' contact information.

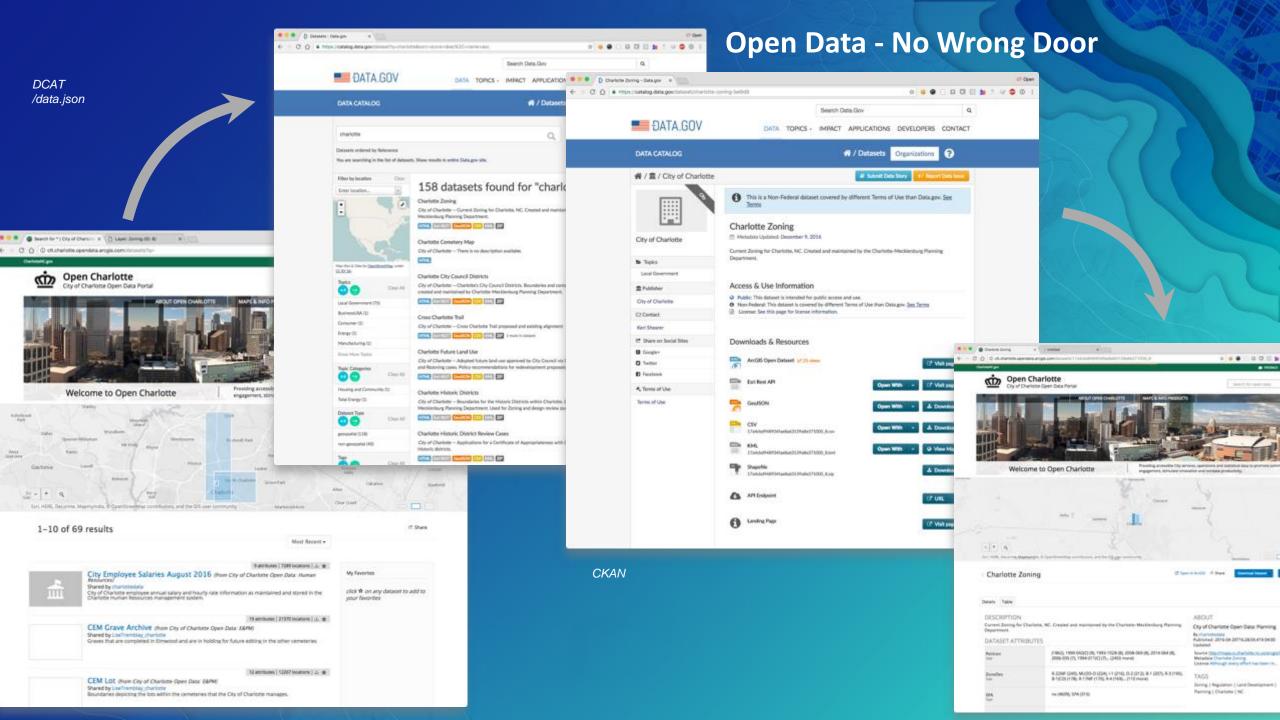


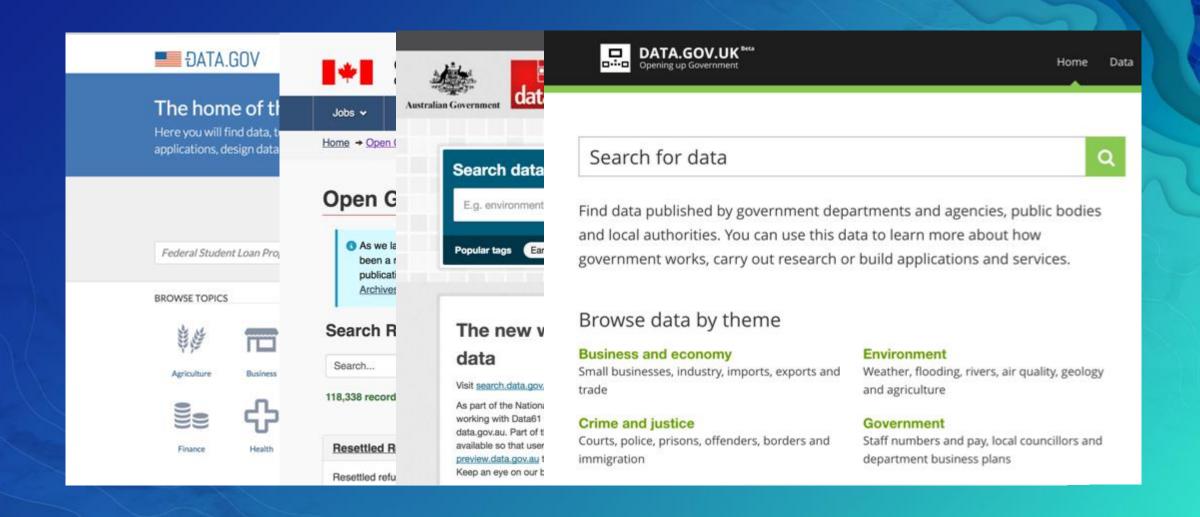












#### **Scripts for automation**

#### registerServices.py

This script registers all of the services from an ArcGIS for Server REST endpoint in the user's portal.

Sample Usage

Register the services at https://server.domain.com/arcgis/rest/services.

python registerServices.py -u https://portal.domain.com:7443/arcgis -o admin -s password -l
https://server.domain.com/arcgis/rest/services

#### updateItemMetadata.py

This example updates an item's description page using an xml file with the ArcGIS metadata format. These files can be generated in ArcGIS Desktop using the Export Metadata tool with the FGDC2ESRI\_ISO.xml translator. This is useful when you have detailed metadata associated with a dataset that you would like carried over when you publish it to your portal.

Sample Usage

Update the item details for portal item abc123 using the metadata in new\_metadata.xml.

python updateItemMetadata.py -u https://www.arcgis.com -u admin -s password -i abc123 -p new\_metadata.xml

#### publishFiles.py

This example bulk publishes the files in a directory as services in you ArcGIS Online org or Portal. The status of each publishing job is written out to a spreadsheet called results.csv in the directory containing the files. This is useful when you have many spatial files (e.g. shapefiles) that you want to publish and share, such as in an ArcGIS Open Data site.

Sample Usage

Upload and publish all of the zipped up shapefiles in C:\Shapefiles as Hosted Services in ArcGIS Online.

python publishFiles.py -u https://www.arcgis.com -o admin -s password -p 'C:\Shapefiles

# https://github.com/ ecaldwell/portaladmin-examples

### **Scripts for automation**

#### Open Data Object

This sample script currently contains an example workflow to refresh the datasets and cache for all datasets in an Open Data site.

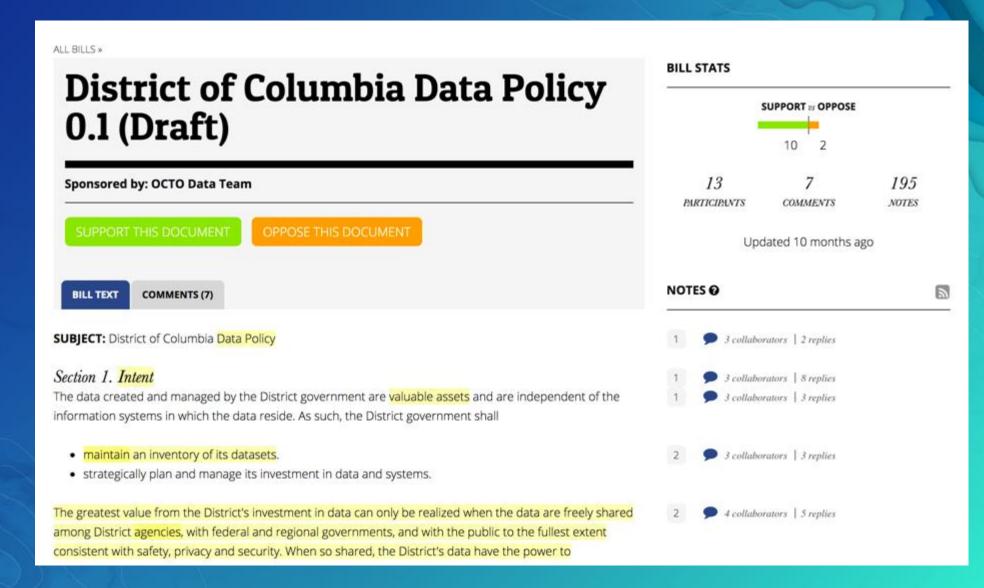
esriurl.com/cachescript

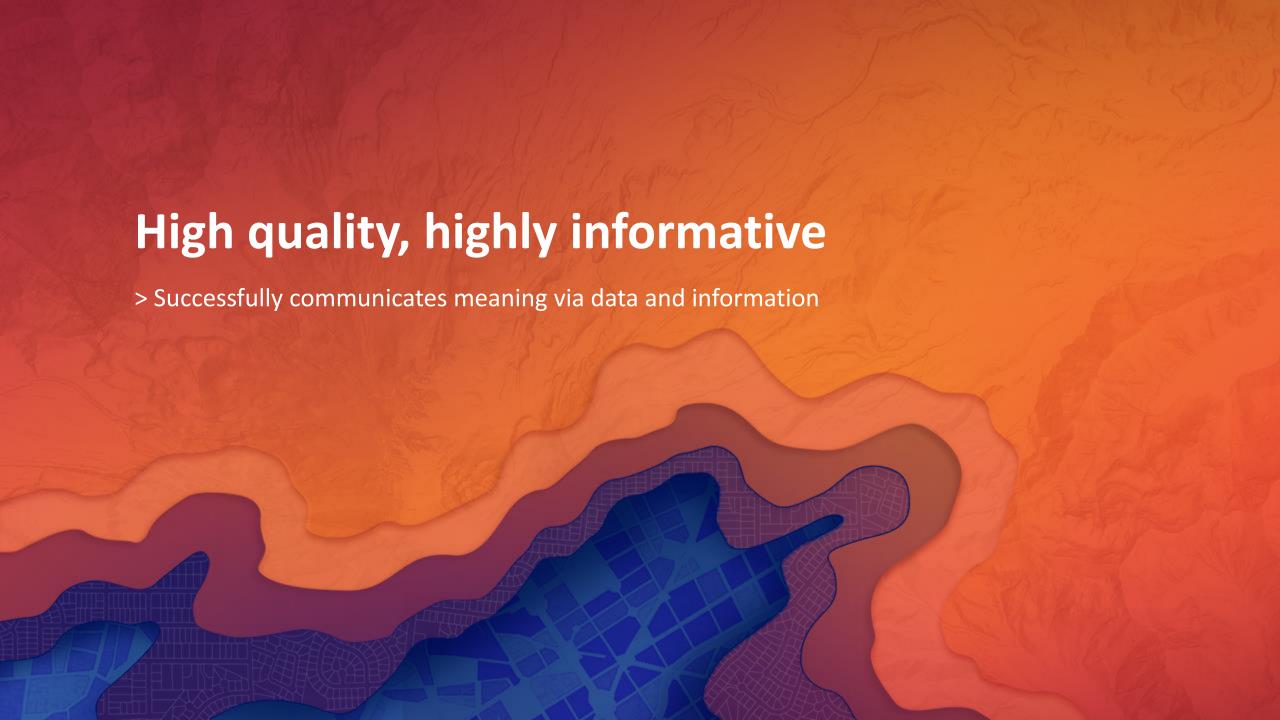
### The people

- Programs of all sizes succeed when you have an open data champion
- Executive buy-in helps sustainability and resource allocation
- Depends on your team and the size of your city/organization

### Creating new workflows to integrate across your org

Policies!





### If you're just starting out...

- Look at documentation and examples to help decide which datasets to focus on first
- http://us-city.census.okfn.org/



### **Creating high quality data**

- Starting from desktop:
  - Add attribute aliases



#### ACS 5 Year Housing Data by Place As of 2013

Showing 1 to 10 of 29,509

▼ NAME	▼ B25002E	ST1	₹	B250	02E	ST2	١,	<b>F</b> B2	5002ES_1	
Abanda	23		23	23			1	100		
Abbeville	1273	1112				8	87.35			
Adamsville	1973	1730				8	87.68			
Addison	463	406				8	87.69			
Akron	278	172			6	61.87				
Alabaster	11391		10587			5	92.94			
Albertville	7809		7079			9	90.65			
Alexander City	6382			5642			8	88.4		
Alexandria	1513			1428			9	94.38		
Aliceville	1566		1351			8	86.27			
_										
« « <b>1</b> 2	3 4 5	6	7	8	9	10	,	,		



#### New ACS 5 Year Housing Data by Place As of 2013

Showing 1 to 10 of 29,509

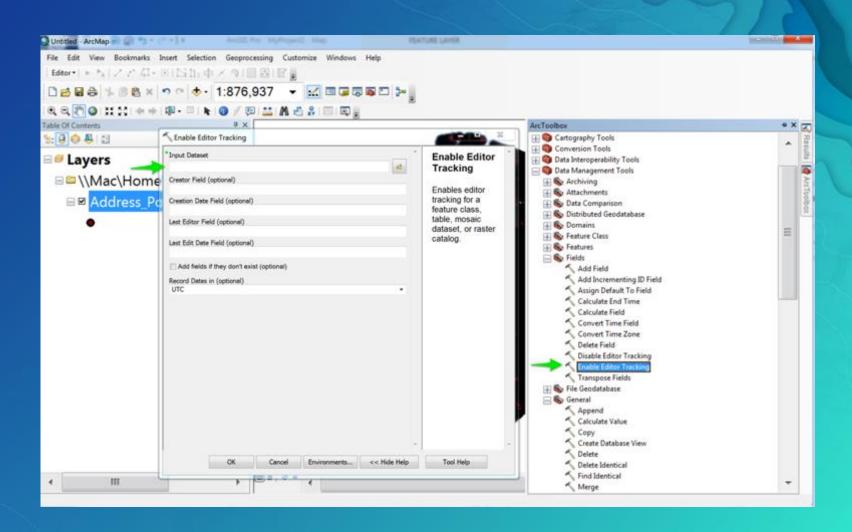
▼ Name of Place	▼ Total: Housing units	▼ Occupied housing units	▼ Occupied housing units as a %		
Abanda	23	23	100		
Abbeville	1273	1112	87.35		
Adamsville	1973	1730	87.68		
Addison	463	406	87.69		
Akron	278	172	61.87		
Alabaster	11391	10587	92.94		
Albertville	7809	7079	90.65		
Alexander City	6382	5642	88.4		
Alexandria	1513	1428	94.38		
Aliceville	1566	1351	86.27		



Unutied - Arciviap File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help × Layer Properties Table Of Contents %: 👂 😂 🖽 General Source Selection Display Symbology Fields Definition Query Labels Joins & Relates Time HTML Popup □ □ ↑▼↓▼ Options▼ **■ ■** Layers Choose which fields will be visible Appearance ✓ FID NCES School ID ✓ Shape Highlight No ✓ OBJECTID\_1 Read-Only No ✓ OBJECTID ✓ NCES School ID Field Details ✓ seasch Data Type Text √ fipst 80 Length ✓ leanm Name schno ✓ leaid √ coname Allow NULL Values No √ conum ✓ mstree ✓ mcity ✓ mzip ✓ Istree ✓ Icity Alias ✓ Izip ✓ latcod Descriptive name for the field OK Cancel Apply TENDIO I EEE.

### **Creating high quality data**

- Starting from desktop:
  - Add attribute aliases
  - Enable editor tracking

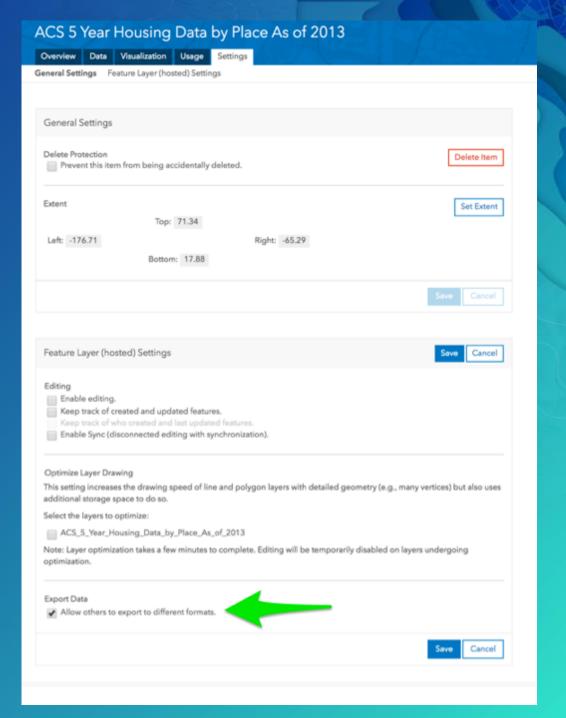


### **Creating high quality data**

- Registering datasets and editing metadata
- Title, description, access and use constraints (license), tags
- Licenses
  - Creative Commons (CCO, CC BY, CC BY-SA), Open Data Commons license
  - https://creativecommons.org/choose/
  - If you have a terms of use, add it in your footer
- Add structured metadata on ArcGIS Online
  - Accessible from dataset page and included in shapefile downloads

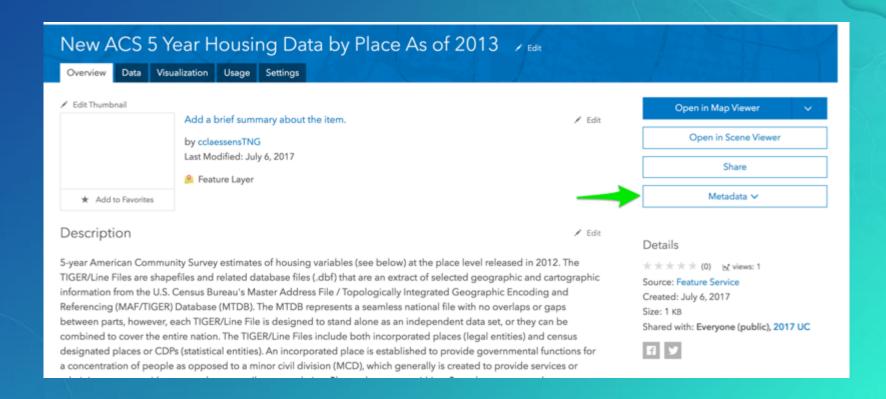
# More than just pre-packaged ETL – Getting those sweet sweet fgdbs

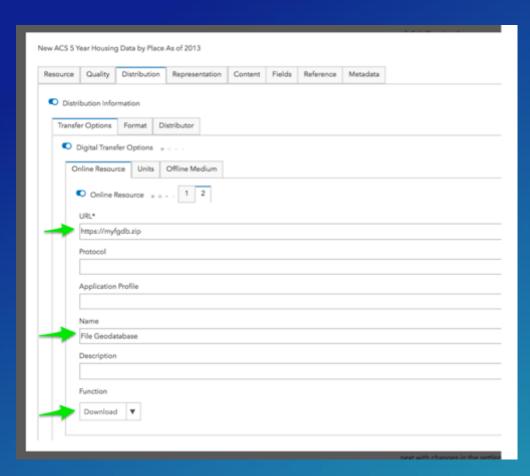
- For hosted services: check "Export Data" in the Online settings
- File geodatabases are automatically created by ArcGIS Online

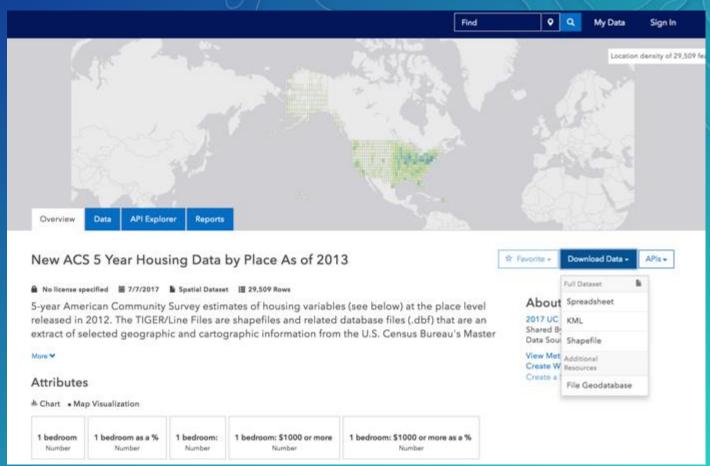


### Adding additional download types

- Add additional resources to your datasets using distributions in metadata
  - Add file geodatabases to your on-premises services
  - Add more metadata files
  - Add raw imagery data
  - Anything else!







In the metadata of the ArcGIS Online item

Dataset in open data

### Adding other kinds of items

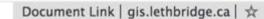
- Go beyond the feature service
  - Web maps
  - Web mapping applications
  - PDFs, word docs
  - External links



#### Parcels West Side & (from Lethbridge Open Data)

Shared by OpenLethbridge

Land parcels located in West Lethbridge. This data is intended for use in computer-aided design software applications such as AutoCAD and MicroStation. Last Updated: Jan 23,2016 Refresh Frequency: As Available





#### Parcels South Side & (from Lethbridge Open Data)

Shared by OpenLethbridge

Land parcels located in South Lethbridge. This data is intended for use in computer-aided design software applications such as AutoCAD and MicroStation. Last updated: Jan 23,2017 Refresh Frequency: As Available





#### Nature Sightings & (from Lethbridge Open Data)

Shared by OpenLethbridge

The Helen Schuler Nature Centre (HSNC) has been collecting local plant and wildlife sighting data, from a 100 km radius of the City of Lethbridge since the early 1990's. Sightings are reported by HSNC staff and volunteers, as well as members of the public (citizen science) and have been verified by NC staff. New sightings can be reported to the NC by phoning 403-320-3064 or e-mailing hs...

Document Link | trr.tbe.taleo.net | \*



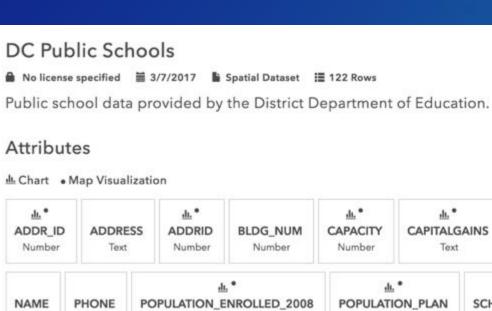
#### Career Opportunities & (from Lethbridge Open Data)

Shared by OpenLethbridge

Employment Opportunities with the City of Lethbridge Refresh Frequency: Live Feed

### Adding other kinds of items

- Go beyond the feature service
  - Web maps
  - Web mapping applications
  - PDFs, word docs
  - External links
- Connected content
  - Add web maps that use your open data they'll show up on the dataset page!





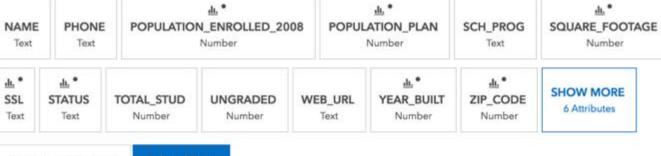


**Education Open Data** Shared By: cclaessen\_uc Data Source: maps2.dcgis.dc.gov

Download Data -

APIs +

View Metadata Create Webmap Create a Story Map





Related Data



#### School Distributions &

The organization that shared this item did not provide a description.

JULY 3, 2017

Official Web Map: cclaessensTNG



**FACUSE** 

Text

GIS\_ID

Text

### More than just data altogether

#### Consider the questions...

- What stories do the data tell?
- How can we generate insights?
- How is the data being used?
- What questions can we answer more simply?

#### **Consider the solutions...**

- Story Maps
- Operations dashboards
- Locator applications
- Pages

## **Turning data into information**

### A Platform for a

# futureready

The Brampton GeoHub is a platform that features initiative driven tools that help grow transparency and foster innovation everywhere. Combine datasets and perform analysis through the use of maps and charts, or simply download the data to tell your own story.

Browse the data by Category, or explore the entire collection of datasets. This is Open Data with a purpose.



Purposeful web apps built with Open Data to answer questions and solve problems.

**APPS** 



Browse Brampton's gallery of cartographic products that are built with open data.

MAPS



A platform to share stories with residents relating to the City's current initiatives.



Analyze it. Visualize it. Download it. This is Open Data with a purpose.

DATA

# Johns Creek DataHub

Open Data, Dashboards, and Mapping Apps

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Q

The "DataHub" is the City of Johns Creek's central location for open data, dashboards, and interactive mapping applications.

Through this Hub, you can visualize city data in maps, charts, and dashboards. Developers can even tie their own data services and applications into City data.

### Visualize Data in Dashboards

Dashboards provide an interactive way of visualizing information in the Johns Creek DataHub.



### Most Common Data

Explore the most commonlyaccessed data in the DataHub



### CreekView

Interact with property information through a map



### **Business Locations**

Find businesses and associated information



### Building

Browse building permits and construction projects



### Code Compliance

View code compliance cases



### Fire

Navigate fire and medical calls from the JC Fire Department



### Police

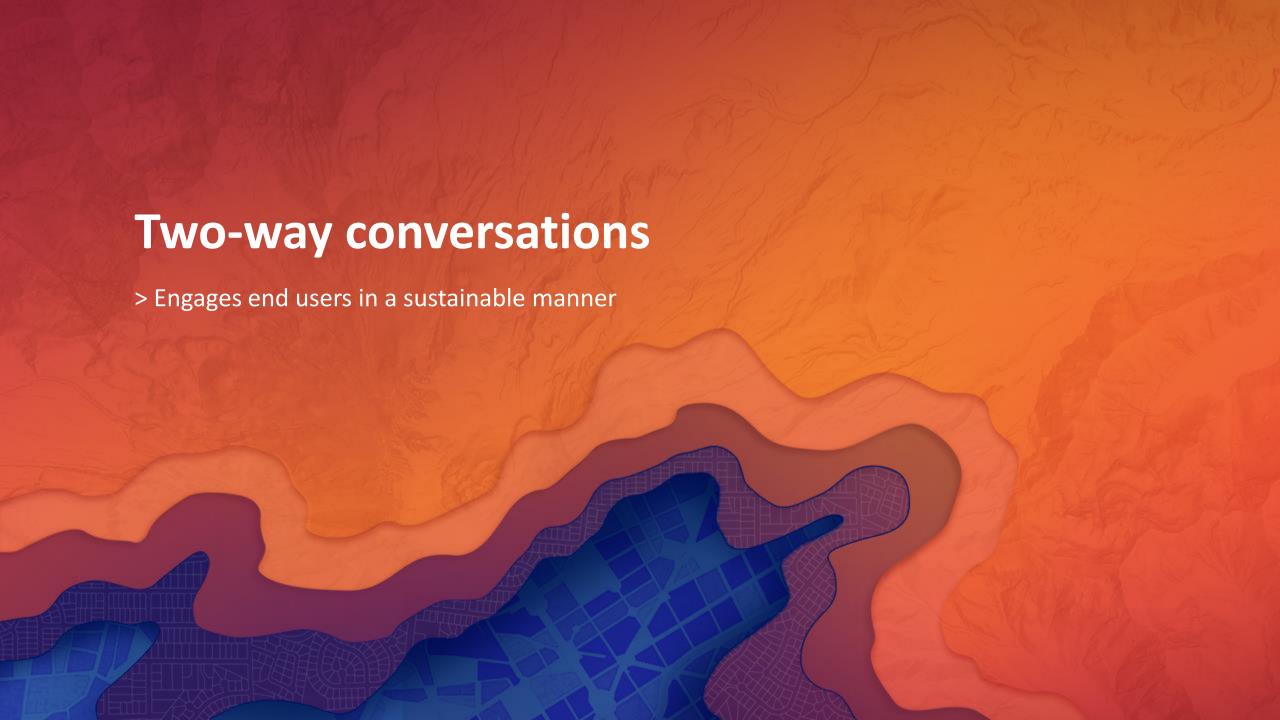
View incident information from the JC Police Department



### Public Works

Dig into public works projects and tasks

Explore More City Maps & Apps



# Helping your users use the data

### How-To Example Videos

View a short video explaining how data from the Johns Creek DataHub can be answer a variety of questions.



<u>Locate</u>

Locate potential customers



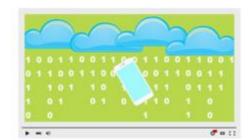
Find

Find, vacant, commercial sites



Discover

Discover restaurants along your commute



Utilize

Utilize data services to empower your apps



Iowa Department of Transportation

### Welcome to the GIS Training Portal

The lowa Department of Transportation maintains a wide array of geographic information system, or GIS, services and tools to collect, manage, leverage, and implement geospatial data. In addition to supporting the data and services we offer, The Office of Organizational Improvement also creates training guides, videos, and documents that cover everything from the fundamentals to advanced skills.

This GIS Training Portal was created in an effort to provide a centralized location for all types of geospatial learning.



Search for training.















Training

AGOL User Guide

### **Communication Channels**

- Think about how you want to converse with your community
  - Meeting people where they are
  - How are they currently contacting you?
  - Twitter, Facebook
- Let people know when you publish new data or make any breaking changes





ICYMI: Starting Monday, our crash data on @opendatadc will be published DAILY. Nearly real-time data for #VisionZero ddot.dc.gov/release/mayor- ...

2:40 PM - 29 Jun 2017

### Mayor Bowser Announces Public Crash Data to be Published Every Twenty Four Hours

Thursday, June 29, 2017 Safety data supports Vision Zero



### FOR IMMEDIATE RELEASE

Media Contacts

Terry Owens — (202) 763-8635, terry.owens@dc.gov 

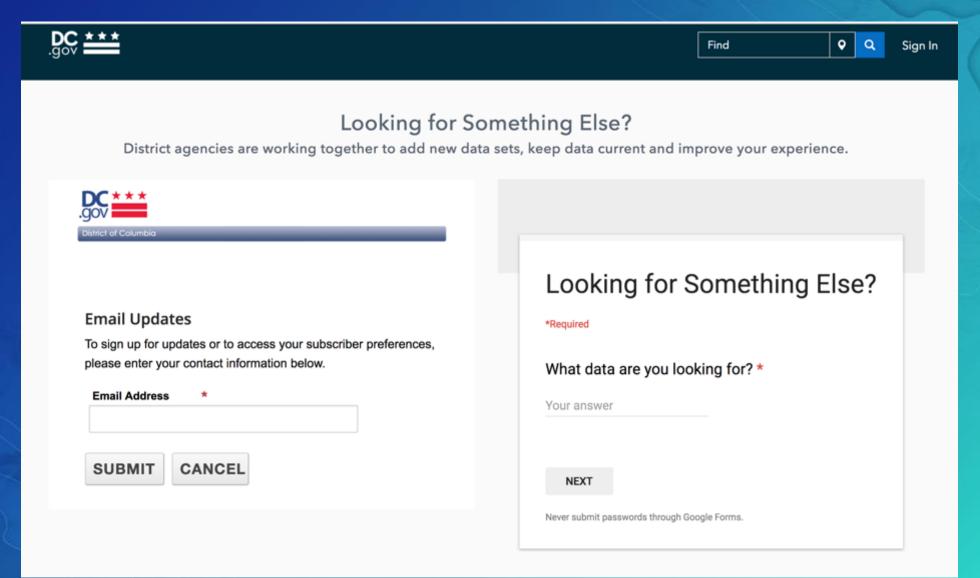
Michelle Phipps-Evans — (202) 497-0124, michelle.phipps-evans@dc.gov 

■

(Washington, DC)—Today, Mayor Muriel Bowser announced the District of Columbia will begin publishing traffic crash data in an open and geocoded format every 24 hours. The new initiative is the result of collaboration between the District Department of Transportation (DDOT), the Metropolitan Police Department (MPD), and the Office of the Chief Technology Officer (OCTO).

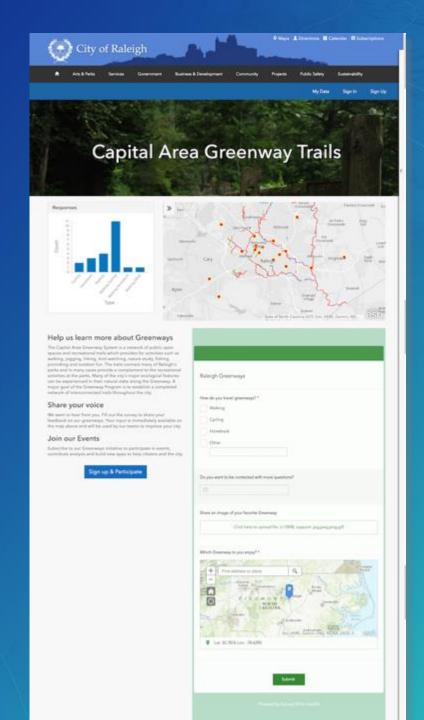


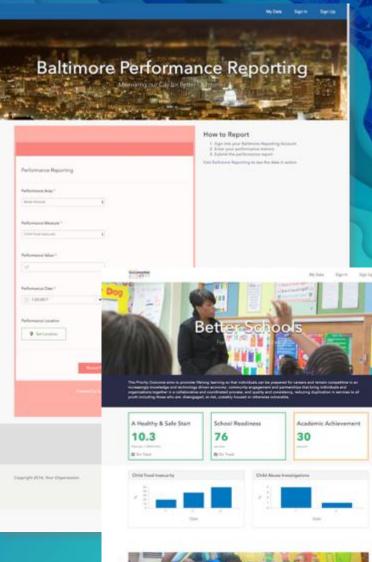
## **Communication channels – FOIA-lite**



# **Surveys & Data Collection**

- Data gathering by the public community or team members
- Integrated with Pages, mobile apps, and embed into external advocacy groups
- Supports data requests, internal performance metrics







### Child Food Insecurity

# Communication channels – what have your users been working on?

- Use pages and leverage surveys to give users an entry to present their work
- Add a community spotlight section on your site for others' to leverage the knowledge of their neighbours



### Spotlight on Community Content

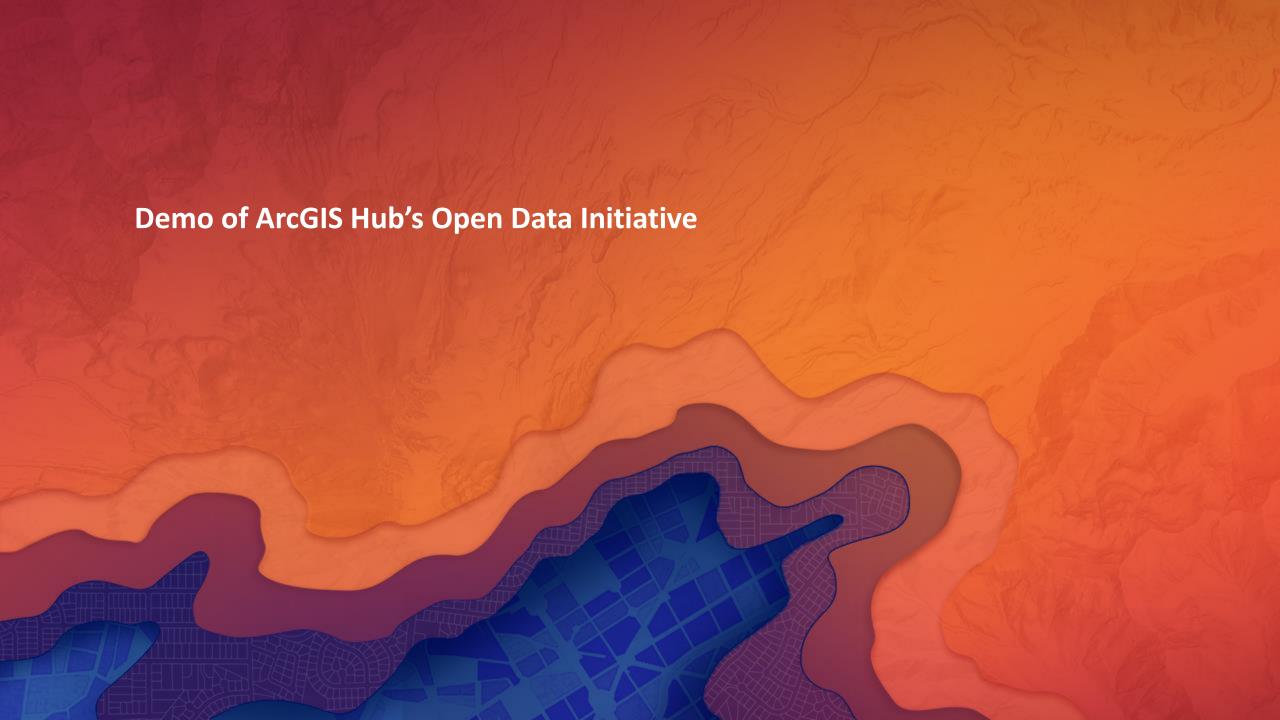
Explore what members of the community have been working on.

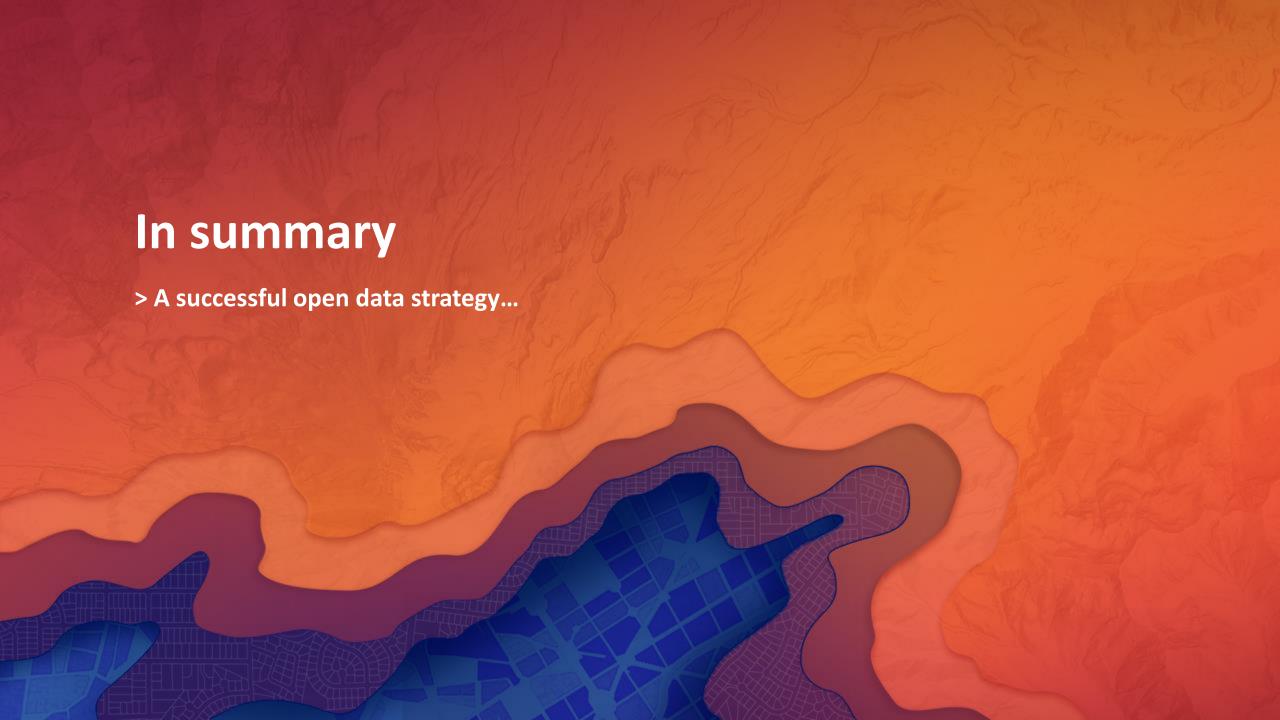


### Vacant Lots to Community Gardens

Comparing results of a vacant land inventory survey with community garden distribution and demographic data, we advocate for turning lots into gardens in Marquette Park.

Launch the Page





# 1. Uses minimal resources and has a minimal impact on information workers

- leveraging ArcGIS for Server and ArcGIS Online
- scripts for automation
- people are important

# 2. Successfully communicates meaning via data and information

- data quality is critical
- allow as many uses as you can
- data tells stories bring them to the forefront

# 3. Engages end users in a sustainable manner

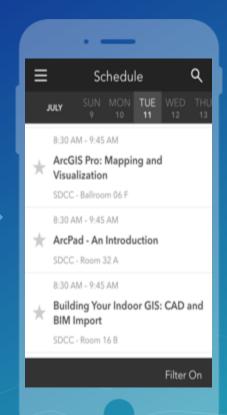
- create a communication space
- leverage surveys for data requests and data collection
- community spotlight

# Please Take Our Survey on the Esri Events App!

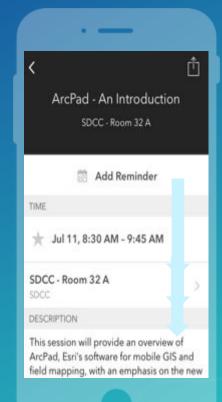
### Download the Esri Events app and find your event



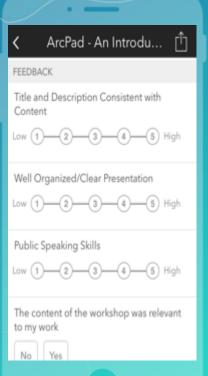
# Select the session you attended



# Scroll down to find the survey



# Complete Answers and Select "Submit"





# L.A. GeoHub **Ecosystem**

### **Initiative Pages**

**Focused Collaboration** 

-

GeoHub

**Public Engagement Hub** 

"Open Data 2.0"--Maps, Data & Apps



City's Hub and Mapping Platform Find, Use, Create, and Collaborate



# **GIS** Infrastructure

Departmental Servers or ArcGIS Online

Serve & Power



GeoHub



Unlock the City's Geodata

Find Data



# Information & Engagement

### Create & Innovate





