Implementing ArcGIS Open Data in Rhode Island

Erica Tefft
RIGIS Data Manager
Topics to Cover

- What is ArcGIS Open Data?
- Setting up an Open Data site
- Data Preparation
- Metadata Preparation
- Other things to consider
What is ArcGIS Open Data?

- A way to share and disseminate data under an open data license.

- Allows users to use, change, and redistribute data.

- Can add a custom license in the “Access and Use Constraints” for each feature layer.

Access and Use Constraints

These data are shared under the RIGIS license agreement, which can be viewed below:

This dataset is provided ‘as is.’ The producer(s) of this dataset, contributors to this dataset, the Rhode Island Geographic Information System (RIGIS) consortium, the State of Rhode Island, and the University of Rhode Island do not make any warranties of any kind for this dataset, and are not liable for any loss or damage however and whenever caused by any use of this dataset.

Please acknowledge both RIGIS and the primary producer(s) of this dataset in any derived products. Versions of the RIGIS logo suitable for both printed and web-based products are available at http://www.rigis.org/logos.
ArcGIS Open Data Formats

- Data shared in multiple open data formats:
  - Shapefile
  - CSV
  - KML
  - GeoJSON
  - GeoService
Activating Open Data

- Hosted via ArcGIS Online in a public-facing website.
- Activating Open Data for your organization.
  - Must be an administrator
Activating Open Data

Enhance the sharing workflows of ArcGIS and engage with the public by enabling Open Data for your organization. When you enable this feature, groups can be designated to share Open Data and content within these groups is able to be added to custom Open Data sites you create. Once shared, the data is automatically available to be visualized with charts, graphs, maps, or downloaded in a variety of open file formats.
Create Open Data Groups

Data must be shared in groups designated for use with “Open Data”.
Summary:
Vector data relating to biology and ecology for Rhode Island.

Description:
This group contains biology and ecology vector data for the state of Rhode Island. It is important for users to note that not all of these data provide full coverage of the state (where applicable), and these data also range in publication date from 1993 (wetlands) at the oldest, to 2016 (natural heritage areas) at the most recent.

Some samples of data included within this group are, Bird Species, Forest Habitat, Submerged Aquatic Vegetation and Wetlands.

These vector datasets mirror those available for download from the RIGIS website.

Tags:
- BIO
- RIGIS
- Rhode Island
- RI

Status:
- Private (Users cannot find this group and can join by invitation only.)
- Organization (Users within your organization can search for and find this group.)
- Public (Users can search for and find this group.)
- Designate as available for use in Open Data sites

Contributors:
- Members
- Only group owner

Sorted by:
Title (Ascending)
Creating an Open Data Site
Creating an Open Data Site

### Basic Information
- **Site Name**: NEARC Test Site
- **Browser Icon**: //edc.opendata.arcgis.com/favicon.ico
- **Google Analytics Tracking ID**: UA-NNNNNNN-N

### Domains
- **Site URL**: NEARCtestSite
- **Full URL**: NEARCtestSite.edc.opendata.arcgis.com
- **Custom Domain**: data.myorg.com

### Set Extent

![Map of New England](https://example.com/map)

### Select Basemap Option
- Default Basemaps
- Custom Basemap
Creating an Open Data Site

Select Open Data Groups

Choose Open Data groups to make accessible in your site. Changes are automatically saved.

Available Open Data Groups:

- Boundaries
- Cultural and Historical
- Elevation and Bathymetry
- Environment and Conservation
- Geology
- Hydrography

Selected Open Data Groups:

- Remove Biology and Ecology

Open Data Sharing

Only Groups in Your Organization

Next
Choosing a Coordinate System

- By default data will be downloaded in WGS84.
- Can enable **Local Projections** through the site configuration options.
- RIGIS will upload all data as WGS84 and only support WGS84 downloads.
Data Preparation

- “Humanize” your data
- Add field aliases
- Hide repetitive/empty fields
Data Preparation

- “Humanize” your data
- Add field aliases
- Hide repetitive/empty fields

Much easier for humans to understand
### Data Preparation

#### TIGER Roads (2005)

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- Sort Ascending
- Sort Descending
- Advanced Sorting
- Summarize
- Statistics
- Field Calculator
- Calculate Geometry
- Turn Field Off
- Freeze/Unfreeze Column
- Delete Field
- Properties
Uploading Data to Your Site

Two options:

1. Upload as hosted service on ArcGIS Online
   - Stored in the cloud, on Esri servers
   - Best for large, or popular data

2. Upload to your organization’s ArcGIS Server
   - Takes up space on your server
   - Must individually register all services with ArcGIS Online
Uploading Data as a Hosted Service to ArcGIS Online

Live Demo!
1) Add your Data...
2) Change the Data Frame Coordinate System

Select proper transformation
3) Add field aliases

These make more sense!
4) Share As...Hosted Service
5) Finalize Service Overview Information

Law Enforcement

Description
Locations and websites for police stations, state police barracks, and sheriffs offices throughout Rhode Island. This dataset reflects all Rhode Island Police Departments and Law Enforcement Agencies trained by the State of Rhode Island Municipal Police Academy, as well as the Narragansett Tribal Police, Providence Police Department, Rhode Island Capitol Police, Rhode Island Division of Sheriffs, and Rhode Island State Police.

Layers
Law Enforcement

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Next Steps for RIGIS...

- Prepare metadata to be uploaded to ArcGIS Online
- Design layout of Open Data site
- Make groups and Open Data site public!
Enabling Metadata for ArcGIS Online

- **EDC Blog:** Prepping and Adding Metadata to ArcGIS Online Items

- Must enable metadata for ArcGIS Online Organization.
  - Choose appropriate style → FGDC CSDGM

- Must properly format metadata in ArcCatalog before uploading to ArcGIS Online.
  - Cant directly upload FGDC-formatted metadata
Preparing Metadata for ArcGIS Online

1. In ArcCatalog, search for the **XSLT Transformation** tool (Conversion toolbox).

2. Select input data (FC/SHP) and select output location.
   - Metadata must already be “imported” into the FC/SHP!
   - Add “.xml” to the end of your chosen file name

3. Input XSLT = “exact copy of .xslt”
   - C:\Program Files (x86)\ArcGIS\Desktop10.4\Metadata\Stylesheets\gpTools
Uploading Metadata to ArcGIS Online

1. Open
2. Populate metadata with item details.
3. Browse... No file selected.
4. Save & Close

Law Enforcement

Resource Quality Distribution Representation Content Fields Reference Metadata

Citation Details Keywords Extent Context Maintenance Constraints Additional

Titles & Dates URLs Identifiers Form Other

Creation Date

Access and Use Constraints
Uploading Metadata to ArcGIS Online

Law Enforcement

Identification Information:
Citation:
  Publication Date: 20140919
  Title: Law Enforcement
  Edition: 2014
  Geospatial Data Presentation Form: vector digital data
  Publisher: University of Rhode Island Environmental Data Center
  Online Linkage: http://services2.arcgis.com/58z2y6p923kl6exQ/arcgis/rest/services/Law_enforcement/FeatureServer
  Larger Work Citation:
    Citation Information:
      Publication Date: 19930101
      Title: Rhode Island Geographic Information System (RIGIS) Data Distribution System

Description:
  Abstract: Locations and websites for police stations, state police barracks, and sheriffs offices throughout Rhode Island. This dataset reflects all Rhode Island Police Departments and Law Enforcement Agencies trained by the State of Rhode Island Municipal Police Academy, as well as the Narragansett Tribal Police, Providence Police Department, Rhode Island Capitol Police, Rhode Island Division of Sheriffs, and Rhode Island State Police.
  Purpose: Locations of law enforcement stations and barracks throughout Rhode Island.

Time Period of Content:
  Time Period Information:
    Single Date/Time: 20140919
  Calendar Date: 20140919
  Currentness Reference: publication date

Status:
  Progress: Complete
  Maintenance and Update Frequency: Irregular

Spatial Domain:
  Bounding Coordinates:
    West Bounding Coordinate: -71.802087
    East Bounding Coordinate: -71.160293
    North Bounding Coordinate: 42.055464
    South Bounding Coordinate: 41.173386

Keywords:
  Theme: Theme Keyword Thesaurus: ISO 10115 Topic Category
  Theme Keyword: structure
  Theme Keyword: Constables
  Theme Keyword: Police officers
Other Things to Consider...
Selecting Transformations

**Esri Blogs:**

- About geographic transformations and how to choose the right one
- HowTo: Determine which NAD_1983_To_WGS_1984 transformation to use
- HowTo: Select the correct geographic (datum) transformation when projecting between datums

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HowTo: Determine which NAD_1983_To_WGS_1984 transformation to use. The gist of this article is summarized below:

1. NAD_1983_To_WGS_1984_1 – for the entire North American continent.
2. NAD_1983_To_WGS_1984_2 – for the Aleutian islands.
3. NAD_1983_To_WGS_1984_3 – for Hawai‘i.
4. NAD_1983_To_WGS_1984_4 – superseded by 5; this transformation method should no longer be used!
5. NAD_1983_To_WGS_1984_5 – for the 48 contiguous United States.
6. NAD_1983_To_WGS_1984_6 – for the Canadian province of Quebec.
7. NAD_1983_To_WGS_1984_7 – for the Canadian province of Saskatchewan.
8. NAD_1983_To_WGS_1984_8 – for the Canadian province of Alberta.
Making Content Management Easier

- The Environmental Data Center uses **Admin Tools for ArcGIS Online**
  - GEO Jobe GIS Consulting Center for Research and Engineering
  - Makes repetitive tasks easier!
  - Available as a FREE version, or a paid-for subscription.

- Features that I use:
  - Move items
  - Update Access & Use Constraints
  - Update item thumbnail
  - Update delete protection
  - Delete items
Custom Open Data Site URL

- Can create custom open data site URL
  - Requires DNS

- Default URL looks something like...

  **RIGIS Open Data** (rigis.edc.opendata.arcgis.com)

- Sample custom URL...
  - [http://geohub.lacity.org](http://geohub.lacity.org)
Customizing your Open Data Site

- Can build your open data website using either:
  - Design Wizard
  - CSS
  - Beta site builder
Conclusions

- ArcGIS Open Data allows you to reach a broader audience.
- Great for developers – always have the most up-to-date data.
- Users can download subsets of data.
- Straightforward – if repetitive – process to get data prepped and uploaded.
Questions?

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I would like to thank the Rhode Island Department of Administration, Division of Planning for supporting the EDC’s efforts towards building and maintaining RIGIS resources.