

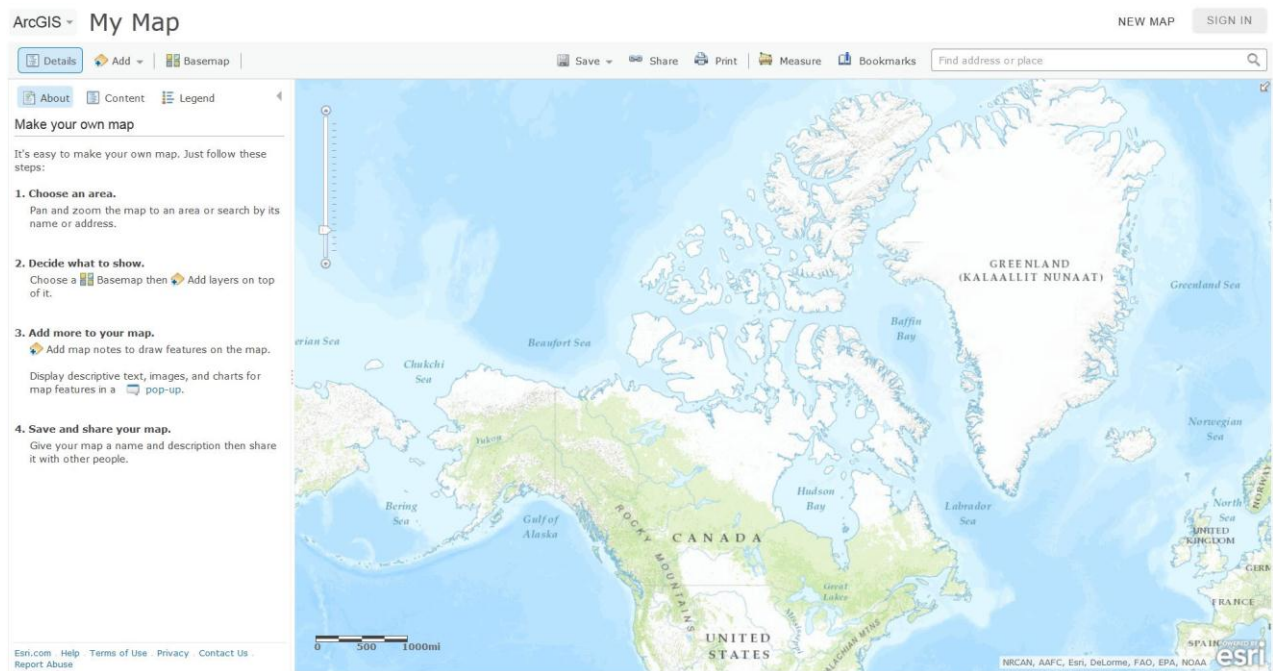
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ArcGIS online Introduction

ArcGIS online offers many tools and applications to create simple and more complex maps on the web. These maps can be shared to the public and can also be created into different web applications for users to view. A public account can be created for free and allows storage of up to 2GB of content that includes shapefiles (compressed into a zip folder), kml files, delimited text files (.txt or .csv), as well as maps and web applications that have been created.

In this tutorial you will learn how to use many features in ArcGIS online including creating basic maps, adding in layers, changing the symbology of the layers and creating and sharing web applications. Once you have finished this tutorial, you should have a high understanding of the main functions of ArcGIS online and be able to produce simple maps by using data available online through their server as well as learning how to upload and use your own data from multiple sources.



Module 1: How to create a basic map on ArcGIS online

In this first module you will learn how to use the basic functions of ArcGIS online. This includes a step-by-step process of creating an account; adding a basemap; and creating points, lines and polygons.

Creating a public account with ArcGIS online

Open up ArcGIS.com.

Open a new internet browser and enter this address (<http://www.arcgis.com/home/>) in the address bar. When you see a webpage shown below, click *Sign In*.



Sign up or sign in to ArcGIS.com with your Esri Global Account

If you are a first time user, you will need to click 'Create a public account' and then follow the website's step by step instructions to create one. Once you sign in, you will notice that your first name will appear where it previously said 'sign in'.

https://www.arcgis.com/home/createaccount.html

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Create A New Account

Complete the form below to create an account.

Username:
 Password:
 Confirm Password:

First Name:
 Last Name:
 Organization:
 E-mail:
 Confirm E-mail:
 Phone Number:

The following question and answer will help validate your identity in the event you forget your password.

Identity Question: Select a question for password recovery.
 Answer:

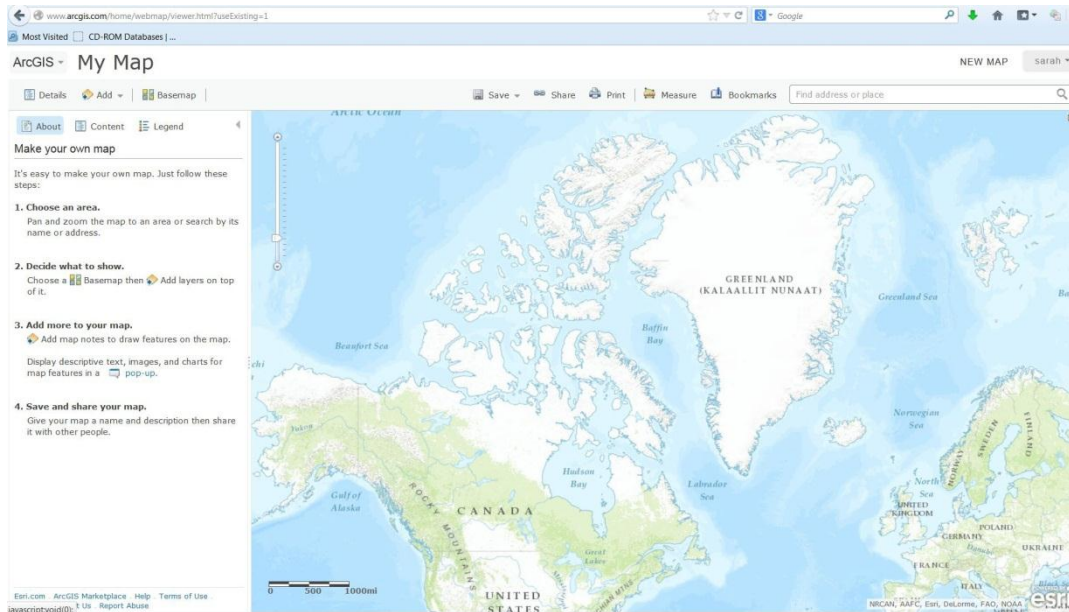
Terms of Use: ☐ REVIEW AND ACCEPT THE TERMS OF USE

Esri.com | ArcGIS Marketplace | Help | Terms of Use | Privacy | Contact Us | Report Abuse

Opening a Map, Adding a Basemap and then Saving it

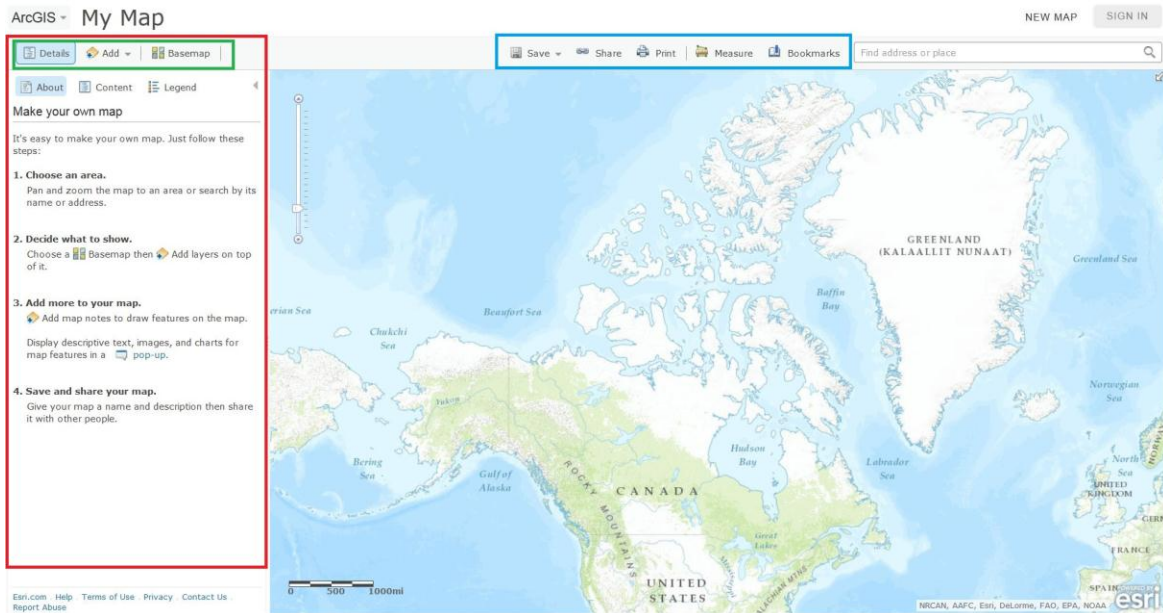
Opening up the map feature in ArcGIS online

Once you have successfully logged in, click on the *Map* tab along the top of the ArcGIS online home screen. This will pull up a new blank map named *My Map* that looks like the image below:



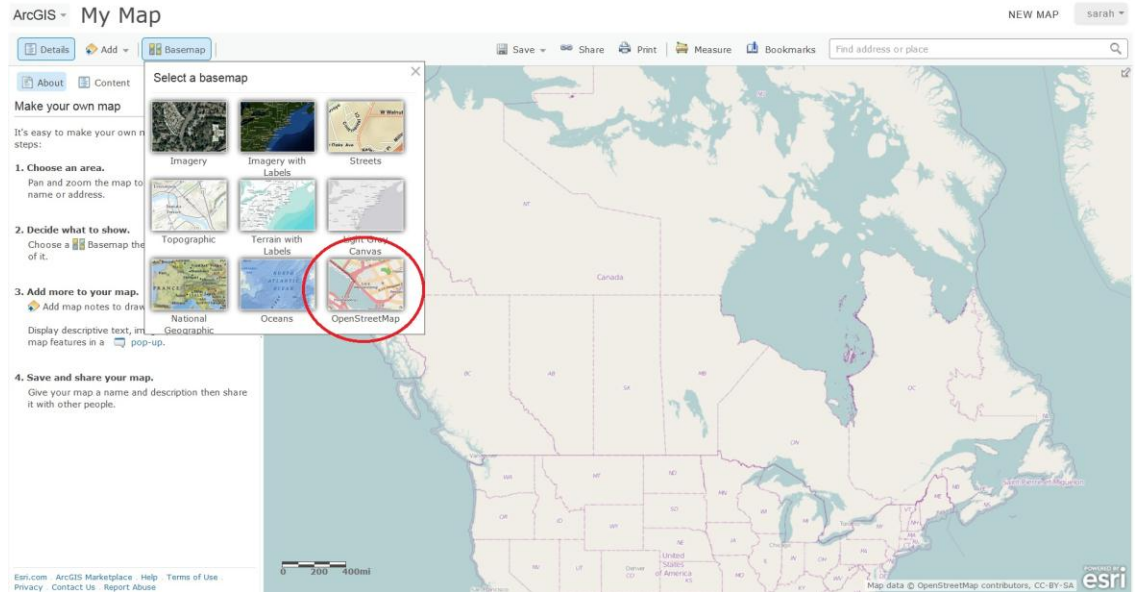
There are many important features available on the map home page. On the left, there is a sidebar that contains a tab about your map, a tab that contains the contents of your map (such as layers) and also a tab that contains your legend. This sidebar also has 3 functions that allow you to see the details of your map, add a layer through the *Add* tab and finally a tab called *Basemap* that allows you to choose 1 of 9 basemaps that are available for free.

Along the top there are some other important features such as the *Save* and *Share* options which will be discussed in greater detail in this tutorial.



Choose a Basemap

ArcGIS.com offers a variety of basemaps and the default one is 'Topographic'. Click *Basemap*. This opens a tab containing nine different basemaps. Depending on the map you would like to produce, a different basemap may be appropriate. For this tutorial we will use the 'OpenStreetMap' basemap. After selecting that basemap, your map will look like the image below.



Save your Map


Next we are going to save the map we have begun creating. To do so you must click on the *Save* tab. Once you have clicked *Save* click on the 'Save as' option. This will open a 'Save Map' message box. Enter an appropriate name and tags for your map and then click 'Save Map' when finished.

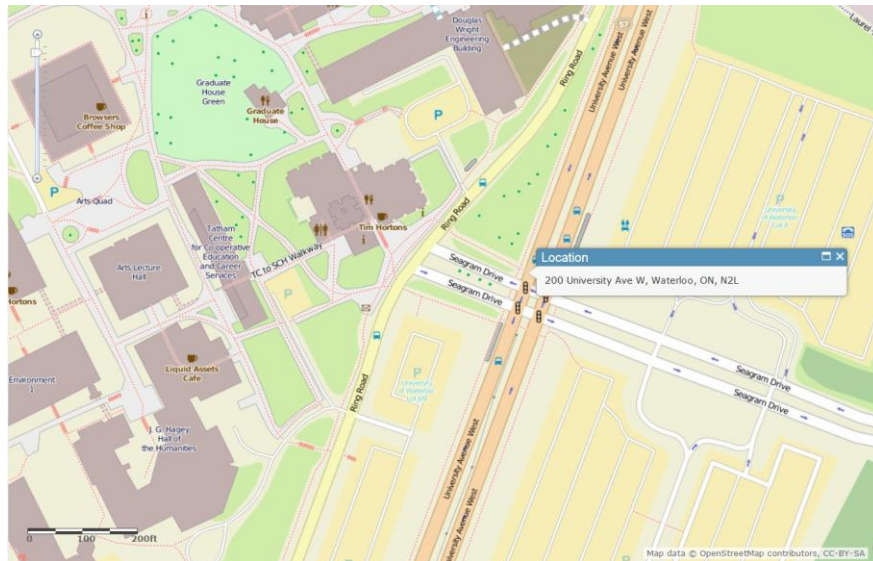
Searching for a Location and Creating Points, Lines and Polygons

Finding a location on ArcGIS online

Now that we have changed our basemap and saved our map, we need to find the location on the map we wish to view. This can be done by manually zooming into your map using your

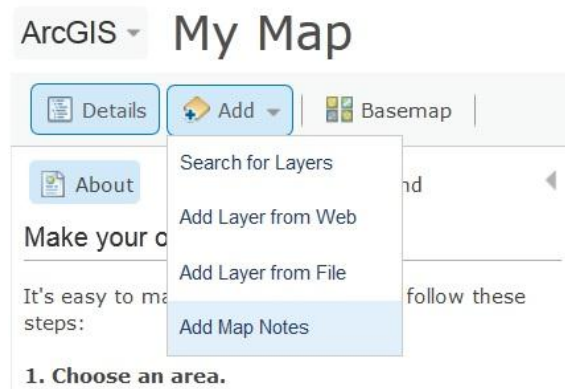
mouse and scroll wheel, + - keys on your keyboard or the navigator control pan. You can also search an address in the search bar in the top right-hand corner of the screen. For this tutorial we would like to zoom into the main campus of the University of Waterloo.

In the search bar type '200 University Ave West Waterloo Ontario' and then click enter or the  symbol. Now your map should be zoomed into the university and should look like the image below.

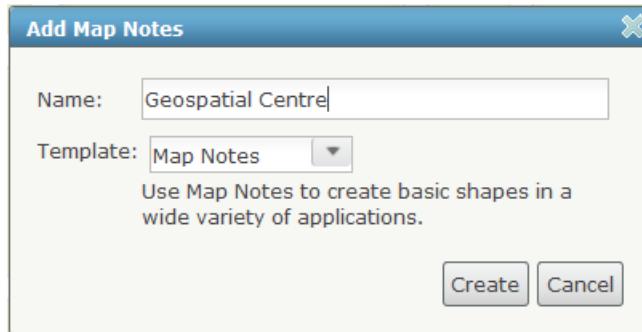


Adding a Map Note

Next we are going to create a map note. Click 'Add' and then select 'Add Map Notes'. This will bring out an 'Add Map Notes' message box.



Assign a name and a template for the map notes. For this tutorial we will set the name as 'Geospatial Centre' and template as 'Map Notes'. Click 'Create' when finish. You will notice that an 'Add Feature' table of contents appears on the left side.



Add Map Notes

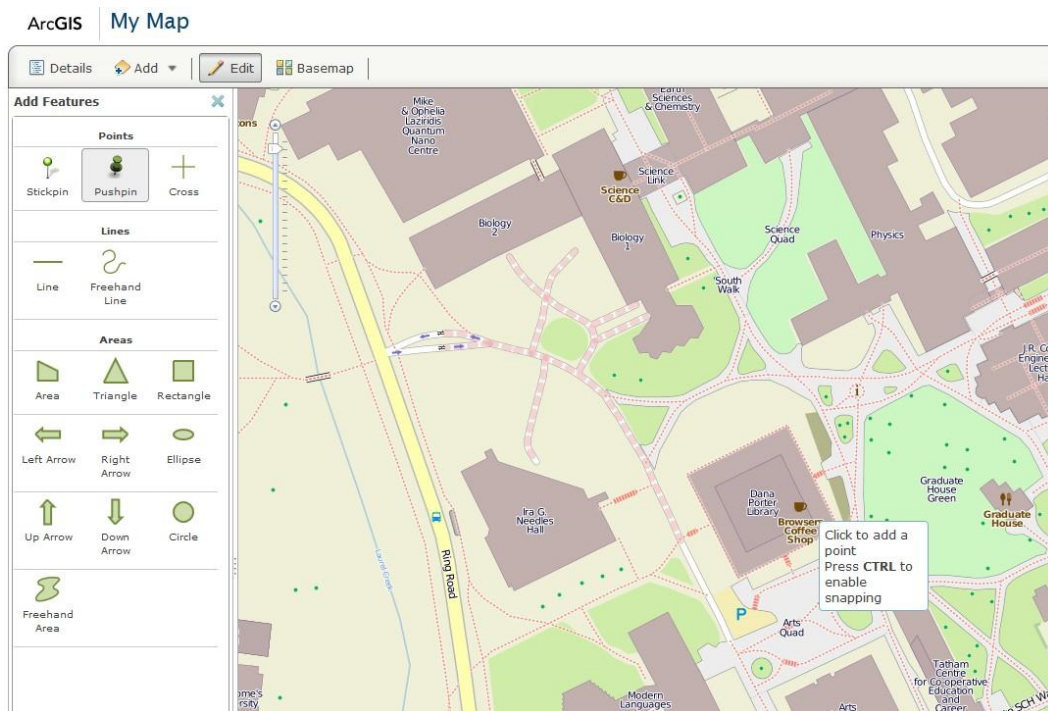
Name:

Template:

Use Map Notes to create basic shapes in a wide variety of applications.

Adding a Point Feature

First we are going to add a point feature. You will see in the table of contents that you can select one of three different point features; a stickpin, pushpin or cross. For this tutorial we will select the feature to be Pushpin. The next step is to double click to add the map note to the actual location of University of Waterloo Geospatial Centre, located in the Dana Porter Library. This will bring out a points message box.



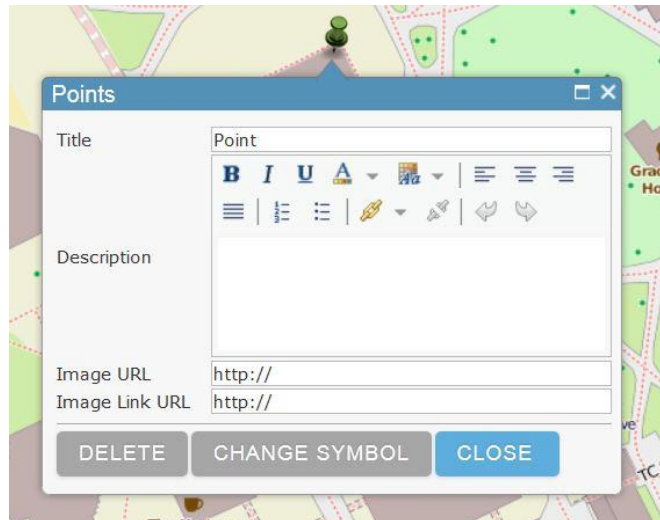
Complete the message box. Enter the following information into the box. Click close when finish.

Title: Geospatial Centre

Description: Dana Porter Library, Room 328

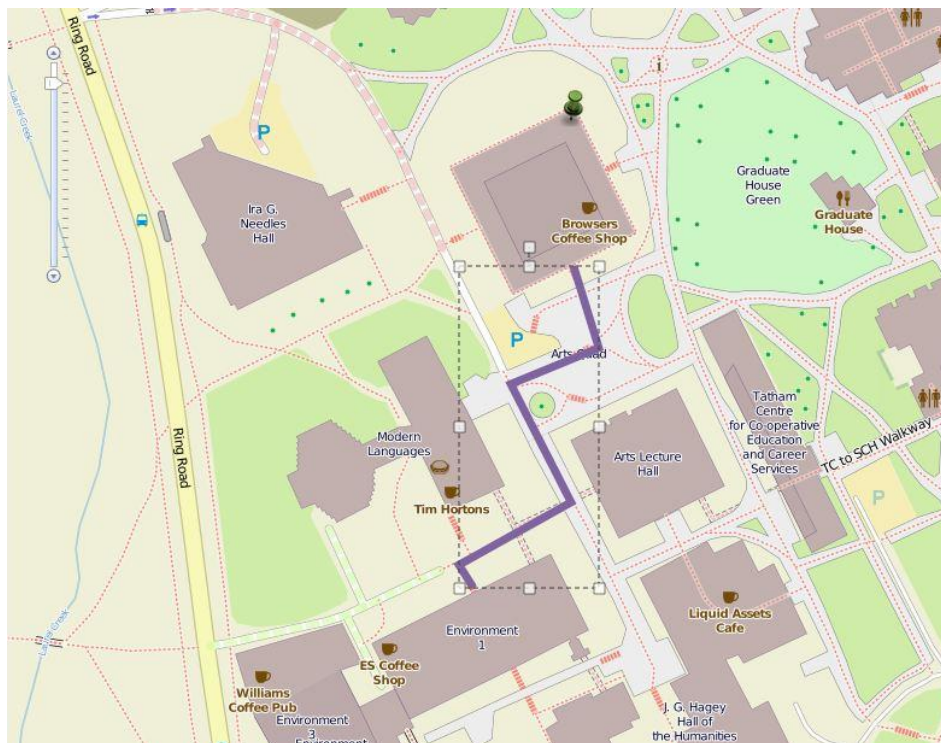
Image URL: <http://www.lib.uwaterloo.ca/locations/umd/collage/banner3.jpg>

Image Link URL: <http://www.lib.uwaterloo.ca/locations/umd/index.html>

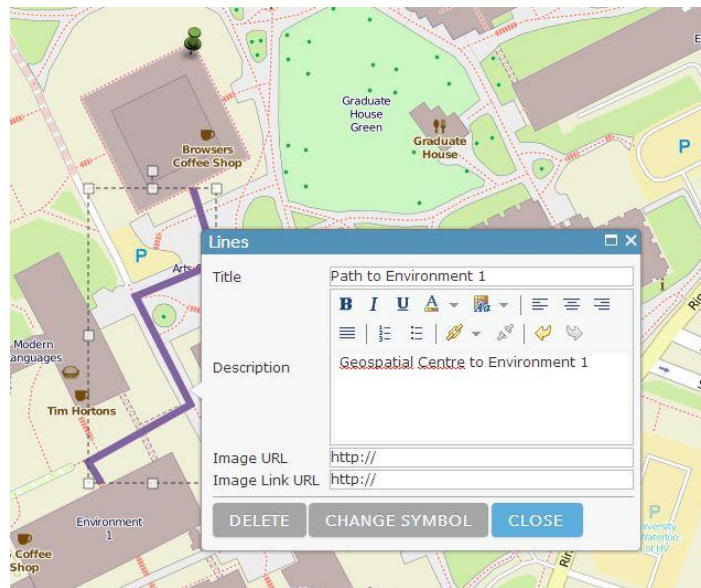


Adding a Line Feature

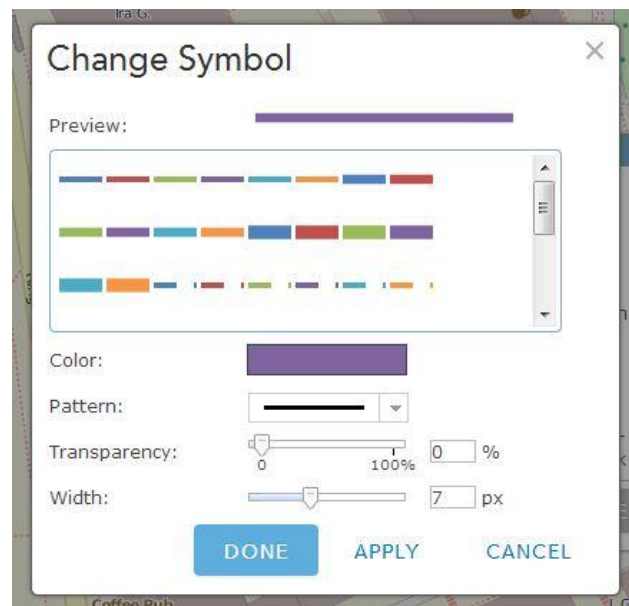
For this tutorial, you are going to add a line feature by creating a path from the Geospatial Centre to Environment 1. From 'Add Features' table of contents, select 'Line'. To create the path, single click on the map, starting at the Geospatial Centre, and complete the path ending at Environment 1 (as shown below).



Double click to finalize it. You will see a new message box. Enter the information as shown below.

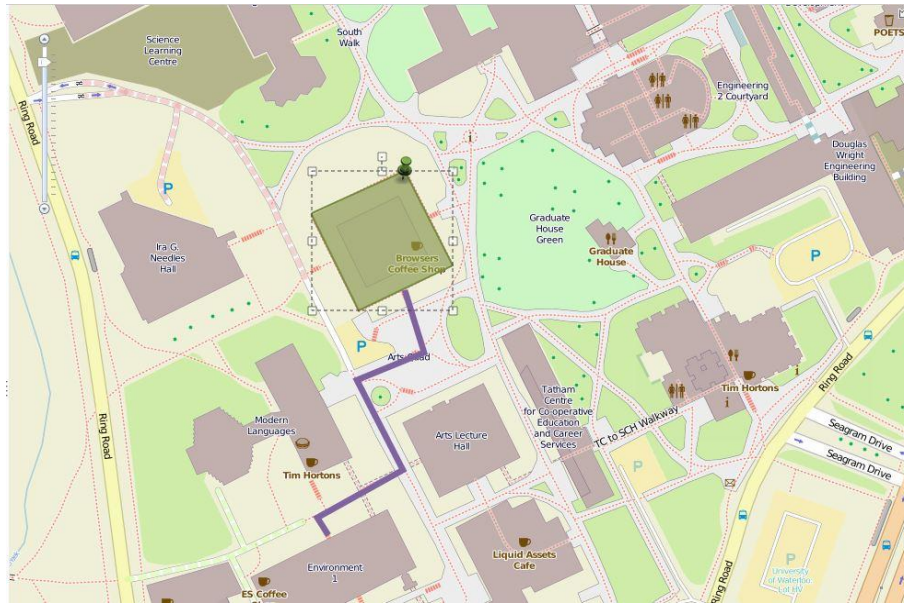


You can change the line symbol colour by clicking on 'Change Symbol'. This will bring out a message box. Select a new color and optionally, you can change the line pattern, width, and transparency. Click 'Done' to confirm the change and 'Close' when finished.

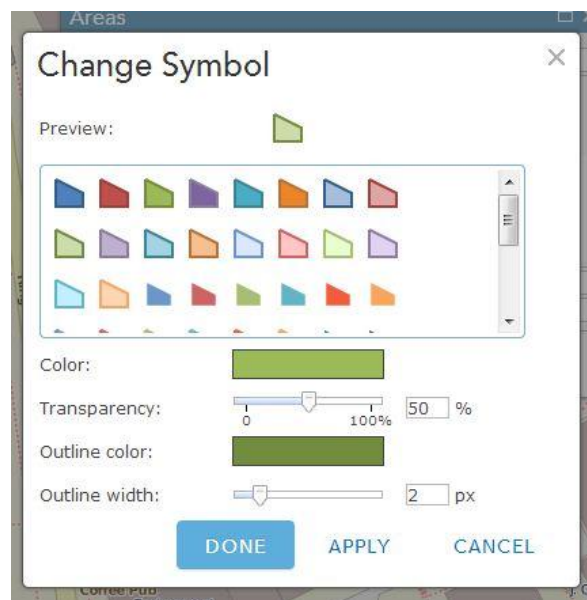


Add a Polygon Feature

For this tutorial, you are going to create a polygon of the building outline for Dana Porter Library. From 'Add Features' table of contents, select 'Area'. Next click on one of the building corners to start drawing. Double click at the last corner to complete the polygon.



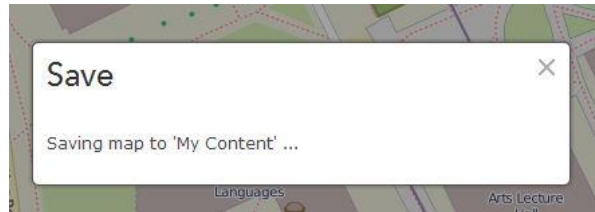
Similar to the line feature, you can change the polygon's colour, transparency as well as width by clicking 'Change Symbol' in the message box. The next step is to pick a new color and set its transparency level to 50%. Click 'Done' and then 'Close' when finished.



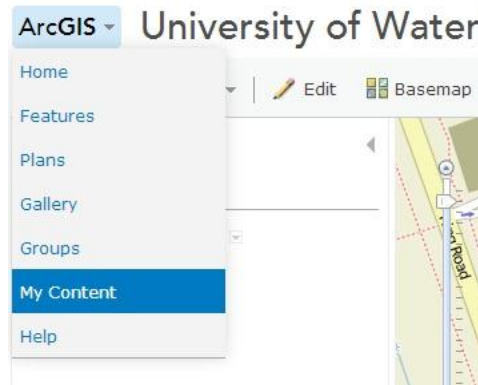
Saving your Map and Sharing it to the Public

How to view your saved map in 'My Contents'

Your map is now complete! Simply click the save button to update the saved file of your map. You will see that it says 'saving to my content'.



To view your saved map click the *ArcGIS* tab in the top left-hand corner of the screen. This pulls down a message box that contains a tab called 'My Contents'. If you click this tab it will take you to your contents which stores the saved maps as well as any uploaded files.

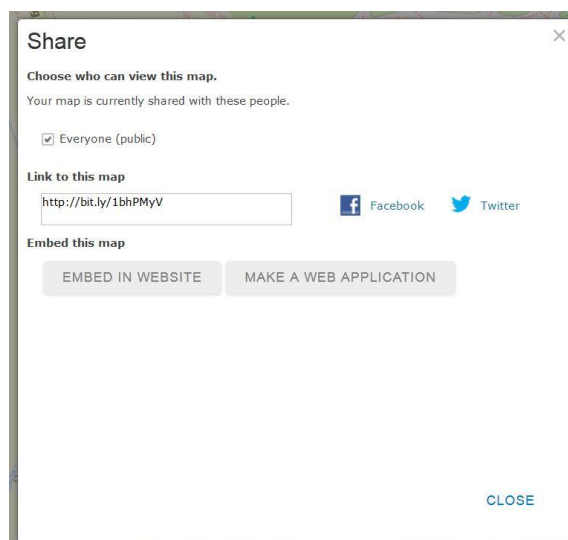


Sharing your Saved Map

After you have saved your map you have the option of sharing it. This can be done by clicking the share option next to save in the *Map* tab.



After clicking 'Everyone (public)', you can share the link to your map as shown below. This will allow someone to follow the link on a web browser to view the map you have created.



Module 2: Adding and Symbolizing Layers

This module will address how to add multiple layers to your map. With the latest release of ArcGIS.com, you can add a layer to your map that was stored in a delimited text file (.txt or .csv), a GPS Exchange Format file (.gpx), Keyhole Markup Language (kml), or a shapefile (compressed into a .zip). Once the layer is in ArcGIS.com, you can edit the layer properties, similar to symbolizing the point, line and polygon features in Module 1. For example, you can configure pop-up windows, change symbols, set visibility range, and enable editing.

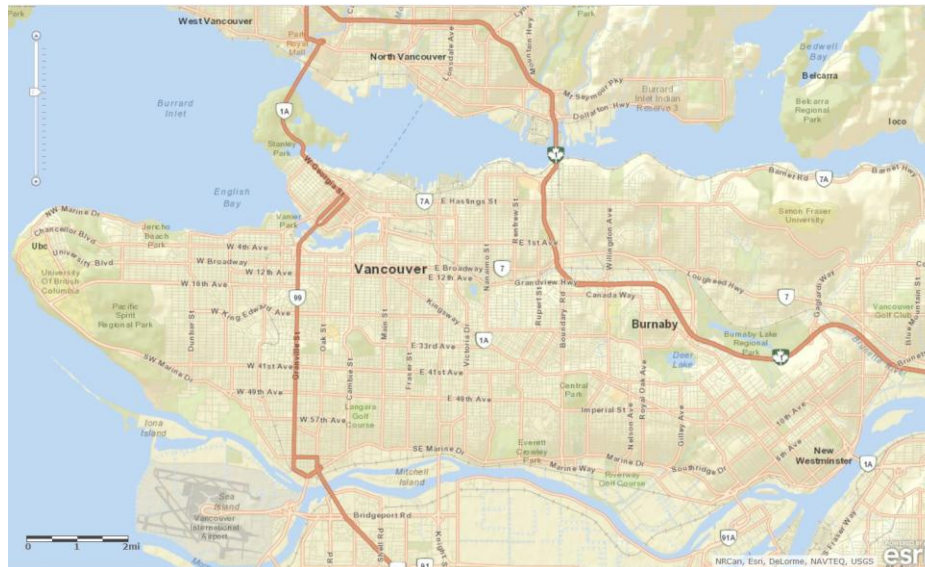
This tutorial shows you how to add a CSV file, a shapefile and a KML file into ArcGIS.com and then edit their layer properties. The files can be downloaded from the City of Vancouver data open website (<http://data.vancouver.ca/>). Details on how to download the files used are available in the appendix.

Along with adding in data from outside sources as seen in this module, ArcGIS.com has an online data catalogue that includes over 10000 shapefiles. The data can be added to your map similarly to these other file types and can also be edited and shared to the public. To learn more about using ArcGIS.com's online data, visit Module 5.

How to Add a Layer to your Map

Open a new map

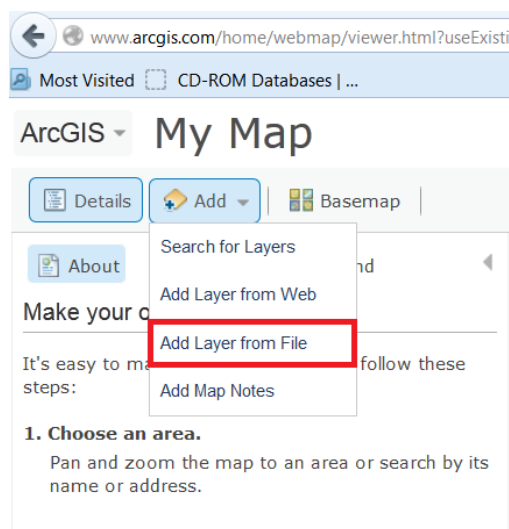
For this portion of the tutorial we are going to create a new map that will be looking at the City of Vancouver. If you are unfamiliar with how to do so, check out the previous section called "Opening a Map, Adding a Basemap and then Saving it". Choose the 'Streetmap' option for the basemap and save it as 'Library and Firehall Locations in the City of Vancouver' with appropriate tags.



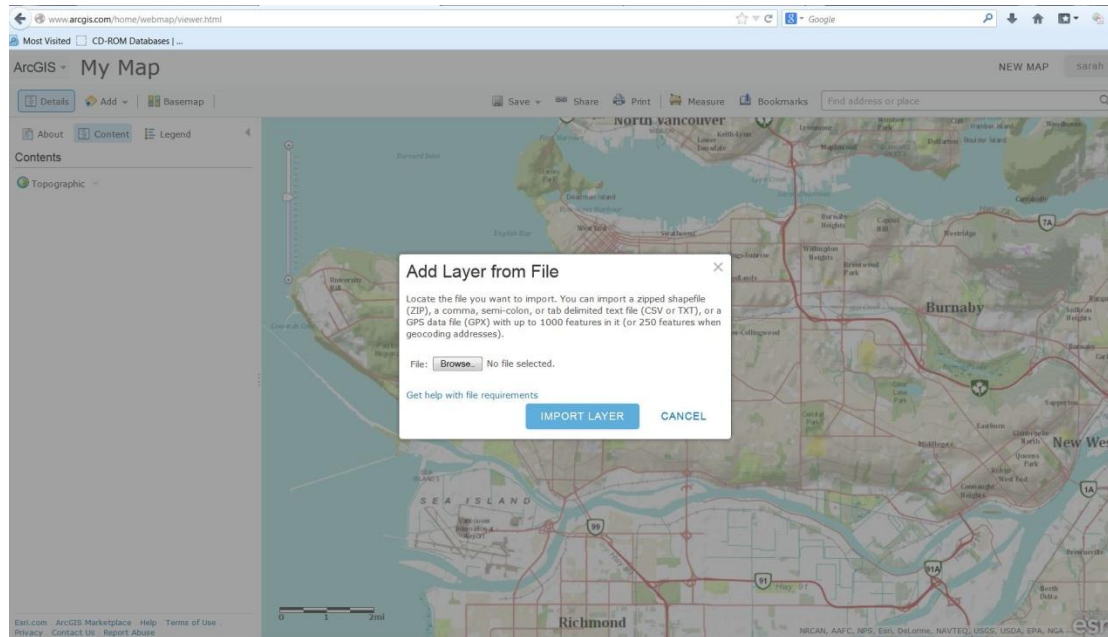
How to add a shapefile

Now that you have your map set up with a basemap and saved to *My Contents*, you can now add a layer to your map. There are many ways to add a layer to your map including uploading it from a file on your computer, uploading from a file on the web, dragging it and dropping from a folder on your computer (csv, txt, and gpx files only), and searching for it either through ArcGIS's online catalogue or from *My Contents*.

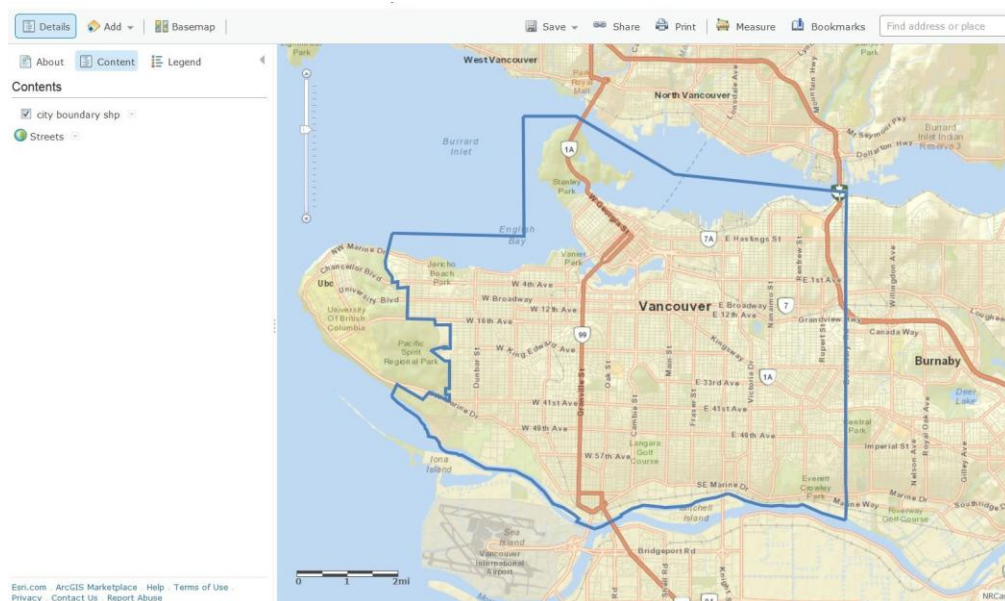
For this tutorial, we are going to begin by adding the city boundary shapefile. To add a shapefile to ArcGIS online it must be compressed into a zip file and have generally fewer than 1,000 features. Add the shapefile by clicking the *Add* tab and then clicking 'Add layer from file'.



Browse your computer to the folder where the shapefile (zip file) is located and click 'Import Layer'.



When you see an image similar to the one shown below, that means the boundary shapefile has been added into ArcGIS.com as a new layer.



Adding a CSV file to your map

In addition to importing shapefiles through map viewer by using the 'Add' button, you can upload a CSV file from the web or you can drag the CSV from a file on your computer. The comma-separated values text file (.csv) must include latitude and longitude information. There is however a limit of 1,000 records that can be imported to the map.

Making an Interactive Spreadsheet

To make an interactive spreadsheet on the web you must create or log in to your Google account. Once you have done this, you can upload the excel spreadsheet 'Firehalls' into the google drive, making sure to apply the settings as below.

Upload settings ×

Set your preferences for uploading files. We'll apply these settings to any files you upload to Google Docs. [Learn more](#)

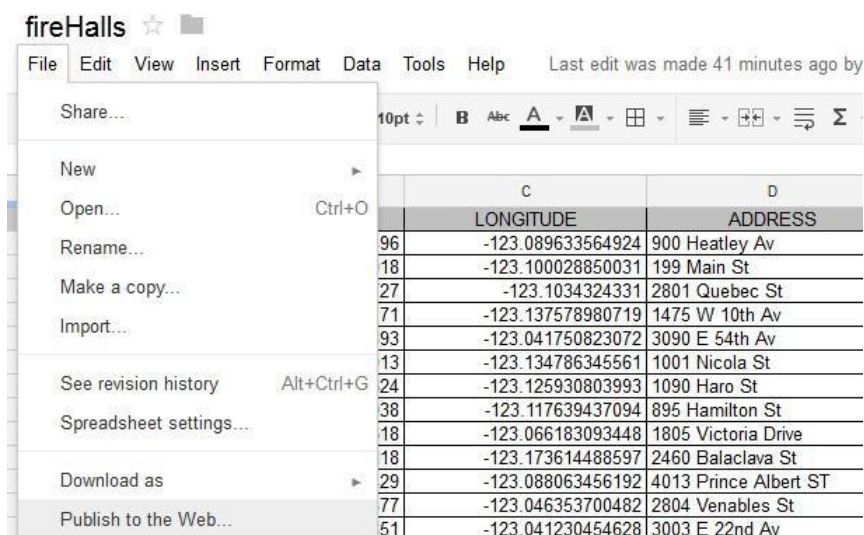
☒ Convert documents, presentations, spreadsheets, and drawings to the corresponding Google Docs format

☐ Convert text from PDF and image files to Google documents

☒ Confirm settings before each upload

[Start upload](#) [Cancel](#)

Once uploaded, the imported spreadsheet becomes a Google spreadsheet. Open the spreadsheet. In the 'File' menu select 'Publish to the Web'.



	C	D
	LONGITUDE	ADDRESS
96	-123.089633564924	900 Heatley Av
18	-123.100028850031	199 Main St
27	-123.1034324331	2801 Quebec St
71	-123.137578980719	1475 W 10th Av
93	-123.041750823072	3090 E 54th Av
13	-123.134786345561	1001 Nicola St
24	-123.125930803993	1090 Haro St
38	-123.117639437094	895 Hamilton St
18	-123.066183093448	1805 Victoria Drive
18	-123.173614488597	2460 Balaclava St
29	-123.088063456192	4013 Prince Albert ST
77	-123.046353700482	2804 Venables St
51	-123.041230454628	3003 E 22nd Av

Next, click 'Start publishing'. Set the published data format by opening the drop-down list and clicking CSV (comma-separated values).

Publish to the web

Sheets to publish

All sheets

☒ Automatically republish when changes are made

Stop publishing

Republish now

Published on Aug 8, 2012

Note: Publishing a doc does not affect its visibility option. [Learn more](#)

Get a link to the published data

Web page

HTML to embed in a page

CSV (comma-separated values)

TVET (Plain text)

Once the Firehalls spreadsheet is published, you can obtain a link to the published data. Copy and paste the link below so you can add it to your map.

Get a link to the published data

CSV (comma-separated values)

All sheets

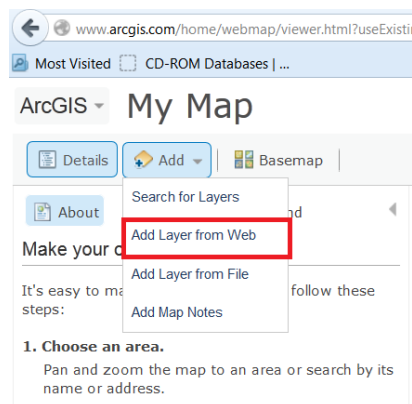
All cells

<https://docs.google.com/spreadsheets/pub?key=0Aha6csT5clcddFM1d2JSemJVdWU2M1dpVWZvSi1FU1E6&output=csv>

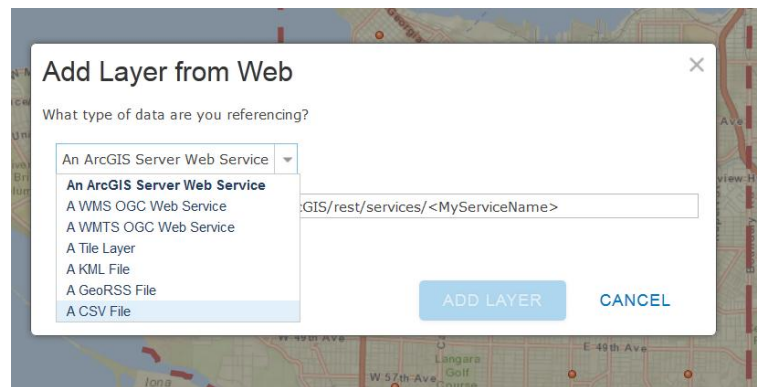
Copy and paste the link above

Adding the Interactive CSV file to your Map

Now that you have the link to your published spreadsheet, you can add it to your map by clicking the *Add* tab and selecting 'Add Layer from Web'.



Specify the type of data you are referencing as 'CSV' and paste the Google Drive URL link as shown below, then click 'Add Layer'.

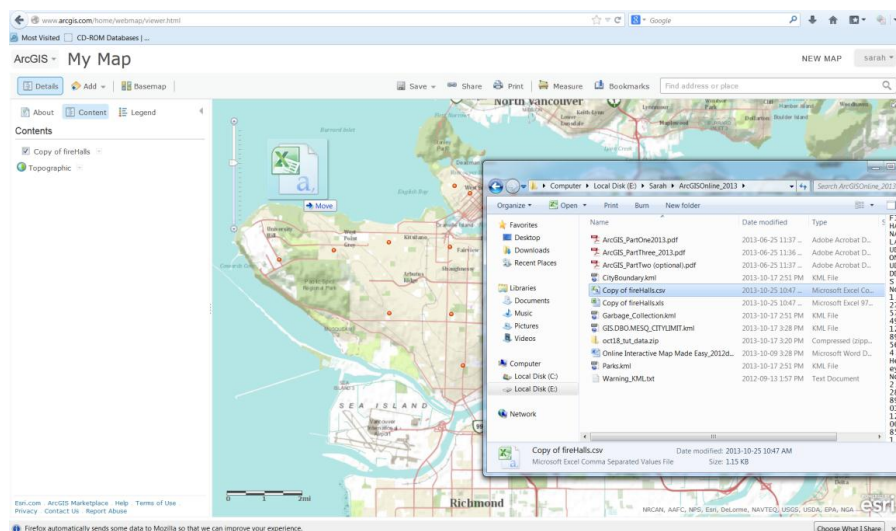


Having a CSV file that is linked with your google drive allows you to create an interactive map. This means that any changes made on the spreadsheet will then appear on your map. Try out deleting or adding a new value to your spreadsheet in your google drive and update your map to see the changes that are made.

Adding a CSV file through a 'Drag and Drop' method

As well as adding the CSV file through the 'Add Layer from Web' interactive option, you can also drag and drop the FireHalls spreadsheet onto your map.

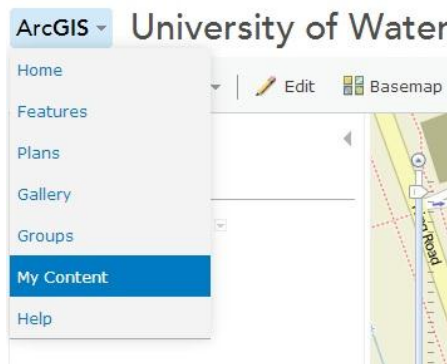
Open your Window's browser and navigate to the folder where the file is located. Click to select the 'fireHalls.csv' file and then drag and drop it onto the map. Once it is dropped into your map, you can then close the Windows' explorer.



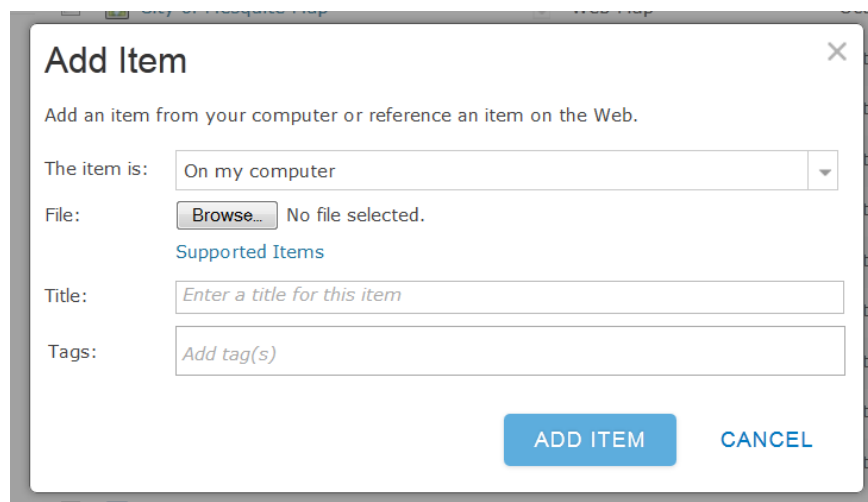
Note: This feature does not work in Internet Explorer. Instead, simply just add the file by clicking 'add layer from file' and select the 'fireHalls.csv' table.

How to add a KML file to your Map

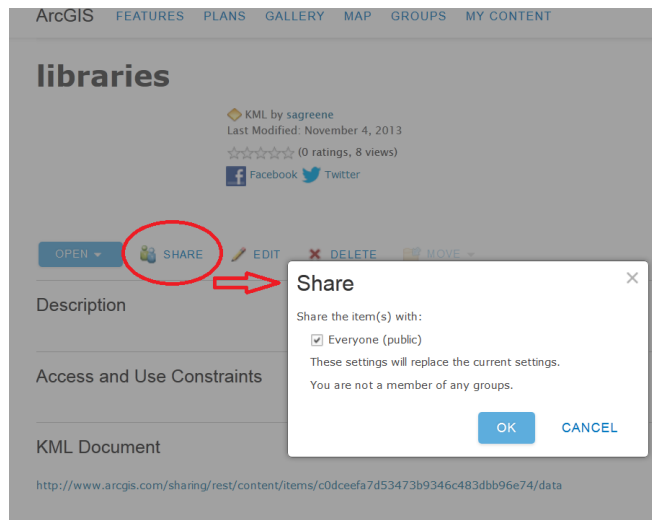
To add a KML file to your map, begin by clicking on *My Contents*. This can either be found on the top tool bar or under the ArcGIS tab at the left side of the screen.



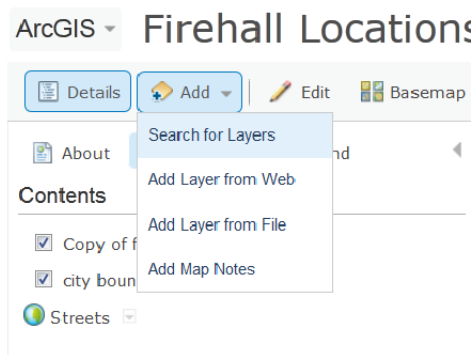
To add a KML file into ArcGIS online, click 'Add Item' under the 'My Contents' tab. Select 'The item is:' as 'On my Computer'. Browse to the folder where the libraries file is located and then click open. Enter an appropriate title and tags for the layer. When you are finished, click 'Add Item'.



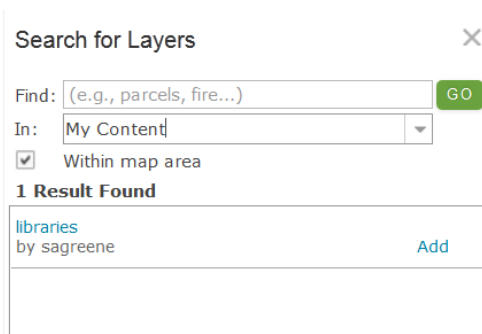
Once you have uploaded the KML file, you will see a page similar to the one shown below. To be able to add the file to your map you must share it. To do this click 'Share' and indicate 'Share the item with:' 'Everyone (public)'. Click 'OK' when finished.



Now that your file is shared to the public, you can add it to your already created map. Go back to your map titled 'Library and Firehall Locations in the City of Vancouver' and click the *Add* tab. Click on the option 'Search for Layers'.

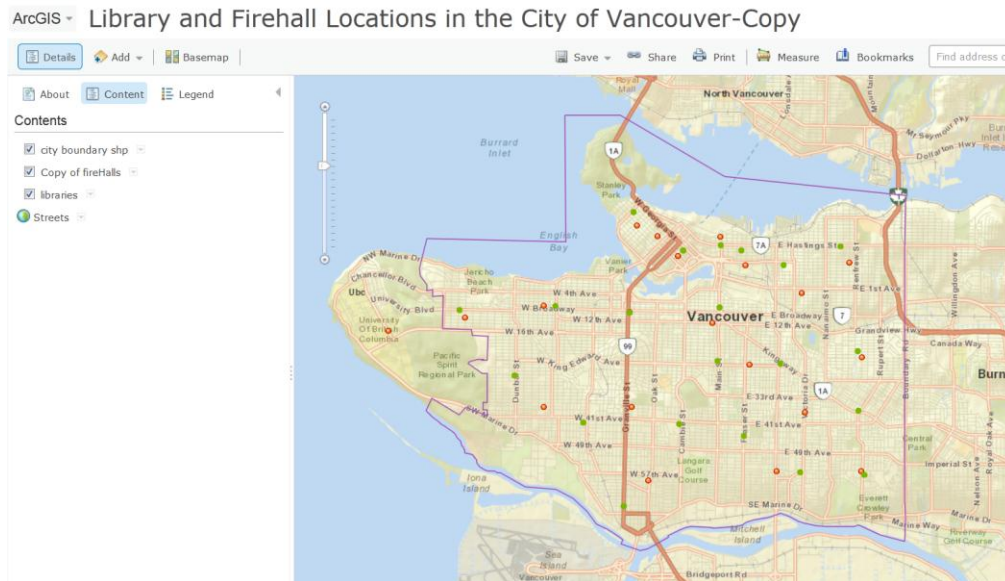


A new panel will appear on the left side of your screen. Under the 'Find:' tab you can search tags to find the KML layers. Under the 'In:' tab, you can select where you would like to locate your data. For example you can search 'ArcGIS online' to view Esri's online data catalogue or 'My Contents' to view files you have uploaded. To find the uploaded KML file, search in My Contents. You should see results such as below.



Select 'Add' to add the KML files to your map. Click 'Done Adding Layers' when you are finished.

Your map may look something like below. It now has three different layers, but it may not be clear to your audience what these layers are. By symbolizing the layers, we can create an easy to read map that our viewers can understand.



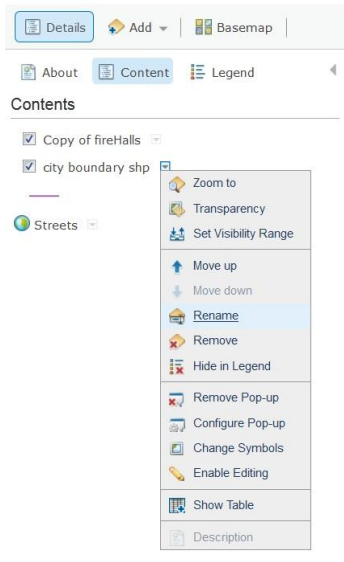
Symbolizing your Layers

The next part of this tutorial will focus on briefly going over how to symbolize different layer types in ArcGIS online.

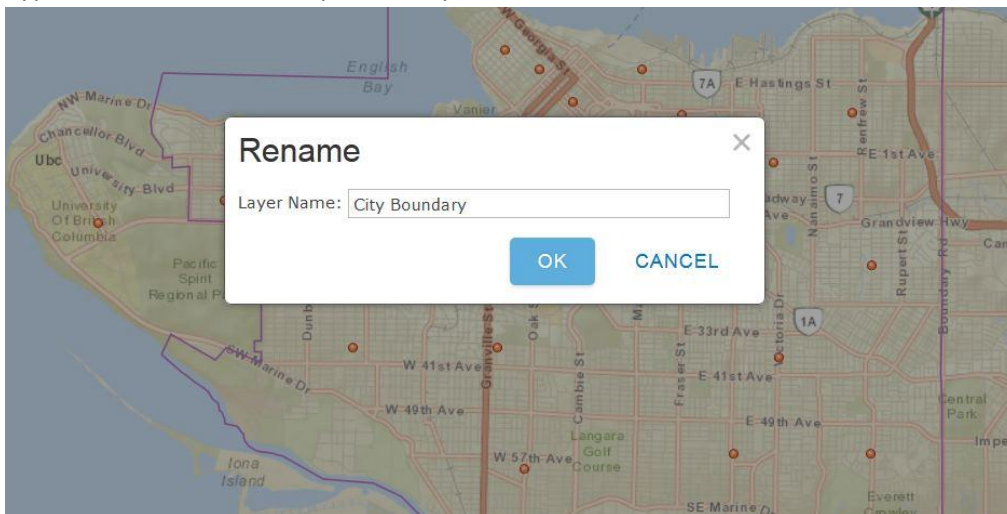
Before we begin, just a reminder to periodically save your map throughout the tutorial to make sure no data or hard work is lost in the process.

Symbolizing a shapefile in ArcGIS online

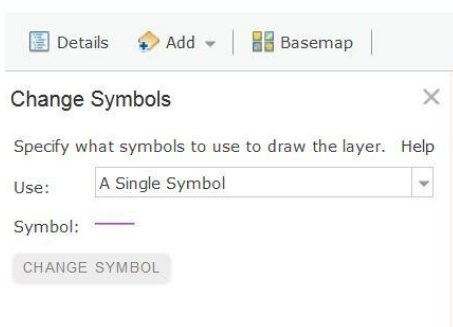
For this part of the tutorial, you are going to symbolize the 'city-boundary_shp' layer. To begin, Move the cursor over 'city-boundary_shp' layer then click on the down arrow to show the message box. Click 'rename' and this will bring out a rename message box.



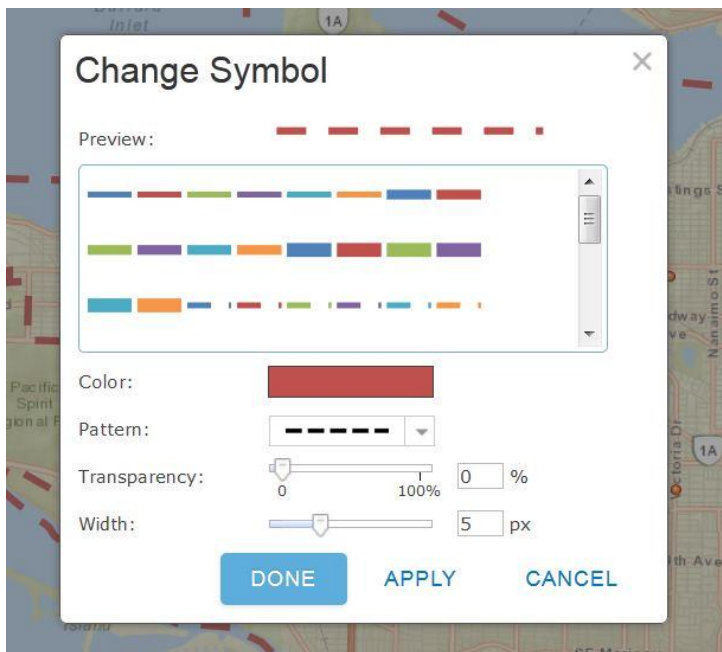
Type the new name as 'City Boundary' and click 'OK' when finished.



To change the symbology of a layer, select 'Change Symbol' in the pull down options. For the purpose of this tutorial, let's change the symbology of the city boundary by selecting 'A Single Symbol' and click 'Change Symbol' to change its color, width, transparency and pattern.

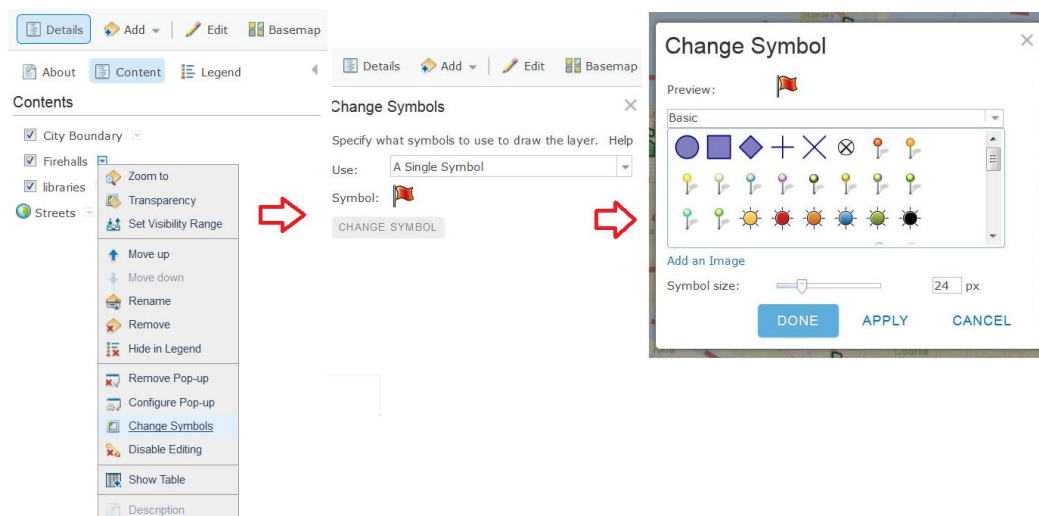


Change the city boundary symbol to: Red color, Pattern as dash line, Transparency as 0%, Width as 5 px and click 'Apply' to see the changes you have made, and then click 'Done' when finished.

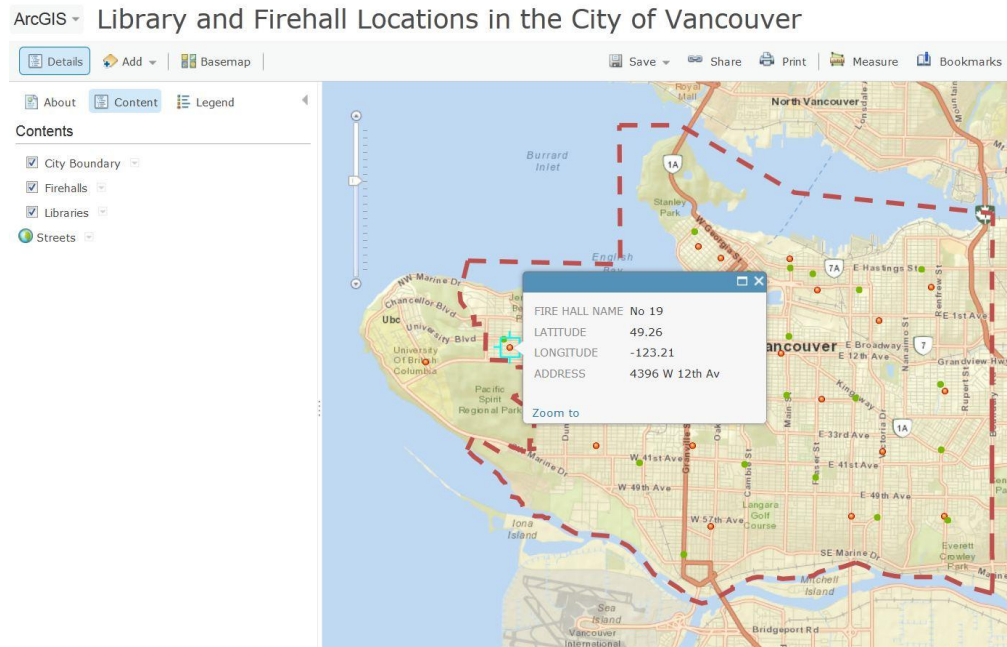


Symbolizing a CSV File in ArcGIS online

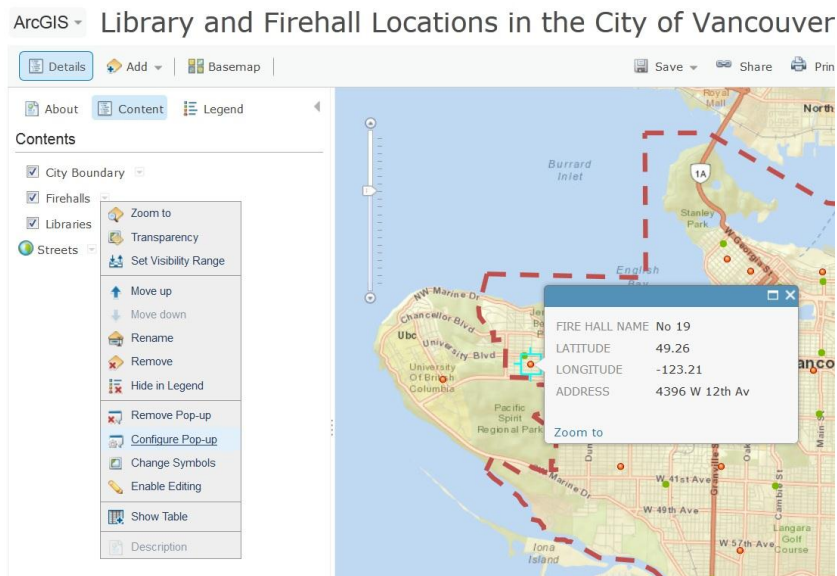
Next we are going to change the symbology of the firehalls CSV file. To begin, click on the down arrow and select 'Change Symbols'. Click Change Symbol again and it will open a new window containing different types of symbols you can use. It also includes the option to change the symbol size. Change the symbol of the firehalls to a red flag. Click 'Done' to close the 'Change Symbol' window and then 'Done Changing Symbols' to go back to your 'contents' tab.



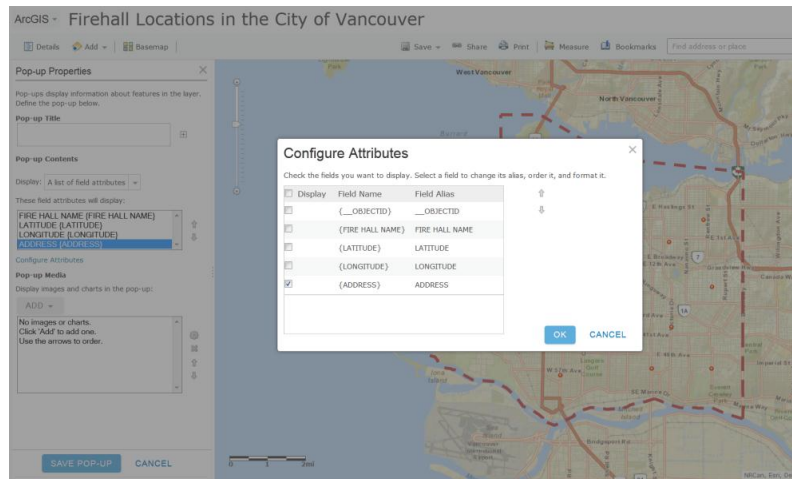
Next, click on any firehall location on the map. This will bring out a pop up message showing its attributes including name, latitude, longitude and address.



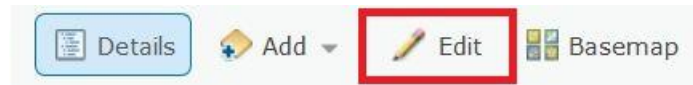
Move the cursor over the 'fireHalls' layer and then click the down arrow to show the message box. Click 'Configure Pop-up'. Next you can configure the pop-up message, title and its contents. This is viewed when you click on a point file in your layer.



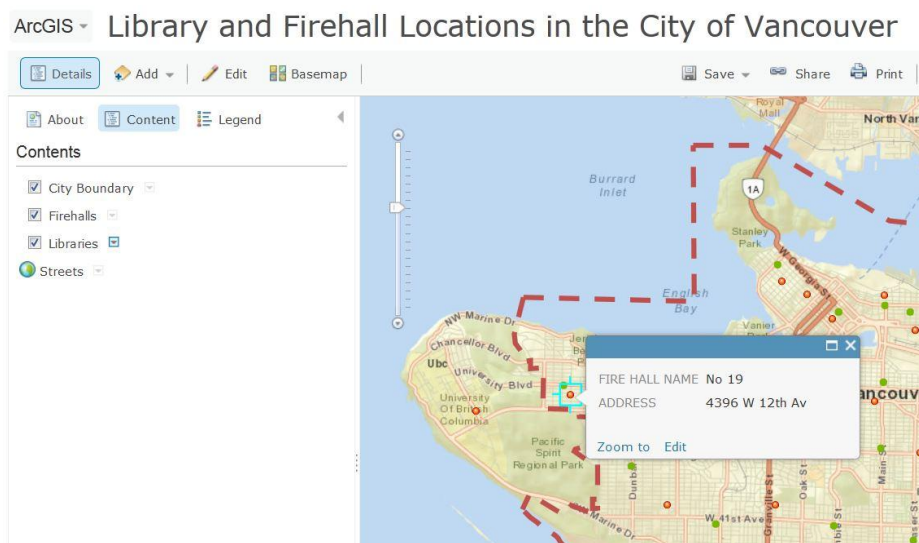
By default, all field attributes will be displayed in the pop-up message. To remove unwanted attribute messages, click 'Configure Attributes'. This will bring up a pop-up containing all fields that can be viewed when clicking on a point file in your map. Click on the 'ADDRESS {ADDRESS}' and 'FIRE HALL NAME {FIRE HALL NAME}' fields and click OK to confirm the change, and then 'Save Pop-up' to save all changes you have made.



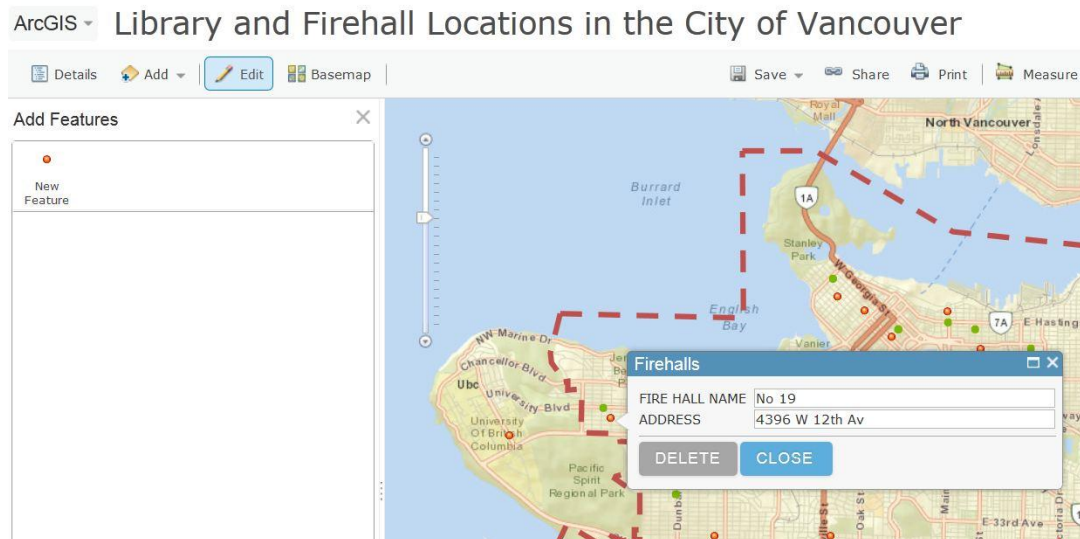
Next we are going to enable the editing feature. This can be done by moving the cursor over the 'fireHalls' layer and then clicking to show the message box. Click 'Enable Editing'. A new tool will appear beside the 'Add' tab as shown below.



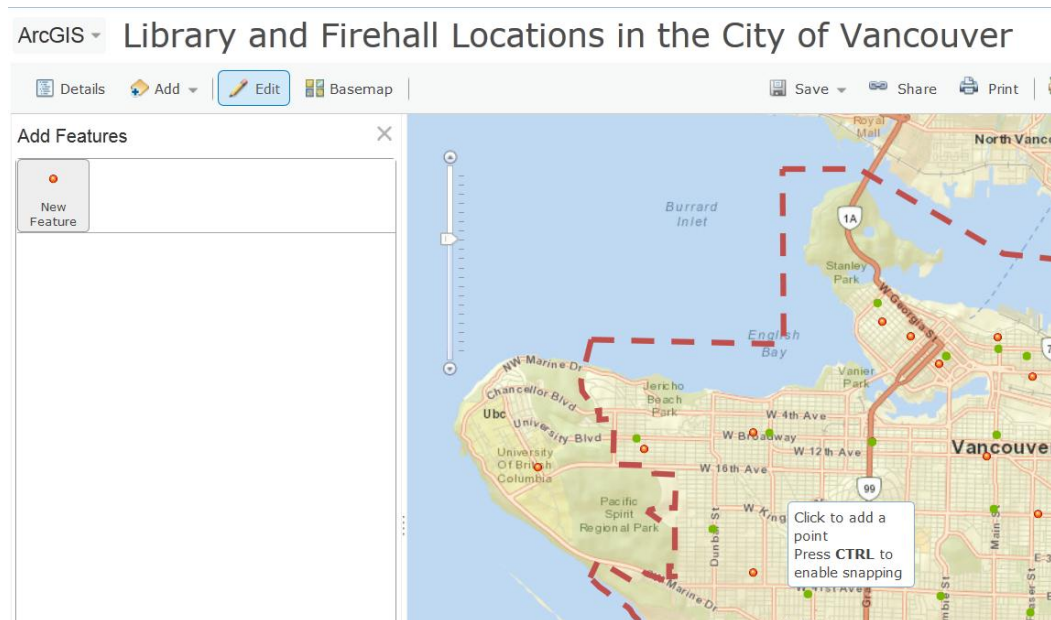
Now that the editing tool has been enabled, zoom in to the map and click on a fire hall location, this will bring out a pop-up message. Click 'Edit'.



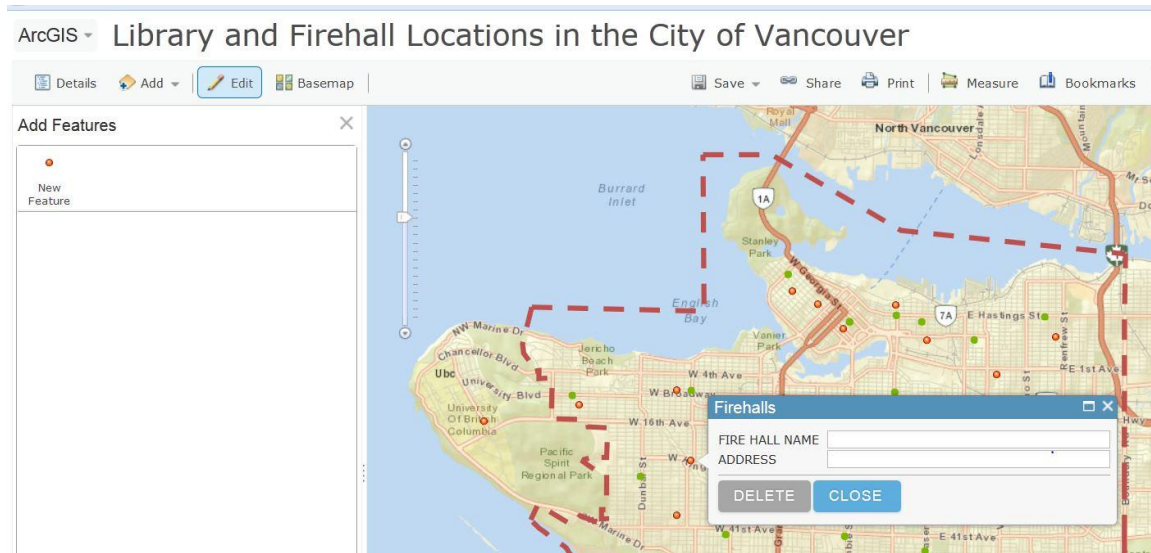
Next you have the choice of deleting the point by clicking 'Delete', moving the point, or modifying its attribute (address) in the address box.



Under the edit tool, you can also add a new feature. This can be done by clicking the 'New Feature' symbol under the 'Add Features' table of contents. Next, click a point somewhere on the map where you want to add a point.

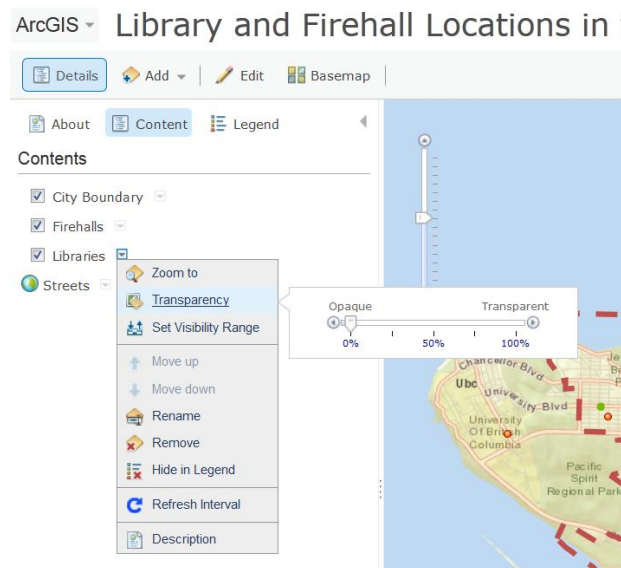


Once you have chosen a location, a message box will appear as seen below. This is where you can enter an address and name to a new point location on your map. Add an address and click close.



How to Symbolize KML files in ArcGIS online

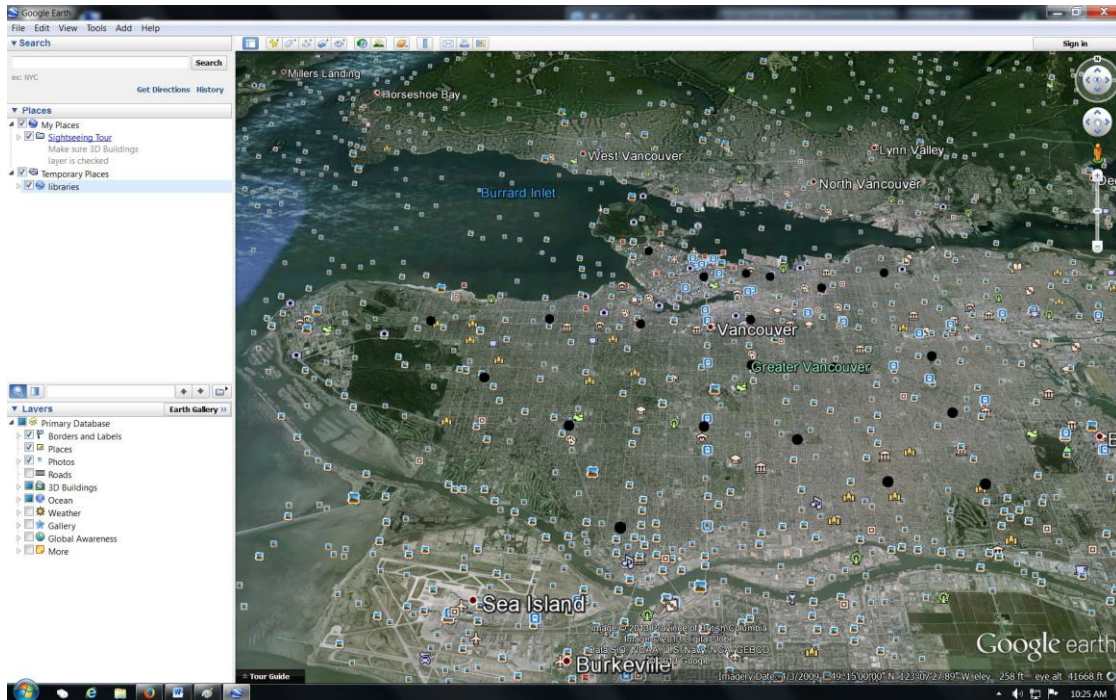
ArcGIS online offers minimal settings to change the symbology of a KML file. The main function it allows for symbolizing is the transparency. This can be changed by clicking the down arrow to the right of the KML layer and changing the percentage as shown below.



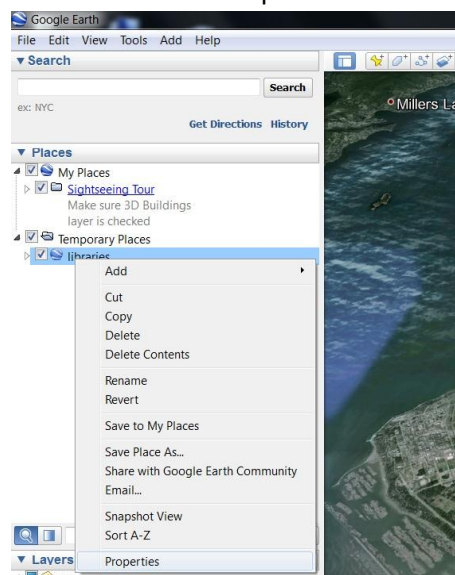
How to Symbolize and Style KML files in Google Earth

If you would like to symbolize more than just the transparency of your KML file in ArcGIS online, you will have to use an outside source; Google Earth. If your computer does not have Google Earth, it can be downloaded for free at <http://www.google.com/earth/index.html>

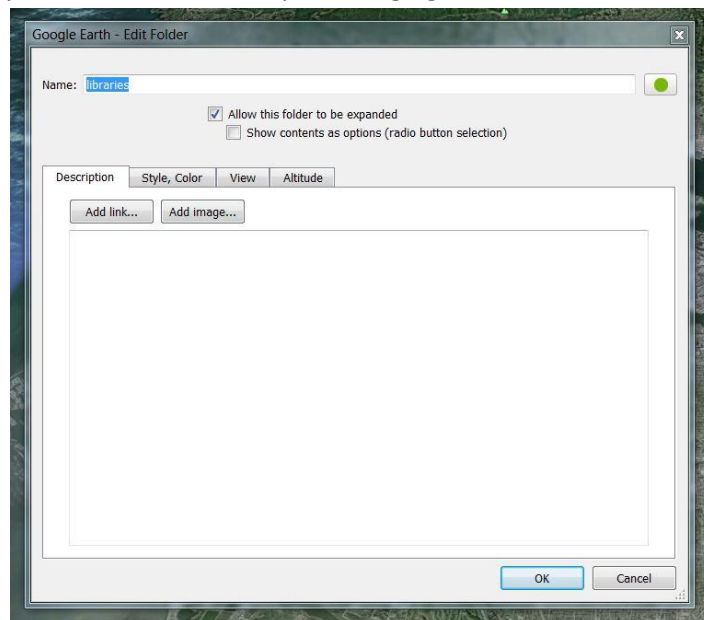
After you have either downloaded or opened Google Earth, begin by adding in the libraries KML file. This can be done by going to the File menu and selecting 'open'. Navigate to the folder where the KML file is located. Select the file you would like to upload to Google Earth and then click 'open'. You will find it under 'Temporary Places' on the left side of the screen.



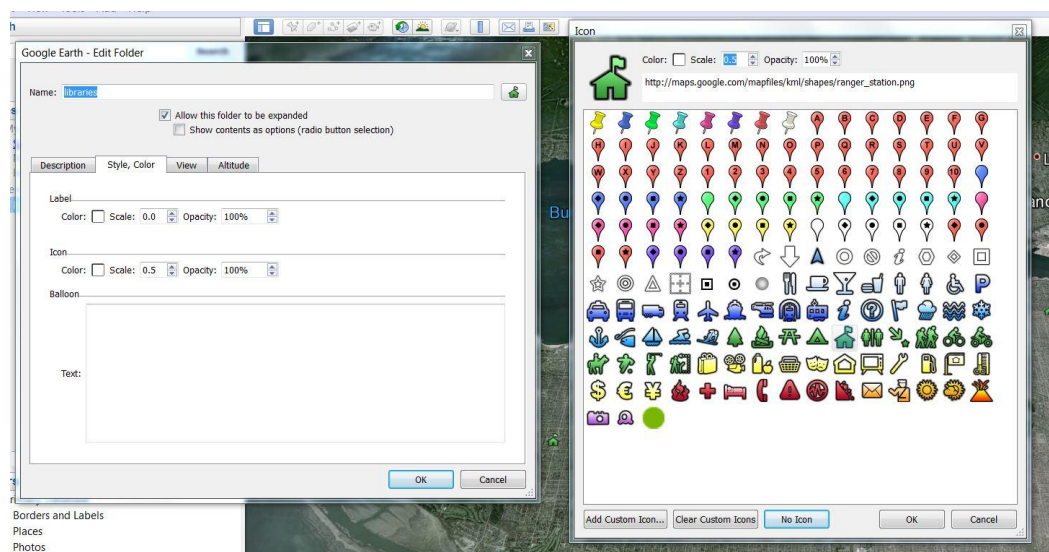
The above map is very crowded and it may be difficult to see the features you are looking for, so it is best to turn off some of the options under 'Layers' > 'Primary Database'. Now that we can visibly see the library locations, let's begin symbolizing. To start we are going to change the KML layer style. Right click the 'libraries' file under 'Temporary Places' and select 'Properties'



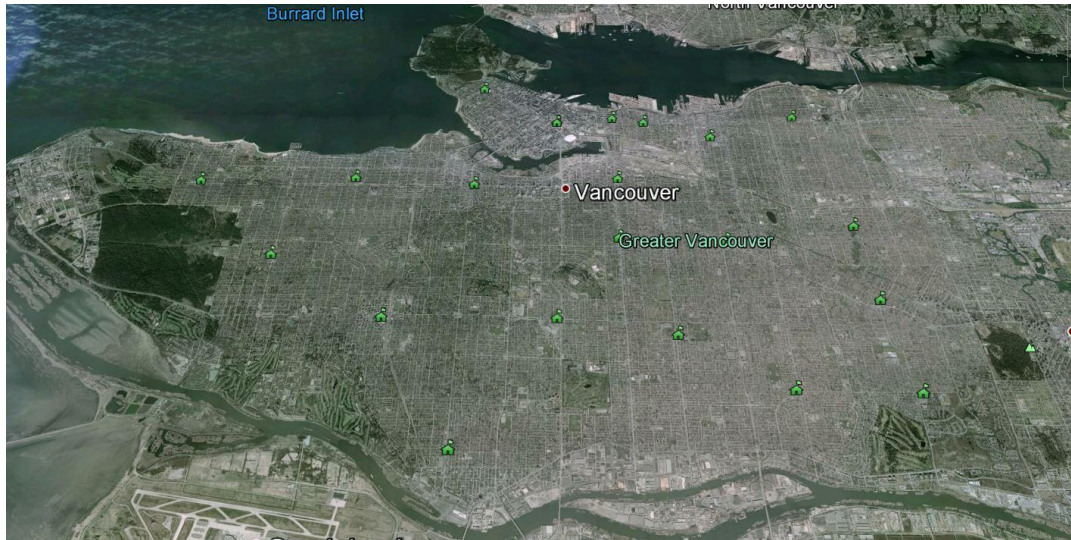
In 'Google Earth – Edit Folder' pop up window, you can click on the 'Style, Colour' tab. This tab allows you to edit your KML file, for example, changing the colour, and scale.



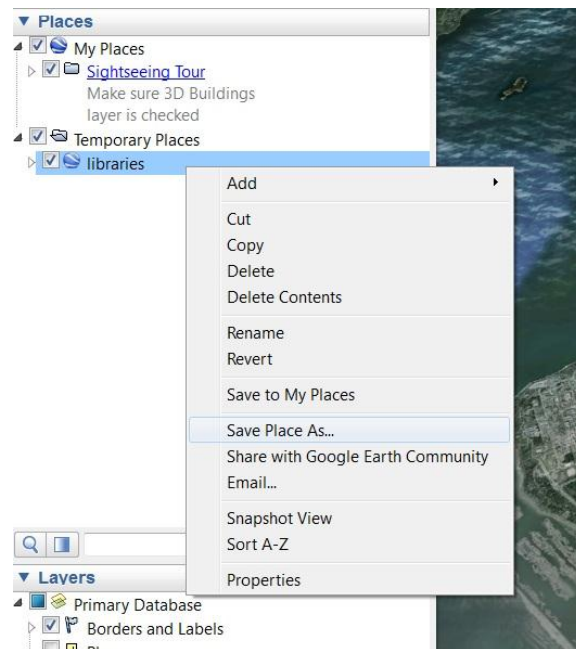
Along with the style and colour, you can also change the symbol that your layer uses. For example, to the right of the 'Name:' section you can see the symbol that is currently being used (in this case it's a green circle). By clicking the icon, it will open a new window that allows you to change the symbol used on the map. There are many different options that can be used, including well known symbols for things such as schools and airports, as well as plain icons that come in different colours and shapes. You can also create your own custom icon by adding in an image from a file on your computer.



Choose a different icon for the library file. For example you could use the green house with a flag on it and change the scale to 0.5. Click 'OK' on both tabs to see your new icon on the map.



Once you are satisfied with your new symbolized layer, you will need to save it to be able to add it back to your ArcGIS online map. Right click the layer you wish to save (under the Temporary Places tab) and select 'Save Place As'.

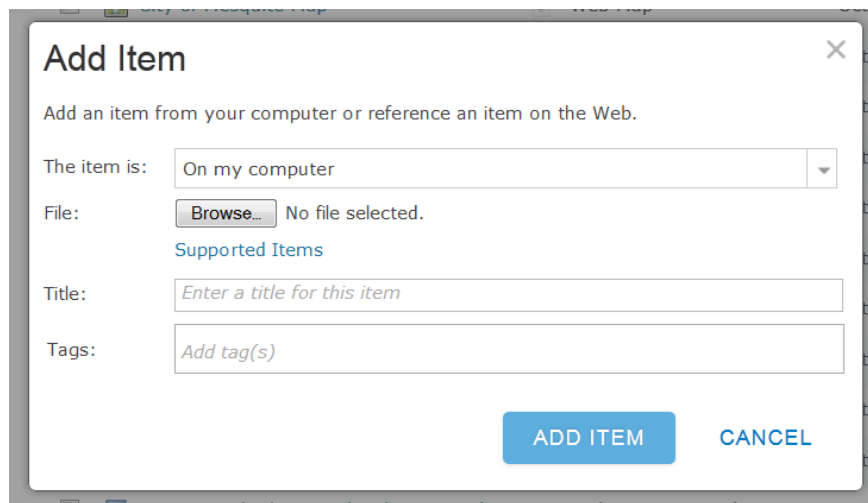


In the 'Save file...' pop up window, navigate to the folder you wish to save the file and save it under the exact same name as the original. Make sure that under 'Save as type:' it says KML. Click 'Save'.

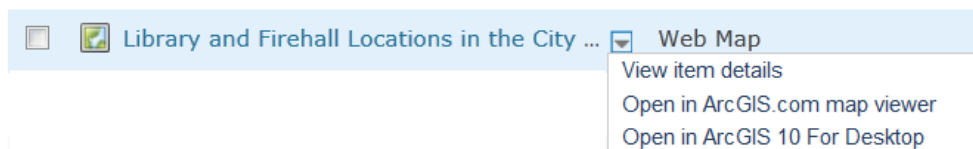
Updating KML files in ArcGIS online

Now that the KML file has been symbolized and saved on to your computer, you will need to update the file that is currently on ArcGIS online. To begin, go to 'My Contents' and delete the old libraries file.

Once the old file has been deleted, add the updated KML file into your contents, as explained earlier in this tutorial. Make sure it is shared to the public.



Once your file is added to 'My Content', open up the map you were previously working on in 'My Contents'. This can be done by clicking the down arrow next to the layer name and selecting 'Open in ArcGIS online map viewer'.



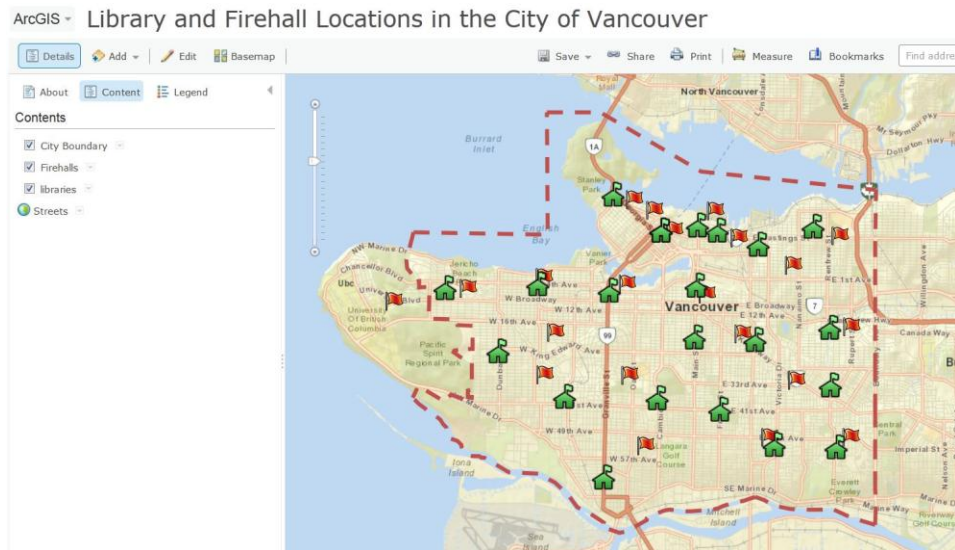
Add the layer how you did previously by selecting 'Search for Layers' in 'My Contents' and add the updated layer to your map

Module 3: Saving your Map and Producing a Web Application

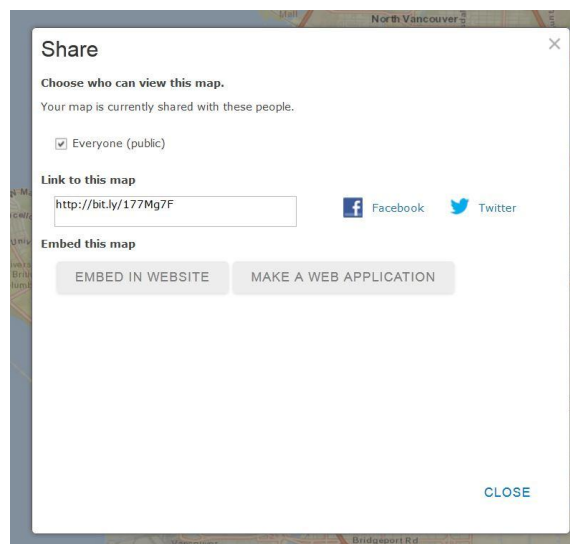
In the third and final module you will learn how to save your finished map and produce a web application. By the end of this tutorial you will be familiar with all the tools used to save your map, how to share it to the public, and how to produce a web application.

Saving your Final Map

Now that you have finished adding and symbolizing all the layers, the map is now complete. Look over all your layers to make sure their names are written correctly and that the layers are symbolized to your liking. Now click Save > Save as.



Check to make sure the title and tags are written correctly and click Save. Once completed, click the 'Share' tab next to 'Save'. This will open up a pop-up 'Share' window as shown below.



How to Share your Map

Now that we have the share pop-up open, we can explore the different types of methods that can be used to share the maps we make in ArcGIS online.

Sharing to the Public

As shown in Module 1, you can share your map to the public by clicking 'Everyone (public)' and copying the link provided. You can also share it on social media such as Facebook and twitter.

Embedding your Map into a Website

As well as sharing the map link, you can also embed the map in a website. To do so, click 'Embed in Website'. This will lead to a new message box. In this message box you can choose a map size (Small, Medium, Large or Custom) and also add different options such as 'Show zoom control' and/or 'Show scale bar'. Then copy and paste the HTML code to embed it in a website. Click 'Close' when finished.

Share

Embed in Website

Copy and paste HTML to embed in website

```
<iframe width="500" height="400" frameborder="0" scrolling="no" marginheight="0"
marginwidth="0" src="http://www.arcgis.com/home/webmap
/embedViewer.html?webmap=d2885c355075425883fa46d0b9dc17a6&
amp;extent=-123.2771,49.1665,-122.8724,49.327"></iframe><br /><small><a
href="http://www.arcgis.com/home/webmap
/viewer.html?webmap=d2885c355075425883fa46d0b9dc17a6&
amp;extent=-123.2771,49.1665,-122.8724,49.327" style="color:#0000FF;
text-align:left" target="_blank">View Larger Map</a></small>
```

☐ Small 300x260 ☒ Medium 500x400 ☐ Large 940x600 ☐ Custom Width 500 Height 400

☐ Show zoom control. ☐ Show location search.
☐ Show scale bar. ☐ Show basemap selector.
☐ Show legend. ☒ View Larger Map
☐ Show description.

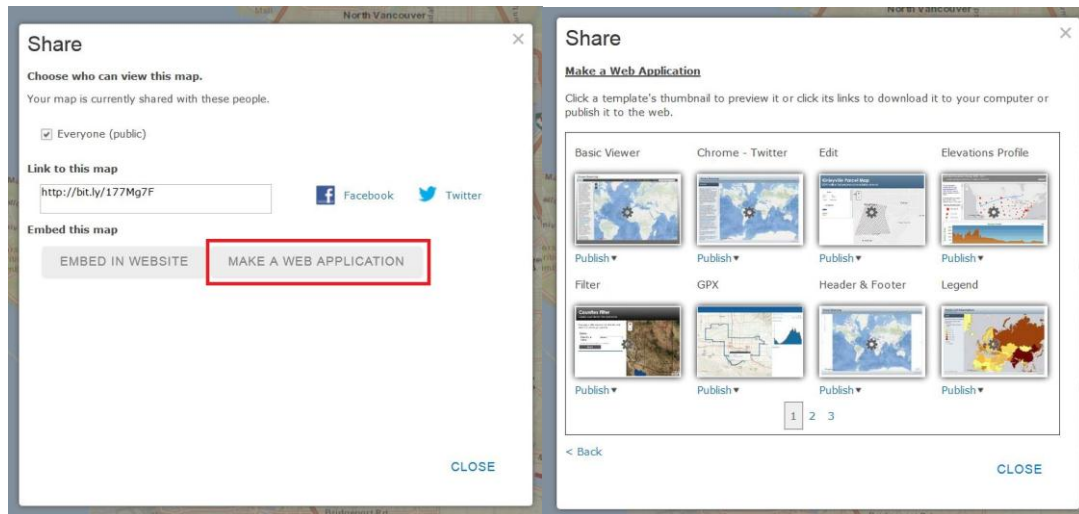
[< Back](#)

CLOSE

How to Make a Web Application

Sharing your map through the link in the pop-up and creating an embedded map in a website are both simplistic ways that you can share your map with others. Along with both of these, you can also create web applications.

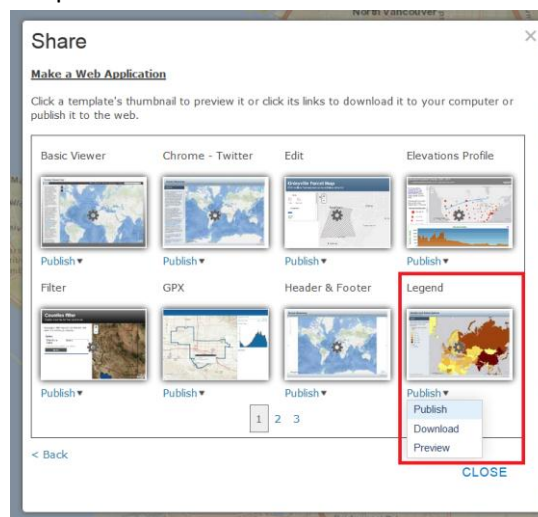
To begin, let's create a basic web application. To do so, in the same 'Share' pop-up, click 'Make a Web Application'.



This will open up a new window that shows you the many options of templates that are available for making a web application. We will begin by creating a basic 'Legend' application.

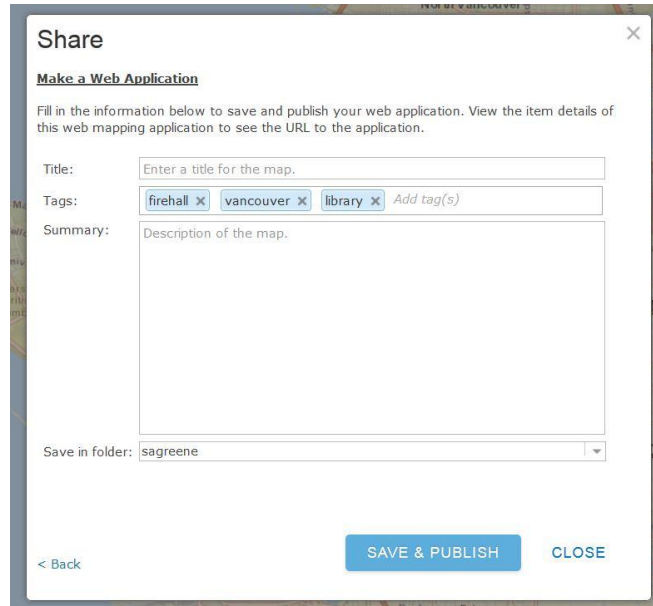
Creating a Basic Web Application

Similar to using any of the other basic applications, to select a specific one (in this case Legend) click the down arrow next to publish.



This pull down has three options, including publishing the application, downloading it, and previewing what it looks like.

It is always a good idea to preview an application to see if it is visually what you are looking for. Once you have decided that it is fit for your map, click 'Publish'.

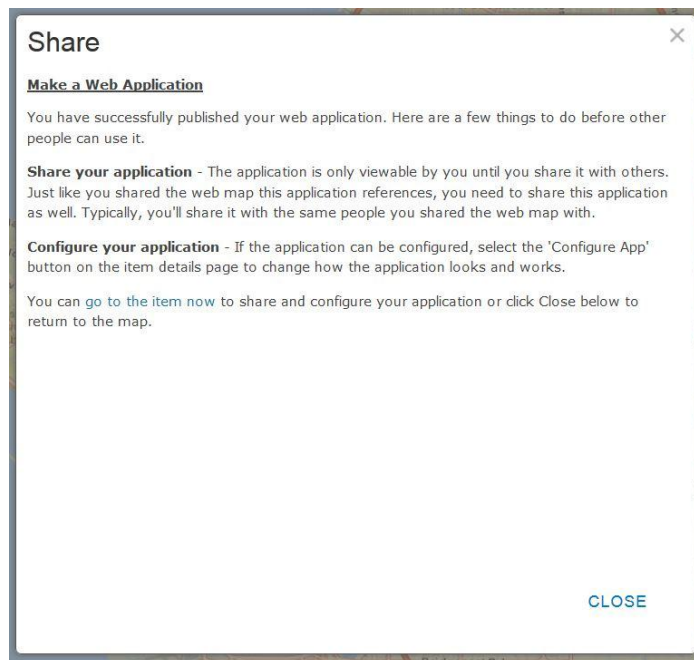


The 'Share' dialog box is titled 'Share' and has a close button (X) in the top right corner. Below the title is a section titled 'Make a Web Application'. A paragraph of text reads: 'Fill in the information below to save and publish your web application. View the item details of this web mapping application to see the URL to the application.' The form contains the following fields:

- Title:** A text input field with the placeholder text 'Enter a title for the map.'
- Tags:** A row of three tag buttons labeled 'firehall', 'vancouver', and 'library', each with a close (X) icon. To the right of these tags is a text input field with the placeholder text 'Add tag(s)'.
- Summary:** A large text area with the placeholder text 'Description of the map.'
- Save in folder:** A dropdown menu currently showing 'sagreene'.

At the bottom of the dialog, there are three buttons: '< Back' on the left, 'SAVE & PUBLISH' in the center, and 'CLOSE' on the right.

This will bring up a new window that will contain the title, tags and summary of your application. Fill in the appropriate information and click 'Save & Publish'. A new window will appear as shown below. Click 'go to this item now' to share and configure your application.



The 'Share' dialog box is titled 'Share' and has a close button (X) in the top right corner. Below the title is a section titled 'Make a Web Application'. A paragraph of text reads: 'You have successfully published your web application. Here are a few things to do before other people can use it.'

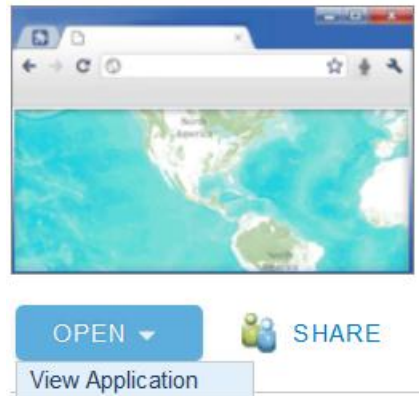
Share your application - The application is only viewable by you until you share it with others. Just like you shared the web map this application references, you need to share this application as well. Typically, you'll share it with the same people you shared the web map with.

Configure your application - If the application can be configured, select the 'Configure App' button on the item details page to change how the application looks and works.

You can [go to the item now](#) to share and configure your application or click Close below to return to the map.

At the bottom right of the dialog, there is a 'CLOSE' button.

This will open a new details page about your web application. Click 'Share' to share it with the public. Next, click 'Open' > 'View Application' to see the application you just created.



You can now view your final web application.



How to create a Storytelling Map in ArcGIS Online

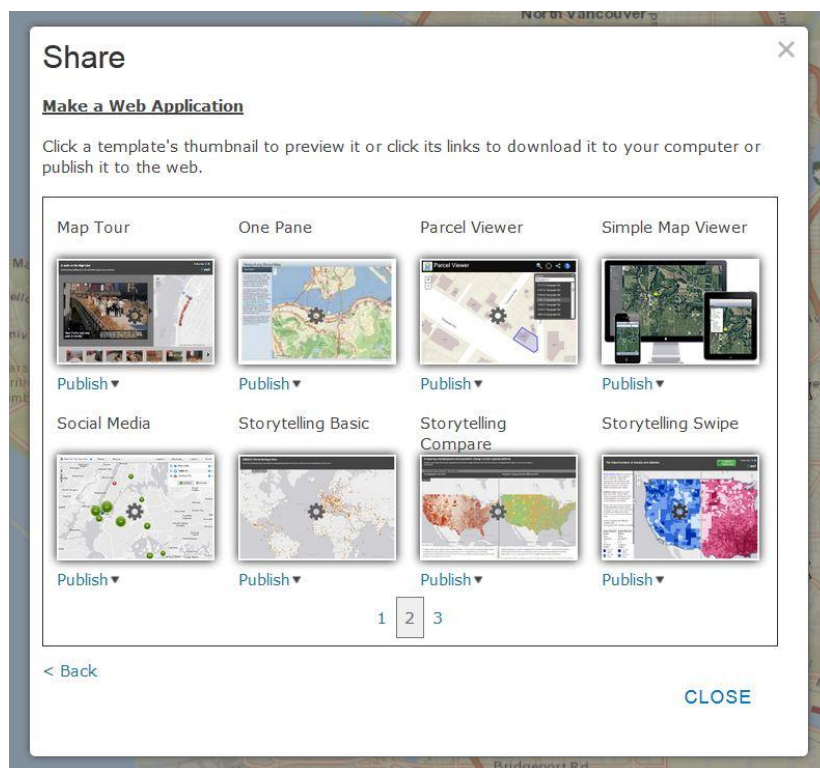
Within the feature of 'Web Applications' you can create basic maps that allow your audience to see organized information that is visually appealing. There is also other options within the web applications that allow you to make more complex maps as well.

One example of a more complex map is a Storytelling Map. These maps provide an easy way to publish your own story map using different story-telling techniques. To see examples of the many templates available follow the link <http://storymaps.esri.com/templategallery/>

Similar to the web application, you can create a Storytelling Map through the 'make a web application' option in the share window.

Go back to your original map. Go through the share options again and click on 'make a web application'. When you browse through the options, you will see that some of them say 'storytelling' in the title, for example 'Storytelling Swipe'. For the purposes of this tutorial, let's create a Storytelling Map using this option.

To begin, click the 'Publish' button in the drop down arrow of the application you wish to create.

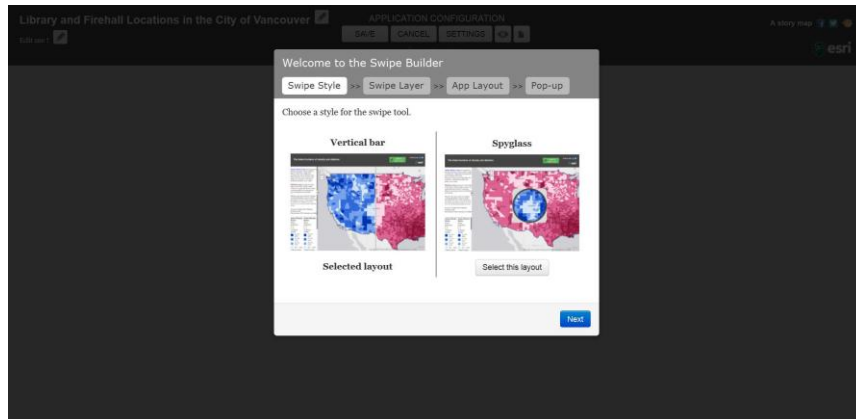


Do the same as you did for the regular application and fill in an appropriate title, tags and if applicable, a summary. Click 'Save & Publish' when finished.

Customizing your Storytelling Map

Now that you have created a storytelling map, the next step is to customize it through a step-by-step process beginning after you select 'go to the item now'.

Click 'Open' > 'View Application' and you should see a new page like the one below.

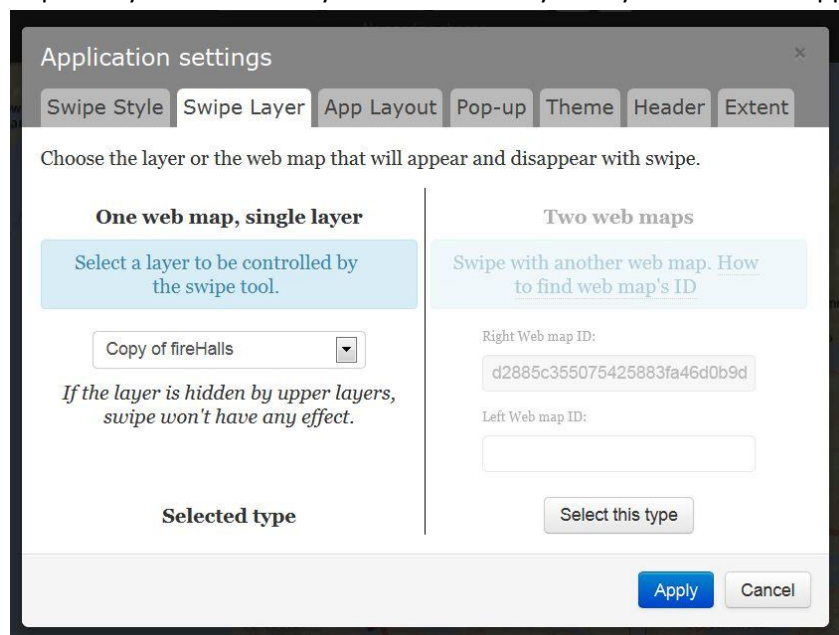


You have now begun the process of creating your Storytelling Map.

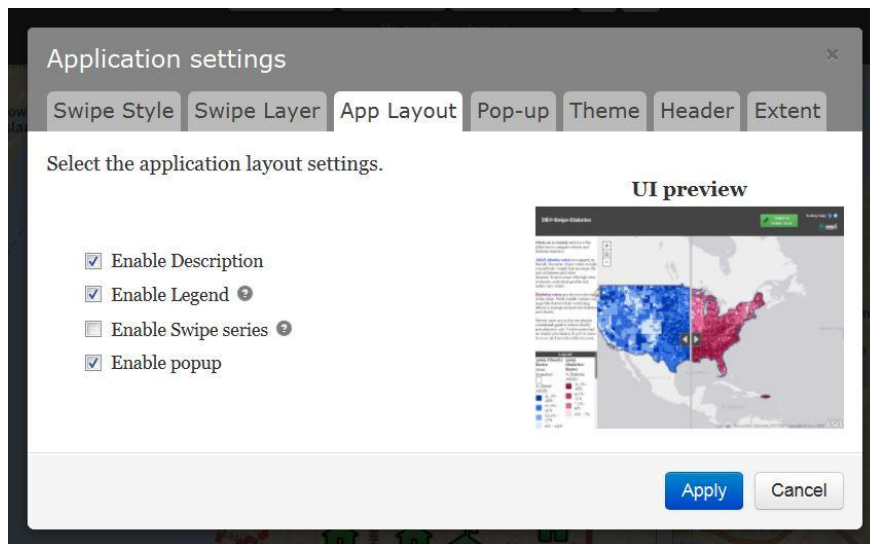
This great feature comes equipped with a ‘wizard’ tool that takes you through each step to successfully create your map.

The first step is choosing what type of swipe tool you would like to use. This tool will ‘swipe’ away some data either through a vertical bar, or a spyglass. For this tutorial, let’s choose the ‘Vertical Bar’ option. Then click ‘Apply’.

The next step will ask you to choose which layer you are going to swipe away. In this case, you will want to swipe away to ‘Firehalls’ layer. Select that as your layer and select ‘Apply’.

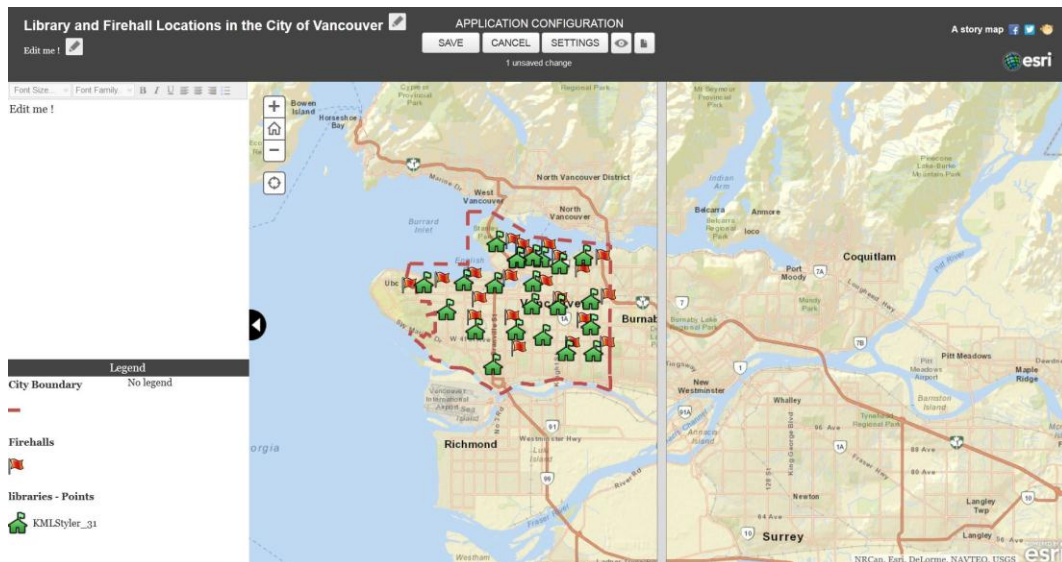



The next step is selecting the application layout settings. This includes enabling and disabling what your audience will see on your map. You can try out different settings or leave them as default.



Click 'Apply'. This will bring you to your next step, which is customizing pop-ups. This is where you can name the headings for each side of the pop-up windows. Select heading names and then click Apply. The next three steps are more customization tools that will allow you to change the theme, header and extent. Look through these settings and change any that you see fit.

When finished, click 'Apply' and you will see your Storytelling Map application.




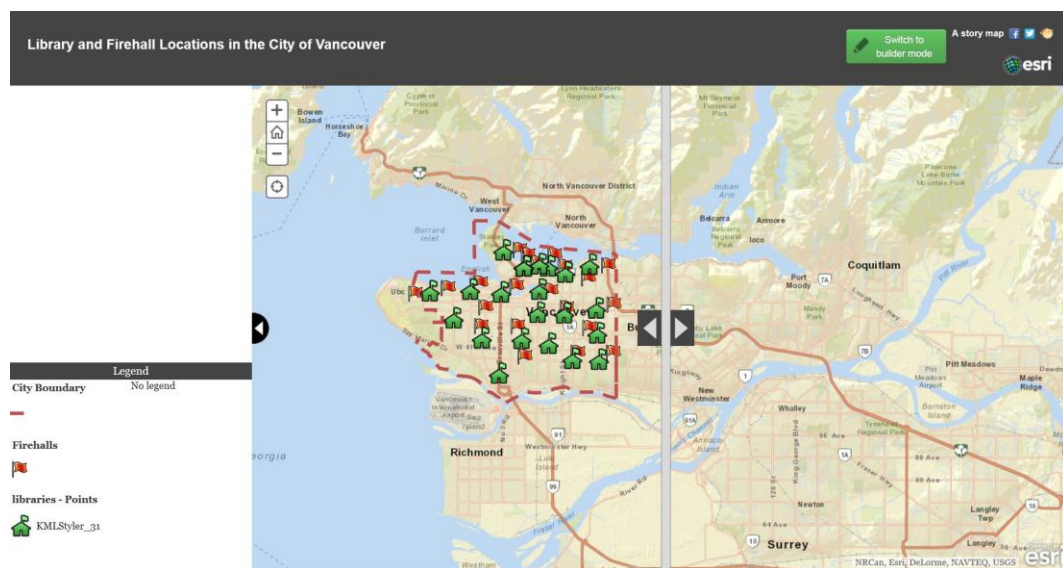
You can click the  tool to change your title and subtitle.

Do not forget to click the save option after every change you make. By clicking the ‘Settings’ option, it will take you back into the wizard where you can re-change or fix anything in your map.

You can also write in a description on the left side where it currently says ‘Edit me!’.



To see what your map will look like when the public view it, click the  icon. This will change your view to one where you cannot edit the map. This is where you can see how your audience will view it, and see if any more changes need to be made. You can also copy the link in the browser to share this map with others.



Select the ‘Switch to builder mode’ to go back to editable map. Map any more necessary changes and save your final Storytelling application.

You have now created a Storytelling Map in ArcGIS online. This is just one of many storytelling web applications that you can create. Take the time to go through the link given above and explore the other storytelling templates available. There are many different types that may suite your specific needs.

Module 4: Creating a Storytelling Map with ArcGIS online data

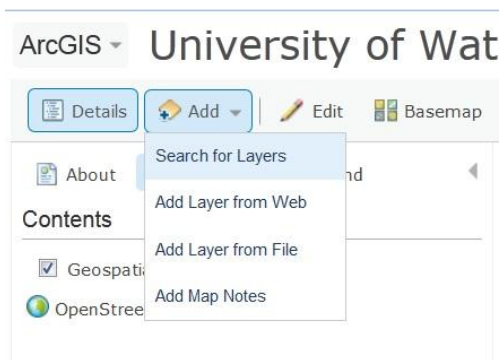
Throughout this tutorial you have learned how to bring in and use outside sources of data in ArcGIS online to create maps. In this last module, you will learn about the features available to use data available on ArcGIS online’s website.

Adding Data from ESRI's Online Catalogue

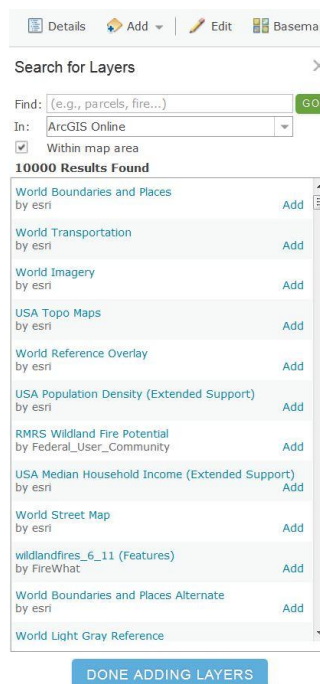
As explained in Module 2, there are many different ways that data can be added to your map on ArcGIS.com. Instead of adding data from an outside source such as a city's open data catalogue, you can also add in data that is available online in ESRI's catalogue on ArcGIS.com. The catalogue includes over 10,000 shapefiles that can be added to your map including simple files such as boundaries and more complex files such as income and education levels.

How to Add Data from ESRI's Online Catalogue

To view the layers available let's begin by creating a new map. Once this map is created click the *Add* tab and select 'Search for Layers'.



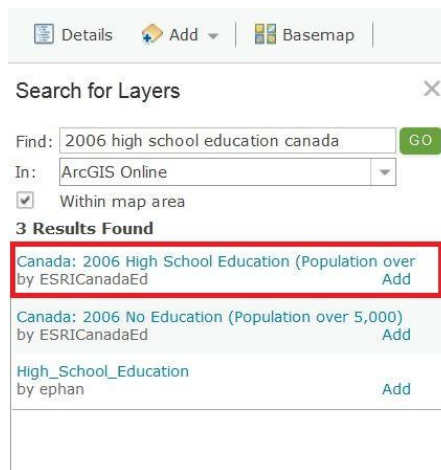
This will open a new side panel as shown in Module 2. This time, instead of selecting 'In: My Content', select 'In: ArcGIS Online'. You can search for a specific layer in the find search bar or browse the available options.



For this module, we are going to make a map that will compare income and education. The two shapefiles we will be searching for are 'Canada: 2006 High School Education (Population over 5,000)' and 'Canada: 2006 Median Household Income'.

In the 'Find:' search bar type in key words to find each layer individually, such as '2006 high school education Canada' then click 'GO'. Once you have found the layer click 'Add' to add it to your current map.

If you are having trouble finding the layers, make sure to click off 'Within map area' or zoom out so that all of Canada is visible.

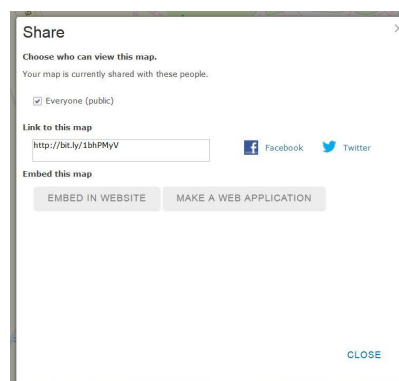


Visually on your ArcGIS online map, you will only see one layer at a time, since they have the same coverage area. This may not result in the best map, but it does however allow you to create an interesting Storytelling Map.

Creating a Storytelling Map with ArcGIS Online Data

Before we can begin creating a Storytelling Map with ArcGIS's online data, you must save your map. Save it using a relevant name such as 'Income and Education Level Comparison Map'.

Once you have saved your map, click the *Share* tab and select 'Make a Web Application'.



Similar to Module 4, you will be creating a 'Storytelling Swipe Application'. Compared to the previous Storytelling Map, this one will provide more information and allow you to see how data on maps can be used to make comparisons, correlations and inferences.

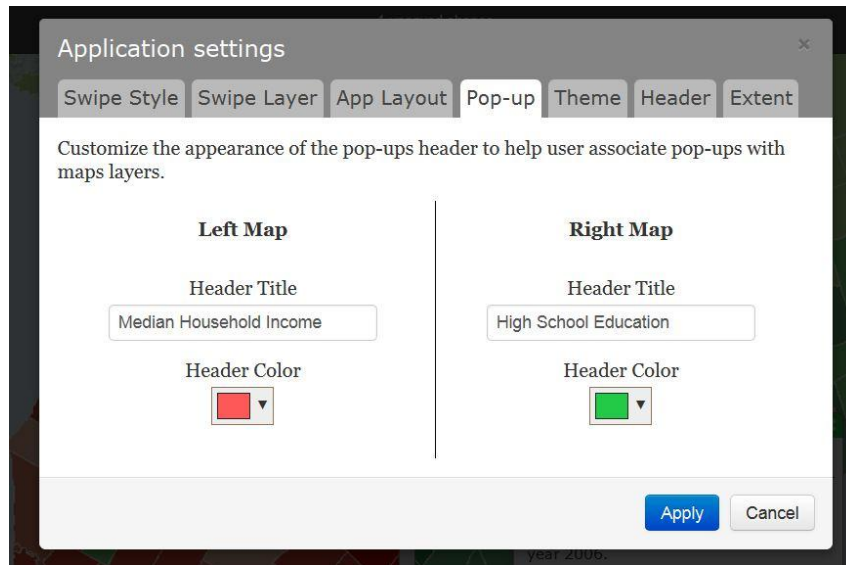
Start creating your Swipe Application by clicking the 'Publish' button in the drop down arrow and then saving it. Once saved, open it via 'go to this item now'. And Click Open > View Application.



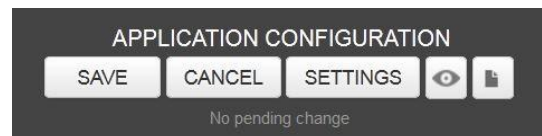
Once the application is open, use the 'Application settings' wizard tool to help you build your swipe application. Under 'Swipe Style' select 'Vertical Bar' and make sure under 'Swipe Layer' to choose the layer you added first to your original map, in this case 'Canada: 2006 High School Education (Population over 5,000)'.

A screenshot of the 'Application settings' wizard tool. The 'Swipe Layer' tab is selected. The interface is divided into two columns. The left column, titled 'One web map, single layer', contains a button 'Select a layer to be controlled by the swipe tool.' and a dropdown menu showing 'Canada: 2006 High School Ed'. Below this is a note: 'If the layer is hidden by upper layers, swipe won't have any effect.' The right column, titled 'Two web maps', contains a button 'Swipe with another web map. How to find web map's ID' and two input fields for 'Right Web map ID' (containing '867345a5c86742748560933675') and 'Left Web map ID'. At the bottom right of the right column is a button 'Select this type'. At the bottom of the entire window are 'Apply' and 'Cancel' buttons.

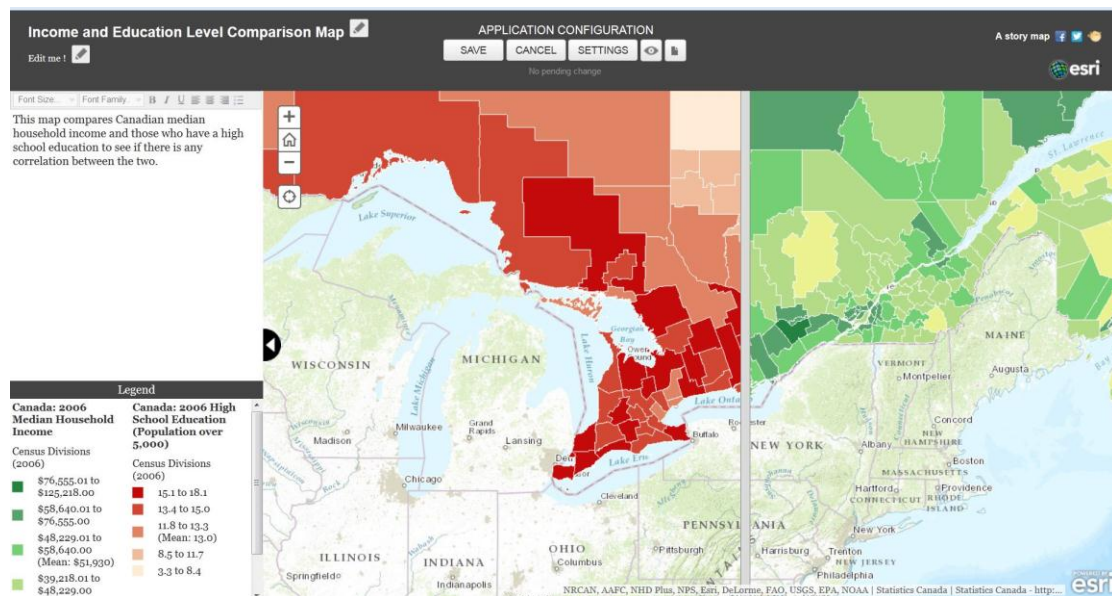
Next, under 'Pop-up', you can name the headings that will appear when you click on specific locations on your map. Fill out the Information as shown below.



If for some reason the titles got mixed up and are incorrect, you can always go back and fix them later using the *Settings* tab. This reopens the ‘Application settings’ window to allow you make more changes.

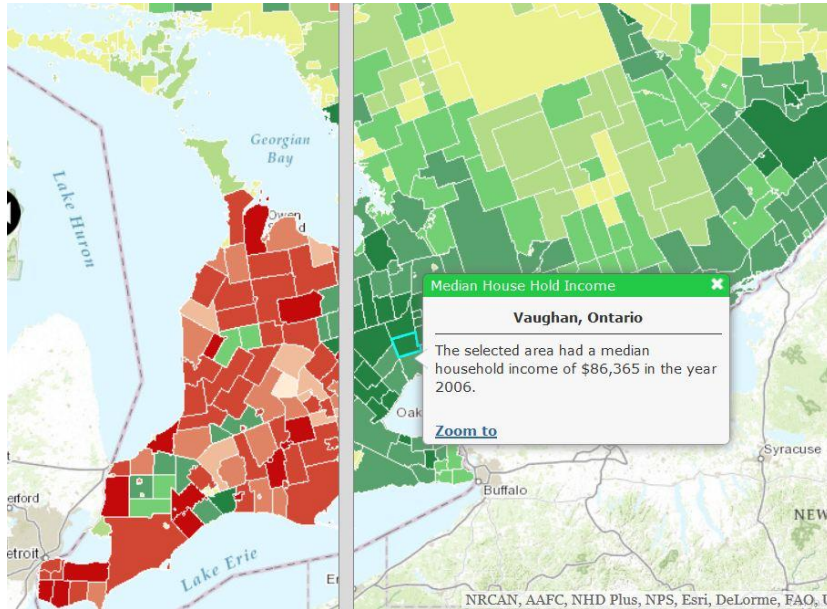


Continue to click ‘Apply’ under each settings tab and change what you think is necessary to create your Storytelling Application. When finished, your map should appear similar to the image below:



By using the swipe tool, you can examine different areas in Canada and, by clicking on specific locations, you can see the median household income as well as the high school education percentage.

Click on a location in Southern Ontario. Swipe over the location and you will see the pop-up change from details about income to details about high school education.

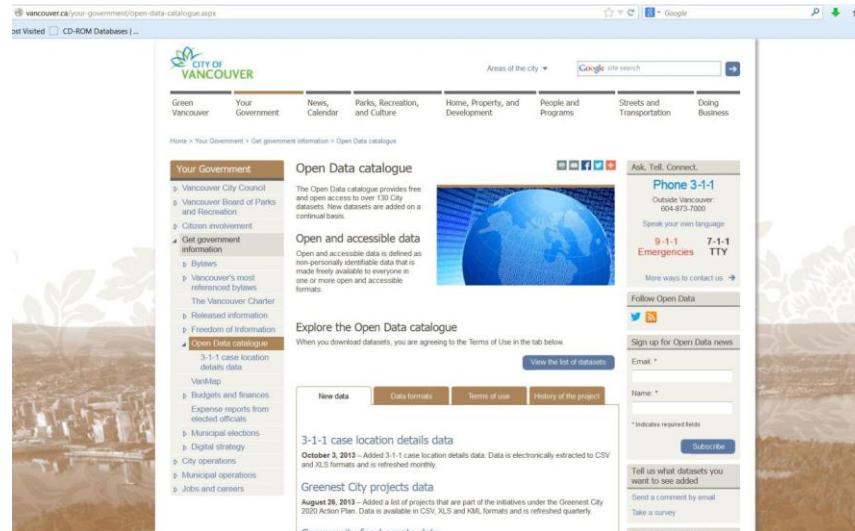


Now you have created an application that compares two values. From this application, you can decide if there is a correlation between the two points, or see if the layers do not relate at all. Applications such as this allow you to take your mapping experience a step further by taking the data you have added to your map and using it to come to conclusions about specific subjects.

Appendix A

How to Download Shapefiles and KML files from City of Vancouver's Open Data Catalogue

Open the City of Vancouver's Open Data Catalogue (<http://data.vancouver.ca/>) with an internet browser. You will see a webpage shown below.



You can open the data catalogue by clicking 'view the list of datasets' under the 'explore the open data catalogue' tab on the home screen. You will see a page as shown below. Each dataset usually has more than one file format. Download the city boundary layer in the shapefile format, the fire halls layer in CSV format, and the libraries file in kml format.

A screenshot of the City of Vancouver's Open Data Catalogue dataset list page. The page shows a table of datasets with columns for 'Name & Information about Data', 'CSV', 'XLS', 'DWG', 'KML', 'SHP', 'ECW', 'Other Formats', 'Google Maps', and 'Bing Map'. The datasets are listed under the letter 'A' and include 'Accessible parking', 'Address labels for map display', 'Alleyways', 'Animal Inventory - Deceased Animals', 'Animal Inventory - Lost & Found', 'Animal Inventory - Register', and 'Apartment recycling areas'. Each dataset has a row of checkboxes indicating the available file formats.

Appendix B

Glossary of Terms

Delimited Text File: A file in which the individual data values contain embedded delimiters, such as quotation marks, commas, and tabs.

(<http://support.sas.com/documentation/cdl/en/acpcref/63184/HTML/default/viewer.htm#a003103525.htm>)

GPS Exchange Format File: GPX (the GPS Exchange Format) is a light-weight XML data format for the interchange of GPS data (waypoints, routes, and tracks) between applications and Web services on the Internet. (<http://www.topografix.com/gpx.asp>)

Keyhole Markup Language: A file format used to display geographic data in an Earth browser, such as Google Earth, Google Maps, and Google Maps for mobile (<https://developers.google.com/kml/>)

Shapefile: A shapefile is a simple, nontopological format for storing the geometric location and attribute information of geographic features. Geographic features in a shapefile can be represented by points, lines, or polygons (areas).

(<http://help.arcgis.com/en/arcgisdesktop/10.0/help/index.html#/005600000002000000.htm>)

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November 15th 2013