ArcGIS Online Workshop (May 2020)

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1. Introduction

The aim of this workshop is to give an overview of the AGOL platform and then focus on some of the applications (WebMaps, WebApps, Survey123, Dashboard and StoryMaps). The emphasis will be drawing on AGOL's strength as a central storage location where data can be shared and displayed/used in different ways depending on its purpose.

Participants will learn how to:

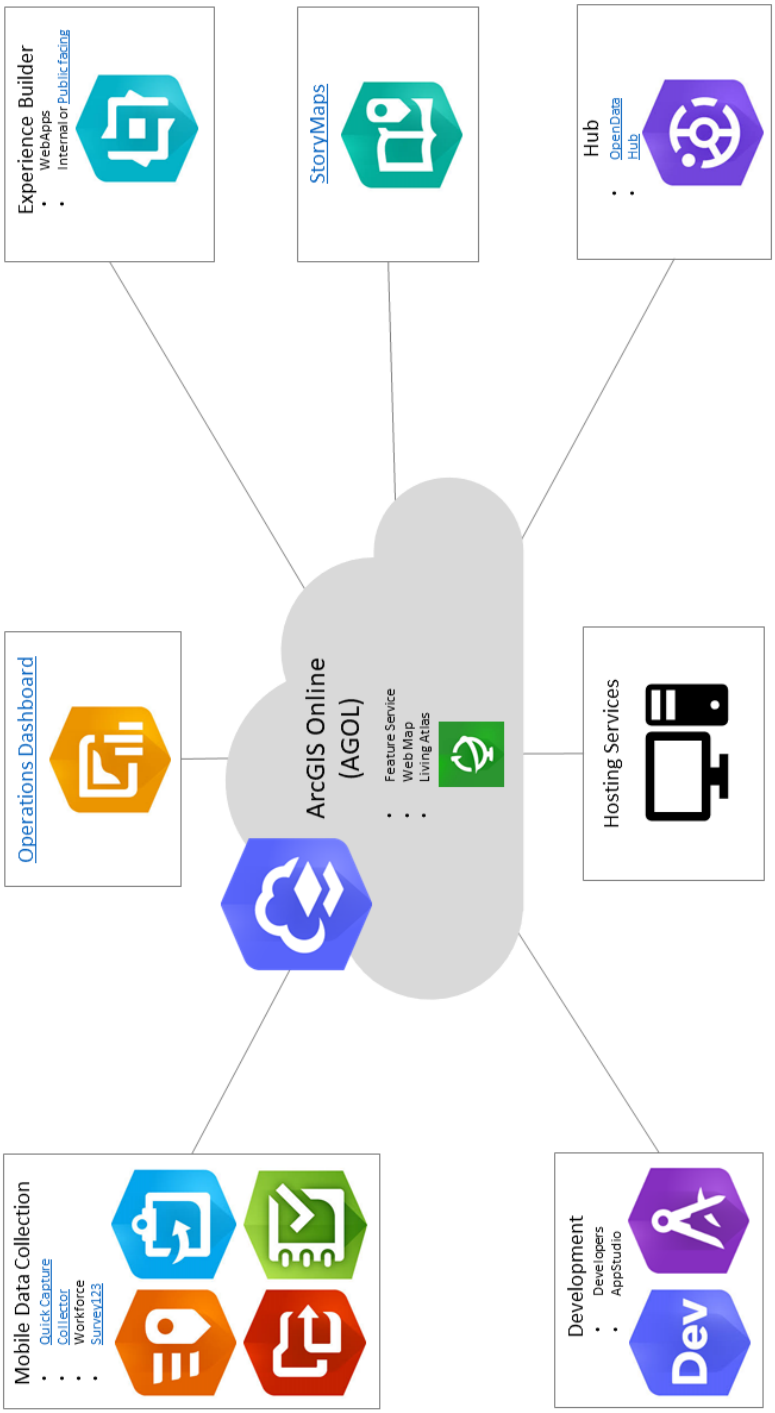
- Publish a service from ArcPro to AGOL
- Understand the setup of AGOL
- Create Folders and Groups
- Create a WebMap
- Develop a WebApp using the WebMap
- Interact with Survey123 and a Dashboard
- Embed the WebApp and Dashboard within a StoryMap

The theme of the workshop is building on the OS concept of Named Extents. This is a project aimed at using members of the public to create polygons of their localities, extremely useful for organisations such as emergency services when planning for responses in their patches. The idea being that a tool needs to be developed that informs the public of the project (StoryMap), collects data (WebApp), highlights progress of the project (Dashboard) and receives feedback (Survey123).

StoryMap example: https://storymaps.arcgis.com/stories/71881ef381714e58ae45548caac76918

2. AGOL Overview

15 mins



Why would I use AGOL? Because you want to collect or share data around the organisation or publicly. AGOL has a number of tools that cater for collecting, analysing and displaying data in a variety of ways.

What is a Feature Layer? Is a published service that exposes vector data (points, lines and polygons) for display, query and editing on the web. Image Services can also be published relating to raster data.

What is a WebMap? A WebMap contains Feature Layers and Image Services and is used primarily to embed into the other AGOL apps e.g. WebApps, Dashboards, StoryMaps etc.

What is a WebApp? An app that can be internal or public facing and has a number of built-in tools giving GIS functionality. WebApps are flexible to design and extremely user-friendly – they are webGIS without having to write any code. WebMaps are the foundation of WebApps.

What is a Dashboard? Another way of displaying your spatial data via interactive charts and stats allowing users to make decisions, visualise trends and monitor status in real-time.

What is a StoryMap? A tool that can be internal or public facing and allows a project/story to be shared via interactive maps, text, images and other multimedia. StoryMaps are a great way of wrapping up the different aspects of a project e.g. WebApp/Survey123/Dashboard into one location.

What is OpenData? A site that allows organisations to share their own data, meeting mandated transparency requirements as well as allowing others to gain greater insights.

What is Hub? Is an easy-to-configure community engagement platform that helps organise people, data, and tools through information-driven initiatives. Aimed at using volunteers to collect and maintain open data. However, could also be used for a number of different organisations to work together on specific projects as access to the site can be controlled through registration.

Why would I use Living Atlas? Aiming to be a one-stop shop for geographical data from around the globe – can be a mixture of maps, apps and data layers. Data goes through certain processes and is validated before it is available on Living Atlas

What is mobile data collection? A range of apps that can be used on mobile phones or tablets and collect data whilst out in the field – the apps can work offline and sync data once back in the office.

Why would I host a service? WFS services can be hosted on AGOL that non-esri software can consume e.g. Cadcorp, QGIS etc.

3. Publishing a Service

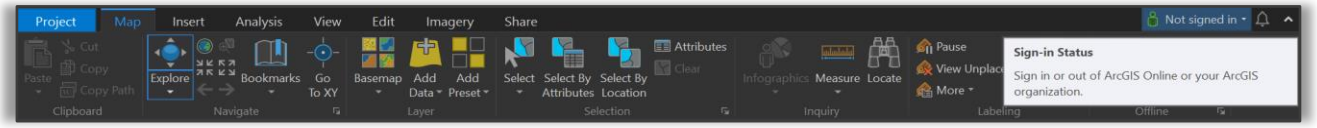
15 mins

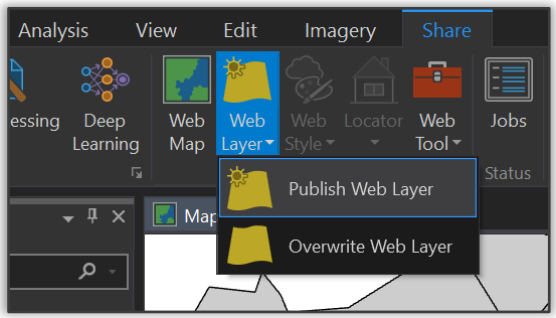
3.1 Notes/Tips

- Two ways of creating Feature Layers:
  - pre-defined blank templates within AGOL
  - publish service from ArcMap/Pro
    - respects attributes, alias, definition queries
    - respects Domains/Subtypes – great for data integrity
    - allows Attachments
- A service can include all layers from a map and a mixture of points, lines and polygons. Raster tile services can also be produced.
- tip: large services will take longer to load in some applications so consider a number of smaller ones e.g. all points in one, all polygons in another
- AGOL has limited symbology options and may struggle to publish the more complex styles from ArcMap/Pro
- Consider projecting all data in WGS84 before publishing. Issues have been encountered previously with data that has been reprojected numerous times due to publishing/downloading.

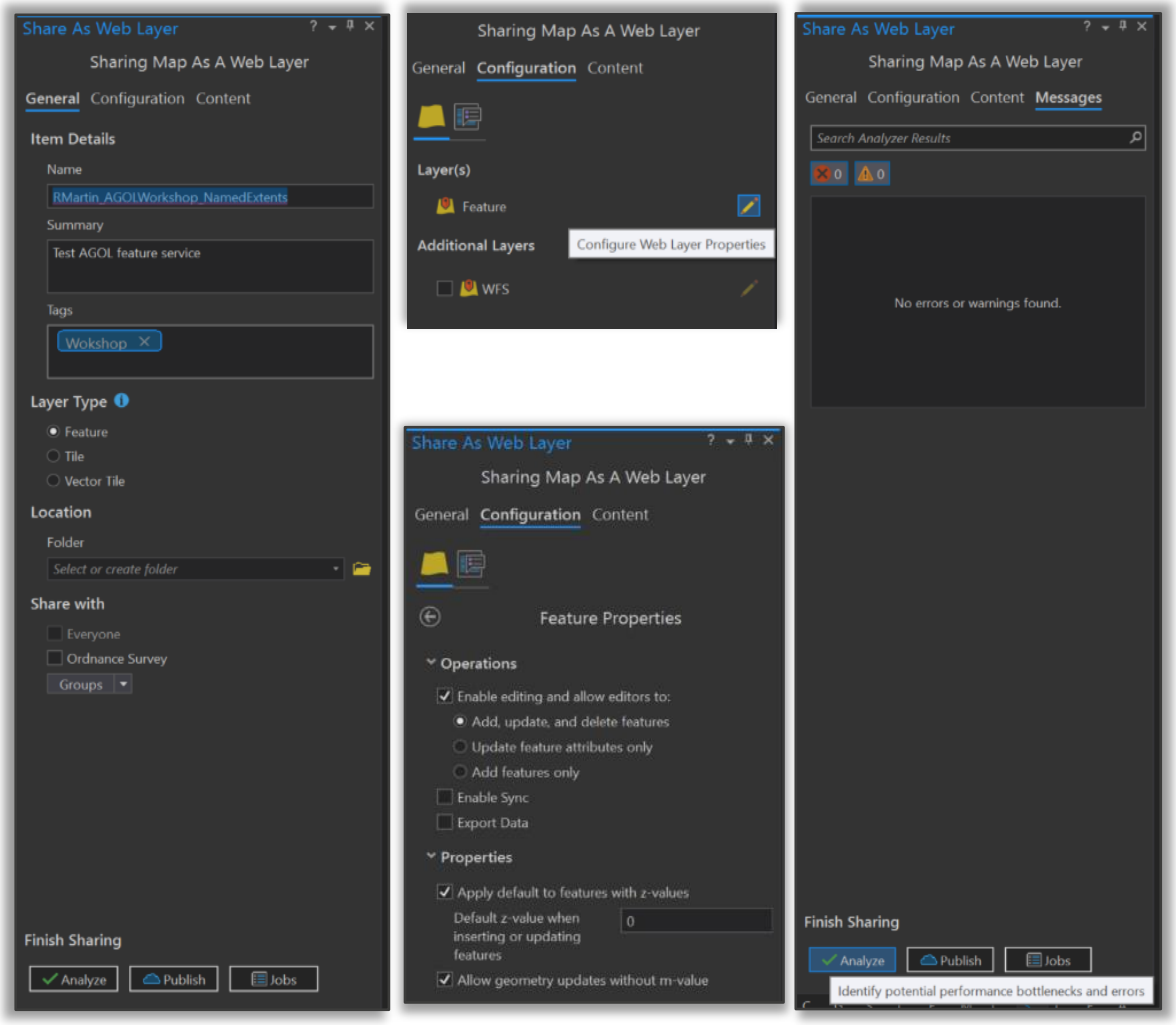
3.2 Start of Practical

- Sign in (Enterprise Login > ordnancesurvey > ordnancesurvey)
- Share Tab > (Share As) Web Layer > Publish Web Layer
- Remove any Esri Basemaps from the map – the same basemaps can be found in AGOL





3.3 Sharing Map as a Web Layer Configurations



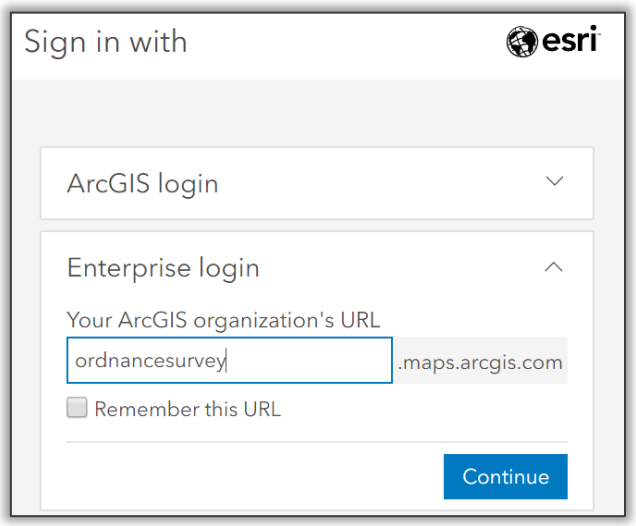
Name: *<name>_AGOLWorkshop_NamedExtents*
Summary: *AGOLWorkshop Data*
Tags: *Workshop*

Select Analyse to check the layer is ready to be published. A service can be published with Warning messages but will not publish if an Errors exist (often double clicking on the message will resolve it).

- Any settings that are not selected now can be activated once in AGOL
- Under the Configuration settings, there is an option of publishing the data as a WFS – this is then hosted on AGOL and could be consumed by non-Esri software e.g. QGIS (do not use this option for the Workshop)

3.4 Log-in to AGOL to view the service

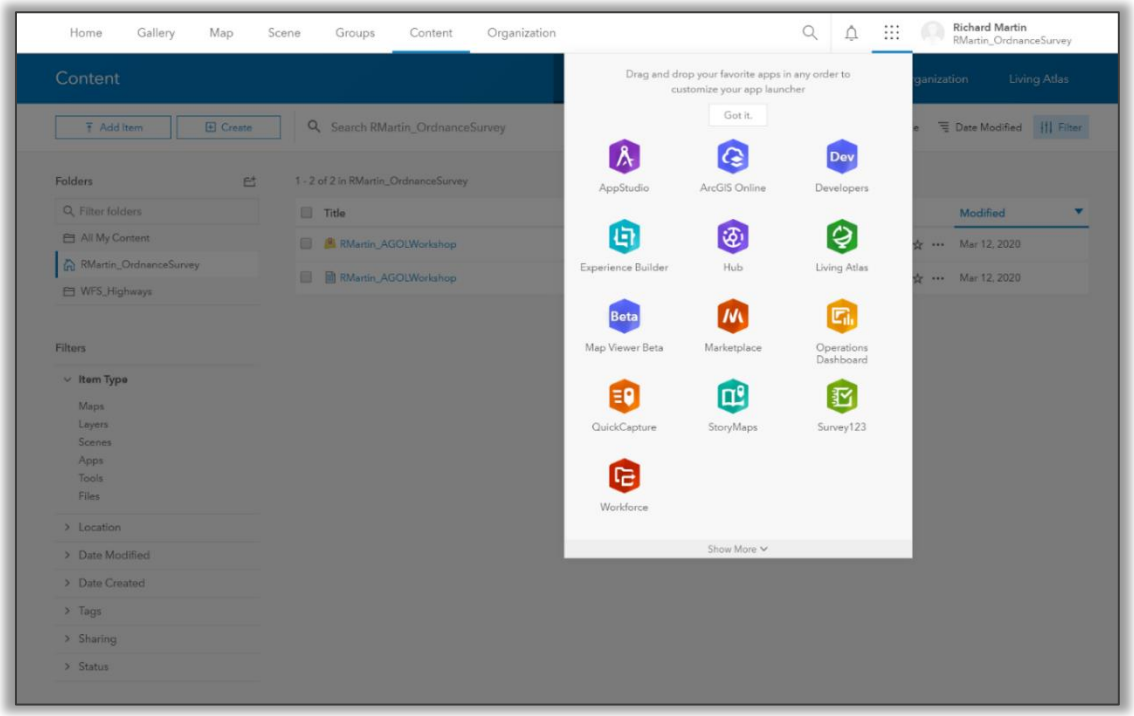
- https://www.arcgis.com/index.html
- Enterprise login = ordnancesurvey
- Select 'Ordnance Survey' from next screen
- Sign in using normal NT details
- Content tab will show the published service



4. AGOL Admin

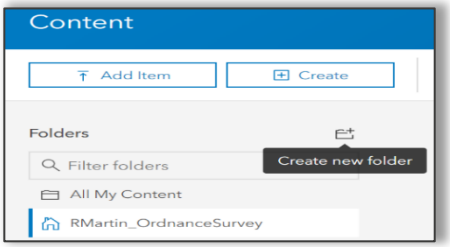
10 mins

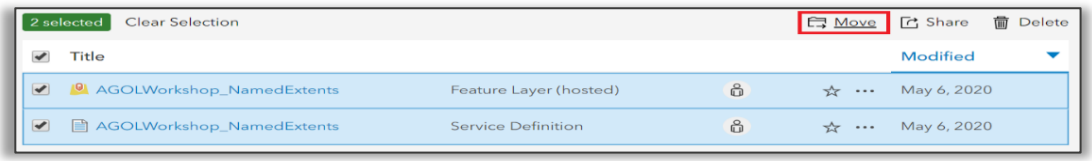
Map, Groups and Content are the most useful AGOL pages – as well as the navigation 'grid' between the various AGOL apps:*Folders:*



If you are working on multiple AGOL projects it can get confusing after a while with a mixture of layers, maps and apps all appearing in your Content page - get into the habit of storing relevant project work in folders.

- Content > New Folder: *AGOL Workshop May 2020*
  - Service Definition file – do not delete. This file stores the settings required if you need to republish a layer
- Move data to folder





4.1 Groups

Groups are one of the most important aspects of AGOL as they control access to your data, maps and apps. Groups can be created for a variety of reasons:

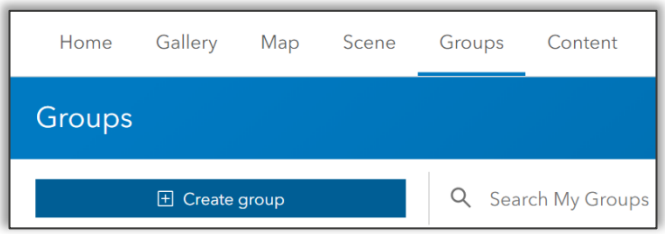
- Small group working on a private project
- Whole department sharing ideas e.g. C&Ts
- Surveyors using data collection apps in the field
- Material for public facing apps

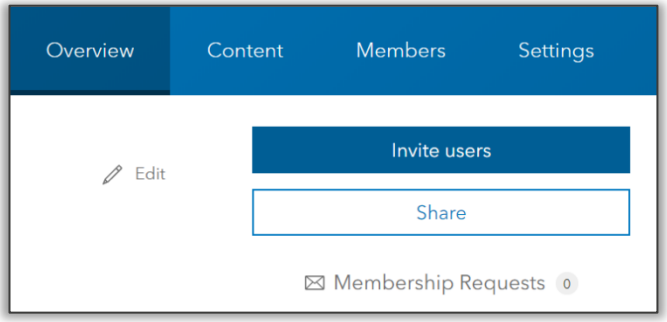
4.2 Groups > Create Group

<name> AGOL Workshop

There are various settings that determine who can view, join and contribute content to the Group. For this workshop we will use the following settings:

- View: Only Group Members
- Join: N/A
- Contribute: Group members



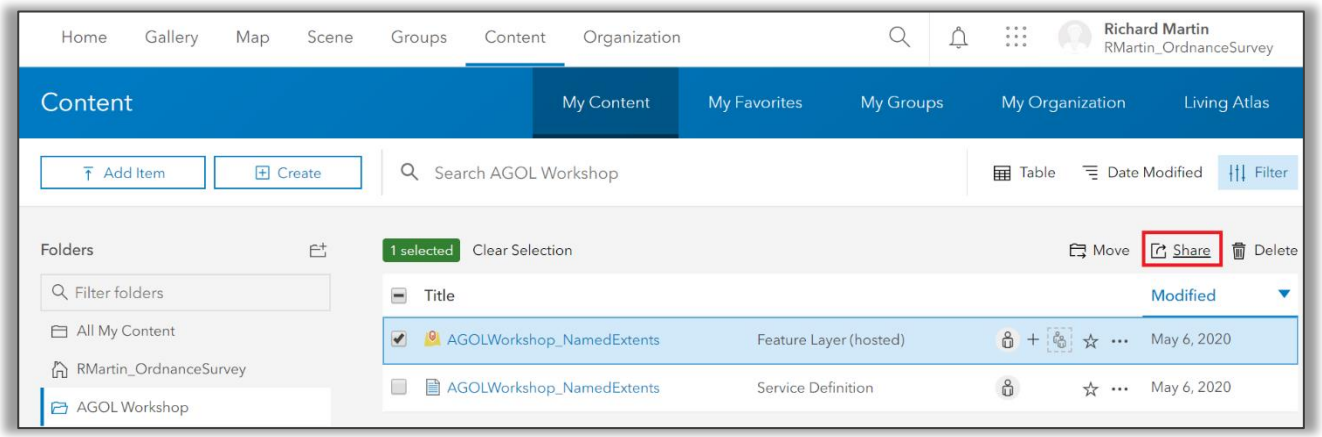


Once the Group has been created, open it and invite some of the other workshop members to join:

- Invite Users > search name > tick Add box > Add to Group

Once you have created a Group you will need to share any relevant material to it:

- My Content tab > Folder > Share > Edit group sharing > with Group
  - Service Definition file does not need to be shared



5. AGOL WebMap

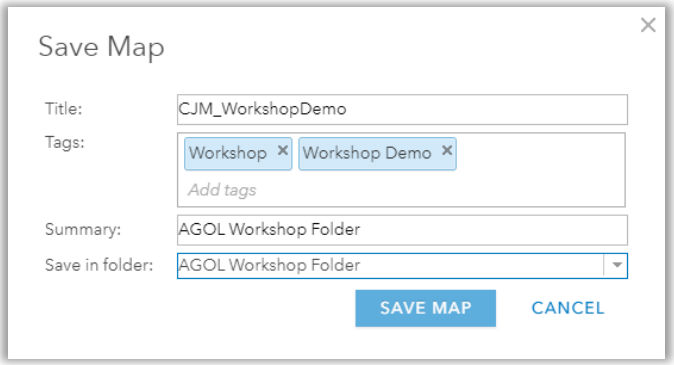
10 mins Demo + 15 mins Practical

An ArcGIS web map is an interactive display of geographic information that you can use to tell stories and answer questions.

Web maps can be used across ArcGIS because they adhere to the same web map specification. This means you can create web maps in one ArcGIS app and view and modify them in another. For example, you can create a web map in ArcGIS Pro and your colleague can modify it in ArcGIS Online.

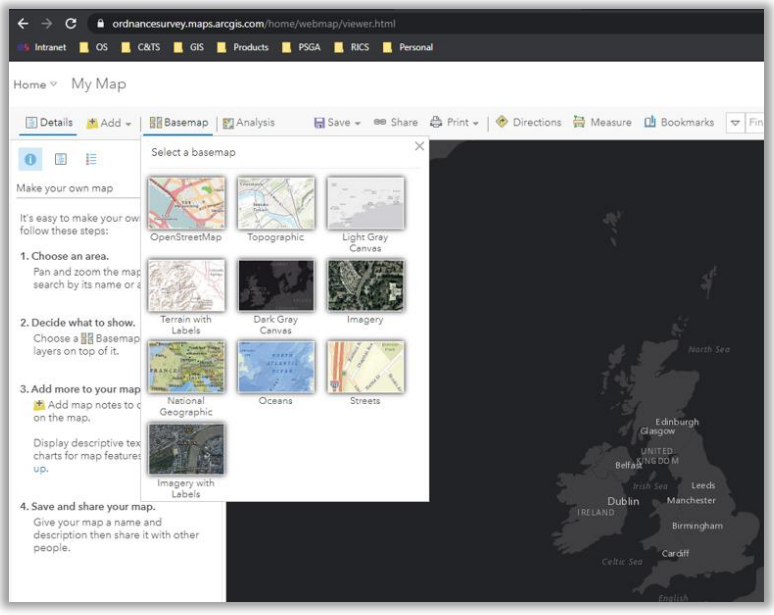
- Map > Save As

<name>_WorkshopDemo, Workshop, Workshop Demo, AGOL Workshop folder



- Basemap = Light Grey

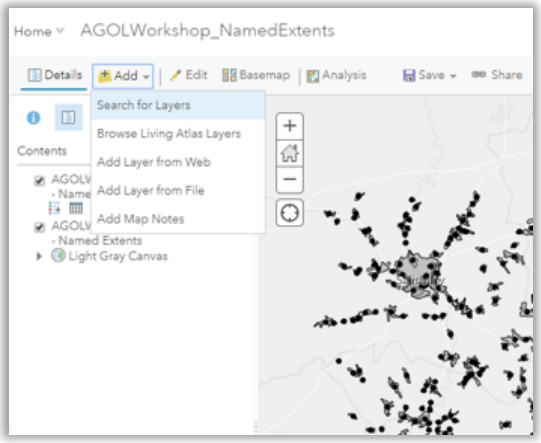
You can use a selection of ESRI's basemaps which are free to use. Alternatively, you can use OS API's as a WMS connection (Chapter 5.4).

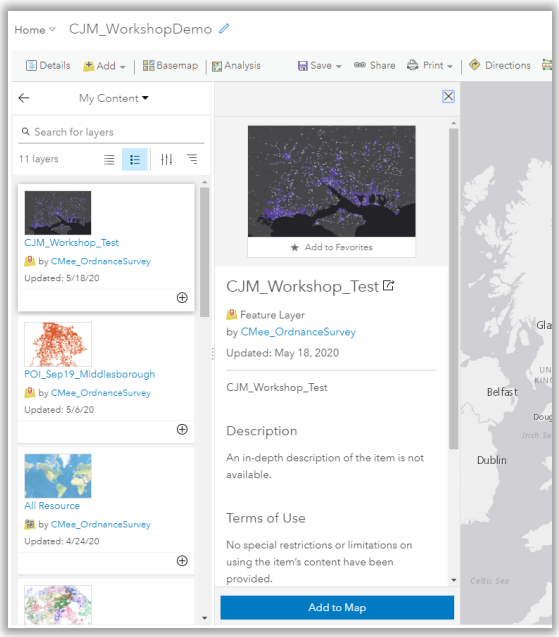


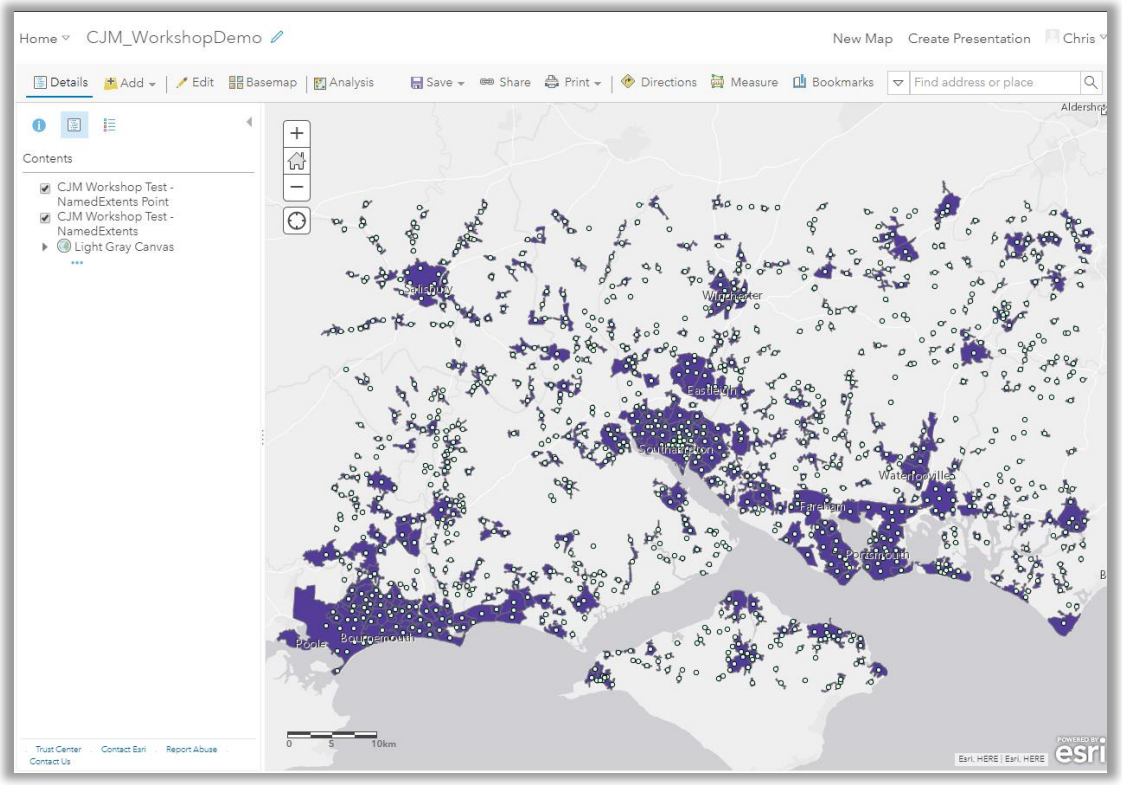
❖ Add > Search for layers

<name>_AGOLWorkshop_NamedExtents

Layers and files can be loaded through the Add function:
Local files can be added if .csv. / .txt / GeoJSON and Zipped Shapefiles

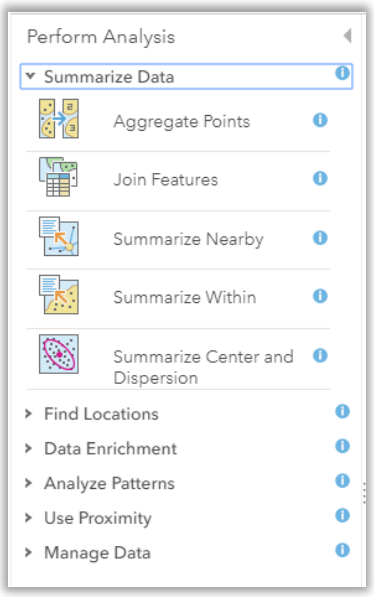


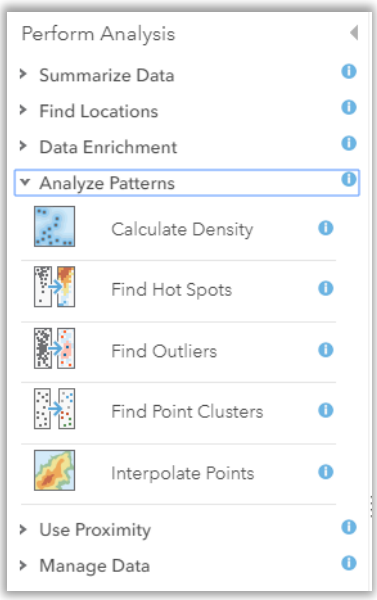


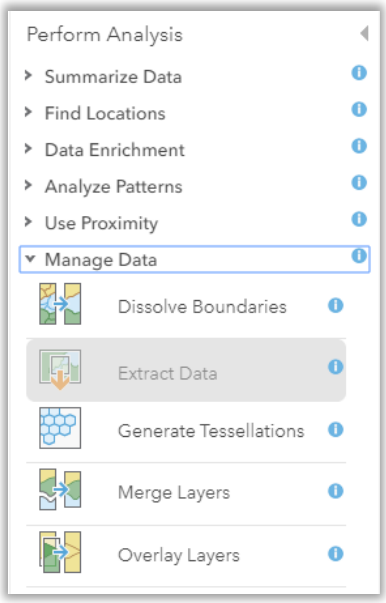


❖ Analysis

The analysis tools are arranged in categories. These categories are logical groupings and do not affect how you access or use the tasks in any way. Further information can be found here. These features use credits (see below)

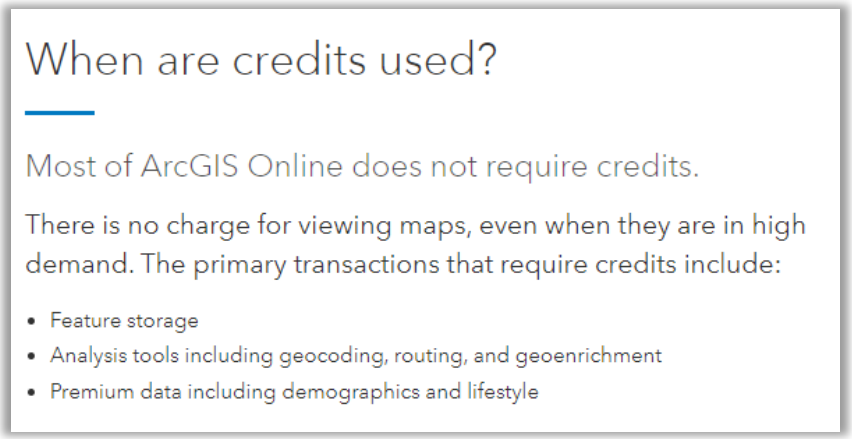






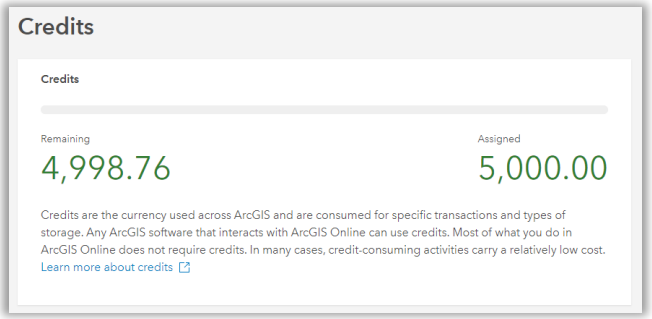
5.1 Credits

Any ArcGIS software that interacts with ArcGIS Online, such as ArcGIS Enterprise, ArcGIS Pro, ArcGIS Insights, or Collector for ArcGIS can use credits.



Geocoding	Match addresses when publishing spreadsheets (such as CSV or Excel files) as hosted feature layers using ArcGIS World Geocoding Service or a view of this locator	40 credits per 1,000 geocodes
Service Areas	**Create Drive-Time Areas**	0.5 credits per drive-time
Closest Facility Routes	**Find Nearest**	0.5 credits per closest facilities route
Multi-Vehicle Routes	**Plan Routes**	1 credit per vehicle route
GeoEnrichment	**Enrich Layer**	10 credits per 1,000 attributes (data variables multiplied by total feature records)
Simple Routes	**Directions**, **Connect Origins to Destinations**	0.005 credits per simple route

More information on credits can be found here.
Your own credits can be viewed by looking here: Profile / My Settings / Credits

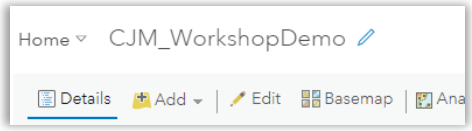


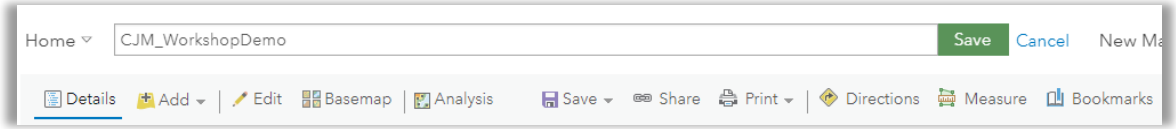
Running small-scale analysis on a local dataset should not use too many credits, just be mindful when running analysis on national datasets.

5.2 Name/Table/Symbology/Filter/Pop-up/Label

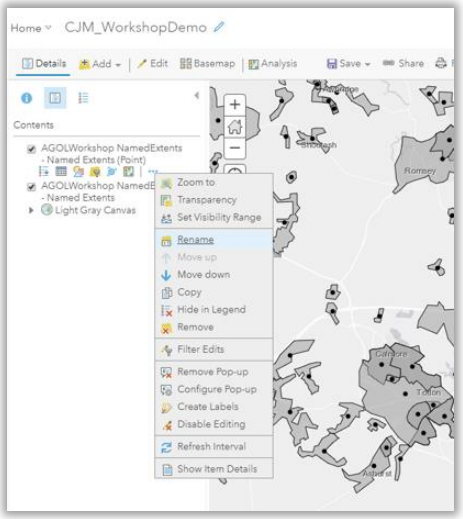
The WebMap can be customised in a similar way to a standard GIS where you can change text, symbology and undertake analysis. Below is a guide how to play with these settings:

Name:





Rename Layer:



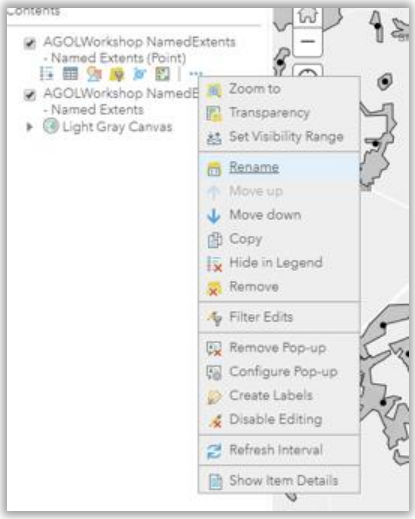
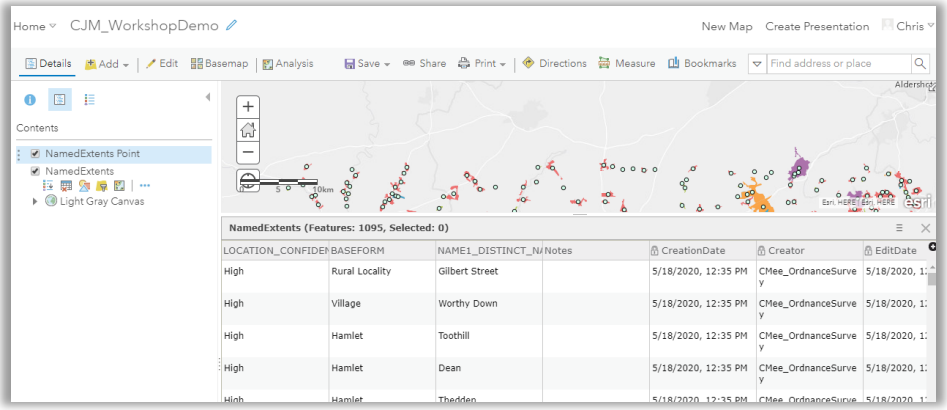
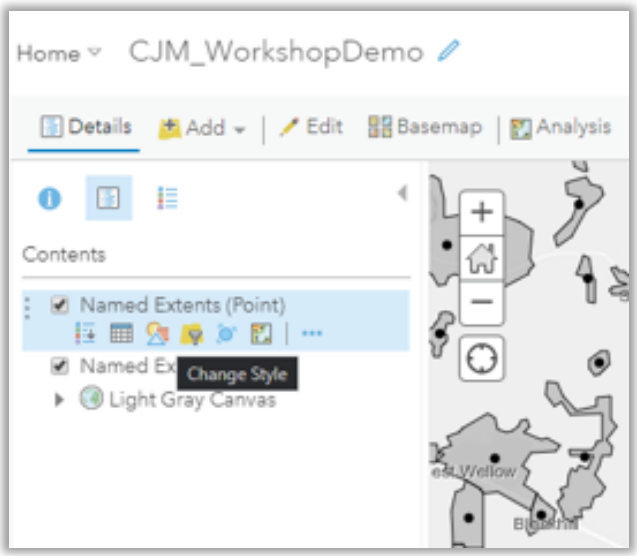
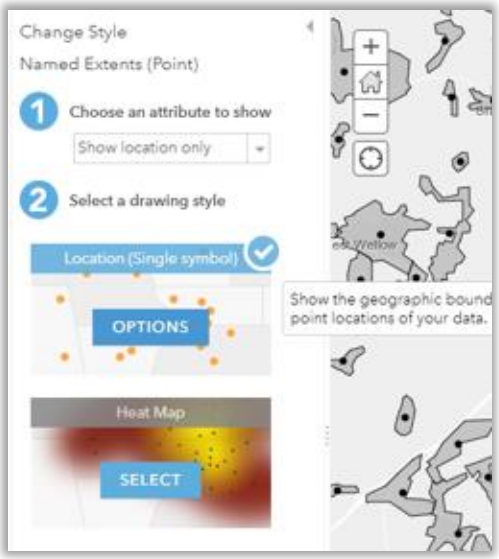


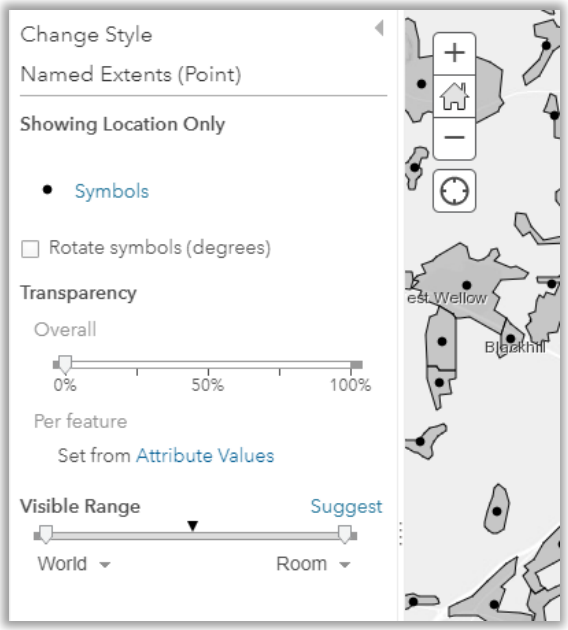
Table:

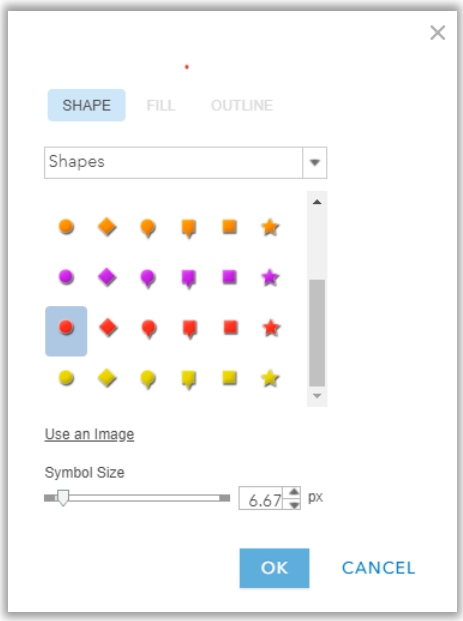


Symbology:

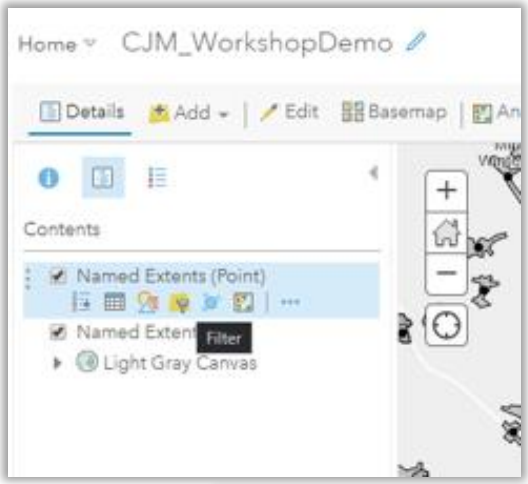


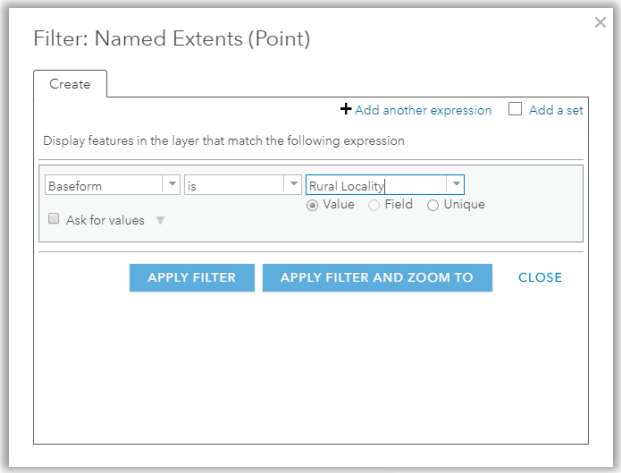


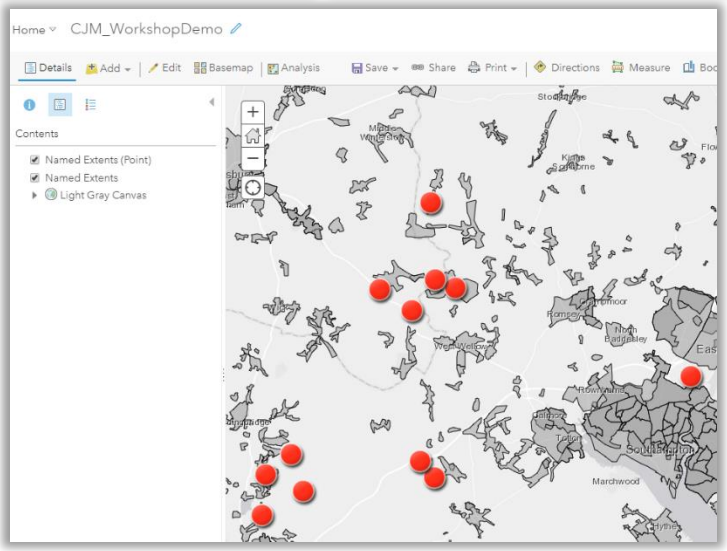




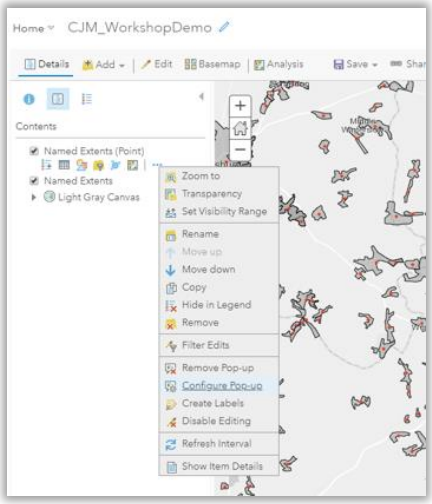
Filter:

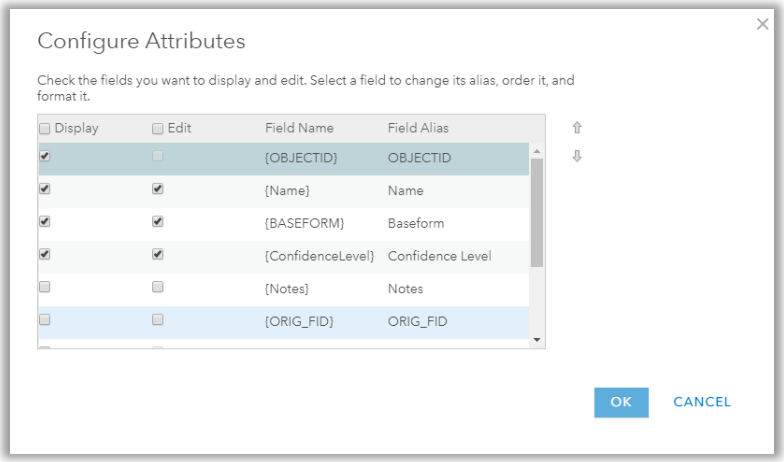




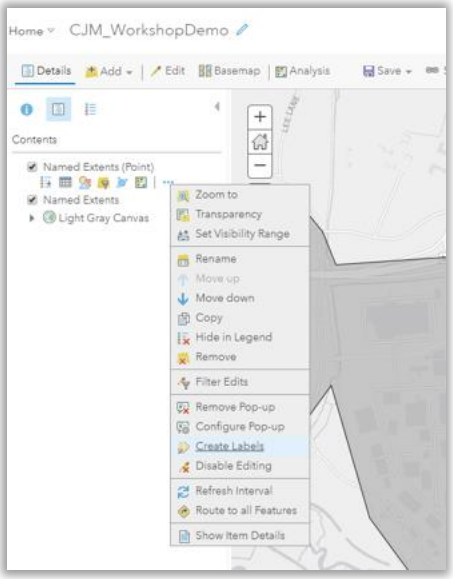


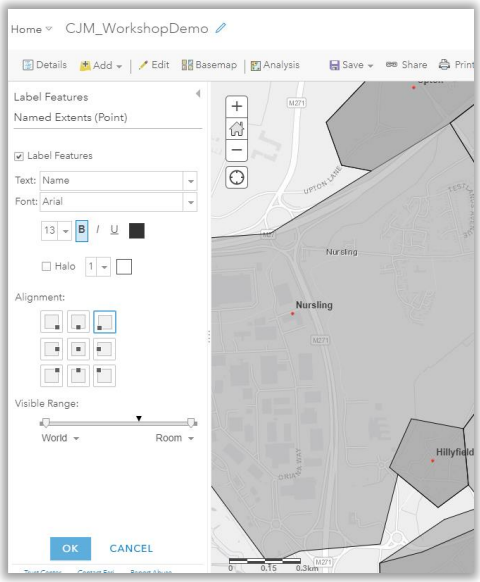
Pop-up:





Labels:

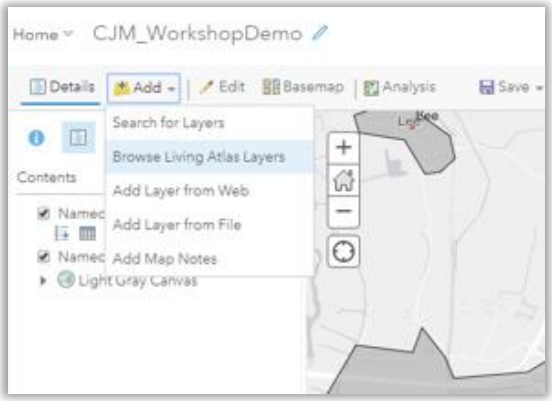


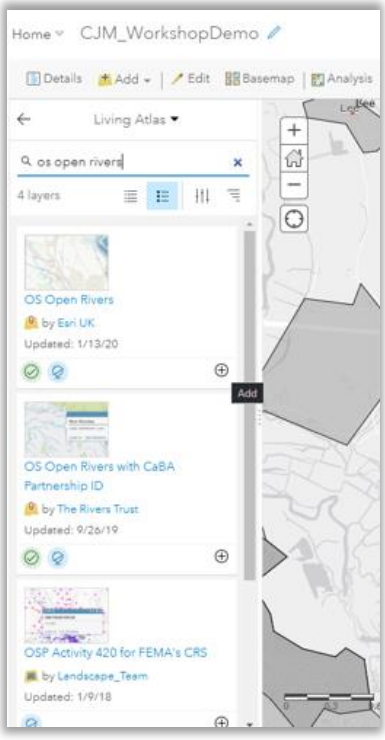


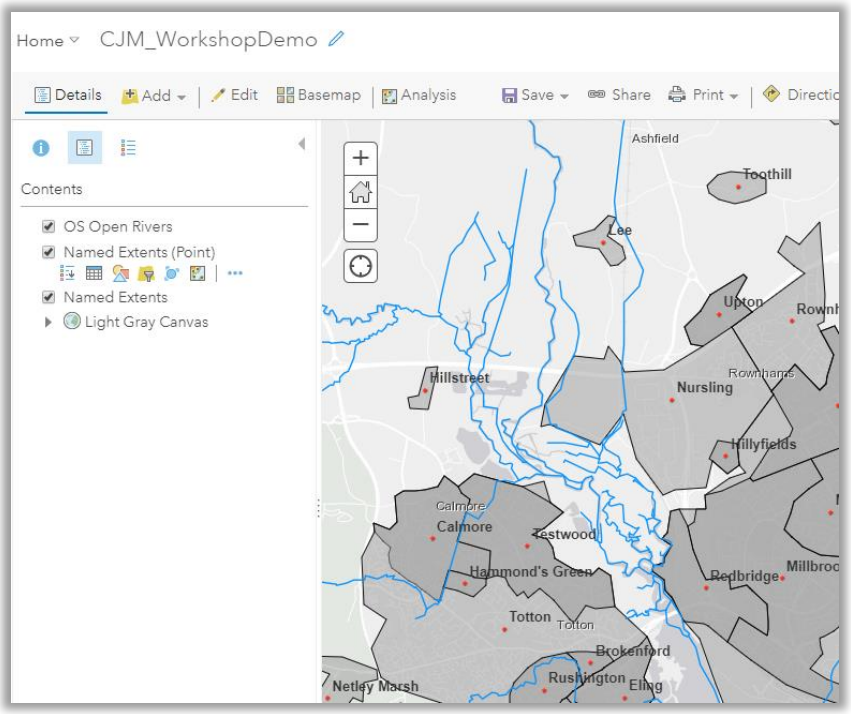
5.3 Add > Browse Living Atlas

The ArcGIS Living Atlas of the World is the foremost collection of geographic information from around the globe. It includes maps, apps, and data layers to support your work.

- *OS Open Rivers*
- *Elevation*





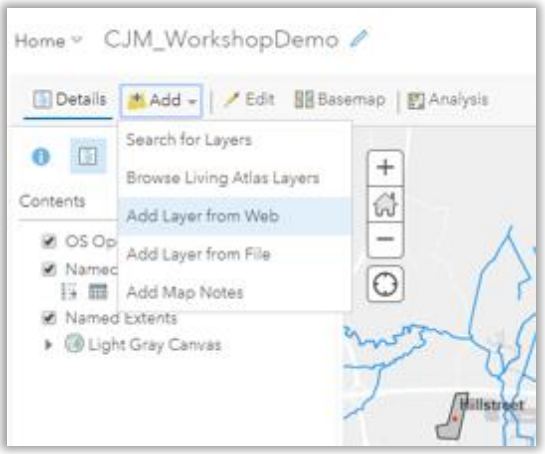


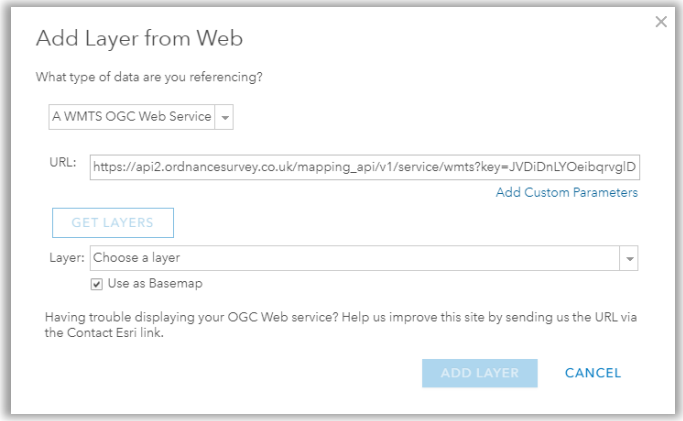
5.4 Add > Add Layer from web > A WMTS OGC Web Service

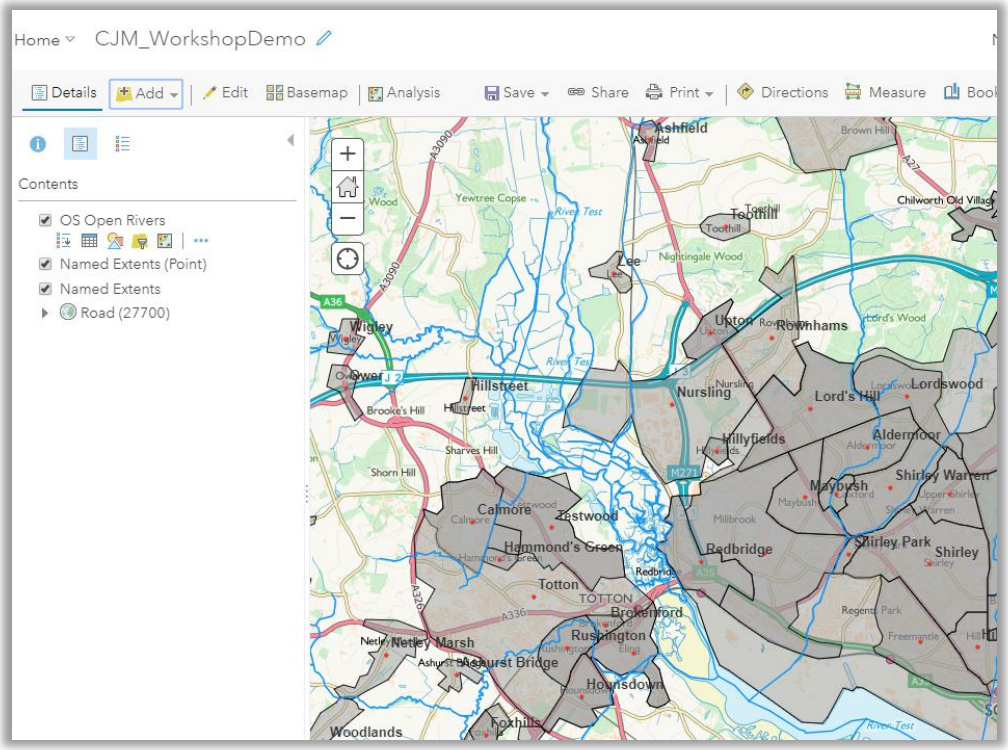
Layers can be added into AGOL using the web for these services:

- An ArcGIS Server Web Service
- A WMS OGC Web Service
- A WMTS OGC Web Service
- A WFS OGC Web Service
- A Tile Layer
- A KML File
- A GeoRSS File
- A CSV File

OS Maps API (3857)
(https://api2.ordnancesurvey.co.uk/mapping_api/v1/service/wmts?key=JVDiDnLYOeibqrvglD5q2ds0f1zQ6byl)







6. AGOL WebApp

10 mins Demo + 15 mins Practical

Web AppBuilder for ArcGIS is an intuitive what-you-see-is-what-you-get (WYSIWYG) application that allows you to build 2D and 3D web apps without writing a single line of code. It includes powerful tools to configure fully featured HTML apps. As you add your map and tools, you can see them in the app, and use them right away.

Key features

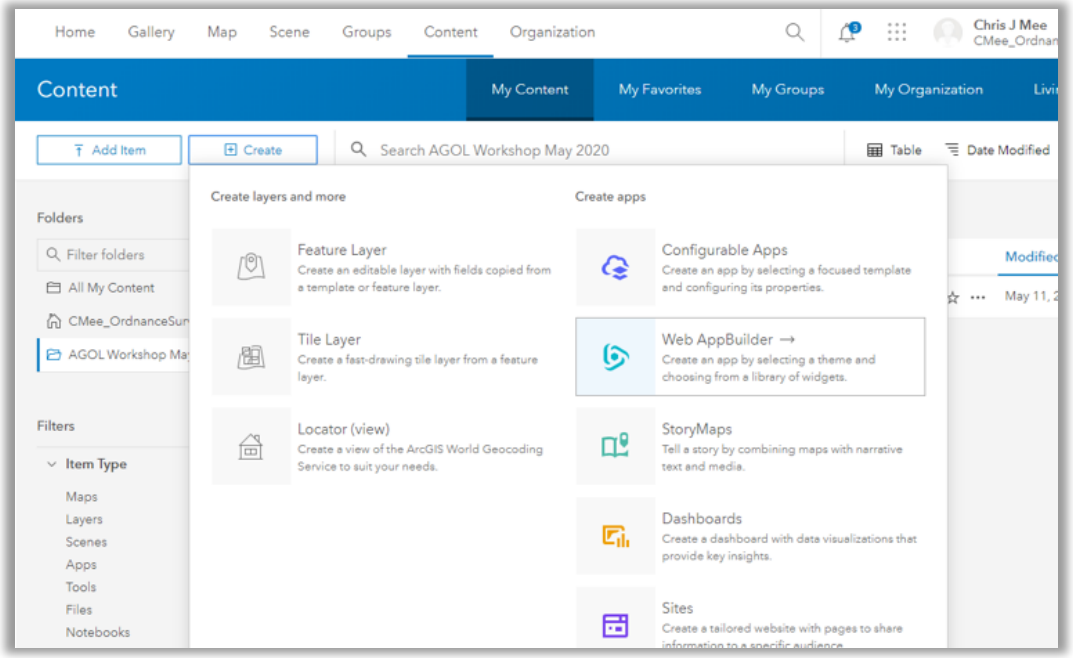
You can do the following with Web AppBuilder for ArcGIS:

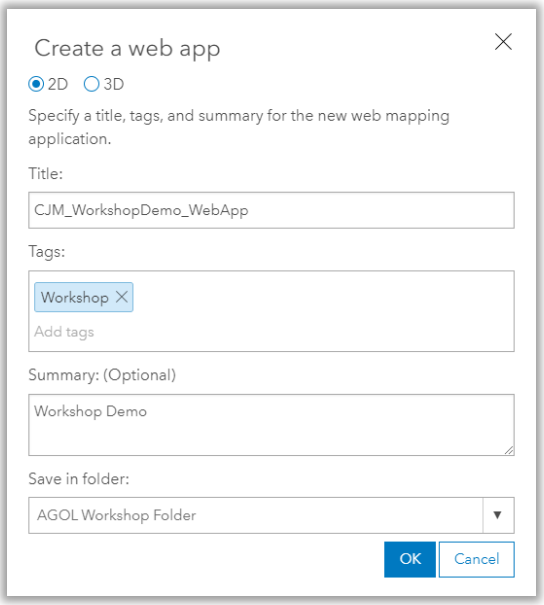
- Create HTML/JavaScript apps that run on any device.
- Build the apps you need using ready-to-use widgets.
- Customize the look of your apps with configurable themes.
- Host your apps online or run them on your own server.
- Create custom app templates.

❖ Save Map

6.1 Home > Content > Create WebApp Builder

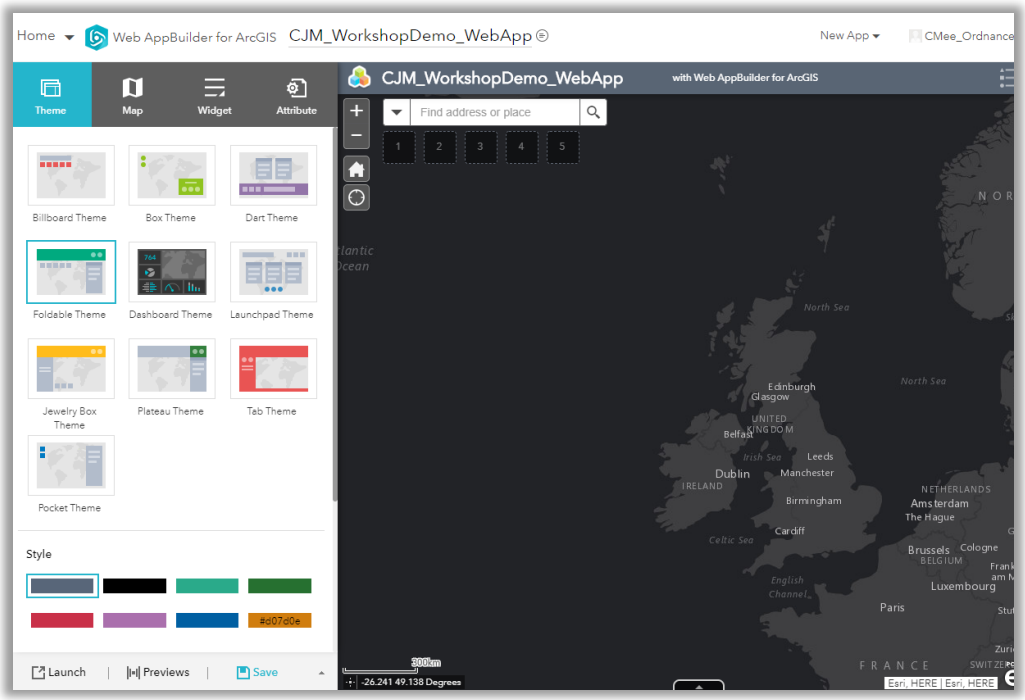
<name>_WorkshopDemo_WebApp, Workshop, Workshop Demo, AGOL Workshop folder





6.2 Choose Theme

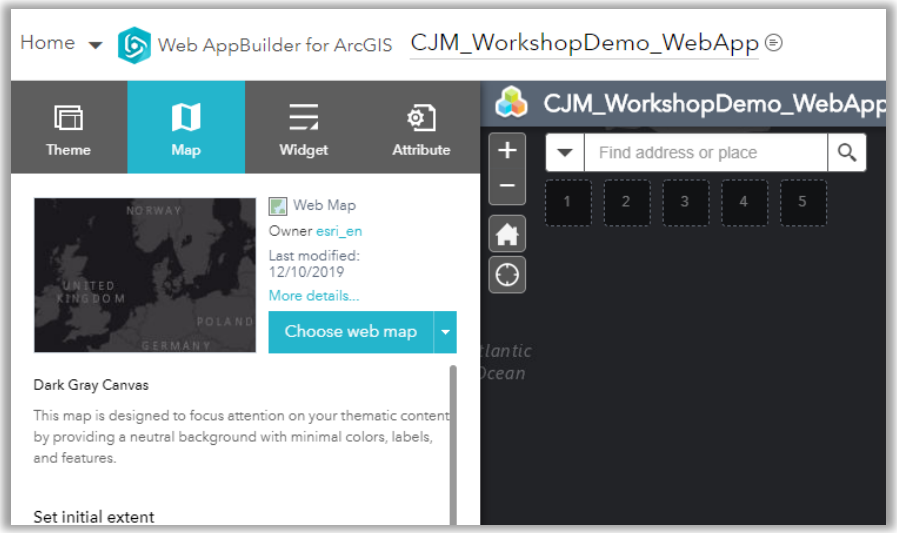
The Theme tab in Web AppBuilder provides out-of-the-box themes. A theme is a template framework representing the look and feel of an app. Content in a theme includes a collection of panels, styles, and layouts, and a set of preconfigured theme widgets.

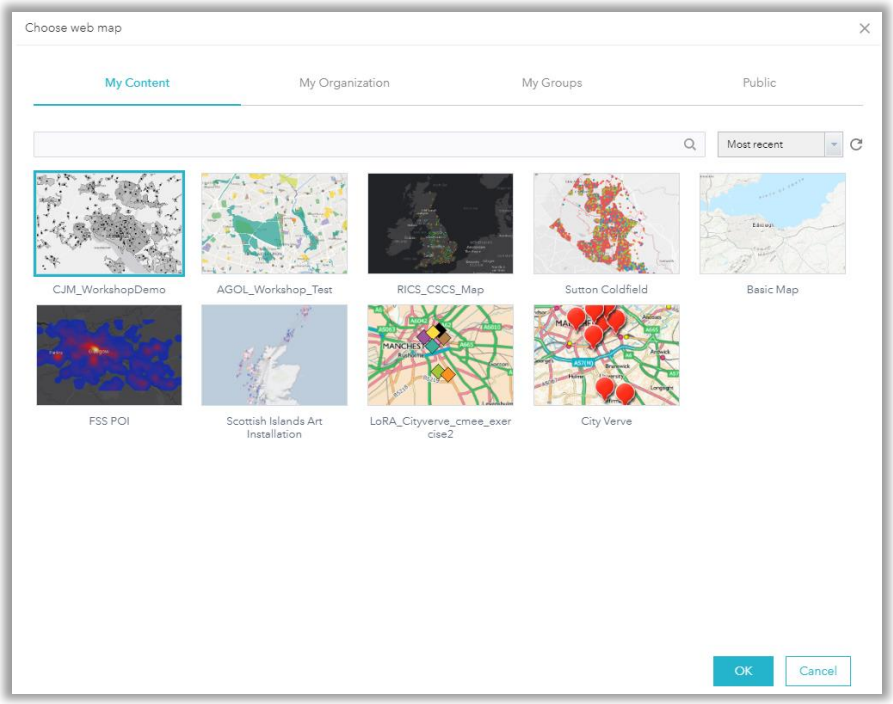


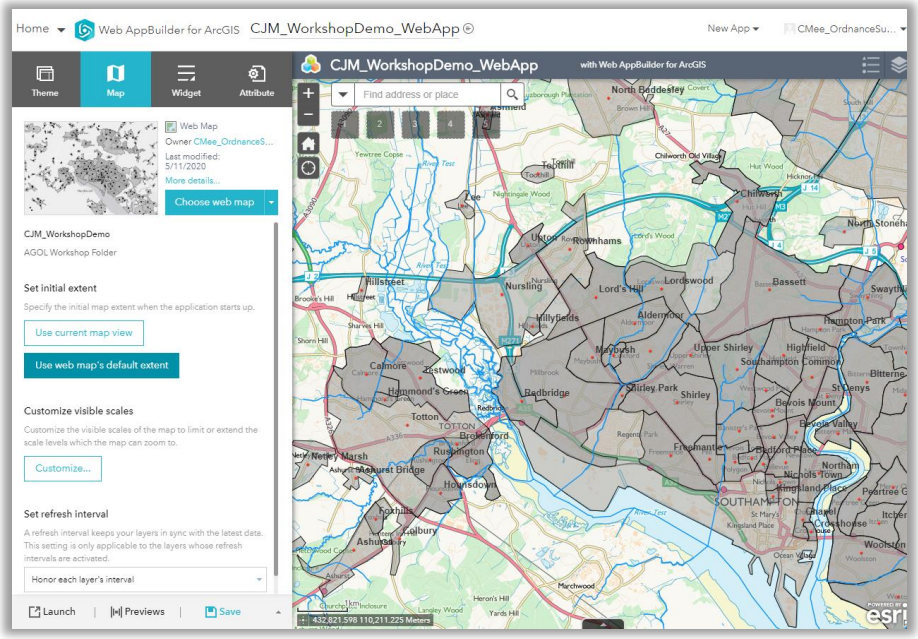
6.3 Map > Choose Web Map

<name>_WorkshopDemo

The app created by Web AppBuilder for ArcGIS is based on a web map or web scene from ArcGIS Online or ArcGIS Enterprise. 2D apps are built with web maps and 3D apps are built with web scenes. A web map or web scene usually includes a basemap and operational layers that you want the users to interact with.

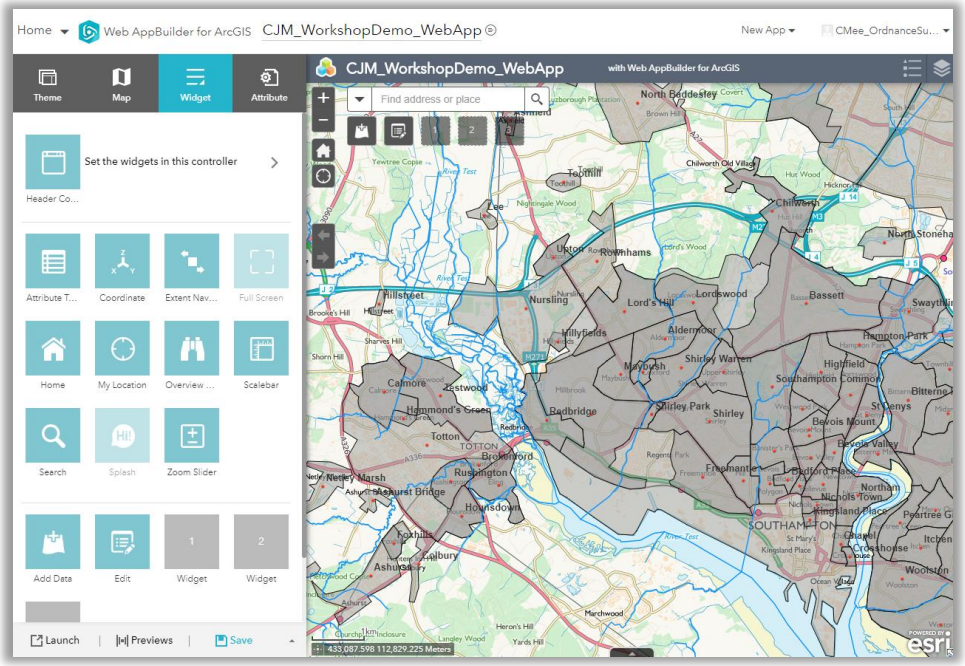




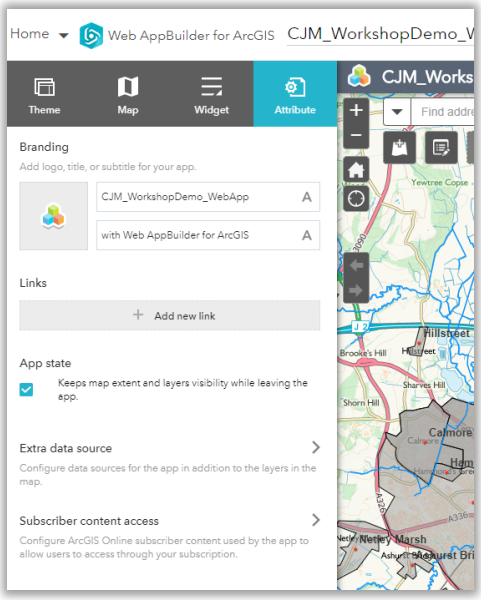


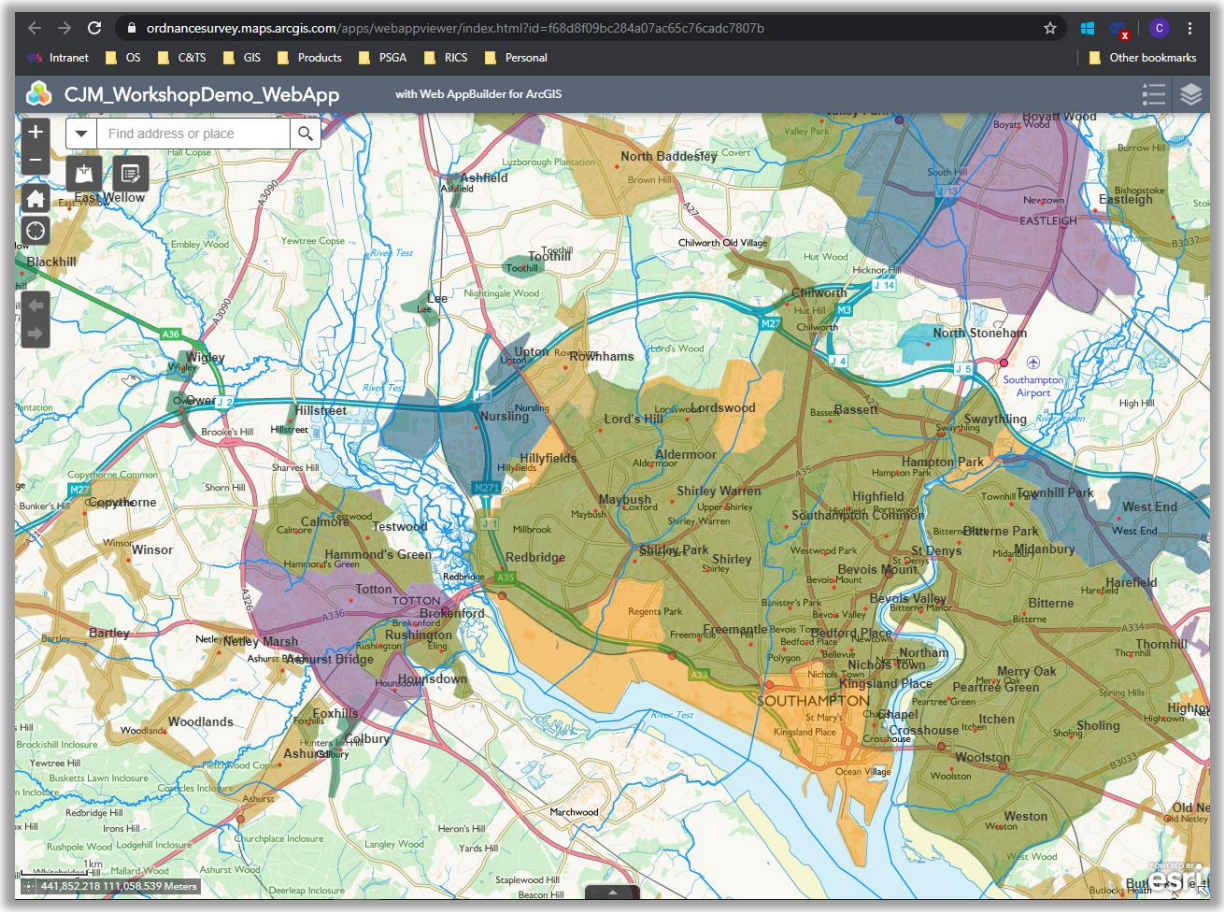
6.4 Choose Widgets and settings

Web AppBuilder includes many out-of-the-box widgets. These widgets provide fundamental functions to easily create web apps. Most of them have parameters that allow configuration and customisation. Widgets added from the Choose Widget window can be set to open automatically when an app starts.



6.5 Complete Attribute settings

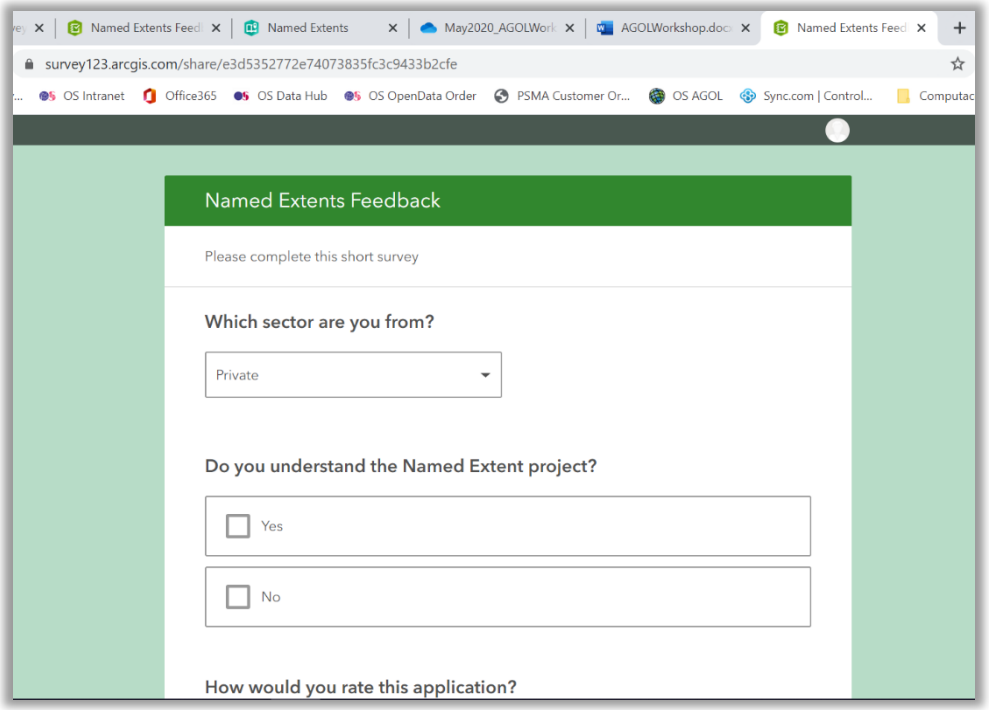




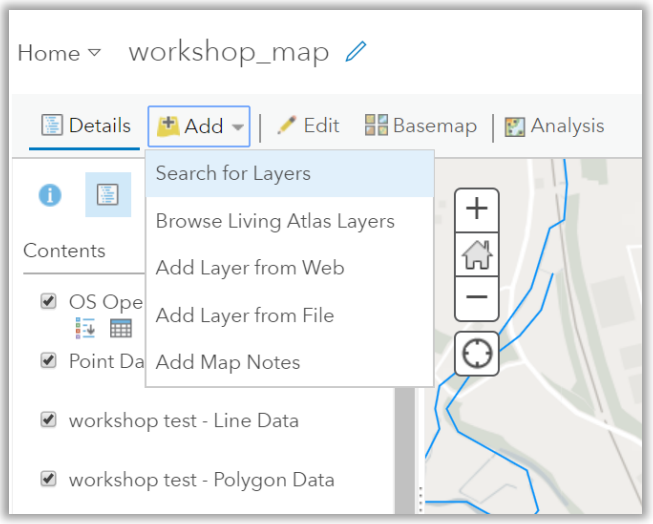
AGOL Survey123/Dashboard

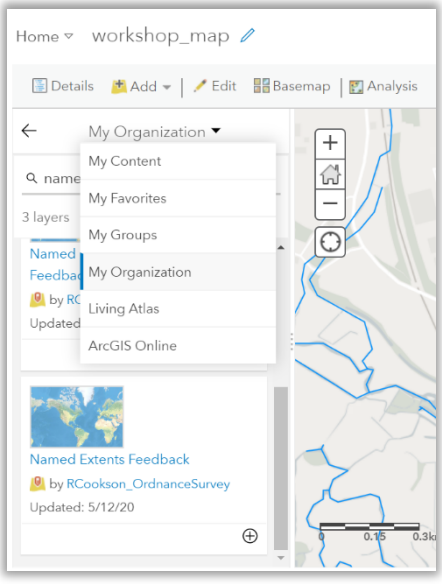
5 min Demo + 10 mins Practical

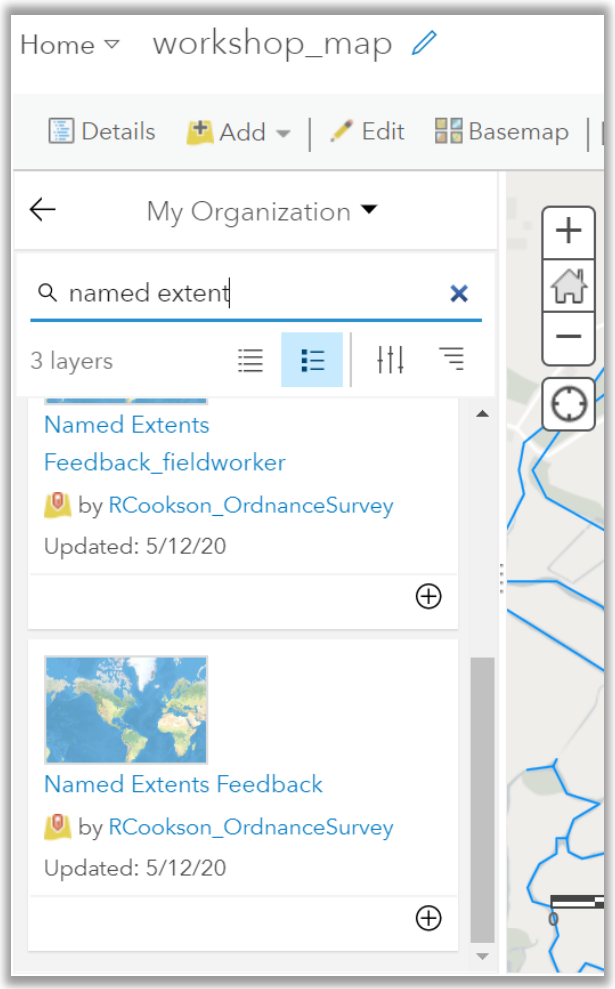
- Complete this survey: https://arcg.is/1z0fuK

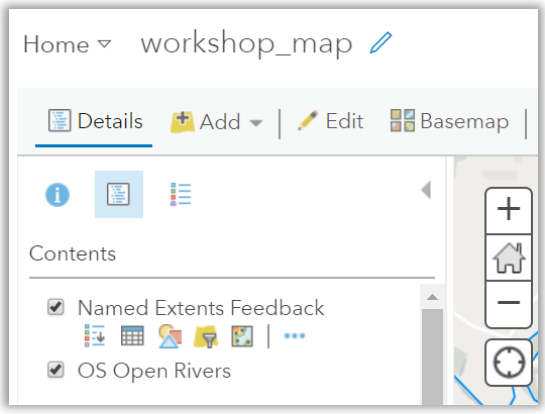


- Open your web map and search for the Survey123 feature service (My Organisation > Named Extent Feedback) and add to the map (bottom right hand corner plus).









- Open this dashboard to view the survey results: https://arcg.is/0C5uT4

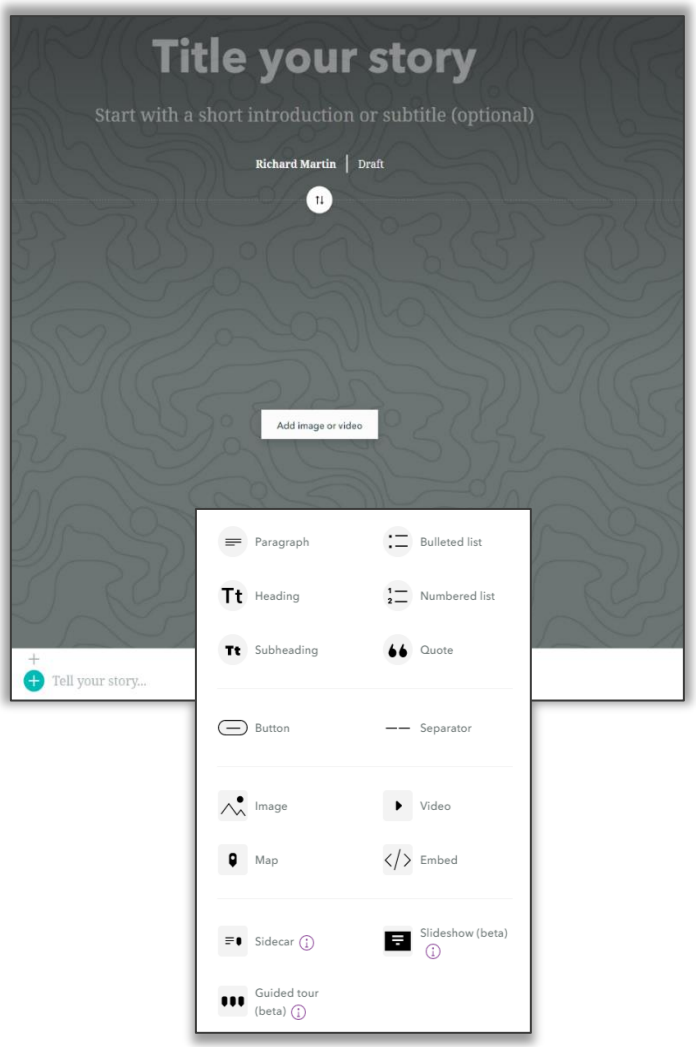
7. AGOL StoryMap

5 min Demo + 10 min Practical

We can then use a StoryMap to tie all our information together in one place. If you would like a different style to the default settings, check out https://storymaps-classic.arcgis.com/en/ which include more interactive styles.

For this workshop, we will use the default style:

- Home > Content > Create > StoryMap
- Add Title then Scroll down to 'Tell your story…' and click on the plus symbol
  - (Optional: add Paragraph text from https://storymaps.arcgis.com/stories/71881ef381714e58ae45548caac76918)
  - Map: embed your WebMap
  - Add content block > Embed > paste your WebApp url > Display as interactive content
  - Add content block > Embed > paste Dashboard link (above) > Display as interactive content
  - Preview



8. AGOL/Desktop

5 mins

ArcPro was designed to be tightly integrated with AGOL and makes it easy to view available material. There are two ways of viewing this material, firstly make sure you are signed into AGOL (top right):

- View Tab > Catalog View – this gives you a full screen view of Catalog
- View Tab > Catalog Pane – this opens a pane which is stored alongside any other panes you have open

Both options allow you to view any items that exist in My Content, any Groups you are a member of, and to search the OS Portal as well as the Living Atlas.

Add items to map:

- Right click on layer > Add to Map
  - My Content: Find the Feature Layer that you published at the start of the workshop and add to map
  - Living Atlas: Search for 'OS Open Rivers' and add to map