Best Practices for Working with ArcGIS Open Data

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R&D Center, Washington, DC
esriurl.com/17odbp
(case sensitive)
Open data: part of the ArcGIS Platform
Simple
Integrate
Open
• Data-centric view
• Open formats
• Hosted and configurable
• Included with ArcGIS subscriptions
Not all data is created equal.

We have the challenge of introducing our data to new users with new use cases.
Ultimate goals and session outline

• Data that is performant and quick to view (service configuration)
• Data that is user friendly and easy to understand (data prep and organization in ArcGIS Online)
• Sites that are inviting and give user guidance (site design)
• Some great examples!
Dataset and service preparation
Getting data and services ready from desktop

• Humanize your attributes with attribute aliases
### ACS 5 Year Housing Data by Place As of 2013

Showing 1 to 10 of 29,509

<table>
<thead>
<tr>
<th>▼ Name</th>
<th>▼ B25002EST1</th>
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<tr>
<td>Aliceville</td>
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</table>

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

Showing 1 to 10 of 29,509

<table>
<thead>
<tr>
<th>▼ Name of Place</th>
<th>▼ Total: Housing units</th>
<th>▼ Occupied housing units</th>
<th>▼ Occupied housing units as a %</th>
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*Note: The alias 'NCES School ID' is selected and marked with a green check in the image.*
Getting data and services ready from desktop

- Humanize your attributes with attribute aliases
- Turn on editor tracking
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- Large data – simplify and reduce the number of vertices
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- Server: latest is greatest
- Service parameters
  - Don’t alter the default maximum number of records returned from server
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- Service capabilities
  - Enable WMS, WFS, WCS (where applicable)
  - Turn off feature access if not needed
Independent Schools

The dataset contains locations and attributes of Independent Schools, created as part of the DC Geographic Information System (DC GIS) for the D.C. Office of the Chief Technology Officer (OCTO) and participating D.C. government agencies.

Attributes

<table>
<thead>
<tr>
<th>ADDR</th>
<th>ID</th>
<th>NAME</th>
<th>TELEPHONE</th>
<th>WEB_URL</th>
<th>ZIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text</td>
<td>Text</td>
<td>Text</td>
<td>Text</td>
<td>Text</td>
<td>Text</td>
</tr>
</tbody>
</table>

**SHOW MORE**

2 Attributes
Getting data and services ready from desktop

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- Organize layers (datasets) into multiple services
  - No more than twenty to a service
Hosted or on premises?

- Online is generally better – more performant, better updates
- Use ArcGIS Online to host:
  - Large datasets
  - Popular datasets
  - Any data you’d like automatically translated into file geodatabase
ArcGIS Online preparation
Configuring organisation and data in Online
Organization structures

- **ArcGIS Online user roles**
  - Open Data administrator
  - These users still need to be added to the Team tab within Hub admin
### Roles

**Role Name:** Open Data Admin

**Description:** ability to create open data groups and sites

#### General Privileges

<table>
<thead>
<tr>
<th>Groups</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="#" alt="Checkboxes" /> Create, update, and delete</td>
<td><img src="#" alt="Checkboxes" /> Create, update, and delete</td>
</tr>
<tr>
<td><img src="#" alt="Checkboxes" /> Join organizational groups</td>
<td><img src="#" alt="Checkboxes" /> Publish hosted feature layers</td>
</tr>
<tr>
<td><img src="#" alt="Checkboxes" /> Join external groups</td>
<td><img src="#" alt="Checkboxes" /> Publish hosted tile layers</td>
</tr>
</tbody>
</table>

#### Sharing

| ![Checkboxes](#) Share with groups |
| ![Checkboxes](#) Share with organization |
| ![Checkboxes](#) Share with public |
| ![Checkboxes](#) Make groups visible to organization |
| ![Checkboxes](#) Make groups visible to public |
| ![Checkboxes](#) Make groups available to Open Data |

#### Premium Content

| ![Checkboxes](#) Geocoding |
| ![Checkboxes](#) Network Analysis |
| ![Checkboxes](#) Spatial Analysis |
| ![Checkboxes](#) GeoEnrichment |
| ![Checkboxes](#) Demographics |
| ![Checkboxes](#) Elevation Analysis |

#### Features

| ![Checkboxes](#) Edit |
| ![Checkboxes](#) Edit with full control |

| ![Checkboxes](#) Manage Open Data site(s) |
ArcGIS Online groups

- **Staging groups** – good for organizations with multiple contributors
  - Use a group that is NOT open data for vetting, quality control, etc
  - Open data leader can move data from that group to the open data group and publish it

- **Thematic groups** – comes in handy when adding data and designing your site
  - Others that might want to add your data can choose from themes, rather than get everything
  - In site design, use category cards and limit search queries to specific groups

- **Include good group names, icons, descriptions**
Select open data groups

Choose open data groups to make accessible in your site. Changes are automatically saved.

Available open data groups

- Maryland GIS Data Catalog: Biota
- Maryland GIS Data Catalog: Boundaries
- Maryland GIS Data Catalog: Business Economy
- Maryland GIS Data Catalog: Demographics
- Maryland GIS Data Catalog: Education
- Maryland GIS Data Catalog: Elevation
- Maryland GIS Data Catalog: Environment

Selected open data groups

- 2017 UC

Add
Remove
Registering data and editing metadata

- Register individual layers over full services
  - Gives greater and easier control of metadata
- Title, description, access and use constraints (license), tags
I-80 PEL Resources - Wildlife Management Areas
Shared by IowaDOT_GISServices
This map shows known or potential wildlife management area resources within the I-80 Planning and Environmental Linkage (PEL) Study Area. The PEL study is being conducted by the Office of Location and Environment.

SF257 City Funding
Shared by IowaDOT_GISServices
Data depicting FY 2016 breakdown of city funding generated from Senate File 257.

I-80 PEL Study Areas
Shared by IowaDOT_GISServices
This layer identifies the study areas for the Interstate 80 Planning and Environmental Linkage (PEL) study being conducted by the Office of Location and Environment.
Registering data and editing metadata

• Register individual layers over full services
  • Gives greater and easier control of metadata
• Title, description, access and use constraints (license), tags
• Licenses
  - Creative Commons (CC0, 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
Construction Permits in 2015
Shared by DCGIStudio data
The dataset contains locations and attributes of 2015 above ground permits applied for and approved by the District Department of Transportation. They are occupied constructions and events. Examples include: moving trucks, roll off debris container, moving storage container, construction staging area, mobile crane

Occupancy Permits in 2012
Shared by DCGIStudio data
The dataset contains locations and attributes of 2012 above ground permits applied for and approved by the District Department of Transportation. They are existing occupied constructions and events. Examples include: moving trucks, roll off debris container, moving storage container, construction staging area,

Emergency Work Requests (via DDOT TOPs)
Shared by DCGIStudio data
This data set shows emergency work requests from DDOT’s Transportation Online Permitting System. https://tops.ddot.dc.gov/
Registering data and editing metadata

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  • Gives greater and easier control of metadata

• Title, description, access and use constraints (license), tags

• Licenses
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  - 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
Getting those sweet sweet fgdb

- 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...

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!
DC Public Schools

Public school data provided by the District Department of Education.

Attributes

- ADDR_ID: Number
- ADDRESS: Text
- ADDRID: Number
- BLDG_NUM: Number
- CAPACITY: Number
- CAPITALGAINS: Text
- FACUSE: Text
- GIS_ID: Text
- LEVEL: Text
- NAME: Text
- PHONE: Text
- POPULATION_ENROLLED_2008: Number
- POPULATION_PLAN: Number
- SCH_PROG: Text
- SQUARE_FOOTAGE: Number
- SSL: Text
- STATUS: Text
- TOTAL_STUD: Number
- UNGRADED: Number
- WEB_URL: Text
- YEAR_BUILT: Number
- ZIP_CODE: Number

Connected Content

- Show More: 9 Attributes

Related Data

- School Distributions [Details]
- The organization that shared this item did not provide a description.
- JULY 3, 2017
- Official Web Map: cclaessensTNG

About

- Education Open Data
- Shared By: cclaessens_uc
- Data Source: maps2.dcgis.dc.gov

View Metadata
Create Webmap
Create a Story Map
Site configuration and design
• Add Google analytics
• Enforce HTTPS
deepcustom-andrew.opendata.arcgis.com
Use pages!

• Pages give you so much freedom and flexibility to further configure your site
• Page examples –
  - API instructions (http://opendata.dc.gov/pages/using-apis)
  - Events
  - Surveys
  - Data themes
  - Dashboard
  - App galleries
  - Literally anything else
Great examples from our peers
On this site, the District of Columbia government shares hundreds of datasets. DC realizes that data’s greatest value comes from having it freely shared among agencies, federal and regional governments and with the public to the extent possible when considering safety, privacy and security. The District invites you to browse the data, download it as a file, analyze it with your tools, or build apps using our APIs. Everything you find here is open by default per DC’s Data Policy. Visit open data for help with using this site.

http://opendata.dc.gov/
Discover Brampton’s Open Data and the Tools to Visualize It.

http://geohub.brampton.ca/
Digital meeting space
Welcome to the ArcGIS Hub space

(Formerly the ArcGIS Open Data space) ArcGIS Hub transforms how governments engage and collaborate with their communities through policy-driven initiatives, bringing open data to life and putting it to work. The ArcGIS Hub team is here to collaborate with ArcGIS Hub administrators and users in all aspects of the application – answering questions, listening to feedback, and communicating new and upcoming features.

ADMIN

Courtney Claessens

Overview Activity Content People Subspaces Calendar Reports

ASK ARCGIS HUB

Type your question

Ask my question

LATEST BLOG POSTS

Changes to ArcGIS Open Data
Courtney Claessens 1 week ago

Configuring charts and stats in ArcGIS Open Data pages
Courtney Claessens 3 months ago

What’s New - Documentation Link Roundup
Courtney Claessens 5 months ago

ANSWERED QUESTIONS

Update to Hub prompts off license to access data
Lars Elmkaer Chwastek 3 days ago

Is anyone else having problems with the WFS and WMS URLs created in the APIs dropdown for each dataset?
Craig Valentine 1 week ago

https://geonet.esri.com/community/gis/web-gis/arcgis-hub
In summary
• Great sites need great data – starts locally in your desktop
• Use Online to your advantage – groups, metadata, more download types
• Licensing!
• Upgrade your site to 2.0 if you haven’t already
• Talk to your peers and get inspired
• Meet on GeoNet – ask questions, share tips, tell us what you want to see
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”**
esriurl.com/17odbp
(case sensitive)
Questions?
Open data booth in the Online Island
cclaessens@esri.com
@sidewalkballet