 <p>DCHC Metropolitan Planning Organization Planning Tomorrow Today</p>	<p align="center">DCHC MPO GIS/Web/Database</p>	<p>Date: 05/13/2014 Date Last Updated: 06/30/2014</p>
<p>User Manual: 3</p>		
<p>Objective: DCHC MPO ArcGIS Online Inputs: MPO ArcGIS Online Outputs: MPO personnel become familiar with the MPO ArcGIS Online-AGOL site and can use it effectively and efficiently at the base level with minimal or no support. Comment:</p>		

DCHC MPO System Access/Use Manual: ArcGIS Online

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Introduction: What is ArcGIS Online?

ArcGIS Online (AGOL) is a simple cloud-based utility for producing, editing, and sharing geospatial data. Designed by Esri, the makers of the popular ArcGIS software suite, ArcGIS Online is meant to act as a Web-based mapping solution for everyone from GIS professionals to those with no formal GIS training.

ArcGIS Online allows you to:

- ❖ Upload and manipulate data
- ❖ Map points, lines, and areas
- ❖ Create point, choropleth, and other thematic maps
- ❖ Embed maps in Web sites
- ❖ Share maps in a multitude of ways
- ❖ View maps on mobile devices

For more background on ArcGIS Online, please visit

<http://doc.arcgis.com/en/arcgis-online/reference/what-is-agol.htm>

Extensive help documentation for the product can be found here:

<http://doc.arcgis.com/en/arcgis-online/>

Some possible uses of ArcGIS Online include:

- ❖ Embedding maps of plans and traffic information into the DCHC MPO website
- ❖ Creating a wide variety of locational and thematic maps
- ❖ Uploading GPS points of a route and creating a story map with information about each point location
- ❖ Allowing users and citizens to add information to public maps

Known limitations of ArcGIS Online include:

- ❖ Only 52 users can have accounts with DCHC MPO's organizational account
- ❖ DCHC MPO has a limited number of credits, which can be quickly expended by using online geoprocessing and analysis services
- ❖ Large datasets may be slow to display

By hosting data on an internal server, DCHC MPO hopes to overcome many other limitations of ArcGIS online, such as the use of credits for file hosting, and limited display of large numbers of features.

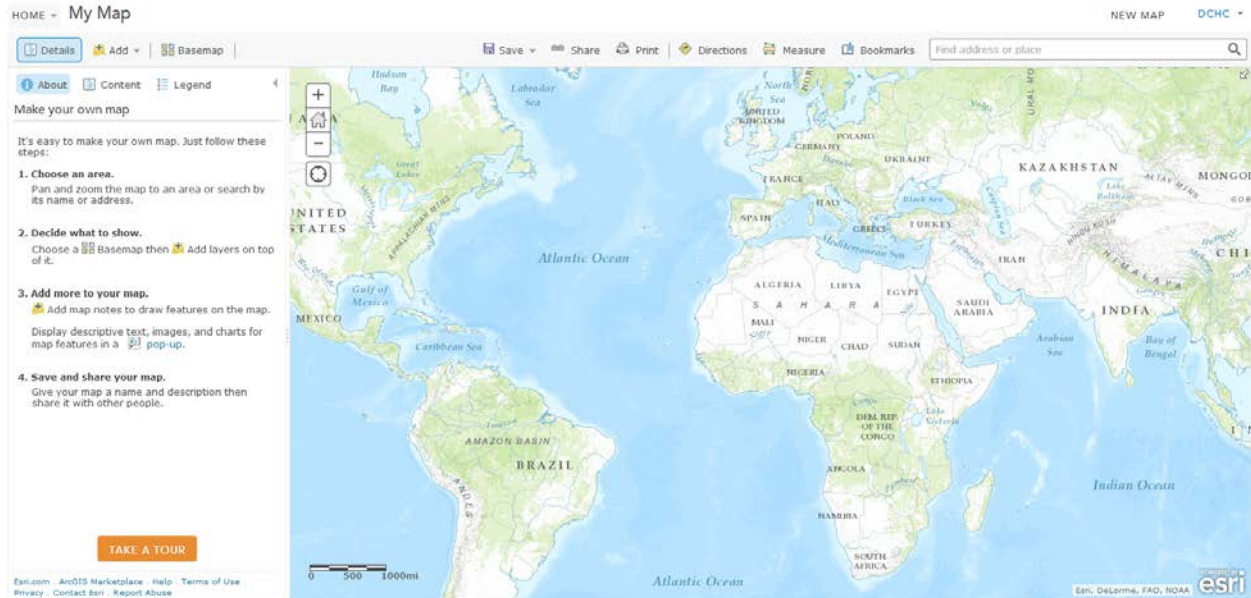
Getting Started: Introduction to the Interface

ArcGIS Online requires an Esri account to upload data and save maps. If you do not already have an account, you can be provided an account by the AGOL administrator for your organization. Personal accounts should not be used for joining an organization, so if you have a personal Esri account, you will still need to get a new account in the organization. If you already have a DCHC MPO account, or after you have created an account, you can log in by clicking *Sign In* on the main screen of www.arcgis.com.



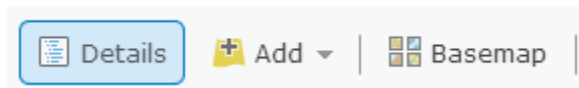
The main ArcGIS Online toolbar

Once logged in, you will see the DCHC MPO homepage. From there, you can go to the *My Content* section using the link on the toolbar. This is where you can see and organize all of your existing maps, as well as set permissions. From this screen, click the *Create Map* button to enter the ArcGIS Online web application. You will be presented with a screen similar to this:



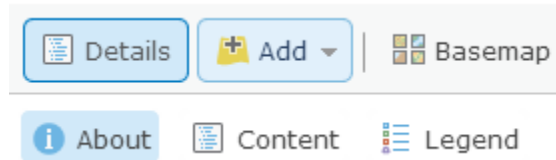
The ArcGIS Online mapping application

The top left corner contains three important tools: the *Details* sidebar, the *Add* menu, and the *Basemap* selection button.



The Details, Add, and Basemap buttons

The Details sidebar has three additional buttons at the top: *About this Map*, *Show Contents of Map*, and *Show Map Legend*.



The three above-listed buttons are respectively located under Details

Once some data has been added these buttons can be used to provide information about the resulting map:

- ❖ *About this Map* displays basic metadata about the map, such as who created it, the date it was created, ratings, views, and comments.
- ❖ *Show Contents of Map* lists the layers of the map, and allows the user to edit their attributes.
- ❖ *Show Map Legend* displays map symbology.

The *Add* menu is how map layers and other data are added to the map document. The user can choose to search for layers, create an editable layer, add a layer from a file, or add a layer from the Web. The option to add a layer from the Web can be useful in scenarios when the information contained in the layer will be frequently updated. For example, you could create a CSV file on your computer that contains the latitude and longitude of local trailheads. From here you could save that file to Dropbox (www.dropbox.com) or another Web-based file storage service. Then, after getting a direct link to this file, you could import it into ArcGIS Online as a layer. That way, each time changes are made to the CSV file on your computer, those changes will automatically be reflected in the ArcGIS Online document. Adding a layer from the web is also the way to add ArcGIS Server services to AGOL.

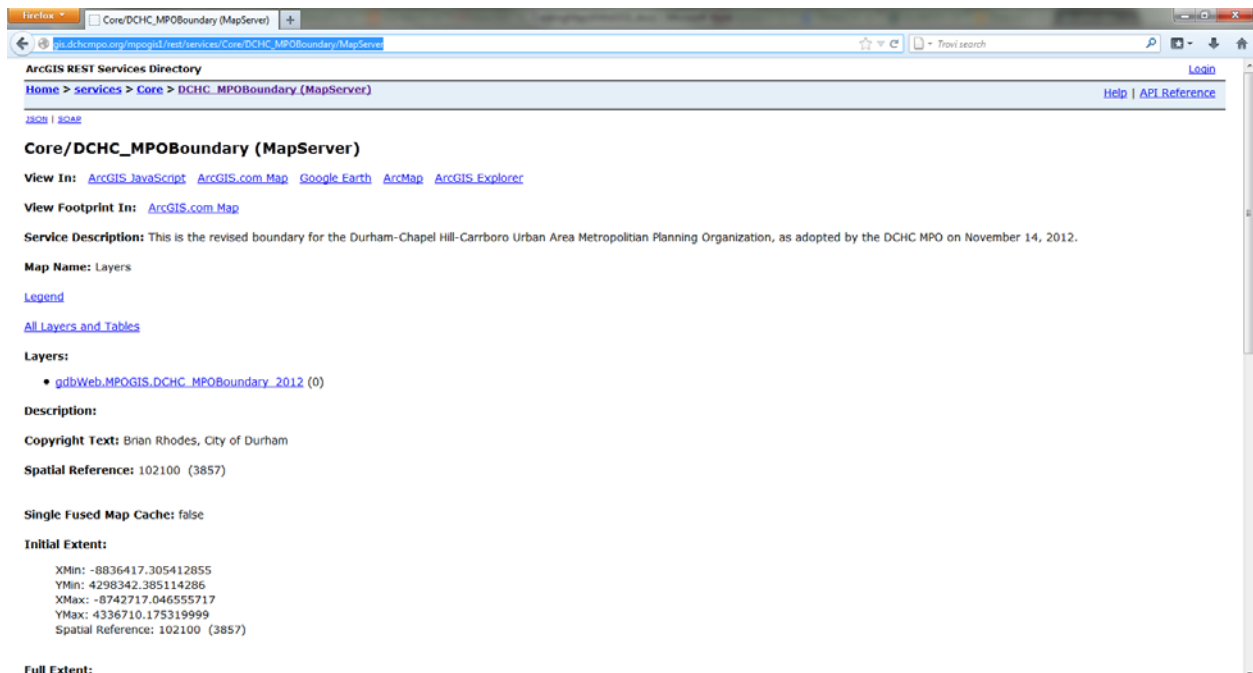
The *Basemap* button allows you to choose one of twelve different basemaps. These range from satellite imagery, to street maps, to topographic maps. Use whichever basemap best suits your application.

Take some time to explore the application. Knowing what tools and options are at your disposal will not only stimulate ideas for your own project, but also save time and frustration later.

First Steps: Making a Simple Map

In order to create a map from server data, it must be added to ArcGIS Online. (Instructions for publishing saving data on the server and publishing it as a service can be found in [\\Transportation\Transportation Department\Planning\Data Infrastructure\UserGuides.](#))

Go to <http://gis.dchcmpo.org/mpogis1/rest/services>, the index of published services on the DCHC MPO server. Find the data you want, and copy the URL.



The screenshot shows a web browser window with the URL gis.dchcmpo.org/mpogis1/rest/services/Core/DCHC_MPOBoundary/MapServer. The page content is as follows:

ArcGIS REST Services Directory
Home > services > Core > DCHC_MPOBoundary (MapServer) [Login](#)
[JSON](#) | [SOAP](#)

Core/DCHC_MPOBoundary (MapServer)
View In: [ArcGIS JavaScript](#) [ArcGIS.com Map](#) [Google Earth](#) [ArcMap](#) [ArcGIS Explorer](#)
View Footprint In: [ArcGIS.com Map](#)

Service Description: This is the revised boundary for the Durham-Chapel Hill-Carrboro Urban Area Metropolitan Planning Organization, as adopted by the DCHC MPO on November 14, 2012.

Map Name: Layers
[Legend](#)
[All Layers and Tables](#)

Layers:
• [gdbWeb.MPOGIS.DCHC_MPOBoundary_2012](#) (0)

Description:

Copyright Text: Brian Rhodes, City of Durham

Spatial Reference: 102100 (3857)

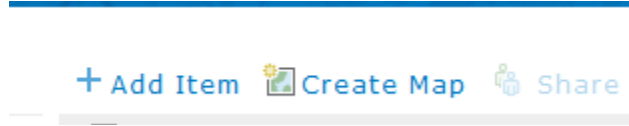
Single Fused Map Cache: false

Initial Extent:
XMin: -8836417.305412855
YMin: 4298342.385114286
XMax: -8742717.046555717
YMax: 4336710.175319999
Spatial Reference: 102100 (3857)

Full Extent:

Copy the service URL

In ArcGIS Online, go to My Content. Choose *Add Item*:

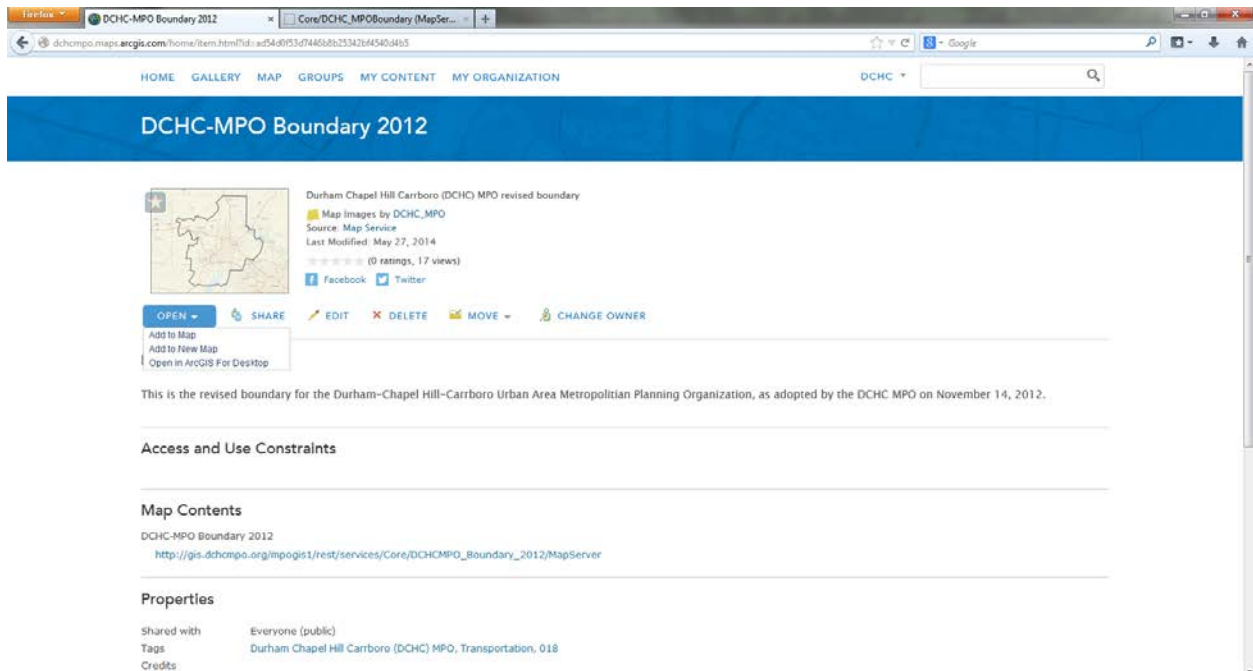


In the *Add Item* dialog box, select “The item is: On the Web” from the menu. Paste the URL in the box provided. Press tab. The other fields will self-populate from the information in the service.

The screenshot shows the 'Add Item' dialog box. At the top, it says 'Add an item from your computer or reference an item on the Web.' Below this, there is a dropdown menu for 'The item is:' with 'On the web' selected. There are four radio button options: 'ArcGIS Server web service' (selected), 'KML', 'OGC (WMS)', and 'Document'. The 'URL:' field contains the text 'http://gis.dchcmo.org/mpogis1/rest/services/Core/DCHC_MPOBounda'. Below the URL field, there is a section for 'Supported Items' with a 'Title:' field containing 'DCHC_MPOBoundary' and a 'Tags:' field containing several tags: 'Transportation', 'MPO Boundary', 'boundaries', 'DCHC', and 'DCHC MPO'. At the bottom right of the dialog are two buttons: 'ADD ITEM' and 'CANCEL'.

Add item from the web

Once the service is added to your content, you can add it to maps. Click on the name of the service, click *Open*, and choose *Add to Map* or *Add to New Map*.



Add data to map

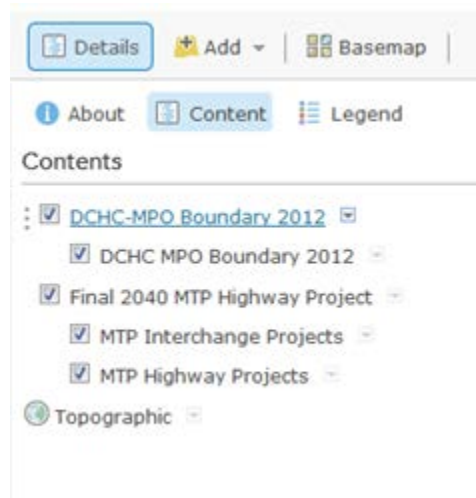
Data can also be added by importing a zipped shapefile:

If for some reason you are unable to use server data, data can also be added to AGOL by uploading a zipped shapefile. Because shapefiles can contain very large amounts of information with a high level of geographic accuracy, the files can be large enough to slow down the speed at which they are rendered. To remedy this issue, select *Generalize features for web display*. Under normal circumstances, and in most applications, this should not lower the accuracy of the data in a meaningful way. However, do not use this feature if the shapefile contains adjacent polygons, as slivers may be produced. In this exercise we will let this option default. For more information about importing shapefiles see Esri's online help.

Select *Import Layer* and repeat for the second zipped shapefile.

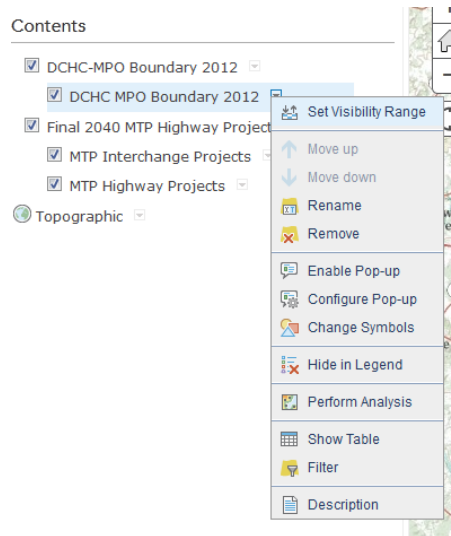
Next Steps: Customizing the Map

Once your data has been added to the map, you can customize the display of the data to make the map look the way you want. To get started, click the Show *Contents of Map* button (middle button) on the top of the toolbar on the left side of the screen. This is the table of contents of the map, and lists all layers present. Click the name of the service to show the layers in the service:



Services can have more than one layer.

Mouse over the layer you want to customize and click the arrow to the right. You will be presented with the following options:



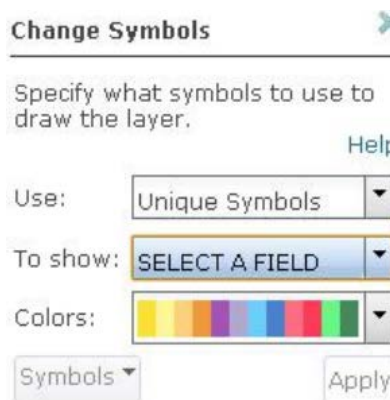
Layer options menu

Click *Change Symbols*. A bar will pop up on the left side of the screen. The options here include *A Single Symbol*, *Unique Symbols*, *Color*, and *Size*.



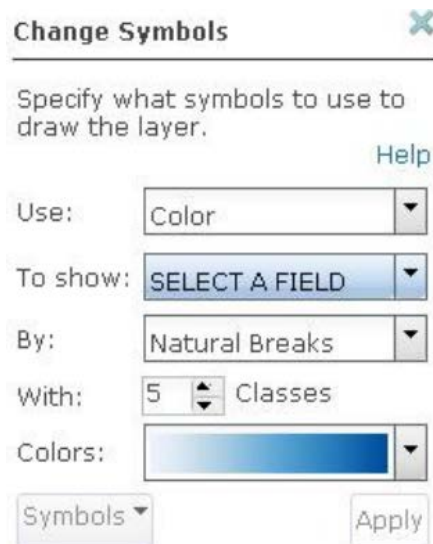
Symbol options

Unique Symbols allows the user to use a unique color ramp to represent different classes of data within a layer. This is best suited for data grouped into classes.



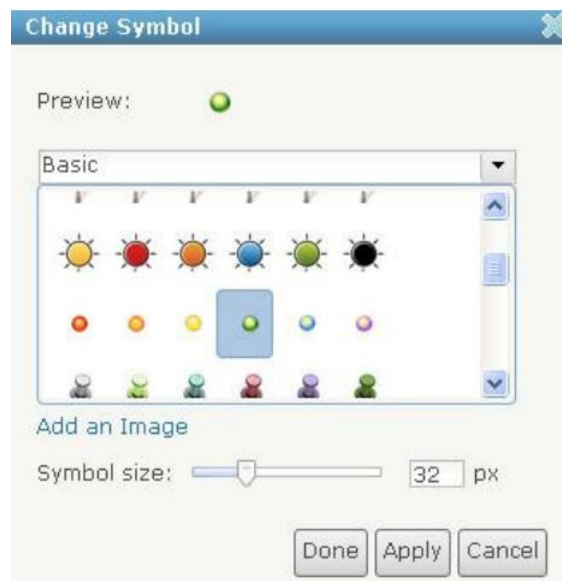
Unique Symbols – options

The *Color* option is used for creating choropleth maps and allows the user to specify a field to represent, a break scheme (Natural breaks/Jenks, Equal interval, Standard deviation, or Quantile), the number of classes to be used, and a color ramp to use.



Color options

The *Size* option is used to create a proportional symbol map, i.e., one on which the size of the dot (or other symbol) is representative of an attribute of that layer.



The Change Symbol Window

The dropdown menu provides application-specific symbols, such as business, outdoor recreation, and transportation.

To change the information that pops up when a user clicks a feature on the map, choose *Configure Popup*. A window will appear on the left side of the screen.



Configure Pop-ups

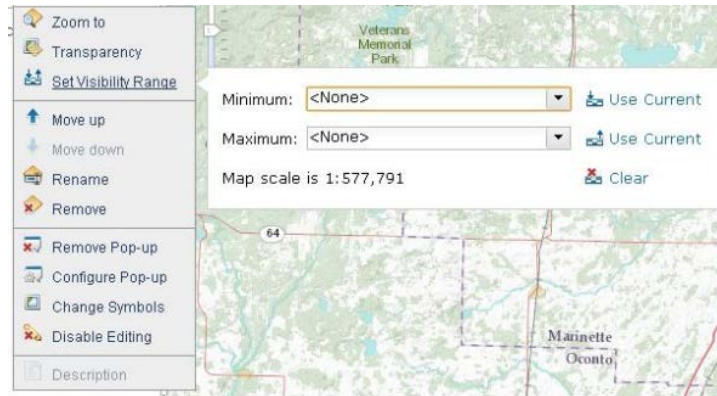
Select the *Configure Attributes* button. Here you can change whether or not a field displays, and also what name it displays as. When you have finished, select OK to close the window, and make sure to select *Save Pop-Up* on the *Pop-up Properties* window.

ArcGIS Online is capable of displaying media, such as images or charts, from other Web sites. To do this you can include the URL (Web site address) of the media in a field in your layer. The URL will appear as a clickable link in the pop-up window when you click on a point.

Set Visibility Ranges

Another useful tool within ArcGIS Online is the ability to set the visibility range of each layer. This can be useful if the items on a map look too crowded at certain zoom levels. For example, zoom out so that the whole continent is visible. It should be obvious that at this scale it is impossible to discern individual features in the MPO. This can also be a problem when a combination of national, regional, and local data is layered together. When trying to view the national data at a small scale the regional and local data points probably crowd the map so much that it is almost impossible to discern the types of features.

These problems can be fixed by changing the visibility range of a layer. To do so, click on the arrow next to a layer in the table of contents and select *Set Visibility Range*.



Setting the visibility range

From here, use the drop-down boxes to select the scale range in which you would like that layer to appear.

Sharing the Finished Product

Before the map is actually shared, there are a few settings to take note of, the first being the extent of the map. The extent of the map can be thought of as the zoom level and frame of the map when it is first opened or embedded. ArcGIS Online does a good job of automatically selecting the extent, but there are situations where a different extent is better.

To get started, save your map, then click on the *My Content* tab near the top of the page. Click on the desired map. From here, click the *Edit* button.

Final 2040 MTP Highway Project

All highway projects included in the 2040 Metropolitan Transportation Plan

Web Map by DCHC_MPO
Last Modified: June 27, 2014

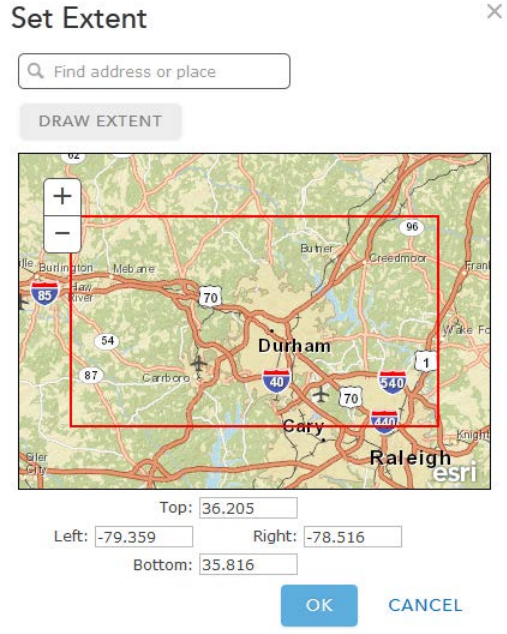
★★★★★ (0 ratings, 6 views)

Facebook Twitter

OPEN SHARE EDIT DELETE MOVE CHANGE OWNER

Edit Properties

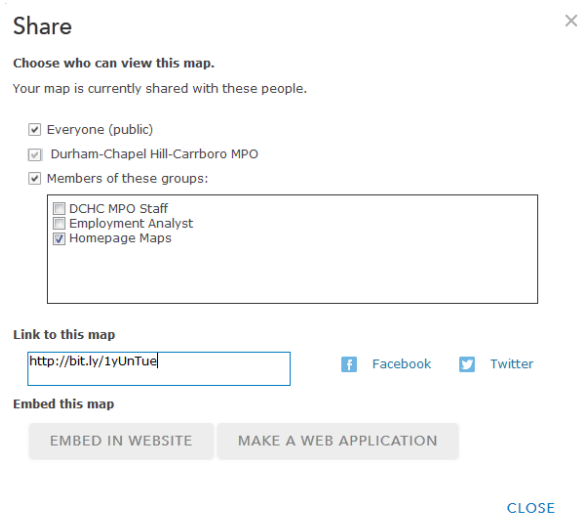
This is where all the properties of the map document can be changed, including the title, summary, description, tags, and extent. To set the extent, scroll to the bottom of the page and click *Set Extent*. The following box will appear.



Setting the Extent

If you know the exact coordinates of the extent you would like, you can enter them directly, or you can simply select *Draw Extent*. This will allow you to draw a box around the area of interest. When you are done, hit Save. Now whenever this map document is opened this will be the default view.

To change the permissions, reopen the map document in the ArcGIS Online map view. Across the top bar, click the *Share* button. The following window will open. (Note that you will not see any group information unless you belong to one or more groups.)



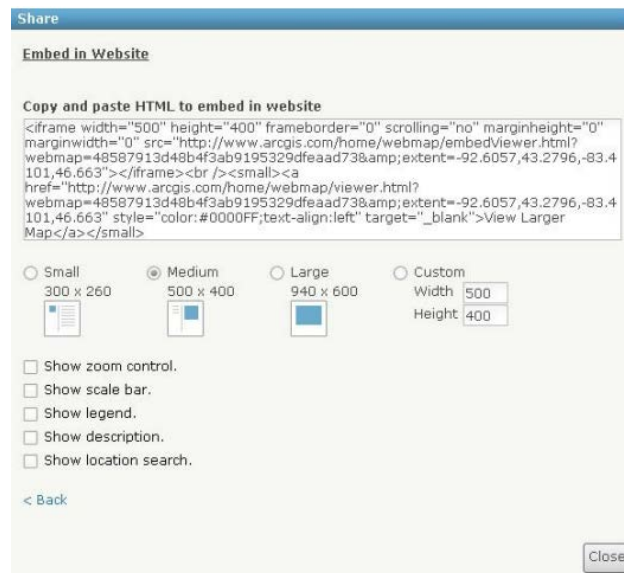
Sharing options

From here the permissions of the map can be changed to *Public* or shared with a group. By default, all new maps are private, meaning only the creator can view them. Setting the privacy to *Public* allows everyone on the internet to view your map, whereas sharing with a group allows only group members to

view the map. If you plan on embedding your map in a Web site or otherwise widely distributing, it is best to select *Public*.

This window also provides options for directly sharing the map via Facebook or Twitter. This can be done by simply clicking their button and logging into your account. If you would like to share the map on a different social network, in an email, or other location you can copy the link from the *Link to this map* box.

Additionally, you can embed your map in a Web site by clicking the *Embed in Website* button. It will open this window.



Embed in a Web site

From here you can select the size of the map frame, as well as the options you would like added to the embedded map, such as zoom control or location search. It is important to note that the extent previously set is not used by this embed function. Instead it uses the view of the map currently displayed on the screen. This means that if you are zoomed into a city, that is what will display on the embedded map.

Once the proper size, extent, and options are checked, simply copy and paste the HTML code into your Web site.

Mobile Maps

Perhaps the most powerful and unique feature of ArcGIS Online is the ability to take your map with you on your smartphone or tablet. Apps currently exist for iOS, Android, Amazon, and Windows Phone 7. For more information about the app for each platform and to download, see:

- ❖ iOS download: <http://www.esri.com/landing-page-arcgis-itunes>
- ❖ Windows Phone download: <http://www.esri.com/landing-page-arcgis-windows-phone>
- ❖ Android download: <http://www.esri.com/landing-page-arcgis-google-play>
- ❖ Amazon download: <http://www.esri.com/landing-page-arcgis-amazon-app>

After using the Web-based platform, the ArcGIS app will seem quite familiar. Although it has substantially less functionality than its desktop cousin, the app gives users the ability to view their current location on the maps they have created. When integrated with an ArcGIS Server, users gain the ability to update their maps from their mobile device. Unfortunately, there is currently no way to edit layers (including editable layers) from a smartphone or tablet without access to an ArcGIS Server.

Next Steps

As with most web applications, ArcGIS Online will continue to evolve. With this will hopefully come more features, intuitive interfaces, and wider adoption.