Getting Started with ArcGIS Online

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Introduction to ArcGIS Online

A. *Making Maps*

1. Go to www.arcgis.com and sign-in (top right).
2. On the menu bar at the top of the page, click **Map**.
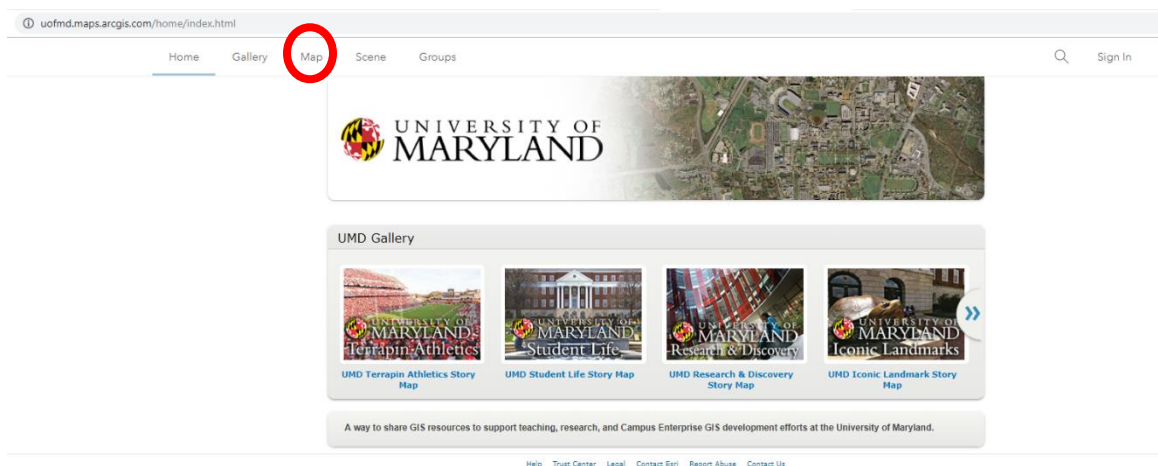

3. Notice the directions that appear on the side for making a map. Zoom in and out using the plus and minus buttons at the left side of the map, the middle of your mouse if you have one, or by holding the shift key and drawing a box on the map with your mouse. Click on **Basemap** in the top menu bar towards the left- hand side of the screen. Click on the different types of base maps to see how the map changes.
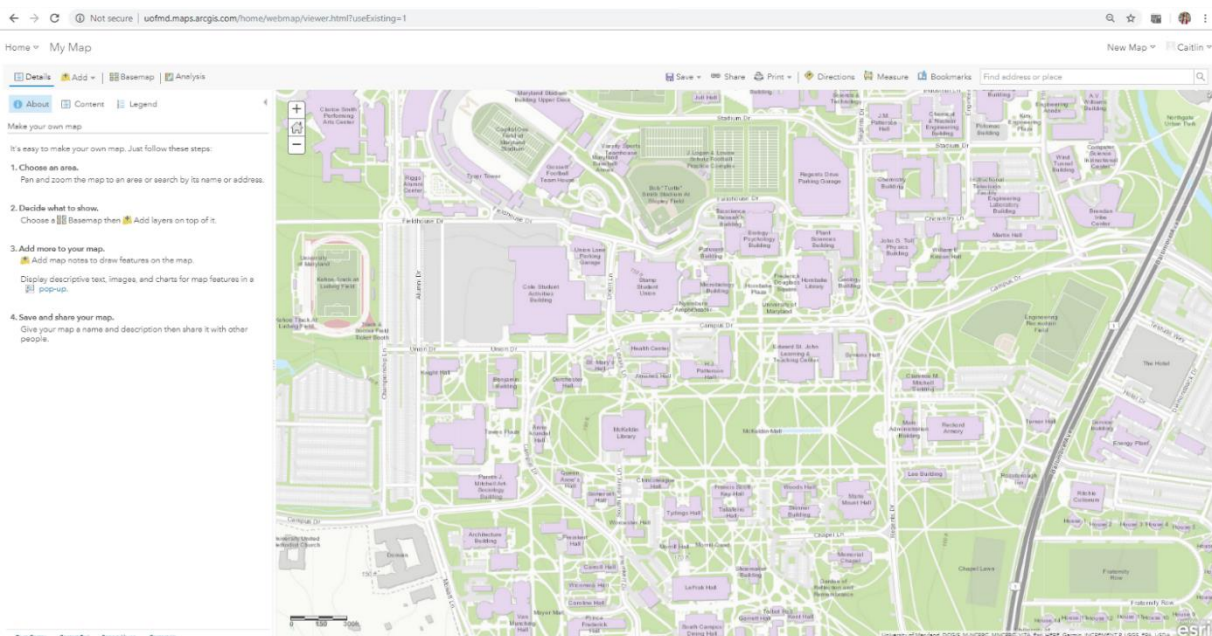
4. Let's make a map of major cities across the United States. Change your basemap to **Open Street Map**. Zoom to Washington D.C. or you can type it in the search box in the top right-hand corner of the screen. Add a point to mark this place by following these instructions:

   a. Click on **Add** in the top menu towards the left-hand side of the screen

   b. Select **Add Map Notes** and *g*ive this map note a name (such as "Major U.S. Cities".) You can leave the template as it is (Map Notes), and then click on **Create**.
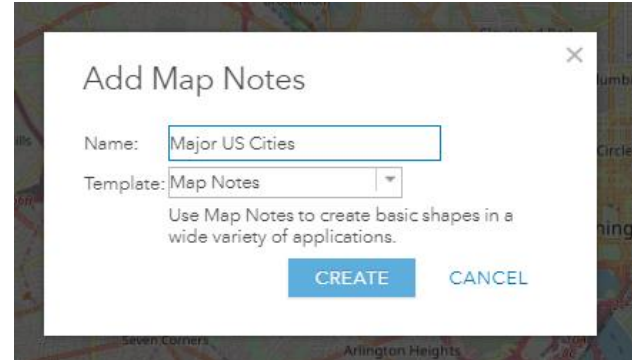
   c. Notice that this opens up the **Add Features** menu on the left-hand side where you can select a point, text, line or area (different geographic features that can be found on a map). Select one of the **Points** options (by clicking on it), and then click on the map to add the point. "A pop-up box will appear as shown below.
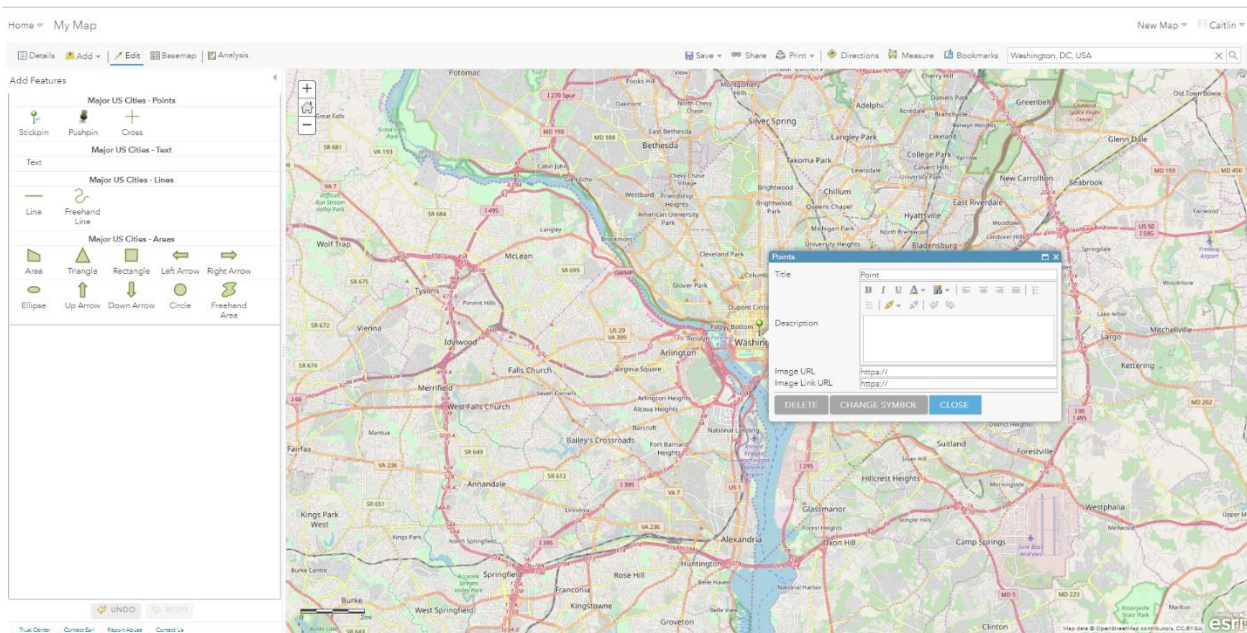
   d. Add an appropriate title, such as "Washington D.C."

   e. Copy and paste the following in the description field: "Washington, D.C., is the capital city of the United States, located between Virginia and Maryland on the north bank of the Potomac River. The city is home to all

three branches of the federal government, as well as the White House, the Supreme Court and the Capitol Building. More than 500,000 people live in Washington, D.C."

 f. In your web browser, go to images.google.com. Type in "Washington DC jpg" and select an image to include in your map. Click on view image and copy the URL. Note, whenever you add an image URL, it should be a link to a JPG, PNG, TIF, or other image file type.

 g. Enter the following link into the "*Image Link URL*" field: http://www.history.com/topics/us-states/washington-dc This will take the reader of your map to that website when they click on the image in the pop-up.

5. Click on the *Close* button at the bottom right corner of the popup when you are done. Click on the arrow next to the *Add Features* menu to completely exit out of editing this point.
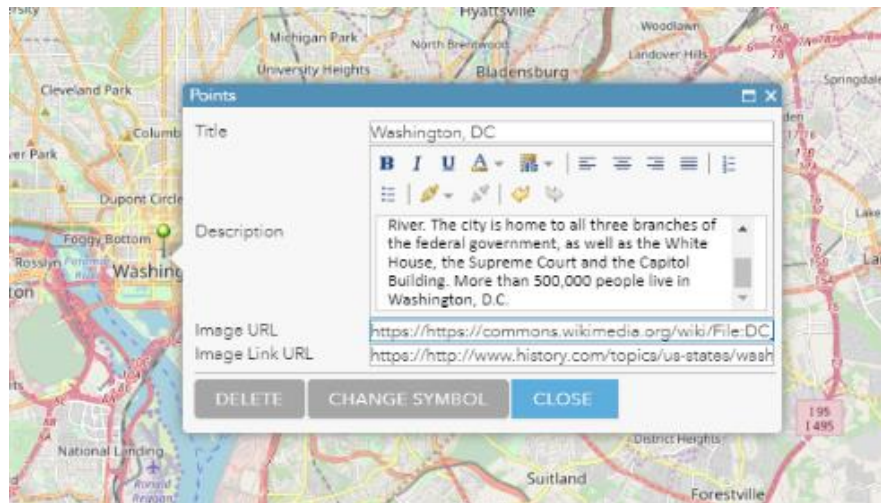
6. Test your pop-up by clicking on your map note. You should see your note title, text, and image. Click on your image - you should be directed to the website that you selected. If you need to make changes, click on *Edit* at the bottom of the pop-up box. In edit mode, you can also click on *Change Symbol* to change the look of the symbol and its size. There are pre-set symbols that Esri has created or you can add your own.

7. Add at least one other point to the map of another major U.S. city.

8. Once you have added at least two points save your map by clicking the ***Save*** button. Give it an appropriate title. In the *Tags* area enter keywords to help people discover your map. In the *Summary* field write a short description about your map that will be helpful to the readers of your map. All of this information is part of the map's metadata.

9. Once you have saved your map, click on Details and then *"About"* icon   🛈 About   in the menu bar on the left-hand side of the screen. You should now see your map title and summary. If you don't see your map, click on **New Map** on the right hand corner and you should see your map listed. Click on ***More Details*** underneath the map summary. This is where you can add more metadata about your map (including information about the sources of the images and the data on your map) and access uses and constraints. Access uses and constraints is where you outline what permission you want to give to others to share and/or re-use data from your map. To do this click on ***Edit***. Fill in the boxes with as much information as you can/want. Then click ***Save.***

10. Next, let's make your map viewable to others. Go back to the display of your map by clicking on the **Open in map viewer** button. Once you are looking at your map again, click on the *Share* button in the menu above your map. Share your map with *Everyone*. Write down or copy the URL of your map to your clipboard. You can give this to anyone, and they'll be able to load and use your map.
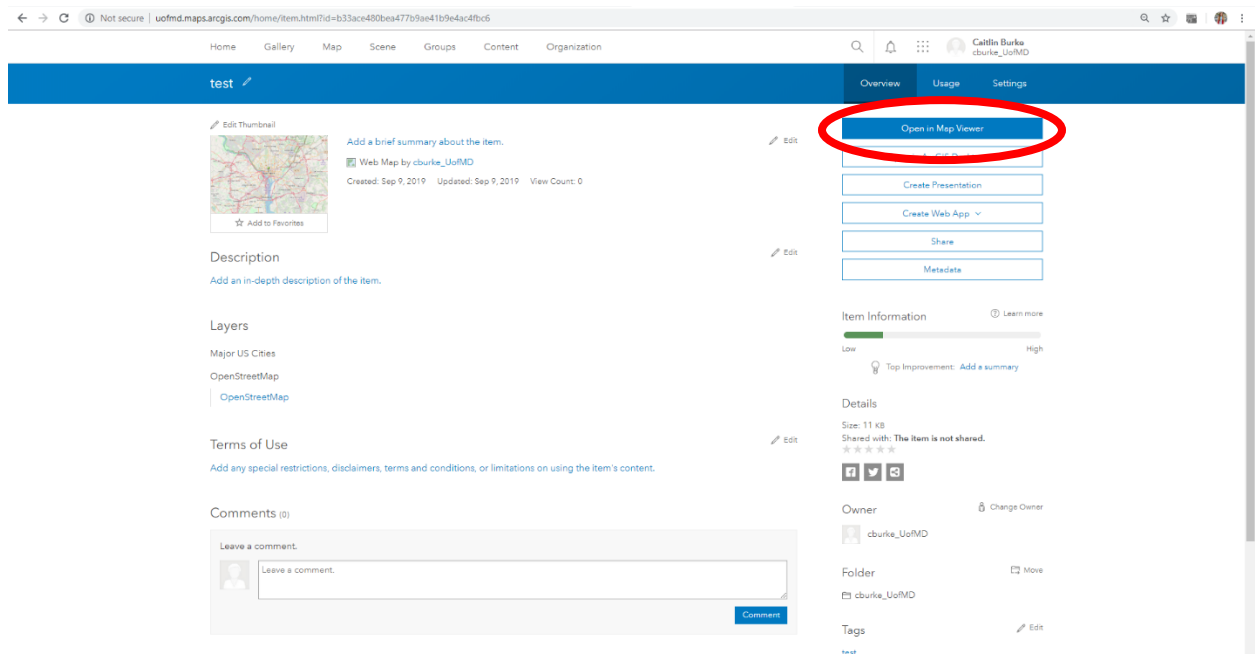
11. Now click on *Home* in the top left corner of the interface and select *Content*. You should see your map listed in your content.

B. *Adding Data from Files*

In addition to adding individual points, you can also add data to create maps by importing a file. These files must be in a shapefile (ZIP archive containing all .shp files), comma-separated values (.csv), a text file (.txt) or a GPS exchange (GPX) format. The following steps will walk you through an example of importing a .shp file (zipped) and .csv file and formatting the pop-ups.

Adding a Shapefile
A shapefile is a point, line or polygon that stores location and information for geographic features. It is a geometric feature that represents topography.

1. Go to http://www.naturalearthdata.com/downloads/10m-cultural-vectors/ and scroll down until you see Ports. Click on **Download Ports**.
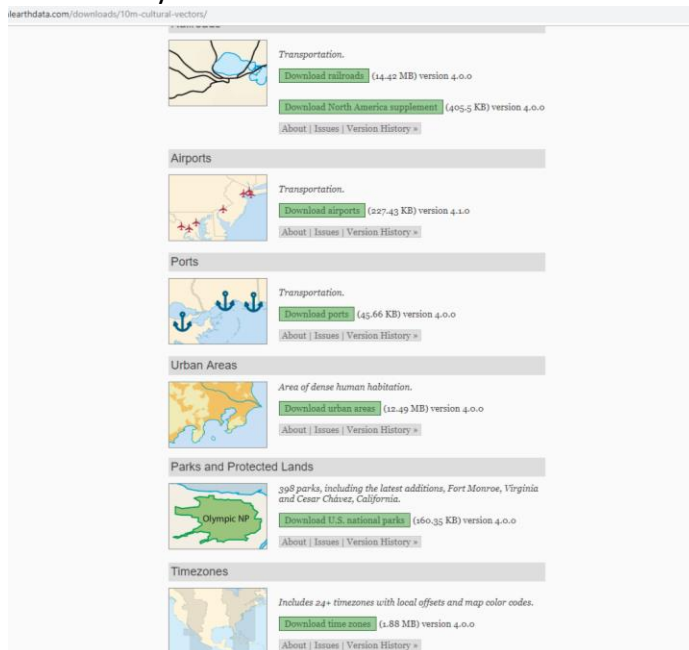

2. The file you download will be a zipped folder. DO NOT unzip the folder. It needs to be zipped when you upload your data on ArcGIS online.

3. Go to ArcGIS Online and open a new map.

4. Add your Port data to the map by going to **Add**, **Add Layer from File**. Once the layer is added to your map, your map should look like this:
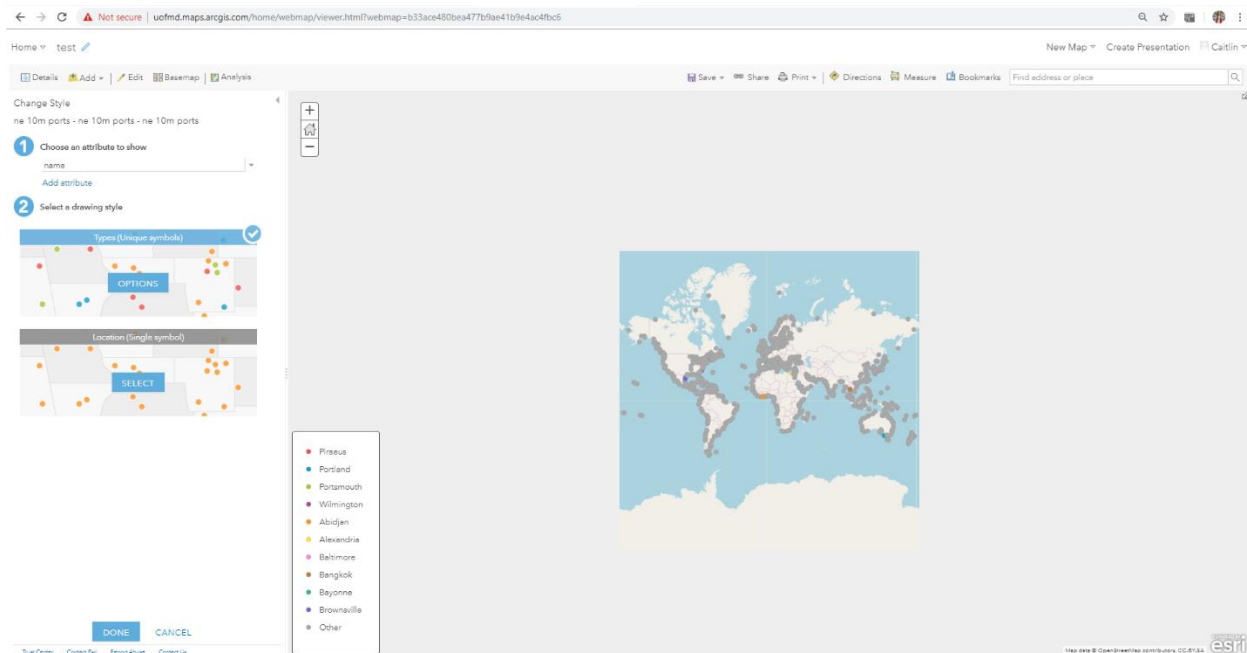
5. On the left side, you can design the points however you like. For these points, they should all be the same design. Under **2. Select a drawing**, click on **Location (single symbol)**.

6. On the next page, click on **Symbols**. Select a different category and click on *Government*. Scroll down until you see an icon with a blue circle and a white anchor. Click on that icon and change the pixel size to 12. Click **Okay, Okay**, then **Done**.
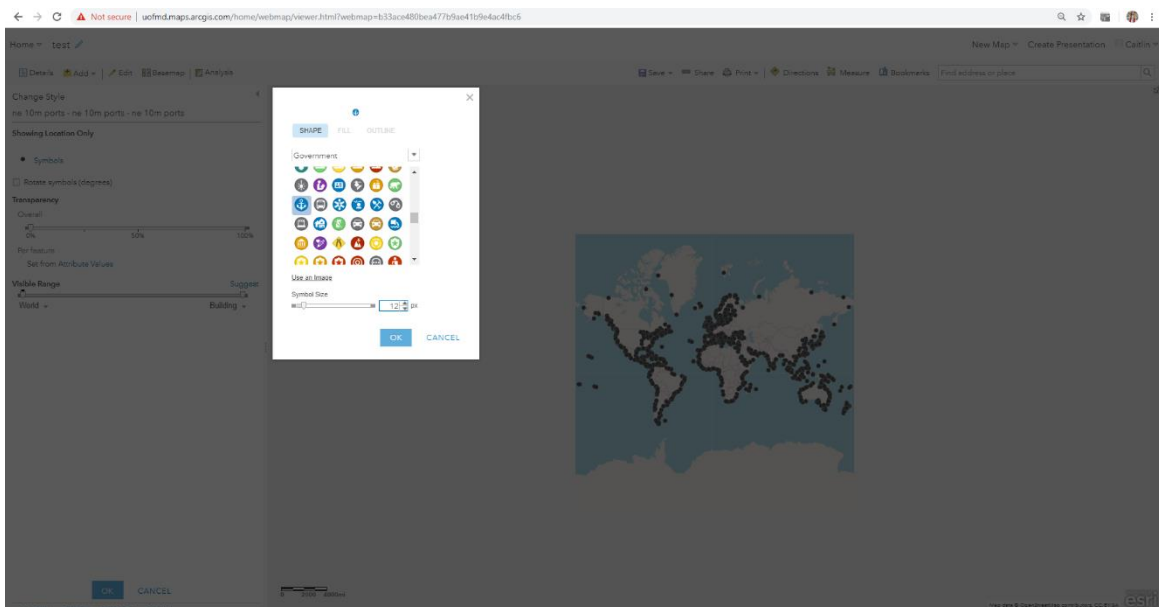
7. Play around with the zoom levels and data on the map.
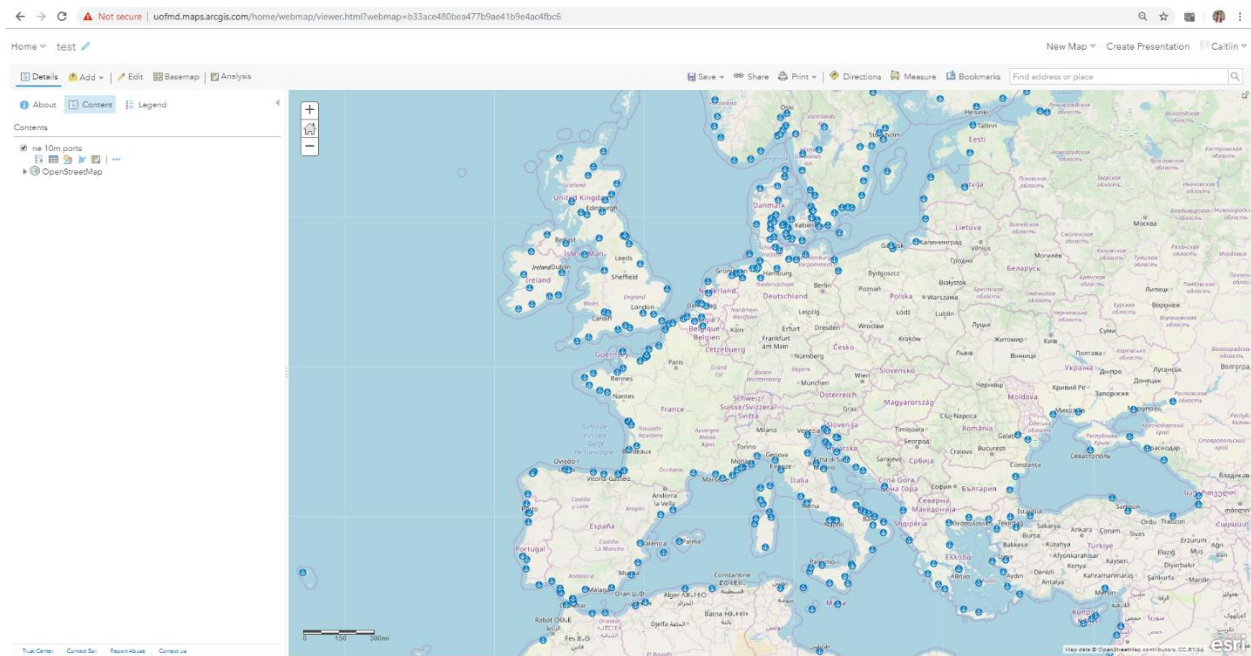
Adding a CSV file
A .csv file contains geographic information and is used for point features. It must have a geographic component, so the information can be geocoded and displayed on a map.

1. Download the data file from the data link on www.lib.umd.edu/gis/workshops. Navigate to the ArcGIS Online folder and download population.csv

2. In the drop-down menu under the "**Add**" icon in the top left-hand side of the screen, select "**Add Layer from File**." In the pop-up window that opens up, select "**Browse**" and look for the "Population.csv" file. Once you have selected the file, click "**Import Layer**." A new dialogue box will open., click on "**Geography**" and a drop-down menu arrow should appear. In that menu select "**Address or Place**" Then click "**Add Layer**." It should place most of the points in the correct location, we will fix the others later.
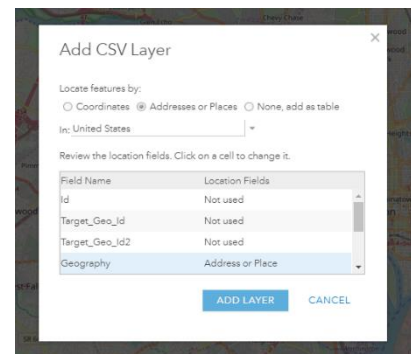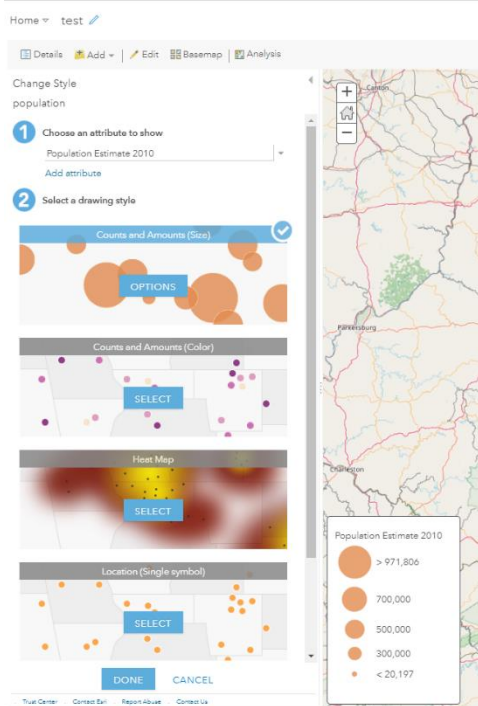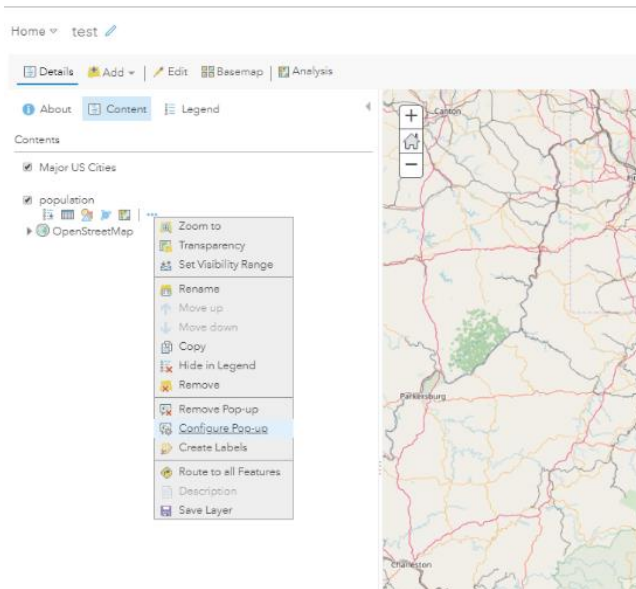
3. An options menu will appear on the left-hand side of the screen. It allows you to decide which attribute (field from your table) you want displayed and different ways of displaying the data (*Counts and Amounts, Heat Map, Location, Type*). For our map, if it is not already selected, select ***Counts and Amounts,*** and then click **Done**.

4. In the Contents menu on the left-hand side of the screen, you should now see your file listed as a layer. You can rename the layer (or reformat) it by clicking the **More Options** (three dots) symbol below the name that appears when you hover over it with your mouse. Then, select **Rename** from the drop-down menu that appears.

5. Next, in that same drop-down menu, select **Configure Pop-up**. For the Pop-up Title, you can either create a generic title or you can click on the plus sign next to the box and select {Geography}. Leave the brackets around Geography in the box. This will allow each pop-up to have the county's name as its title. The system automatically pulls that data from your data table.

6.   If you want to display any of the data from the different columns in your table (known as "attributes") as a list, you can highlight them in the box under **Pop-up Contents**. Control-click will allow you select multiple attributes. For our example, we are not going to list any attributes, so in the drop-down menu next to **Display**, select **A list of field attributes**.

7.   In the "Pop-up Media" section, click on the **ADD** button. From this a drop-down menu with several different options of the type of media you can display on your pop-ups will appear. For this example we are going to create pie charts, so select that. A dialogue box should pop-up. In the same way that you chose the Pop-up Title, you can create the Pie Chart Title. You can also add a caption if you want. To create the pie chart, select all of the data you want included in the pie chart by checking the boxes next to their names (Population Estimate 2010, Population Estimate 2015, and Change 2010 to 2015). If you want to add spaces between these titles, you can highlight each one and then add spaces in the titles in the left-hand column. When you have finished this, click **OK**. If you need to go back in and make changes, click on the gear icon next to the box.
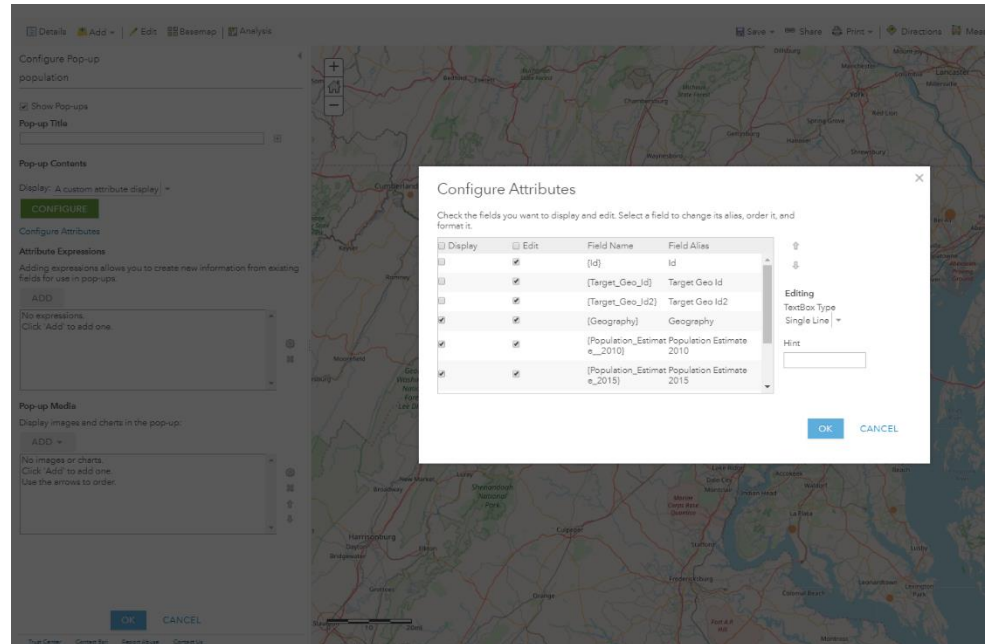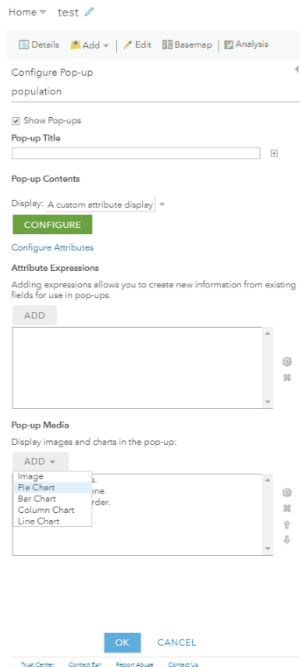
8.   When you have finished all your changes, click on **OK**. Now when you click on any of the points on your map, a pop-up should appear with a pie chart in it. If you hover over the parts of the pie chart, it will tell you what that section represents.

9.   If you need to edit any information on a specific pop-up, delete a pop-up or add a pop-up, you can do that by clicking on the pop-up that you need to change and clicking on the "**edit**" button at the bottom of the pop-up. Now when you click on a point on the map, the pop-up will no longer have a pie chart, but instead, you will see all of the fields from your original table, and you can make any necessary edits. You can also completely delete the point by clicking on delete at the bottom of the pop-up. To add a point, you would do this in the same way as we did in the first exercise—by clicking on the icon in the **Add Features** menu, and then clicking on the map where you want to place the point. The new pop-up will have all of the fields, but they will be blank so you will need to cut and paste this information from your original .csv file.
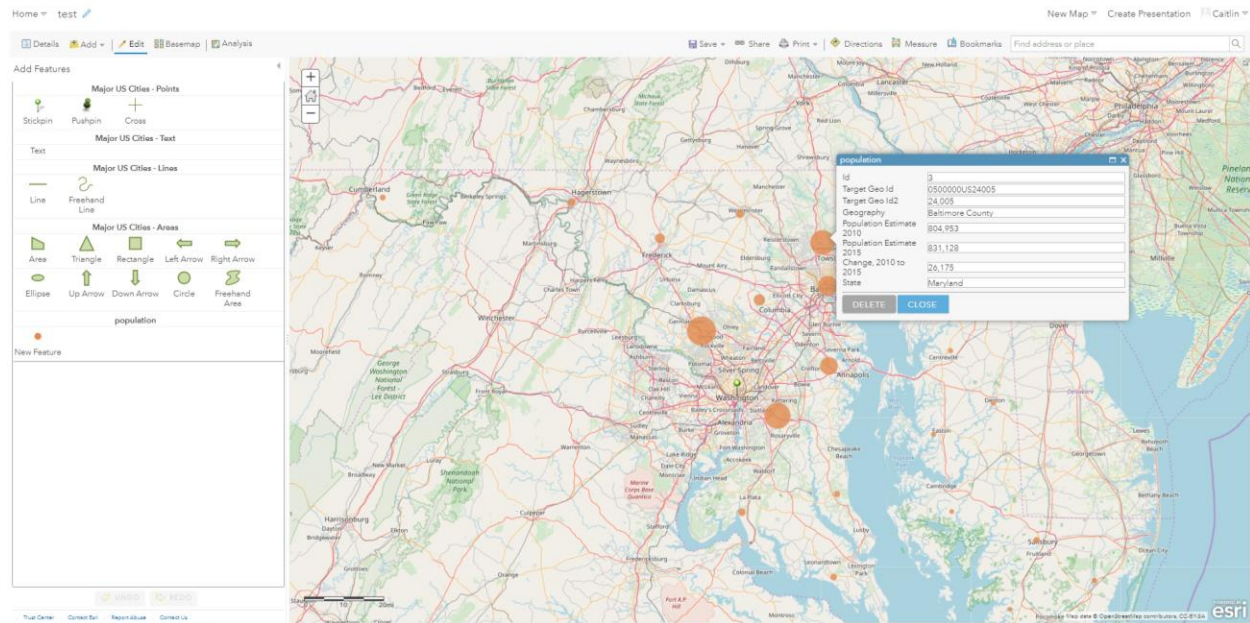
### *Adding Data from ArcGIS Online*

Data can also be added from an online database.

1. Select the add data icon on the top left of the screen.
2. Select the first option, **Search for Layers**.
3. Select **ArcGIS Online** from the dropdown
4. Type "USA Census Populated Places" in the find field
5. Click the first choice on the list, then click **Add to Map**. Then, save your map.
6. Your map should look something like this:
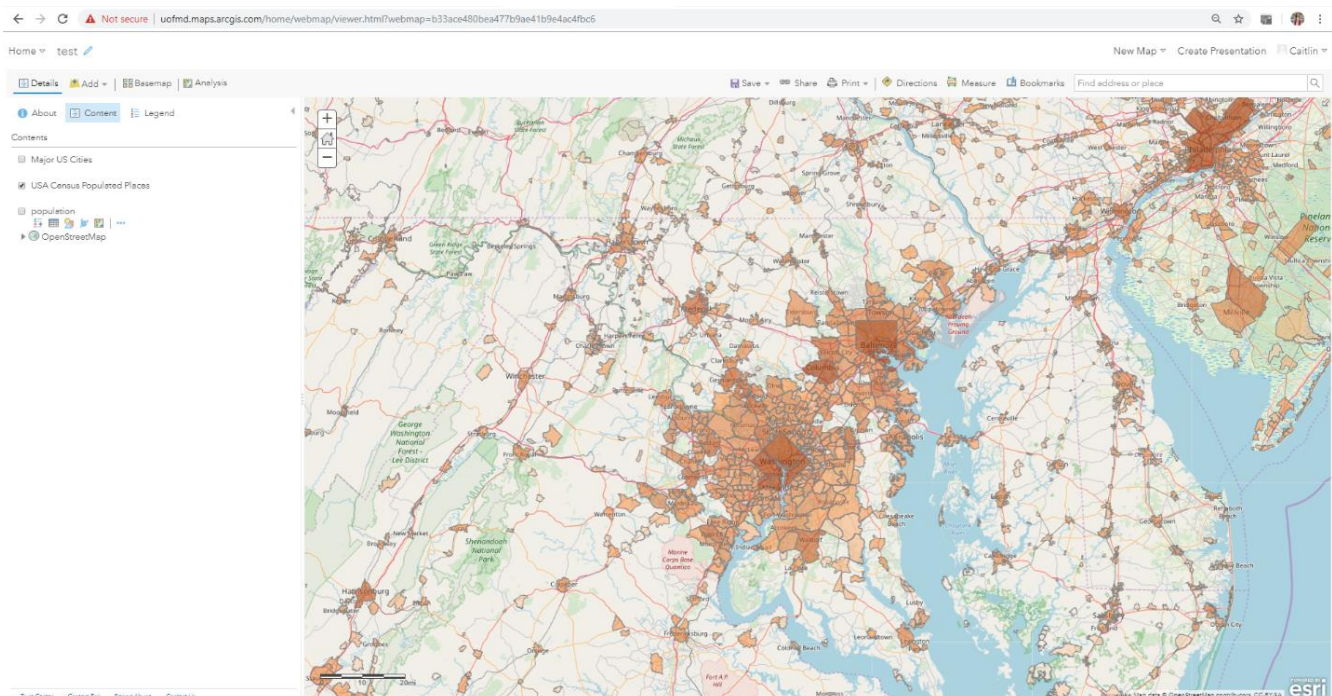
Saving and Sharing Your Content

As you create maps and layers, you need to save your content. Unlike some cloud services, ArcGIS Online does not constantly save every change you make. Keep in mind, the Save button is always on the top of the page. After your content gets saved, it will be updated and stored in your Contents page.
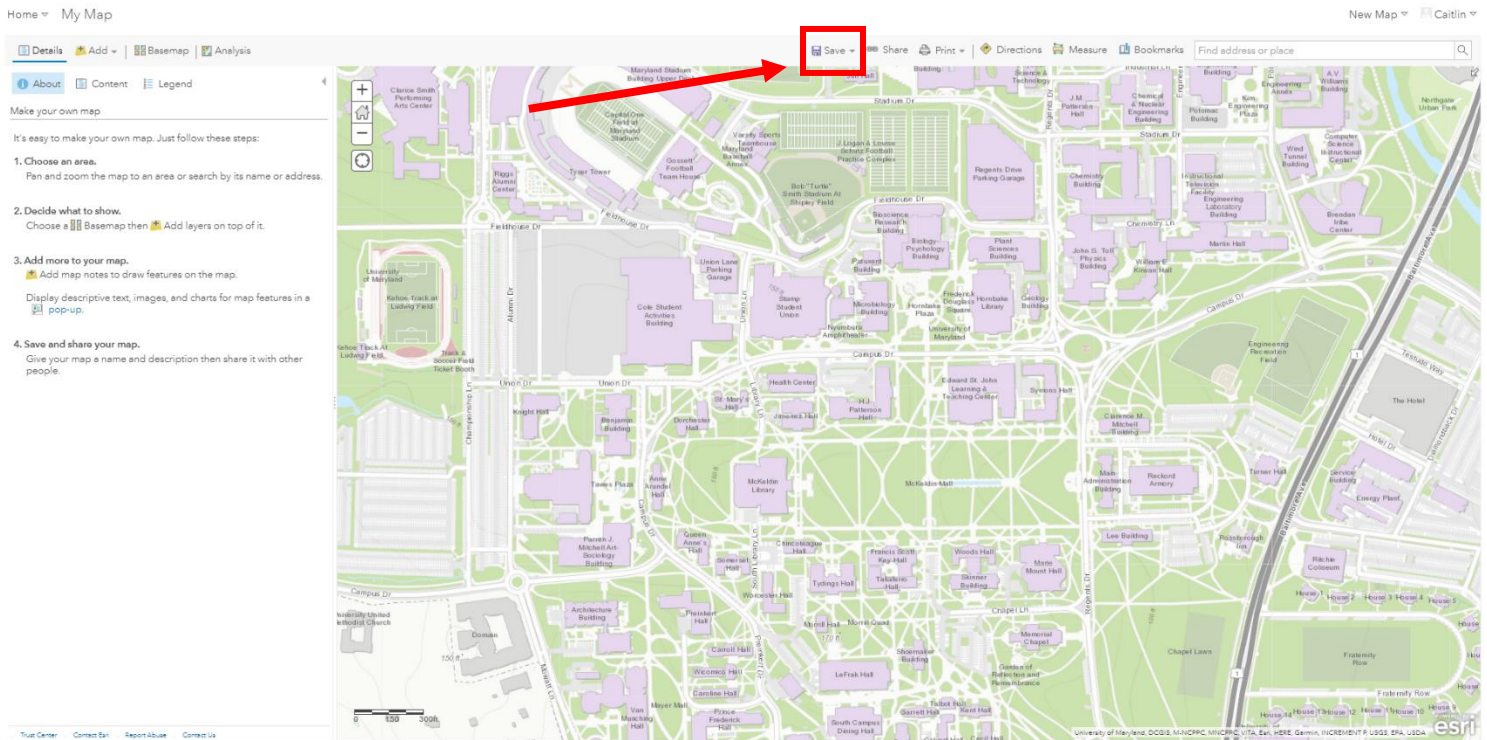

When you are finished creating your layers or maps, you can share it with your group, your organization, or to the public.

1. Go to your Contents page and click on the map or layer that you want to share.

2. You will be taken to that Content's main page. On the right side, click the Share button. You can share it with the organization (UMD), the public, or not share it to anyone else with the Owner option.
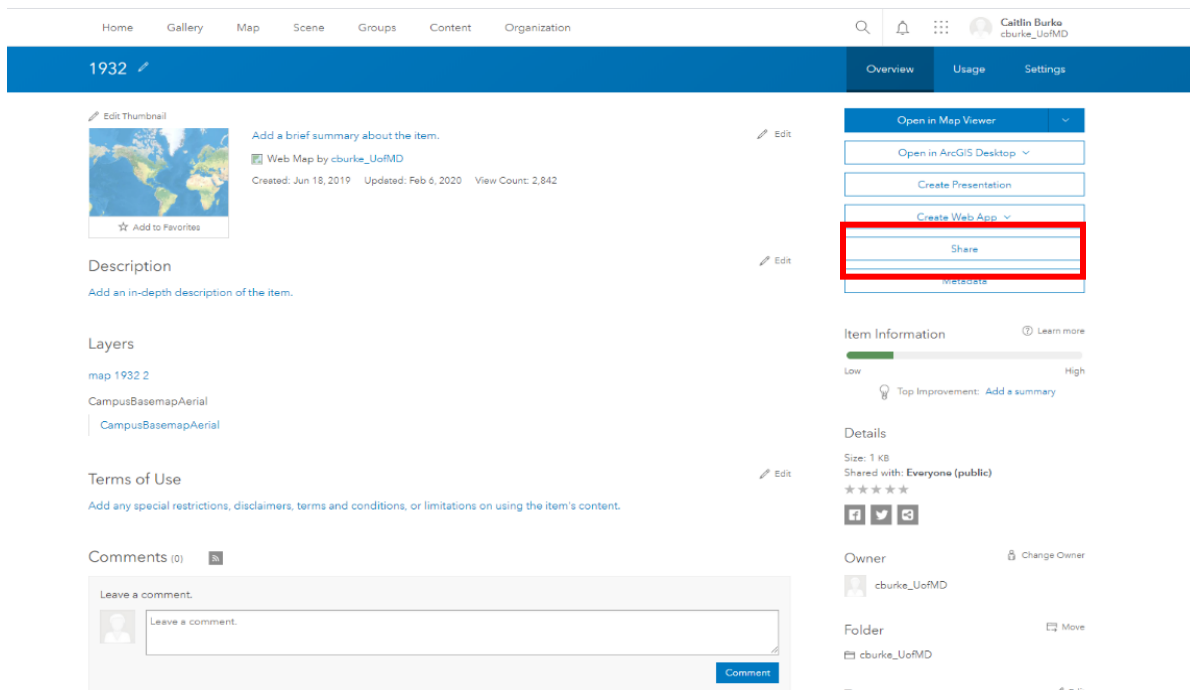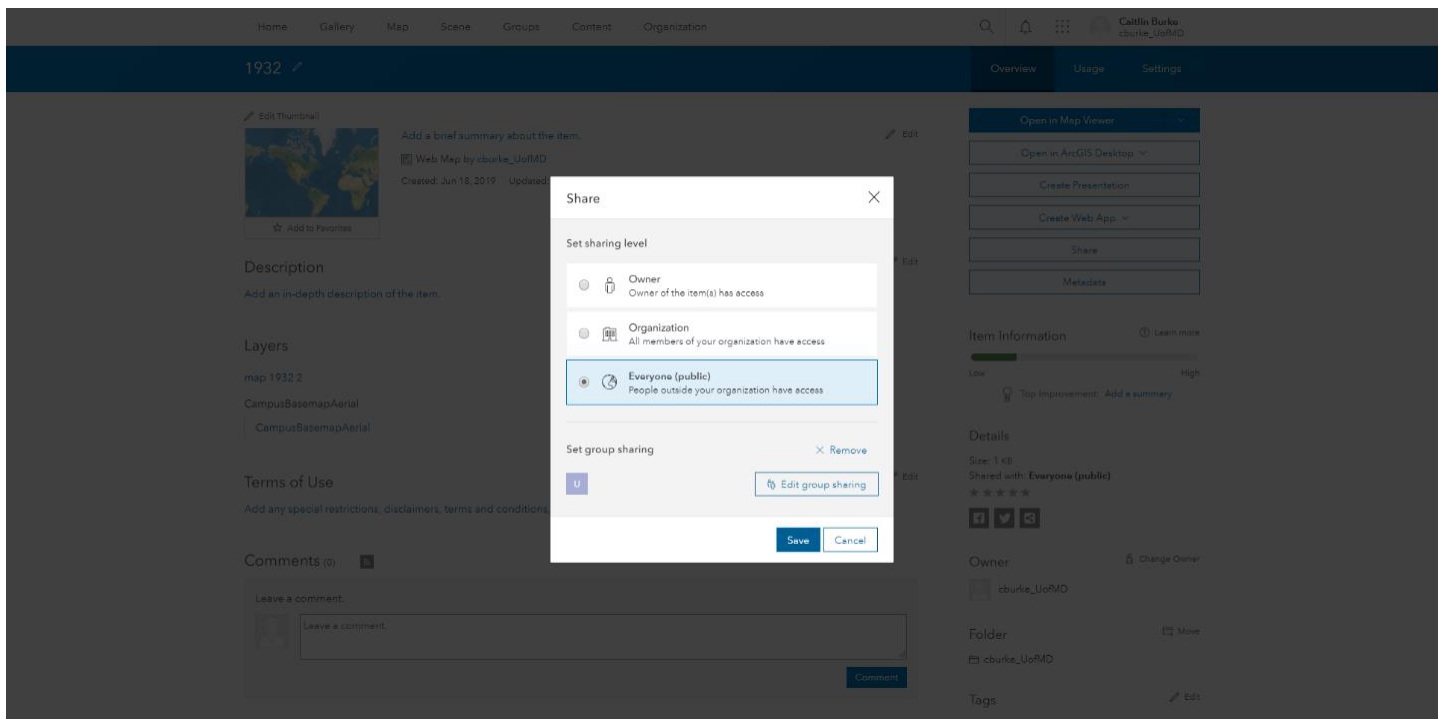

3. If you want to share it with your group, click on the Edit group sharing button. Click on the group(s) that you want to share it with and then click OK.
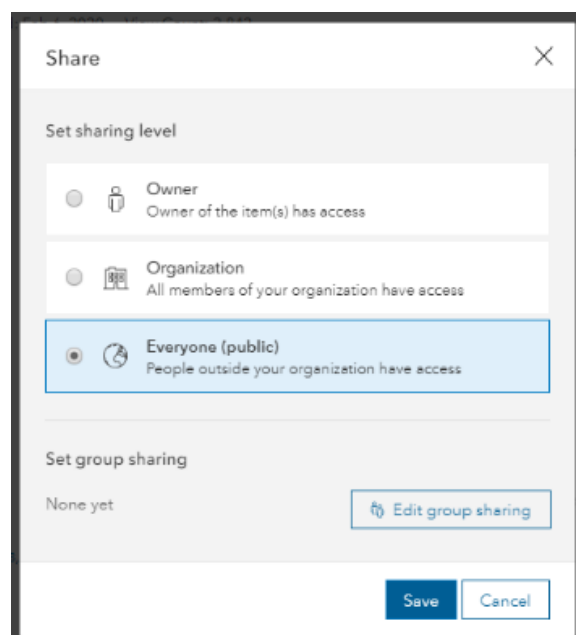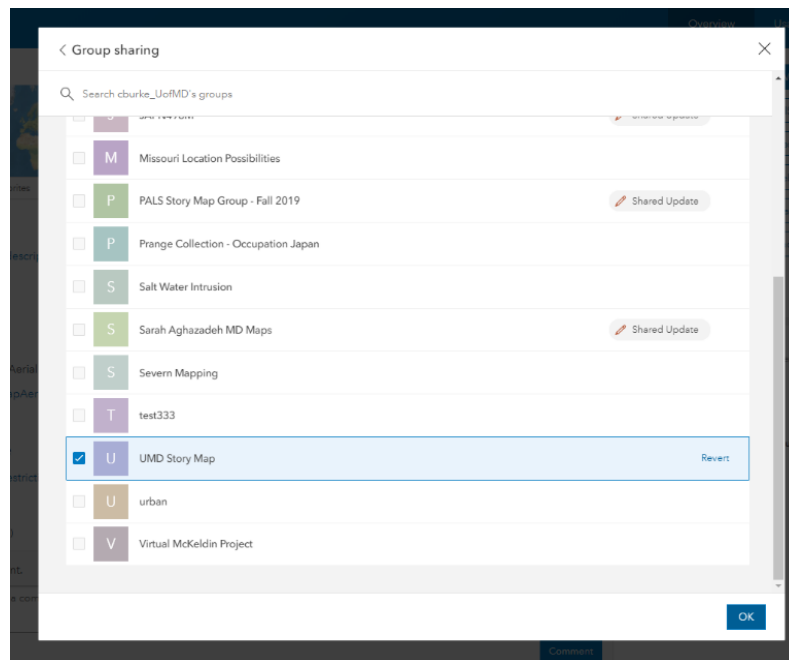
4. Click save to finish changing the sharing settings.

Using Analysis Tools

Besides showcasing your data, ArcGIS Online lets you look at patterns and relationships in your data with analysis tools. There are different types of categories for analysis tools: summarize data, find locations, data enrichment, analyze patterns, use proximity, and manage data. For more information and instructions, go here https://doc.arcgis.com/en/arcgis-online/analyze/perform-analysis.htm and https://doc.arcgis.com/en/arcgis-online/analyze/use-analysis-tools.htm.

Web App Builder

The web app builder lets users build a GIS web application that suits the needs of the GIS users. You can design your own web application without using any code. For more information, go to https://doc.arcgis.com/en/web-appbuilder/create-apps/what-is-web-appbuilder.htm
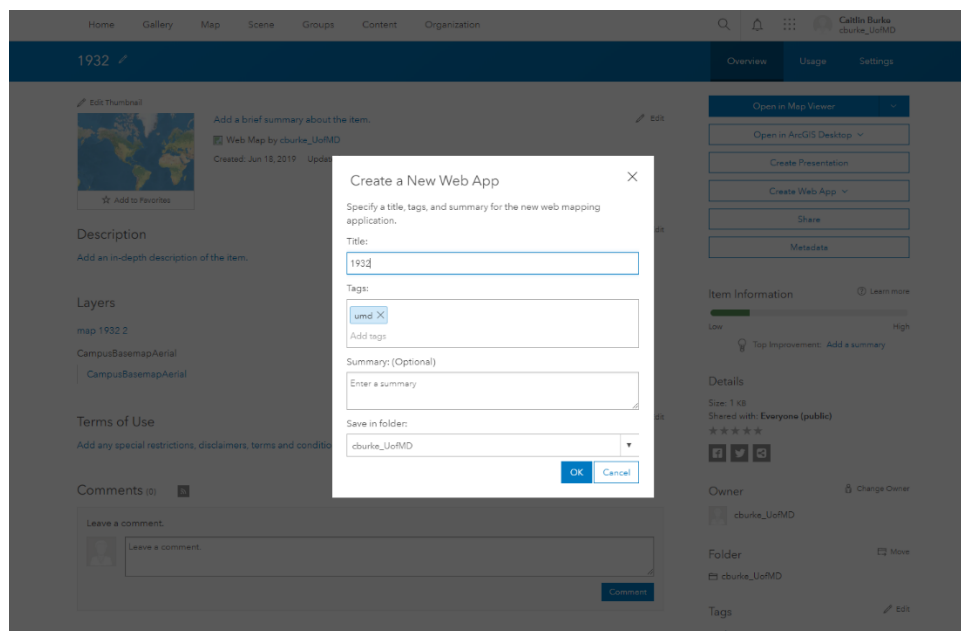
1. Go to the Contents page and find the map that you want to use in your GIS web application.
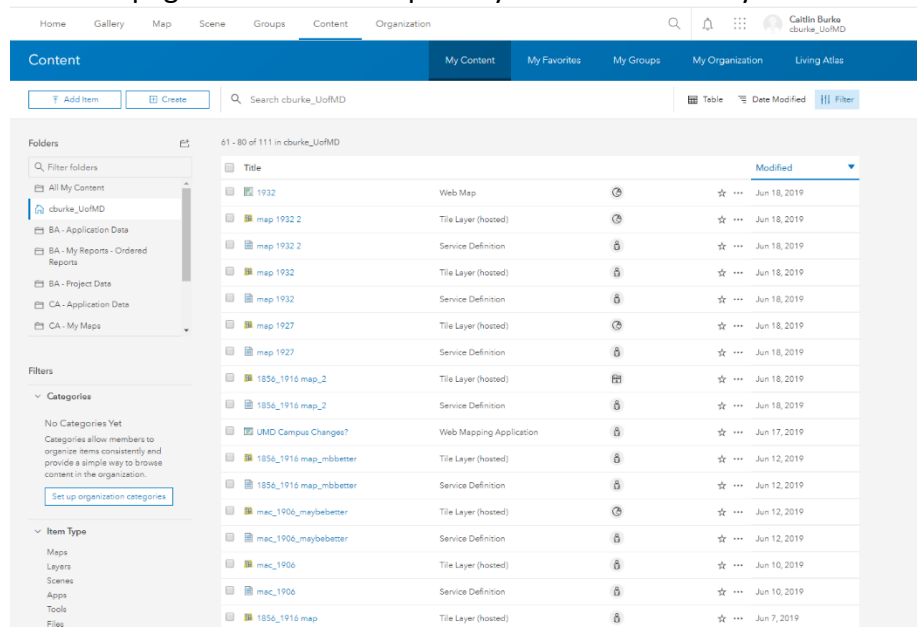
2. On the info page on the right, click on Create Web App, then click Web AppBuilder.
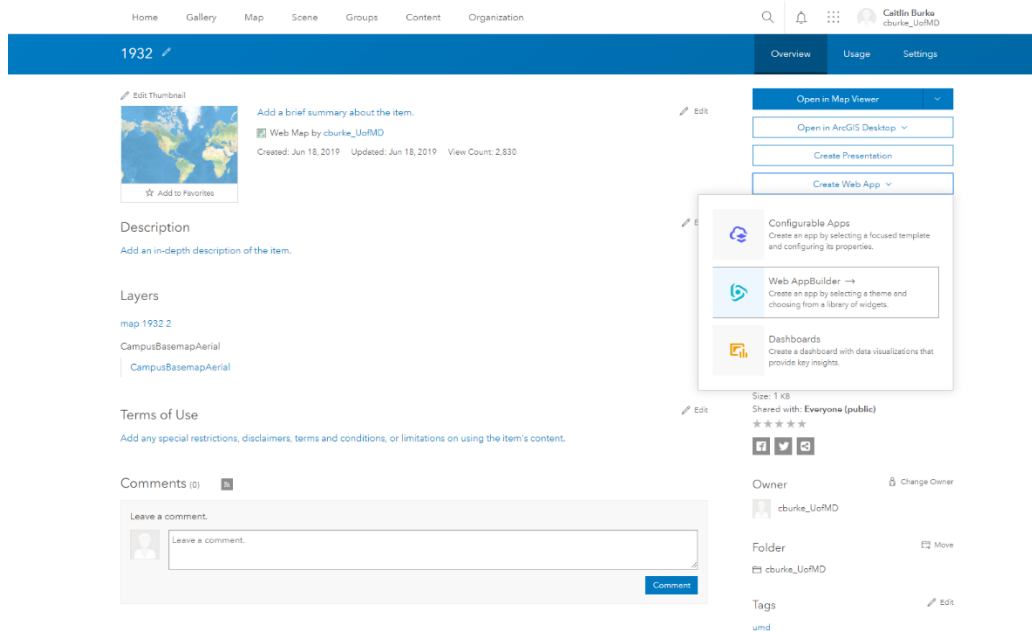
4. Create a title for your web app and put a tag. Creating a summary is optional. Click OK.


5. Once you get taken to the editing page, you can design your web app. The themes tab has different templates for the web app. You can also change the color of the theme.
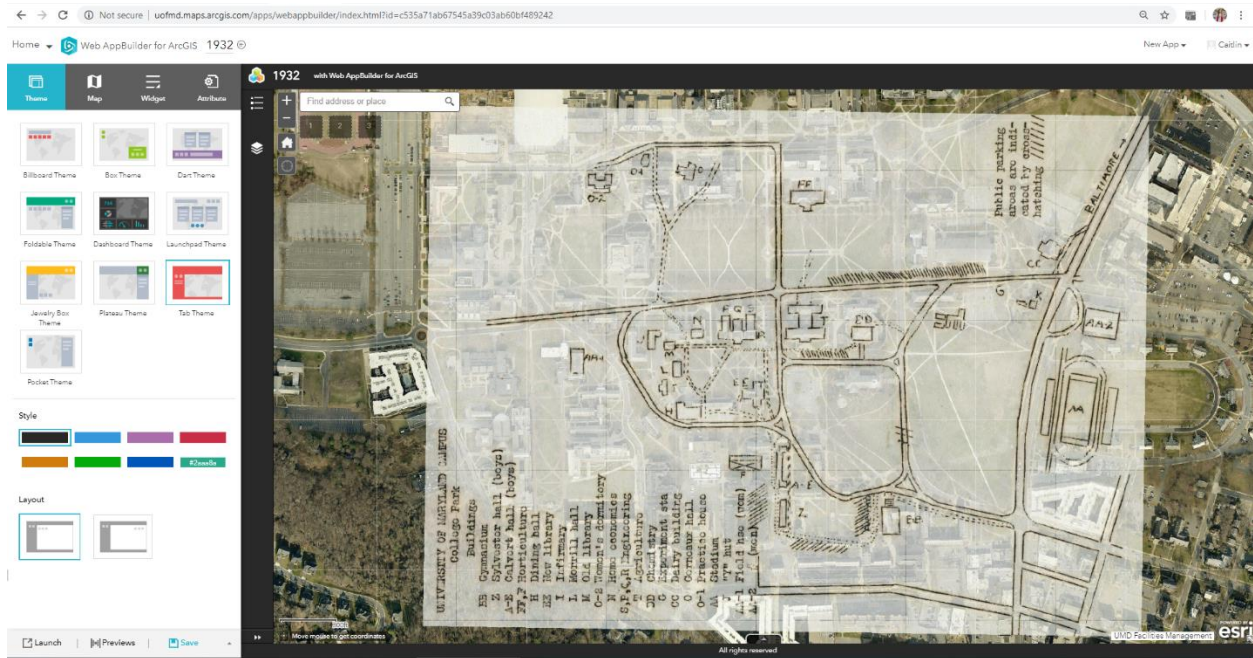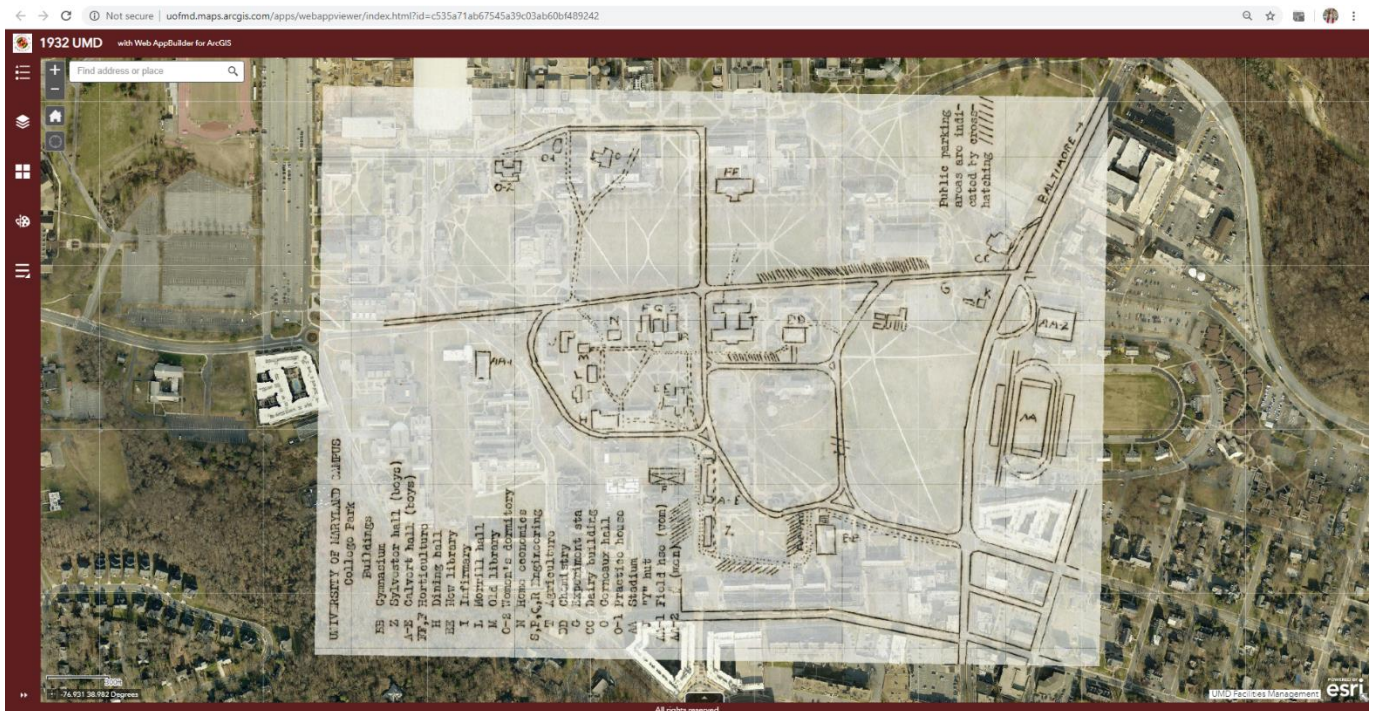
6. The widgets are different tools that you can add to your web application. For more information on what each widget does, click here https://doc.arcgis.com/en/web-appbuilder/create-apps/widgets-tab.htm#.
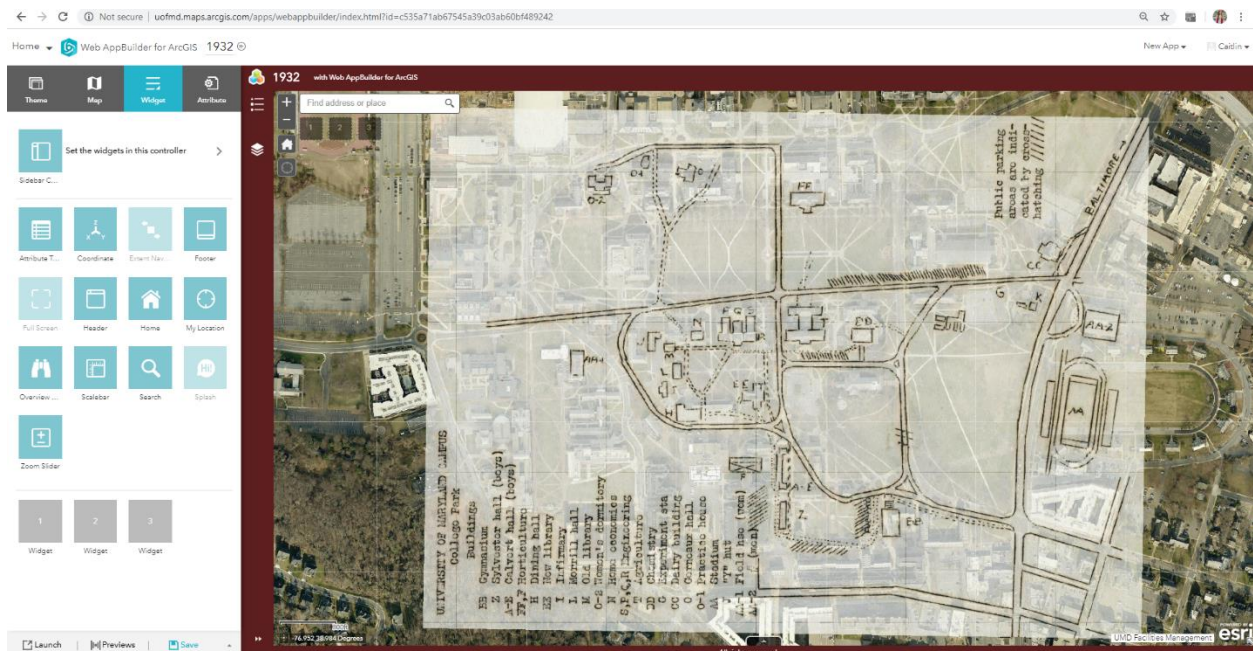
7. You can also edit the name and logo.
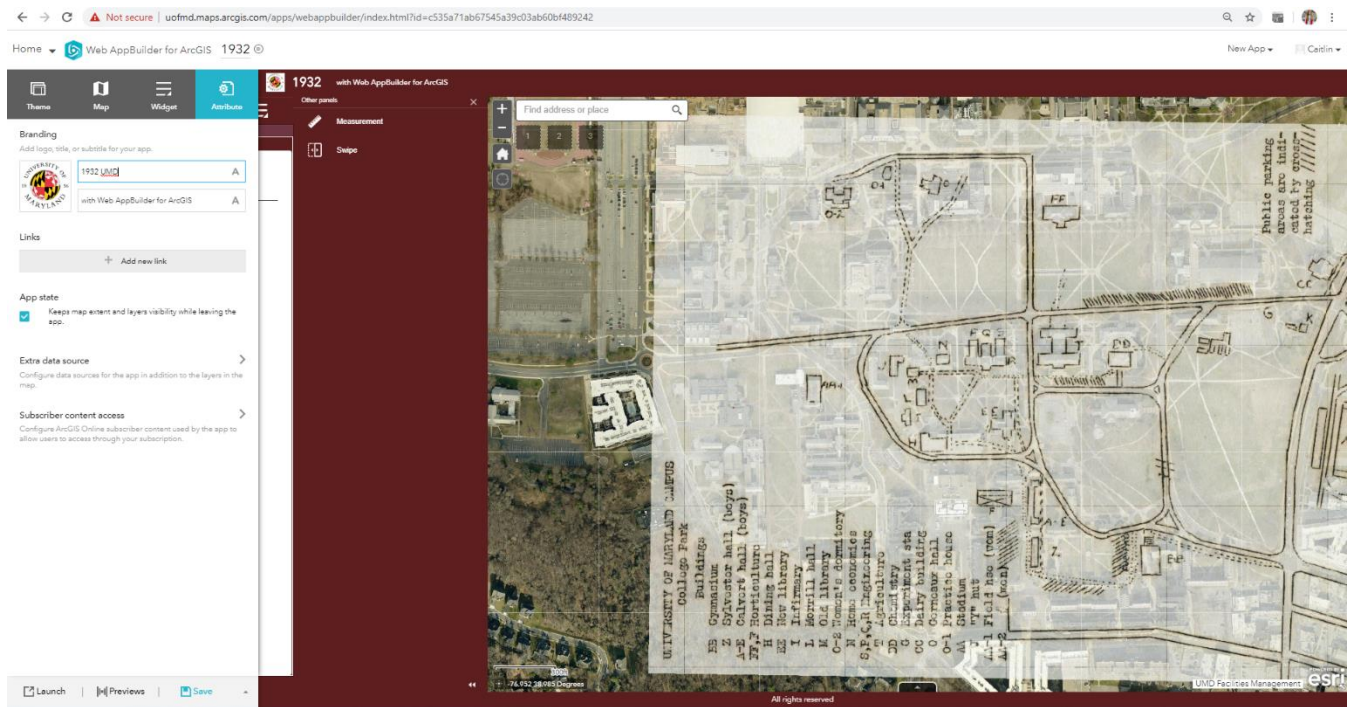
8. To preview your web app, click Launch.

Story Maps

General Guidelines and Resources

Story Maps are an elegant way to display dynamic digital maps. They can be created using templates developed by Esri and ArcGIS Online. You can view examples of different Story Maps here: http://storymaps.arcgis.com/en/gallery/#s=0

Tips for building the map:

- See Esri's "How to Make a Story Map" (http://storymaps.arcgis.com/en/how-to/) for an overview on creating a Storymap.
- Use Chrome, Mozilla (Firefox) or Safari as your browser to create the map. Several of the apps have problems when building them in Internet Explorer.
- If you are using photos, be sure to add a credit line for them and try to find copyright free images or ones with a Creative Commons license.

For all the Story Map templates you can use, go to this link: http://storymaps-classic.arcgis.com/en/app-list/.

For a project, the ones that might be the best suited to present an informative story are:

- Story Map Journal: http://storymaps-classic.arcgis.com/en/app-list/map-journal/
- Story Map Cascade: http://storymaps-classic.arcgis.com/en/app-list/cascade/
- Story Map Series: http://storymaps-classic.arcgis.com/en/app-list/map-series/

    Each link provides a thorough explanation of each type of template, a gallery, and thorough instructions!